APPROVED
JUNE 01 2023
BOARD OF RECREATION
AND PARK COMMISSIONERS

BOARD REPORT NO. 23-111

DATE June 01, 2013 C.D. 7

BOARD OF RECREATION AND PARK COMMISSIONERS

SUBJECT: VERDUGO HILLS POOL AND BATHHOUSE REFURBISHMENT (PRJ20598) (W.O. #E170164F) - APPROVAL OF FINAL PLANS AND CALL FOR BIDS; CATEGORICAL EXEMPTION FROM THE PROVISIONS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO ARTICLE III, SECTION 1, CLASS 1(1) [INTERIOR OR EXTERIOR ALTERATIONS INVOLVING REMODELING OR MINOR CONSTRUCTION WHERE THERE BE NEGLIGIBLE OR NO EXPANSION OF USE], CLASS 1(3) [OPERATION, REPAIR, MAINTENANCE OR MINOR ALTERATION OF EXISTING HIGHWAYS AND STREETS, SIDEWALKS, GUTTERS, BICYCLE AND PEDESTRIAN TRAILS], CLASS 1(12) [OUTDOOR LIGHTING AND FENCING FOR SECURITY AND OPERATIONS] AND CLASS 2(3) [REPLACEMENT OR RECONSTRUCTION OF EXISTING UTILITY SYSTEMS AND/OR FACILITIES INVOLVING NEGLIGIBLE OR NO EXPANSION OF CAPACITY] OF CITY CEQA GUIDELINES AND ARTICLE 19, SECTIONS 15301(a), 15301(c), 15302(c) AND SECTION 15331 OF CALIFORNIA CEQA GUIDELINES

B. Aguirre	fwc	M. Rudnick	
		C. Santo Domingo	DF
B. Jackson		N. Williams	

General Manager

Approved X Disapproved Withdrawn

If Approved: Board President Board Secretary

RECOMMENDATIONS

1. Approve the final plans and specifications, substantially in the form on file with the Board of Recreation and Parks Commissioners (Board) Office and as attached to this Report (Attachment No. 1), for the Verdugo Hills Pool and Bathhouse Refurbishment (PRJ20598) (W.O #E170164F) project (Project);

2. Approve the date to be advertised for receipt of bids as Wednesday, July 12, 2023 at 2:00 P.M. in the Board Office;

3. Determine that the Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Article III, Section 1, Class 1(1) [Interior or exterior alterations involving remodeling or minor construction where there be negligible

or no expansion of use], Class 1(3) [Operation, repair, maintenance or minor alteration of existing highways and streets, sidewalks, gutters, bicycle and pedestrian trails], Class 1(12) Outdoor lighting and fencing for security and operations] and Class 2(3) [Replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity] of City CEQA Guidelines and Article 19, Sections 15301(a), 15301(c), 15302(c) and 15331 of California CEQA Guidelines and direct RAP staff to file a Notice of Exemption (NOE) with the Los Angeles County Clerk;

4. Authorize the Department of Recreation and Parks (RAP) Chief Accounting Employee or Designee to prepare a check to the Los Angeles County Clerk, in the amount of Seventy-Five Dollars ($75), for the purpose of filing a NOE; and,

5. Authorize RAP's Chief Accounting Employee or Designee to make technical corrections as necessary to carry out the intent of this Report.

SUMMARY

Verdugo Hills Pool is located at 10654 Irma Avenue in the Tujunga community of the City. This 0.75 acre facility provides a swimming pool for the use of the surrounding community. Due to the facilities, programs, and services it provides, Verdugo Hills Pool meets the standards for a Community Park as defined in the City's Public Recreation Plan. RAP staff has determined that the age and condition of the 1951 pool and bathhouse facility necessitates renovations.

The Project scope provides improvements to the existing pool and bathhouse including:

1. Demolition of the existing 8,550 square-foot pool deck and pedestrian ramp from public sidewalk to the building main entrance

2. Refurbishment of:
   - Pool water supply and drainage system
   - Pool equipment room and installation of new pool equipment

3. Construction of:
   - New 8,550 square-foot pool deck
   - New sports, security, and underwater pool lighting
   - New ADA ramp from public way to the building entrance (8'-6" elevation change)
   - New pathway in compliance with ADA
   - New pool fences and gates
   - New landscaping and irrigation around the existing bathhouse and pool
4. Renovation of the existing bathhouse including ADA restrooms, men's and women's showers and changing areas.

The final plans and specifications were prepared by The Department of Public Works, Bureau of Engineering (BOE), Architectural Division, and is attached as Attachment 1 to this Report.

Community Outreach
Three (3) Local Volunteer Oversight Committee (LVNOC) meetings were held to address the requirements of the Proposition K – L.A. for Kids Program (Proposition K) funded line items within the Project scope. The three meetings were conducted on September 9, 2015, December 17, 2015, and July 20, 2017, which provided opportunities for the Project's stakeholders and community members to engage in the development of the Project design. A consensus on the scope, budget, and timeline was reached, and the Project obtained LVNOC approval on July 20, 2017. Five (5) additional community outreach meetings were conducted on June 22, 2019, June 27, 2019, July 17, 2019, July 22, 2019, and July 30, 2019, to satisfy the Proposition 68 funding application requirements. The community was briefed on the topic of the proposed public art selection, sustainable design in terms of LEED and NetZero, and other related issues.

PROJECT FUNDING

The City Engineer's estimate for the Project's construction cost is Four Million Seven Hundred Twenty Thousand Dollars ($4,720,000), with a budgeted amount for construction contingency in the amount of Six Hundred Seventy Thousand and Five Hundred Dollars ($670,500), for a total estimated construction cost of Five Million and Three Hundred Ninety Thousand and Five Hundred Dollars ($5,390,500).

Funds are currently available (or pending availability) from the following funds and accounts:

Funding Source	**Fund/Dept./APPR**	**Amount**
Proposition K – Year 14	43K/10/10MPCB	$ 218,963.35
Proposition K – Year 18	43K/10/10NPCB	141,057.67
Proposition K – Year 19	43K/10/10SPAE	450,000.00
Sites and Facilities	209/88/88TAIQ	1,692,601.00
Quimby (BR 13-259)	302/89/89460K-VB	248,358.29
CIEP	100/54/00V807	182,000.00
MICLA	298/50/50VPMC	518,000.00
GCP (C.F. 19-0600)	TBD	500,000.00
MICLA FY 2022-23	298/50/TBD	1,282,785.00
Deferred Maintenance	302/89/89727H-VS	1,133,000.00
	Total Approved Funding	**$ 6,366,765.31**
Funding in Mayor's Proposed Budget - *Pending Council Approval*		
CTIEP 2023-24	TBD	$ 2,000,000.00
	Total	**$ 8,366,765.31**

The BOE submitted a report to the Municipal Facilities Steering Committee in October 2022, which requested approval to move forward with the solicitation of bids, and acknowledgement of a total project budget gap of approximately Two Million Seven Hundred Seventy Thousand Dollars ($2,770,000) (Attachment No. 2). The City Administrative Officer (CAO) and Council Office 7 have since identified General City Purpose (GCP) funding in the amount of Five Hundred Thousand Dollars ($500,000), and MICLA FY 2022-23 funding in the amount of One Million Two Hundred Eighty Two Thousand Seven Hundred and Eighty Five Dollars ($1,282,785). RAP has

also identified One Million One Hundred Thirty Three Thousand Dollars ($1,133,000) in Deferred Maintenance Funding, which resolves the previously mentioned budget shortfall. Council approval of the allocation of Two Million Dollars ($2,000,000) in CTIEP funds noted in the FY 23-24 Mayors Proposed budget, will be utilized to ensure that the Project can be awarded if we receive high bids due to the current volatile construction market.

TREES AND SHADE

Eight (8) trees are proposed to be removed and fourteen (14) trees are proposed to be planted as part of this Project.

Of the eight (8) trees to be removed, one (1) tree is dying (Lagerstroemia indica, crape myrtle), and two (2) are considered an invasive weed (Ailanthus altissima, tree of heaven). The remaining five (5) existing trees proposed to be removed are: three (3) Lagerstroemia indica, crape myrtle, and two (2) Callistemon viminalis, weeping bottlebrush, which are non-native. Their total diameter at breast height (DBH) is 36". All eight (8) trees to be removed are unprotected trees as defined by the Protected Tree under Ordinance 177404

The fourteen (14) new trees proposed to be planted are eight (8) Chilopsis 'Burgundy' Std, and six (6) Callistemon Viminalis 'Slim', with the 8ight (8) new trees proposed to be planted being 24-inch box trees, and the other six (6) new trees proposed to be planted being 15 Gal. box trees. Their total DBH is 36", in accordance with Appendix M of the RAP Urban Forest Program.

Approximately two hundred (200) square feet of tree canopy is proposed to be removed (not including dying or invasive trees), and approximately one thousand two hundred (1,200) square feet of tree canopy is projected to be provided by the new trees after five (5) years, assuming a survival rate of 75 percent.

ENVIRONMENTAL IMPACT

The proposed Project consists of interior and exterior alterations involving remodeling or minor construction where there be negligible or no expansion of use; minor alteration of existing sidewalks, outdoor lighting for security and operations and replacement or reconstruction of existing facilities involving negligible or no expansion of capacity.

According to the parcel profile report retrieved on September 5, 2022, this area does not reside in a liquefaction zone. This site is not within a coastal, methane, or historic zone, so there is no reasonable possibility that the proposed Project may impact on an environmental resource of hazardous or critical concern or have a significant effect due to unusual circumstances. No other known projects would involve cumulatively significant impacts, and no future projects would result from the proposed Project. As of September 5, 2022, the State Department of Toxic Substances Control (DTSC) (Envirostor at www.envirostor.dtsc.ca.gov) and the State Water Resources Control Board (SWCB) (Geotracker at https://geotracker.waterboards.ca.gov/) have not listed the Project site or any contaminated sites near the Project area (within 500 feet). According to the Caltrans Scenic Highway Map there is no scenic highway located within the vicinity of the proposed Project or within its site. On May 30, 2019, SWCA conducted a search of the California

Historical Resources Information System (CHRIS) at the South-Central Coastal Information System (SCCIC), located on the campus of California State University, Fullerton. The SLF was conducted by the Native American Heritage Commission at the request of SWCA. Based on the results of this survey, the project site does not contain historical resources. Therefore, the proposed Project is not located in proximity of a known historical resources and will not cause a substantial adverse change in the significance of any historical resource.

Based on this information, RAP staff recommends that the Board determines that it is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Article III, Section 1, Class 1(1), Class 1(3), Class 1(12) and Class 2(3) of City CEQA Guidelines and Article 19, Sections 15301(a), 15301(c), 15302(c) and 15331 of California CEQA Guidelines. Staff will file a Notice of Exemption with the Los Angeles County Clerk upon Board's approval.

FISCAL IMPACT

The Project will be funded by a combination of the aforementioned funding sources. There is no immediate fiscal impact to RAP's General Fund at this time. However, operations and maintenance costs will be evaluated and included in future RAP budget requests.

STRATEGIC PLAN INITIATIVES AND GOALS

Approval of this Board Report advances RAP's Strategic Plan by supporting:

Goal No. 3: Create and Maintain World Class Parks and Facilities
Outcome No. 2**:** Long-term park system planning is guided by community engagement, data, and a commitment to equity.

Key Metric: Complete capital improvement plan.
Target: 60% by 2023

This Report was prepared by Alex Ngo, Project Manager, BOE Architectural Division; reviewed by Ohaji Abdallah, Contract Administrator/ Proposition K Program Manager and Steven Fierce, Principal Architect, BOE Architectural Division; and Darryl Ford, Superintendent, Department of Recreation Parks, Planning, Construction and Maintenance Branch.

LIST OF ATTACHMENTS

Attachment No. 1 – Final Plans and Specifications
Attachment No. 2 – Municipal Facilities Steering Committee Report
Attachment No. 3 – CEQA Notice of Exemption

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

VERDUGO HILLS POOL & BUILDING REFURBISHMENT

TENANT IMPROVEMENT

10654 IRMA AVE. TUJUNGA , CA. 91042

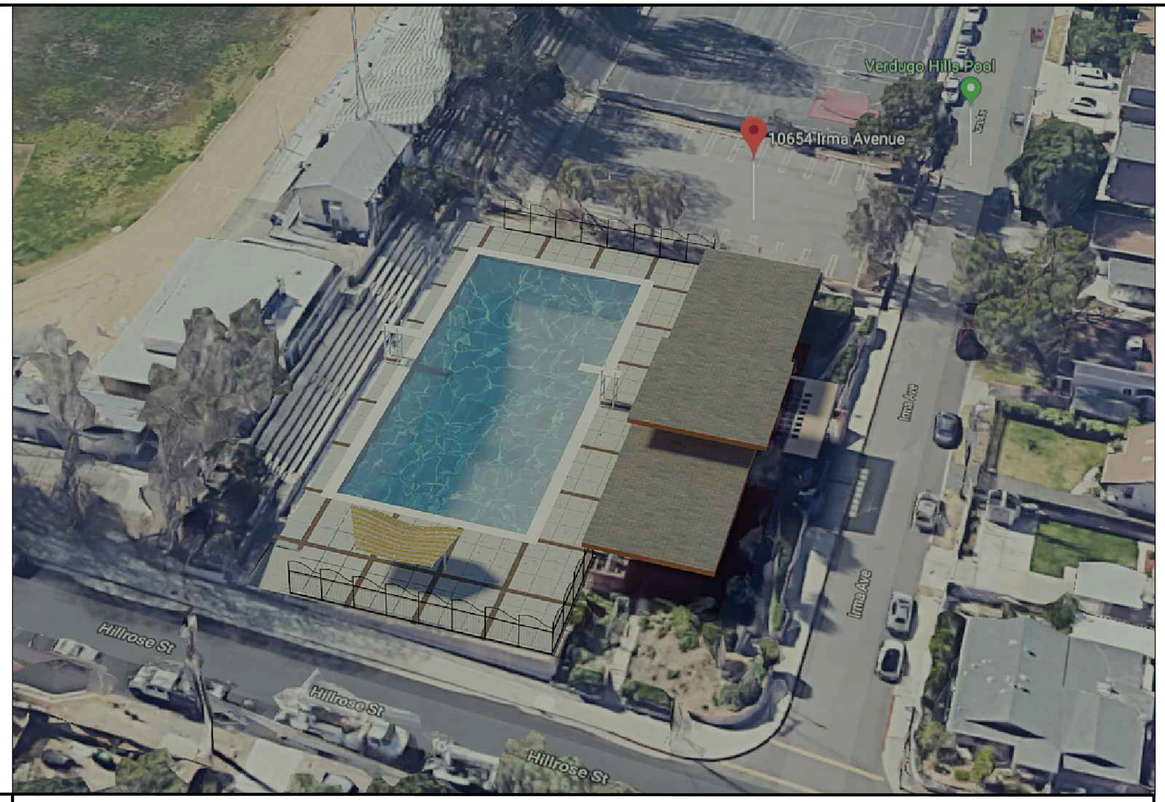
BUREAU OF ENGINEERING
OFFICIAL RECORD

GENERAL SCOPE OF WORK

VOLUNTARY UPGRADES FOR INTERIOR ALTERATION: ADD TWO NEW ADA COMPLIANT GENDER NEUTRAL RESTROOMS.ONE MENS WITH LAVATORY, TOILET AND SHOWER, ONE WOMENS WITH LAVATORY, TOILET AND SHOWER. (NO CHANGE TO SQUARE FOOTAGE OF BUILDING FOOTPRINT). REMOVE EXISTING LAVATORIES AND TOILET FIXTURES IN EXISTING MENS AND WOMENS PUBLIC SHOWER AREAS, AND REPLACE WITH NEW. PATCH AND REPAIR INTERIOR WALLS AND REPAINT. REFINISH EXISTING CONCRETE FLOORS. INSTALL NEW SHOWER WALL TILE. INSTALL NEW ENERGY EFFICIENT LED LIGHTING FIXTURES THROUGHOUT INTERIOR. AND SPORTS LIGHTING FOR POOL DECK AREA. (ELECTRICAL WORK UNDER SEPARATE PERMIT).

VOLUNTARY UPGRADE FOR EXTERIOR: CONSTRUCT NEW CONCRETE ADA COMPLIANT ACCESS RAMP AT ENTRY. REPLACE ALL EXISTING BROKEN AND MIS-MATCHED GLAZING FROM EXISTING METAL WINDOW FRAMES AND REPLACE WITH NEW UNIFORM GLASS GLAZING. EXISTING WINDOW FRAMES TO REMAIN IN PLACE. REPAIR PATCH AND PAINT EXISTING WOOD OVER HANG AND EAVES. REPAIR, REPOINT AND REPLACE EXISTING BRICK AND MORTAR AS NEEDED.

POOL AND POOL AREA UPGRADES: DEMOLISH AND REPLACE EXISTING POOL DECK AND DECK AREA DRAINS. (EXISTING POOL TANK TO REMAIN IN PLACE - NO CHANGE TO POOL SIZE). INSTALL NEW CONCRETE POOL DECK AND DECK AREA DRAINS. REMOVE EXISTING POOL EQUIPMENT AND INSTALL NEW POOL EQUIPMENT AND ALL NECESSARY LINES. (ALL POOL WORK, UNDER SEPARATE PERMIT).



PROJECT SCOPE OF WORK

1. CONSTRUCT NEW ADA COMPLIANT GENDER NEUTRAL RESTROOMS FOR MEN & WOMEN INCLUDE ALL PLUMBING, PLUMBING FIXTURES, LIGHTING AND ACCESSORIES AS REQUIRED AND SHOWN. (SEE MECHANICAL DRAWINGS- UNDER SEPARATE PERMIT).

2. CONSTRUCT AND INSTALL NEW ADA COMPLIANT CUSTOMER SERVICE COUNTER.

3. CONSTRUCT NEW ADA COMPLIANT CONCRETE WALK PATH AS SHOWN. DEMO, REMOVE AND DISPOSE OF EXISTING PUBLIC WALKWAY RAMP AND STAIRWAY WHERE SHOWN, AND CONSTRUCT NEW ADA COMPLIANT PUBLIC ACCESS RAMP FROM STREET LEVEL WITH LANDINGS AND HANDRAILS AS SHOWN.

4. REMODEL AND RECONFIGURE AND REFINISH EXISTING MEN & WOMEN SHOWERS.

5. REMOVE AND DISPOSE OF EXISTING MENS & WOMENS TOILET FIXTURES AND LAVATORIES AND REPLACE WITH NEW, TOILETS & LAVATORIES. SEE PLUMBING PLANS.

6. REMOVE EXISTING METAL DOORS AND HARDWARE AND CLOSURES (WHERE SHOWN) & INSTALL NEW FIBERGLASS DOORS, HARDWARE AND CLOSURES.

7. INSTALL NEW INFRARED RADIANT SPACE HEATERS AND CONTROLS. SEE MECHANICAL DRAWINGS. (SEE MECHANICAL DRAWINGS- UNDER SEPARATE PERMIT).

8. REMOVE AND DISPOSE OF EXISTING OUTDOOR DRINKING FOUNTAIN. & INSTALL NEW ADA COMPLIANT HI-LOW DRINKING FOUNTAIN.

9. REMOVE AND DISPOSE OF EXISTING MENS AND WOMENS SHOWER AND MODESTY PARTITIONS, INCLUDING POSTS AND BASE & INSTALL NEW (PHENOLIC) SHOWER AND MODESTY PARTITIONS PER PLAN.

10. REMOVE AND DISPOSE OF EXISTING WINDOW GLAZING. PROVIDE AND INSTALL NEW LOW-E ENERGY EFFICIENT WINDOW GLASS. REPAIR AND OR REPLACE ALL BROKEN OR NONFUNCTIONAL WINDOW LATCHES AND HINGES. PATCH AND REPAIR ALL ADJACENT SURFACES.

11. DEMOLISH, REMOVE AND DISPOSE OF EXISTING POOL DECK AND DRAINS & INSTALL NEW POOL DECK, DECK DRAINS AND WATER SUPPLY + DRAIN LINES (AS REQUIRED),PROVIDE AND INSTALL NEW POOL EQUIPMENT AND ACCESSORIES AS INDICATED PER CONSULTANTS (SEE SP. SWIMMING POOL PLANS & DRAWINGS, (UNDER SEPARATE PERMIT).

12. REMOVE AND DISPOSE OF EXISTING EXTERIOR LIGHT POLES (WHERE SHOWN) & INSTALL NEW EXTERIOR LIGHT POLES PER ELECTRICAL DRAWINGS (UNDER SEPARATE PERMIT).

13. REMOVE AND DISPOSE OF EXISTING INTERIOR & EXTERIOR BUILDING LIGHT FIXTURES & INSTALL NEW INTERIOR & EXTERIOR BUILDING LIGHTING FIXTURES (SEE ELECTRICAL PLANS).

14. CLEAN, PREP, PATCH AND REPAIR ALL INTERIOR WALLS, CEILINGS, AND EXPOSED SURFACES AND EQUIPMENT. PREP, PRIME AND PAINT ALL, AND AS INDICATED AND PER FINISH SCHEDULE.

15. REPAIR AND REPLACE POOL SERVICE PIPES AND EQUIPMENT PER S.P. DOCUMENTS AND DRAWINGS

16. SAND SMOOTH, PATCH, REPAIR, CLEAN AND PAINT(E) STREET FACING, PLANTER RETAINING WALLS AS SHOWN AND CAP STONE AS NECESSARY.

17. REMOVE RUST FROM (E) RAMP GALV. METAL GUARDRAIL PRIME AND COAT. REPAIR BROKEN AND MISSING CONCRETE AREAS AND VISIBLE CRACKS ON ENTRY STAIRS AND WALKS, AS NEEDED.

18. SAND, PATCH, REPAIR AND PAINT (E) WOOD TRELLIS, FASCIAS AND UNDER EAVES ON ALL SURROUNDING EAVES AND OVERHANGS ON BATH HOUSE BUILDING AND ABOVE BUILDING ENTRANCE CANOPY AND CLERESTORY. REPLACE DETERIORATED AND WARPED WOOD IN KIND AS NECESSARY.

19. CLEAN, PATCH, REPAIR AND REPOINT ALL EXISTING CRACKED, BROKEN AND MISSING MORTAR AND BRICK JOINTS AS REQUIRED PER CHBC HISTORICAL STANDARDS. PROVIDE EXTERIOR ANTI-GRAFFITI COATING.

20. CLEAN, BLAST, GRIND AND OR PATCH LEVEL, PATCH AND REPAIR ALL CRACKS AND VOIDS IN EXISTING INTERIOR CONCRETE FLOORING. SEAL WITH CROWNCRETE-U #814 SL URETHANE POLYMER. AND TOP WITH CROWNPRO - 7072 SC ALIPHATIC POLYASPARTIC POLYUREA TOP COAT (OR EQUAL). COLOR: MERLOT METALLIC.

21. REMOVE AND DISPOSE OF EXISTING CHAIN LINK PERIMETER FENCING (WHERE SHOWN). PROVIDE AND INSTALL NEW DECORATIVE IRON FENCING. (PER STRUCT. DETAIL A1/S301).

22. REMOVE , DEMOLISH, MODIFY AND CONSTRUCT: EXISTING LANDSCAPING, TREES, PLANTING, IRRIGATION, AND PARKING FEATURES AS INDICATED PER LANDSCAPE PLANS. PROVIDE AND INSTALL NEW LANDSCAPING, TREES, PLANTING, IRRIGATION, PARKING FEATURES AND ACCESSORIES PER LANDSCAPE DRAWINGS.

23. PROVIDE AND INSTALL NEW STRUCTURAL STEEL AND FABRIC SUN SHADE CANOPY AS SHOWN. (UNDER SEPARATE PERMIT),

NOTE:

1. THIS PROJECT SHALL COMPLY WITH CURRENT L.A. CITY BUILDING CODE, ELECTRICAL, MECHANICAL & PLUMBING CODE. AND ADA CRITERIA.

2. A SEPARATE PERMIT IS REQUIRED FOR ELECTRICAL, MECHANICAL, PLUMBING, AND SHADE STRUCTURE.

3. ALL WORK PERTAINING TO REPLACEMENT OF EXISTING FINISHES & MATERIALS THAT ARE TO BE INCORPORATED INTO LIKE MATERIALS: WOOD, BRICK, METALS, CONCRETE AND MORTAR, SHALL ADHERE TO THE SECRETARY OF INTERIORS STANDARDS FOR REHABILITATION OF HISTORIC BUILDINGS.



(THOMAS GUIDE PAGE 503 - GRID J3)

VICINITY MAP

NOT TO SCALE

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PROJECT TEAM

CLIENT:
DEPARTMENT OF RECREATION & PARKS
JIMMY KIM
GENERAL MANAGER

PROJECT MANAGEMENT:
PROP K RECREATIONAL AND CULTURAL FACILITIES PROGRAM
PROGRAM MANAGERS

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CONSTRUCTION MANAGEMENT:
BUREAU OF ENGINEERING CONSTRUCTION MANAGEMENT GROUP
RICHARD LOUIE
DIVISION MANAGER

BUREAU OF ENGINEERING ARCHITECTURAL DIVISION
ARCHITECTURAL:
STEVEN FIERCE, A.I.A.
PRINCIPAL ARCHITECT

CELSO DEL POSO
SENIOR ARCHITECT

MECHANICAL
SAHAR MEHRZAD / SHAWN FARZAN
MECHANICAL ENGINEER

LANDSCAPE
GREGORY MOESER - RICHARD FISHER
LANDSCAPE ARCHITECTS

ELECTRICAL
SARO DERSAROIAN
ELECTRICAL ENGINEER

GEOTECHNICAL ENGINEERING DIVISION
PATRICK SCHMIDT, PE,GE
GEOTECHNICAL ENGINEER III

STRUCTURAL ENGINEERING DIVISION
SHAILESH PATEL, PE,SE
PRINCIPAL STRUCTURAL ENGINEER

SURVEY DIVISION
WILLIAM KNIGHT, PLS
ENGINEER OF SURVEYS

CONSULTANTS

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E-MAILS : MIKE HIGGINS@MUSCO.COM

BID SET
Date: May 17, 2022

REVISION DATES: (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

Sheet Version 2.2

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

NO	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			

BUILDING NO. -

INDEX NO. RP-300123

TED ALLEN , P.E. CITY ENGINEER
ACCEPTED BY

DEPUTY CITY ENGINEER/ PROGRAM MANAGER — DATE:

CITY ENGINEER — DATE:

GENERAL MANAGER
DEPARTMENT OF RECREATION AND PARKS
JIMMY KIM

SHEET TITLE: COVER SHEET - PROJECT SCOPE

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE, TUJUNGA , CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. G0.1

SHEET 1 OF SHEETS 96

BUILDING SUMMARY

ADDRESS:	10654 IRMA AVE. LOS ANGELES, CA. 91042
ZONE:	OS-XL1
FIRE DISTRICT/STATION :	74
COUNCIL DISTRICT:	CD 7 - MONICA RODRIGUEZ
LOT SIZE:	18,021.SQ. FT.
BUILDING HEIGHT:	20'
BUILDING USE:	SWIMMING POOL BATH HOUSE
STORIES:	1
OCCUPANCY:	A4
CONSTRUCTION TYPE:	TYPE V-N
SPRINKLERS:	NONE
BUILDING FLOOR AREA : FOOTPRINT	4386 SQ. FT.

LEGAL DESCRIPTION:

TRACT:	TR 6729
MAP REFERENCE:	M B 76-76
BLOCK:	NONE
LOT:	78
ARB :	-
APN :	255 - 702 - 4900

PLUMBING FIXTURES

EXISTING FIXTURE COUNT

EXISTING BOYS:	5	SHOWERS,
	3	TOILETS
	1	LAVATORY,
	1	URINAL
EXISTING GIRLS:	3	SHOWERS
	3	TOILETS
	2	LAVATORIES
DRINKING FOUNTAIN:	1	
SERVICE SINK:	2	

NEW FIXTURES ADDED

BOYS SHOWERS:	1	GENDER NEUTRAL	
BOYS TOILETS:	1	GENDER NEUTRAL	
BOYS LAVATORIES:	1	GENDER NEUTRAL	1 DRESSING ROOM
URINALS:	1	BOYS RESTROOM	
GIRLS TOILETS:	1	GENDER NEUTRAL	
GIRLS LAVATORIES:	1	GENDER NEUTRAL	
AQUATICS SHOWER:	1		
AQUATICS TOILET:	1		
AQUATICS LAVATORY:	1		
DRINKING FOUNTAINS:	2	DISABLED ACCESS (Hi and Low)	
SERVICE SINK:	1	(REMOVED)	

AREAS

TOTAL BLDG. AREAS:	3869 SQ. FT.
OFFICE AREA:	898 SQ. FT.
GIRLS DRESSING ROOM:	1098 SQ. FT.
GIRLS GENDER NEUTRAL RESTROOM:	105 SQ. FT.
BOYS DRESSING ROOM:	1098 SQ. FT.
BOYS GENDER NEUTRAL RESTROOM:	105 SQ. FT.
TOTAL OCCUPIED BLDG AREA:	3304 SQ. FT.
MISCELLANEOUS AREAS:	
INTERIOR STORAGE RM:	80 SQ. FT.
EXTERIOR POOL STORAGE- 1:	54 SQ. FT.
EXTERIOR POOL STORAGE- 2:	54 SQ. FT
COMM RM:	89 SQ. FT.
BOYS EXIT CORRIDOR :	54 SQ. FT.
GIRLS EXIT CORRIDOR :	54 SQ. FT.
FIRST AID:	90 SQ. FT.
AQUATICS STAFF RESTROOM:	90 SQ. FT.
TOTAL:	565 SQ. FT.

PARKING ANALYSIS

EXISTING - 21 SPACES

RE-STRIPE - 21 SPACES

REFER to : Memorandum of Department Recreation & Parks - Parking Authority Under City Charter Dated: December 6th 2018.

PROJECT DATA

DRAWING INDEX

MECHANICAL

57. M100 MECHANICAL SCHEDULE AND DETAILS
58. M101 MECHANICAL FLOOR PLAN

PLUMBING

59. P100 PLUMBING SCHEDULE
60. P101 C.W, H.W AND GAS PLUMBING PLAN
61. P102 WASTE & VENT FLOOR PLAN AND RISER DIAGRAM
62. P103 GAS RISER DIAGRAM & PLUMBING DETAILS

ELECTRICAL

63. E101 SYMBOLS LIST, CODES, AND NOTES
64. E102 LIGHTING FIXTURE SCHEDULE & DETAILS
65. E103 MUSCO LIGHTING CONTROL SUMMARY
66. E104 MUSCO LIGHTING CONTROL SUMMARY
67. E105 SINGLE LINE DIAGRAM & PANEL SCHEDULE
68. E106 TITLE 24 FORMS - INDOOR
69. E107 TITLE 24 FORMS - INDOOR
70. E108 TITLE 24 FORMS - OUTDOOR
71. E109 TITLE 24 FORMS
72. E110 PHOTOMETRIC STUDY
73. E111 PHOTOMETRIC STUDY
74. E112 ELECTRICAL SITE PLAN
75. E113 BASEMENT AND FIRST FLOOR DEMOLITION PLANS
76. E114 BASEMENT AND FIRST FLOOR LIGHTING PLANS
77. E115 BASEMENT AND FIRST FLOOR POWER PLANS
78. E116 BASEMENT AND FIRST FLOOR SIGNAL PLANS
79. FA101 SYMBOL LIST AND NOTES
80. FA102 FIRE ALARM DETAILS AND CALCULATIONS
81. FA103 FIRE ALARM SITE PLAN, BASEMENT AND FIRST FLOOR FIRE ALARM PLANS

ELECTRICAL LIGHTING POLE STRUCTURAL DRAWINGS

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34. D1.0 DEMOLITION PLAN
35. A1.0 SITE PLAN - CONSTRUCTION PLAN
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37. A1.3 REFLECTED CEILING PLAN
38. A2.0 EXTERIOR ELEVATIONS & SECTIONS
39. A3.0 ENLARGED RESTROOM PLANS
40. A3.1 ENLARGED GEN-NEUTRAL RESTROOM, INTERIOR ELEVATIONS & WALL DETAILS
41. A4.0 LOBBY SERVICE COUNTER / STAIR REPAIR & PAINT SCHEDULE
42. A5.0 DETAILS
43. A6.0 DOOR & WINDOW SCHEDULE, FINISH SCHEDULE & DETAILS
44. A7.0 SITE PHOTOS & PROJECT DETAILS
45. A8.0 USA SHADE - CUSTOM CANTILEVER STRUCTURE - (DESIGN BUILD ITEM)
46. A9.0 FENCE DETAILS / ELEVATIONS
47. A10.0 SIGNAGE PLAN / EXIT TRAVEL PLAN

STRUCTURAL

48. S001 GENERAL NOTES
49. S002 GENERAL NOTES FOR STRUCTURAL OBSERVATION
50. S003 DESIGN DATA, DEPUTY INSPECTION AND ABBREVIATIONS
51. S004 TYPICAL DETAILS
52. S101 PARTIAL PLANS - RETAINING WALL, BUILDING FIRST FLOOR AND SITE FENCE
53. S201 ELEVATION
54. S202 ELEVATION
55. S301 FOUNDATION AND WALL DETAILS
56. S302 CONCRETE DETAILS

NOTE: THIS TENANT IMPROVEMENT, BUILDING REFURBISHMENT PROJECT DOES NOT INCORPORATE OR UTILIZE THE INSTALLATION OF ANY RENEWABLE ENERGY WATER REUSE SYSTEMS OR SOLAR ENERGY GATHERING OR SOLAR STORAGE COMPONENTS.

SOUND LEVELS: THIS TENANT IMPROVEMENT, BUILDING REFURBISHMENT PROJECT DOES NOT CONTAIN ANY LOCALIZED SYSTEMS OR EQUIPMENT THAT CREATE EXCESSIVE VIBRATION OR THAT WILL EXPOSE THE OCCUPANTS TO EXCESSIVE NOISE DECIBEL LEVELS GREATER THAN 65db DURING ANY HOURS OF OPERATION.

BUREAU OF ENGINEERING
OFFICIAL RECORD

RATIO REQUIRED BY LADBS:

OCCUPIED BUILDING AREA: 3572 SQ. FT.

COMMERCIAL: 984 SQ. FT. / 500 = (2 SPACES)

BATH HOUSE: 2588 SQ. FT. / 100 = (26 SPACES)

TOTAL REQUIRED: 28 SPACES

STANDARD PARKING PROVIDED : (20)

COMPACT PARKING: NONE

HANDICAPPED PARKING: (1)

TOTAL EXISTING PARKING SPACES: (21)

ELECTRICAL VEHICLE STATION: NONE

BICYCLE RACKS: NONE

SEE RECREATION AND PARKS AUTHORITY UNDER CITY CHARTER LETTER PERTAINING TO PARKING REQUIREMENTS, DATED DECEMBER 6, 2018

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
DELSO J. DEL POSO
LIC. NO. C-29974
RENEW: 31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:	
	ARCHITECTURAL DIVISION	LIC. NO. C-29974	03-10-22
ARCHITECT:	Celso J. Del Poso		03-10-22
DESIGNED BY:	John McNeil		03-10-22
DRAWN BY:	Vinh Ha TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DRAWING INDEX & PROJECT DATA

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. G1.0

SHEET 2 OF 96 SHEETS

PLOTTED: 8/17/2022 7:30 PM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/10/2022 2:44 PM
FILE: C:\USERS\25355BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\GENERAL SHTS AND GREEN CODE\GENERAL\G1.0-DWG\INDEXT. (BID SET).DWG

ABBREVIATIONS

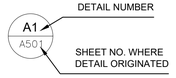
A	ABOVE	ABV.
	ABOVE FINISH FLOOR	A.F.F.
	ACOUSTICAL CEILING TILE	A.C.T.
	ACCESS PANEL	ACP
	AGGREGATE	AGG.
	AIR CONDITION	A/C
	ALUMINUM	ALUM.
	ANODIZED	ANOD.
	AMERICAN CONCRETE INSTITUTE	A.C.I.
	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	AISC or A.I.S.C.
	AMERICAN NATIONAL STANDARDS INSTITUTE	ANSI
	AMERICAN SOCIETY OF CIVIL ENGINEERS	ASCE
	AMERICAN SOCIETY OF TESTING AND MATERIALS	ASTM
	AMERICAN WELDING SOCIETY	AWS
	AMOUNT	AMT.
	AND	&
	ANCHOR BOLT	A.B.
	ANGLE	L
	APPROVED	APPD.
	APPROXIMATE	APPROX.
	ARCHITECT or ARCHITECTURAL	ARCH.
	ASBESTOS	ASB.
	ASPHALT	ASPH.
	ASPHALTIC CONCRETE	A.C.
	ASPHALT TILE	A.T.
	ASSOCIATE	ASSOC.
	ASSOCIATION	ASSN.
	AT	@
	AUTOMATIC	AUTO
	AVENUE	AVE.
B	BASEMENT	BSMT.
	BEAM	BM
	BETWEEN	BET.
	BLOCK	BLK.
	BLOCKING	BLKG.
	BOARD	BD.
	BOTH WAYS	B.W.
	BOTTOM	BOT.
	BOTTOM OF JOINT	BOJ
	BOTTOM OF MULLION	BOM
	BOULEVARD	BLVD.
	BRACKET	BRKT.
	BRONZE	BRZ.
	BRITISH THERMAL UNITS	BTU
	BUILT-UP	B/U
	BUILDING	BLDG.
C	CABINET	CAB.
	CAST IRON	C.I.
	CAST IRON PIPE	C.I.P.
	CATCH BASIN	C.B.
	CEILING	CLG.
	CEMENT	CEM.
	CENTER	CTR.
	CENTERLINE	CL OR ℄
	CENTER TO CENTER	C TO C
	CERAMIC TILE	C.T.
	CHALKBOARD	CK.BD.
	CHANGE	CHG.
	CHANNEL	CHAN. OR ⊏
	CLEAN OUT	C.O.
	CLEAR	CLR.
	COLUMN	COL.
	COMMON	COM.
	COMMUNICATION	COMM.
	COMPANY	CO.
	COMPOSITION	COMPO.
	CONCRETE	CONC.
	CONCRETE BLOCK	CONC. BLK.
	CONCRETE MASONRY UNIT	C.M.U.
	CONNECTION	CONN.
	CONSTRUCT or CONSTRUCTION	CONST.
	CONTINUOUS or CONTINUE	CONT.
	CONTRACT or CONTRACTOR	CONTR.
	CONTROL JOINT	C.J.
	CORNER	COR.
	CORRIDOR	CORR.
	COUNTERSINK	CSK.
	CARPET	CP.
	CERAMIC TILE	CT.
	CUBIC	CU.
	CUBIC FOOT	CU. FT.
	CUBIC FEET PER MINUTE	CFM
	CUBIC INCH	CU. IN.
	CUBIC YARD	CU. YD.
	CURB FACE	C.F.
D	DEGREE	DEG. or
	DEPARTMENT	DEPT.
	DETAIL	DET.
	DIAGONAL	DIAG.
	DIAMETER	DIA. OR ø
	DIMENSION	DIM.
	DISPENSER	DISP.
	DISTANCE	DIST.
	DIVISION	DIV.
	DOOR	DR.
	DOUBLE	DBL.
	DOWEL	DWL.
	DOWN	DN.
	DOWNSPOUT	D.S.
	DRAWING	DWG.
	DRINKING FOUNTAIN	DF.
E	EACH	EA.
	EAST	E.
	ELECTRIC OR ELECTRICAL	ELEC.
	ELEVATION	EL.
	ELEVATOR	ELEV.
	ELASTOMERIC MEMBRANE	E.M.
	EMERGENCY	EMER.
	EXPOSED CONSTRUCTION	E.C.
	END VERTICAL CURVE	E.V.C.
	ENAMEL	EN.
	ENGINEER	ENGR., ENG.
	EQUIPMENT	EQUIP.
	EQUAL	EQ.
	ESTIMATE	EST.
	EXCAVATE	EXC.
	EXISTING	EXIST.
	EXPANSION BOLT	E.B.
	EXPANSION JOINT	E.J.
	EXTERIOR	EXT.
	EXTRUDED	EXTR.
	EXTERIOR GRADE	EXT. GR.
	EYE WASH	E.W.
F	FACE OF CONCRETE	F.O.C.
	FACE OF MASONRY	F.O.M.
	FACTORY FLUOROCARBON RESINOUS COATED	FAC. FCRC
	FACE OF STUD	F.O.S.
	FEET/FOOT	FT.
	FIREMAN'S PHONE JACK	F.J.
	FIGURE	FIG.
	FINISH	FIN.
	FINISH FACE	F.F.
	FIRE ALARM PULL	F.P.
	FIRE EXTINGUISHER	F.E.
	FIRE HOSE CABINET	F.H.C.
	FIRE HYDRANT	F.H.
	FLANGE	FLG.
	FLATHEAD WOOD SCREWS	F.H.W.S.
	FLOOR	FL.
	FLOOR DRAIN	F.D.
	FLOW LINE	F.L.
	FLOOR SINK	F.S.
	FOOTING	FTG.
	FOUNDATION	FND.
	FABRIC WALL COVERING	F.W.C.
	FABRIC WALL PANEL	F.W.P.
G	GALLON	GAL.
	GALVANIZED	GALV.
	GALVANIZED IRON	GI.
	GAGE	GA.
	GLASS	GL.
	GOVERNMENT	GOVT.
	GRAB BAR	G.B.
	GRANITE	GRAN.
	GRADE	GR.
	GRATING	GRTG.
	GYPSUM BOARD	GYP. BD.
H	HANDICAP	H/C
	HANGER	HGR
	HARDBOARD	HBD.
	HARDNER	HARD.
	HARDWARE	HDW.
	HARDWOOD	HWD.
	HEADER	HDR.
	HEXAGONAL	HEX.
	HEIGHT	HT.
	HIGH POINT	H.P.
	HOLLOW CORE	H.C.
	HOLLOW METAL	H.M.
	HOOK	HK.
	HORIZONTAL	HORIZ.
	HOSE BIBB	H.B.
	HOUR	HR.
I	I BEAM	I
	INCH	IN or "
	INFORMATION	INFO
	INSIDE DIAMETER	I.D.
	INSULATION	INSUL.
	INTERIOR	INT.
	INTERIOR GRADE	INT. GR.
	INTERMEDIATE	INTER.
	INVERT	INV.
J	JOINT	JT.
	JOIST	JST.
K	KIP	K
L	LABORATORY	LAB.
	LAMINATE	LAM.
	LANDING	LDG.
	LAVATORY	LAV.
	LEVEL	LEV.
	LIGHT	LT.
	LINOLEUM	LINO.
	LONG	LG.
	LUMBER	LUM.
M	MACHINE	MACH.
	MANHOLE	M.H.
	MANUFACTURER or MANUFACTURING	MFR.
	MINERAL FISSURED TILE	MFT
	MARK	MK.
	MASONRY OPENING	MO
	MATERIAL	MAT.
	MAXIMUM	MAX.
	MECHANICAL	MECH.
	MEDICINE CABINET	MC
	MEMBRANE WATERPROOFING	MWP
	METAL	MTL.
	MEZZANINE	MEZZ.
	MINIMUM	MIN.
	MISCELLANEOUS	MISC.
	MOULDING	MLDG.
	MOUNTED	MTD.
N	NATIONAL	NATL.
	NATIONAL BOARD OF FIRE UNDERWRITERS	NBFU
	NATIONAL ELECTRICAL CODE	NEC
	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	NEMA
	NATURAL	NAT.
	NATURAL GRADE	NAT. GR.
	NOMINAL	NOM.
	NORTH	N
	NOT IN CONTRACT	N.I.C.
	NOT TO SCALE	N.T.S.
	NUMBER	NO. or #
O	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	O.S.H.A.
	OFFICE	OFF.
	OVER FLOW DRAIN	OFD
	ON CENTER	O.C.
	OPENING	OPNG.
	OPPOSITE	OPP.
	OUTSIDE DIAMETER	O.D.
	OUTSIDE FACE CONCRETE	O.F.C.
	OUTSIDE FACE MASONRY	O.F.M.
	OUTSIDE FACE STUDS	O.F.S.
	OUT TO OUT	O TO O
P	PAIR	PR.
	PAINTED	PTD.
	PARTITION	PART.
	PEDESTAL	PED.
	PENNY	d
	PERFORATED	PERF
	PERPENDICULAR	PERP.
	PHENOLIC	PHEN
	PICKET FENCE	PF
	PIECE	PC.
	PIPE BOLLARD	P.B.
	PLASTER	PLAS.
	PLASTIC LAMINATE	P-LAM.
	PLATE	PL.
	PANEL	PNL.
	POINT	PT.
	PORTLAND CEMENT CONCRETE	P.C.C.
	POUND	LB. or #
	POWER POLE	P.P.
	PRECAST	PRCST.
	PREFABRICATED	PREFAB.
	PROPERTY	PROP.
	PROPERTY LINE	℄
	PULL CHAIN	P.C.
	POLYVINYL CHORIDE	PVC
	POLYURETHANE ENAMEL	PVE
	PLYWOOD	PLYWD.
Q	QUARRY TILE	QT
R	RADIUS	RAD.
	RISER	R
	RUBBER BASE	R.B.
	RECTANGLE	RECT.
	REDWOOD	REDWD.
	REFER TO	RE
	REFLECTED CEILING PLAN	R.C.P.
	REFRIGERATOR	REF.
	REINFORCE or REINFORCING	REINF.
	REQUIRED	REQD.
	REVISION	REV.
	RIGHT-OF-WAY	R.O.W.
	ROOF	RF.
	ROOF DRAIN	R.D.
	ROOFING	RFG.
	ROOM	RM.
	ROUGH OPENING	RO.
	ROUND	RD.
S	SANITARY SEWER	SANT. SEW.
	SCHEDULE	SCH
	SECTION	SECTN.
	SHEET	SHT.
	SIMILAR	SIM.
	SINGLE	SGL.
	SOLID CORE	S.C.
	SOUTH	S.
	SPECIFICATION	SPEC.
	SPEAKER	SPK
	SQUARE	SQ.
	STAGGERED	STAGG.
	STAINLESS STEEL	SS
	STANDARD	STD.
	STEEL	STL.
	STIFFENER	STIFF.
	STIRRUP	STIR.
	SMOKE DETECTOR	S.D.
	STONE	STN.
	STRAIGHT GRADE	S.G.
	STREET	ST.
	STRUCTURAL	STRUCT'L.
	SUPPORT	SUPT.
	SURFACED 4 SIDES	S4S
	SUSPEND	SUSP.
	SYMBOL	SYM.
	SYMMETRICAL	SYMM.
T	TEMPERATURE	TEMP.
	TERRAZZO	TERR.
	THICK or THICKNESS	THK.
	TELEPHONE	TEL.
	THRESHOLD	THLD
	TONGUE AND GROOVE	T&G
	TOP OF	T.O.
	TOP OF BANK	T.O.B.
	TOP OF CURB	T.O.C
	TOP OF FINISH	T.O.F.
	TOP OF GRATE	T.G.
	TOP OF JOINT	T.O.J
	TOP OF MASONRY	T.O.M.
	TOP OF METAL DECK	T.M.D.
	TOP OF PARAPET	T.O.P.
	TOP OF STEEL	TOS / T.O.S.
	TOP OF STRUCTURAL SLAB	T.S.S.
	TOP OF WALL	T.O.W.
	TREAD	T.
	TURNBUCKLE	TRNBKL.
	TYPICAL	TYP.
U	UNIFORM BUILDING CODE	U.B.C.
	UNDER CUT	UC
	UNLESS NOTED OTHERWISE	U.N.O.
V	VINYL COMPOSITION TILE	VCT
	VENTILATOR	VENT.
	VERTICAL	VERT.
	VESTIBULE	VEST.
	VEE JOINT	V JT.
	VOLUME	VOL.
	VERIFY IN FIELD	VIF
	VINYL WALL COVERING	VWC
	VINYL	VYN
W	WAREHOUSE	WHSE
	WATER CLOSET	WC
	WATER HEATER	W.H.
	WATERPROOF or WATERPROOFING	WP
	WATER RESISTANT	WR
	WEIGHT	WT.
	WELDED WIRE FABRIC	WWF
	WEST	W.
	WIDE FLANGE (STEEL)	W
	WITH	W/
	WOOD	WD.
Y	YARD	YD.

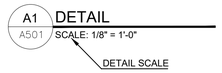
MATERIALS KEY

- CONCRETE (PLAN)
- 8" X 16" CONCRETE BLOCK (PLAN AND SECTION)
- CMU WALL WITH EXTERIOR PLASTER
- ALL WALLS IN PLAN NOTE MATERIALS IN ROOM FINISH SCHED.
- PLASTER ON METAL LATH
- GYPSUM BOARD (SECTION & ELEVATION)
- FINISHED MILLWORK (ARCH) LUMBER (STRUCTURAL)
- PLYWOOD (SEE PLAN FOR SIZE)
- WOOD BLOCKING (ARCHITECTURAL)
- WOOD ROUGH LUMBER (ARCHITECTURAL)
- EARTH (SECTIONS)
- CONCRETE (SECTIONS)
- RIGID INSULATION BOARD
- METAL-STEEL OR IRON (SECTION) - NOTE IF SPECIAL METAL
- SHEET METAL (SECTION)

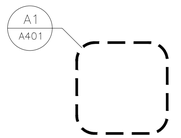
SYMBOL LEGEND

DETAIL REFERENCE

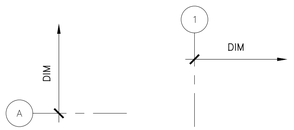




BLOW-UP DETAIL REFERENCE



COLUMN GRID LINES



ALONG SIDES OF PLANS

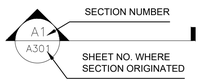
ALONG TOP AND BOTT. OF PLANS

GRAPHIC SCALE



SCALE: 1/8" = 1'-0"

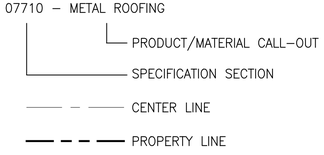
SECTION FLAG



NORTH ELEVATION (FOR REFER. ONLY)

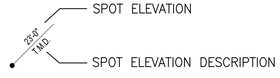


NOTE CALL-OUTS



FIRE EXTINGUISHER CABINET

SPOT ELEVATIONS



VERTICAL ELEVATION



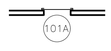
INTERIOR ELEVATION



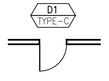
EXTERIOR ELEVATION



ROLL-UP DOOR SYM.



DOOR IDENTIFICATION



WINDOW IDENTIFICATION



EXIT SIGN

ROOM IDENTIFICATION



REVISION

FIRE ALARM PULL

KEYNOTE



CEILING HEIGHT

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
DELSO J. DEL POSO
LIC. NO. C 29974
RENEW: 31-2023
STATE OF CALIFORNIA

TED	ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION		03-10-22
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ABBREVIATIONS, MATERIALS KEY & SYMBOLS LEGENDS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

BUREAU OF ENGINEERING
OFFICIAL RECORD

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. G1.1
SHEET 3 OF SHEETS 96

PLOTTED: 6/4/2022 3:56 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 3:55 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\TTLB.DWG

GENERAL

1. THESE DRAWINGS AND SPECIFICATIONS AND COPIES, OR ANY OTHER ACCESSORIES THEREOF, ARE LEGAL INSTRUMENTS OF SERVICE FOR USE BY THE OWNER AND AUTHORIZED REPRESENTATIVES ON THE DESIGNATED PROPERTY ONLY.

2. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CURRENT EDITION OF UNIFORM BUILDING CODE WITH CITY OF LOS ANGELES AMENDMENTS AND ALL OTHER GOVERNING AGENCIES' REQUIREMENTS.

3. CONTRACTOR SHALL COMPLY WITH THE REGULATIONS OF THE OCCUPATION SAFETY AND HEALTH ACT.

4. ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED ON THE JOB SITE BY THE CONTRACTOR BEFORE THAT CONTRACTOR OR SUBCONTRACTOR BEGINS WORK. ANY ERRORS, OMISSIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND CONSTRUCTION MANAGER BEFORE CONSTRUCTION BEGINS.

5. ACCESSIBILITY AND USABILITY FOR THE PHYSICALLY HANDICAPPED SHALL CONFORM TO STATE OF CALIFORNIA HANDICAP ACCESS LAWS AS STIPULATED BY TITLE 24 AND SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT.

6. CONTRACTOR SHALL PROVIDE TEMPORARY TOILET AND OTHER TEMPORARY FACILITIES AS REQUIRED.

7. ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS WHICH ARE NECESSITATED BY FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

8. ALL DIMENSIONS TAKE PRECEDENCE OVER SCALE. NOTE THAT DIMENSIONS ARE TO FACE OF WALL, UNLESS OBVIOUSLY SHOWN, OR MARKED CENTERLINE OF WALL OR COLUMN. CONTRACTOR SHALL NOT SCALE FROM THE DRAWINGS.

9. TYPICAL DETAILS SHALL APPLY WHERE NO SPECIFIC DETAILS OR SECTIONS ARE GIVEN.

10. PROVIDE PEDESTRIAN AND PROPERTY PROTECTION BARRICADES AND/OR CANOPIES AS REQUIRED BY THE LOCAL AUTHORITIES , OR AS NECESSARY FOR PEDESTRIAN SAFETY. A PERMIT IS REQUIRED FROM THE DEPARTMENT OF PUBLIC WORKS FOR A PROTECTION FENCE OR CANOPY ON OR OVER ANY STREET OR PUBLIC SPACE.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUS CLEANUP OF THE SITE AND OF ALL DEBRIS, WHETHER CREATED BY HIS WORK, OR BY THE FAILURE OF HIS SUBCONTRACTORS TO CLEAN UP AFTER THEIR WORK.

12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPERVISE ALL CUTTING AND PATCHING OF FINISHED WORK ALREADY INSTALLED, IF MADE NECESSARY BY ERRORS, CHANGES, OR OTHER REASONS; ALL REPLACEMENT WORK SHALL MATCH ORIGINAL SURFACES.

13. CONTRACTOR SHALL PROVIDE GALVANIC ISOLATION BETWEEN DISSIMILAR METALS.

14. ALL SURVEY DATA SHOWN ON DRAWINGS IS BASED ON A SURVEY MADE BY THE CITY OF LOS ANGELES, BUREAU OR ENGINEERING, DATED 8/07/2013.

15. SOILS INVESTIGATION WAS PERFORMED BY GEOTECHNICAL ENGINEERING DIVISION, CITY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, FILE 17-137 SUPPLEMENTAL.

16. THERE SHALL NOT BE EXPOSED PIPE, CONDUIT, DUCTS, VENTS, ETC. IN DESIGNATED FINISH SPACE OR AT BUILDING EXTERIOR, UNLESS NOTED AS EXPOSED CONSTRUCTION ON FINISH SCHEDULE OR SPECIFIED ON PLANS.

17. ALL ADDENDA, CHANGE ORDERS, BULLETINS, AND NOTICES, IF ANY ISSUED LATER, SHALL BE CONSIDERED AS PART OF THE WORK.

18. IN THE EVENT THERE ARE FOUND DISCREPANCIES OR AMBIGUITIES IN OR OMISSIONS FROM THE DRAWINGS, OR SHOULD THERE BE DOUBT AS TO THEIR MEANING OR INTENT, THE ARCHITECT SHALL BE NOTIFIED, IN ORDER TO PROVIDE A WRITTEN CLARIFICATION.

19. WHERE FACTORY PRIMED ITEMS OCCUR, SUCH AS GRILLES, DIFFUSERS, METAL TRIM AND ACCESSORIES, ETC. PAINT TO MATCH THE ADJACENT SURFACE OR AS SPECIFIED AS DIRECTED BY THE ARCHITECT.

20. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN APPROVAL BY THE LOCAL BUILDING INSPECTOR FOR ALL CONCEALED WORK BEFORE CLOSING UP.

21. PROVIDE BACKING FOR ALL CABINETS OR WALL HUNG EQUIPMENT.

22. ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE, OR LESS THAN 6" ABOVE THE GROUND SHALL BE PRESSURE-TREATED WOOD.

23. ALL EXTERIOR OPENINGS EXPOSED TO THE WEATHER SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WATERPROOF. ALL FLASHING, COUNTERFLASHING AND COPING WHEN OF METAL, SHALL MEET THE GAUGES SPECIFIED, BUT NO LESS THAN 24 GA. GALVANIZED.

24. ALL NEW GLAZING SHALL BE TEMPERED WITH LAMINATED COATING.

25. NO TRENCHES OR EXCAVATIONS 5' OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND SHALL BE ALLOWED WITHOUT ENGINEERED SHORING PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE SUCH PLANS AND OBTAIN REQUIRED APPROVALS.

26. FIRE BLOCK AT MID-HEIGHT OF WALLS OVER 8'-0" HIGH.

27. PROVIDE WATERPROOF MEMBRANE OVER ALL EXTERIOR BUILDING WALLS BELOW GRADE. CARRY WATERPROOF MEMBRANE 6" ABOVE FINISHED GRADE. INSTALL PROTECTION BOARD PRIOR TO BACKFILLING.

28. THE CONSTRUCTION OR DEMOLITION OF ANY BUILDING, STRUCTURE, SCAFFOLDING OR FALSEWORK MORE THAN THREE-STORIES OR 36 FEET IN HEIGHT, REQUIRES A PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.

29. CONTRACTOR SHALL OBTAIN SEPARATE PERMIT FOR SIGNS & YARD WALL. PROVIDE SHOP DRAWINGS AND CALCULATIONS TO L.A. DEPARTMENT OF BUILDING & SAFETY AS REQUIRED TO SECURE PERMIT. ALL FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

30. EXIT DOOR SHALL NOT BE LESS THAN 36" IN WIDTH AND NOT LESS THAN 6'-8" CLEAR IN HEIGHT. PROJECTIONS INCLUDING PANIC HARDWARE SHALL NOT REDUCE THE OPENING TO LESS THAN 32" IN WIDTH.

31. THE EXIT DOOR MUST OPEN OVER A LANDING NOT MORE THAN 1/2" BELOW THE THRESHOLD.

32. INTERIOR WALL AND CEILING FINISHES FOR RECREATION AREAS SHALL NOT EXCEED A
33. FLAME SPREAD CLASSIFICATION OF 200 (CLASS III)

    ANY DECORATIONS USED SHALL BE NON COMBUSTIBLE OR FLAME RETARDANT TREATED IN AN APPROVED MANNER (CURTAINS, DRAPES, SHADES, ETC.)

34. PROVIDE ILLUMINATED EXIT SIGNS AND DIRECTIONAL ILLUM. EXIT SIGNS W/ MIN. 6" HIGH x 3/4" STROKE BLOCK LETTERS IN CONTRASTING BACKGROUND. LOCATIONS AS SHOWN ON PLANS AND AS REQUIRED BY FIRE DEPARTMENT INSPECTOR. WHENEVER THE BUILDING IS OCCUPIED, EXIT SIGNS SHALL BE LIGHTED SO THEY ARE CLEARLY VISIBLE.
35. EXIT PATH LIGHTING SHALL BE PROVIDED FOR HALL WAY, EXIT PASSAGE WAY, & EGRESS TO PUBLIC WAY ANYTIME THE BUILDING IS OCCUPIED.

37. PROVIDE ACCESS PANELS FOR MECHANICAL, ELECTRICAL, & PLUMBING EQUIPMENT AS INDICATED ON DRAWINGS. REVIEW LOCATIONS WITH ARCHITECT PRIOR TO STARTING WORK. PANEL FINISHES SHALL BE SELECTED BY THE ARCHITECT FROM A STANDARD COLOR PALETTE U.N.O.

38. ALL ELECTRICAL & TELEPHONE CONDUITS, PLUMBING PIPES ARE TO BE CONCEALED IN WALLS. ALL PANELS, OUTLETS, OR J-BOXES METAL OR CMU WALLS SHALL BE RECESSED FLUSH WITH WALL FINISH U.N.O.

39. POST OCCUPANT LOAD SIGNS IN RECREATION AND VOCATIONAL ROOM AS REQUIRED BY CODE.

40. THE CONTRACTOR SHALL PAY FOR ALL SURCHARGES, CONNECTION FEES, METER FEES, OR ANY MISC. FEES IMPOSED/REQUIRED BY UTILITY COMPANIES AS PART OF THEIR CONDITION OF SERVICES.

41. ALL EXPOSED EXTERIOR METAL FABRICATIONS SHALL BE SHOP GALVANIZED PER ASTM A153, A123, AND A386 U.N.O. FOR REPAIR OF DAMAGED GALVANIZED SURFACES RESULTING FROM WELDING USE GALVALLOY METHOD IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

42. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL-BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.0 OR TO THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES-WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND/OR ADDITIONAL EXPENSES.

GENERAL CONTINUED

1. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.) OR TO THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES-WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND/OR ADDITIONAL EXPENSES.

2. AN APPROVED SEISMIC GAS SHUT-OFF VALVE WILL BE INSTALLED ON THE FUEL GAS LINE ON THE DOWNSTREAM SIDE OF THE UTILITY METER AND BE RIGIDLY CONNECTED TO THE EXTERIOR OF THE BUILDING OR STRUCTURE CONTAINING THE FUEL GAS PIPING. (PER ORDINANCE 170, 158) (INCLUDES COMMERCIAL ADDITIONS AND ALL WORK OVER $10,000.) SEPARATE PLUMBING PERMIT REQUIRED.

3. PROVIDE ULTRA-LOW FLUSH WATER CLOSETS FOR ALL NEW CONSTRUCTION. EXISTING SHOWER HEADS AND TOILETS MUST BE ADAPTED FOR LOW WATER CONSUMPTION.

4. A COPY OF THE EVALUATION REPORT AND/OR CONDITIONS OF LISTING SHALL BE MADE AVAILABLE AT THE JOBSITE

ACCESSIBILITY

1. ALL ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD I.S.O. ACCESSIBILITY SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, VISIBLE FROM APPROACHING PEDESTRIAN WAYS.

2. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8.5 LBS. FOR EXTERIOR DOORS AND 5 LBS. FOR INTERIOR DOORS. SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND ALL THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED NOT TO EXCEED 15 LBS.

3. THE CENTER OF RECEPTACLE OUTLETS SHALL BE NOT LESS THAN 15 INCHES ABOVE THE FLOOR OR WORKING PLATFORM.

4. THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, OR COOLING, HEATING AND VENTILATING EQUIPMENT SHALL BE MORE THAN 4-FEET ABOVE THE FLOOR OR WORKING PLATFORM.

5. THE CENTER OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48-INCHES ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE OR SIDEWALK.

6. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS AS SET FORTH IN THESE BUILDING STANDARDS. THE SYMBOL SPECIFIED ABOVE SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE EQUAL TO COLOR NO. 15090 IN FEDERAL STANDARD 595b.

7. IF EMERGENCY WARNING SYSTEMS ARE REQUIRED, THEY SHALL ACTIVATE A MEANS OF WARNING TO THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

8. AT SINKS, FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PUNCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LB/F. LEVER OPERATED, PUSH TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.

9. THE SURFACE OF RAMPS SHALL BE SLIP RESISTANT.

FIRE

1. ALL EXIT DOORS AND EXIT GATES MUST BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. FLUSH OR SURFACE BOLTS ARE PROHIBITED.

2. PROVIDE AND MAINTAIN FIRE EXTINGUISHERS AS REQUIRED BY THE LOCAL FIRE DEPARTMENT FIELD INSPECTOR DURING CONSTRUCTION. PROVIDE PERMANENT FIRE EXTINGUISHERS IN NUMBER, SIZE AND LOCATION AS SPECIFIED BY THE FIRE DEPARTMENT WITH ARCHITECT'S APPROVAL PRIOR TO INSTALLATION. ALL SUCH PERMANENT EXTINGUISHERS SHALL BE IN RECESSED CABINETS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL FIRE RATED SPACES TO THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS. PROVIDE COMBINATION FIRE DAMPPERS PER UBC STANDARDS 43-7 AND ACCESS PANELS FOR DUCTS AND A.C. FIXTURES WHEN PASSING THROUGH THESE SPACES. PROVIDE APPROPRIATE FIRE RATED ENCLOSURE BEHIND RECESSED LIGHT FIXTURES, WHERE REQUIRED.

4. PROVIDE OUTSIDE GAS SHUT-OFF VALVES, CONSPICUOUSLY MARKED.

5. EXIT LIGHTING SHALL BE PROVIDED GIVING MINIMUM VALUE OF ONE FOOT-CANDLE AT FLOOR LEVEL.

6. CORRIDORS AND AISLES IN PUBLIC AREAS SHALL PROVIDE A MINIMUM 44" CLEAR WIDTH TO PUBLIC RIGHT-OF-WAY.

7. T.V. ANTENNA CROSS ARMS OR OTHER ROOF OBSERVATION SHALL BE LOCATED 7'-0" MINIMUM ABOVE FLAT ROOF AREAS.

8. PROVIDE AREA FOR COMBUSTIBLE RUBBISH STORAGE.

9. STORAGE, DISPENSING OR USE OF ANY FLAMMABLE OR COMBUSTIBLE LIQUIDS, FLAMMABLE GASES AND HAZARDOUS CHEMICALS SHALL COMPLY WITH UFC REGULATIONS.

10. ROOF OBSTRUCTIONS SUCH AS TELEVISION ANTENNA, GUY WIRE, SOLAR PANEL, RAZOR RIBBON, FENCE, CABLE, OR OTHER OBSTRUCTIONS SHALL NOT PREVENT FIRE DEPARTMENT ACCESS IN THE EVENT OF FIRE.

11. MAINTAIN FIRE RESISTIVE INTEGRITY AROUND PENETRATIONS INTO RATED ASSEMBLIES AS FOLLOWS:

    A. FOR LARGE OPENINGS (I.E. RECESSED LIGHT FIXTURES), CONSTRUCT 5/8" TYP. GYP. BOARD ENCLOSURE AROUND OBJECT.

    B. FOR WIDE GAPS OR CRACKS, USE FIRE SAFING INSULATION (OPENINGS GREATER THAN ONE INCH)

    C. FOR PIPE/CONDUIT PENETRATIONS,, USE FLAME-STOPPING CAULKING OF RATING NOT LESS THAN THAT OF THE ASSEMBLY BEING PENETRATED. MATERIAL SHALL MEET REQUIREMENTS OF UL-1479. SEE SPECS SECTION 07840 FIRE STOPPING.

MEANS OF EGRESS

1. THE PATH OF EXIT TRAVEL TO AND WITHIN EXITS IN THE BUILDING SHALL BE IDENTIFIED BY EXIT SIGNS CONFORMING TO THE REQUIREMENTS OF SECTION 1003.2.8. EXIT SIGNS SHALL BE READILY VISIBLE FROM THE DIRECTION OF APPROACH. EXIT SIGNS SHALL BE LOCATED AS NECESSARY TO CLEARLY INDICATE THE DIRECTION OF EGRESS TRAVEL. NO POINT SHALL BE MORE THAN 100 FEET FROM THE NEAREST VISIBLE SIGN.

2. EXIT SIGNS SHALL BE INTERNALLY OR EXTERNALLY ILLUMINATED. WHEN THE FACE OF AN EXIT SIGN IS ILLUMINATED FROM AN EXTERNAL SOURCE, IT SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES FROM EITHER OF TWO ELECTRIC LAMPS. INTERNALLY ILLUMINATED SIGNS SHALL PROVIDE EQUIVALENT LUMINANCE AND BE LISTED FOR THE PURPOSE.

3. THE EXIT SIGNS SHALL ALSO BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM PROVIDED FROM STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR SET, AND THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRIC CODE.

4. EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT. FLUSH BOLTS OR SURFACE BOLTS ARE PROHIBITED. "APPLIES ALSO TO EXIT GATES". THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION.

5. POST A SIGN ADJACENT TO THE REQUIRED MAIN EXITS DOOR WITH 1" LETTERING STATING: "THIS DOOR MUST REMAIN UNLOCKED DURING BUSINESS HOURS". MAIN EXITS ONLY.

SECURITY

1. ALL SECURITY OPENINGS SHALL COMPLY WITH DIVISION 67 OF THE LOS ANGELES CURRENT BUILDING CODE INCLUDING THE FOLLOWING:

    A. ALL PIN TYPE HINGES WHICH ARE ACCESSIBLE FROM OUTSIDE THE SECURED AREA WHEN THE DOOR IS CLOSED SHALL HAVE NON-REMOVABLE HINGE PINS.

    B. DEADBOLTS SHALL CONTAIN HARDENED INSERTS.

    C. STRAIGHT DEADBOLTS SHALL HAVE A MINIMUM THROW OF 1" AND AN EMBEDMENT OF 1/4".

    D. A HOOK SHAPED OR AN EXPANDING LUG DEADBOLT SHALL HAVE A MIN. THROW OF 1/4".

    E. CYLINDER GUARDS SHALL BE INSTALLED IN ALL CYLINDER LOCKS WHENEVER THE CYLINDER PROJECTS BEYOND THE FACE OF THE DOOR OR IS OTHERWISE ACCESSIBLE TO GRIPPING TOOLS.

    F. ALL GLASS DOORS SHALL HAVE FULLY TEMPERED GLASS.

    G. PROVIDE DEADLOCKING LATCH KEY OPERATED LOCKS ON EXTERIOR.

    H. ALL GLAZING WITHIN 40" OF DOOR LOCK SHALL BE TEMPERED GLASS.

    J. DOOR STOPS OF IN-SWINGING EXTERIOR DOORS SHALL BE ONE PIECE CONSTRUCTION.

    K. SLIDING DOOR AND WINDOWS SHALL BE PROVIDED WITH A DEVICE IN THE UPPER CHANNEL OF THE MOVING PANEL TO PROHIBIT RAISING AND REMOVING OF THE MOVING PANEL IN THE CLOSED OR PARTIALLY OPEN POSITION.

    L. SLIDING GLASS DOOR SHALL BE EQUIPPED WITH LOCKING DEVICES AND SHALL BE SO CONSTRUCTED AND INSTALLED THAT THEY REMAIN INTACT AND ENGAGED WHEN SUBJECTED TO THE TEST SPECIFIED IN SECTION 6717.1

2. SEE THE DRAWINGS FOR SECURITY REQUIREMENTS AT HOLDING AND HIGH SECURITY AREAS.

ENERGY

1. INSULATION SHALL CONFORM TO FEDERAL SPECIFICATION HH-1-521E. THERMAL RESISTANCE IS SHOWN ON THESE DRAWINGS.

2. ALL OPENINGS IN INSULATION WALLS SHALL BE PROPERLY WEATHER-STRIPPED OR GASKETED TO LIMIT AIR INFILTRATION. ALL GLASS DOORS SHALL COMPLY WITH AIR INFILTRATION STANDARDS OF ANSI A134.2, .2, .3 AND .4.

3. THE INSULATION CONTRACTOR SHALL PROVIDE A CERTIFICATE OF COMPLIANCE

4. ALL GAS APPLIANCES, EXCEPT WATER HEATERS AND RANGE-TOP BURNERS, SHALL BE EQUIPPED WITH INTERMITTENT DEVICES.

5. PROVIDE MOTORIZED DAMPERS IN ALL FAN SYSTEMS WHICH EXHAUST AIR FROM THE ENERGY ENVELOPE, EXCEPT WHERE BACKDRAFT DAMPERS ARE SPECIFIED.

6. CAULK AROUND ALL PENETRATIONS INTO THE BUILDING ENVELOP.

7. RECIRCULATING HOT WATER PIPING TO BE INSULATED IN UNHEATED SPACES.

MISCELLANEOUS

1. ALL WATER CLOSETS SHALL BE LOW CONSUMPTION, PER ORDINANCE #156.004

2. APPLY CITY OF LOS ANGELES APPROVED GRAFFITI RESISTANT COATING SYSTEM AS SPECIFIED AT ALL EXTERIOR BUILDING WALLS WITHIN 10-FEET 6-INCHES OF GRADE AND AT OTHER AREAS SPECIFIED.

3. WALLS, HALLS, CORRIDORS AND OTHER CIRCULATION SPACES SHALL HAVE MIN. HEAD ROOM OF 7'-0".

4. SIGNAGE DEPICTING ACCESSIBILITY TO THE BUILDING SHALL HAVE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL EQUAL TO COLOR NO. 15090 IN FEDERAL STANDARD 595a.

5. ALL TOILET ROOMS SHALL BE VENTILATED TO PROVIDE A MINIMUM OF FIVE AIR CHANGES PER HOUR (MORE IS REQUIRED PER MECHANICAL DRAWINGS) AND CONNECTED DIRECTLY TO THE OUTSIDE.

6. WHERE CONFLICT OCCURS ON DRAWING THE ENTIRE SET OF MECHANICAL, ELECTRICAL, PLUMBING, STRUCTURAL AND ARCHITECTURAL PLANS MUST BE CONSIDERED FOR ITS RESOLUTION AND MAY NOT BE CONSIDERED AS AN EXTRA WORK FOR THE CONTRACTOR.

FINISH MATERIAL POLLUTANT CONTROL

1. FINISH MATERIALS SHALL COMPLY WITH SECTIONS 5.504.1 THROUGH 5.504.46.

2. NON-RESIDENTIAL ADDITIONS AND ALTERATIONS SHALL REQUIRE VERIFICATION THAT CALIFORNIA PROHIBITED UNIVERSAL WASTE MATERIALS ARE DISPOSED OF PROPERLY AND DIVERTED FROM LANDFILLS 5.408.2

3. BUILDING IS NOT EXPOSED TO A NOISE LEVEL OF 65dB Leq-1-hr DURING ANY HOUR OF OPERATION.

STORM WATER - BEST MANAGEMENT PRACTICE

CONTRACTOR MUST COMPLY WITH THE FOLLOWING STANDARDS:

1. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEETFLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSE OR WIND.

2. STOCKPILES OF EARTH AND OTHER CONSTRUCTION-RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY WIND OR WATER.

3. FUELS, SOILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL NOT THE SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.

4. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.

5. TRASH AND CONSTRUCTION-RELATED SOLID WASTE MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.

6. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAYS. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR BY ANY OTHER MEANS.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 3:52 PM FILE: O:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\ELEMENTS\TITLE.DWG

REVISION DATES (DESIGN STAGE ONLY)

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
RENEWAL 08/31/2023
LIC. NO. C 29974
STATE OF CALIFORNIA

TED ALLEN, P.E.	CITY ENGINEER	DATE:	
ARCHITECTURAL DIVISION		03-10-22	
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil		03-10-22
DRAWN BY:	Vinh Ha, TMY . DT		03-10-22
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APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL NOTES

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. G1.2

SHEET 4 OF SHEETS 96

PLOTTED: 6/4/2022 3:53 PM

COMMERCIAL
PLAN CHECK CORRECTION SHEETS
(2017 LABC)

Plan Check Submittal Date: _____

Plan Check / PCIS App #: _____

Job Address: _____

Applicant: _____ Phone: _____

P.C. Engineer: _____ Phone: _____
(print first / last name) E-mail:firstname.lastname@lacity.org

Your feedback is important, please visit our website to complete a Customer Survey at www.ladbs.org/LADBSWeb/customer-survey.jsf.

If you have any questions or need clarification on any plan check matters, please contact a plan check supervisor or call our Customer Hotline at 3-1-1.
Callers from outside Los Angeles can call (213) 473-3231

INSTRUCTIONS FOR PROCEEDING WITH THE PLAN CHECK (PC) PROCESS:

1 Review corrections circled on this Plan Check Correction Sheet and on the plans and calculation sheets.
2. Provide a written response or reference to details pursuant to the corrections. Location of any revisions on the plans shall be identified as part of your responses. For any questions related to these PC corrections, email or call the Plan Check Engineer.
3. Phone or email the PC engineer for a verification appointment after you have addressed the corrections. Verification of corrections is only done by appointment.
4. Complete item #2 above and bring the originally checked set of plans and calculations to the meeting along with this plan correction sheets. Unprepared responses with incomplete plans or calculations may result in cancellation of the meeting.
5. During the appointment, the plan check engineer will go over the corrections and comments. Once all the items have been corrected to comply with the code requirements and clearances are obtained, the permit will be ready to be issue.

IMPORTANT ITEMS TO READ:

1. Your early attention is suggested to the approval process from other Departments as listed in the Clearance Summary Worksheet due to possible delays resulting from a public hearing or other processes required by other Departments. The Planning Department, the Community Redevelopment Agency, and others may have requirements that could significantly affect the final design of the project.
2. The permit application will expire 18 months from the plans submittal date.
3. Please be advised that the permit will be issued upon verification of compliance with the corrections included herein. The approval of plans does not permit the violation of any section of the Building Code, or other ordinance or state law.
4. Numbers in parenthesis refer to particular code sections of the 2017 Edition of the Los Angeles City Building Code.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

THE FOLLOWING SUPPLEMENTAL CORRECTION SHEETS ARE ATTACHED AND SHALL BE CONSIDERED A PART OF THIS REVIEW. COMPLIANCE WITH THESE CORRECTIONS MUST BE OBTAINED PRIOR TO THE ISSUANCE OF THE PERMIT.

Supplemental Correction sheets attached:
_ Fire District
_ Flood Hazard
_ Methane Seepage Regulation
_ Energy Conservation
_ Grading and shoring - general
_Security Requirements
_Sound transmission
_ Structural - General
_ Disabled Accessibility
_ Bicycle Parking – ORD. 185,480

Review the following checked information bulletins and forms. Revise plans to show compliance (Copies can be obtained at **www.ladbs.org).**
_ P/GI 2017-024 Recording Covenants with LA County
_ P/GI 2017-025 Copies of LA Ordinances
_ P/BC 2017-027 Onsite Wastewater treatment system
_ P/BC 2017-044 Alquist-Priolo EQ Fault Zoning Act
_ P/BC 2017-060 30 days notification of intent to excavate
_ P/BC 2017-064 Flood Hazard Management Specific Plan
_ P/BC 2017-065 Coastal Development Permit
_ P/BC 2017-073 Policy on signed and wet Stamped plans
_ P/BC 2017-074 Sound Insulation near Airport
_ P/BC 2017-081 Conv. into Heavy Duty Equip. Room (Struct)
_ P/BC 2017-095 Plumbing Fixtures
_ P/BC 2017-106 Water Curtain in lieu of protected ext. openings
_ P/BC 2017-102 Methane hazard Mitigation standard plan
_ P/BC 2017-103 Sump Pumps for surface drainage
_ P/BC 2017-113 Reports for submittal to Grading Division
_ P/ZC 2002-001 Parking Lot Design
_ P/ZC 2002-006 Projections in Yards
_ P/ZC 2002-008 Zoning Code Building height
_ P/ZC 2017-011 Parking requirements
_ P/ZC 2017-013 Auto Dismantling Yards, Junk Yards, Scrap Metal Yards, or Open Air Storage of Used Materials, Used Equipment and Used Machinery in the M-2 and M-3 Zones

Affidavits / Additional Documents:
_ Summary Clearance worksheet (attached)
_ Grading Bond: PC/GRAD/Bond 03 and 04
_ Protection of adjoining property: PC/GRAD/App.13
_ Lot Tie: PC/STR/Aff.22
_ Building Maintenance: PC/STR/Aff.23
_ Other _____
_ Maintenance of Building Support: PC/STR/Aff.25
_ Oversize Building: PC/STR/Aff.28
_ Off-street Parking: PC/STR/Aff.27
_ Parking Attendant: PC/STR/Aff.31
_ Green Building Declaration: PC/STR/Aff.39
_ Structural Observations
_ Graffiti Removal: PC/STR/Aff.42

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PART I: GENERAL REQUIREMENTS

A. PERMIT APPLICATIONS

1. Provide a fully dimensioned plot plan to scale, in ink, and attach it to the PCIS application plot plan sheet provided.
2. Valuation is revised to $ _____
   Pay additional plan check fee of $ _____
3. Arts Development and School fees are applicable to this project, as required by Section 107.4.6.
4. Provide complete and correct legal description (Tract, Lot, Block, Grant Deed). Provide complete information for applicant, owner, engineer, architect, and contractor.
5. Obtain separate permit for the following items:
   a. Retaining walls or block fence walls
   b. Grading work
   c Block walls
   d. Signs
   e. Swimming pools
   f. Fire sprinkler systems
   g. A separate structure
   h. Electrical, Mechanical, Plumbing work
   i. Shoring
   j. Demolition
6. The permit application must be signed by the property owner, or licensed contractor, or authorized agent at the time the permit is to be issued:
   a. For owner-builder permits: Owner's signature can be verified with owner's driver license. Owner's representatives must present owner's approval with a notarized letter from the owner.
   b. For contractor building permits: Prior to the issuance of a building permit, the contractor shall have the following:
      i) Certificate of workers Compensation Insurance made out to the Contractors State License Board.
      ii) Notarized letter of authorization for agents.
      iii) Copy of Contractors State License or pocket ID.
      iv) Copy of City of Los Angeles business tax registration certificate or a newly paid receipt for one.

B. CLEARANCES

1. Obtain all clearances as noted on the attached Clearance Summary Worksheet. Apply immediately for the signoff is necessary as it can take months for some departments to review the project. Comply with conditions given during approval prior to the permit issuance.
2. Obtain lot cut date from Land Records of Public Works. Lot divided after 6-1-46 shall comply with Lot area requirement of the Zone. Lot divided after 7-29-62 shall obtain a Certificate of Compliance from City Planning Department. Allow months to process. Obtain application from Planning Dept.
3. Provide copies of the following recorded documents for the parcel (_____). More requirements or Clearances may follow upon review of the **documents**. For copies of recorded affidavits, contact Building and Safety Records Section. For copies of City Planning documents, contact the Department of City Planning at (213) 978-1259, or fax request to (213) 978-1263
4. A recorded affidavit is required (see Page 2 of 15). Obtain a copy of instruction to process affidavits from LADBS and follow the instructions.
5. Provide temporary shoring plans for excavations removing the lateral support of public way or an existing building. Excavations adjacent to a public way require Public Works approval prior to permit issuance.
6. Where there is an excavation of a greater depth than are the walls or foundation of an adjoining building or structure and located closer to the property line than the depth of the excavation, the owner shall provide the Department of Building and Safety with evidence that the adjacent property owner(s) have been given a 30-day written notice of such intent to make an excavation. This notice shall state the depth of such excavation and when it will commence. This notice shall be by certified mail, return receipt requested. (3307.1) (IB: P/BC 2014-060)
7. Soil/Foundation/Geology report(s) must be approved by the Grading Section. Provide a copy of the approved report and Department approval letter. Show compliance with the report requirements and approval letter conditions.
8. Building projections into public properties must comply with Chapter 32. Note on the plans: "Temporary pedestrian protection shall be provided as required by Section 3306". Obtain Public Works approval. (3201.3, 3202.3.1, 3306)
9. Fire lane access is required. Obtain clearance from the Hydrants and Access Unit of the Fire Department LAMC 57.09.03
10. Obtain a site plan review approval from City Planning Department for any development project which creates, or results in an increase of 50,000 gross square feet or more of nonresidential floor area.
11. Low Impact Development (LID) Signoff from Watershed Protection Division, Bureau of Sanitation, and Department of Public Works is required for:
    ☐ New construction
    ☐ Addition (> 500 sq. ft. of impervious area)
    ☐ Re-grading of parking lots (> 500 sq. ft.)
    ☐ Impervious pads > 500 sq. ft. (i.e. Equipment pads) Ord. 181.899
12. Obtain Clearances from the Green Building Division of LADBS.
13. The city records indicate there possibly is an oil well on the site. Obtain clearance to construct a new building or addition near or on an oil well from the Fire Department. Prior to requesting building permit clearance from the Fire Department shall be obtained. Obtain a determination letter from the State of California, Division of Oil, Gas, and Geothermal Resources, 5816 Corporate Ave., Suite 100, Cypress, CA 90630-4731 (714) 816-6847
14. Obtain clearance from Los Angeles Fire Department (LAFD) for the Automated Parking Garage or Mechanical Car Lift.

C. ADMINISTRATION

1. Each sheet of the architectural and structural plans must bear the signatures, registration number and expiration date of an architect or engineer registered in the State of California
2. The address of the building and the name/address of the owner are required on all plans. The name and address of the consultants are required on their plans.
3. (Three)/ (Two) sets of plans will be required during permit issuance. One of these set of plans will be submitted to the Los Angeles County Assessors. The plans must be: (106.3.2.2. & 106.3.3.)(California Revenue and Taxation Section 72):
   a. Quality blue or black line drawings with uniform and light background color.
   b. Max. 36" x 48" size with minimum 1/8" lettering size.
   c. Sticky back details must produce prints without contrasting shades of background color.
4. The final set of plans must be stamped by (City Planning Dpt.), (Fire Dpt.), (Disable Access Div.) (Green Div.) (LID)
5. Provide the following with each set of plans:
   ☐ Topography Survey Map
   ☐ Floor Plans
   ☐ Construction Section
   ☐ Framing Plans
   ☐ Grading
   ☐ Two Elevations
   ☐ Foundation Plans

☐ Structural Details

6. Provide fully dimensioned plot plan to scale. Show legal description, building lines, easements, lot size, zone boundaries, highway dedication lines, street center line, alley, parking spaces and location of all buildings (Show type of construction, number of stories and the use for all buildings.) (106.3.2.1)
7. Show location and distance of active and abandoned oil wells with respect to building perimeter, if any.
8. Show the building area, occupancy group(s), use(s), and type of construction, number of story, fire zone, lot size, lot area and height on the first sheet or title sheet of plans.
9. Show on site plans the natural and finish grade elevations around the perimeter of the building. Show elevations for all floors and top of roof. Survey Map must be signed by a licensed Surveyor or Civil Engineer. (106.4.3.3)
10. Remove all plans, details or notes that do not pertain to the project.

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PART II ZONING:
(Allow time for discretionary approval process from City Planning if zoning requirements can't be met.)

1. Comply with the provisions of the Specific Plan _____
2. Comply with Zoning Information File # ( )
3. Provide a copy of the Certificate of Occupancy and building permit with plot plan showing the legal existing use and parking.
4. The proposed use ( ) is not permitted in Zone ( ). Planning entitlement is required. Provide a copy of the CUP, ZA, CPC for review and copy the conditions of approval onto the plans for Planning signoff.
5. Building exceeds ( ) height for Zone ( ). Show maximum height of the structure from top of roof to grade on all elevation views.
6. Height and stories restriction in Height District 1VL is max. at 3 stories and 45 ft. and in Height District 1XL is max. at 2 stories and 30 ft. 12.21.1A1
7. For Height District 1, floor area is limited to 1.5 X Buildable Lot Area. 12.21.1A1
8. No building or structure can exceed the heights as shown below due to close proximity to a Lot zoned for single family residences (RW1 or more restrictive) at where the lot is located adjacent or across a street / alley. A portion of the proposed building within a distance from an adjacent Lot zoned for residences shall be limited to the height as listed below:
   a. 0 to 49 ft ; limits to 25 ft tall.
   b. 50 to 99 ft; limits to 33 ft tall.
   c. 100 to 199 ft; limits to 61 ft tall.
9. Maintain a 10' front yard in CR, C1, or C1.5 Zone. Maintain min. rear yard when abutting an A or R Zone.
10. Maintain a ( ) Building Line setback 12.22C1.
11. Maintain a 5' / 15' front yard in MR-1 and MR-2 Zones.
12. Provide a summary of the existing legal use and floor area for all buildings on site to determine parking requirements.
13. Provide ( ) paved parking spaces. Compact stalls no more than 40% is allowed if there are more than 10 stalls on site 12.21A4, 12.21A5(c).
14. For Off Site parking, provide proof of the extra available parking on existing site or obtain a Use of land permit for the new parking lot. Off Site Parking Affidavit is required 12.21A5(h)
15. Attendant Parking Affidavit is required for Tandem parking.
16. Comply with parking design standards per Information Bulletin. Plans shall be drawn to scale (around 1/8"=1') to shown aisle widths, circulation driveway, stall widths, and stalls width increase for obstructions and end stalls condition. 12.21A5
17. Parking site and turning areas within 15' of a property line shall be enclosed with a 5'- 9" high wall. (12.21A6(d), (e), (f)) A solid concrete or masonry of 6" thick construction is required for parking areas of over 4 cars. 12.21A6(f). A 3' high wall is required where parking is within 15' of the sidewalk.
18. Maximum driveway slope shall not exceed 20%. [Grade details and transition slopes required where slope exceeds 12▯%. Maximum driveway cross slope is 10%. Maximum slope within parking area is 5%. 12.21A5(g), Information Bulletin# P/ZC 2014-001.
19. Automobiles are not permitted to back onto a public street or sidewalk. 12.21A5(i)1.
20. Revise plans to maintain a backup aisle (12.21A5(b))
21. Provide 3 ft. 6 in. high enclosing walls at each floor level of the parking garages in the PB, C1.5, C2, C4, C5, CM zone. 12.12.1.5A2(a), 12.13.1.5A2(b)5, 12.14A24, 12.16A2, 12.17.1A1.
22. Provide a 10'x10' visibility triangle from property lines and maintain clear from 2.5' to 10' above curb. 12.21C7.
23. Transportation Demand Ordinance. Check zoning section 12.21A16 - 12.26J. Requirements vary depending on size starting with developments of 25,000 ft². Show ( ) lockers, and ( ) shower stalls per section 91.6307 of LABC
24. For Mini-Shopping Center / Commercial Corner Development , Planning entitlement is required for certain uses or types of operation (see 12.22A23).
    a) No Tandem parking 12.22A23(a)(2)(1)
25. Provide a loading space with minimum 400 sq. ft, 20 ft of length along the alley. 12.21C6
26. Provide a storage area on the rear half of lot. Enclosed with a 6' high solid fence 12.14A42
27. Provide a recycling room per section 12.21A19.
28. Note on plans. ▯Double striping of stalls shall be per Section 12.21A.5 (l).
29. Los Angeles City Electrical Test Lab Research Report is required to use a mechanical lift to provide parking spaces.
30. A maintenance of vehicle lift system (2-levels or more) affidavit shall be approved and recorded prior to issuing a building permit.
31. 2-vehicle parking lift ceiling height shall be minimum 16'-0" for sprinklered buildings (14'-6" for nonsprinklered buildings).
32. No permit can be issued without a recorded Parcel Map/Tract Map. Provide an official recorded copy prior to permit issuance.

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PART III: BUILDING CODE

A. GENERAL REQUIREMENTS

1. The following nonstructural products shall comply with an approved ICC evaluation report or Los Angeles City Research Report. Copy the report and conditions of approval onto the plans and show compliance with those conditions.
   ☐ Deck Coating ☐ Roofing Materials
   ☐ Exterior Siding ☐ Sound/Thermal Insulation
   ☐ Fire Rated Assemblies ☐ Skylights
   ☐ Damp proofing material behind basement walls
   ☐ Others such as _____
2. Unit Skylights shall be labeled by an LA City Approved Labeling Agency. Such label shall state the approved labeling agency name, product designation and performance grade rating (research report not required). 2405.5
3. Add notes on plans:
   * The construction shall not restrict a five-foot clear and unobstructed access to any water or power distribution facilities (Power poles, pull-boxes, transformers, vaults, pumps, valves, meters, appurtenances, etc.) or to the location of the hook-up. The construction shall not be within ten feet of any power lines-whether or not the lines are located on the property. Failure to comply may cause construction delays and/or additional expenses.
   * An approved Seismic Gas Shutoff Valve will be installed on the fuel gas line on the downstream side of the utility meter and be rigidly connected to the exterior of the building or structure containing the fuel gas piping. (Per Ordinance 170,158) (Includes Commercial additions and TI work over $10,000.) Separate plumbing permit is required.
   * Provide ultra-low flush water closets for all new construction. Existing shower heads and toilets must be adapted for low water consumption.
   * A copy of the evaluation report and/or conditions of listing shall be made available at the job site.
4. Alterations, repairs, or rehabilitation of the existing portion in excess of 10 percent of the replacement value of building or structure may be made provided all the work conforms to this Code for a new building. (Section 402.1, LA Existing Building Code)
5. Any change in use or occupancy of any building shall comply with the requirements of the LA Building Code for the use or occupancy. Changes in use or occupancy of a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. (Section 407.1, LA Existing Building Code)
6. Additions to any building or structure shall comply with the requirements of the LA Building Code as applicable, for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are no less conforming to the provisions of the LA Building Code than the existing building or structure was prior to the addition. (Section 402.1 of LA Existing Building code)

B. OCCUPANCY CLASSIFICATION

1. Any building used for educational purposes by ≥ 6 persons at any one time through the 12th grade shall be classified as E occupancy.
2. Any infant/toddler day care (2 years old and younger) shall be classified as I-4 occupancy.
3. All outpatient clinics can be considered as Group B.
4. Indoor shooting Range can be classified as a Bowling Center (A3).
5. Adult day care shall be determined as I-4 occupancy.

308.6

6. Child day care facilities with more than 5 but no more than 100 children two and half years of age or younger shall be classified as E occupancy. 308.6
7. Provide floor area calculation on plan including the non-separated occupancy per 508.3.2. The lesser height, floor area and most restrictive fire protection system for one of the occupancies shall be enforced.
8. Provide "unity formula" floor area calculation on plan for separated occupancies. This is a mixed occupancies and must comply with one of the design options contained in section 508.1
9. For buildings or portion thereof appropriated to the processing, storage, or sale, or sale of food or drink or human consumption show compliance to section 91.6302 of LABC

C. BUILDING LIMITATION

1. Show on the plans the number of stories, occupancy group(s), type(s) of construction and area of the proposed structure. Vent shafts and courts do not count as area. The mezzanine shall not contribute to the building area or story. One basement level need not be included in the total allowable area if it is not a story and does not exceed the area permitted for a one-story building. Specify the use of all rooms/areas on floor plans. Provide an area breakdown by level.
2. The total building area must be limited to ( ) square feet. Provide total allowable calculation as part of plans.
3. The building as shown is a mixed-occupancy (separated occupancy) building.
   a. In each story, the sum of the ratios of the actual area for each separate occupancy divided by the allowable area per story for each occupancy must not exceed one. (508.4.2)
   b. For the maximum area of a building, the sum of the ratios of the total actual area for each separate occupancy divided by the allowable area per story for each separate occupancy must not exceed three for buildings with more than three stories above the grade plane. (506.2.4)
4. Unobstructed yards of minimum 20 must be maintained at minimum 25% of the building perimeter to permit a (_____) % floor area increase. Provide calculation of I_f determination. (506.3.2) Allowable area per story is defined as $A_a = [A_t + (NS \times I_f)]$, where A_t is the tabular allowable area factor (NS, S1, or S13R value, as applicable) in accordance with Table 506.2. NS is the tabular allowable area factor in accordance with Table 506.2 for a nonsprinklered building; I$_f$ is the increase due to frontage increase; I$_s$ is the increase due to sprinklers

   Total building area is = A_ax2 for multistory for high-rise, Group A, E, H, I, L, and R occupancies and those in Section 1.11.
   For all other occupancies, total building area is = A_ax2 for 2 stories, = A_ax3 for over 2 stories. (T506.2)
5. The total building area must be limited to_____ square feet. Provide total allowable calculation as part of plans. (506.2)
6. Building exceeds allowable height limit of T 504.2 for Type (____) construction. (504.3): Max (____) feet in height and Max ( ) stories in height
7. Provide calculations for establishing grade plane as per Section 202. Attach calculations and established grade planes on elevations, plans, and site plan.
8. Show maximum height of the structure (in feet and stories) as measured from grade plane to the average height of the highest roof surface on all elevation views. (202)
9. Lowest level is determined not to be a basement. This level is considered as 1st story above grade plane. Include this story in total building height. (202)
10. Automatic sprinkler system (NFPA-13) may be used for only one of the following purposes:
    a. Height increase (504.3)
    b. Area increase (506.2)
    c. Fire-resistance rating substitution (T 601)
11. This structure is of type ( ) construction. Show on the plans the required ( ) rated roof, (_____) rated exterior wall construction, ( ) structural frame protection, and (_____) floor construction. (T 601)
12. Exterior (bearing) (nonbearing) walls of Type ( ) construction must be of ( ) hour rated construction. (T601)

D. SPECIAL USE OR AREAS

1. Show location and distance of active and abandoned oil wells with respect to building perimeter (6105)
2. This structure has an Atrium(s). Show that the requirements of Section 404 are satisfied. (404.1 thru 11).
3. Within the live entertainment facilities and except for restrooms, the premises must be configured so that there is an unobstructed view of all interior areas to which any patron is permitted access. There shall be no entertainment booths, rooms or cubicles. Visibility shall not be blocked or obscured by doors, curtains, drapes, partitions or room dividers of any kind. Partitions of any kind, including drapes made of opaque or other material, are not permitted. Nothing in this subsection precludes the installation of columns which are essential for the structural integrity of the building. (LAMC 103.102.1)

E. FIRE-RESISTANCE RATED CONSTRUCTION

1. Clearly identify the locations of the Fire Areas, Fire Walls, Fire Barriers and Fire Partitions on the plans. Provide complete legends and details (702) (202)
2. Fire rated assemblies shall be per Table 721.1(1), generic assemblies of Gypsum Handbook, or have

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

CITY OF LOS ANGELES
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: TITLE 24 - DISABLED ACCESS REQUIREMENTS
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE TUJUNGA, CA. 91042

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil	03-10-22
DRAWN BY:	Vinh Ha, TMY , DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

DATE: BY: SERIAL NO.

BUILDING NO. - RP-300123

INDEX NO. -

LICENSED ARCHITECT CELSO J. DEL POSO LIC. NO. C 29974 REN 08-31-2023 STATE OF CALIFORNIA

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. G2.0
SHEET 5 OF SHEETS 96

PLOTTED: 6/4/2022 4:40 PM

REVISION DATES (DESIGN STAGE ONLY)
A
B
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THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/11/2022 2:18 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\GENERAL SHTS AND GREEN CODE\GENERAL\G2.0-2.2 ADA NOTES.DWG

LARR approval or ICC approval

3. Show the fire separation distance: to interior lot line; to centerline of the street, and to an imaginary line between two buildings on the property. The distance shall be measured at right angles from the face of the wall. (702) (202)

4. Provide complete analysis for protected and unprotected exterior wall openings per section 705 and Equation 7-2. Openings are not allowed when the fire separation distances less than 3. (705.8)
   a. Door openings in exterior walls must be protected with (3/4-hour) or (1 1/2 hour) fire assemblies (not permitted) (716.5)
   b. Window openings in exterior walls must be protected with (3/4-hour) or (1 1/2 hour) fire assemblies (not permitted).(716.5)

5. Provide ( ) hour(s) fire-resistance rating for exterior walls for ( ) occupancy, and building type ( ) at ( ) feet from property line or assumed property line. (T601, T602, 705.1, T 706.4). Provide complete details per Section 706.4

6. Projections beyond the exterior wall must comply with Table 705.2

7. Provide details to show that Fire Wall complies with Section 706 including but not limited to:
   a. Fire Rating shall be (___) hr. per Table 706.4
   b. Fire walls must remain structurally stable in the event of collapse of construction on either side during a fire. Provide a detail to show that joist supported by the fire wall is spliced and not continuous (plywood membrane may be continuous), or provide double fire walls or provide justification for any other method used. 706.2
   c. Shall be non-combustible material, except in Type V construction per 706.3
   d. Shall have horizontal continuity per 706.5
   e. Shall extend vertically from the foundation to a point 30 inches above the roof per 706.6
   f. The area of each opening in Fire Walls is limited to 156 sf. Total width of the openings is limited to 25 percent of the wall length in the story under consideration. (706.8)
   g. All openings in fire walls shall be protected with fire assemblies having a fire-resistive rating of (1-1/2) (3) hours. (Table 716.5)
   h. Ducts and air transfer openings through Fire Walls should be avoided. If allowed, duct and air transfer opening penetrations shall be protected as required in Section 714 and 717. Dampers are required. (705.10)
   i. Exits must be provided independently for each area bounded by fire walls except for horizontal exits per section 1026.

8. A complete (_____)-hour separation is required between Group (_____) and Group (_____) Occupancies. Separation walls must provide fire barriers complying with Section 707. Horizontal assemblies shall comply with Section 711. Openings in the separation wall shall have (____) hour fire assemblies. (508.2.4, T 508.4, 707, 712)

9. Fire barriers and horizontal assemblies separating single occupancies into different fire areas shall be (_____) hour fire rated per Table 707.3.10

10. Areas of each opening in fire barrier are limited 156 sf. Total width is limited to 25 percent of the wall length in the story under consideration. (706.8)

11. Elevator lobby is required at each floor where an elevator enclosure connects more than 2- stories, unless the building is sprinklered with 903.3.1.1. or 903.3.1.2 and it is not a high-rise. (3006.2)

12. Provide (_____) hour rated Fire Partition at walls separating tenant spaces ( ) and common areas, corridors, and elevator lobbies. (708.1, 708.3)

13. Fire barrier at vertical occupancy separations must have continuity and must extend through underfloor area, attic areas, and suspended ceiling areas (707.5)

14. Opening protectives shall be per section Tables 716.5 and 716.6. Doors shall be ____hr. fire rated and windows shall be ( )hr. fire rated (716)

15. Openings through a floor/ ceiling assembly shall be protected by (1) _(2) _hour shaft enclosure. The shaft enclosure shall be constructed of fire barriers and horizontal assemblies. (713)

16. Section 712.1.9 permits two floors to be open to each other when all 7 conditions are met. If not, the atrium provision shall be utilized for open two story spaces. See additional corrections for atrium.

17. Penetrations in walls requiring protected openings must be firestopped with an approved material in accordance with Section 714.3.1. Space between penetrating materials (described below) must be designed to prevent the movement of hot flame or gases:
   a. Steel, Copper or ferrous pipes or conduits may penetrate concrete or masonry walls where the penetrating item is a maximum 6- inch diameter and the area of the opening through the wall does not exceed 144 square inches. (714.3.1)
   b. Membrane penetrations of maximum 2- hr fire-resistance rated wall and partitions by steel electrical outlet boxes not exceeding 16 square inches are permitted provided openings do not exceed 100 square inches for any 100 square feet of wall area. Outlet boxes on opposite sides of walls or partitions must be separated by a horizontal distance of 24 inches. (714.3.2)
   c. Where walls are penetrated by other materials or where larger openings are required than permitted in (b) above, they must be qualified by tests conducted in accordance with Section 714.3.1.2

18. Smoke and fire dampers must be installed in the following locations per Sections 717.5
   a. Duct penetrations of fire walls (717.5.1)
   b. Duct penetrations of fire barriers, except exit enclosures and exit passageways where they are not allowed to penetrate. (717.5.2)
   c. Ducts penetrating shafts. (717.5.3)
   d. Ducts penetrating fire partitions and fire-rated corridor walls. See exception for steel ducts with no openings into corridor (717.5.4)
   e. Ducts penetrating smoke barriers (717.5.5)
   f. Ducts penetrating exterior walls (717.5.6)
   g. Ducts penetrating smoke partitions (717.5.7)
   f. Ducts penetrating horizontal assemblies (717.6)

19. Show draft stop location on plans. Also, provide these notes on the plans:
   a. In buildings used for other than residential occupancies, draft stops must be installed in wood frame floor construction containing concealed space. Such draft stops must be installed so that the area of the concealed space does not exceed (1000) square feet (718.3.3).
   b. In buildings used for other than residential occupancies, draft stops must be installed in the attic (mansards) (overhangs) (false fronts set out from walls) (similar concealed spaces) formed by combustible construction. Such draft stops must be installed so that the area of the concealed space does not exceed (3000) square feet (718.4.3).
   c. Draft-stopping materials must not be less than 2-inch gypsum board, 3/8-inch plywood, 3/8-inch Type 2-M particle board or other materials approved by the building department. Draft-stopping must be adequately supported. (718.3.1)

20. Draft stops shall be provided within attics, mansards, overhangs and similar concealed spaces formed of combustible construction, unless the building is sprinklered with NFPA13 sprinkler system (3000 sf between draft stops) (718.4.3)

21. Draft stop shall be provided within a concealed floor-ceiling assembly formed of combustible construction, unless the building is sprinklered with NFPA 13 sprinkler system (1000 sf between draft stops) (718.3.3)

22. Horizontal occupancy separation must be supported with a structural system having equivalent fire-resistive protection. (704.1)

23. In building over one-story in height, members supporting concrete or masonry require 1-hour fire resistive protection (704)

24. Note on plans: Fire blocking must be provided in accordance with Section 718.2 at the following locations:
   a. In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor levels.
   b. In concealed spaces of stud walls and partitions, including furred spaces, at 10-foot intervals along the length of the wall.
   c. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
   d. In concealed spaces between stair stringers at the top and bottom of the run and between studs along and in line with the run of stairs if the wall under the stairs is unfinished.
   e. In openings around vents, pipes, ducts, chimneys, fireplaces and similar openings which afford a passage for fire at ceiling and floor levels, with noncombustible materials.

25. This building is of Type V-A / III-A construction, provide / show:
   a. Continuous drywall behind all tubs is required unless the walls are within the unit and non-bearing. Back to back tubs with a common plumbing wall are impractical in 1-hour buildings.
   b. All interior partitions shall be constructed of not less than 1-hour fire-resistive construction.
   c. Attic access openings in 1-hour ceiling can be 2 layers of 3/4" plywood or one layer of 1-5/8" T&G material, self-closing.
   d. All openings in floors are required to be enclosed by a shaft having wall, floor, and ceiling of hour fire resistive construction. 714
   e. Recessed ceiling light fixtures must be boxed around with 5/8" Type X drywall to maintain the 1-hour ceiling assembly.
   f. Continuous drywall is required behind all electrical service panels, fire hoses and medicine cabinets.
   g. Exhaust fans from the bathroom must enter through the wall. Dampers are required if the ceiling is penetrated. (717.5)
   h. Plumbing penetration through horizontal occupancy separations shall be boxed out and filled with approved safing material. Insulation is not approved. (714.4.1)
   i. Penetration of the 1 hour ceiling by ducts from the FAU and the stove hood require dampers (use a ductless hood whenever possible). Attic units (including heat pumps) require dampers at all ceiling penetrations. (717.6.1)
   j. Steel beams and columns shall be protected as required for 1-hour protection. Where ceiling forms the protective membrane for fire-resistive assemblies (occupancy separations and rated roof/ceiling or floor/ceiling assemblies), the construction (floor joists) and their supporting horizontal structural members (beams) need not be individually fire protected except where such members support directly applied loads from more than one floor or roof. The required fire resistance shall not be less than that required for individual protection of members. (704.3)
   k. All plumbing penetrations through walls which require protected openings (Fire walls, Fire barriers, Fire partitions) are required to be galvanized or cast iron piping

26. S2 Occupancy, type I construction garage requires ( ) hour separation (minimum floor assembly for S2 occupancy) from ( ) occupancy, but not less than required per T508.4 Show details (509.4, 508.3.3, T508.4). A _____ rated self-closing door between the garage and _____ 406.3.4

27. Occupancy garage shall comply with the followings:
   a. Concrete or similar non-combustible and non-absorbent floor, or asphalt surface at ground level only 406.4.5
   b. Sloped floor to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway 406.4.5
   c. Floor system designed for uniform or concentrated loads per table 1607.1
   d. Minimum headroom of 7ft - 406.4.1
   e. Vehicle barriers not less than 2 feet 9 inches high placed at the end of drive lanes, and at the end of parking spaces where the difference in adjacent floor elevation is greater than 1 foot - 406.4.3
   f. Vehicle barriers designed in accordance with section 1607.8.3

F. INTERIOR FINISHES

1. Indicate on plans that interior finish materials applied to wall and ceilings shall be tested as specified in Section 803.1.1. Specify the classifications per Table 803.11 and Section 803.1. Clearly indicate on the plans.

2. The flame-spread rating of paneling materials on the walls of the corridor, lobby and exit enclosure must be identified on plans. (T-803.11)

G. FIRE PROTECTION

1. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.(903.2)

2. A sprinkler system is required for a four-story, Type V A building. (504.2)

3. Building with floor areas over 1500 sf shall be sprinklered where 20 sq. ft. of opening for every 50 ft of wall length is not provided. (903.2.11.1(2))

4. Add a note on plan: This building must be equipped with an automatic fire extinguishing system, complying with (NFPA-13/ NFPA-13R). The Sprinkler System shall be approved by Plumbing Div. prior to installation. (903.2)

5. Show the location on the plans. Class I, II or III standpipe (dry, wet, combination) are required in this building. (905.3)

6. An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5.

7. Show locations of hard-wired smoke detectors with a battery back up in each sleeping room and at a point centrally located in the corridor or area giving access to each sleeping area. (907.2.11.2)

8. Provide automatic sprinkler system at top of rubbish and linen chutes and in their terminal room (903.2.11.2)

9. Waste and linen collection rooms over 100 square feet shall provide 1 hour separation or provide automatic fire-extinguishing system or classify room occupancy to comply with separation per 508.4 (T508.2, T508.4, T509)

10. Smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall be provided except where areas of buildings are equipped with early suppression fast response sprinklers. Show locations on plans. (910.2)

11. Smoke and heat vents shall be installed in the roofs of one story building or portions thereof occupied for the uses set forth in Section 910.2.1 thru 910.2.2

12. The following note shall be provided on the plans:

    "Buildings shall have approved radio coverage for emergency responders. See Los Angeles Fire Code Section 510 for more details."

    This note shall apply to all new buildings meeting any one of the following conditions:
    a. There are more than 3 stories above grade plane
    b. The total building area is 50,000 s.f. or more
    c. The total basement or parking area is 10,000 s.f. or more
    d. Any basement or level that extends 2 or more stories below grade plane
    e. Any building that is 21,000 s.f. or greater and is equipped with a solar voltaic system

H. MEANS OF EGRESS

1. Exterior exit stairs, balconies and ramps shall be located at least 10 ft. from adjacent lot lines and from other buildings on the same lot (1027.5)

2. All stairways shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction. (1011.7)

3. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces and wheelchair spaces, shall be determined in accordance with Section 1004.1.2. and added to the number of fixed seats. (1004.4)

4. For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches of seating length. (1004.4)

5. The occupant load of seating booths shall be based on one person for each 24 inches of booth seat length measured at the backrest of the seating booth. (1004.4)

6. Show detailed summary of the floor area and all deductions for Gross and/or Net floor area. (1004.1)

7. Use correct occupant load factor for the function of space according to Table 1004.1.2. (1004.1.2.)

8. Two exits are required from each space or story. (1006.1)
   a. Occupant load > 49, (A, B, E, F, M, U)
   b. Occupant load > 10, (R)
   c. Occupant load > 29, (S)
   d. Common path of egress > 75 ft.
   e. Common path of egress > 100 ft. (B, F, S) sprinklered building (T1006.21)

9. Provide two means of egress for stories exceeding Table 1006.3.2(1), 1006.3.2(2).

10. Where two or more exits are required, at least two exits must be separated by (half) (1/3) the max. diagonal length of the area served. (1007.1.1)

11. Where more than exit is required, no one exit can exceed 50% of the required egress width. (1005.5)

12. All exit doors shall comply with Section 1010.1
   a. Clear width of each door opening shall be min. 32" or per Sec. 1005.1, whichever is greater
   b. Min. door height of 6 feet - 8 feet
   c. Shall be capable of opening 90 degrees.
   d. The maximum width of a swinging door leaf shall be 48" nominal.
   e. Exit door shall be side-hinged swinging type.

13. Door(s) # _____ serve(s) an area that has an occupant load of 50 or more. Swing this/these door(s) in the direction of egress travel. (1010.1.2.1)

14. Show the path of exit travel to and within exits. The exit path shall be identified by exit signs conforming to the requirements of Section 1013. Exit signs shall be readily visible from any direction of approach. Exit signs shall be located as necessary to clearly indicate the direction of egress travel. No point shall be more than 100 feet from the nearest visible sign. (1013.1)

15. All required exits shall be maintained until arrival at grade or the public way. (1005.4)

16. Change of elevation at _ (_____) is less than 12 inches, provide sloped surface. If slope is greater than 5%, ramps shall comply with Section 1012 (1003.5)

17. Provide a 1 hour fire rated corridor in accordance with Table 1020.1.
   a. Occupant load > 30
   b. Occupant load >10

18. Detail and reference all rated corridor construction in and protected openings in accordance to Section 709 for fire partitions. Protection to be of a 20 min. doors and 45 min. for other openings. (1020.1)

19. Provide a min. corridor width of 44 inches or per Sec. 1005.1, whichever is greater. (1020.2)

20. Revolving doors used for egress purposes shall be accompanied by a side-hinged swinging egress door located max. 10ft along the same wall. (1010.1.4.1)

21. Provide complete details for ramps when used as part of the egress component. Show width, slope, landing and handrails dimensions accordance with Section 1012.

22. Thresholds at doorways shall not exceed 0.50 inches in height. 0.75" in height for sliding doors serving dwelling units. (1010.1.7)

23. Floors or landings on each side of doors to have the same elevation. Landings shall be level except for exterior landings (max. 2% slope) (1010.1.5)

24. Landing width at doors must have a min. clear dimension of doors served. Min. length of such landings is 44" (36") (1010.1.6)

25. Doors shall not project more than 7" into the required corridor width or at landings when fully opened. And not more than 50% in any position. (1010.1.6)

26. Dead end corridors must not exceed 20 feet in non-sprinklered, and 50 feet for sprinklered bldg. (1020.4)

27. Detail all stairways to comply with Section 1011
   a. Rise: 7" max. Run (tread): 11" min. (1011.5)
   b. Rise: 7.75" max. Run (tread): 10 for stairs within dwelling units. (1011.5.2.)
   c. Headroom clearance: 6'-8. (1011.3)
   d. Width: (44") (36") (48" between hand rails for accessible stairs). (1011.2)
   e. Landing width: Same as stairway served (1011.6)
   f. Landing length: Same as width, max. 48" (1009.8)
   g. Provide a landings at every 12 ft. of vertical rise at stairways. (1011.8)
   h. Handrail height: 34-38, max 4" openings (1014.2)
   i. Handgrip portion of handrail shall not be less than 1.25" and not greater than 2" in cross-section for circular type. 4" - 6.25" perimeter for other shapes. (1014.3)
   j. A minimum 1.5 inches handrail clearance from adjacent wall. (1014.7)
   k. Handrail extension of 12" beyond the top and bottom riser. (1014.6)
   l. 1-hour fire rated construction for the enclosed usable space under the stairs. (1011.7.3)
   m. Curved stairways: (1011.9)
   n. Spiral stairways: (1011.12)

28. Provide 42 inches high guards at Decks; Landings; Balconies and Walkways where there is a vertical drop of >30 inches. (1015.2)

29. For glass handrails and guards, the panels and their support system shall be designed to withstand the loads specified in Chapter 16. A safety factor of four shall be used. The minimum nominal thickness of the glass shall be 1/4 inch. (2407), (1015.2.1)

30. The means of egress system must have a clear ceiling height of 7' -6". (1003.2)

31. Show calculations for all egress component widths to comply with section 1005.1.

32. Provide min. 48 plus width of door when doors are placed in series. (1010.1.8)

33. Provide a barrier in the exit enclosure at (_____) to prevent entry into the basement level. (1023.8)

34. Building has an exit enclosure connecting more than 3-stories. Provide an approved stairway sign indicating the floor level, terminus of the top and bottom of the stair and the identification number of the stair. It shall be located approximately 5 ft. above the floor landing and be readily visible when the stair doors are in an open or closed position. (1023.9)

35. Open space under exterior stairways shall not be used for any purpose. (1011.7.4)

36. Provide floor-level exit signs in all interior corridors of Group A, E, I, R-1 and R-4 occupancies. (1013.7)

37. The exit passageway may only be used as a means of egress. Provide a 1-hour fire-resistance rating or of the same rating required for any connecting exit enclosure. Walls, floors and ceilings shall be constructed as fire barriers in accordance with Section 707 (1024.1 & 1024.3)

38. Opening into exit passageways shall be limited to those necessary for egress from normally occupied spaces. Elevators not allowed. Openings and penetrations shall comply with Section 715. (1024.5)

39. Spiral stairways shall not serve as required exit for an area exceeding 250 and serves not more than 5 occupants. (1011.10)

40. In buildings located four or more stories in height above grade plane, one stairway shall extend to the roof surface, unless the roof has a slope steeper 4:12 (33%). (1011.12)

41. Vertical exit enclosures: (1022)
   a. Connecting 4-stories more: provide 2-hour fire-resistance rating construction (fire barrier);
   b. Connecting up to 3-stories: provide 1-hour fire-resistance rating construction (fire barrier);
   c. All openings to be protected in accordance to Section 716. No openings other than exit doorways and exterior wall openings are permitted. (1023.4)

42. Accessible Means of Egress: (1009)
   a. In buildings where a required accessible floor is four or more stories above or below the level of exit discharge, egress elevator shall be provided, read exceptions. (1009.2.1)
   b. Provide 48" clear width between handrails. (1009.3)
   c. Platform lifts not allowed as part of accessible means of egress. (1009.5)
   d. Max force to operate doors is limited to 15-lb.
   e. Show location and dimension of area of refuge. (1009.6)
      i) Size: (2) 30"x48" or 1/200, whichever is greater
      ii) Separation from other space by a smoke barrier (detail construction per Section 709)
      iii) Note: Two-way communication required;
      iv) Signage on door of area of refuge
      v) Exterior area of refuge to comply with section 1009.7

43. Egress through intervening space is not allowed to go through: (1016.2)
   a. Different tenant space or dwelling units.
   b. A more hazardous occupancy.
   c. Commercial kitchens.
   d. Storage rooms, closets or similar spaces

44. Egress convergence applies at (_____) Show calculation for egress width to account for combined occupant load from floor above and below. (1005.6)

45. Horizontal exits: (1026),
   a. Detail horizontal exits as a 2 hour fire barrier or a fire wall in accordance to Section 706.
   b. Provide self-closing or automatic closing doors;
   c. Not allowed as the only exit from a space;
   d. Horizontal exits cannot exceed 50% of total exits required;
   e. Provide clear summary for the refuge area. Show capacity for a minimum of 3 sq. ft. for each combined occupant to be accommodated therein.

46. Egress balconies to comply Section 1021. Detail plans to meet all requirements

47. One openable window with an openable area of not less than 5.7 sq. ft., minimum clear 24" height and 20" width, and a sill height not over 44" above the floor is required in all bedrooms below the fourth story and basement. (1030)

48. Provide calculation to show that existing egress system is adequate to accommodate new usable outdoor area; (1004.5)

49. Show and dimension common path of egress travel from each space. (1006.2.1)

50. Label each space to match the function of space according to Table 1004.1.2.

51. Legend on floor plans to show where exits are located and the travel distance to it from the most remote point within a story, measured along the natural and unobstructed path of egress travel.

52. Show clear width dimension at corridors and exit passageways where doors open into it.

53. Area of refuge cannot project into egress path of travel

54. Hatch/label and dimension all areas of refuge.

55. For High-rise buildings, provide smoke-proof or pressurized exit enclosures for buildings required to comply with Section 403 or 405 (1023.11)

Note on Plans:
1. Exit signs shall be internally or externally illuminated
2. Exit signs illuminated by an external source shall have an intensity of not less than 5 foot candles (54 lux).

3. Internally illuminated signs shall be listed and labeled and shall be installed in accordance with the manufacturer instructions and Section 2702. (1013.5)

4. Exit signs shall be illuminated at all times. (1013.3)

5. Exit signs shall be connected to an emergency power system that will provide an illumination of not less than 90 min. in case of primary power loss (1013.6.3)

6. Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort. See 1010.1.9.3 for exceptions.

7. Door handles, lock and other operating devices shall be installed at a min. 34" and a max. 48" above the finished floor

8. THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.

9. All egress door operation shall also comply with Section 1010.1.9 & 1010.1.9.12

10. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

11. The means of egress illumination level shall not be less than 1 foot-candle at the walking surface

12. The power supply for means of egress illumination shall normally be provided by the premises electrical supply. In the event of power supply failure, an emergency electrical system shall automatically illuminate the following areas:
   a. Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress
   b. Corridors, exit enclosures and exit passageways in buildings required to have two or more exits;
   c. Exterior egress components at other than the level of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
   d. Interior exit discharge elements, as permitted in Section 1028.1, in buildings required to have two or more exits.
   e. Exterior landings, as required by Section 1010.1.6, for exit discharge doorways in buildings required to have two or more exits.

13. The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.

14. Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 foot-candle (11 lux) and a minimum at any point of 0.1 foot-candle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 foot-candle (6 lux) average and a minimum at any point of 0.06 foot-candle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

I. INTERIOR ENVIRONMENT

1. Provide a door and window schedule. Show type and size of each.

2. Provide shower and locker facilities as required by Section 6307

3. All shower compartments, regardless of shape, shall have a minimum finished interior area of not less than 1024 square inches (0.66 m2) and shall be capable of encompassing a 30 inch (0.76 m) circle. The minimum area and dimensions shall be maintained to a point 70 inches (1.8 m) above the shower drain outlet. (1210.2.3, LAPC 408.6)

4. Provide _____ water closets for women, _____ water closets for men, and _____ urinals (2901, LAPC Table 422.1, IB: P/BC2014-095

5. Toilet room floors shall have a smooth, hard nonabsorbent surface such as Portland cement, ceramic tile or other approved material that extends upward onto the walls at least 4" (1210.2.1)

6. Walls within 2 feet (610 mm) of the front and sides of urinals and water closets shall have a smooth, hard non-absorbent surface of Portland cement, concrete, ceramic tile or other smooth, hard non-absorbent surface to a height of 4 feet (1219 mm), and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture. (1210.2.2)

7. Cement, fiber-cement or glass mat gypsum backers in compliance with ASTM C1178, C1288 or C1325 shall be used as a base for wall tile in tub and shower areas and wall and ceiling panels in shower areas. Water-resistance gypsum backing board shall be used as a base for tile in water closet compartment walls when installed in accordance with GA-216 or ASTM C840. Regular gypsum wallboard is permitted under tile or wall panels in other wall and ceiling areas when installed in accordance with GA-216 or ASTM C840. Water-resistant gypsum board shall not be used in the following locations: Section 2506.1
   a. Over a vapor retarder.
   b. In areas subject to continuous high humidity, such as saunas, steam rooms or gang shower rooms
   c. On ceilings where frame spacing exceeds 12 inches O.C. for 1/2 inch thick and more than 16 inches O.C. for 5/8 inch thick.

8. Show the location, on plans, of any room(s) that will be used for accompact storage (movable files). Rooms that are used for accompact storage must comply with the following requirements: LAMC Section 94.2012.1
   a. The maximum area of a accompact storage room is limited to 1500 square feet for systems designed as Ordinary Hazard Group 2 and 5000 square feet for Extra Hazard Group 1.
   b. The clear space below the sprinklers shall be a minimum of 18 inches between the top of the storage and the ceiling sprinkler detector.
   c. The minimum design live load for compact storage rooms shall be 250 psf.

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/11/2022 2:18 PM
FILE: G:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\GENERAL SHTS AND GREEN CODE\GENERAL\G2.0-2.2 ADA NOTES.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:
1			
2			
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4			
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SERIAL NO.

BUILDING NO. - 1

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW 1-31-2023
STATE OF CALIFORNIA

	NAME	LIC. NO.	DATE
CITY ENGINEER	TED ALLEN, P.E.		03-10-22
ARCHITECTURAL DIVISION			
ARCHITECT:	Celso J. Del Poso	C-29974	03-10-22
DESIGNED BY:	John McNeil		03-10-22
DRAWN BY:	Vinh Ha, TMY . DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TITLE 24 - DISABLED ACCESS REQUIREMENTS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE., TUJUNGA, CA. 91042

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

WORK ORDER NO.
E170164F

PLAN FILE NO.
-

DRAWING NO.
G2.1

SHEET 6 OF SHEETS 96

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9. One elevator in buildings four or more stories above or below grade plane shall be of such a size to accommodate a 24-inch by 84-inch ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services. See 3002.4a for exceptions. (3002.4)

10. One baby diaper changing station shall be provided in men's and women's restrooms, or one changing station shall be provided in a gender neutral (unisex) restroom since the use of the space or building is open to the public and the cost of construction for new building or alterations to existing buildings is $10,000 or greater. (AB-1127)

11. **Add note on plans**:
    a. Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section 1205.2 or shall be provided with artificial light that is adequate to provide an average illumination of 10 foot-candles over the area of the room at a height of 30 inches above the floor level. (1205.1 and 1205.3)

J. BUILDING ENVELOPE

1. A fire retardant roof covering is required. Provide a complete description on plans. Class A roof covering is required for all buildings located in a Very High Fire Hazard Severity Zone. (1505.1, 7207.4)

2. Show roof slope(s), drain(s) and overflow drain(s) or scuppers on the roof plan. Provide a detail of the roof drain and overflow system.
    a. Size the roof drains and overflow drains according to Chapter 11 of the LAPC. (1503.4)
    b. The roof drain and overflow drain must be independent lines to a yard box.
    c. Roof drainage is not permitted to flow over public property.
    d. Overflow scuppers shall be designed in accordance to 1101.11.2.1 of the LAPC
    e. Show roof elevation to provide a minimum 1/4in per foot roof slope for drainage or design to support accumulated water.
    f. Site drainage: Show on plans how concentrated drainage is being conveyed to the street via non-erosive devices (7013.10)

3. Provide access to all mechanical equipment located on the roof.

4. Show that the penthouse satisfies the requirements of Section 1510

5. Skylights set at an angle of less than 45 degrees from the horizontal plane shall be mounted at least 4 inches above the plane of the roof on a curb constructed as required for the frame. Except for R3 occupancies, skylights without a curb shall be permitted on roof s with a minimum slope of 14 degrees (three units vertical in 12 units horizontal (Section 2405.4) Glass skylights shall comply with Section 2405. Plastic skylights shall comply with Section 2610

6. Provide anti-graffiti finish at the first 9 feet, measured from grade, at exterior walls and doors. LAMC 91.6306

7. Details of the guardrails at the floor and roof openings, occupied roofs and balconies or porches more than 30" above grade are required. Guardrails shall be 42" in height, have intermediate rails or balusters spaced at 4" maximum. It shall be designed as per Section 1607.8, (1015)

8. Provide veneer details. Show method of anchorage, size and spacing of anchors. Comply with requirements per Section 1405.6.

9. Each pane of safety glazing installed in hazardous locations shall be identified by a manufacturers designation specifying who applied the designation, the manufacturer or installer and the safety glazing standard. The following shall be considered specific hazardous locations for the purposed of safety glazing. Glazing in: Section 2406
    a. Swing doors.
    b. Fixed and sliding panels of sliding door assemblies and panels in sliding and bi-fold closet door assemblies.
    c. Storm doors.
    d. Unframed swinging doors.
    e. Doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers.
    f. Fixed or operable panels adjacent to a door where the nearest exposed edge of the glazing is within 24 inches (610 mm) arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches (1525 mm) above the walking surface. Read code for exceptions.
    g. Fixed or operable panel, other than described in items e and f, which meets all of the following conditions (read code for exception with special installation).
        i) Exposed area of an individual pane greater than 9 square feet (0.84 m2)
        ii) Exposed bottom edge less than 18 inches (457 mm) above the floor.
        iii) Exposed top edge greater than 36 inches (914 mm) above the floor.
        iv) One or more walking surfaces within 36 inches (914 mm) horizontally of the plane of the glazing.
    h. Guards and railings regardless of area or height above a walking surface. Included are structural baluster panels and nonstructural in-fill panels.
    i. Walls and fences enclosing indoor and outdoor swimming pools and spas where all of the following conditions are present:
        i) The bottom edge of the glazing is less than 60 inches (1525 mm) above a walking surface on the pool or spa side of the glazing.
        ii) The glazing is within 60 inches (1525 mm) of a swimming pool or spa waters edge.
    j. Adjacent to stairways, landings and ramps within 36 inches horizontally of a walking surface; when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface(read code for exception with special installation).
    k. Adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches above the nose of the tread (read code for exception with special installation).

10. Provide a weep screed for stucco at the foundation plate line a minimum of 4 inches above the earth or 2 inches above paved areas. Weep screeds shall be of a type which will allow trapped water to drain to the exterior of the building. (Show these dimensions on a foundation detail drawing) (Section 2512.1.2)

K. ACCESSIBILITY (see supplemental sheet)

****

ADDITIONAL CORRECTIONS

Items	Code Sec. No.

Items	Code Sec. No.

GREEN BUILDING CODE:

ENERGY EFFICIENCY

1. NEW RESIDENTIAL GRADE EQUIPMENT AND APPLIANCES PROVIDED AND INSTALLED SHALL BE ENERGY STAR LABELED IF ENERGY STAR IS APPLICABLE TO THAT EQUIPMENT OR APPLIANCE. (10.210.1)

WATER EFFICIENCY AND CONSERVATION

2. NEW PLUMBING FIXTURES AND FITTINGS SHALL NOT EXCEED THE MAXIMUN ALLOWABLE FLOW RATE SPECIFIED IN TABLE 10.303.2.3

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

3. A FINAL REPORT FOR THE TESTING AND ADJUSTING OF ALL NEW SYSTEMS SHALL BE COMPLETED PRIOR TO FINAL INSPECTION. THIS REPORT SHALL BE SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES. (10.410.4.4)
4. AN OPERATION AND SYSTEMS MANUAL SHALL BE PROVIDED TO THE FIELD INSPECTOR AT THE TIME OF FINAL INSPECTION. (10.410.4.5)
5. NONABSORBENT INTERIOR FLOOR AND WALL FINISHES SHALL BE USED WITHIN AT LEAST TWO FEET AROUND AND PERPENDICULAR TO NEW EXTERIOR ENTRIES AND / OR OVERHANGS OR RECESSES. (10.407.2.2)
6. CONSTRUCTION WASTE SHALL BE REDUCED BY 50% BY CITY OF LOS ANGELES CERTIFIED HAULER. (10.408.1)

CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

2020 Los Angeles Green Building Code

FORM GRN 10

MANDATORY REQUIREMENTS CHECKLIST

ADDITIONS AND ALTERATIONS TO NON-RESIDENTIAL BUILDINGS

(COMPLETE AND INCORPORATE THIS FORM INTO THE PLANS)

Permit # _____ - _____ - _____ Date: _____

ITEM #	CODE SECTION	REQUIREMENTS	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A
		PLANNING AND DESIGN		
1	5.106.1	Storm water drainage and retention during construction	L001	Sect. 1, Earthwork E
2	5.106.4.1.1	Short-term bicycle parking (≥ 10 vehicular parking spaces)	N/A	no new spaces
3	5.106.4.1.2	Long-term bicycle parking (≥ 10 vehicular parking spaces)	N/A	no new spaces
4	5.106.5.2	Designated parking (≥ 10 vehicular parking spaces)	N/A	no new spaces
5	5.106.10	Grading and Paving	L301	
		ENERGY EFFICIENCY		
6	5.211.1	Solar ready (additions ≥ 2,000 sq. ft.)	N/A	
		WATER EFFICIENCY & CONSERVATION		
7	5.303.1.1	Additions in excess of 50,000 sq. ft.	N/A	
8	5.303.1.2	Excess consumption	N/A	
9	5.303.2	Water reduction	N/A	
10	5.303.3	Water conserving plumbing fixtures and fittings	P001	
11	5.303.3.3	Showerheads	P001	
12	5.304.1	Outdoor water use in landscape areas	L601-L703	
13	5.304.3	Irrigation controller and sensor application	L601	shown in legend
14	5.304.4	Outdoor water use meters	L601	
15	5.304.5	Exterior faucets	L601	uses separate key
16	5.305.1	Graywater ready	N/A	
17	5.305.2	Recycled water supply to fixtures	N/A	
		MATERIAL CONSERVATION & RESOURCE EFFICIENCY		
18	5.407.1	Weather protection	N/A	
19	5.407.2.1	Sprinklers	N/A	
20	5.407.2.2.1	Nonabsorbent floor and wall finishes	A6.0 FinSch	ITEM - B
21		Exterior door protection	G6 / A3.1	
22	5.407.2.2.2	Flashing	N/A	
23	5.408.1	Construction waste reduction	D1.0 - Note	Universal Waste Bins
24	5.408.3	Excavated soil and land clearing debris	L202	note 5

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CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

2020 Los Angeles Green Building Code

FORM GRN 10

ITEM #	CODE SECTION	REQUIREMENTS	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A
25	5.410.1	Recycling by occupants (additions that are > 30% of existing floor area)	N/A	
26	5.410.4	Testing, adjusting and balancing	L601, L002	
27	5.410.4.2	– Systems		
28	5.410.4.3	– Procedures		
29	5.410.4.4	– Reporting		
30	5.410.4.5	– Operation and maintenance manual		
31	5.410.4.5.1	– Inspections and reports		
		ENVIRONMENTAL QUALITY		
32	5.503.1	Fireplace and Woodstoves	N/A	
33	5.504.1.3	Temporary ventilation	G3.0	
34	5.504.3	Covering of duct openings and protection of mechanical equipment during construction		
35	5.504.4	Finish material pollutant control	G1.2	MATERIALS & POLLUTION CONTROL NOTES
36	5.504.4.1	– Adhesives, sealants, and caulks		
37	5.504.4.3	– Paints and coatings		
38	5.504.4.3.1	– Aerosol paints and coatings		
39	5.504.4.3.2	– Verification	G1.2	
40	5.504.4.4	Carpet systems	N/A	
41	5.504.4.4.1	Carpet cushion	N/A	
42	5.504.4.5	Composite wood products	N/A	
43	5.504.4.6	Resilient flooring systems	N/A	
44	5.504.5.3	Filters	N/A	
45	5.504.7	Environmental tobacco smoke (ETS) control	N/A	
46	5.505.1	Indoor moisture control	N/A	
47	5.506.2	Carbon dioxide (CO_2) monitoring	N/A	
48	5.507.4.1	Exterior noise transmission prescriptive method	G1.2	MATERIALS & POLLUTION CONTROL NOTES
49		– Exterior noise transmission for roof		
50		– Exterior noise transmission for walls		
51		– Exterior noise transmission for windows		
52	5.507.4.2	Exterior noise transmission performance method	N/A	
52	5.507.4.3	Interior sound transmission	N/A	
53	5.508.1	Ozone depletion and greenhouse gas reductions	N/A	
54	5.508.2	Supermarket refrigerant leak reduction	N/A	

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CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

FORM GRN 15

2020 Los Angeles Green Building Code

GREEN BUILDING CODE PLAN CHECK NOTES

NON-RESIDENTIAL BUILDINGS

1. State on plans that the outdoor lighting systems shall be designed and installed to comply with all of the following:
   a. The minimum requirements in California Energy Code for Lighting Zones 1-4
   b. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11
   c. Allowable BUG ratings not exceeding those shown in on Table 5.106.8. (5.106.8)
2. Separate submeters shall be installed in any building or new space within a building that is projected to consume more than 1,000 gal/day. (5.303.1.2)
3. New plumbing fixtures and fittings shall not exceed the maximum allowable flow rate specified in Section 5.303.3. (5.303.3)
4. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80psi, or the shower shall be designed to only allow one showerhead to be in operation at a time. (5.303.3.3)
5. For projects that include landscape work, the *Landscape Certification*, Form GRN 12, shall be completed prior to final inspection approval. (State Assembly Bill No. 1881)
6. Installed automatic irrigation system controllers are weather- or soil-based controllers. (WMELO, § 492.7)
7. Weather-resistant exterior wall and foundation envelope shall be detailed in conformance with Los Angeles Building Code Section 1403.2 and California Energy Code Section 150. (5.407.1)
8. Automatic landscape irrigators shall be installed such that it doesn't spray on the structure. (5.407.2.1)
9. New exterior entries and openings subject to foot traffic shall be protected against water intrusion using features such as overhangs, awnings and/or recesses for a combined depth over the entry of at least 4 feet. (5.407.2.2.1)
10. Nonabsorbent interior floor and wall finishes shall be used within at least two feet around and perpendicular to new exterior entries and/or opening subject to foot traffic. (5.407.2.2.1)
11. Exterior entries shall have flashing integrated with the drainage plane. (5.407.2.2.2)
12. Only a City of Los Angeles certified hauler will be used for hauling of construction waste. (5.408.1)
13. 100% of excavated soil and vegetation resulting from land clearing shall be reused or recycled. (5.408.3)
14. A final report for the testing and adjusting of all new systems shall be completed and provided to the field inspector prior to final approval. This report shall be signed by the individual responsible for performing these services. (5.410.4.4)
15. For all new equipment, an *Operation & Systems Manual* shall be provided to the owner and the field inspector at the time of final inspection. (5.410.4.5)
16. All new gas fireplaces must be direct-vent, sealed combustion type. Wood burning fireplaces are prohibited per AQMD Rule 445. (5.503.1, AQMD Rule 445)
17. If the new HVAC system is used during construction, use return air filters with a MERV of 8. Replace all filters immediately prior to occupancy. (5.504.1.3)
18. All new ducts and other new related air distribution components openings shall be covered with tape, plastic, or sheet metal until the final startup of the heating, cooling and ventilating equipment. (5.504.3)
19. Architectural paints and coatings, adhesives, caulks and sealants shall comply with the Volatile Organic Compound (VOC) limits listed in Tables 5.504.4.1- 5.504.4.3. (5.504.4.1- 5.504.4.3)
20. The *VOC Content Verification Checklist*, Form GRN 2, shall be completed and verified prior to final inspection approval. The manufacturer's specifications showing VOC content for all applicable products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.3.2)
21. All new carpet installed in the building interior meets the testing and product requirements of one of the following:
    a. Carpet and Rug Institute's Green Label Plus Program
    b. California Department of Public Health's Specification 01350
    c. NSF/ANSI 140 at the Gold level
    d. Scientific Certifications Systems Indoor Advantage™ Gold (5.504.4.4)
22. All new carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. (5.504.4.4.1)
23. New hardwood plywood, particle board, and medium density fiberboard composite wood products used in the interior or exterior of the building shall meet the formaldehyde limits. (5.504.4.5, 10.504.4.5)
24. The *Formaldehyde Emissions Verification Checklist*, Form GRN 3, shall be completed prior to final inspection approval. The manufacturer's specifications showing formaldehyde content for all applicable wood products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.5)
25. 80% of the total area receiving new resilient flooring shall comply with one or more of the following:
    a. VOC emission limits defined in the CHPS High Performance Products Database
    b. Certified under UL GREENGUARD Gold
    c. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program
    d. Meet the California Department of Public Health's Specification 01350 (5.504.4.6)
26. Mechanically ventilated buildings shall have air filter with a Minimum Efficiency Reporting Value (MERV) of 13 or higher. Filters shall be installed prior to occupancy and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. (5.504.5.3)
27. Designated outdoor smoking area shall be at least 25 feet from an outdoor air intake or operable windows. (5.504.7)
28. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2 Sections 1202 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures, see Section 5.407.2 (5.505.1)
29. Buildings that use Demand Control Ventilation shall have CO_2 sensors and ventilation controls installed in accordance with the requirements of the current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c). (5.506.2)
30. The HVAC, refrigeration, and fire suppression equipment shall not contain CFC or Halons. (5.508.1)
31. Retail food stores of 8,000 sq. ft. or more of conditioned area that have a commercial refrigeration system with a global warming potential (GWP) of 150 or greater shall have leak reduction measures in accordance with LAGBC Section 5.508.2. Separate mechanical plan check is required. (5.508.2)

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CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

VOC AND FORMALDEHYDE LIMITS

2020 Los Angeles Green Building Code

(Incorporate this form into the plans)

FORM GRN 11

2020 Los Angeles Green Building Code Tables 4.504.1, 4.504.2, 4.504.3, 4.504.5, 5.504.4.1, 5.504.4.2, 5.504.4.3, 5.504.4.5

VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS [2,3]
Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY [1,2]	CURRENT LIMIT
Flat coatings	50
Nonflat coatings	50
Nonflat-high gloss coatings	50
Specialty Coatings	
Aluminum roof coatings	100
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	100
Concrete curing compounds, Roadways & Bridges	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	50
Faux finishing coatings	
Clear Top Coat	100
Decorative Coatings	350
Glazes	350
Japan	350
Trowel Applied Coatings	50
Fire resistive coatings	150
Floor coatings	50
Form-release compounds	100
Graphic arts coatings (sign paints)	200
High temperature coatings	420
Industrial maintenance coatings	100
Low solids coatings[3]	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	150
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Roof coatings, aluminum	100
Rust preventative coatings	100
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	100
Stains, Interior	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	100
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	100

[1] Grams of VOC per liter of coating, including water and including exempt compounds.
[2] The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
[3] Some values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 5, 2016. More information is available from the Air Resources Board.

FORMALDEHYDE LIMITS [1]
Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

[1] Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E 1333. For more detailed information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.
[2] Thin medium density fiberboard has a maximum thickness of $\frac{5}{16}$ inches (8 mm).

SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter
SEALANTS

	CURRENT VOC LIMIT
Architectural	50
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous 500	500
Marine deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168.

ADHESIVE VOC LIMIT [1,2]
Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	100
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

[1] If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be used.
[2] For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF.

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CITY LA DBS DEPARTMENT OF BUILDING AND SAFETY

PLUMBING FIXTURE FLOW RATES

Non-Residential Occupancies

2020 Los Angeles Green Building Code

(Incorporate this form into the plans)

FORM GRN 17

SECTION 5.303.2
WATER REDUCTION FIXTURE FLOW RATES

FIXTURE TYPE	MAXIMUM ALLOWABLE FLOW RATE
Showerheads	1.8 gpm @ 80 psi
Lavatory faucets, residential	1.2 gpm @ 60 psi [1,3]
Lavatory Faucets, nonresidential	0.4 gpm @ 60 psi [1,3]
Kitchen faucets	1.5 gpm @ 60 psi [2,4,5]
Wash fountains	1.8 gpm for every 20 in. of rim space @60 psi
Metering faucets	0.2 gallons/cycle
Metering faucets for wash fountains	0.2 gpm for every 20 in. of rim space @ 60 psi
Gravity tank type water closets	1.28 gallons/flush [6]
Flushometer tank water closets	1.28 gallons/flush [6]
Flushometer valve water closets	1.28 gallons/flush [6]
Urinals	0.125 gallons/flush
Clothes Washers	ENERGY-STAR certified
Dishwashers	ENERGY-STAR certified

[1] Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi.
[2] Kitchen faucets may temporarily increase flow above the maximum rate, but not above 2.2gpm @ 60psi and must default to a maximum flow rate of 1.8 gpm @ 60psi.
[3] Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.
[4] Kitchen faucets with a maximum 1.8 gpm flow rate may be installed in buildings that have water closets with a maximum flush rate of 1.06 gallons/flush installed throughout
[5] This requirement does not apply to faucets in commercial kitchens.
[6] Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.
Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.
Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

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BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:		

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 01-31-2023
STATE OF CALIFORNIA

ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	
DESIGNED BY:	John McNeil		
DRAWN BY:	Vinh Ha, TMY , DT		
CHECKED BY:	Celso J. Del Poso		
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		

CITY ENGINEER — DATE: 03-10-22
ARCHITECTURAL DIVISION — DATE: 03-10-22
DATE: 03-10-22
DATE: 03-10-22
ARCHITECT — DATE: 03-10-22

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GREEN BUILDING REQUIREMENTS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. G3.0

SHEET 8 OF SHEETS 96

PLOTTED: 6/4/2022 4:43 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/11/2022 2:18 PM FILE: O:\IH-HOUSE-DESIGN\VERDUGO HILLS POOL\GENERAL SHTS AND GREEN CODE\GENERAL\G3.0 GREEN FORM.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

LANDSCAPE CONSTRUCTION SPECIFICATIONS

SECTION SECTION TITLE

1. General Earthwork
2. Irrigation System
3. Landscape Planting
4. Concrete
5. Chain-Link Fencing & Miscellaneous Metal Construction
6. Porous Asphalt Concrete Paving
7. Permeable Concrete Pavers
8. Painting

BUREAU OF ENGINEERING
OFFICIAL RECORD

GENERAL

The Specifications included herein on Sheets L001-L004 shall be applied ONLY to the work described on sheets L201 through L702.

The latest edition and supplements of the Standard Specifications for Public Works Construction, hereinafter referred to as (SSPWC) adopted by the Board of Public Works and the City of Los Angeles including the City of Los Angeles Department of Public Works SSPWC additions and amendments (Brown Book) shall be made a part of these plans.

Website: http://eng.lacity.org/techdocs/stdplans/s-600/BB2006.pdf

Where conflicts occur between these Landscape Construction Notes and the SSPWC these LANDSCAPE CONSTRUCTION SPECIFICATIONS shall take precedence. Where conflicts occur between Notes on Drawing Sheets and the SSPWC the NOTES ON DRAWING SHEETS shall take precedence.

Subsections included within these LANDSCAPE CONSTRUCTION SPECIFICATIONS modify or add to the corresponding subsection (by number) of the SSPWC, latest edition with current yearly supplements where noted; where options for materials and/or methods appear in the SSPWC, the option listed hereon shall be used.

This improvement consists only of work called for on these plans.

PLANS AND SPECIFICATIONS
The General Contractor shall be responsible for issuing a complete set of plans and specifications to all Sub-Contractors.

√ **Indicates required approvals or submittals, including items to be turned over at the pre-final. All approval requests and submittals shall be transmitted to the Project Manager.**

√√ **Indicates required field inspections with the Project Manager and Landscape Architect. Notify all party's three (3) days prior to the required inspection.**

INSPECTIONS: All work and materials are subject to inspection and approval by the Project Manager or his designer. Any work done without proper inspection will be subject to rejection per Section 2-11 of the Standard Specifications for Public Works Construction.

The Contractor shall notify the Project Manager three (3) days prior to requested date of inspection of the following for approval:

√√ **1. ROUGH GRADING:** When forms have been set, to approve alignment. Offsets or vertical controls shall be verifiable in the field, or be provided in grade sheet form, and submitted to the Project Manager for approval prior to the inspection.

√√ **2. TREE TAGGING:** Tagging of 24" box or larger trees at the grower with owners tags by the Landscape Architect. This inspection will be for compliance with the caliper, height and spread requirements if given on the plant legend and general health and appearance of plants.

√√ **3. ON-SITE PLANT MATERIAL INSPECTION:** The inspection of all plant materials under 24" box size at the job site. This inspection will be for compliance with the plant legend and to confirm the general health and appearance of plants. The Contractor shall also stake all tree planting locations at this time for approval.

√√ **4. IRRIGATION PRESSURE AND COVERAGE TESTS:** The pressure test shall include all lines under continuous pressure during normal operation, and take place under the direction of the Project Manager. Following the pressure test, the entire irrigation system shall be tested for coverage under the direction of the Project Manager. The coverage test shall cycle through each station of the irrigation system from the automatic controller for all new irrigation systems. The Project Manager, Contractor and Landscape Architect shall be notified three (3) days before the scheduled test.

√√ **5. FINISH GRADE REVIEW:** For all finish grades in planting areas following soil preparation, and fine grading/rolling and prior to seeding or landscape planting.

√√ **6. PRE-FINAL LANDSCAPE INSPECTION:** Approximately two weeks before completion of the Work, the contractor will schedule a Pre-final Inspection to be attended by the Project Manager, the Contractor, Landscape Architect and invited parties associated with the Project. At this time, a list of items requiring correction or completion before the Final Inspection will be compiled. In addition, at this time the Contractor shall arrange for the delivery of manufacturers data, manuals, and operating instructions and keys to the appropriate owners personnel.

√√ **7. CONTRACT FINAL LANDSCAPE INSPECTION:** Approximately seven (7) days prior to completion of the Work, the Contractor shall first notify the Project Manager that he desires a Final Inspection of the Project. During this inspection, which will be arranged as soon as possible, the Project Manager, the Contractor, the Landscape Architect and other parties concerned with contractual requirements will compile a Final Inspection Correction List, incorporating all items of work and corrections required to complete the Project. This list must be completed within thirty (30) days of Final Inspection, or a new Final Inspection will be held and a new Final Inspection Correction List compiled.

√ **8. MATERIALS SUBMITTAL:**
A. Furnish a schedule and list of required submittals to the PROJECT MANAGER, including required submittals by Subcontractors.

B. Wherever called for in these specifications or on the plans, or where required by the PROJECT MANAGER, furnish to the PROJECT MANAGER for review 4 copies of each submittal. The term "submittal" as used herein shall be understood to include detail design calculations, design drawings, Shop Drawings, Working Drawings fabrication and installation drawings, erection drawings, lists, graphs, operating instructions, catalog sheets, data sheets, samples, and similar items. Unless otherwise required, Submit said submittals to the PROJECT MANAGER at a time sufficiently early (see paragraph F. below) to allow review of same by the PROJECT MANAGER and to accommodate the rate of construction progress required under the Contract without delaying the Contract Work and with due regard for the possibility of re-submittals. Submittals shall be in English.

C. Design or Shop Drawings or other submittal shall be accompanied by the standard "CONTRACTOR'S SUBMITTAL TRANSMITTAL" form. A submittal not accompanied by such a form, or where all applicable items on the form are not completed, or are incorrectly completed, may be returned, at the PROJECT MANAGER'S discretion, for re-submittal.

D. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates a review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the PROJECT MANAGER.

E. Shop Drawings shall show in detail the size, sections, and dimensions of all the member(s); the arrangement and construction of all connections and joints; all holes, straps, and other fittings required for attaching Work; and other pertinent details. When required, PROJECT ENGINEERING computations shall be submitted. Be responsible for delivering reviewed copies of Shop Drawings to all others whose Work is dependent thereon. Maintain at the site of the Project, a complete file of approved Shop Drawings and manufacturers' data for this Project, at all times.

F. Except as may otherwise be provided herein, the PROJECT MANAGER will make a reasonable attempt to return prints of each submittal to the CONTRACTOR, with its comments noted thereon, within 30 calendar days following their receipt by the PROJECT MANAGER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the PROJECT MANAGER by the second submission of a submittal item. The CITY reserves the right to withhold moneys due the CONTRACTOR to cover additional costs of the PROJECT MANAGER's review beyond the third submittal. Submittal will be returned to the CONTRACTOR with one of three (3) markings:

1. If three (3) copies of a submittal are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN/PROCEED," formal revision and resubmission of said submittal will not be required.

2. If three (3) copies of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED/PROCEED CONDITIONALLY," formal revision and resubmission of said submittal will not be required.

3. If one (1) copy of a submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT/DO NOT PROCEED," revise said submittal and resubmit TEN (10) copies of said revised submittal to the PROJECT MANAGER.

J. Work for which Shop Drawings are required shall be performed in accordance with the reviewed and approved copies. Fabrication of an item shall not commence before the PROJECT MANAGER has reviewed the pertinent submittal and returned the copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN/PROCEED," or "MAKE CORRECTIONS NOTED/PROCEED CONDITIONALLY." Revisions indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for claims for extra Work.

K. CONTRACTOR submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission to the PROJECT MANAGER. Each submittal shall be dated, signed, and certified by the CONTRACTOR as being correct and in strict conformance with the Contract Documents. No consideration for review by the PROJECT MANAGER of any CONTRACTOR submittal will be made for any items that have not been so certified by the CONTRACTOR. Non-certified submittals will be returned to the CONTRACTOR without action taken by the PROJECT MANAGER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

L. The PROJECT MANAGER's review of CONTRACTOR submittal shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions and conformance to the specifications. Assume all responsibility and risk for any misfits due to any errors in the submittal. Any fabrication or other Work performed in advance of the receipt of accepted submittals shall be entirely at the CONTRACTOR's risk and expense. Be responsible for the dimensions and the design of adequate connections and details.

√ **10. SUBSTITUTIONS AND "OR EQUAL" SUBMITTAL:**
A. Make "Or Equal" submittals within thirty (30) calendar days after issuance of Notice-to-Proceed. A request or submittal received after the specified period will be considered as NOT EQUAL to that so specified and will be processed as a substitution described hereinafter.

B. Clearly identify manufacturers' data submitted to the PROJECT MANAGER for review and acceptance each proposed substitute with the corresponding Contract Drawing detail and Specification section. If the PROJECT MANAGER decides to accept for use in the Project a material, process or article which is not the equal of that specified, make substitution in the manner described in CHANGES AND EXTRA WORK of the General Conditions, with a credit to the CITY for the difference in value.

C. The PROJECT MANAGER will determine whether the material offered is equivalent to that specified. Any revision to structures, piping, mechanical, electrical, instrumentation, or any other Work made necessary by such substitution must be approved by the PROJECT MANAGER, and the entire cost both direct and indirect of these revisions shall be borne by the CONTRACTOR.

D. Materials, processes, or articles may be requested as a substitution by the CONTRACTOR, in lieu of that specified, under the following conditions:

Submit in writing and in the manner described in SUBMITTAL of these Landscape Construction Notes.

1. Submit thirty (30) calendar days before starting the Work, as established by the PROJECT MANAGER, so as not to cause any delay in completion of the Project. No other request will be considered after expiration of the period specified, except that in exceptional cases where it is determined to be in the best interest of the CITY, as approved by the PROJECT MANAGER.

2. Agree to pay for all PROJECT ENGINEERING and design services, if required, to make changes and adjustments in material and Work of trades directly or indirectly affected by the substitute, to the satisfaction of the PROJECT MANAGER, at no cost to the CITY
.
3. All requests for substitution shall be made through the CONTRACTOR. Submissions by the CONTRACTOR shall imply the CONTRACTOR's approval of such substitution.

4. No requests for substitutions will be considered during the bidding period.

5. Furnish adequate data with each request for approval of a substitute to enable the PROJECT MANAGER to evaluate the proposed substitution.

√ RECORD DRAWINGS (AS-BUILTS) SUBMITTALS

√ Record Drawings are full size drawings (Plans) which are marked up during construction to delineate the actual in-place constructed conditions. Record Drawings shall be provided by the CONTRACTOR for this Project. Requirements for Record Drawings as specified elsewhere shall supplement the requirements specified herein.

A. Record Drawings shall include all changes in the plans including those issued as Change Orders, Plan Clarifications, Addenda, Notice to Bidders, responses to Requests for Information, Jobsite Memos, and any additional details needed for the construction of the Project but not shown on the plans. Substructures encountered while excavating that are left in place shall be located by survey, to the satisfaction of the PROJECT MANAGER, shown, and identified on the Record Drawings. Substructures, including but not limited to concrete structures, electrical conduit and duct banks, drains and sanitary sewer pipelines, process piping, water lines, etc, whose installed location differs from that shown on the original plans shall be precisely located by survey to the satisfaction of the PROJECT MANAGER and recorded on the as-built drawings before backfilling.
B. Mark Record Drawings with red or blue waterproof ink on one (1) set of full size prints to produce a record of the complete installation. Prepare additional drawings that may be required to indicate record conditions on 24" x 36" paper. Additions to Contract Drawings shall employ and use drafting standards, which are consistent with the drafting standards, used in the Contract Drawings.

C. Keep Record Drawings on the job and update during construction and make available for the PROJECT MANAGER'S inspection and copying at all times. The PROJECT MANAGER will review the Record Drawings before submittal of monthly payment requests. If in the opinion of the PROJECT MANAGER, the Record Drawings are not current, approval of the monthly payment may be withheld until the drawings are made current. Submit a signed certification with each monthly payment request stating that the Record Drawings are current and accurate as of the date of the payment request.

D. Where the plans are diagrammatic or lacking precise details, produce dimensioned full size sheets as the Record Drawings. For installations outside of structures, the locations shall be given by coordinates and elevations. Where substructures are encased in concrete, the outside dimensions of the encasement shall also be given.

E. In the case of those drawings which depict the detail requirements for equipment to be assembled and wired in the factory, the Record Drawings shall be updated by indicating those portions which are superseded by final Shop Drawings and by including appropriate reference information describing the Shop Drawings by manufacturer, drawing and revision numbers.

F. At the completion of the Work and after final inspection, copy the Record Drawing (as installed) data, using red ink, onto a new set of high quality prints provided by the CITY. Certify to the completeness and accuracy of the "as installed" information indicated on the prints with its signature. Then deliver as a submittal to the PROJECT MANAGER for review and approval both the field developed prints and the final signed prints as a condition precedent to the CITY'S release of any retained funds.

√ LAYOUT OF WORK
Contractor shall provide all required surveying services for the project. The City will provide electronic files of the project layout and grading for the Contractors use during construction. Grade stakes shall be a minimum size of 1" x 2" and shall be driven a minimum of 12" into ground; each grade stake shall be protected by a flagged lath projecting 24" above ground; grade stakes disturbed by on-site activities shall be promptly reset by the Surveyor.

UNDERGROUND SUBSTRUCTURES
The construction plans provided to the Contractor will show existing on-site underground substructures to the extent of the Department's records. Service lines from other public utilities, including the Department of Water and Power shall be located by notifying UNDERGROUND SERVICE ALERT at 1 - (800) 422-4133 prior to commencing any excavation.

DEPARTMENT OF PUBLIC WORKS STANDARD PLANS
The following Department of Public Works Standard Plans are to be included as a part of these plans:

NUMBER	TITLE
S-444	SIDEWALKS
S-463-3	PEDESTRIAN PIPE GUARDRAILS & HANDRAILS
S-550-1	RETAINING WALL MISCELLANEOUS DETAILS

SSPWC
2014 Edition of the Additions and Amendments to the SSPWC
website: http://eng.lacity.org/techdocs/stdplans/s-600/s61028.pdf

TREE PROTECTION REQUIREMENTS:
ANY FAILURE BY THE CONTRACTOR TO ADHERE TO THE REQUIREMENTS SPECIFIED BELOW WILL RESULT IN THE SUSPENSION OF ALL CONSTRUCTION ACTIVITIES, TO BE DONE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF OR PAYMENT FOR ANY TREES DAMAGED THROUGH NON-COMPLIANCE WITH THESE SPECIFICATIONS. THE MONETARY OR REPLACEMENT VALUE OF IMPACTED TREES WILL BE DETERMINED BY A CITY APPROVED ISA CERTIFIED ARBORIST.

These tree protection specifications shall be followed to protect all trees whose dripline is encroached upon either directly or indirectly by construction within City.
All trees that occur within the area of work, as shown on the plans, and NOT specifically designated for removal, shall be protected by the following means:

1. Defining the Tree Protection Zone (TPZ) - The radius (not the diameter) of the TPZ, measured from the outside of the tree trunk, shall be calculated according to the following:
   (a) Single trunk trees - multiply the trunk diameter in inches, measured 4.5' above grade, by 1.5 feet.
   (b) Multi trunk trees - multiply the sum of the diameters of all trunks in inches, measured 4.5' above grade, by 1.5 feet.
   (c) Palm trees - 5' from the base of the trunk.

(d) If a TPZ is delineated on the plans, the size and shape shown on the plans shall supercede the above requirements.

1. No work is permitted within the TPZ without the approval of: 1) the project Landscape Architect, AND 2) the Project Manager. Any work authorized by Project Manager within the TPZ must be done under the supervision of a Monitoring Arborist. The Monitoring Arborist shall be supplied by the Contractor at his own expense, and be an ISA Certified Arborist or a Registered Consulting Arborist with verifiable experience in protecting trees. The Monitoring Arborist must be approved by Project Manager prior to commencement of work.

2. Within the TPZ, the contractor shall adhere to the following requirements, including, but not limited to:

   (a) No stockpiling or storage of any material, debris, or soil.
   (b) No storage of any construction equipment.
   (c) No vehicular access.
   (d) No un-approved trenching, excavation or disturbance of soil will be allowed.
   (e) No objects of any kind shall be attached to tree trunks.
   (f) For any approved excavation or trenching, no cutting of roots over 2" diameter will be allowed. Contractor shall use a pneumatic drill (a.k.a. "air spade") to excavate under woody roots larger than 2" in diameter. If any roots are unintentionally severed, remedial cuts are to be made under the supervision the Monitoring arborist, and soil backfilled immediately.

3. Within the boundaries of the construction zone (including the TPZ), the contractor shall be responsible for mitigating construction-related dust accumulation on all trees by spraying the trunks, limbs, and foliage with water to a maximum height of 30 feet during the months of April through November, at monthly intervals.

4. Beyond the TPZ, the contractor shall also be responsible for protecting all existing trees to remain in place within the boundaries of the construction zone, including vehicular access areas, lay down areas, and any other areas impacted by construction activities. Any damage to trees in these areas shall also be subject to the same monetary or replacement requirements specified below. Any necessary root cutting in this area must be approved in advance by an ISA Certified Arborist employed by the Contractor.

5. Irrigation to all existing trees NOT specifically designated for removal shall be kept in operation for the duration of the project. Contractor shall be responsible for hand watering all impacted trees if necessitated by temporary shutdowns to or demolition of existing irrigation systems. Trees are to be irrigated deeply and as often as required such that soil moisture is detectable at a minimum depth of 18" using a soil probe.

6. Upon completion of all trenching, grading, excavation and soil preparation work, contractor shall remove all items installed to protect trees during the construction process with approval of the Project Manager.

7. Any of the following Southern California native tree species fall under Ordinance No. 177404 of the Los Angeles Municipal Code:

   (a) Oaks, including Valley Oak (*Quercus lobata)*, California Live Oak (*Quercus agrifolia),* or any other tree of the oak genus indigenous to California but excluding Scrub Oak *(Quercus dumosa);*
   (b) Southern California Black Walnut *(Juglans californica* var. *californica);*
   (c) Western Sycamore *(Platanus racemosa);*
   (d) California Bay *(Umbellularia californica).*

Contractor shall comply with the requirements of the ordinance found at:
http://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf.

DAMAGES
If a tree that is designated to remain is removed or caused to be irreversibly damaged as determined by the Certified Arborist, install a replacement tree matching in size, quality and variety using an installer designated by the Project Manage. If an acceptable replacement tree is not available, pay damages to the City for the value of the damaged tree as assessed by the tree value formula in the ISA Guide for Establishing Value of Trees and Other Plants.

1. GENERAL EARTHWORK

METHODS

The Grading Plan when shall be on the job site at all times.

All grades between contours and/or spot elevations shall be assumed to be straight grades. There shall be no localized depressions or humps, (801-2.1).

The Contractor shall verify all grades and amounts of cut and fill before commencing work.

The area to be filled shall be cleared of all vegetative material, except the existing trees to remain. Protect existing trees during construction per notes herein.

All fill soil shall be compacted to 90% relative compaction. Prior to placing fill, rip existing subgrade to a depth of 6 inches. Intermix first 6 inches of fill placed with ripped subgrade to eliminate interface lens. Place remaining fill in 8" lifts.

Fill material 24 inches, or more, below the finish grade may contain up to 25 percent broken concrete or bituminous paving with maximum dimension of 3 inches of any piece. The top 24 inches of fill shall be Class "A" Topsoil. (800-1.1.2)

The contractor shall be responsible for removal and disposal of all excess soil and debris from the work area, (300-1.3.1, 300-2.6). No soil or debris shall be disposed of on City Property without the permission of the Project Manager.

The Contractor shall conform to Section 7-8.1 of the SSPWC latest edition with the current yearly supplements for clean up and dust control.

Ground water conditions encountered during the course of the work shall be brought to the attention of the Project Manager.

If any grading operation covered by this section shall extend into or through, or shall be commenced during the period of October 15 to April 15, ***the contractor shall be required to submit plans of the temporary erosion control methods and devices he proposes to use in connection with the grading operations to be performed during that period.*** Said plans shall be submitted to the Project Manager for approval on or before September 15 or at least 30 days before any grading is performed during said period.

BID SET - 5/17/2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 2/27/2023 3:18 PM FILE: C:\USERS\37574\DESKTOP\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\EL001 LANDSCAPE CONST NOTES.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT W. T. FISHER No.3069 Signature Renewal Date 08-31-22 STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

CITY ENGINEER	LIC. NO.	DATE:
TED ALLEN, P.E.		
ARCHITECTURAL DIVISION		
ARCHITECT: Richard Fisher	3069	03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY: Jane Adrian		03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION NOTES, SHEET 1

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L001

SHEET 9 OF SHEETS 96

PLOTTED: 3/8/2023 9:12 AM

2. IRRIGATION SYSTEM

MATERIALS

SOLVENT WELDED PLASTIC PIPE
Schedule 40 PVC plastic pipe shall be used for pipe sizes up to and including 2-1/2 inch diameter on both the discharge and supply side of control valves, or any existing PVC lateral line piping designated to remain in place per irrigation plan.

CONTROL WIRE CONNECTIONS
Control wire connections shall be made with 3-M brand of DBY or DBR Direct Burial Splice kits, or approved equal. The splice kit shall consist of a one-piece malleable plastic bulb body with internal locking fingers, filled with re-enterable gel sealant and a Scotchlok Electrical Spring Connector. Materials shall be as follows:

- Connector shall be a flame retardant PVC insulator with a steel spring and shell within. Connector shall be a non-crimping system
- Tube material shall be clear see-through polypropylene.
- Gel material shall be hixotropic calcium organic complex.

DRIP VALVE ASSEMBLY
If not otherwise specified, drip valve assembly shall be Rainbird model XCZ-100-PRB-COM (XCZ-100-PRBR for reclaimed water application) including 1" PESB valve and 1" 40 PSI pressure regulating 200 mesh quick-check basket filter,capable of flow of 0.3 to 20.0 GPM, Inlet Pressure of 15 to 150 psi and regulated output pressure of 40 psi or approved equal. Install per detail.

LANDSCAPE DRIPLINE
If not otherwise specified, dripline shall be shall be Rainbrid Model Number XFS-CV-06-12-XXX dripline with a 4.3 psi check valve or approved equal, nominally sized to 16mm low-density linear polyethylene tubing with integral and evenly spaced pressure compensating emitters, with copper chip inside every emitter, welded to the inside of the tubing at discharge rate of 0.6 gallons per hour spaced at 12" on center. The exterior of the tubing shall be brown in color (purple for reclaimed water application) and conform to an outside diameter (O.D.) of 0.634 inches and an inside diameter (I.D.) of 0.536 inches. Individual pressure compensating emitters shall be welded to the inside wall of the tubing as an integral part of the manufacturing process.

METHODS

EXISTING IRRIGATION SYSTEM REPAIR - GENERAL
The Contractor shall reconstruct any existing irrigation lines that are to remain in service, when they interfere or are damaged by construction. Reconstruction of the irrigation lines shall conform to the applicable sections of the Landscape Construction Notes using all new materials except existing irrigation heads, which may be reinstalled. When modifications to an existing irrigation system are part of the project, the Contractor shall verify the operation of all existing irrigation controllers, remote control valves, quick coupling valves, and irrigation heads prior to the commencement of work. The Project Manager shall be notified, in writing, of any inoperable equipment encountered.

COVER OVER LATERAL LINES:
Maintain 12 inches of cover over all lateral lines except where noted otherwise.

LAYOUT OF PIPING
Pipe layout as shown on irrigation plan is schematic. Contractor may route piping in the most expedient manner consistent with the requirements set forth herein, including avoidance of tree roots. Contractor shall adhere to As-Built requirements as shown below.

DRIPLINE INSTALLATION
Contractor shall lay out dripline using dimensions and spacing indicated on plans before planting takes place. Adjust layout as needed in field to avoid existing trees and shrubs to remain - taking care to avoid placing emitters within 12" of existing plant crowns. Secure dripline in place with 6" metal wire staples (Rainbird TDS-060 or approved equal) installed 48" minimum on center. Two staples shall be installed over every change-of-direction fitting at 90º angles to each other.

LOW VOLTAGE WIRE CONNECTIONS
Connectors shall be DBY or DBR as manufactured by 3M Corp. Control wires shall be stripped of 1/2 inch insulation, inserted into the electrical spring connector, and the connector twisted in a clockwise direction until the wires are tight. Insert the completed splice into the gel-filled tube, and check visually to confirm that the wire nut has been pushed past the fingers and is seated in the bottom of the tube. Position wires in wire channels and close insulator cover.

IRRIGATION SYSTEM FLUSHING AND TESTING
The irrigation system shall be thoroughly flushed after installation of valve, lateral lines and dripline, prior to installation of self flushing valve.

After installation of dripline and completion of planting *BUT PRIOR TO PLACEMENT OF MULCH OR APPLICATION OF PRE-EMERGENT HERBICIDE* contractor shall arrange for coverage test to take place in presence of city Landscape Architect. Before commencement of test, planting area shall be relatively dry (not recently irrigated) so drip system coverage and spread can be evaluated visually. Any adjustments to dripline layout required to achieve adequate watering for all plant materials will be made promptly after testing at no additional cost to city. At the time of testing, contractor shall also review irrigation controller settings with city Landscape Architect.

RECORD DRAWINGS (AS-BUILTS) AND SYSTEM MAINTENANCE
Scaled as-built plans shall be maintained throughout the construction period and turned over to the Bureau of Engineering Architectural Division upon completion and approval.
Contractor shall turn over to the owner (city) instructions on maintaining dripline system, such as water-scheduling and flush valve usage.

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3. LANDSCAPE PLANTING

MATERIALS

√ **ORGANIC AMENDMENT**
"Type 1" organic soil amendment shall be a relatively dry and friable fine-textured organic composite that is well-composted and nitrogen stabilized, derived primarily from composted greenwaste or processed wood products, and free of foreign matter including any viable plant, tree or weed seed. 99% of material shall pass through a 1/2" screen. Salinity: material shall have a maximum saturation extract conductivity of 2.50 millisiemens per centimeter.

Contractor shall submit a sample of the organic soil amendment to the Project Manager for approval prior to installation.

FERTILIZER TABLETS
Fertilizer tablets shall be Gro-Power planting tablets, 7 gram 12-8-8 (N-P-K) 20% HUMUS, 4% HUMIC ACIDS, 3.5% Sulfur, 2% Iron, Micronutrients, as manufactured by Gro-Power Inc., 5065 Telephone Avenue, Chino, CA 91710 (909) 393-3744, or an approved equal.

HERBICIDE
Shall be Finale™, by BASF, or an approved equal. All herbicides, when required, shall be specified and applied by a licensed Pest Control Advisor and in a manner consistent with the manufacturer's product labelling. Prior to application, Contractor shall submit proposed herbicide and a diagram showing the area of application for approval to the Project Manager. All herbicide application areas shall be securely fenced (or within an area secured by project construction fencing) to keep unauthorized persons from entering the application area for 48 hours during and after application.

PRE-EMERGENT HERBICIDE
Shall be Ronstar Granular, by Elanco, or an approved equal. All pre-emergent herbicides, when required, shall be applied by a licensed Pest Control Applicator. (If planters are relatively weed-free, Pre-Emergent Herbicide need not be applied.).

√ **TOP DRESSING MULCH**
Shall be semi-decomposed wood chip mulch (NOT bark), free all foreign matter including weed and tree seeds. Mulch chip size shall be minimum one (1) inch in diameter and not more than two (2) inches in diameter. Submit sample of mulch and source to the Project Manager for approval prior to application.

PLANT MATERIALS:

a. **ALL PLANTS**: The plant names shown or listed on the Contract Drawings shall conform to the "Sunset Western Garden Book," latest edition unless otherwise specified. In all cases, botanical names take precedence over common names.

b. **QUALITY**: All plants shall have a growth habit normal to the species in accordance with U.S.A. Standards for Nursery Stocks, latest editions; shall be sound, healthy, vigorous and free from insect pests, plant disease, sun scalds, fresh bark abrasions, excessive abrasions or other objectionable disfigurements. Tree trunks shall have normal well-developed branch systems, and vigorous and fibrous root system, not root bound and shall be free of kinked or girdling roots.

c. **TYPE AND SIZE**: Plant materials shall be as listed on the Contract Drawings, unless otherwise instructed by the Project Manager. In case of conflict between the plant schedule totals and total plant count of the contract documents, the Contractor shall the higher number of plants.

d. **DELIVERY OF PLANT MATERIAL**: shall begin only when it is ready for the work and after the inspections are made and any required soil samples and tests have been reviewed by the Project Manager. All materials furnished for the work shall be not less than the reviewed sample. Upon delivery, Contractor shall tag one plant of each variety for identifying purposes.

e. **PRUNING**: Other than normal side pruning during the growth period, no pruning shall be done prior to the inspection at the nursery.

f. **TREES**: All trees shall conform to types, sizes and heights noted on the Contract Drawings. All trees shall be measured for height from the root crown to the last division of the terminal leader and measured for the diameter 3 feet above the root crown. All palm trees shall be measured for height from the root crown to the brown trunk and measured for the diameter 3 feet above the root crown. Trees and plams shall stand erect without support.

All trees shall be staked as designated on the Contract Drawings. Wood tree stakes shall be 2 inches in diameter by 10 feet long, lodgepole grade, pressure treated, capable of standing in the ground at least two years.

METHODS

TOPSOIL PREPARATION - FOR AREAS OUTSIDE EXISTING TREE PROTECTION ZONE
The type and thickness of topsoil shall be as shown on the plans. If not shown, the topsoil shall be the existing class "C" on-site topsoil. Topsoil shall be scarified and cultivated to a uniform, finely divided condition to a depth of 9 inches. Remove all stones over 1 inch in greatest dimension, to a depth of 6 inches below finish grade. ***All soil amendments shall be thoroughly and uniformly incorporated***. Prior to planting, the top 2 inches of all areas (including slopes) shall be free of weeds, stones and other deleterious matter 1 inch in diameter and larger. Soil shall not be worked when it is so wet or dry as to cause excessive compaction or the formation of large clods or dust.

TOPSOIL AMENDMENT MATERIALS
If not otherwise specified, areas to be planted shall receive the following soil preparation:
2 cubic yards, Type I organic soil amendment per 1,000 sq. ft.
5 lbs. Agricultural Gypsum per 1000 sq. ft.
25 lbs. Gro-Power Plus fertilizer per 1000 sq. ft.

The soil amendment materials shall be uniformly cultivated into the soil to a depth of 12 inches minimum and thoroughly watered. During soil preparation, take care not to damage tree roots over 1-inch. Amending soil by hand excavation may be required in some areas to avoid damaging the roots.

PLANTING BACKFILL MIX
Plants shall be backfilled with thoroughly amended site soil per "Topsoil Preparation" specification.

Each plant pit (other than native plants) shall also receive Gro-Power 7 gram 12-8-8 planting tablets as shown in the relevant planting details, and as follows:
1 gallon - 1 tablets
5 gallon - 2 tablets
15 gallon - 4 tablets
24" box - 8 tablets

Space tablets evenly around the perimeter of the rootball, approximately 3" inches below finish surface.

TOPSOIL PREPARATION FOR AREA WITHIN EXISTING TREE PROTECTION ZONE
Do not cultivate or rototill the areas in the tree protection zone. The backfill of the soil for each plant pit here shall be a uniform mix, consisting of 80% native site soil and 20% amendment materials (see above section in "TOPSOIL AMENDMENT MATERIALS"). The planting pit shall be free of weeds, stones and other deleterious matter 1 inch in diameter and larger.

√√ **FINISH GRADING**
Finish grading of lawn areas shall take place after the soil has dried out to a workable condition following the soil preparation operations. The soil shall be regraded and smoothed to the required grades and contours, then rolled in two directions at right angles with a water ballast roller weighing 200 to 300 pounds. Any resulting irregularities in the grade after the initial rolling shall be re-raked, cut or filled, then re-rolled until the grade is free from irregularities. No heavy objects shall be taken over the areas at any time. The final finish grade shall be uniform, without abrupt changes in grade, within one-tenth of a foot of the grades shown on the plan, and approved by the Project Manager prior to seeding. (801-2.3).

WEED ABATEMENT ("GROW AND KILL"):
Weed abatement shall apply to all planting areas. The abatement operation shall be commenced only after demolition, grading, hardscape, construction, installation of irrigation system, and fine grading of planting areas have been completed. Since the site is relatively weed free, herbicides may be unnecessary, and the contractor may propose other methods of weed control.

NOTE: It is required that herbicides be applied by a licensed **PEST CONTROL APPLICATOR.**

WEED ABATEMENT: GROW AND KILL METHOD
Weed abatement shall apply to all areas to be planted or mulched. Be advised that herbicide only works on actively growing plant material and it is ineffective on dormant plants such as Bermuda Grass. Follow manufacturer's instructions carefully under the drip line of existing trees.

Contractor shall follow the "grow and kill" steps set forth below:
Demolition: Clear site of all dead or living vegetative growth by hand or mechanical means. Contractor shall keep site free of all weeds and undesirable vegetation until commencement of Step 1.
Step 1. Treat all vegetation to be removed with herbicide at a minimum application rate as indicated by manufacturer. Apply to all plant material designated for removal per manufacturer's instructions..
Step 2. After a minimum of 48 hours from completion of the herbicide spraying, clear site of all dead or living vegetative growth by hand or mechanical means. Do not water during the 48 hour period.
Step 3. Thoroughly water all turf and planting areas as needed to keep soil evenly moist for a period of at least two weeks. Hand water if needed.
Step 4. At the conclusion of the 2-week period, treat all remaining live plants designated for removal with herbicide per above.
Step 5. After two week kill period, remove all dead plant growth. If any living plants are observed, entire plant, including roots, shall be carefully removed by hand. Minimize physical disturbance of the soil.

CONTRACTOR RESPONSIBILITY DURING HERBICIDE WEED ABATEMENT OPERATION AND APPLICATION PRECAUTIONS
The Contractor shall abide by all laws and codes governing weed abatement operations including but not limited to CAL-OSHA requirements and The Healthy School Act which includes 72 hour notice to employees and patrons, submittal of a "Pest Control Recommendation Form" to Project Manager, and a completed and accurate SDS (Safety Data Sheet) to be at the site of application. The area of application shall be posted as such and barricaded for public safety and information. On sites over ½ acre in size the contractor shall utilize a Project Manager approved plan of phasing the application.

The Contractor is responsible or any and all damage done to plant materials outside of the treatment area. Contractor shall replace, in kind and size, any plant material damaged or killed through the application of herbicide.

Any Contractor, who is obligated under contract with the City for the construction or refurbishment of a project that involves the intended use of herbicides or other pesticides, must first notify the Project Manger. Prior to any approved pesticide applications at any recreation/child care center, the contractor is also required to notify the Construction Manager at least 72 hours in advance of the date/s of application. This is to conform to the State of California Healthy Schools Act of 2000(AB2260). Also, all pest control work performed at any facility should fall within the guidelines of the City's IPM programs. In addition, each individual project will require a written recommendation by a licensed Pest Control Advisor for any pesticide application.

Any questions regarding pesticide application and procedures shall be directed to the Project Manager.

In addition to the listed responsibilities the following precautions shall be observed in handling and applying herbicide:

1 Before applying, Contractor shall read and understand all instructions provided by the manufacturer.
2 Product shall not be used when winds are gusty or in excess of 3 miles per hour, or whenany other conditions exist, which would result in drift.
3 Avoid combinations of pressure and nozzle type or adjustment that result in mist.
4 Do not apply during rain, or if rain is forecast within twelve hours. If rain occurs within twelve hour period, material must be reapplied after plant growth has dried out.
5 Contractor shall observe extreme care not to allow spray to contact desirable plant material. Use cardboard, plywood, or other appropriate material to shield plant materials outside of the treatment area from overspray.
6 Do not apply to bare ground.
7 Do not add any other products to any herbicide mix, including spreader stickers or surfactants, unless required by the label directions and approved by the City's Pest Control Advisor (PCA).

WEED SUPPRESSION (NON-HERBICIDE WEED REMOVAL)
After planets are installed, weed suppression, shall apply to all planting areas. The suppression operation shall be commenced only after removals, grading, hardscape construction, installation of irrigation system, soil preparation, and fine grading of turf and planting areas have been completed. Contractor shall thoroughly water all turf and planting areas for a period of two weeks minimum prior to commencing removal. Contractor shall clear site of all dead vegetation and living weeds by hand or mechanical means. All removed vegetation shall be properly disposed of off site.

√√ **PLANT MATERIAL INSPECTION**
All plant materials, including plants previously approved at the nursery, shall be inspected by the Landscape Architect prior to planting. The Contractor shall be responsible for the condition of all plants, planted or otherwise, until final acceptance by the City and termination of maintenance period. Contractor shall be obligated to honor all requirements of warranty as indicated herein. Contractor shall perform planting with materials and equipment according to procedures favorable to the optimum growth of the plant. Do not plant during windy conditions. Except as noted for specimen planting, do not start planting operations until the completion of weed suppression and completion and acceptance of the irrigation system for specimen

PLANT PROTECTION AND STORAGE
Keep all plant materials delivered to the job site in a healthy condition for planting. Do not allow plants to dry out or suffer physical damage from other construction activities.

√√ **PLANTING LAYOUT**
Plant locations indicated on the Contract Drawings are approximate. Contractor shall make a detailed layout of plants, etc., in the planting areas and obtain approval of the Landscape Architect prior to actual planting operations. Plants may be re-spotted prior to planting as directed by the Landscape Architect without additional cost to the City.

Locate the first row of plants in areas designated for on center spacing at one-half the designated spacing from the edge of the area. Do not stretch the maximum specified spacing for each species shown on the plans.

Plant pits for all 1 gallon, 5 gallon, 15 gallon, and all boxed size trees, shall be twice the width and equal to the depth of the container rootball. Note that this requirement differs from the SSPWC (801-4.5).

PLANTING
Make planting holes, for boxed material, approximately square with vertical sides **no greater than** the depth of the plant container (or such depth as needed so that the root crown has the correct relationship to adjacent finished grade per the planting details) and approximately twice the width of the plant container or rootball and larger if necessary to permit handling and planting without injury to the root system. Lightly scarify native soil at the bottom of planting holes.

Specimen Planting: When in close proximity to irrigation lines, plants in boxes (24 inches or larger) may be planted before installation of lateral irrigation lines. Re-rout irrigation lines in conflict with specimen plant locations to clear the rootball.

Do not plant plants with a broken or cracked rootball. Such plants shall be considered defective and rejected.

Open and remove plant containers in such a manner that the plant roots are not injured. Do not pull plants out of the pot by the stalk.

After "water settling" the bottom half of the planting hole, set the plant approximately in the center of the planting hole and adjust the root crown to the correct relationship to finish grade per the planting details. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half the height of the rootball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the rootball and adjacent soil. The remainder of the hole shall be backfilled and watering repeated.

Prune or remove any broken or damaged minor limbs. Any major damage to plant material shall be brought to the attention of the Project Manager.

Immediately after planting, form a circular watering basin slightly larger than the planting hole: 6 inches high for trees and 3 inches high for shrubs. The bottom the basin shall be at the level of the surrounding finish grade.

Restore the area around the plants and watering basins to designated finish grade and dispose of excess soil.

After planting, plants shall be plumb, with the root crown at the correct relationship to finish grade per the planting details. All plants which settle more than 1 inch shall be raised by the Contractor to the correct level, as shown in the planting details, at no additional cost to the City.

Remove all watering basins around trees planted in lawn areas at the end of the maintenance period. All trees planted in lawn areas shall have a 36 inch diameter unplanted area around each tree.

MULCHING
All planting areas designated shall receive a minimum three (3) inch deep layer of Top Dressing Mulch per the Landscape Construction Notes Materials list. Mulch shall be spread evenly throughout planting beds and tree watering basins. Do not bury plant crowns. Prior to placing mulch, apply pre-emergent herbicide per manufacturer's instructions.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 2/27/2023 3:18 PM FILE: C:\USERS\37574\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L002 LANDSCAPE CONST NOTES.DWG

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT No.3060 STATE OF CALIFORNIA
Signature
Registration Date
Renewal Date
10-31-22

CITY ENGINEER	TED ALLEN, P.E.		DATE:
ARCHITECTURAL DIVISION		LIC. NO. 3060	03-01-22
ARCHITECT:	Richard Fisher		03-01-22
DESIGNED BY:	Gregorry Nunio/Greg Moeser		03-01-22
DRAWN BY:	Gregorry Nunio/Greg Moeser		03-01-22
CHECKED BY:	Jane Adrian		03-01-22
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION NOTES SHEET 2

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L002
SHEET 10 OF SHEETS 96

PLOTTED: 3/8/2023 9:12 AM

√√ PLANT ESTABLISHMENT PERIOD

The plant establishment period shall be for a period of 90 days unless extended as described in this section. The plant establishment period shall be started when all planting and related work has been completed in accordance with the contract documents and approved by the Project Manager. The beginning of the plant establishment period shall be determined by an on-site review by the Project Manager. The Contractor shall immediately replace any and all plant materials and/or grass which, for any reason dies or is damaged while under the Contractors care. Replacement shall be made with seed and/or plants as indicated or specified for the original planting.

The Contractor shall be responsible for maintenance within the area of work ***throughout the period of construction and the plant establishment period***. Broken or vandalized trees, shrubs, ground covers or tree stakes shall be repaired/replaced to a condition as initially installed within seven (7) days of damage. The maintenance shall include continuous operations of picking up trash and emptying trash cans daily, watering, the removal of all weeds in planting areas, control of pests, insects and rodents, reseeding, plant replacement (irrespective of cause), or any other operations necessary to assure normal plant growth, and the collection and removal of all trash daily. The Contractor shall maintain the area of work at maximum seven (7) day intervals.

Any malfunctions of, or damage to, the irrigation system caused by the Contractor in the prosecution of his work shall be repaired within 24 hours.

The designated plant establishment period is part of the total contract time. The plant establishment period will be extended at fourteen (14) day intervals if, at the end of the plant establishment period, the planting, irrigation and other improvements do not reflect the intent of the plans and Landscape Construction Notes. All extensions of the plant establishment period shall be subject to the assessment of liquidated damages, (801-6).

All 1 and 5-gallon container shrubs and ground covers shall be guaranteed for a period of ninety (90) days from the end of the plant establishment period. All trees and shrubs 15 gallon size or larger shall be guaranteed for a period of one (1) year from the end of the plant establishment period.

INSPECTIONS

All work and materials are subject to inspection and approval by the Project Manager. The Contractor shall notify the Project Manager three (3) days prior to inspection. Work shall be done only in presence of the Project manager, unless otherwise approved. Any work done without proper inspection will be subject to rejection. The Project Manager and any authorized representatives shall at all times have access to the Work during its construction at shops and yards and while in storage, as well as to the Work site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship conform to the Contract Documents. Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

The Contractor shall notify the Project Manager three (3) days prior to inspection of the following for approval:

√√**1. TREE TAGGING:** Tagging of 24" box or larger trees at the grower with owner tags by the Landscape architect. This inspection will be for compliance with the caliper, height and spread requirements if given on the plant legend and general health, structure and appearance of plants. See Planting section of Landscape Construction Notes.

√√**2. ON-SITE PLANT MATERIAL INSPECTION:** Inspection of all plant materials under 24" box size upon delivery to the job site. This inspection will be for compliance with the caliper, height and spread requirements if given on the plant legend and for the general health, structure and appearance of plants. The Contractor shall also stake all tree planting locations at this time for review and approval by the Project Manager. See Planting section of Landscape Construction Notes.

√√**3. FINISH GRADE REVIEW:** For all finish grades in planting areas following rolling in turf areas and prior to landscape container planting.

4. CONCRETE

All non-structural concrete construction - except City Sidewalk - shall be as specified in this Section.

MATERIALS

BASE MATERIAL
Base material for Portland Cement concrete shall be (CMB) crushed miscellaneous base, (200-2.4).

CONCRETE SPECIFIED BY CLASS
Placed concrete shall be class 520-C-2500, maximum 4 inch slump. Pumped concrete shall be class 560-E-2500, maximum 6 inch slump. A complete delivery receipt shall be required for each truckload of concrete delivered. The receipt shall be given to the BCA Inspector, (201-1.1.2).

PORTLAND CEMENT
All cement shall be Type II, low alkali Portland cement conforming to ASTM C150 (201-1.2).

AGGREGATES
The aggregates for all concrete construction shall be fractured face aggregates obtained from a quarry in the San Gabriel River drainage area only and shall be certified non-reactive by an approved testing laboratory as approved by the Bureau of Contract Administration, (201-1.2.2).

COMBINED AGGREGATE GRADINGS
Combined aggregate gradings for Portland Cement shall be as specified under this section, (201-1.3.2).

EXPANSION JOINTS
Expansion joints shall use a 3/8 inch thick asphalt impregnated felt expansion joint.

JOINT URETHANE SEALANT
When specified, expansion joint material shall be urethane elastomeric sealant for concrete pavement shall be Lithoseal Trafficalk-G3 by L. M. Scofield Company, or an approved equal, (201-3). Color to match concrete.

EXPANSION JOINT PREMOLDED ASPHALTIC JOINT MATERIAL
When specified, expansion joint material shall be 1/4 inch thick asphaltic joint material as manufactured by Sealtight Co., or an approved equal, (201-3).

REINFORCING STEEL
Shall be grade 60 billet steel, (201-2.2).

DOWELS (EXPANSION AND END-OF-POUR JOINTS)
Shall be grade 60 billet steel, (201-2.2).

END OF POUR JOINTS
End of pour joints shall be 1/4 inch thick asphaltic joint material as manufactured by Sealtight Co., or an approved equal, (201-3).

COLORED CONCRETE ADMIXTURES
Admixtures for colored concrete shall be Lithochrome Color Hardener by L.M. Scofield Company (800) 800-9900, or Davis Mix-in Colors for concrete by Davis Colors, (800) 800-6856, or an approved equal.

METHODS

SUBGRADE AND BASE PREPARATION AND COMPACTION
Subgrade under all concrete shall be prepared and compacted in accordance with Section 303.1 of the "Greenbook" but superceded by the "Earthwork" Section in Supplemental Geotechnical Report dated 9-13-2018 and stated below:

"Prior to fill placement, the excavation bottom shall be scarified 6 inches, moisture conditioned and compacted to a to at least 90 percent relative compaction (RC), as determined by ASTM D 1557. If native soil is encountered at the bottom of footing elevation, this material shall be scarified at least 12 inches, moisture conditioned, and compacted to at least 95 percent RC. The earthwork shall result in at least 12 inches of compacted fill beneath all structural foundations. The lateral over-excavation shall extend at least 1 foot beyond the edge of the footings.

All deleterious materials, including materials greater than 3 inches in diameter, shall be removed if existing fill and native soil can be reused as compacted fill.

Fill shall be moisture conditioned to within 3 percent above the optimum moisture content and compacted. Primary structural fill beneath footings shall be compacted to at least 95 percent RC; however, 90 percent RC is acceptable if the results of a hydrometer test indicate the clay content of the fill material is at least 15 percent. All secondary fill, including retaining wall backfill, shall be compacted at least 90 percent RC."

EXPANSION JOINTS
Shall be placed against previously constructed concrete structures or as indicated in the plans (303-5.4.2) and the applicable details.

√√**CONCRETE SURFACE FINISHING**
Concrete walks, pads, or mow strips shall have a medium broom finish, unless otherwise noted on the plans. The Contractor shall prepare a minimum three foot by three foot sample for approval by the Project Manager before any concrete is placed, (303-5.5.3). Any sidewalk in the public street right of way constructed as a portion of this contract shall be finished as directed by the BCA Inspector.

PAVEMENT MARKINGS
Paint for parking stalls and game courts shall be regular dry type non-reflective paint, applied to a wet film thickness of 7 mil. Paint shall be Zone-Loc, Traffic Line Paint, as manufactured by Morton, or an approved equal, in the specified color, (310-5.6 and 210.6)

5. CHAIN LINK FENCING AND MISCELLANEOUS METAL CONSTRUCTION

MATERIALS

√√**CHAIN LINK FENCING**
Chain link fencing materials shall be as specified in the applicable details and Section (206-6).

√√Pipes for posts, braces and rails shall be Class 1, Schedule 40, ASTM F 1083 or, Class 1A, with a minimum 50,000 psi yield strength. Class 1 pipe shall be galvanized as indicated in this section of the Landscape Construction Notes. Class 1A pipe shall have a minimum hot dipped zinc coating of 0.9 oz./Sq. Ft., 15 micrograms of chromate per square inch and a minimum or 3 mils of acrylic coating on the exterior of the pipe. The interior coating of Class 1A pipe shall be hot dipped galvanized with .9 oz/ Sq. Ft. Zinc. Materials for chain link fence posts, rails and braces shall be sized as follows:

NOMINAL SIZE (Inches)	ACTUAL O.D. (Inches)	Class **1** Pipe Wall Thickness	Class **1** Weight Lbs per lin. ft.	Class **1A** Pipe Wall Thickness	Class **1A** Weight Lbs/L.F. (Pounds)
1 1/4"	1 5/8"	.140	2.27	.110	1.82
1 1/2"	1 7/8"	.145	2.72	.120	2.28
2"	2 3/8"	.154	3.65	.130	3.12
2 1/2"	2 7/8"	.203	5.79	.160	4.64
3"	3 1/2"	.216	7.57	.160	5.71
3 1/2"	4"	.226	9.11	.160	6.56
4"	4 1/2"	.237	10.79	NA	NA
6"	6 5/8"	.280	18.97	NA	NA

CHAIN LINK FABRIC
Galvanized steel chain link fabric shall conform to ASTM A 392, Class 2, 1.20 0z./Sq.Ft. zinc. Fabric shall be 9 gauge and be woven in a 2" mesh unless otherwise indicated on the plan. Top and bottom selvages shall be knuckled.

STEEL SHAPES
All structural steel shapes shall be as specified in the applicable detail.

√√**GALVANIZING**
Where called out, metal products shall be hot dipped galvanized in accordance with **TABLE 210-3.2(A)** of the SSPWC.

√√**MANUFACTURER'S CERTIFICATE OF COMPLIANCE**
The manufacturer of the Chain link fabric, fence posts, rails and braces shall provide the Contractor a Certificate of compliance for each shipment sent to the project site. The Certificate shall state that the materials delivered conform the specification for materials as described in these Landscape Construction Notes. The Certificate of Compliance shall be delivered to the Project Manager and BCA Inspector before any fencing materials are installed at the project site

REPAIRING OF DAMAGED GALVANIZED SURFACES
Galvanized surfaces which have been damaged in transport or during installation shall be re-coated using the metalizing process or zinc oxide, zinc dust paint per Section 210-3.5 of the Standard Specification.

TUBULAR STEEL SHAPES
Cold formed shapes for tubular steel fencing shall conform to ASTM A 500, Grade B, in the size and wall thickness shown on the plans and details. Unless specified on the plans all post and rails shall be 3/16" thick. All pickets for fencing shall be minimum 11 gauge.

√√**TUBULAR STEEL WELDING**
Shall conform to the AWS code for procedures, appearance and quality. All welds shall be ground smooth. All fabricated metal fencing panels shall be shop assembled and welded.

√√**PAINTING (TUBULAR STEEL AND CHAIN LINK FENCING WHEN REQUIRED)**
"Factory" coated tubular steel fencing or chain link fencing shall be exempted from this requirement. All other shop fabricated tubular steel fencing or fencing constructed on site shall be painted in accordance with the requirements for painting "Ferrous Metal (Non-galvanized) Surfaces" below. The two finish coats shall be black unless otherwise specified.

METHODS

CHAIN LINK FENCE
Chain link fence shall be installed and stretched tight between posts.

All connection bolts shall not extend more than 1/4 inch past the end of the nut and be free from burrs.

TUBULAR STEEL PAINTING
Prior to priming and painting, all steel shall be made free of loose mill scale, rust, oil and grease. Welds shall be smoothed by grinding. Damage to "factory" coated tubular steel or chain link fencing shall be repaired after installation by sanding damaged paint surfaces and by applying one coat of manufacturer specified primer and two new coats of specified color coat.

6. POROUS ASPHALT CONCRETE PAVING

GENERAL

THE REQUIREMENT

The CONTRACTOR shall furnish all tools, equipment, materials, and supplies and shall perform all labor required to complete the work as indicated in the Contract Documents and specified herein. This section covers the work necessary to construct the porous asphalt parking lot.

RELATED WORK SPECIFIED ELSEWHERE

Earthwork section of these Landscape Construction Notes.

REFERENCE SPECIFICATIONS, CODES AND STANDARDS

Work shall comply with the applicable reference specifications as specified in the GENERAL REQUIREMENTS.

Work of this section shall be performed in accordance with the Standard Specifications for Public Works Construction (SSPWC), unless otherwise specified herein.

CONTRACTOR SUBMITTALS

Submittals shall be made in accordance with the GENERAL REQUIREMENTS, and the requirements of this section.

Samples: Prior to the delivery of specified aggregate to the site, the CONTRACTOR shall submit samples of the material for the INSPECTOR's acceptance in accordance with SSPWC Section 4-1.4. Samples shall be typical of materials to be furnished from the proposed source and in conformance with the specified requirements.

The CONTRACTOR shall formulate a job-mix formula using the Marshall Method in accordance with SSPWC Section 203-6.3.2 and submit it to the ENGINEER for approval. The resultant mixture shall have Marshall properties conforming to SSPWC Section 203-6.3.2:

Certificates:
1. Twenty days prior to the delivery of aggregates, asphalt materials, and paving mixes to the project site, the CONTRACTOR shall submit to the ENGINEER certificates and test results of compliance of such materials with these Specifications.
2. Where laboratory testing is specified herein, the CONTRACTOR shall employ an independent testing laboratory to conduct such tests and submit certificates of the test results.

QUALITY ASSURANCE

Quality assurance will be provided by the INSPECTOR. The CITY will provide inspection at the asphalt plant and laboratory services within 50 miles of the geographical limits of the CITY. The CONTRACTOR shall be responsible for quality control.

PRODUCTS

GENERAL

The CONTRACTOR shall make all tests necessary to locate a source of materials that meet the Specifications. Final approval of the aggregate material will be based on tests of material taken by the CONTRACTOR from the compacted base course.

POROUS ASPHALT

Porous asphalt concrete shall consist of open-graded mineral aggregate mixed with paving asphalt and shall conform to the requirements of SSPWC Section 203-15 POROUS ASPHALT CONCRETE. The grade of asphalt binder mixed with the open graded-mineral aggregate must be PG 64-10 and conform to the requirements of SSPWC Section 203-15.2.1 – PAVING ASPHALT. The aggregates must comply with SSPWC Section 203-15.3 - COMPOSITION AND GRADING. Porous asphalt concrete shall conform to the requirements of 203-15.3.

BASE COURSE

1. Pavement Base Material shall consist of clean, mechanically crushed stone, substantially free from adherent coatings. Materials shall be washed thoroughly to remove clay, organic matter, extraneous debris, or objectionable materials. Recycled materials are not permitted.
2. Pavement Base shall consist of up to two (2) layers as specified on the Plans and included herein: ASTM No. 57 (modified) stone and ASTM No. 2 (modified).
3. Pavement Base Material shall meet the following specifications for grading and quality:
4. Aggregate Gradation tested in accordance with ASTM C136 at least once per 500 cubic yards of base material.

Sieve[1]	Percent Passing by Weight	
	ASTM No. 2 (modified)	ASTM No. 57 (modified)
3 inch	100	--
2 1/2 inch	90 to 100	--
2 inch	35 to 70	--
1 1/2 inch	0 to 15	100
1 inch	--	95 to 100
3/4 inch	0 to 5	--
1/2 inch	--	25 to 60
3/8 inch	--	--
No. 4	--	0 to 10
No. 8	--	0 to 5
No. 16	--	--
No. 100[2]	0 to 2	0 to 2

[1]Sieve provided in nominal size square openings or United States Standard Sieve Series sizes.
[2]Gradation modified from ASTM for portion passing the No. 100 sieve.

5. R-Value: 78 (minimum) tested in accordance with California Test 301.
6. L.A. Abrasion: 30 percent (maximum) tested in accordance with ASTM C 131.
7. Cleanness Value: 75 (minimum) tested in accordance with California Test 227 at least once per 500 cubic yards of base material.
8. Crushed Particles: 90 percent (minimum) with two (2) or more fractured faces tested in accordance with California Test 205.

ASPHALT CEMENT

Asphalt cement for binder shall be PG 64-10 paving asphalt and shall conform to the requirements of SSPWC Section 203-1 PAVING ASPHALT.

GEOGRID

Geogrid shall be Tensar InterAx NX850 Geogrid or approved equal.

PARKING LOT STRIPING MATERIAL

Fuller "Traffic Line Paint" or J. E. Bauer Co. "Zonelac Traffic Paint" or other colors as otherwise noted on drawings.

MATERIALS NOT TO BE USED:

The following materials shall not be used unless approved in advance by the Engineer.
A. Tack Coat (except on vertical faces of curbs, edges of PCC structures).
B. Asphalt Rubber Binder.
C. Crumb Rubber Modifier.
D. Reclaimed Asphalt Pavement.

EXECUTION

PREPARATION OF SUBGRADE

1. The existing soil shall be removed to a depth of at least 12 inches below the finish subgrade elevation. the base of the excavation shall be scarified at least 6 inches, moisture conditioned between 0 and 3 percent above optimum moisture content, and mechanically compacted to at least 90 percent relative compaction (RC) per ASTM D1557.
2. The 12 inches of excavated soil shall be replaced as compacted fill. Loose lift thickness shall not exceed 8 inches. the soil shall be moisture conditioned between 0 and 3 percent above optimum moisture content, and mechanically compacted to at least 93 percent RC.
3. A layer of Tenser Interax 850 or equal shall be placed along the entire base of compacted subgrade in accordance with the manufacturer's specifications/requirements.
4. The CMB/CAB in the porous pavement section shall be moisture conditioned between 0 and 3 percent above optimum moisture content, and mechanically compacted to at least 93 percent RC.

CONSTRUCTION OF POROUS ASPHALT CONCRETE PAVEMENT

Lay asphalt concrete over the base in accordance with the SSPWC Section 302-13.1. The method of proportioning, mixing, transporting, laying, processing, rolling the material, and the standards of workmanship shall conform to the applicable requirements of SSPWC Section 302-5 ASPHALT CONCRETE PAVEMENT and SSPWC Section 302-13 POROUS ASPHALT CONCRETE PAVMENT. At no time shall the coarse aggregate that has segregated from the mix be scattered across the paved mat.

The INSPECTOR will examine the base before the paving has begun. The CONTRACTOR will correct any deficiencies before the paving is started. Rolling of porous asphalt concrete shall conform to SSPWC Section 302-13.3.

TESTING

Upon completion, the pavement shall be true to grade and cross section. When a straight edge is laid on the finished surface, the surface shall not vary from the edge of the straightedge no more than ⅛"h inches, except at the intersection or at the change of grade.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2008
REVISION DATE: 2/27/2023 3:18 PM FILE: C:\USERS\97574\BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\3\DESIGN\LANDSCAPE\L003 LANDSCAPE CONST NOTES.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

BUILDING NO. -
SERIAL NO.
DATE: BY:
NO. REVISIONS:
INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER DATE
ARCHITECTURAL DIVISION
ARCHITECT: Richard Fisher LIC. NO. 30662 03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser 03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser 03-01-22
CHECKED BY: Jane Adrian 03-01-22
APPROVED BY: STEVEN PIERCE, AIA, PRINCIPAL ARCHITECT 03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: LANDSCAPE CONSTRUCTION NOTES, SHEET 3
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L003
SHEET 11 OF SHEETS 96

PLOTTED: 3/8/2023 9:16 AM

CLEANUP

Clean all debris and unused materials from the paving operation. Clean all surfaces that have been spattered or defaced as a result of the paving operation. Asphalt or asphalt stains which are noticeable upon surfaces of concrete or materials which will be exposed to view shall be promptly and completely removed. Cleaning shall be done in a manner that will not result in any discharge of contaminated materials into any catch basin.

PARKING LOT STRIPING, LETTERS, ARROWS

A. Materials: As hereinbefore specified.
B. Lines: 4" wide or as indicated on the Drawings.
C. Letters: Sizes and strokes as indicated on the Drawings. Minimum dry paint thickness shall be 15 mils.
D. Handicapped Parking Striping: Sizes and colors are in conformance with the State of California, Code of Regulations, Title 24. An International Symbol of Accessibility symbol shall be stenciled at the rear of the parking space. Each accessible parking unloading zone shall be marked.
E. Traffic Striping: As indicated on the drawings and in conformance with Section 310-5.6.5 - TRAFFIC STRIPES AND MARKINGS of SSPWC.
F. Preparation: All surfaces to be free of dirt, grease or other foreign materials. Remove existing markings by sandblasting or other approved methods.
G. Application: Apply one heavy undiluted coat with traffic line painting equipment in locations indicated on the Drawings in uniform coverage, free from light spots and with all edges clean-cut and true. Paint by spray can shall not be allowed. Minimum dry paint thickness shall be 15 mils.

7. PERMEABLE PAVERS

REFERENCES

A. American Society of Testing Materials (ASTM)
1. C936, Standard Specification for Solid Concrete Interlock Paving Units
a. Clarification, Section 1.2 - Hydro-Flo pavers have the desired special feature of being permeable. Therefore, regarding Section 5.4, by design, the absorption rate is greater for Hydro-Flo pavers than the 5% desired for non-pervious pavers. Similarly, for Section 5.3 the compressive strength for Hydro-Flo pavers is less than the 8,000 psi required for non- pervious pavers as the main property of pervious concrete, permeability, is inversely proportional to strength.
2. C140, Standard Test Methods of Sampling and Testing Concrete Masonry Units
3. C136, Method for Sieve Analysis for Fine and Coarse Aggregate
4. C33, Specification for Concrete Aggregates
5. D2940, Standard Specification for Graded Aggregate Material for Bases

√ **SUBMITTALS**

A. In accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
B. Manufacturer's drawings and details: Indicate perimeter conditions, relationship to adjoining materials and assemblies, [expansion and control joints,] concrete paver [layout,] [patterns,] [color arrangement,] installation [and setting] details.
C. Sieve analysis per ASTM C 136 for grading of bedding and joint sand.
D. Concrete pavers:
1. Four representative full-size samples of each paver type, thickness, color, finish that indicate the range of color variation and texture expected in the finished installation. Color(s) selected by Landscape Architect as specified on contract drawings.
2. Accepted samples become the standard of acceptance for the work.
3. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

E. Paver Installation Subcontractor:
1. A copy of Subcontractor's current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.

QUALITY ASSURANCE

√ A. Paving Subcontractor Qualifications:
1. Utilize an installer having successfully completed concrete paver installation similar in design, material, and extent indicated on this project.
2. Utilize an installer holding a current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.

√ √ B. Mock-Ups:
1. Install a 5 ft x 5 ft paver area.
2. Use this area to determine surcharge of the bedding sand layer, joint sizes, lines, laying pattern(s), color(s) and texture of the job.
3. This area will be used as the standard by which the work will be judged.
4. Subject to acceptance by owner, mock-up may be retained as part of finished work.
5. If mock-up is not retained, remove and properly dispose of mock-up.

DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Refer to manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers packaging with identification labels intact.
1. Deliver concrete pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by fork lift or clamp lift.
2. Unload pavers at job site in such a manner that no damage occurs to the product.

D. Storage and Protection: Store materials protected such that they are kept free from mud, dirt, and other foreign materials.

E. Extra materials: Contractor shall provide owner with (2) 50lb sacks of additional joint sand for maintenance and repair. Contractor shall provide owner (10) pavers of each color used for maintenance and repair. Pavers shall be from the same production run as installed materials.

ENVIRONMENTAL CONDITIONS

A. Do not install sand or pavers during heavy rain.
B. Do not install sand or pavers on saturated base materials.

PART 2: PRODUCTS

Permeable pavers shall be HYDRO-FLO 60MM HOLLAND PERMEABLE PAVER BY PACIFIC INTERLOCK PAVINGSTONE.

Crushed Stone Filler, Bedding, Base and Subbase

A. Crushed stone with 90% fractured faces, LA Abrasion < 40 per ASTM C131, minimum CBR of 80% per ASTM D1883.
B. Do not use rounded river gravel.
C. All stone materials shall be washed with less than 1% passing the No. 200 sieve.
D. Joint/opening filler, bedding, base and sub-base: conforming to ASTM D448 gradation as shown in Tables 1, 2, 3 and 4 below:

Table 1: ASTM C33 Fine Aggregate Joint Filler Grading Requirements:

Sieve Size	Percent Passing
3/8 inch (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 8 (2.36 mm)	80-100
No. 16 (1.18 mm)	50-85
No. 30 (600 µm)	25-60
No. 50 (300 µm)	5-30
No. 100 (150 µm)	0-10

Table 2: No. 8 Bedding Aggregate - Grading Requirements:

Sieve Size	Percent Passing
1/2 inch (12.5 mm)	100
3/8 inch (9.5 mm)	85 to 100
No. 4 (4.75 mm)	10 to 30
No. 8 (2.36 mm)	0 to 10
No. 16 (1.18 mm)	0 to 5

Table 3: No. 57 Base Aggregate - Grading Requirements:

Sieve Size	Percent Passing
1 1/2 inch (37.5 mm)	100
1 inch (25 mm)	95 to 100
1/2 inch (12.5 mm)	25 to 60
No. 4 (4.75 mm)	0 to 10
No. 8 (2.36 mm)	0 to 5

Table 4: No. 2 Subbase Aggregate - Grading Requirements:

Sieve Size	Percent Passing
3 inch (75 mm)	100
2 1/2 inch (63 mm)	90 to 100
2 inch (50 mm)	35 to 70
1 1/2 inch (37.5 mm)	0 to 15
3/4 inch (19 mm)	0 to 5

PART 3: EXECUTION

Note: The specifier should be aware that the top surface of the pavers after compaction may be 1/8 to 1/4 in. (3 to 7 mm) above the final elevations after compaction. This difference in initial and final elevations is to compensate for possible minor settling.

Examination

E. Note: Specify compaction of the soil subgrade under the direction of the geotechnical engineer. Compaction of open-graded bases should be with at least five passes of roller compactor without vibration.
F. Verify that base is dry, uniform, even, free of any sediment (if open-graded), and ready to support sand, pavers and imposed loads.
G. Verify gradients and elevations of base are correct.
H. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.
I. Beginning of installation means acceptance of base and edge restraints. **Installation**
J. Spread the leveling course aggregate evenly over the compacted, open-graded base course and screed uniformly to 1 - 1 ½ in. (25 - 40 mm) thickness. The screeded aggregate should not be disturbed. Place sufficient aggregate to stay ahead of the laid pavers.
K. Ensure that pavers are free from foreign materials before installation.
L. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines. D. Joints between the pavers shall be between 1/16 in. and 1/8 in. (2 to 4 mm) wide.
M. Fill gaps at the edges of the paved area with cut pavers or edge units.
N. Cut pavers to be placed along the edge with a double-bladed splitter or masonry saw.
O. Compact and seat the pavers into the screeded aggregate using a low amplitude, 75-90 Hz plate compactor capable of at least 5,000 lbs. (22 kN) centrifugal compaction force. Note: A rubber or neoprene pad between the compactor and grids is necessary to prevent cracking or chipping on textured surfaces.
P. Vibrate and compact the pavers again, sweeping a small fraction of ASTM C33 fine aggregate or equivalent into the joints and openings until it is within ½ in. (13 mm) from the top surface. This will require at least two or three passes with the compactor. Do not compact within 3-ft (1 m) of the unrestrained edges of the paving units.

8. PAINTING

MATERIALS

Paint systems, catalog names, and product numbers listed below are based on products of Dunn-Edwards Corporation. This shall be considered the standard of quality against which the Project Manager will judge equivalency. Equivalent materials from alternate manufacturers will be considered as an approved equal. Contractor's material submittal for proposed alternate must include complete material specifications from manufacturer. Paint systems described below are for specific surfaces as indicated. In addition to the information provided herein, paint materials shall also be governed by the requirements set forth in section 210-1 of the SSPWC.

FERROUS METAL TUBULAR SHAPES (NON-GALVANIZED), SEMI-GLOSS

Painting Sequence:

1st Coat: Synthetic alkyd white corrosion inhibiting primer; Corrobar (43-5). Recoat & Dying time: Min. 24 hrs. Max. 72 hrs. Coverage At Required Wet Film Thickness : 450 square feet per gallon. Required Wet Film/Dry Film Thickness: 3.5 wet mils; 2.0 dry mils.

2nd coat: Semigloss enamel acrylic latex exterior enamel; Permasheen (W 901). Recoat & Dying time: Dry to touch: 30 min.; Recoat: 4 hrs. Coverage At Required Wet Film Thickness : 375 square feet per gallon. Required Wet Film/Dry Film Thickness: 4.2 wet mils; 1.5 dry mils

3rd coat: Semigloss enamel acrylic latex exterior enamel; Permasheen (W 901). Recoat & Dying time: Dry to touch: 30 min. Coverage At Required Wet Film Thickness: 375 square feet per gallon. Required Wet Film/Dry Film Thickness: 4.2 wet mils; 1.5 dry mils

METHODS

GENERAL
Refer also to section 310-1of the SSPWC.

COLOR SPECIFIED
Colors shall be selected from color chip samples provided by manufacturer of paint system approved for use by the Project Manager.

CONDITION OF SURFACES TO BE PAINTED
Contractor shall verify condition of surfaces to be painted prior to commencement of painting work. Work of other trades that been left or installed in a condition that is not suitable to receive paint, stain, or other specified coatings shall be immediately called to the attention of the Project Manager. Painting of defective or unsuitable surface implies acceptance of the surfaces.

PROTECTION OF EXISTING WORK
The Contractor shall take all necessary precautions to protect previously installed work and materials which may be affected by work. Items to be protected include, but are not limited to, turfgrass, shrubs, trees, ground cover, prefinished surfaces, and adjacent surfaces. Contractor shall furnish at his expense sufficient drop cloths, shields, and other protective devices necessary to prevent spray or splatter from fouling surfaces not being painted. Contractor shall be responsible for protecting equipment and fixtures from damage resulting from use of fixed, movable and hanging scaffolding, planking and staging, (310-1.4)

PROTECTION OF NEW PAINTING
"WET PAINT" signs, barricades, and such other devices as are required to protect newly finished surfaces shall be provided. Contractor shall be responsible for removal of signs protective materials, and temporary protective wrappings provided by others for protection of their work after completion of painting operations.

SURFACE PREPARATION, GENERAL
The Contractor shall perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions for each substrate condition, (310-2)

√√ SURFACE PREPARATION FOR GALVANIZED SURFACES
Galvanized surfaces shall be prepared for painting in accordance with section 310-3 of the SSPWC.

APPLICATION
The Contractor shall apply painting and finishing materials in accordance with the manufacturer's printed instructions. Application methods and techniques that are best suited for the materials and surfaces to which coatings are being applied shall be used, (310-5)

The number of coats specified is the minimum that shall be applied. All undercoats shall be tinted to the approximate color of the finish coat. The Contractor shall apply additional coats when undercoats, stains, or other conditions show through the final paint coat, until paint film is of uniform finish, color and appearance.

Each material shall be applied at not less than the manufacturer's recommended spreading rate and mil thickness. The total dry-film thickness of coatings shall not be less than 1.2 mils for each required coat.

CLEANING, TOUCH-UP AND REFINISHING
The Contractor shall remove all spattering, spots and blemishes caused by work done throughout the work period. Upon completion of painting, the Contractor shall remove all rubbish, paint cans and accumulated materials resulting form work and dispose of off site. All areas of work shall be left in a clean, orderly condition. Runs, sags, misses, holidays, stains, or any other defects in the painted surfaces, including inadequate coverage and mil thickness, shall be satisfactorily touched up, refinished, or repaired a necessary to produce a result satisfactory to the Project Manager.

END OF LANDSCAPE CONSTRUCTION NOTES

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 2/27/2023 3:18 PM FILE: C:\USERS\37574\DROPBOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\LL001 LANDSCAPE CONST NOTES.DWG
REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT ★ LICENSED ★ STATE OF CALIFORNIA
W. TED ALLEN III
No. 3069
Signature
Renewal Date
Date

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER

TED ALLEN, P.E.			DATE:
ARCHITECTURAL DIVISION			03-01-22
LIC. NO. 3069			03-01-22
ARCHITECT:	Richard Fisher		03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser		03-14-22
CHECKED BY:	Jane Adrian		
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONST. NOTES, SHEET 4

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L004

SHEET 12 OF SHEETS 96

PLOTTED: 3/8/2023 9:14 AM

Low Impact Development (LID)
Post Construction Stormwater Mitigation
Best Management Practices (BMPs)

STORMWATER BMP(s) VERIFICATION

Upon installation of the approved stormwater BMPs, a Stormwater Observation Report (SOR) Form shall be submitted to Department of Public Works, Bureau of Sanitation. 201 N. Figueroa, 3rd floor, station 18. The SOR Form must be with filed and approved by the Bureau of Sanitation prior to the issuance of a Certificate of Occupancy.

Project Address: 10654 IRMA AVE., TUJUNGA, CA 91042

RESIDENTIAL (4 UNITS OR LESS, <10,000SF, < 2,500 SF within a ESA)

Item #	Stormwater BMP	Description (Units, total)	Reference Sheet(s)* (Sheet #)
1	Rain Tank(s) – 55 to 130 gal each		
2	Rain Tank(s) – > 130 gal min		
3	Shade Tree - min 15 gal		
4	Flow thru Planter(s)		
5	Permeable pavers / Porous concrete (min 10% open space)	☐ Incidental; _____ total SF ☐ Infiltration; _____ total SF	
6	Rain Garden	☐ #____ - Lined; _____ total SF ☐ # ____ - Unlined; _____ total SF	
7	Dry Well		
8	SUMP Pump (modification was not required)		

ALL OTHER DEVELOPMENT
(Residential: 5 ≥ units, 10,000 ≥ SF, within a ESA and ≥2,500SF)

	Item #	Stormwater BMP	Description (Units, total)	Reference Sheet(s)* (Sheet #)
Infiltration	1	Infiltration Basin / Trench		
	2	Dry Well		
	3	Permeable pavers / Porous concrete (min 10% open space)	☒ Incidental; 907 SF total SF ☒ Infiltration; 355 SF total SF	L301, L401, DETAILS J13/L405 AND E13/L406
Capture & Use	4	Rain Tank(s) – 530 gal min		
	5	Cistern	☐ Above Grade ☐ Below Grade	
Treat & Discharge	6	Flow thru Planter(s)		
	7	Biofiltration	☐ #____ - Lined; _____ total SF ☐ # ____ - Unlined; _____ total SF	
	8	Vegetative Swale / Filter Strip		
	9	Catch Basin Filter(s)		
	10	Trench Drain Filter(s)		
	11	Down Spout Filter(s)		
	12	SUMP Pump (modification was not required)		

* At a minimum: Site Plan, Architectural Elevations, Roof Plan, Civil Sheets and Detail

STORMWATER OBSERVATION REPORT FORM
(Residential ≥ 5 units & All other Development)

LOW IMPACT DEVELOPMENT

IN THE EVENT THAT THE APPROVED STORMWATER BMP CANNOT BE BUILT PER PLANS (OR ANY MODIFICATION), CONSULT WITH BUREAU OF SANITATION STAFF PRIOR TO ANY PLAN MODIFICATIONS. FAILURE TO DO SO MAY DELAY OBTAINING A FINAL APPROVAL AND CERTIFICATE OF OCCUPANCY (C OF O).

STORMWATER OBSERVATION *means the visual observation of the stormwater related Best Management Practices (BMPs) for conformance with the approved LID Plan at significant construction stages and at completion of the project. Stormwater observation does not include or waive the responsibility for the inspections required by Section 108 or other sections of the City of Los Angeles Building Code.*

STORMWATER OBSERVATION *must be performed by the engineer or architect responsible for the approved LID Plan or designated staff in their employment.* ***As part of the observation, provide photos of the BMPs taken during various construction phases.***

STORMWATER OBSERVATION REPORT *must be signed and stamped (see below) by the engineer or architect responsible for the approved LID Plan and submitted to the city prior to the issuance to the certificate of occupancy.* ***PRIOR TO CERTIFICATE OF OCCUPANCY (C of O), SOR FORM, PRINTED PHOTOS OF THE BMPS TAKEN DURING VARIOUS CONSTRUCTION PHASES AND APPROVED STAMPED PLANS BY THE BUREAU OF SANITATION MUST BE SUBMITTED TO THE PUBLIC COUNTER FOR STAFF APPROVAL.***

Project Address:	Building Permit No.:
10654 IRMA AVE., TUJUNGA, CA 91042	19030-10000-01555
Name of Engineer/Architect responsible for the approved LID Plan: RICHARD FISHER/GREG MOESER	Phone Number: (626) 864-8306/(323) 365-1050

List all BMPs installed as part of the project: Coordinates of the most significant (or typical) BMPs:

BMP Type: POROUS ASPHALT # of units: 907 SF Lat: 34.26266 ; Long: -118.30040 ***Ex: Lat: 34.04152; Long: -118.25962 (5 sig digits)***	BMP Type: PERMEABLE PAVERS # of units: 355 SF Lat: 34.26282 ; Long: -118.30067
BMP Type:_____ # of units: ____ Lat: _____ ; Long:_____	BMP Type:_____ # of units: ____ Lat: _____ ; Long:_____

I DECLARE THAT THE FOLLOWING STATEMENTS ARE TRUE TO THE BEST OF MY KNOWLEDGE:

1. I am the engineer or architect responsible for the approved LID Plan, and;
2. I, or designated staff under my responsible charge, has preformed the required site visits at each significant construction stage and at the completion to verify that the Best Management Practices (BMPs) as shown on approved plans have been constructed and installed in accordance with the approved LID Plan.

_____
Signature Date

Wet Stamp of Engineer or Architect

City of Los Angeles
Department of Building and Safety

Version 1

Grading Pre-Inspection Report

Address: **10654 N IRMA AVE**
Council District: **7** Permit Application: **20030-10000-05158**

Work Description:
GPI ONLY TO CONSTRUCT NEW CONCRETE ADA PEDESTRIAN RAMP FROM STREET LEVEL UP TO 7' HIGH. INSTALL NEW LANDSCAPE AND IRRIGATION

Inspector/Telephone: **KIRK LINKLATER, (818) 374-4359**
Inspection District: **VN**
Inspection Date: **12/11/2020**

Property Posted: **N/A** Posting Date: **N/A** Posting Fees Paid? **No**
Tract: **TR 6729**
Block: Lot(s): **78** ARB: County Ref No: **M B 76-76**

Approved Graded Lot: **No**
Fill Over 100 Feet: **No**
Slope of Surface: **Descending**
Fill: degrees Height: ft in
Natural: **2% at work** degrees Height: ft in
Sewer Available: **N/A**
Site is **Above** Street
Condition of Street for Drainage Purposes **paved**
Driveway Grade: **% -**

Bearing Value:
Buttress Fill: **No**
Natural Soil Classification 1804.2: **PER REPORT**
Cut: degrees Height: ft in
Slide Area: **No**
PSDS Sized Per Code: **N/A**
Roof Gutters: **No**
Recommended Termination of Drainage **To street or approved location**
Maximum Rough Grade Allowed: **%**

GRADING APPROVAL TO ISSUE PERMIT(S)
X OK TO ISSUE. SEE BELOW FOR COMMENTS.
DO NOT ISSUE UNTIL BELOW REQUIREMENTS HAVE BEEN SATISFIED.

Page 1 of 3

X 1. A grading permit is required for **retaining wall sub drain and back fill..**

X 2. A retaining wall permit is required. **.**

3. OSHA permit required for **vertical cuts 5 feet or over.**

4. All footings shall be founded in undisturbed natural soil per Code.

5. Design for expansive soil or submit a soils report to the grading division per information bulletin P/BC 2008-116 and 91.1805.8.

X 6. In the event excavations reveal unfavorable conditions, the services of a soils engineer and/or geologist may be required.

X 7. **Soils** report(s) are required. Submit three copies (1 original and 2 copies), with appropriate fees, to the Grading Section for review and approval.

8. Incorporate all recommendations of the approved Soils report(s) and Department letters dated 12/20/2018 into the plans. **Soils Engineer** to sign plans.

9. Site is subject to mudflow. Comply with provisions of Section 91.7014.3. Geological and soils report required.

10. Buildings shall be located clear of the toe of all slopes which exceed a gradient of 3 horizontal to 1 vertical as per Section 91.1805.3.1.

11. Footings shall be set back from the descending slope surface exceeding 3 horizontal to 1 vertical as per Section 91.1805.3.7.

12. Swimming pools and spas shall be set back from descending and ascending slopes as per Section 91.1805.3.3.

13. Department approval is required for construction of . on or over slopes steeper than 2 horizontal to 1 vertical.

14. Provide complete details of engineered temporary shoring or slot cutting procedures on plans. Call for inspection before excavation begins.

X 15. All concentrated drainage, including roof water, shall be conducted, via gravity, to the street or an approved location at a 2% minimum. Drainage to be shown on the plans.

X 16. A Registered Deputy Inspector is required.

X 17. All fill or backfill shall be compacted by mechanical means to a minimum 90% relative compaction as determined by ASTM method D-1557. Subdrains shall be provided where required by Code.

X 18. Specify on the plans: "The soils engineer is to approve the key or bottom and leave a certificate on the site for the grading inspector. The grading inspector is to be notified before any grading begins and, for bottom inspection, before fill is placed. Fill may not be placed without approval of the grading inspector."

19. Existing non-conforming slopes shall be cut back at 2:1 (26 degrees) or retained. All concentrated drainage, including roof water, shall be conducted, via gravity, to the street or an approved location at a 2% minimum. Drainage to be shown on the plans.

20. All cut or fill slopes shall be no steeper the 2:1 (26 degrees).

X 21. Stake and flag the property lines in accordance with a licensed survey map. **.**

22. Approval required by the Department for **.**

23. Approval required by the Department of Public Works, Urban Forestry Division, for native tree protected ORD. 177,040. Phone # (213) 847-3077

24. This is a preliminary pre-inspection only - base on limited information. When complete plans (and possibly calculations and/or required reports) are submitted for a permit, a new pre-inspection and fee will be required.

Page 2 of 3

** Additional requirements: **THIS GPI SHALL BE A PART OF THE APPROVED PLANS. CALL FOR INITIAL GRADING INSPECTION PRIOR TO THE COMMENCEMENT OF WORK.**

Construction of new occupied buildings or major additions to buildings on sites located in any of the Seismic Hazard Zones (liquefaction, Landslide or Alquist-Priolo Fault Zone) will require a geology and/or soil engineering report. For questions call (213) 482-0480.

Page 3 of 3

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT ★ LICENSED ★ STATE OF CALIFORNIA
W. J. LOCKE
No. 3069
Signature
Date 3/31/23
Renewal Date 08-31-24

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	NAME	LIC. NO.	DATE
CITY ENGINEER	TED ALLEN, P.E.		03-01-22
ARCHITECTURAL DIVISION			03-01-22
ARCHITECT:	Richard Fisher	LIC. NO. 30969	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY:	Jane Adrian		03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT			

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GRADING PREINSPECTION/LID FORMS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

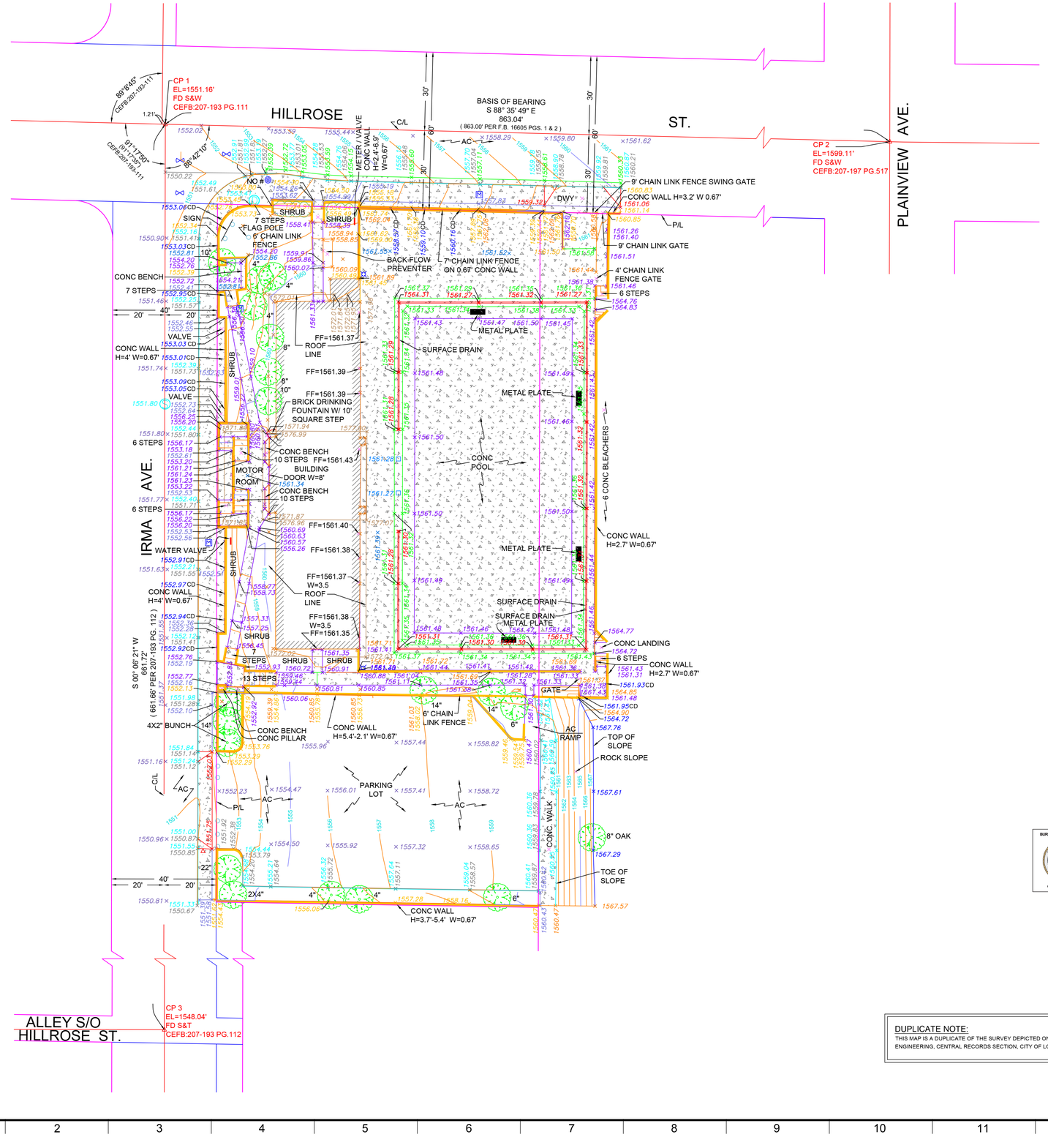
WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L005
SHEET 13 OF SHEETS 96

PLOTTED: 3/8/2023 9:17 AM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 2/27/2023 3:18 PM FILE: C:\USERS\37574\BOXARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L001 LANDSCAPE CONST NOTES.DWG



SCALE IN FEET
SCALE: 1"=20'
CONTOUR INTERVAL IS 1'

LEGEND ABBREVIATIONS

AC	ASPHALT CONCRETE
C/L	CONTROL LINE
CB	CATCH BASIN
CD	CURB DRAIN
CONC	CONCRETE
CP	CONTROL POINT
DWY	DRIVE WAY
FD	FOUND
IP	IRON PIPE
L&T	LEAD AND TACK
L&TAG	LEAD AND TAG
P/L	PROPERTY LINE
PA	PLANTER AREA
S&W	SPIKE AND WASHER
SMHM	SEWER MAINTENANCE HOLE MONUMENT
SPK	SPIKE
SSDM	STANDARD SURVEY DISK MONUMENT
SSM	STANDARD SURVEY MONUMENT

LEGEND LINE TYPE

- STREET CONTROL LINE
- FENCE CHAIN LINK
- FENCE WOOD
- FENCE WROUGHT IRON
- WALL
- SIDE WALK
- DRIVEWAYS
- CURB
- FLOW LINE
- CONCRETE GUTTER
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- TOP
- TOE
- GRADE CHANGE
- (CITY DISTRICT MAPS) PROPERTY LINES
- EASEMENT LINE
- BUILDING

LEGEND

- MAINTENANCE HOLE
- SEWER MAINTENANCE HOLE
- STORM DRAIN MAINTENANCE HOLE
- POWER MAINTENANCE HOLE
- WATER METER
- GAS VALVE
- WATER VALVE
- LIGHT STANDARD
- POWER POLE
- TREE
- CONCRETE

BUREAU OF ENGINEERING
OFFICIAL RECORD

NOTES:

STREET RIGHT OF WAY
STREET RIGHT OF WAYS ON THIS MAP WERE LOCATED BY FIELD SURVEY BY RETRACEMENT OF CITY ENGINEER FIELD BOOKS AS REFERENCED HEREON.

PUBLIC EASEMENTS:
PUBLIC EASEMENTS AS SHOWN ON CITY CADASTRAL MAPS ARE THE ONLY EASEMENTS SHOWN ON THIS MAP; SAID EASEMENTS WERE IMPORTED FROM ELECTRONIC CADASTRAL MAP 207A195 & 207B197 AND ARE A GRAPHIC REPRESENTATION OF THE APPROXIMATE LOCATION OF SAID LINES

LOT LINES:
LOT LINES WERE NOT ESTABLISHED BY THIS SURVEY; SUCH LINES WERE IMPORTED FROM ELECTRONIC CADASTRAL MAP 207A195 & 207B197 AND ARE A GRAPHIC REPRESENTATION OF THE APPROXIMATE LOCATION OF SAID LINES

DUPLICATE NOTE:
THIS MAP IS A DUPLICATE OF THE SURVEY DEPICTED ON MAP # A-21155, FILED IN THE BUREAU OF ENGINEERING, CENTRAL RECORDS SECTION, CITY OF LOS ANGELES.

BID SET 5/17/2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SURVEY NO. 31328

INDEX NO. RP-300123

PROFESSIONAL LAND SURVEYOR ★ TED ALLEN SOLTMAN ★ NO. 8822 ★ STATE OF CALIFORNIA

CITY ENGINEER: TED ALLEN , P.E.
SURVEY DIVISION
SURVEYOR: MAGDI SOLIMAN
P.L.S. 8822
FIELD SURVEYOR: MARK CHEVALIER
DRAWN BY: FRANK GARCIA
CHECKED BY: MARK CHEVALIER
APPROVED BY:
DATE: 03/23/2022, 09/07/2013, 08/19/2013, 08/19/2013

VERTICAL CONTROL: CEFB 43058 PGS 23 - 26
HORIZONTAL CONTROL: CEFB 43058 PGS 23 - 26

SHEET TITLE: SITE SURVEY
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE, TUJUNGA, CA 91042

WORK ORDER NO. E170164F
DRAWING NO. L101
SHEET 14 OF 96 SHEETS

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

Sheet Version 2.01

DEMOLITION NOTES

1. PROPERTY LINE.
2. EXISTING BATH HOUSE. SEE ARCHITECTURAL PLANS.
3. EXISTING POOL AREA. SEE ARCHITECTURAL PLANS.
4. EXISTING PARKING LOT ASPHALT PAVING TO REMAIN. SEE SHEET L401.
5. EXISTING CHAIN LINK FENCE. PROTECT IN PLACE.
6. EXISTING POWER POLE. PROTECT IN PLACE.
7. EXISTING LIGHT FIXTURE AND POLE TO REMAIN. PROTECT IN PLACE.
8. NOT USED.
9. EXISTING FLAGPOLE AND FOOTING TO REMAIN. SEE SHEET L401.
10. EXISTING SIGNAGE & POSTS TO REMAIN. PROTECT IN PLACE.
11. EXISTING RAILROAD TIES TO BE REMOVED.
12. EXISTING PARKING LOT CURBS TO REMAIN. PROTECT IN PLACE.
13. EXISTING RETAINING AND PLANTER WALLS TO REMAIN. PROTECT IN PLACE.
14. EXISTING RETAINING WALLS TO BE REMOVED.
15. CAREFULLY REMOVE AND STOCKPILE BRICK CAPS ON EX. WALL AS REQUIRED FOR REPAIRS ELSEWHERE. SEE ARCH. PLANS.
16. EXISTING STAIRS AND/OR LANDINGS TO REMAIN. PROTECT IN PLACE.
17. EXISTING CONCRETE BENCH TO BE REMOVED.
18. EXISTING CONCRETE STAIRS TO BE REMOVED.
19. EXISTING DRINKING FOUNTAIN TO REMAIN.
20. EXISTING DRIVEWAY TO REMAIN. PROTECT IN PLACE.
21. EXISTING RINO GATE AND POSTS TO REMAIN. SEE SHEET L401.
22. EXISTING CONCRETE WALKWAY/SIDEWALK /RAMP TO REMAIN. PROTECT IN PLACE.
23. EXISTING CONCRETE WALKWAY, AREA, OR SIDEWALK AREA TO BE REMOVED.
24. EXISTING HANDRAILS TO BE REMOVED.
25. EXISTING CONCRETE RAMP, HANDRAILS & FOOTINGS, TO BE REMOVED.
26. REMOVE & REPLACE EXISTING BACKFLOW PREVENTER. SEE SHEET L601.
27. EXISTING WATER METER TO REMAIN. SEE IRRIGATION PLANS.
28. EXISTING VALVE/METER TO BE REMOVED AND REPLACED. SEE MECH.
29. (NOT USED)
30. EXISTING SLOPE WITH STONE COVER TO REMAIN. REMOVE WEEDS.
31. EXISTING DIRT TERRACE TO REMAIN. REMOVE WEEDS.
32. EXISTING TREES, SHRUBS, GROUNDCOVE & MISC. STUMPS & ROOTS TO BE REMOVED, TYP.
33. EX. TREES TO REMAIN. SEE L001 TREE PROTECT. SEE TREE PROTECTION NOTES.
34. EX. GUARDRAIL/HANDRAIL TO REMAIN. REFER TO ARCH. DRAWINGS.
35. SAW-CUT AND REMOVE EXISTING ASPHALT PAVING WHERE SHOWN.
36. POOL AREA GATES & FENCING TO BE RENOVATED. SEE ARCH. PLANS.
37. REMOVE & REPLACE CHAIN LINK FABRIC ON PARKING LOT FENCE. SEE SHEET L401.
38. EXISTING LOW, ROCK WALLS TO REMAIN. PROTECT IN PLACE.
39. EXISTING PLANTER TO REMAIN. REMOVE ALL WEEDS, TYP.
40. EXISTING STRINGER TO BE REPAIRED AT ENDS. SEE ARCH. PLANS.
41. REMOVE PORTION OF EXISTING FENCE AND WALL. ABOUT 36" IN LENGTH. RELOCATE THE END POST AS NEEDED TO ACCOMMODATE NEW RAMP CURB AND RAILING. REMOVE EXISTING CURB AND CONCRETE AS NEEDED.
42. EXISTING CONCRETE BENCH TO REMAIN.
43. REMOVE PORTION OF EXIST. CURB. ABOUT 9-FT IN LENGTH TO ACCOMMODATE LAYOUT OF NEW ASPHALT STRIPING. SEE SHEET L401.
44. EXISTING DOMESTIC BACKFLOW AND ENCLOSURE. SEE MECH. PLANS.

DEMOLITION LEGEND:

- EXISTING SLOPE WITH STONE COVER
- REMOVE EXIST CONCRETE PATHWAY, RAMP, OR SIDEWALK. ASSUME 4" OF CONCRETE ON 4" OF BASE. ASSUME 3" THICK, EXISTING SIDEWALK.
- REMOVE EXISTING CONCRETE RETAINING WALL, BENCH, OR STAIRS.
- EXISTING IVY GROUND COVER TO BE REMOVED.
- EXISTING CONCRETE PAVEMENT TO REMAIN.
- EXISTING DIRT TERRACE TO BE REMAIN.
- REMOVE EXISTING ASPHALT PAVING.

KEY:

- CONSTRUCT
- EXISTING TO REMAIN
- REMOVE
- REMODEL EXISTING
- REMOVE & CONSTRUCT

EX. WATER METER TO REMAIN. PROTECT IN PLACE.

(SEE POOL AREA PLANS)

HILLROSE ST.

SAW-CUT & REMOVE EXISTING CONCRETE AT LINE SHOWN.

BATH HOUSE

SAW-CUT & REMOVE EXISTING SIDEWALK AT LINE SHOWN.

SAW-CUT & REMOVE EXISTING SIDEWALK AT LINE SHOWN.

IRMA AVE.

8" STUMP

48'-1"

25'-0"

DIGALERT
Call Toll Free 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG
Underground Service Alert of Southern California

A1 SITE PLAN
Scale: 3/32" = 1' - 0"

BID SET - 5/17/2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 11/2/2023 1:34 PM
FILE: C:\USERS\37574\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L201 DEMOLITION PLAN.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT
LICENSED
No. 3060
Signature
Renewal Date
06-01-22
LIC. EXP.
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

CITY ENGINEER	DATE:
TED ALLEN, P.E.	03-01-22
ARCHITECTURAL DIVISION LIC. NO. 3060	03-01-22
ARCHITECT: Richard Fisher	03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY: Jane Adlian	03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE DEMOLITION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L201
SHEET 15 OF SHEETS 96

PLOTTED: 3/8/2023 9:14 AM

DEMOLITION NOTES

1. CONTRACTOR SHALL MEET WITH PROJECT MANAGER TO REVIEW EXISTING ELEMENTS TO BE DEMOLISHED/PROTECTED PRIOR TO COMMENCEMENT OF WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING WORK AREA, STORAGE, AND ETC. DURING CONSTRUCTION AND MAINTENANCE PERIOD. COORDINATE WITH PROJECT MGR. PRIOR TO BEGIN CONSTRUCTION.
3. ALL EXISTING TREES TO REMAIN SHALL BE PROTECTED IN PLACE PER TREE PROTECTION SECTION IN THE PROVIDED LANDSCAPE CONSTRUCTION NOTES.
4. ALL PLANT MATERIALS INDICATED TO BE DEMOLISHED SHALL BE COMPLETELY REMOVED, INCLUDING ALL STUPMS, ROOTS ETC. EXISTING IVY MAY REQUIRE MULTIPLE EFFORTS TO REMOVE ANY MATERIAL THAT RE-SPROUTS AFTER REMOVAL. PRIOR TO PLANTING, THE LANDSCAPE AREAS SHALL BE ENTIRELY FREE OF ALL WEEDS AND RE-SPROITING PLANTS FROM REMOVALS.
5. ALL REMOVALS SHALL BE PROPERLY DISPOSED OF AT A CITY-APPROVED LOCATION OFF-SITE. DISPOSAL SHALL BE IN ACCORDANCE WITH CODES AND ORDINANCES GOVERING LOCATIONS AND METHODS OF DISPOSAL.
6. LOCATIONS OF EXISTING EQUIPMENT/ SITE ELEMENTS ARE SHOWN DIAGRAMMATICALLY FOR THE LEGIBILITY OF THE DRAWING. THE CONTRACTOR SHALL VERIFY EXACT LOCATION FROM SITE SURVEY AND IN THE FIELD. CONTRACTOR SHALL IMMEDIATELY BRING TO THE ATTENTION OF THE PROJECT MANAGER ANY CONFLICTS.
7. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (811) BEFORE START OF CONSTRUCTION AND OBTAIN AN UNDERGROUND SERVICE ALERT INQUIRY I.D. NUMBER BY CALLING 1-800-422-4133. PROVIDE TWO (2) WORKING DAYS AFTER THE I.D. NUMBER IS OBTAINED AND BEFORE THE EXCAVATION WORK IS STARTED SO THAT UTILITY OWNERS CAN BE NOTIFIED.
8. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT CONDITIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
9. ALL EXISTING SITE ELEMENTS (INCLUDING BUT NOT LIMITED TO: LIGHTING FIXTURES, TRAFFIC SIGNS, ELECTRICAL PULLBOX, CATCH BASIN, WATER METER, DWP WATER VALVES, POWER POLE & GUY WIRE, CONCRETE CURBS) NOT INDICATED ON PLAN FOR REMOVAL SHALL BE PROTECTED IN PLACE.
10. ALL ABOVE-GROUND COMPONENTS OF THE EXISTING IRRIGATION SYSTEM NOT DESIGNATED TO REMAIN SHALL BE REMOVED. ALL BURIED IRRIGATION COMPONENTS SUCH AS PIPE AND CONTROL WIRE ETC. SHALL BE ABANDONED IN PLACE. SEE IRRIGATION PLAN.
11. SEE LANDSCAPE CONSTRUCTION NOTES ON SHEETS L001 - L003 FOR ADDITIONAL REQUIREMENTS.

Further, any Department of Recreation and Parks project, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, shall not be subject to any Department of City Planning entitlements for development, including but not limited to the following:

A. Project Permit Compliance
B. Zone Change (Changes to zones will continue to be reflected during the community plan update process.)
C. Conditional Use Permit (The sale of alcoholic beverages for on or off-site consumption requires approval by the RAP Board. Department of Recreation and Parks will be responsible for coordinating directly with the California Department of Alcoholic Beverage Control regarding license authorizations.)
D. Variance
E. Adjustment
F. Site Plan Review
G. Previously approved entitlements having a Sunset Clause

All other City regulations for development projects, not administered or regulated by Chapter I of the Los Angeles Municipal Code, shall continue to be enforced by each respective City department, unless otherwise stated by said department. All Department of Recreation and Parks projects that require building permits for construction, including tenant improvements, shall be subject to all current building code regulations as enforced by the Department of Building and Safety.

In addition, this memorandum does not supersede any State of California or Federal regulations, including but not limited to, the California Coastal Act (California Government Code Sections 30000-30900), the Subdivision Map Act (California Government Code Sections 66410-66499.58), or the Americans With Disabilities Act.

Finally, the Department of City Planning and the Department of Recreation and Parks will jointly write a Memorandum of Understanding for the purpose of maintaining communication regarding all proposed park projects. Department of Recreation and Parks staff has agreed to convene with Department of City Planning staff on a quarterly basis, as needed, to solicit urban design feedback for all proposed park projects to ensure consistency with applicable design guidelines and adopted plans.

DEPARTMENT OF CITY PLANNING
CITY PLANNING COMMISSION
SAMANTHA MILLMAN
PRESIDENT
VAHID KHORSAND
VICE-PRESIDENT
DAVID H. J. AMBROZ
CAROLINE CHOE
RENEE DAKE WILSON
KAREN MACK
MARC MITCHELL
VERONICA PADILLA-CAMPOS
DANA M. PERLMAN
ROCKY WILES
COMMISSION OFFICE MANAGER
(213) 978-1300

CITY OF LOS ANGELES
CALIFORNIA
ERIC GARCETTI
MAYOR

EXECUTIVE OFFICES
200 N. SPRING STREET, ROOM 525
LOS ANGELES, CA 90012-4801
VINCENT P. BERTONI, AICP
DIRECTOR
(213) 978-1271
KEVIN J. KELLER, AICP
DEPUTY DIRECTOR
(213) 978-1272
LISA M. WEBBER, AICP
DEPUTY DIRECTOR
(213) 978-1274
http://planning.lacity.org

Date: December 6, 2018

To: Michael Shull, General Manager, Department of Recreation and Parks
Frank M. Bush, General Manager, Department of Building and Safety
Ralph M. Terrazas, Fire Chief, Fire Department
Gary Lee Moore, City Engineer, Department of Public Works, Bureau of Engineering

From: Vincent P. Bertoni, AICP, Director of Planning

Subject: Department of Recreation and Parks Authority under City Charter

In response to recent discussions involving management and staff from Department of Recreation and Parks, Department of City Planning and the City Attorney's Office, all parties concur that the City of Los Angeles Charter establishes broad authorization for the Department of Recreation and Parks to pursue parks and recreational facilities located on property owned or controlled by the City for public recreation, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, within the City of Los Angeles. This memorandum does not apply to privately owned and operated park projects. The following Charter Sections (only applicable language listed) provide the aforementioned authority:

Section 590. Powers and Duties of the Department.

The Department of Recreation and Parks shall have the power and duty:
(a) to establish, construct, maintain, operate and control, wherever located:
(1) all parks of the City of Los Angeles;
(2) all recreational facilities, museums, observatories, municipal auditoriums, sports centers and all lands, waters, facilities or equipment set aside or dedicated for recreational purposes and public enjoyment; and
(3) all property acquired by it or assigned to its jurisdiction for public recreation.
(b) to design, construct and operate, lease, rent or sell concessions or privileges to be exercised for the benefit, education, amusement, convenience or enjoyment of the public, in connection with any function, site or facility under the jurisdiction of the department;
(c) to establish schedules of charges for special services;
(d) to promote public recreation and cooperate with other public agencies and organizations for that purpose; and

FORM GEN. 160 (Rev. 11-02)

CITY OF LOS ANGELES
INTERDEPARTMENTAL CORRESPONDENCE

Date: January 24, 2023

To: Department of Building and Safety

From: Darryl Ford, Superintendent
Planning, Construction and Maintenance Branch
Department of Recreation and Parks

Subject: Verdugo Hills Pool – Rehabilitation

Pursuant to the letter, dated December 6, 2018, issued by Department of City Planning, it is agreed that the City of Los Angeles Charter exempts the Department of Recreation and Parks (RAP) projects from the regulations of Chapter 1 of the Los Angeles Municipal Code (CH 1 LAMC). City of Los Angeles, Department of Recreation and Parks manages the development of the following proposed project inside RAP's property, with the support of its pre-qualified contractors.

Project name: Verdugo Hills Pool – Rehabilitation
Project address: 10654 Irma Ave., Tujunga, CA 91042
Scope of work: The project's scope of work includes the construction of two (2) new ADA compliant gender-neutral restrooms, new ADA access ramp, refurbishment of existing restrooms and changing areas, the conversion of existing office into aquatics rescue staff restroom and shower, and new customer counter.

Since the proposed project is within RAP's property, it is exempt from the regulations of CH 1 LAMC. Please contact my staff, Fernando Torres Jr, at 213-202-2707 or fernando.torresjr@lacity.org if you have any questions.

Cc: John McNeil, BOE
Fernando Torres Jr, RAP

Attachment:

Department of Recreation and Parks Authority under City Charter

(e) to establish, maintain and operate playgrounds or other recreational facilities upon portions of public streets, under terms and conditions provided by ordinance.

Section 591. Board of Recreation and Parks Commissioners.

The Board of Recreation and Park Commissioners shall have the power:
(a) to control all recreation and park sites;
(b) to control, appropriate and expend all money in the Recreation and Parks Fund and authorize the City Treasurer to invest any surplus funds under its control in accordance with Section 303(b); and
(c) to organize the work of the department into divisions and to appoint an administrative officer for each division or for any group of divisions.

Section 594. Control and Management of Recreation and Park Lands.

(a) Management and Control. The Department of Recreation and Parks shall operate, manage and control all property now or hereafter owned or controlled by the City for public recreation, including parks, and shall have power in the name of the City to acquire and take by purchase, lease, condemnation, gift, in trust or otherwise, any and all property necessary or convenient for recreation, including park purposes.
(b) Acquisition of Property. No real property shall be acquired by the City for recreation sites, including parks, unless first approved by the Board of Recreation and Park Commissioners.
(c) Restrictions on Transfer of Dedicated Parks. All lands heretofore or hereafter set apart or dedicated as a public park shall forever remain for the use of the public inviolate; but the board may authorize use of the lands for any park purpose, and for……
(d) Transfer to Purposes other than Recreation and Park Purposes. No sites under the management and control of the department shall be devoted or transferred to any other purpose in whole or in part, except in compliance with……

As stated in Section 591 of the Los Angeles Charter, the Board of Recreation and Park Commissioners (Board) has the power to control all City-owned and operated parks and recreational facilities. In addition, all proposed park projects require approval by the Board, thus ensuring consistency with adopted City plans. The Board shall have the authority to determine appropriate locations for park projects, uses associated with park projects, accessory structures and buildings, and any off-street parking to satisfy park project needs. This authorization exempts Department of Recreation and Parks projects, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, from the regulations of Chapter I of the Los Angeles Municipal Code and any General Provisions and Zoning chapters that may be adopted subsequent to this memorandum, including but not limited to the following:

A. Use for each zone (Parks and recreational facilities shall be permitted in all zones.)
B. Restriction for each zone (Parks and recreational facilities, including any accessory use or building, shall be permitted in all zones.)
C. Area for each zone (The area of each structure and/or building shall not be restricted in all zones.)
D. Specific Plans
E. Districts, including Overlays
F. Off-street parking
G. Height
H. Signs

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 08/2006
REVISION DATE: 1/25/2023 9:29 AM FILE: C:\USERS\37574\BOXARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L202 DEMOLITION NOTES.DWG

REVISION DATES (DESIGN STAGE ONLY)

A1
N.T.S.
DEMOLITION NOTES

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. - RP-300123

LANDSCAPE ARCHITECT
CHRISTOPHER W. FISHER
No. 3060
LICENSE EXPIRATION DATE
Signature
Pages 204
Revised Date
03-01-22
Date
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

CITY ENGINEER	DATE
TED ALLEN, P.E.	03-01-22

ARCHITECTURAL DIVISION	LIC. NO. 3060	DATE
ARCHITECT: Richard Fisher		03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY: Jane Adrian		03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE DEMOLITION NOTES/ RAP AUTHORITY UNDER CITY CHARTER

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L202
SHEET 16 OF SHEETS 96

PLOTTED: 3/8/2023 9:17 AM

GRADING & DRAINAGE NOTES

1. PROPERTY LINE.
2. EXISTING CHAIN LINK FENCE TO REMAIN.
3. NEW POOL AREA FENCE AND GATES, SEE ARCH. PLANS
4. EXISTING POWER POLE.
5. NEW LIGHT FIXTURE AND POST.
6. EX. FLAGPOLE AND FOOTING TO REMAIN. SEE L401.
7. EXISTING SIGN & POSTS TO REMAIN.
8. EXISTING RETAINING WALLS TO REMAIN..
9. EXISTING DRINKING FOUNTAIN.
10. EXISTING CONCRETE RAMP & HANDRAILS,
11. NEW ACCESSIBLE RAMP WITH HANDRAIL/GUARDRAIL, TYP. SEE L401.
12. EXISTING BRICK PLANTER TO REMAIN.
13. NEW IRRIGATION BACKFLOW PREVENTER WITH ENCLOSURE, FLOW METER/ MASTER VALVE. SEE L601.
14. EXISTING IRRIGATION WATER METER TO REMAIN.
15. REPLACE EX. GAS VALVE/METER. SEE MECH. PLANS.
16. NEW HVAC CONDENSER ON CONCRETE PAD. SEE MECHANICAL PLANS.
17. EXISTING SLOPE WITH STONE COVER.
18. EXISTING TREE (S) TO REMAIN.
19. EXISTING DOMESTIC WATER METER.
20. NEW PARKING LOT CURB. SEE L401.
21. NEW CONCRETE BENCH, TYP., SEE L401.
22. NEW IRRIGATION CONTROLLER PAD. SEE SHEET L601.
23. CATCH BASIN: 12" NYOPLAST DRAIN BASIN WITH SUMP INSERT AND 12" LOCKABLE DOME GRATE WITH "NO DUMPING - DRAINS TO OCEAN" GRATE MARKER, AND FLEXSTORM INLET FILTERS (OR APPROVED EQUAL).
24. EXISTING CONCRETE BENCH TO REMAIN.
25. NEW CONCRETE PLANTER WALL. SEE E9/L406.
26. NEW CONCRETE RETAINING WALL PER STRUCTURAL PLANS, TYP.
27. 5" WIDE CONCRETE HEADER. INSTALL OVER BUIILDING STUMP WALL AT GRADES PER PLAN. FIELD VERIFY.
28. NOT USED.
29. PROVIDE NEW 4" SCH. 80 PVC PIPE TO CURB FACE, WITH 4" ROUND CURB-O-LET #TCD-4RD CURB FACE DRAIN OUTLET, INSTALL PER MFR'S INSTRUCTIONS, WWW.CURBOLETPRODUCT.COM. NOTE 21/L302 FOR INSTALLATION UNDER SIDEWALK.
30. CONCRETE STEP. INSTALL PER DETAIL A13/L407.
31. 2"X8"X1/8" ALUMINUM TUBE INSERTED INTO 4" CURB WALL, FLUSH WITH BOTH SIDES OF WALL. SLOPE FROM WALK TO PLANTER AREA.
32. LINED PLANTER DRAINAGE. SEE DETAIL E13/L405.

REGISTERED PROFESSIONAL ENGINEER GARY LAM C 65208 EXP 9/30/23 CIVIL STATE OF CALIFORNIA

Gary Lam

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEER EASTON RENE FORSTER No. GE 2946 Exp. 9-30-24 GEOTECHNICAL STATE OF CALIFORNIA

Easton Forster 11-21-22

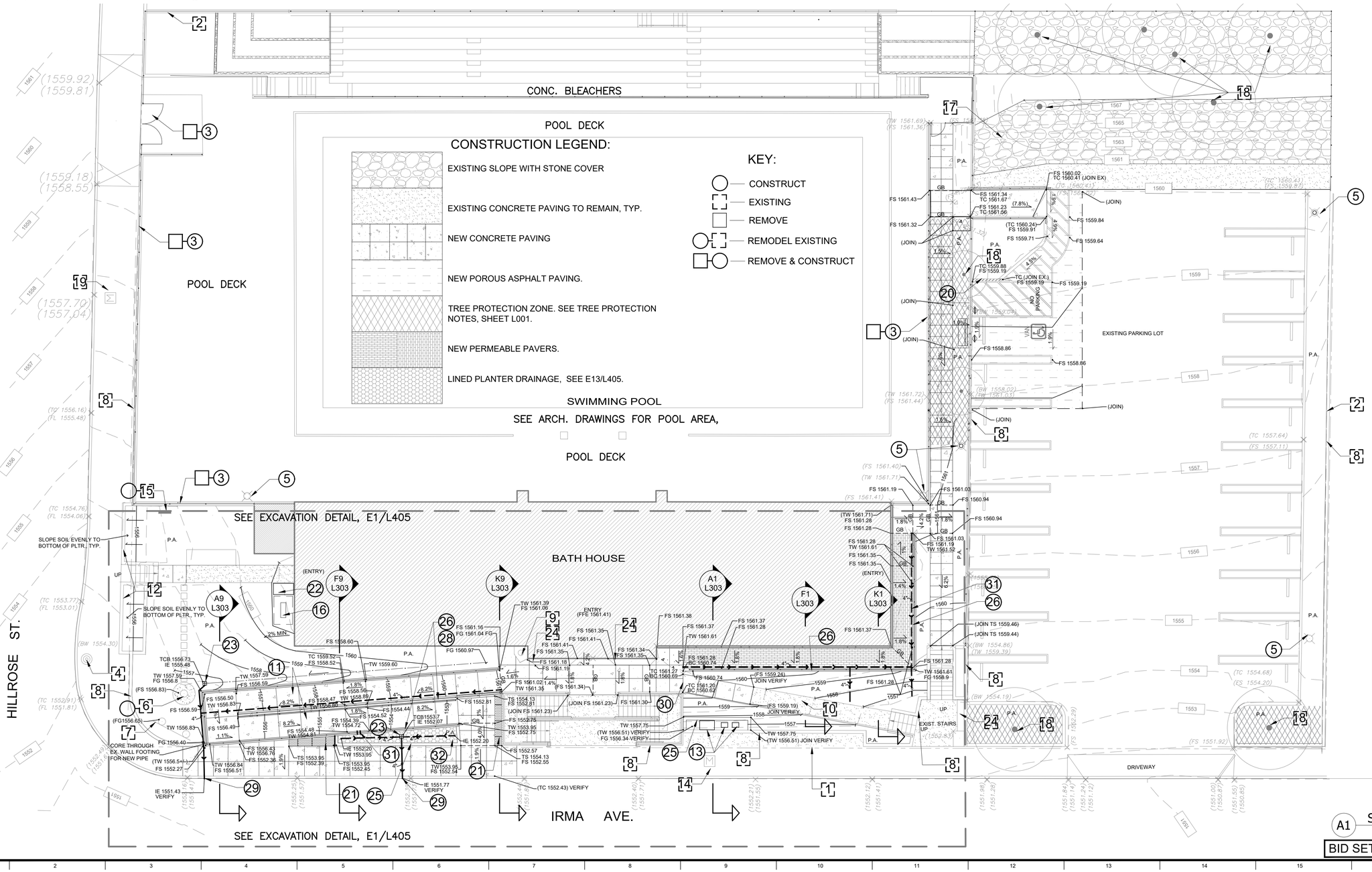
ABBREVIATIONS

AC	ASPHALT CONCRETE	GB	GRADE BREAK
AD	AREA DRAIN	HP	HIGH POINT
BC	BOTTOM OF CURB	INV	INVERT ELEVATION
BCB	BOTTOM OF CATCH B.	LP	LOW POINT
BW	BOTTOM OF WALL	MAX	MAXIMUM
CB	CATCH BASIN	OU	OUTLET
CC	CEMENT CONCRETE	PA	PLANTING AREA
CF	CUBIC FOOT	PL	PROPERTY LINE
CL	CENTER LINE	RE	RIM ELEVATION
CY	CUBIC YARDS	TCB	TOP OF CATCH BASIN
DWY	DRIVEWAY	TC	TOP OF CURB
EC	END OF CURVE	TR	TOP OF ROCK WALL
FF	FINISH FLOOR	TS	TOP OF SEATWALL
FG	FINISH GRADE	TW	TOP OF WALL
FL	FLOW LINE		
FOC	FACE OF CURB		
FOW	FACE OF WALL		
FS	FINISH SURFACE		

CUT & FILL CALC'S (SEE NOTES 27 & 28 SHEET L302):
CUT: 167.4 CY
FILL: 8.5 CY
EXPORT: 158.9 CY
TEMPORARY EXCAVATION: 103.8 CY

GRADING LEGEND

- (100.00) EXISTING ELEVATION
- FS 100.00 PROPOSED GRADE/ FINISH SURFACE
- 100.00 PROPOSED CONTOUR, 1' INTERVAL
- GB GRADE BREAK
- DRAINAGE SWALE
- 1.5% SURFACE FLOW DIRECTION & SLOPE
- SC. 80 PVC PERFORATED DRAINAGE PIPE, WITH SLOPE DIRECTION. 1% MIN. SLOPE. INSTALL PER DETAILS G1/L403, J11/L404, AND E13/L405. ELEVATIONS TO BE VERIFIED IN FIELD.
- SCH. 80 PVC DRAINAGE PIPE W/ SLOPE DIRECTION.



A1 SITE PLAN
Scale: 3/32" = 1' - 0"

BID SET - 5/17/2022

BUREAU OF ENGINEERING OFFICIAL RECORD

LANDSCAPE ARCHITECT STEVEN W. FIERCE No. 3060 Signature 5-30-23 Renewal Date 03-01-22 Date STATE OF CALIFORNIA

CITY ENGINEER
TED ALLEN, P.E.
LIC. NO. 30600
DATE: 03-01-22

ARCHITECTURAL DIVISION
ARCHITECT: Richard Fisher — 03-01-22
DESIGNED BY: Gregory Nuno/Greg Mosser — 03-01-22
DRAWN BY: Gregory Nuno/Greg Mosser — 03-01-22
CHECKED BY: Jane Adrian — 03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE GRADING & DRAINAGE PLAN
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L301
SHEET 17 OF SHEETS 96

BUILDING NO. -
SERIAL NO.
DATE: BY:
NO. REVISIONS:
INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING
ENGINEERING CITY OF LOS ANGELES

REVISION DATES (DESIGN STAGE ONLY)
A
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M

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 11/8/2023 1:11 PM
FILE: C:\USERS\375740\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L301 GRADING PLAN.DWG

PLOTTED: 3/8/2023 9:13 AM

GRADING & DRAINAGE NOTES:

NOTE: SEE CURRENT GEOTECHNICAL REPORT, FILE #17-137, SEPTEMBER 13, 2018 AND SUPPLEMENTS, FOR ADDITIONAL NOTES AND REQUIREMENTS. IN CASE OF DISCREPANCIES, THE GEOTECHNICAL REPORT SHALL GOVERN.

1. ALL DEBRIS AND FOREIGN MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO PLACING FILL MATERIALS.

2. IF A SEEPAGE PIT OR A CESSPOOL IS ENCOUNTERED, DO NOT FILL UNTIL APPROVAL IS OBTAINED FROM THE CITY DEPARTMENT OF BUILDING AND SAFETY GRADING AND SOILS ENGINEER.

3. PRIOR TO FILL PLACEMENT, THE EXCAVATION BOTTOM SHALL BE SCARIFIED 6 INCHES, MOISTURE CONDITIONED AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION (RC), AS DETERMINED BY ASTM D1557. IF NATIVE SOIL IS ENCOUNTERED AT THE BOTTOM OF FOOTING ELEVATION, THIS MATERIAL SHALL BE SCARIFIED AT LEAST 12 INCHES, MOISTURE CONDITIONED, AND COMPACTED TO AT LEAST 95 PERCENT RC. THE EARTHWORK SHALL RESULT IN AT LEAST 12 INCHES OF COMPACTED FILL BENEATH ALL STRUCTURAL FOUNDATIONS. THE LATERAL OVER-EXCAVATION SHALL EXTEND AT LEAST ONE FOOT BEYOND THE EDGE OF THE FOOTINGS.

4. FILL SHALL BE MOISTURE CONDITIONED TO WITHIN ZERO TO THREE PERCENT ABOVE OPTIMUM MOISTURE FOR ON-SITE SOILS AND COMPACTED. PRIMARY STRUCTURAL FILL BENEATH FOOTINGS SHALL BE COMPACTED TO AT LEAST 95 PERCENT RC; HOWEVER, 90 PERCENT RC IS ACCEPTABLE IF THE RESULTS OF A HYDROMETER TEST INDICATE THE CLAY CONTENT OF THE FILL MATERIALS IS AT LEAST 15 PERCENT. ALL SECONDARY FILL, INCLUDING RETAINING WALL BACKFILL, SHALL BE COMPACTED TO AT LEAST 90 PERCENT RC.

5. THE SELECTED FILL MATERIALS SHALL BE PLACED IN LEVEL, UNIFORM LAYERS NOT EXCEEDING 6" IN THICKNESS WHEN COMPACTED. EACH LAYER SHALL BE THOROUGHLY MIXED DURING SPREADING TO INSURE UNIFORMITY OF MATERIAL AND MOISTURE IN EACH LAYER.

6. ALL WORK SHALL COMPLY TO CITY GRADING REGULATIONS.

7. THE STAMPED SET OF PLANS SHALL BE ON THE JOB SITE AT ALL TIMES.

8. TEMPORARY EXCAVATION MAY BE USED WHERE SPACE IS AVAILABLE. TEMPORARY EXCAVATIONS SHALL NOT EXTEND WITHIN THE THEORETICAL 1:1 PROJECTION OF THE EXISTING BUILDING FOOTING FOUNDATIONS. VERTICAL EXCAVATIONS SHALL NOT EXCEED 4 FEET IN HEIGHT. THE EXISTING UNCERTIFIED FILL AND NATIVE SOIL MAY BE SLOPED BACK NO STEEPER THAN 1:1 (H:V) TO 7 FEET IN VERTICAL HEIGHT. THE EXISTING FILL AND NATIVE SOIL MAY BE SLOPED BACK NO STEEPER THAN 1.5:1 FOR SLOPES GREATER THAN 11 FEET.

   THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SHORING DESIGN. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF AND OBTAIN A SHORING PERMIT. THE GED SHALL BE PROVIDED AN OPPORTUNITY TO REVIEW THE SHORING DESIGN PRIOR TO INSTALLATION.

9. PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT ADJACENT PROPERTIES AND FIXED IMPROVEMENTS IN THE PUBLIC RIGHT-OF-WAY DURING GRADING OPERATIONS.

10. DUST SHALL BE CONTROLLED BY WATERING.

11. IF REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PAY FOR ALL RETAINING WALL PERMITS.

12. NO TRENCHES OR EXCAVATION 5'-0" OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND SHALL BE ALLOWED. AN EXCEPTION WILL BE MADE ONLY IF A NECESSARY PERMIT IS OBTAINED FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRY SAFETY PRIOR TO THE ISSUANCE OF A BUILDING OR GRADING PERMIT.

13. REFER TO THE CONSTRUCTION LAYOUT AND DIMENSIONING PLAN FOR ADDITIONAL DIMENSIONS, TIES, OR TO OTHER STAKING DATA.

14. FOR REFERENCE TO EXISTING CONDITIONS, SEE TOPOGRAPHIC SURVEY.

15. GRADING AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2017 LABC CODE REQUIREMENTS.

16. NO FILL TO BE PLACED, UNTIL THE CITY GRADING INSPECTOR HAS INSPECTED AND APPROVED THE BOTTOM EXCAVATION. THE BOE, GEOTECHNICAL ENGINEERING DIVISION (GED) IS TO APPROVE THE BOTTOM AND LEAVE A CERTIFICATE ON THE SITE FOR THE CITY GRADING INSPECTOR AND BOE (GED) ARE TO BE NOTIFIED BEFORE ANY GRADING BEGINS AND, FOR BOTTOM INSPECTION, AND BEFORE ANY FILL IS PLACED. FILL MAY NOT BE PLACED WITHOUT APPROVAL OF THE GRADING INSPECTOR.

17. STRAIGHT GRADE SHALL BE RUN BETWEEN CONTOURS AND SPOT ELEVATIONS UNLESS OTHERWISE INDICATED.

18. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY METHODS, MATERIALS, AND LABOR TO EFFECTIVELY CONTROL ANY EROSION ACTIVITY THAT MAY OCCUR DURING THE COURSE OF GRADING AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL OBTAIN THE APPROVAL FROM THE CONSTRUCTION MANAGER PRIOR TO IMPLEMENTATION OF ANY EROSION CONTROL ACTIVITY.

19. RETAINING WALLS LOCATED CLOSER TO THE PROPERTY LINE THAN THE HEIGHT OF THE WALL SHALL BE BACKFILLED NOT LATER THAN 10 DAYS AFTER CONSTRUCTION OF THE WALL AND NECESSARY STRUCTURAL SUPPORTING MEMBERS UNLESS RECOMMENDED OTHERWISE BY RESPONSIBLE ENGINEER.

20. PROVIDE A 30-DAY WRITTEN NOTICE OF INTENT TO EXCAVATE TO ADJACENT PROPERTY OWNERS PER SECTION 91.3301.21 OF THE L.A. MUNICIPAL CODE. SEE LADBS INFORMATION BULLETIN P/BC 2002-060 AT WWW.LADBS.ORG.

21. INSTALLATION OF DRAINLINES UNDER SIDEWALK SHALL CONFORM TO BOE STANDARD SPECIFICATIONS (https://engpermitmanual.lacity.org/construction -permits/design-standards/boe-standard -specifications-quick-reference-guide).

21. THE CONTRACTOR SHALL PROVIDE A GRADING BOND FOR ALL GRADING WORK OF 250 CUBIC YARDS OR MORE WHEN CONDUCTED IN A DESIGNATED HILLSIDE AREA (SECTION 91.7006.5). PROVIDE A GRADING PERMIT CASH BOND. SEE GRADING BOND: KPC-GRAD BOND 03 AND 04 AT WWW.LADBS.ORB.

22. TEMPORARY EROSION CONTROL TO BE INSTALLED BETWEEN OCTOBER 1 AND APRIL

23. OBTAIN GRADING INSPECTOR' AND DEPARTMENT OF PUBLIC WORKS APPROVAL OF THE PROPOSED PROCEDURES [>200 CY)].

24. ALL GRADING SLOPES SHALL BE PLANTED AND IRRIGATED.

25. STANDARD 12 INCH BERM IS REQUIRED AT TOP OF ALL GRADED SLOPES.

26. THE SOILS ENGINEER IS TO APPROVE THE KEY OR BOTTOM AND LEAVE A CERTIFICATE ON THE SITE FOR THE GRADING INSPECTOR. THE GRADING INSPECTOR IS TO BE NOTIFIED BEFORE ANY GRADING BEGINS AND, FOR BOTTOM INSPECTION, BEFORE FILL IS PLACED. FILL MAY NOT BE PLACED WITHOUT APPROVAL OF THE GRADING INSPECTOR.

27. ESTIMATED EARTHWORK QUANTITIES PROVIDED HEREIN TO BE USED FOR JURISDICTIONAL PLAN CHECKING AND PERMITTING ONLY. THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES AS REQUIRED FOR BIDDING AND EXECUTION OF WORK. THE CITY IS NOT RESPONSIBLE FOR THE CONTRACTOR'S EARTHWORK CALCULATION.

28. THE ESTIMATED EARTHWORK DOES NOT CONSIDER THE REMOVAL OF ANY UNSUITABLE MATERIAL, AND THE REMOVAL OF EXISTING TOP SOIL OR VEGETATION. THE ESTIMATED EARTHWORK QUANTITIES DOES NOT INCLUDE SWELL/SHRINKAGE FACTORS. THE ESTIMATED EARTHWORK QUANTITIES ASSUME THAT ALL ON-SITE MATERIALS ARE SUIITABLE FOR BACKFILLING. HOWEVER, ACTUAL ON-SITE MATERIALS AND IMPORTED MATERIALS MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION.

29. STORM WATER POLLUTION CONTROL: THE CONTRACTOR IS RESPONSIBLE FOR THE STORM WATER POLLUTION CONTROL MEASURE FOR CONSTRUCTION ACTIVITIES.

    ALL CONSTRUCTION WORKS OR ACTIVITIES DUE TO SITE DEVELOPMENT AND REDEVELOPMENT, AND APPLICABLE LINEAR UNDERGROUND/OVERHEAD PROJECT (LUP) SHALL HAVE EROSION CONTROLS AND MEASURES AS REQUIRED BY THE FEDERAL CLEAN WATER ACT (CWA). THE EROSION CONTROLS AND MEASURES USED SHALL BE FROM APPROVED BEST MANAGEMENT PRACTICES (BMPS) CONFORMING WITH THE CITY OF LOS ANGELES MUNICIPAL CODE REQUIREMENTS AND/OR THE CALIFORNIA CONSTRUCTION GENERAL PERMIT ORDER 2009-0009-DWQ ADOPTED BY THE STATE WATER BOARD RESOURCES CONTROL BOARD (SWRCB), WHICHEVER IS APPLICABLE. THESE EROSION CONTROLS AND MEASURES ARE IN ADDITION TO THE HYDROLOGY REPORT, EXCAVATION SUPPORT, THE DEWATERING PLAN, THE EMERGENCY PLAN OR THE EQUIPMENT, AND ALL OTHER REQUIREMENTS AS REQUIRED BY THE GRADING AND/OR BUILDING PERMIT OR FROM THE OTHER LOCAL GOVERNING AUTHORITIES, OR THE RECOMMENDATIONS PROVIDED IN GEOTECHNICAL OR SOIL REPORT BY THE GEOTECHNICAL OR SOIL ENGINEER, OR FROM THE STANDARD SPECIFICATIONS OF PUBLIC WORKS AS AMENDED BY BOE BROWN BOOK, OR THE PROJECT DOCUMENTS. SHOULD ANY CONFLICT OCCUR, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN

    THE BMPS SHALL INCLUDE, BUT NOT LIMITED TO, EROSION AND SEDIMENT CONTROL, TRACKING CONTROL, WIND EROSION CONTROL, NON-STORM WATER CONTROL, WASTE MANAGEMENT AND MATERIAL POLLUTION CONTROL, AND POST CONSTRUCTION STORM WATER CONTROL. NO STORM WATER DISCHARGES AND AUTHORIZED NON-STORM WATER DISCHARGES SHALL CONTAIN POLLUTANTS THAT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF ANY APPLICABLE WATER QUALITY OBJECTIVE OR WATER QUALITY STANDARDS. THE BMPS SHALL ALSO CONFORM TO THE MINIMUM STORM WATER REQUIREMENTS AS SPECIFIED HEREIN AND WITH THE BEST MANAGEMENT PRACTICES AS SPECIFIED IN CALIFORNIA STORMWATER BEST MANAGEMENT PRACTICE HANDBOOK PORTAL: CONSTRUCTION (OR KNOWN AS CONSTRUCTION BEST MANAGEMENT PRACTICE HANDBOOK, HTTP://WWW.CABMPHANDBOOKS.COM) PUBLISHED BY THE

    CALIFORNIA STORM WATER QUALITY ASSOCIATION (CASQA); DEVELOPMENT BEST MANAGEMENT PRACTICES HANDBOOK, PART A-CONSTRUCTION ACTIVITIES, LATEST EDITION HTTP://WWW.LASTORMWATER.ORG/SITEORG/DOWNLOAD/TECHMAN.HTM), PUBLISHED BY WATERSHED PROTECTION DIVISION OF BUREAU OF SANITATION OF THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF LOS ANGELES; AND THE WET WEATHER EROSION CONTROL PLAN (HTTP://BCA.CI.LA.CA.US/INDEX.CFM) APPROVED AND ADOPTED BY THE BOARD OF PUBLIC WORKS PER APPLICABLE SECTIONS 61.02, 61.09, 64.72, 91.106 OF THE LOS ANGELES MUNICIPAL CODE (LAMC) AND OTHER RELATED CITY ORDINANCES.

    NO DISCHARGE OF ANY HAZARDOUS SUBSTANCE SHALL BE ALLOWED. ALL MINIMUM STORM WATER REQUIREMENTS AND/OR THE BMPS SHALL BE INCORPORATED OR ATTACHED TO THE CONSTRUCTION PLANS, THE BUILDING PLANS AND/OR THE GRADING PLANS AND SUBMITTED TO THE APPROPRIATE JURISDICTIONAL CITY DEPARTMENT(S) AND THE GOVERNING AUTHORITIES FOR REVIEW AND APPROVAL AND TO BE USED TO COMPLETE ALL NECESSARY WORK PERMITS. (NOTE: SINCE THE RUNOFF FROM ANY CONSTRUCTION SITE IN PRIVATE DEVELOPMENT CAN ENTER THE PUBLIC RIGHT OF WAYS AND CITY'S STORM DRAIN SYSTEM, REVIEW AND APPROVAL OF THE BMPS BY THE LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY AND THE BUREAU OF ENGINEERING OF DEPARTMENT OF PUBLIC WORKS SHALL ALSO BE REQUIRED. IF STORM WATER RUNOFFS MAY ENTER NEIGHBORING AREA UNDER JURISDICTION OF OTHER LOCAL GOVERNING AUTHORITY, ADDITIONAL APPROVAL FROM SUCH AUTHORITY SHALL ALSO BE REQUIRED.)

NOTE:

SEE GRADING PRE-INSPECTION REPORT ON SHEET L004 FOR ADDITIONAL REQUIREMENTS.

CITY OF LOS ANGELES
CALIFORNIA

BOARD OF BUILDING AND SAFETY COMMISSIONERS
VAN AMBATIELOS, PRESIDENT
E. FELICIA BRANNON, VICE PRESIDENT
JOSELYN GEAGA-ROSENTHAL
GEORGE HOVAGUIMIAN
JAVIER NUNEZ

ERIC GARCETTI
MAYOR

DEPARTMENT OF BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012
FRANK M. BUSH, GENERAL MANAGER, SUPERINTENDENT OF BUILDING
OSAMA YOUNAN, P.E., EXECUTIVE OFFICER

SOILS REPORT APPROVAL LETTER

December 20, 2018

LOG # 106344
SOILS/GEOLOGY FILE - 2

Department of Recreation and Parks
1149 S. Broadway, 8th Floor
Los Angeles, CA 90015

TRACT: 6729
LOT: 78
LOCATION: 10654 Irma Avenue

CURRENT REFERENCE REPORT/LETTER(S)	REPORT No.	DATE(S) OF DOCUMENT	PREPARED BY
Supplemental Report	17-137	09/13/2018	LA City - GEO
Laboratory Test Report	A8950-06-15	09/12/2018	Geocon West, Inc.

PREVIOUS REFERENCE REPORT/LETTER(S)	REPORT No.	DATE(S) OF DOCUMENT	PREPARED BY
Dept. Approval Letter	100429	11/03/2017	LADBS
Soils Report	17-137	10/11/2017	LA City - GEO
Laboratory Test Report	2500.081	10/03/2017	Geotechnical Professional, Inc.

The Grading Division of the Department of Building and Safety has reviewed the supplemental referenced report that provide recommendations for the proposed pedestrian access ramp on the west side of the existing administration building. The earth materials at the subsurface exploration locations consist of up to 7.5 feet of uncertified fill underlain by alluvium. The consultants recommend to support the proposed structure on conventional foundations bearing on native undisturbed soils and/or a blanket of properly placed fill.

The Department previously conditionally approved the above referenced reports dated 10/11/2017 and 10/03/2018 for the proposed new light-emitting diode (LED) light poles security light poles in a letter dated 11/03/2017, Log #100429.

The referenced reports are acceptable, provided the following conditions are complied with during site development:

(Note: Numbers in parenthesis ( ) refer to applicable sections of the 2017 City of LA Building Code. P/BC numbers refer the applicable Information Bulletin. Information Bulletins can be accessed on the internet at LADBS.ORG.)

1. All conditions of the above referenced Department approval letter shall apply.

LADBS G-5 (Rev.11/23/2016) AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

Page 2
10654 Irma Avenue

2. If import soils are used, no footings shall be poured until the soils engineer has submitted a compaction report containing in-place shear test data and settlement data to the Grading Division of the Department, and obtained approval. (7008.2)

3. Compacted fill shall extend beyond the footings a minimum distance equal to the depth of the fill below the bottom of footings or a minimum of three feet whichever is greater, except at locations where lateral over excavation is not possible, in which case the foundations may be deepened to bear in native soils (7011.3).

4. Prior to the issuance of the permits, the soils engineer and/or the structural designer shall evaluate the surcharge loads used in the report calculations for the design of the retaining walls and shoring. If the surcharge loads used in the calculations do not conform to the actual surcharge loads, the soil engineer shall submit a supplementary report with revised recommendations to the Department for approval.

5. Unsurcharged temporary excavation may be cut vertical up to 4 feet. Excavation over 4 feet and up to a maximum height of 7 feet shall be trimmed back at a uniform gradient not exceeding 1:1 (H:V) for existing uncertified fill and native soil, as recommended.

6. The soils engineer shall review and approve the shoring plans prior to issuance of the permit. (3307.3.2)

7. Shoring shall be designed for the lateral earth pressures specified in the section titled "Temporary Shoring" starting on page 3 of the 09/13/2018 report; all surcharge loads shall be included into the design. Total lateral load on shoring piles shall be determined by multiplying the recommended EFP by the pile spacing.

8. Shoring shall be designed for a maximum lateral deflection of ½ inches, as recommended.

9. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.

10. Installation of shoring, underpinning, slot cutting excavations and/or pile installation shall be performed under the inspection and approval of the soils engineer and deputy grading inspector. (1705.6)

11. All foundations shall derive entire support from native undisturbed soils, a blanket of properly placed fill, as recommended and approved by the soils engineer by inspection.

12. Footings supported on approved compacted fill or expansive soil shall be reinforced with a minimum of four (4) ½-inch diameter (#4) deformed reinforcing bars. Two (2) bars shall be placed near the bottom and two (2) bars placed near the top.

13. The foundation/slab design shall satisfy all requirements of the Information Bulletin P/BC 2014-116 "Foundation Design for Expansive Soils" (1803.5.3). Note: Soils with an Expansion Index greater than 20 are considered to be expansive, in accordance with Section 1803.5.3 of the 2014 LABC.

14. Retaining walls up to 8 feet in height and with a level backfill shall be designed for a minimum EFP of 35 PCF, as specified on page 5 of the report. All surcharge loads shall be incorporated into the design.

15. Retaining walls higher than 6 feet shall be designed for lateral earth pressure due to earthquake motions as specified on page 5 of the 09/13/2018 report (1803.5.12). Note: Lateral earth pressure due to earthquake motions shall be in addition to static lateral earth pressures and other surcharge pressures.

Page 3
10654 Irma Avenue

16. Walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure as specified on page 5 of the 09/13/2018 report (1610.1). All surcharge loads shall be included into the design.

17. All retaining walls shall be provided with a standard surface backdrain system and all drainage shall be conducted to the street in an acceptable manner and in a non-erosive device. (7013.11)

18. With the exception of retaining walls designed for hydrostatic pressure, all retaining walls shall be provided with a subdrain system to prevent possible hydrostatic pressure behind the wall. Prior to issuance of any permit, the retaining wall subdrain system recommended in the soil report shall be incorporated into the foundation plan which shall be reviewed and approved by the soils engineer of record. (1805.4)

19. Installation of the subdrain system shall be inspected and approved by the soils engineer of record and the City grading/building inspector. (108.9)

20. Basement walls and floors shall be waterproofed/damp-proofed with an L.A. City approved "Below-grade" waterproofing/damp-proofing material with a research report number. (104.2.6)

21. Prefabricated drainage composites (Miradrain) (Geotextiles) may be only used in addition to traditionally accepted methods of draining retained earth.

22. Where the ground water table is lowered and maintained at an elevation not less than 6 inches below the bottom of the lowest floor, or where hydrostatic pressures will not occur, the floor and basement walls shall be damp-proofed. Where a hydrostatic pressure condition exists, and the design does not include a ground-water control system, basement walls and floors shall be waterproofed. (1803.5.4, 1805.1.3, 1805.2, 1805.3)

23. No footing/slab shall be poured until the compaction report is submitted and approved by the Grading Division of the Department.

ROMIO DURAN
Structural Engineering Associate I

RD/rd
Log No. 106344
213-482-0480

cc: Applicant
LA City - GEO, Project Consultant
Geocon West, Inc., Project Consultant
WL District Office

REGISTERED PROFESSIONAL ENGINEER
GARY LAM
C 65208
EXP 9/30/23
CIVIL
STATE OF CALIFORNIA
01/18/2023

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET - 5/17/2022

A1 SOILS REPORT APPROVAL LETTER

N.T.S.

REVISION DATES (DESIGN STAGE ONLY)

REVISION DATE: 11/2/2023 1:40 PM FILE: C:\USERS\37574\BOXARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L302 GRADING NOTES - SOILS REPORT.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

BUILDING NO. -
INDEX NO. - RP-300123

NO.	REVISIONS:	DATE	BY:
	SERIAL NO.		

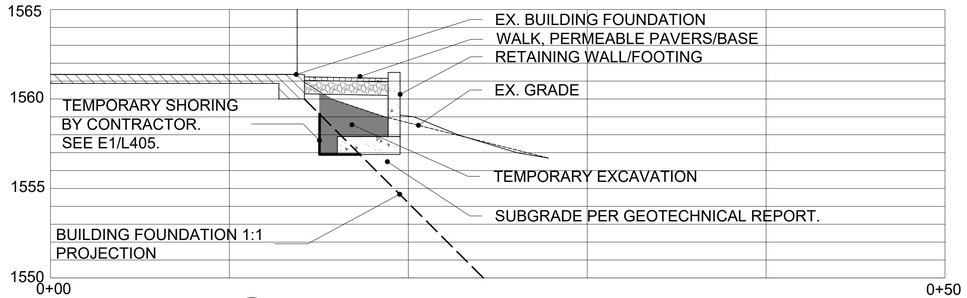
LICENSED LANDSCAPE ARCHITECT
GARY W. FISHER
No. 3460
9-30-23
Renewal Date
Date

CITY ENGINEER	TED ALLEN, P.E.	DATE:	03-01-22
ARCHITECTURAL DIVISION	LIC. NO. 3060		03-01-22
ARCHITECT:	Richard Fisher		03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY:	Jane Adrian		03-01-22
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

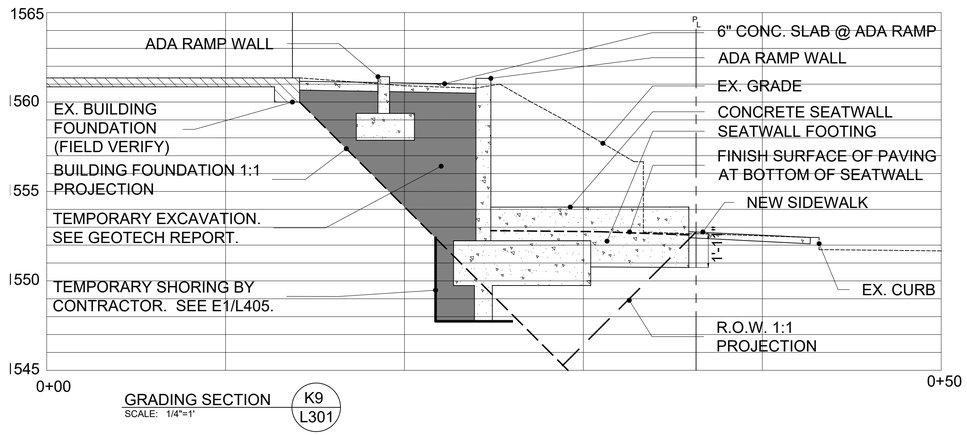
CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: GRADING & DRAINAGE NOTES AND SOILS REPORT APPROVAL LETTER
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L302
SHEET 18 OF SHEETS 96

PLOTTED: 3/8/2023 9:13 AM



GRADING SECTION (K1 / L301)
SCALE: 1/4"=1'



GRADING SECTION (K9 / L301)
SCALE: 1/4"=1'

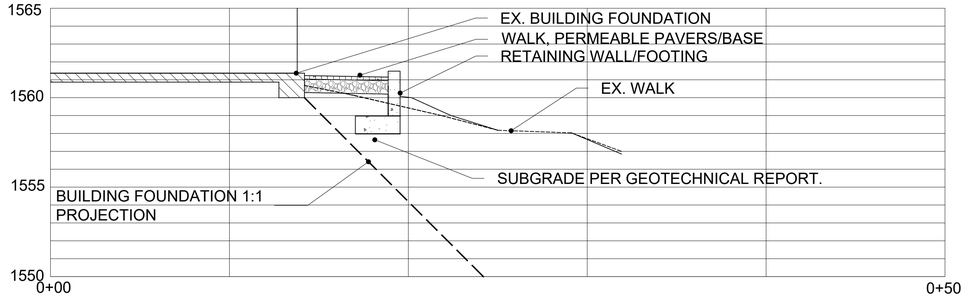
This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEER — GARY LAM — C 65208 — EXP 9/30/23 — CIVIL — STATE OF CALIFORNIA

01/18/2023

REGISTERED PROFESSIONAL ENGINEER — EASTON RENE FORCIER — No. GE 2948 — Exp. 9-30-24 — GEOTECHNICAL — STATE OF CALIFORNIA

11-21-22



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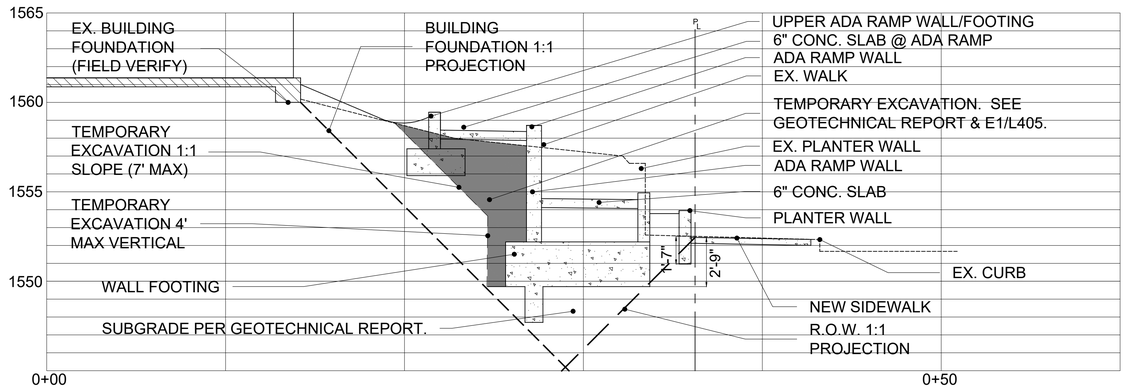
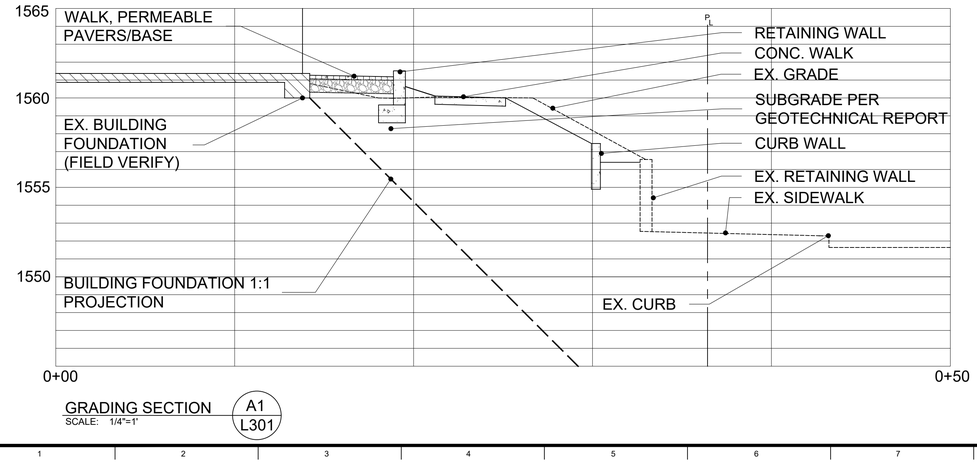
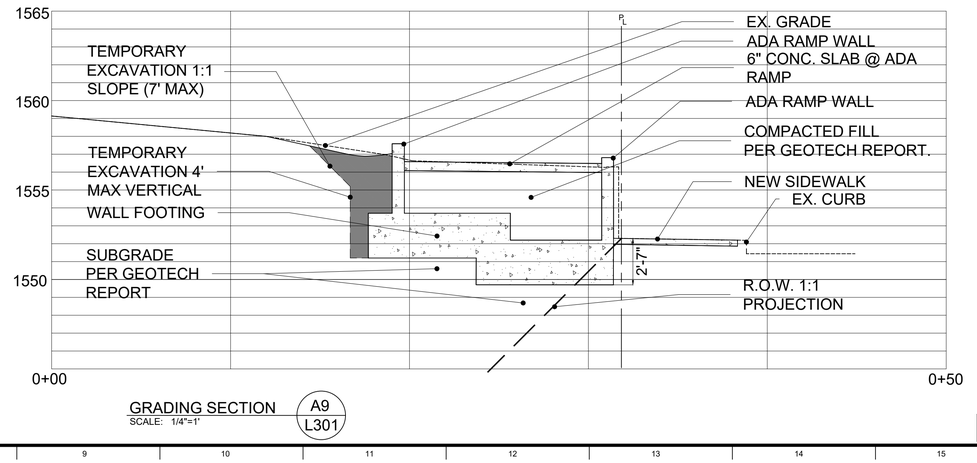
SCALE: 1/4"=1'



GRADING SECTION (F9 / L301)
SCALE: 1/4"=1'



GRADING SECTION (A1 / L301)
SCALE: 1/4"=1'



GRADING SECTION (A9 / L301)
SCALE: 1/4"=1'

BID SET - 5/17/2022

BUREAU OF ENGINEERING — OFFICIAL RECORD

LANDSCAPE ARCHITECT — CHRISTOPHER W. LEE — No. 3060 — Signature — 3-30-23 Renewal Date — 03-01-22 Date — LICENSED — STATE OF CALIFORNIA

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY ENGINEER: TED ALLEN, P.E.

		DATE:
ARCHITECTURAL DIVISION		
ARCHITECT:	Richard Fisher LIC. NO. 30600	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GRADING SECTIONS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L303

SHEET 19 OF SHEETS 96

PLOTTED: 3/8/2023 9:16 AM

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING — CITY OF LOS ANGELES ENGINEERING

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/18/2023 1:11 PM FILE: C:\USERS\37574\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L301 GRADING PLAN.DWG

CONSTRUCTION NOTES:

1. RENOVATED POOL DECK. SEE ARCHITECTURAL PLANS.
2. EXISTING BATH HOUSE TO BE REMODELED. SEE ARCH. PLANS.
3. NEW POOL AREA FENCES, CURBS, AND GATES. SEE ARCH. PLANS
4. EXISTING PARKING LOT ASPHALT PAVING TO REMAIN. CLEAN ASPHALT, AND APPLY TWO COATS OF 'GUARDTOP' SEALER PER MFR.'S. INSTRUCTIONS. RE-STRIPE STALL MARKINGS TO MATCH EXISTING.
5. EXISTING CHAIN LINK FENCE TO REMAIN. PROTECT IN PLACE. SEE ARCH. PLANS.
6. EXISTING POWER POLE. PROTECT IN PLACE.
7. EXISTING TREES TO REMAIN, TYP. SEE TREE PROTECTION NOTES, SHEET L001.
8. OR
9. EX. OR NEW LIGHT FIXTURES. SEE ELECTRICAL PLANS.
10. EXISTING FLAGPOLE & FOOTING TO REMAIN. PROVIDE NEW TACKLE BOX, LINES, AND 4' X 6', NYLON AMERICAN FLAG, WWW.SOCALFLAGPOLE COM. PROVIDE A FULLY OPERABLE FLAGPOLE UPON COMPLETION OF WORK.
11. EXISTING WOODEN PARK SIGN & POSTS TO REMAIN. PROTECT IN PLACE.
12. EXISTING DOMESTIC WATER METER TO REMAIN.
13. EXISTING PARKING LOT CURBS TO REMAIN. PROTECT IN PLACE.
14. EXISTING RETAINING WALLS TO REMAIN. PROTECT IN PLACE. SEE ARCH. PLANS.
15. NEW IRRIGATION BACKFLOW PREVENTER AND ENCOSURE. SEE IRRIGATION PLANS & DETAILS.
16. EXISTING IRRIGATION METER TO REMAIN. SEE IRRIGATION PLAN.
17. EXISTING STAIRS AND/OR LANDINGS TO REMAIN. PROTECT IN PLACE.
18. NEW DOMESTIC BACKFLOW IN C.L. ENCLOSURE. SEE MECHANICAL PLANS.
19. NEW HVAC EQUIPMENT ON CONCRETE PAD. SEE MECHANICAL PLANS.
20. EXISTING DRINKING FOUNTAIN TO REMAIN. PROTECT IN PLACE. SEE ARCH. PLANS.
21. EXISTING DRIVEWAY APPROACH TO REMAIN. PROTECT IN PLACE.
22. EXISTING RINO GATE AND POSTS TO REMAIN. PREPARE SURFACE AND RE-PAINT WITH STANDARD WHITE PAINT TO MATCH EX. DUNN-EDWARDS OR EQUAL.
23. EXISTING CONCRETE WALKWAY/SIDEWALK TO REMAIN - PROTECT IN PLACE.
24. NEW STEEL BENCH: PROVIDE AND INSTALL (1) VICTOR STANLEY MODEL FS-50, 6' BENCH WITH ONE CENTER ARMREST, INSTALL BY SURFACE-MOUNT PER MANUFACTURER'S INSTRUCTIONS. COLOR: SILVER. CONTACT: DAVID SKALKA, AVALON AMENITIES, INC. DAVIDS@AVALONAMENITIES.COM, TEL 951.299.9394, OR APPROVED EQUAL.
25. PROVIDE AND INSTALL (1) TRASH RECEPTACLE: KEYSTONE RIDGE DESIGNS MODEL RE3D-55 WITH LOCK TABS, "READING" ROUND LITTER RECEPTACLE WITH SIDE ACCESS DOOR, SURFACE MOUNT PER MANUFACTURER'S INSTRUCTIONS, FLAT LID - NO LINER. COLOR: "QUICKSILVER" PCSS/90416, OR APPROVED EQUAL.
26. CONSTRUCT NEW ACCESSIBLE RAMP & GUARDRAILS/HANDRAILS. SEE ELEV. A-A', J1/L402; ELEV. B-B', E1/L402; ELEV. C-C', A1/L402; ELEV. D-D', G1/L403; GUARDRAIL OR HANDRAIL PER A1/L404; AND ORNAMENTAL METAL WORK ON GUARDRAIL, A6/L405. FOR RETAINING WALLS, SEE STRUCTURAL PLANS. FOR CURB WALLS SEE E9/L406
27. CONSTRUCT NEW CONCRETE RETAINING WALL WITH POST & HANDRAIL PER DETAIL PER DETAIL A1/L404, D12/S301.
28. CONSTRUCT POURED CONCRETE SEATWALL, SEE DETAILS: A5/L406, A9/L406, AND A13/L406.
29. INSTALL NEW CITY SIDEWALK PER STANDARD PLAN, S-444-0, TYP. MIN. 3" THICK.
30. EXISTING STAIRS TO REMAIN. SEE ARCH. PLANS.
31. CONSTRUCT NEW ACCESSIBLE WALKWAY WITH GUARDRAILS AND CONCRETE RETAINING WALLS. SEE ELEV. E-E', A1/ L403; ELEV. F-F'; J1/L404; SECTION G-G', J11/L404; ORNAMENTAL METAL WORK ON GUARD RAIL, J1/L406. FOR RETAINING WALLS, SEE STRUCTURAL PLANS.
32. NEW CONCRETE PAVEMENT PER DETAIL E1/L406.
33. REPLACE EXISTING CHAIN-LINK FABRIC WITH NEW FABRIC TO MATCH ON FENCE ALONG TOP OF PARKING LOT RETAINING WALL. REMOVE RUST FROM EXISTING POSTS AND RE-PAINT WITH COLOR TO MATCH GALVANIZED FINISH. RE-PAINT EXISTING RETAINING WALL, COLOR TO MATCH EXISTING, DUNN-EDWARDS PAINT OR EQUAL.
34. NEW DISABLED ACCESS PARKING SPACE. SEE DETAIL J5/L407.
35. NEW DISABLED ACCESS EMBLEM. SEE DETAIL J13/L407.
36. NEW CONCRETE WHEEL BUMPER. SEE DETAIL J9/L-407.
37. NEW DISABLED ACCESS PARKING SIGN. SEE DETAIL E1/L407.
38. NEW PARKING LOT TOW-AWAY SIGN. SEE DETAIL E1/L407.
39. EXISTING SLOPE WITH STONE COVER TO REMAIN.
40. EXISTING DIRT TERRACE TO REMAIN.
41. SCORE LINES AND EXPANSION JOINTS AS NOTED PER DETAIL E1 & E5/L406 FOR ALL NEW RAMP AND WALKWAY CONCRETE PAVING.
42. EXISTING CONCRETE BENCH TO REMAIN - PROTECT IN PLACE.
43. NEW PLANTER WALL. SEE DETAIL E9/L406.
44. NEW CONCRETE CURB PER DETAIL A1/ L407.
45. EXISTING PLANTER WALLS TO REMAIN, TYP. PROTECT IN PLACE.
46. CONSTRUCT NEW ACCESSIBLE CONCRETE RAMP WITH 4" HIGH SIDE CURBS. SEE DETAILS E1/L406, E9/L406, AND PROVIDE NEW HANDRAILS PER DETAIL A1/L404, TYPE A1.
47. NEW PRE-CAST CONCRETE STEPPING STONES 16" X 16". LAY ON LAYER OF LEVELING SAND. PLACE WITH 6" GAP BETWEEN STEPPING STONES (12 REQUIRED). TOP OF STONES SHALL BE 1" ABOVE FINISH GRADE.
48. NEW STRIPPING 4" STROKES @ 36" O.C., 45°. APPROVED BLUE PAINT.
49. REPLACE EXISTING VALVE/METER. SEE MECHANICAL PLANS.
50. NEW CONCRETE STEP. INSTALL PER DETAIL A13/L407.
51. NEW PERMEABLE PAVERS. INSTALL PER DETAIL J13/L405.
52. NEW CONCRETE HEADER. INSTALL PER DETAIL J13/L405.
53. POROUS ASPHALT CONCRETE PAVEMENT. INSTALL PER DETAIL E13/L406.

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEER — EASTON RENE' FORBES — No. GE 2948 — Exp. 9-30-24 — GEOTECHNICAL — STATE OF CALIFORNIA

11-21-22

CONSTRUCTION LEGEND:

- EXISTING SLOPE WITH STONE COVER TO REMAIN, TYP.
- EXISTING CONCRETE PAVEMENT TO REMAIN.
- NEW CONCRETE PAVEMENT
- PLANTING AREA, TYP. SEE PLANTING PLAN SHEET L701.
- NEW POROUS ASPHALT CONCRETE PAVING PER DETAIL E13/L406.
- TREE PROTECTION ZONE. SEE TREE PROTECTION NOTES, SHEET L001.
- NEW PERMEABLE PAVERS PER DETAIL J13/L405.

KEY:

- CONSTRUCT
- EXISTING
- REMODEL EXISTING
- REMOVE & CONSTRUCT

EX. CONC. BLEACHERS

SWIMMING POOL
SEE ARCH. DRAWINGS.

POOL DECK - SEE POOL PLANS

EX. BATH HOUSE
SEE ARCH. DRAWINGS.

POOL DECK

SIDEWALK

HILLROSE ST.

IRMA AVE.

PARKING

ENTRY

EX. BENCH, TYP.

(TOP LANDING)

(MIDDLE LANDING)

(BOTTOM LANDING)

LANDING

SECTION D-D'

SECTION G-G'

ELEV. A-A'

ELEV. B-B'

ELEV. C-C'

ELEV. E-E'

ELEV. F-F'

VAN

P.A.

P.L.

SIDEWALK

A1 SITE PLAN
Scale: 3/32" = 1' - 0"

BID SET - 5/17/2022

BUREAU OF ENGINEERING — OFFICIAL RECORD

DIGALERT — Call Toll Free 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — Underground Service Alert of Southern California

BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS

CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT — CHRISTOPHER W. FORBES — No. 3060 — Signature — Print Name: Chris Forbes — Date: 03-01-22 — STATE OF CALIFORNIA

CITY ENGINEER		DATE:
TED ALLEN, P.E.		03-01-22
ARCHITECTURAL DIVISION	LIC. NO. 30660	
ARCHITECT:	Richard Fisher	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L401

SHEET 20 OF SHEETS 96

PLOTTED: 3/8/2023 9:15 AM

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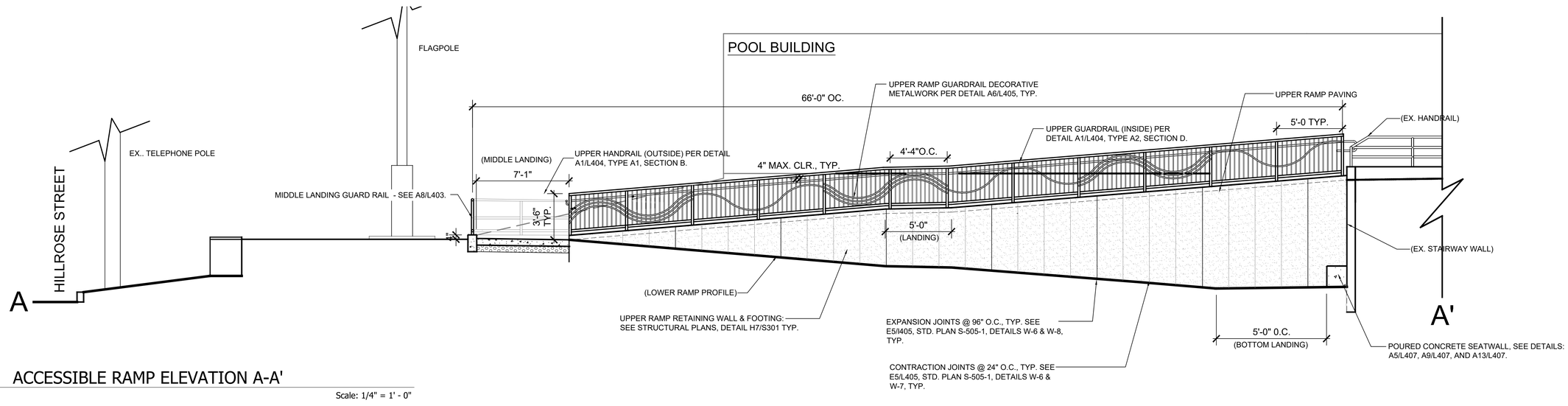
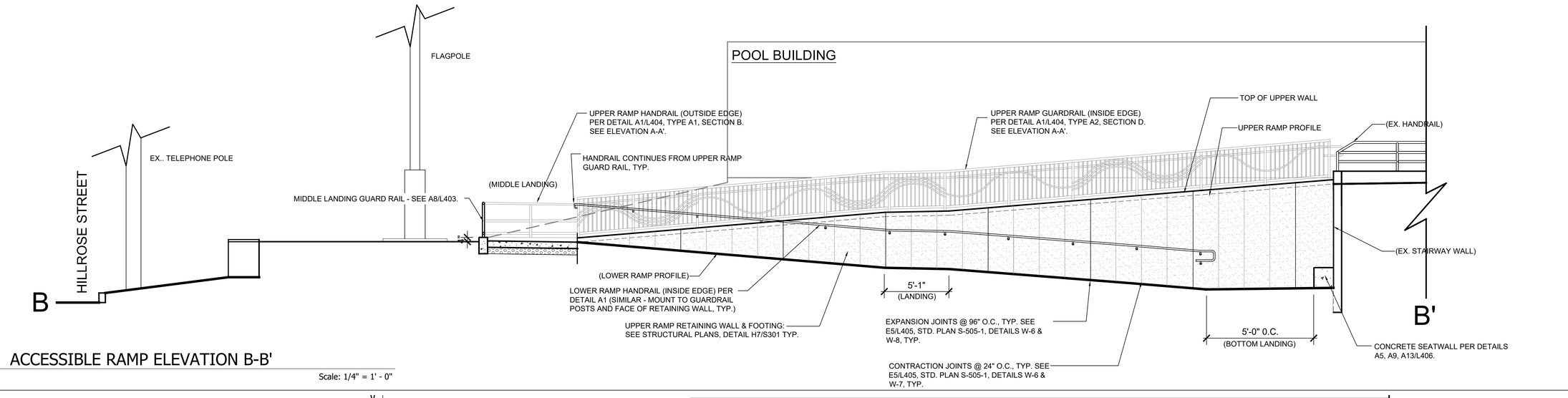
TEMPLATE SHEET REVISION DATE: 08/2006
REVISION DATE: 1/12/2023 2:55 PM FILE: C:\USERS\375740\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L401 CONSTRUCTION.DWG

REVISION DATES (DESIGN STAGE ONLY)



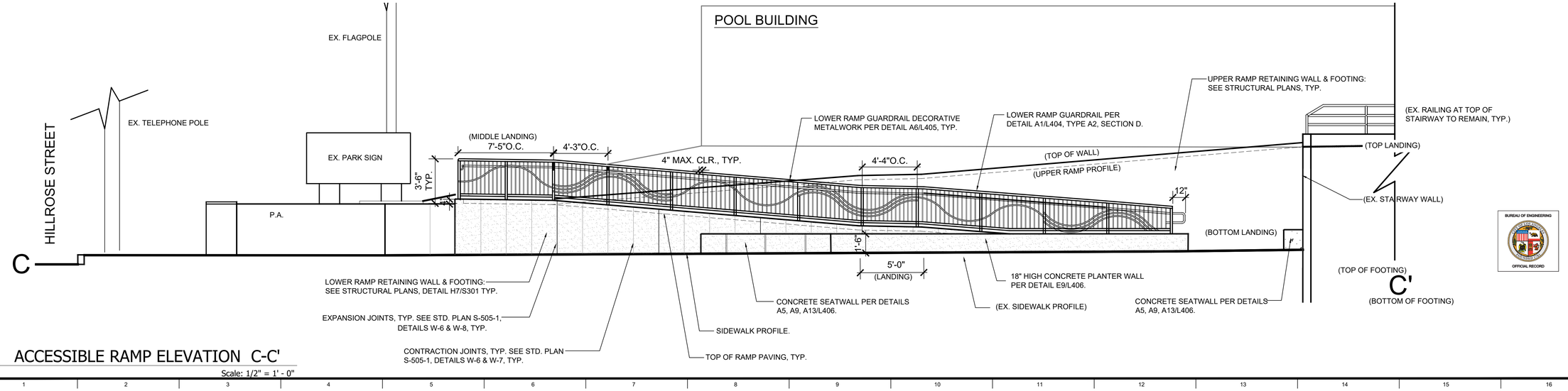
J1 ACCESSIBLE RAMP ELEVATION A-A'

Scale: 1/4" = 1' - 0"



E1 ACCESSIBLE RAMP ELEVATION B-B'

Scale: 1/4" = 1' - 0"



A1 ACCESSIBLE RAMP ELEVATION C-C'

Scale: 1/2" = 1' - 0"

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

NO	REVISIONS:	DATE:	BY:
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SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT
CHRISTOPHER W. FOSTER
No. 3060
Signature
Pending
Renewal date
03-01-22
Date
OF CALIFORNIA
LICENSE NO.

CITY ENGINEER		
TED ALLEN, P.E.	LIC. NO. 30660	DATE: 03-01-22
ARCHITECTURAL DIVISION		
ARCHITECT: Richard Fisher		03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY: Jane Adrian		03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS, SHEET 1

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

BUREAU OF ENGINEERING
OFFICIAL RECORD

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L402

SHEET 21 OF SHEETS 96

PLOTTED: 3/8/2023 9:14 AM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 2:34 PM FILE: C:\USERS\375740\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L402 CONST DETAILS SHT 1.DWG

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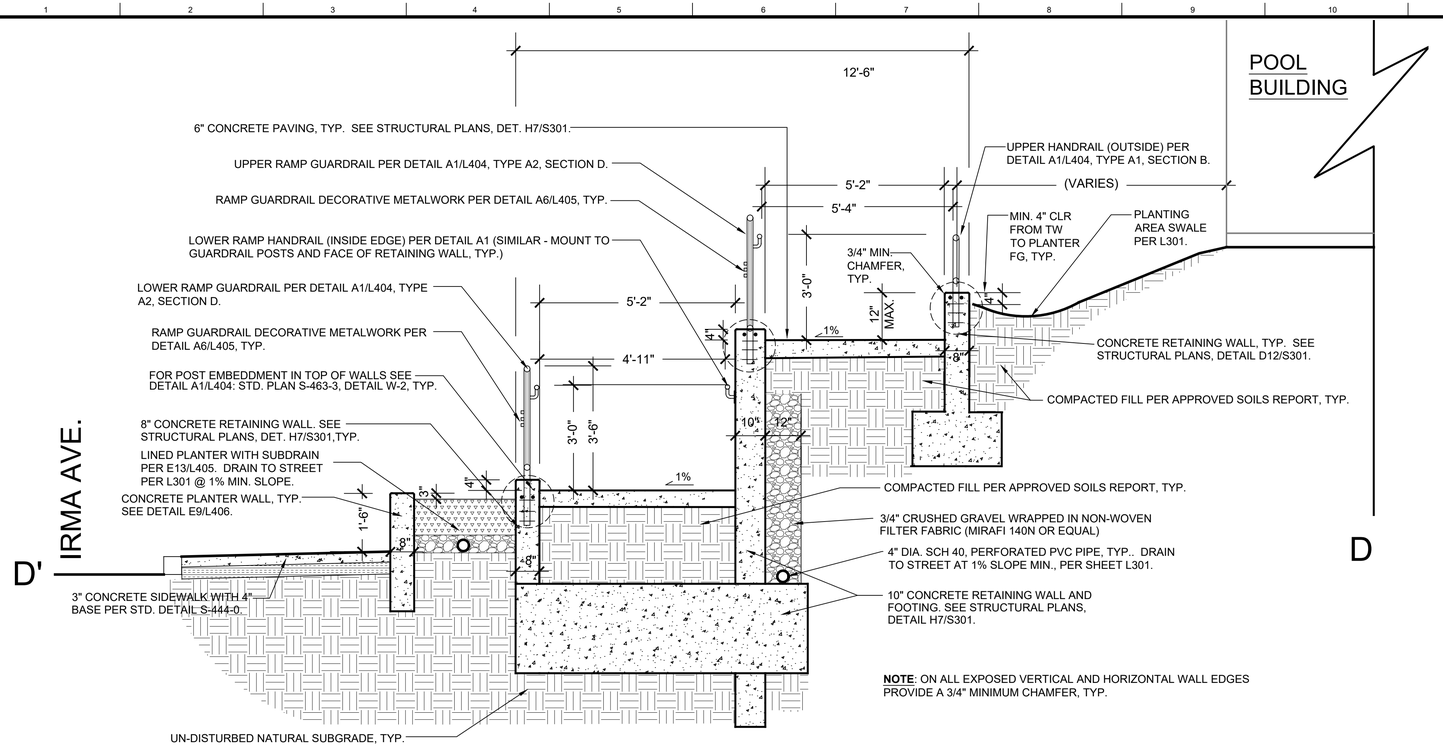


NOTE: ON ALL EXPOSED VERTICAL AND HORIZONTAL WALL EDGES PROVIDE A 3/4" MINIMUM CHAMFER, TYP.

G1 ACCESSIBLE RAMP SECTION D-D'

Scale: 1/2" = 1' - 0"

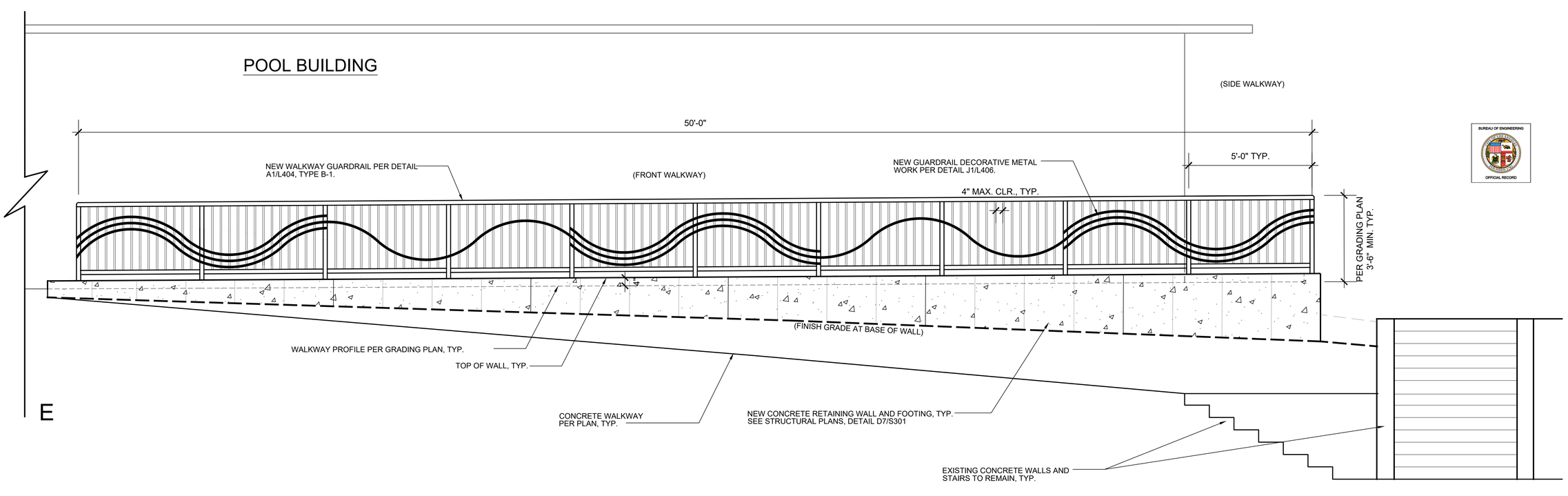
HANDRAIL AND GUARDRAIL NOTES:

1. GUARDRAIL AND HANDRAIL SHALL BE PER STANDARD PLAN S-463-3, DETAIL A1/L405. ALL WORK TO COMPLY WITH THE S.S.P.W.C. "GREENBOOK."
2. PROVIDE SHOP DRAWINGS AND HARDWARE SUBMITTAL FOR FOR APPROVAL PRIOR TO FABRICATION.
3. GUARDRAILS AND HANDRAILS SHALL BE GALVANIZED & LEFT UNPAINTED.
4. ALL FENCE CONNECTIONS SHALL BE FULLY WELDED. ALL WELDS SHALL BE A MINIMUM OF ⅛" THICK WITH COMPLETE PENETRATION AND TENSILE STRENGTH IN CONFORMANCE WITH STANDARD SPECIFICATIONS SECTION 304-1.9.
5. ALL OPENINGS IN GUARDRAIL SHALL BE LESS THAN 4" IN ONE DIMENSION.
6. SEE APPLICABLE CONSTRUCTION PLANS, ELEVATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
7. SEE STRUCTURAL PLANS AND DETAILS FOR STRUCTURAL REINFORCEMENTS.

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEER — EASTON RENE FORDER — No. GE 2948 Exp. 9-30-24 — GEOTECHNICAL — STATE OF CALIFORNIA

Easton Forder 11-21-22



A1 ACCESSIBLE WALKWAY GUARDRAIL ELEVATION E-E'

Scale: 1/2" = 1' - 0"

BUREAU OF ENGINEERING — OFFICIAL RECORD

REGISTERED PROFESSIONAL ENGINEER — GARY LAM — C 65208 EXP 9/30/23 — CIVIL — STATE OF CALIFORNIA

Gary Lam 01/18/2023

LANDSCAPE ARCHITECT — LICENSED — No. 3060 — Signature — 3-30-23 Renewal Date — 03-01-22 Date — STATE OF CALIFORNIA

BID SET - 5/17/2022

BUREAU OF ENGINEERING — ENGINEERING — CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -

BUILDING NO. -

INDEX NO. - RP-300123

DEPARTMENT OF PUBLIC WORKS — CITY OF LOS ANGELES

TED ALLEN, P.E. — CITY ENGINEER — DATE: 03-01-22

ARCHITECTURAL DIVISION — LIC. NO. 3060 — DATE: 03-01-22

ARCHITECT: Richard Fisher — DATE: 03-01-22

DESIGNED BY: Gregory Nuno/Greg Moeser — DATE: 03-01-22

DRAWN BY: Gregory Nuno/Greg Moeser — DATE: 03-01-22

CHECKED BY: Jane Adrian — DATE: 03-01-22

APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT — DATE: 03-14-22

VERTICAL CONTROL:

HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS, SHEET 2

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

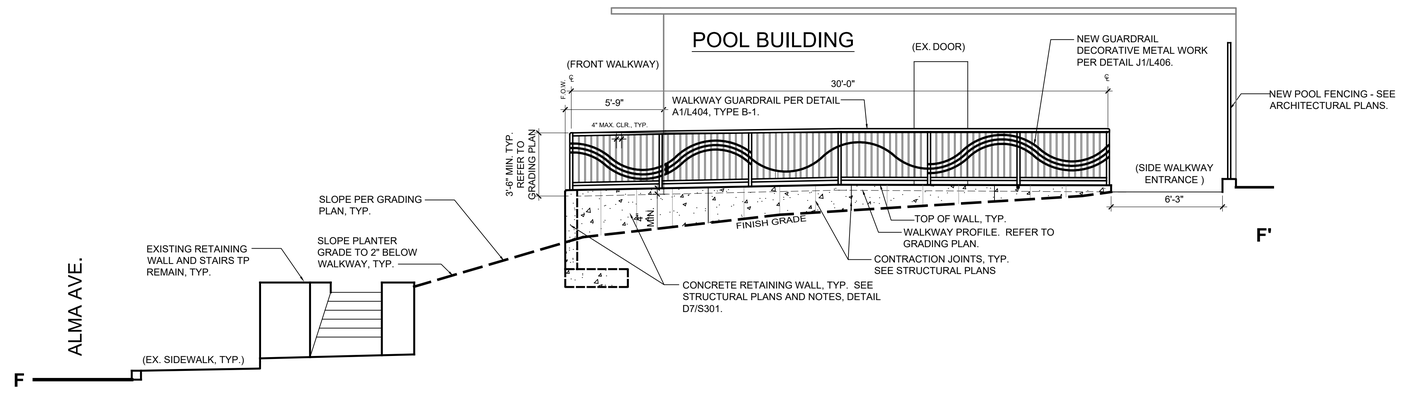
DRAWING NO. L403

SHEET 22 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

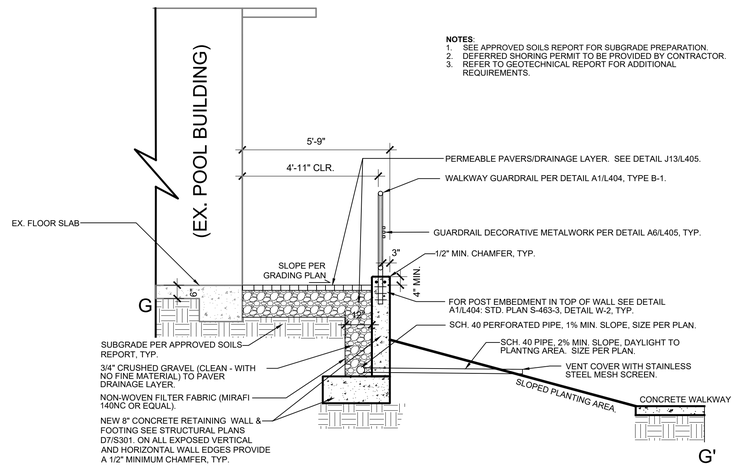
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 08/2006
REVISION DATE: 1/12/2023 2:56 PM FILE: C:\USERS\37574\DBOX\ARC_PROJECTS\VERDUGO HILLS POOLS-DESIGN\LANDSCAPE\L403 CONST DETAILS SHT 2.DWG
PLOTTED: 3/8/2023 9:16 AM



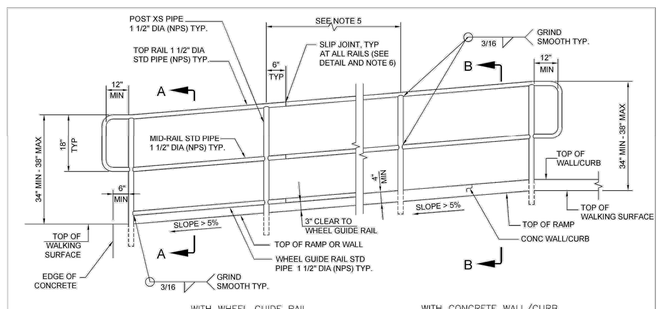
J1 ACCESSIBLE WALKWAY AND GUARDRAIL ELEVATION F-F'

Scale: 1/4" = 1' - 0"

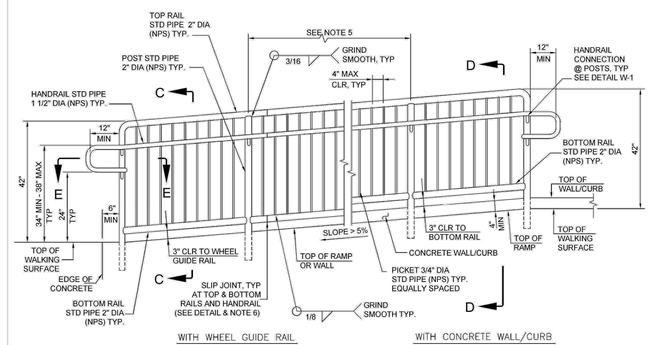


J11 ACCESSIBLE WALKWAY SECTION G-G'

Scale: 3/8" = 1' - 0"



TYPE A1 - HANDRAIL ON RAMPS LESS THAN 2'-6" ABOVE THE ADJACENT GRADE



TYPE A2 - GUARDRAIL AND HANDRAIL ON RAMPS 2'-6" OR MORE ABOVE THE ADJACENT GRADE

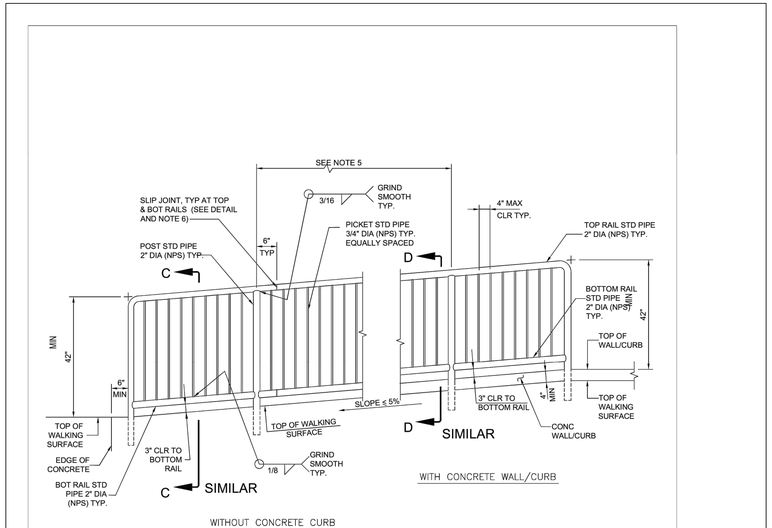
HANDRAIL AND GUARDRAIL ON RAMPS

(WALKING SURFACE SLOPE >5%)

NOT TO SCALE

BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	CITY OF LOS ANGELES
PEDESTRIAN PIPE GUARDRAILS & HANDRAILS		STANDARD PLAN S-463-3

PREPARED	SUBMITTED	APPROVED	SUPERSEDES	REFERENCES
ROBERT LOMELIN, BUREAU OF ENGINEERING	EDWARD ARRINGTON, S.E., ENGINEER OF DESIGN	GARY LEE MOORE, P.E., CITY ENGINEER — 08/15/2018 DATE	B-4633	
CHECKED: RAFFI MASSABKI, BUREAU OF ENGINEERING	KENNETH R. REDD, P.E., DEPUTY CITY ENGINEER		VAULT INDEX NUMBER: **B-4774**	
			SHEET 1 OF 4 SHEETS	



TYPE B1 - GUARDRAIL ALONG WALKWAYS 2'-6" OR MORE ABOVE THE ADJACENT GRADE

GUARDRAIL ON OPEN SIDE OF WALKWAYS

(WALKING SURFACE SLOPE < 5%)

NOT TO SCALE

STANDARD PLAN NO. S-463-3	VAULT INDEX NUMBER **B-4774**	SHEET 2 OF 4 SHEETS

REGISTERED PROFESSIONAL ENGINEER — GARY LAM — C 65208 Exp 9/30/23 — CIVIL — STATE OF CALIFORNIA

Gary Lam 01/18/2023

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEERS — EASTON RENE FORBES — No. GE 2948 Exp. 9-30-24 — GEOTECHNICAL — STATE OF CALIFORNIA

11-21-22

BUREAU OF ENGINEERING — OFFICIAL RECORD

BUREAU OF ENGINEERING — CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS

ENGINEERING — CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. — BUILDING NO. -

INDEX NO. - **RP-300123**

LANDSCAPE ARCHITECT — LICENSED — DONALD W. FISHER — No. 3060 — Signature — Pages 204 — Report Date 03-01-22 — Date — STATE OF CALIFORNIA

TED ALLEN, P.E. — CITY ENGINEER — ARCHITECTURAL DIVISION — LIC. NO. 3060

		DATE
ARCHITECT:	Richard Fisher	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS SHEET 3

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. **L404**

SHEET 23 OF SHEETS 96

BID SET - 5/17/2022

A1 HANDRAIL AND GUARDRAIL ON RAMPS

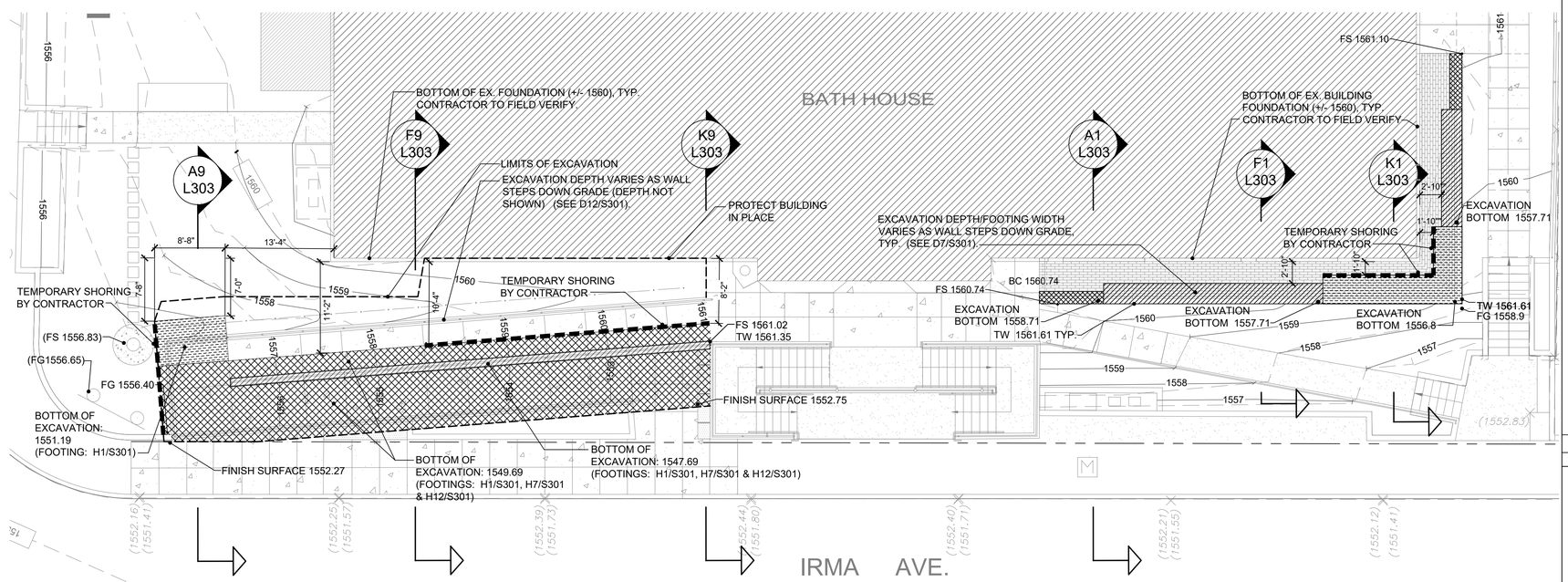
N.T.S.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 1:47 PM FILE: C:\USERS\37574\BOXARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L404 CONST DETAILS SHT 3.DWG

PLOTTED: 3/8/2023 9:15 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



NOTES:

1. TEMPORARY EXCAVATION MAY BE USED WHERE SPACE IS AVAILABLE. TEMPORARY EXCAVATIONS SHALL NOT EXTEND WITHIN THE THEORETICAL 1:1 PROJECTION OF THE EXISTING BUILDING FOOTING FOUNDATIONS. VERTICAL EXCAVATIONS SHALL NOT EXCEED 4 FEET IN HEIGHT. THE EXISTING UNCERTIFIED FILL AND NATIVE SOIL MAY BE SLOPED BACK NO STEEPER THAN 1:1 (H:V) TO 7 FEET IN VERTICAL HEIGHT. THE EXISTING FILL AND NATIVE SOIL MAY BE SLOPED BACK NO STEEPER THAN 1.5:1 FOR SLOPES GREATER THAN 11 FEET.
2. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SHORING DESIGN. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF AND OBTAIN A SHORING PERMIT. THE GED SHALL BE PROVIDED AN OPPORTUNITY TO REVIEW THE SHORING DESIGN PRIOR TO INSTALLATION.
3. PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT ADJACENT PROPERTIES AND FIXED IMPROVEMENTS IN THE PUBLIC RIGHT-OF-WAY DURING GRADING OPERATIONS.
4. REFER TO L302 FOR ADDITIONAL NOTES.
5. EXCAVATIONS OF MINOR SITE ELEMENTS INCLUDING SMALL WALLS, SEAT WALLS, PAVING, ETC. NOT SHOWN.

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

REGISTERED PROFESSIONAL ENGINEER EASTON RENE FERCHER No. GE 2948 Exp. 9-30-24 GEOTECHNICAL STATE OF CALIFORNIA

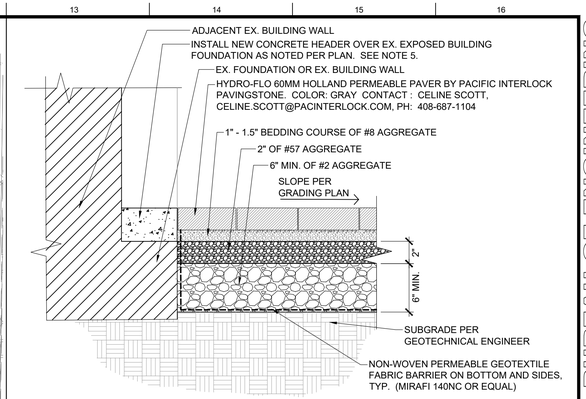
Easton Fe 11-21-22

REGISTERED PROFESSIONAL ENGINEER GARY LAM C 65208 EXP. 9/30/23 CIVIL STATE OF CALIFORNIA

Gary Lam 01/18/2023

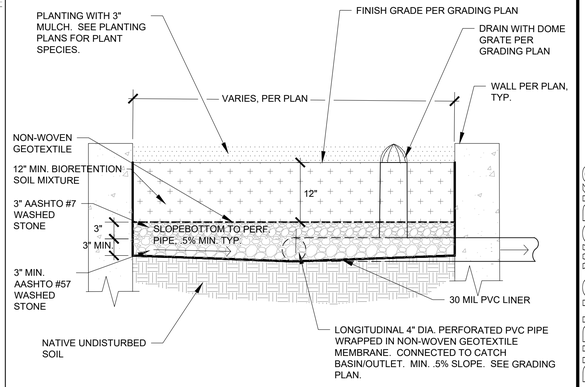
A1 SITE PLAN
Scale: 1/8" = 1' - 0"

E1	EXCAVATION DETAIL
1/8"=1'	



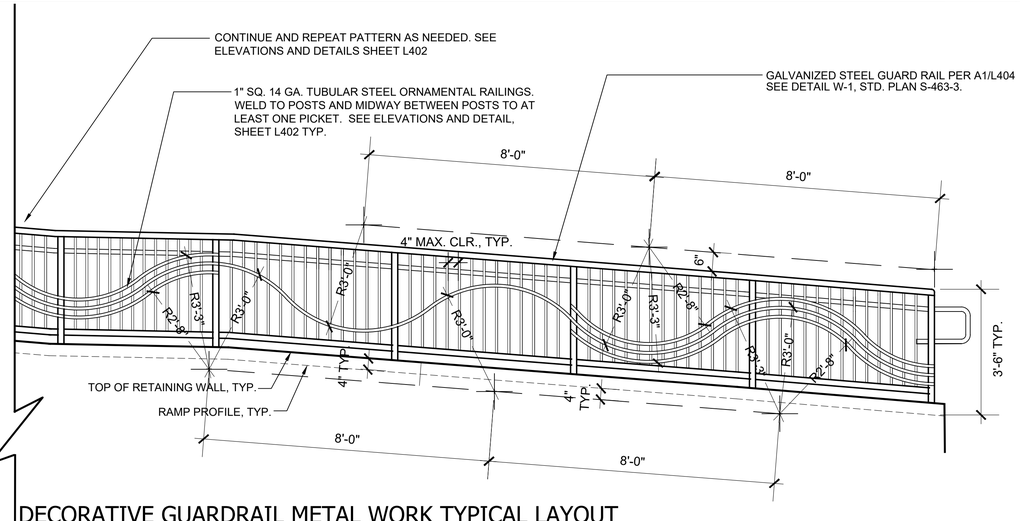
NOTES:
1. ALL STONE MATERIALS SHALL BE WASHED WITH LESS THAN 1% PASSING THE NO. 200 SIEVE.
2. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR JOINT FILLER.
3. ANY GAPS AT THE EDGE OF PAVING SHALL BE FILLED WITH PAVERS CUT TO FIT AS NEEDED.
4. WHEN INDICATED PER PLAN, CONCRETE HEADER SHALL BE INSTALLED OVER EX. BUILDING STUMP WALL, WIDTH TO ALIGN WITH STUMP WALL (+/- 5" WIDE), THICKNESS PER ELEVATIONS NOTED IN GRADING PLAN (+/- 4" THICK). FIELD VERIFY. PROVIDE CONTROL JOINTS ACROSS HEADER EVENLY SPACED AT 5' MAX.
5. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION.
6. INSTALL PAVERS IN A RUNNING BOND PATTERN.

J13	PERMEABLE PAVER INSTALLATION	
N.T.S.	BOE VERSION Oct/08 - SHD, RWF	RP DETAIL L3650



NOTES:
1. BIOFILTRATION SOIL MIXTURE BY GAIL MATERIALS, (951) 667-6106. TO HAVE A 5" INFILTRATION RATE. REFER TO LANDSCAPE CONSTRUCTION NOTES. DO NOT COMPACT.
2. DEPTH OF PVC PIPE/STONE VARIES. SEE GRADING PLAN FOR SLOPE AND INVERT ELEVATIONS.

E13	PLANTER DRAINAGE
N.T.S.	



A6 DECORATIVE GUARDRAIL METAL WORK TYPICAL LAYOUT
Scale: 1/2" = 1' - 0"

NOTES:

1. PROVIDE SHOP DRAWINGS AND HARDWARE SUBMITTAL FOR ORNAMENTAL METAL WORK FOR APPROVAL BY PRIOR TO FABRICATION.
2. ALL WORK TO COMPLY WITH THE S.S.P.W.C."GREENBOOK."
3. PAINT ORNAMENTAL METAL WORK PER LANDSCAPE CONSTRUCTION NOTES. COLORS: CONTINUOUS CENTER PIECE: MEDIUM BLUE; FOR TOP PIECE: LIGHT YELLOW; FOR BOTTOMPIECE: DARK BLUE. SUBMIT COLOR SAMPLES TO THE CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO FABRICATION.
4. ALL CONNECTIONS TO GUARDRAIL SHALL BE FULLY WELDED. ALL WELDS SHALL BE A MINIMUM OF $\frac{3}{16}$" THICK WITH TENSILE STRENGTH IN CONFORMANCE WITH STANDARD SPECIFICATIONS, SECTION 304.1.9.
5. SEE ALL APPLICABLE ELEVATIONS FOR ADDITIONAL INFORMATION.

BUREAU OF ENGINEERING OFFICIAL RECORD

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

ENGINEERING CITY OF LOS ANGELES

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT CHRISTOPHER W. GREEN No. 3060 Signature Pr-30-23 Renewal Date 03-31-22 Date STATE OF CALIFORNIA

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

CITY ENGINEER: TED ALLEN, P.E. — DATE: 03-01-22
LIC. NO. 3060 — 03-01-22
ARCHITECTURAL DIVISION — 03-01-22
ARCHITECT: Richard Fisher — 03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser
DRAWN BY: Gregory Nuno/Greg Moeser
CHECKED BY: Jane Adrian — 03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS, SHEET 4

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L405

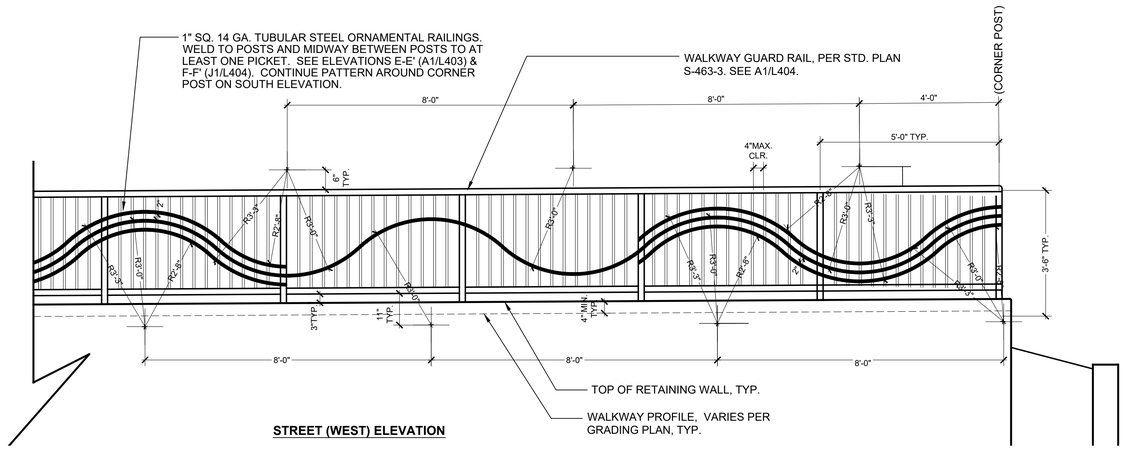
SHEET 24 OF SHEETS 96

PLOTTED: 3/8/2023 9:14 AM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 1:48 PM
FILE: C:\USERS\375740\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L405 CONST DETAILS SHT 4.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



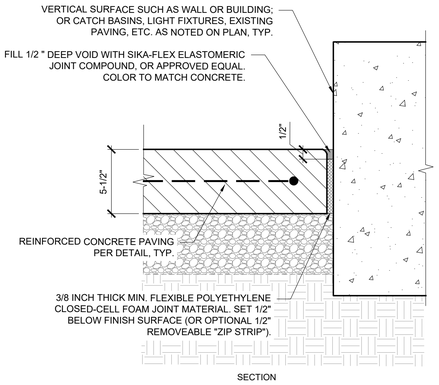
STREET (WEST) ELEVATION

J1 DECORATIVE METAL WORK LAYOUT AT WALKWAY

Scale: 1/2" = 1' - 0"

NOTES:

1. PROVIDE SHOP DRAWINGS AND HARDWARE SUBMITTAL FOR ORNAMENTAL METAL WORK FOR APPROVAL BY PRIOR TO FABRICATION.
2. ALL WORK TO COMPLY WITH THE S.S.P.W.C."GREENBOOK."
3. PAINT ORNAMENTAL METAL WORK PER LANDSCAPE CONSTRUCTION NOTES. COLORS: CONTINUOUS CENTER PIECE: MEDIUM BLUE; FOR TOP PIECE: LIGHT YELLOW; FOR BOTTOMPIECE: DARK BLUE. SUBMIT COLOR SAMPLES TO THE CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO FABRICATION.
4. ALL CONNECTIONS TO GUARDRAIL SHALL BE FULLY WELDED. ALL WELDS SHALL BE A MINIMUM OF $\frac{3}{8}$" THICK WITH TENSILE STRENGTH IN CONFORMANCE WITH STANDARD SPECIFICATIONS, SECTION 304.1.9.



SECTION

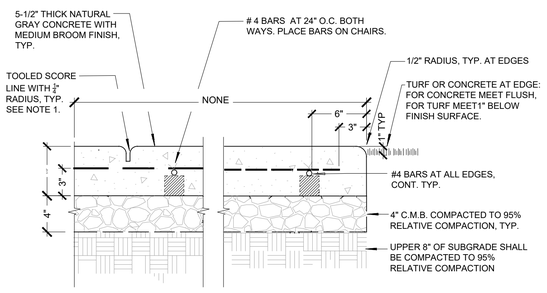
NOTES:

1. PROVIDE ISOLATION JOINTS AT ALL CONCRETE POURS ADJACENT TO FIXED VERTICAL ELEMENTS, TYP.
2. MAINTAIN LINE AND GRADE AT ALL ISOLATION JOINTS, TYP.
3. SEE LANDSCAPE CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

BOE 2/13/18 RWF

J13 ISOLATION JOINT

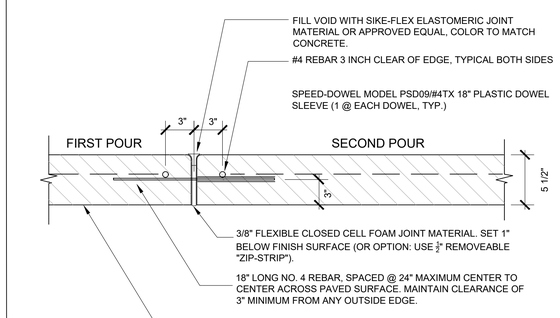
N.T.S. | RP DETAIL L3071



NOTES:
1. PROVIDE TOOLED SCORE LINES, 1" DEEP, AT LOCATIONS SHOWN ON CONSTRUCTION PLAN. SAW-CUT SCORE LINES MAY BE APPROVED AS AN ALTERNATE METHOD AT THE DISCRETION OF THE PROJECT MANAGER.
2. EXPANSION JOINTS SHALL BE CONSTRUCTED PER DETAIL AT LOCATIONS SHOWN ON PLAN.
3. PROVIDE ISOLATION JOINT PER DETAIL AGAINST PREVIOUSLY CONSTRUCTED FIXED ELEMENTS.
4. END OF POUR JOINTS - SEE LANDSCAPE CONSTRUCTION NOTES.

E1 CONC. PAVING W/CM BASE, NO THICK. EDGE

N.T.S | RP REVISED 7-2-13 RWF | RP DETAIL L3020



SECTION

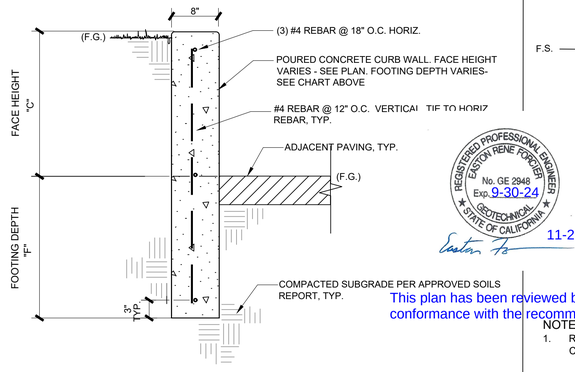
NOTE:
1. MAINTAIN LINE AND GRADE AT EXPANSION JOINTS.
2. EXPANSION JOINT SHALL BE PLACED AT MAX. SPACING OF EVERY 20' UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION PLAN.

E5 DOWELED EXPANSION JOINT

N.T.S. | RP DETAIL L3070

CURB WALL SCHEDULE				
"C"	0" TO 6"	6" TO 1'	1' TO 1'-6"	1'-6" TO 2'
"F"	6"	1'	1'-6"	2'

NOTES:
1.) FACE OF CURB WALL SHALL HAVE SACKED SMOOTH FINISH UNLESS OTHERWISE NOTED ON PLAN.
2.) CONCRETE COLOR SHALL BE 'NATURAL' UNLES OTHERWISE NOTED ON PLAN.



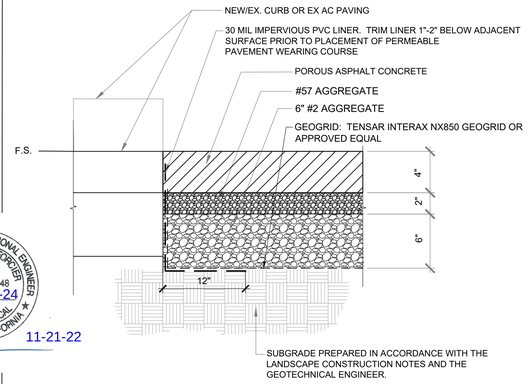
REGISTERED PROFESSIONAL ENGINEER — EASTON RENE FORGER — No. GE 2948 — Exp. 9-30-24 — GEOTECHNICAL — STATE OF CALIFORNIA

11-21-22

This plan has been reviewed by the Bureau of Engineering, Geotechnical Engineering Division and found to be in conformance with the recommendations in our reports dated 10-11-17, 9-13-18, and 12-6-18.

E9 CONCRETE CURB WALL

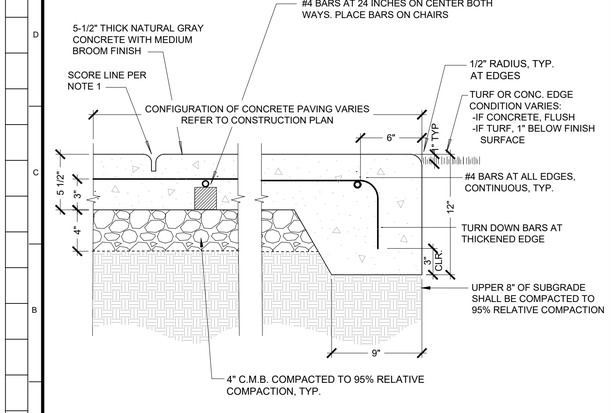
N.T.S.



NOTES:
1. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR SPECIFIC REQUIREMENTS FOR ASPHALT CONCRETE PAVING.

E13 POROUS ASPHALT CONCRETE PAVEMENT

N.T.S. | RP DETAIL L3150

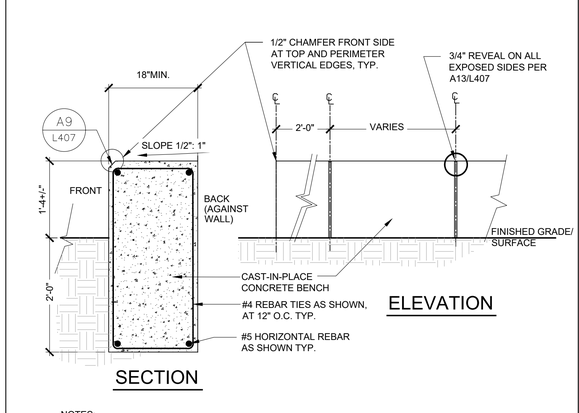


NOTES:
1. PROVIDE TOOLED SCORE LINES, 1" DEEP, AT LOCATIONS SHOWN ON CONSTRUCTION PLAN.
2. EXPANSION JOINTS SHALL BE CONSTRUCTED PER DETAIL AT LOCATIONS SHOWN ON PLAN.
3. PROVIDE ISOLATION JOINT PER DETAIL AGAINST PREVIOUSLY CONSTRUCTED FIXED ELEMENTS.
4. END OF POUR JOINTS - SEE LANDSCAPE CONSTRUCTION NOTES.

RWF 1-23-18

A1 CONCRETE PAVING WITH THICKENED EDGE

NTS | RP DETAIL 3010



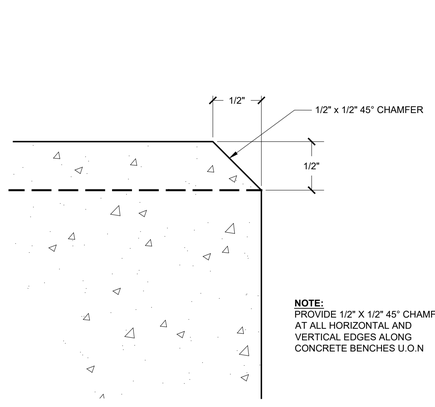
SECTION

ELEVATION

NOTES:
1. CONCRETE TO BE 3250 PSI AT 28 DAYS. SEE STRUCTURAL PLAN SPECIFICATIONS.
2. CONCRETE TO HAVE MEDIUM SANDBLAST FINISH WITH SMOOTH FINISH AT TOP.

A5 CONCRETE SEAT WALL

N.T.S. | RP DETAIL ---

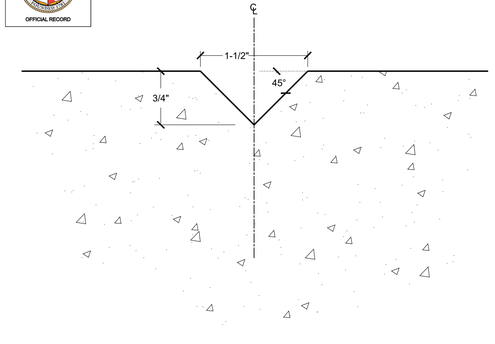


NOTE:
PROVIDE 1/2" X 1/2" 45° CHAMFER AT ALL HORIZONTAL AND VERTICAL EDGES ALONG CONCRETE BENCHES U.O.N

A9 CONCRETE SEAT WALL CHAMFER DETAIL

N.T.S. | RP DETAIL ---

BUREAU OF ENGINEERING — OFFICIAL RECORD



A13 CONCRETE SEAT WALL REVEAL DETAIL

N.T.S. | RP DETAIL L3150

REVISION DATES (DESIGN STAGE ONLY)

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 1:51 PM
FILE: C:\USERS\37574\BOXARD_PROJECTS\VERDUGO HILLS POOL\3-DES\GN\LANDSCAPE\L406 CONST DETAILS SHT 5.DWG

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT — No. 3069 — Signature — Renewal Date 10-31-22 — STATE OF CALIFORNIA

PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN , P.E.	03-01-22
ARCHITECTURAL DIVISION	03-01-22
ARCHITECT: Richard Fisher — LIC. NO. 3069	03-01-22
DESIGNED BY: Gregory Nuno/Greg Mosser	03-01-22
DRAWN BY: Gregory Nuno/Greg Mosser	03-01-22
CHECKED BY: Jane Adrian	03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS, SHEET 5

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

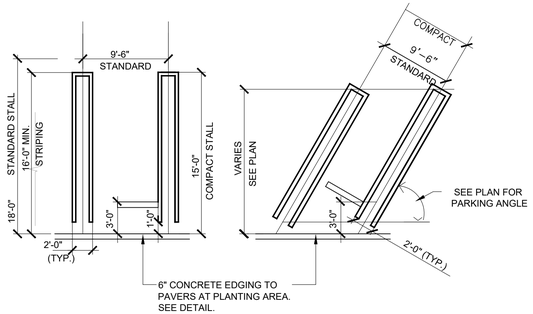
WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L406

SHEET 25 OF SHEETS 96

PLOTTED: 3/8/2023 9:15 AM



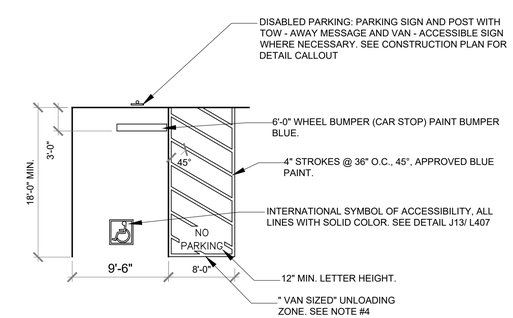
NOTES:

1. PARKING STALL LINES SHOWN ON STRIPING PLANS ARE DIAGRAMMATIC. LINES SHALL BE PAINTED WHITE WITH 4" STROKES IN ACCORDANCE WITH THIS DETAIL. ALL STRIPING SHALL BE PAINTED WITH TWO COATS OF FAST DRY TRAFFIC PAINT WITH REFLECTIVE MATERIAL. TOTAL THICKNESS OF PAINT SHALL BE 15 MIL.

2. SEE LANDSCAPE CONSTRUCTION/STRIPING PLAN FOR ACTUAL STALL DIMENSIONS.

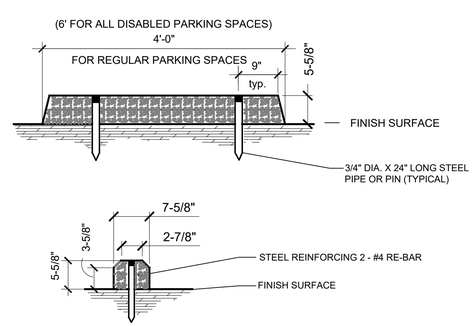
3. DOUBLE STRIPING OF STALLS SHALL BE PER FIG. 7 OF THE CITY OF LA BLDG. DEPT. STANDARDS.

J1	PARKING STALL STRIPING		
N.T.S.			



NOTES:
1. ALL WORK SHALL COMPLY WITH "AMERICAN'S WITH DISABILITIES ACT (ADA) OF 1990.
2. ALL STRIPING AND PAINTED SYMBOLS SHALL BE AN APPROVED BLUE PAINT.
3. SEE PARKING STALL STRIPPING AND CONCRETE WHEEL BUMPER DETAILS FOR INSTALLATION.
4. SEE LAYOUT PLAN FOR DESIGNATED "VAN SIZED" SPACE. PROVIDE 8' WIDE UNLOADING ZONE.

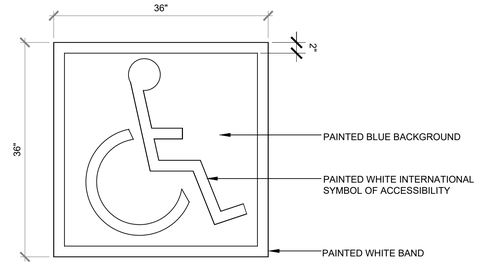
J5	TYPICAL DISABLED PARKING SPACE DETAIL		
N.T.S.	REFINFO	RP DETAIL ---	



NOTES:

1. INSTALL CONCRETE WHEEL BUMPER WHERE INDICATED BY PLANS. SEE PARKING STALL STRIPING DETAIL FOR PLACEMENT LOCATION.
2. SECURING PIN SHALL BE DRIVEN 1/4" BELOW SURFACE AND FILLED FLUSH WITH WEATHERPROOF SEALANT.
3. CONCRETE WHEEL BUMPER SHALL BE INSTALLED FLUSH WITH FINISH SURFACE AND SHALL BE SECURELY FASTENED.

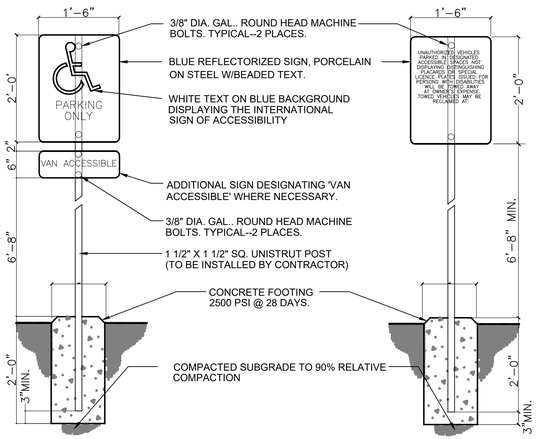
J9	CONCRETE WHEEL BUMPER		
N.T.S.	REFINFO		



NOTE:

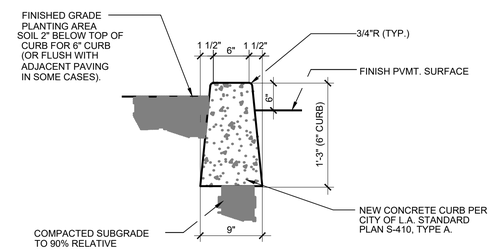
ALL WORK SHALL COMPLY WITH "AMERICAN'S WITH DISABILITIES ACT (ADA) OF 1990..

J13	INTERNATIONAL SYMBOL OF ACCESSIBILITY		
N.T.S.	REFINFO		



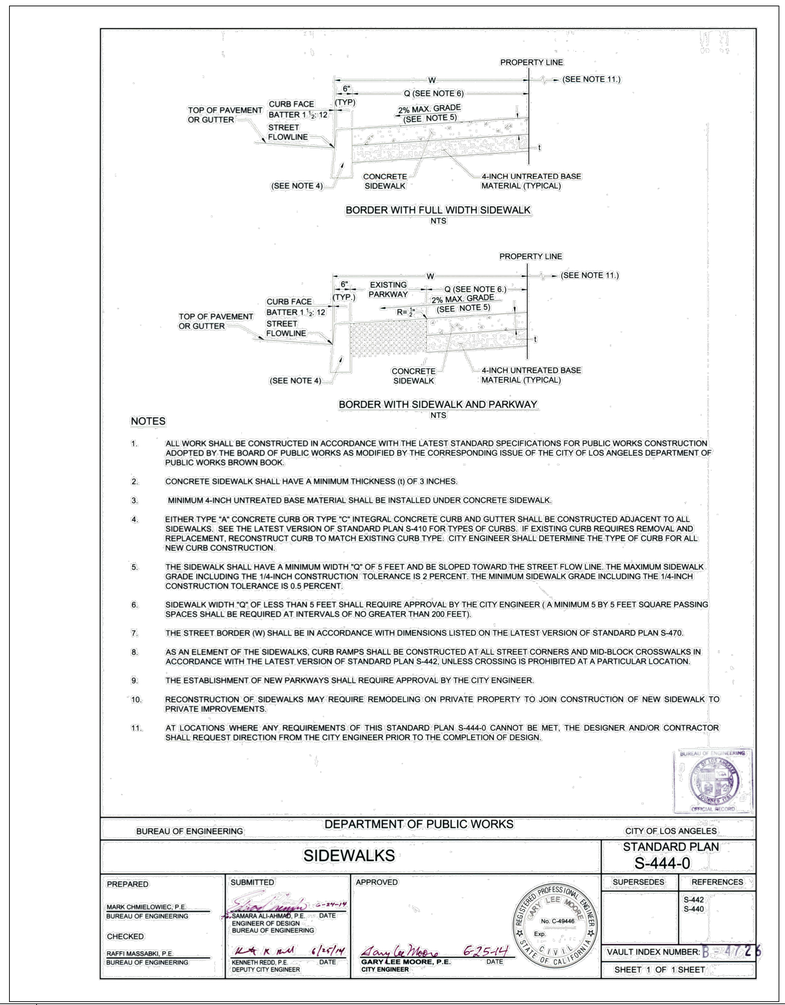
NOTE: TOW-AWAY SIGN TO READ, "UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENSE PLATES ISSUED FOR DISABILITIES WILL BE TOWED AWAY AT THE OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT ABSOLUTE TOWING INC., HOLLENBECK DIVISION, 4760 VALLEY BLVD., LOS ANGELES, CA 90032 OR BY TELEPHONING (323) 225-9294."

E1	DISABLED ACCESS SIGNS	
N.T.S.		DETAIL ---



NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI @ 28 DAYS.
2. PROVIDE EXPANSION JOINTS AT ALL VERTICAL OBJECTS, WHERE SHOWN ON PLAN, AND AT NO LESS THAN 20'-0" ON CENTER.
3. 6" TALL CURB SHALL FUNCTION AS A WHEEL BUMPER PER CITY ORDINANCE 170978, GUIDELINE K.

A1	6" CONCRETE CURB	
N.T.S.	---	



NOTES

1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ADOPTED BY THE BOARD OF PUBLIC WORKS AS MODIFIED BY THE CORRESPONDING ISSUE OF THE CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BROWN BOOK.
2. CONCRETE SIDEWALK SHALL HAVE A MINIMUM THICKNESS (t) OF 3 INCHES.
3. MINIMUM 4-INCH UNTREATED BASE MATERIAL SHALL BE INSTALLED UNDER CONCRETE SIDEWALK.
4. EITHER TYPE "A" CONCRETE CURB OR TYPE "C" INTEGRAL CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED ADJACENT TO ALL SIDEWALKS. SEE THE LATEST VERSION OF STANDARD PLAN S-410 FOR TYPES OF CURBS. IF EXISTING CURB REQUIRES REMOVAL AND REPLACEMENT, RECONSTRUCT CURB TO MATCH EXISTING CURB TYPE. CITY ENGINEER SHALL DETERMINE THE TYPE OF CURB FOR ALL NEW CURB CONSTRUCTION.
5. THE SIDEWALK SHALL HAVE A MINIMUM WIDTH "Q" OF 5 FEET AND BE SLOPED TOWARD THE STREET FLOW LINE. THE MAXIMUM SIDEWALK GRADE INCLUDING THE 1/4-INCH CONSTRUCTION TOLERANCE IS 2 PERCENT. THE MINIMUM SIDEWALK GRADE INCLUDING THE 1/4-INCH CONSTRUCTION TOLERANCE IS 0.5 PERCENT.
6. SIDEWALK WIDTH "Q" OF LESS THAN 5 FEET SHALL REQUIRE APPROVAL BY THE CITY ENGINEER (A MINIMUM 5 BY 5 FEET SQUARE PASSING SPACES SHALL BE REQUIRED AT INTERVALS OF NO GREATER THAN 200 FEET).
7. THE STREET BORDER (W) SHALL BE IN ACCORDANCE WITH DIMENSIONS LISTED ON THE LATEST VERSION OF STANDARD PLAN S-470.
8. AS AN ELEMENT OF THE SIDEWALKS, CURB RAMPS SHALL BE CONSTRUCTED AT ALL STREET CORNERS AND MID-BLOCK CROSSWALKS IN ACCORDANCE WITH THE LATEST VERSION OF STANDARD PLAN S-442, UNLESS CROSSING IS PROHIBITED AT A PARTICULAR LOCATION.
9. THE ESTABLISHMENT OF NEW PARKWAYS SHALL REQUIRE APPROVAL BY THE CITY ENGINEER.
10. RECONSTRUCTION OF SIDEWALKS MAY REQUIRE REMODELING ON PRIVATE PROPERTY TO JOIN CONSTRUCTION OF NEW SIDEWALK TO PRIVATE IMPROVEMENTS.
11. AT LOCATIONS WHERE ANY REQUIREMENTS OF THIS STANDARD PLAN S-444-0 CANNOT BE MET, THE DESIGNER AND/OR CONTRACTOR SHALL REQUEST DIRECTION FROM THE CITY ENGINEER PRIOR TO THE COMPLETION OF DESIGN.

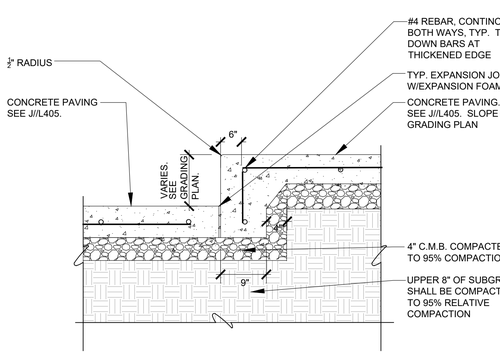
BUREAU OF ENGINEERING — DEPARTMENT OF PUBLIC WORKS — CITY OF LOS ANGELES

SIDEWALKS

STANDARD PLAN S-444-0

PREPARED	SUBMITTED	APPROVED	SUPERSEDES	REFERENCES
MARK CHIMELOWIEC, P.E. BUREAU OF ENGINEERING	SAMARA ALI-AHMAD, P.E. DATE 6-29-19 ENGINEER OF DESIGN BUREAU OF ENGINEERING	GARY LEE MOORE, P.E. DATE 6-25-19 CITY ENGINEER		S-442 S-440
CHECKED RAFFI MASSABKI, P.E. BUREAU OF ENGINEERING	KENNETH REDD, P.E. DATE 6/27/19 DEPUTY CITY ENGINEER		VAULT INDEX NUMBER: S-47126	
			SHEET 1 OF 1 SHEET	

A5	SIDEWALKS	
N.T.S.		



NOTES
1. TREAD SHALL HAVE A MEDIUM BROOM FINISH PERPENDICULAR TO CENTERLINE OF STAIRWAY.
2. STAIR TREAD SHALL BE PAINTED WITH A 3" STRIP PROVIDING CLEAR VISUAL CONTRAST PLACED PARALLEL TO, AND NOT MORE THAN 1" FROM, THE NOSE OF THE STEP. THE STRIPE SHALL EXTEND THE FULL WIDTH OF THE STEP. PAINT SHALL BE NON-SLIP ACRYLIC CONCRETE PAINT, COLOR: YELLOW.

A13	CONCRETE STEP	
N.T.S.		RP DETAIL 3320

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING — CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT — CHRISTOPHER W. GREEN — No. 3069 — Signature — Date Revised: 03-01-22 — Date 03-01-22 — STATE OF CALIFORNIA

CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	TED ALLEN, P.E.	DATE:
ARCHITECTURAL DIVISION	LIC. NO. 3069	
ARCHITECT:	Richard Fisher	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-14-22
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS, SHEET 6

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L407

SHEET 26 OF SHEETS 96

PLOTTED: 3/8/2023 9:12 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 062006
REVISION DATE: 1/12/2023 1:52 PM
FILE: C:\USERS\37574\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L407 CONST DETAILS SHT 6.DWG

REVISION DATES (DESIGN STAGE ONLY)

ABBREVIATIONS

ALN.	ALIGN
BLDG.	BUILDING
CB	CATCH BASIN
CL.	CENTER LINE
D.A.	DISABLED ACCESS
F.O.B.	FACE OF BLDNG.
P.A.	PLANTING AREA
P/L.	PROPERTY LINE
P.O.B	POINT OF BEGINNING
R.	RADIUS
R.L.	REFERENCE LINE
TYP.	TYPICAL

KEYNOTE LEGEND:

1. PROPERTY LINE.
2. EXISTING CHAIN LINK FENCE TO REMAIN.
3. NEW POOL AREA FENCE AND GATES. SEE ARCH. PLANS.
4. EXISTING POWER POLE TO REMAIN.
5. EX. OR NEW LGT FIXTURE SEE ELECT. PLANS.
6. EXISTING FLAGPOLE AND FOOTING TO REMAIN AND REMODELED. SEE SHEET L401.
7. EXISTING FACILITY SIGN TO REMAIN.
8. EXISTING RETAINING WALLS TO REMAIN.
9. EXISTING DRINKING FOUNTAIN TO REMAIN.
10. NEW CONCRETE WALKWAY OR SIDEWALK, TYP. SEE SHEET L401.
11. EXISTING CONCRETE RAMP & HANDRAIL TO REMAIN.
12. NEW DISABLED ACCESS RAMP, RETAINING WALLS, AND HANDRAIL/GURADRAIL PER SHEET L401.
13. EXISTING BRICK PLANTER TO REMAIN..
14. NEW BACKFLOW PREVENTER AND ENCLOSURE. SEE SHEET L601.
15. EXISTING WATER METER TO REMAIN.
16. REPLACE EXISTING VALVE/METER. SEE MECHANICAL PLANS.
17. NEW HVAC CONDENSER ON CONCRETE PAD. SEE MECHANICAL PLANS.
18. EXISTING SLOPE WITH STONE COVER TO REMAIN.
19. EXISTING DIRT TERRACE TO REMAIN.
20. EXISTING TREES AND SHRUBS TO REMAIN. PROTECT IN PLACE. SEE TREE PROTECTION REQUIREMENTS.
21. NEW CONCRETE STEPPING STONES. SEE SHEET L401.
22. EXISTING ROCK WALLS TO REMAIN.
23. NEW CONCRETE BENCH, TYP., SEE SHEET L401.
24. NEW ACCESSIBLE RAMP WITH GALVANIZED HANDRAIL. SEE SHEET L401.
25. NEW AREA DRAIN. SEE GRADING & DRAINAGE PLAN SHEET L301.
26. NEW CONCRETE CURB. SEE DETAIL A1/L407.
27. NEW STEEL BENCH WITH ADA COMPANION SPACE, TYP. SEE SHEET L401
28. EXISTING RINO GATE AND BOLLARDS TO REMAIN & REPAINT. SEE SHEET L401.
29. PERMEABLE PAVERS. SEE CONSTRUCTION PLAN.

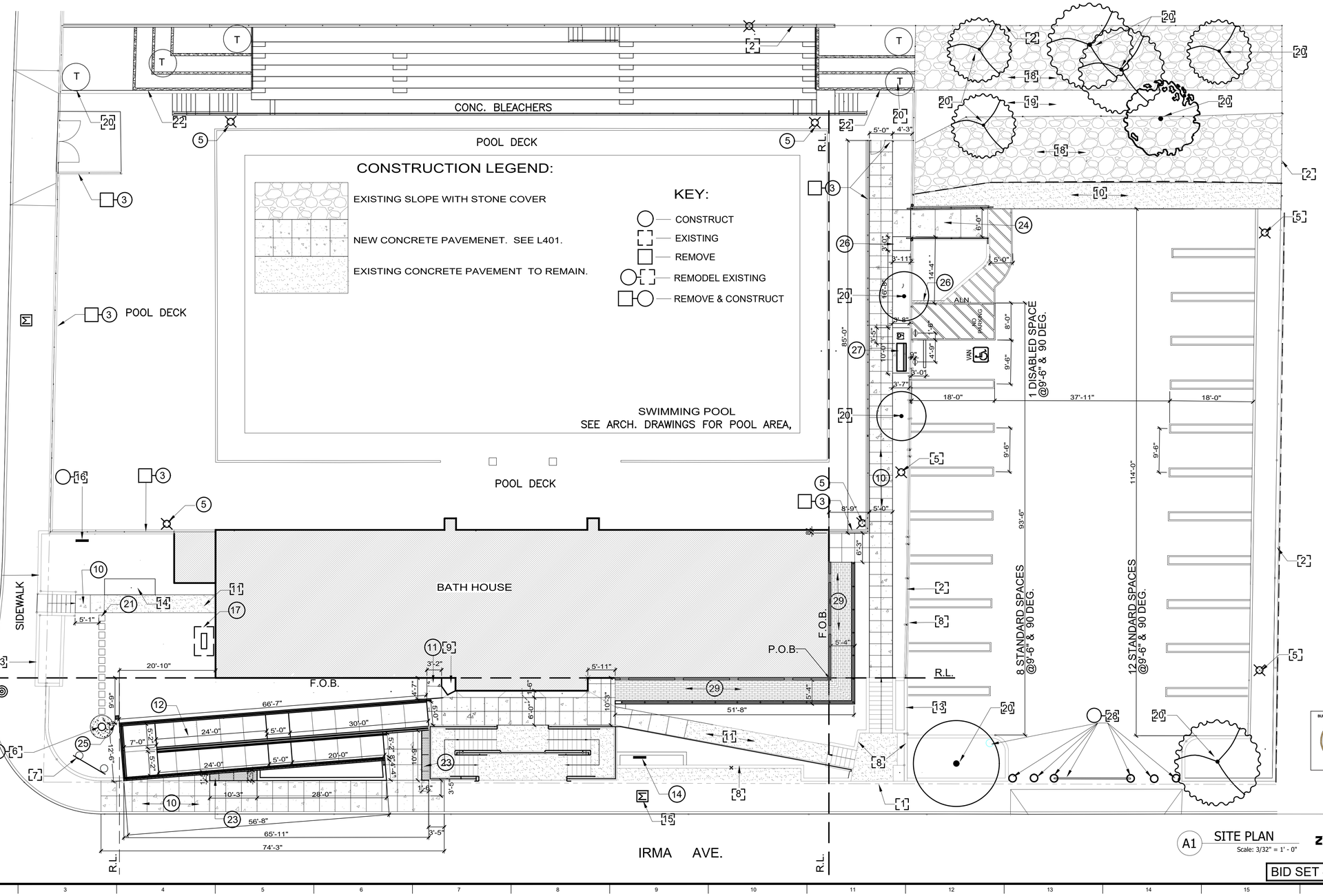
LANDSCAPE LAYOUT NOTES:

SEE L001 FOR SURVEY REQUIREMENTS.

PARKING STALL SUMMARY:

RE-STRIPE 1 EXISTING STANDARD SPACE TO CREATE 1 NEW VAN ACCESSIBLE DISABLED ACCESS SPACE (9'-6" X 18')

EXISTING STANDARD SIZE SPACES (9-0" X 18')	20
TOTAL VEHICLE PARKING SPACES:	21



A1 SITE PLAN
Scale: 3/32" = 1' - 0"

BID SET - 5/17/2022

BUREAU OF ENGINEERING
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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/25/2023 4:02 PM
FILE: C:\USERS\37574\BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L501 LAYOUT PLAN.DWG

REVISION DATES (DESIGN STAGE ONLY)

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT No. 3060 GREGORY W. MOESER Signature 3-30-23 Renewal Date 03-01-22 Date
I-FILE NSD
STATE OF CALIFORNIA

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION LIC. NO. 3060

		DATE
ARCHITECT:	Richard Fisher	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-01-22
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE LAYOUT PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L501

SHEET 27 OF SHEETS 96

PLOTTED: 3/8/2023 9:13 AM

GREEN BUILDING NOTES:

1. FOR PROJECTS THAT INCLUDE LANDSCAPE WORK, THE LANDSCAPE CERTIFICATION, FORM GRN 12, SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.
2. AFTER FUNCTIONAL PERFORMANCE TESTS ARE CONCLUDED, FORM GRN 24 SHALL BE COMPLETED AND READILY AVAILABLE TO THE FIELD INSPECTOR PRIOR TO FINAL APPROVAL
3. RECIRCULATING WATER SYSTEMS SHALL BE USED FOR WATER FEATURES.
4. AUTOMATIC LANDSCAPE IRRIGATORS SHALL BE INSTALLED IN SUCH A WAY THAT IT DOESN'T SPRAY ON THE BUILDING.
5. PRESSURE REGULATING DEVICES ARE REQUIRED IF WATER PRESSURE IS BELOW OR EXCEEDS THE RECOMMENDED PRESSURE OF THE SPECIFIED IRRIGATION DEVICES.
6. CHECK VALVES OR ANTI-DRAIN VALVES ARE REQUIRED ON ALL SPRINKLER HEADS WHERE LOW POINT DRAINAGE COULD OCCUR.
7. OVERHEAD SPRAY IRRIGATION SHALL NOT BE PERMITTED WITHIN 24-INCHES OF ANY NON-PERMEABLE SURFACE. (NOTE: THERE IS NO OVERHEAD SPRAY IRRIGATION IN THIS PROJECT.)
8. A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.
9. A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT AND CERTIFIED BY EITHER THE SIGNER OF THE LANDSCAPE PLANS, THE SIGNER OF THE IRRIGATION PLANS, OR THE LICENSED LANDSCAPE CONTRACTOR FOR THE PROJECT.
10. AN IRRIGATION AUDIT REPORT SHALL BE COMPLETED AT THE TIME OF FINAL INSPECTION.
11. I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS.

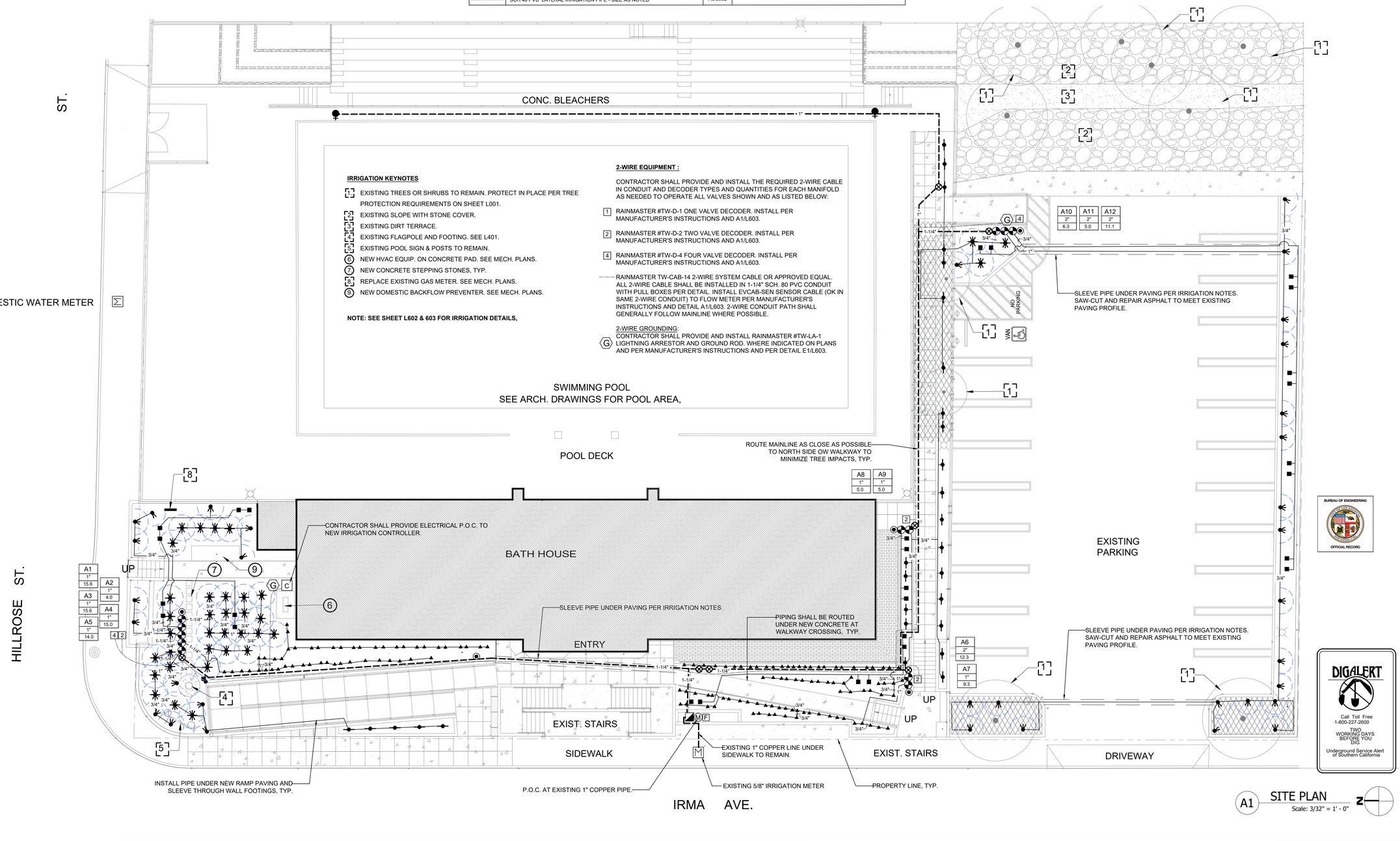
RICHARD FISHER, LANDSCAPE ARCHITECT DATE: 07/24/2020

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	DETAIL	REMARKS
M	EXISTING 5/8" WATER METER		CONTACT LADWP TO CHANGE TO IRRIGATION SERVICE
	NEW 1" WILKINS 375 SXL REDUCED PRESSURE TYPE BACKFLOW PREVENTER WITH ENCLOSURE.	J1&J5 L602	INSTALL PER DETAILS.
M F	1-1/4" BUCKNER/SUPERIOR #3100125 NORMALLY OPEN MASTER VALVE WITH TORO TFS-100 FLOW METER	A13/L602	INSTALL PER DETAIL.
	NIBCO T-113 LINE-SIZE BRASS GATE VALVE, SOLID WEDGE, NON-RISING STEM.	J9/L602	INSTALL PER DETAIL.
	RAIN BIRD 44-LRC QUICK COUPLING VALVE	E9/L602	INSTALL PER DETAIL.
	3/4" BUCKNER B401LK BRASS HOSE BIBB WITH BRASS AVB ON 3/4" GALVANIZED RISER WITH 3/4" PRESSURE TYPE SWING JOINT		ATTACH TO SIDE OF CONC. WALL WITH GALV. PIPE BRACKET. HOSE BIB SHALL BE MIN. 12" ABOVE DECK SURFACE.
C	RAINMASTER EAGLE PLUS 2-WIRE CONTROLLER MODEL EGP-TW, INSTALLED IN STAINLESS STEEL VIT STRONGBOX TOP-OPENING PEDESTAL PER DETAIL J5/L605 AND MANUFACTURER'S INSTRUCTIONS.	J13/L602 A1/L603 E1/L603 E9/L603	INSTALL PER DETAILS. INSTALL WITH TORO TWRS WIRELESS RAIN SENSOR PER MANUFACTURERS' INSTRUCTIONS. FINAL LOCATION OF SENSOR TO BE DETERMINED IN FIELD WITH LANDSCAPE ARCHITECT.
	TORO MODEL 220 BRASS REMOTE CONTROL VALVE - SIZE AS NOTED	E5/L602 E13/L602	INSTALL PER DETAIL.
	TORO 570Z-6P-PRXCOM POP-UP BODY W/ STREAM BUBBLER NOZZLES: SB-360 @ 1.2 GPM SB-180 @ 0.6 GPM SB-90 @ 0.3 GPM SB-2-180 @ 0.3 GPM	A1/L602	ADJUST STREAM LENGTH TO APPROX 36" OR AS NEEDED FOR EACH TYPE OF NOZZLE, TYP.
	RAIN BIRD RWS-M-B-C-1402 TREE ROOT WATERING SYSTEM RAIN BIRD RWS-S-B-C-1401 SHRUB ROOT WATERING SYSTEM	A5/L602	.5 GPM PER EACH BUBBLER, TWO PER TREE. .25 GPM PER EACH BUBBLER, TWO PER 5G, 1 PER 1G.
	SCH. 40 PVC MAINLINE IRRIGATION PIPE - SIZE AS NOTED SCH 40 PVC LATERAL IRRIGATION PIPE - SIZE AS NOTED	E1/L602 A9/L602	

IRRIGATION NOTES

1. HIGH STATIC PRESSURE - 104 PSI; LOW STATIC PRESSURE - 79 PSI. INFORMATION PROVIDED BY LADWP ON 01/28/2019
2. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS ARE FOR CLARITY ONLY AND SHALL BE INSTALLED IN PLANTING AREAS. SET ALL VALVES AND QUICK COUPLERS ADJACENT TO WALKS OR PAVED SURFACES PER DETAILS. ALL IRRIGATION PRESSURE AND LATERAL LINES AND CONTROL WIRING THAT PASS UNDER PAVING SHALL BE SLEEVED PER LANDSCAPE CONSTRUCTION NOTES.
3. ANY TRENCHES DUG TO ACCOMMODATE NEW IRRIGATION LINES OR 2-WIRE CONDUIT THAT PASS INSIDE THE PROTECTED ROOT AREA OF AN EXISTING TREE ARE SUBJECT TO THE REQUIREMENTS LISTED IN THE SECTION "TREE PROTECTION GUIDELINES" OF THE LANDSCAPE CONSTRUCTION NOTES.
4. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERALS UNDER PAVING IN A TIMELY MANNER. SEE TRENCHING DETAIL FOR SLEEVING REQUIREMENTS.
5. 2-WIRE CABLE CONDUIT SHALL GENERALLY FOLLOW MAINLINE WHERE POSSIBLE. CONTRACTOR SHALL SUBMIT PROPOSED LOCATION OF 2-WIRE CONDUIT RUNS AND PULL BOXES FOR APPROVAL BY PROJECT ENGINEER PRIOR TO INSTALLATION.
6. THE CONTRACTOR SHALL FLUSH AND PRESSURE TEST ALL MAINLINES PER LANDSCAPE CONSTRUCTION NOTES. CONTRACTOR SHALL FLUSH ALL LATERAL LINES AND IRRIGATION HEADS PER THE LANDSCAPE CONSTRUCTION NOTES.
7. THE INTENT OF THESE IRRIGATION PLANS IS TO PROVIDE ADEQUATE COVERAGE TO ALL NEW PLANTING. AS PART OF THE SCOPE OF WORK, CONTRACTOR SHALL PROVIDE ANY ADDITIONAL HEADS, SPECIAL NOZZLES, OR PATTERNS TO ACHIEVE PROPER COVERAGE WITH A MINIMUM OF OVERSPRAY AT NO ADDITIONAL COST TO THE CITY.
8. UPON COMPLETION OF INSTALLATION, CONTRACTOR SHALL CONDUCT A COVERAGE TEST PER LANDSCAPE CONSTRUCTION NOTES. CONTRACTOR SHALL NOTIFY PROJECT MANAGER TO REQUEST THE TEST, WHICH WILL BE SCHEDULED AT THE SOONEST DATE POSSIBLE PER AVAILABILITY OF RAP AND LADWP STAFF.
9. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION REGARDING THIS SECTION OF WORK.



IRRIGATION KEYNOTES

- EXISTING TREES OR SHRUBS TO REMAIN. PROTECT IN PLACE PER TREE PROTECTION REQUIREMENTS ON SHEET L001.
- EXISTING SLOPE WITH STONE COVER.
- EXISTING DIRT TERRACE.
- EXISTING FLAGPOLE AND FOOTING. SEE L401.
- EXISTING POOL SIGN & POSTS TO REMAIN.
- (6) NEW HVAC EQUIP. ON CONCRETE PAD. SEE MECH. PLANS.
- (7) NEW CONCRETE STEPPING STONES, TYP.
- REPLACE EXISTING GAS METER. SEE MECH. PLANS.
- (9) NEW DOMESTIC BACKFLOW PREVENTER. SEE MECH. PLANS.

NOTE: SEE SHEET L602 & 603 FOR IRRIGATION DETAILS,

2-WIRE EQUIPMENT :

CONTRACTOR SHALL PROVIDE AND INSTALL THE REQUIRED 2-WIRE CABLE IN CONDUIT AND DECODER TYPES AND QUANTITIES FOR EACH MANIFOLD AS NEEDED TO OPERATE ALL VALVES SHOWN AND AS LISTED BELOW:

[1] RAINMASTER #TW-D-1 ONE VALVE DECODER. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND A1/L603.

[2] RAINMASTER #TW-D-2 TWO VALVE DECODER. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND A1/L603.

[4] RAINMASTER #TW-D-4 FOUR VALVE DECODER. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND A1/L603.

RAINMASTER TW-CAB-14 2-WIRE SYSTEM CABLE OR APPROVED EQUAL. ALL 2-WIRE CABLE SHALL BE INSTALLED IN 1-1/4" SCH. 80 PVC CONDUIT WITH PULL BOXES PER DETAIL. INSTALL EVCAB-SEN SENSOR CABLE (OK IN SAME 2-WIRE CONDUIT) TO FLOW METER PER MANUFACTURER'S INSTRUCTIONS AND DETAIL A1/L603. 2-WIRE CONDUIT PATH SHALL GENERALLY FOLLOW MAINLINE WHERE POSSIBLE.

2-WIRE GROUNDING:
(G) CONTRACTOR SHALL PROVIDE AND INSTALL RAINMASTER #TW-LA-1 LIGHTNING ARRESTOR AND GROUND ROD. WHERE INDICATED ON PLANS AND PER MANUFACTURER'S INSTRUCTIONS AND PER DETAIL E1/L603.

A1 SITE PLAN
Scale: 3/32" = 1' - 0"

BUREAU OF ENGINEERING OFFICIAL RECORD

DIGALERT Call Toll Free 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG Underground Service Alert of Southern California

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REVISION DATES (DESIGN STAGE ONLY)

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BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT No. 3060 Exp. 08-31-22 STATE OF CALIFORNIA
Signature Richard Fisher Date 03-01-22

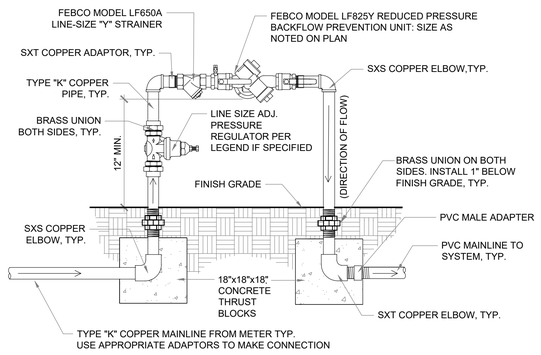
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.		
CITY ENGINEER		DATE:
ARCHITECTURAL DIVISION		03-01-22
LIC. NO. 3060		03-01-22
ARCHITECT:	Richard Fisher	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser	03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser	03-01-22
CHECKED BY:	Jane Adrian	03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: LANDSCAPE IRRIGATION PLAN
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L601
SHEET 28 OF SHEETS 96

PLOTTED: 3/8/2023 9:17 AM

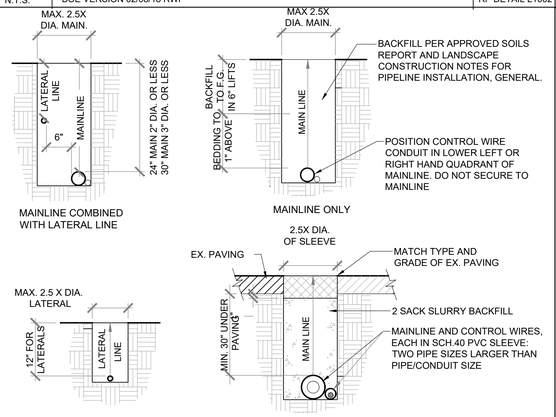


NOTES:

1. ALL PIPE AND FITTINGS BETWEEN METER AND BACKFLOW DEVICE SHALL BE LINE SIZE TYPE K COPPER. SWEAT ALL COPPER FITTINGS FITTINGS WITH NON-LEAD SOLDER PER SECTION 308-5.2.4 OF THE S.S.P.W.C.
2. USE TEFLON TAPE ON ALL MALE THREADS; FOR PVC PIPE SOLVENT WELD JOINTS PER SECTION 306-1.2.9 OF THE SSPWC AND IRRIGATION CONSTRUCTION NOTES.
3. THE CONTRACTOR SHALL HAVE THE BACKFLOW PREVENTER TESTED BY A CERTIFIED TESTER. A "BACKFLOW PREVENTION DEVICE TESTING REPORT" SHALL BE SUBMITTED TO THE LOS ANGELES COUNTY HEALTH DEPT; A COPY OF THE REPORT SHALL BE GIVEN TO THE PROJECT MANAGER AT THE OPERATIONAL FINAL.
4. SEE BACKFLOW ENCLOSURE DETAIL.

J1 BACKFLOW PREVENTION UNIT, 3/4" TO 3" SIZE

N.T.S. | BOE VERSION 02/08/18 RWF | RP DETAIL L1002

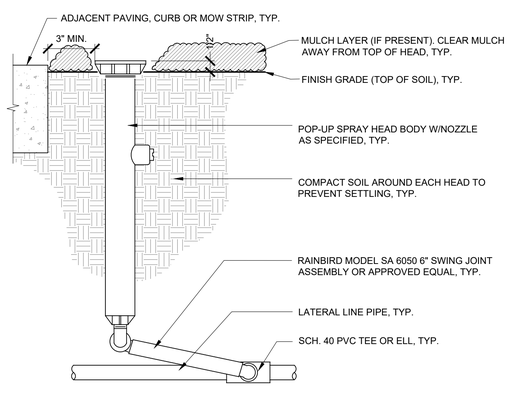


NOTE:

1. PIPE AND CONTROL WIRE CROSSING UNDER PAVING OR WALKWAY OVER 8' WIDE SHALL BE SLEEVED AS INDICATED ABOVE.
2. PIPE BEDDING AND BACKFILL SHALL BE PER APPROVED SOILS REPORT AND LANDSCAPE CONSTRUCTION NOTES, PIPELINE INSTALLATION GENERAL.

E1 IRRIGATION TRENCHING DETAIL

N.T.S. | BOE VERSION JUN/18 | RP DETAIL 1350

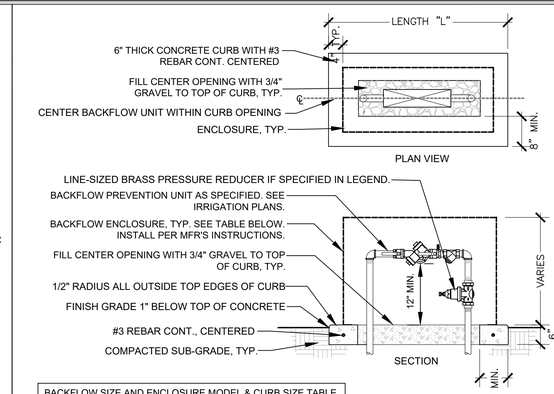


NOTES:

1. PLACE ALL HEADS 1/4" ABOVE FINISH GRADE AT INITIAL INSTALLATION. SET HEADS 3" AWAY FROM WALKS, CURBS, OR MOW STRIPS.
2. INSTALL ALL HEADS PERPENDICULAR TO FINISH GRADE.
3. THOROUGHLY FLUSH ALL LATERAL LINE PIPES TO REMOVE DIRT AND DEBRIS BEFORE INSTALLATION OF NOZZLES.
4. ADJUST ALL HEADS TO PROPER ARC AND RADIUS AS NECESSARY TO ACHIEVE PROPER COVERAGE AND UNIFORMITY. IF PROPER COVERAGE AND UNIFORMITY IS NOT ACHIEVED WITH THE SPECIFIED NOZZLE, CONTRACTOR SHALL CHANGE NOZZLE AS NEEDED UNTIL DESIRED PERFORMANCE IS ACHIEVED.

A1 POP-UP SPRAY HEAD INSTALLATION

N.T.S. | REVISED: 6/09/20 RWF | RP DETAIL 1622

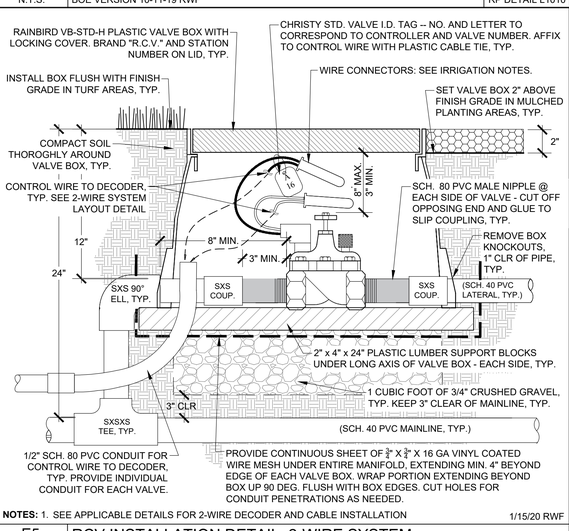


BACKFLOW SIZE AND ENCLOSURE MODEL & CURB SIZE TABLE ALL ENCLOSURES SHALL BE POWDER COATED DARK GREEN			
DEVICE SIZE:	STRONG BOX INC. (800) 729-1314	ENCLOSURE DIMENSIONS (width x length)	LENGTH "L"
3/4" to 1"	SBBC-30CR	18" x 31.5"	40 INCHES
1-1/2" to 2"	SBBC-45CR	18" x 46.5"	55 INCHES
2-1/2" to 3"	SBBC-75CR	25.5" x 76.5"	85 INCHES

ENCLOSURE MOUNTING HARDWARE: REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS BEFORE POURING CONC. CURB.

J5 BACKFLOW DEVICE ENCLOSURE

N.T.S. | BOE VERSION 10-11-19 RWF | RP DETAIL L1010

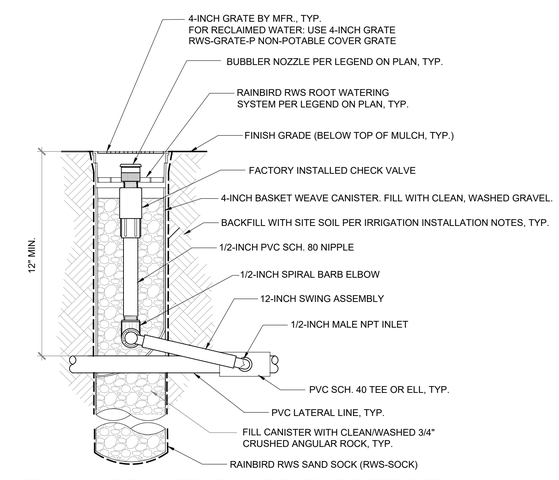


NOTES: 1. SEE APPLICABLE DETAILS FOR 2-WIRE DECODER AND CABLE INSTALLATION

1/15/20 RWF

E5 RCV INSTALLATION DETAIL, 2-WIRE SYSTEM

N.T.S. | RP DETAIL 1402



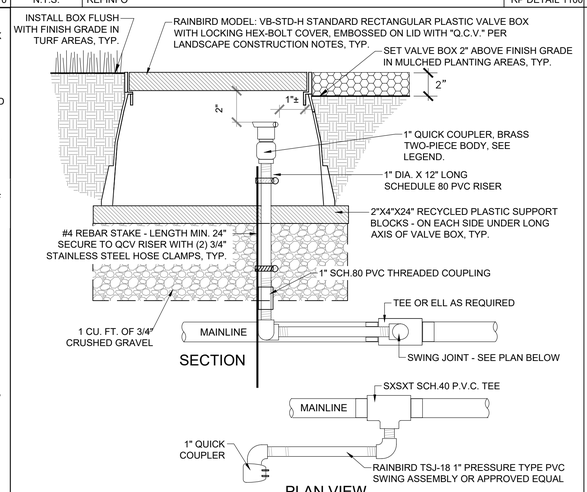
NOTE: ALWAYS LOCATE RWS CANISTERS WITHIN 12" OR LESS FROM EDGE OF TREE ROOTBALL.

A5 ROOT WATERING SYSTEM BUBBLER ASSEMBLY

N.T.S. | BOE VERSION Sep/07 - RF | RAP DETAIL L1660

J9 GATE VALVE INSTALLATION, 3/4" TO 2"

N.T.S. | REFINFO | RP DETAIL 1100



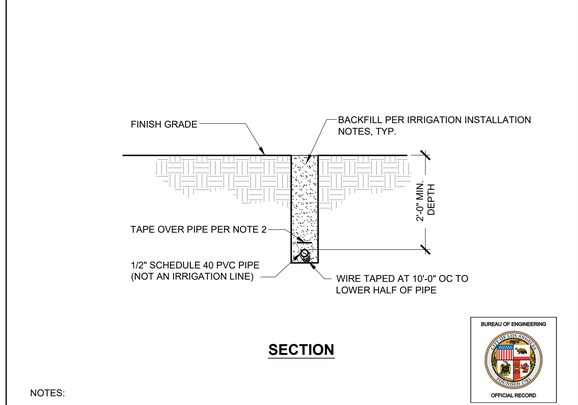
SECTION

NOTE: FOR 3" GATE VALVES AND LARGER REFER TO RP DETAIL L1101

8/9/18 GM

E9 QUICK COUPLER INSTALLATION (2" MAINLINE OR SMALLER)

N.T.S. | BOE VERSION Dec/08 RF | RP DETAIL L1200



SECTION

BUREAU OF ENGINEERING — OFFICIAL RECORD

NOTES:

1. SOLVENT WELD ALL JOINTS. PRIMER NOT REQUIRED.
2. MARK LOCATION OF PIPE AND WIRE WITH A CONTINUOUS ALUMINUM-BACKED, 3 INCH WIDE RED, UNLABELED TAPE, INSTALLED ABOVE PIPE, AS MANUFACTURED BY "TERRA-TAPE/GRIFFOLYN CO. (800) 231-2417 OR APPROVED EQUAL.
3. SHOW ALIGNMENT OF ALL CONTROL WIRE NOT INSTALLED WITH MAINLINE ON AS-BUILT DRAWINGS.

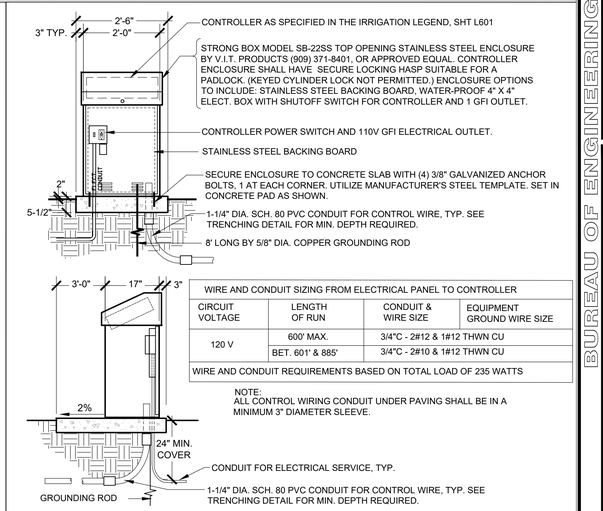
BOE VERSION 02/01/18 RWF

A9 CONTROL WIRE WITHOUT MAINLINE

N.T.S. | DETAIL L1420

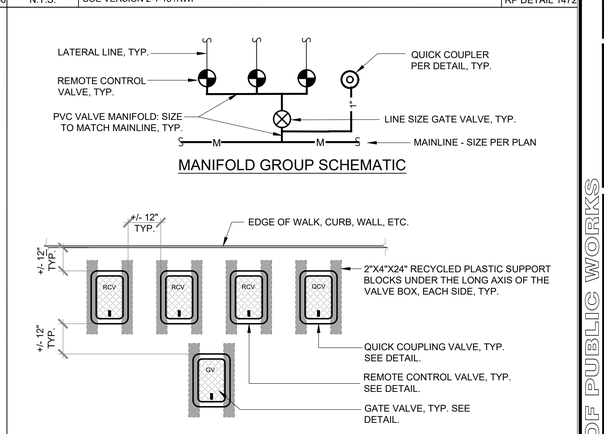
J13 CONTROLLER AND ENCLOSURE

N.T.S. | BOE VERSION 2-1-18 /RWF | RP DETAIL 1472

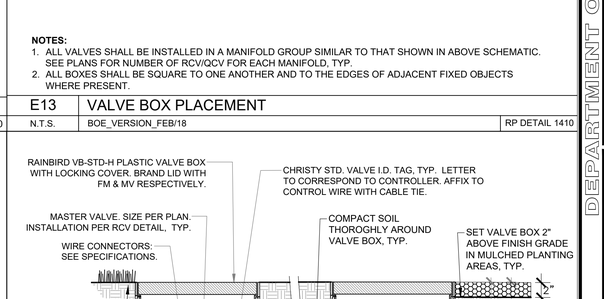


WIRE AND CONDUIT SIZING FROM ELECTRICAL PANEL TO CONTROLLER			
CIRCUIT VOLTAGE	LENGTH OF RUN	CONDUIT & WIRE SIZE	EQUIPMENT GROUND WIRE SIZE
120 V	600' MAX.	3/4"C - 2#12 & 1#12 THWN CU	
	BET. 601' & 885'	3/4"C - 2#10 & 1#12 THWN CU	
WIRE AND CONDUIT REQUIREMENTS BASED ON TOTAL LOAD OF 235 WATTS			

NOTE:
ALL CONTROL WIRING CONDUIT UNDER PAVING SHALL BE IN A MINIMUM 3" DIAMETER SLEEVE.



MANIFOLD GROUP SCHEMATIC



NOTES:

1. ALL VALVES SHALL BE INSTALLED IN A MANIFOLD GROUP SIMILAR TO THAT SHOWN IN ABOVE SCHEMATIC. SEE PLANS FOR NUMBER OF RCV/QCV FOR EACH MANIFOLD, TYP.
2. ALL BOXES SHALL BE SQUARE TO ONE ANOTHER AND TO THE EDGES OF ADJACENT FIXED OBJECTS WHERE PRESENT.

E13 VALVE BOX PLACEMENT

N.T.S. | BOE_VERSION_FEB/18 | RP DETAIL 1410

NOTES:

1. CONNECT FLOW METER LEADS TO DESIGNATED CONTROLLER WITH A BLACK AND RED #14 UF WIRE.
2. CONNECT MASTER VALVE LEADS TO 2-WIRE DECODER PER DETAILS AND SPECIFICATIONS.
3. CONNECT FLOW METER TO SENSOR DECODER PER DETAILS AND SPECIFICATIONS.
4. ALL 2-WIRE CONNECTIONS SHALL BE MADE WITH A CONNECTOR PER SPECIFICATIONS. RUN WIRE ALONG MAINLINE OR PER DETAIL L1420 WHERE MAINLINE NOT AVAILABLE.

A13 FLOW METER AND MASTER VALVE

N.T.S. | BOE VERSION Dec/18 | RP DETAIL L1510

BUREAU OF ENGINEERING
BUREAU OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -
BUILDING NO. -
INDEX NO. - RP-300123

LANDSCAPE ARCHITECT — STATE OF CALIFORNIA — CHRISTOPHER W. FISHER — No. 3060 — Signature — Date 3-30-23 — Registration Expires 03-01-24

CITY ENGINEER

TED ALLEN, P.E.	DATE:	03-01-22	03-01-22	03-01-22	03-14-22
ARCHITECTURAL DIVISION	LIC. NO.	30600			
ARCHITECT:	Richard Fisher				
DESIGNED BY:	Gregory Nuno/Greg Moeser				
DRAWN BY:	Gregory Nuno/Greg Moeser				
CHECKED BY:	Jane Adrian				

APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE IRRIGATION DETAILS, SHEET 1

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L602
SHEET 29 OF SHEETS 96

PLOTTED: 3/8/2023 9:13 AM

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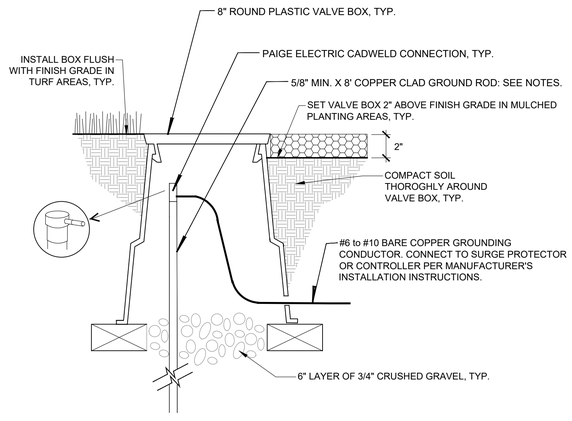
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 4:22 PM
FILE: C:\USERS\97574\BOXARC_PROJECTS\VERDUGO HILLS POOLS-DESIGN\LANDSCAPE\L602 IRRIG DETAILS SHT 1.DWG

REVISION DATES (DESIGN STAGE ONLY)



TWO-WIRE SYSTEM GROUNDING REQUIREMENTS:

SURGE PROTECTION USING PROPER GROUNDING RODS AND RAINBIRD LINE SURGE PROTECTION, LSP-1 (WHERE IT IS NOT ALREADY BUILT INTO THE DECODER) IS REQUIRED FOR PROTECTION AGAINST SURGE DAMAGE DUE TO LIGHTNING OR OTHER ELECTRICAL SURGE EVENTS. CONFORMANCE TO THIS SURGE SUPPRESSION SPECIFICATION IS NECESSARY TO RETAIN WARRANTY PROTECTION UNDER RAINBIRD WARRANTY TERMS.

THE INSTALLATION SHALL CONFORM TO MANUFACTURER'S INSTRUCTIONS, AND MUST MEET OR EXCEED THE AMERICAN SOCIETY OF IRRIGATION CONSULTANTS (ASIC) EARTH GROUNDING GUIDELINE 100-2002.
HTTP://WWW.ASIC.ORG/UPLOADS/ASSETS/011007_121320_ASIC_GROUNDING_GUIDELINES.DOC

GROUND RODS AS REFERRED TO IN THIS SPECIFICATION SHALL CONFORM TO THE FOLLOWING STANDARDS:

1.) ALL GROUNDING RODS SHALL BE BARE COPPER OF 5/8" DIAMETER OR GREATER, AND 8' LENGTH OR GREATER.
2.) A MEASURED RESISTANCE READING OF LESS THAN 10 OHMS IS NECESSARY AT EACH LSP-1 (OR DECODER WHERE SURGE PROTECTION IS BUILT INTO THE DECODER). ASIC SPEC: SECTION 7.0 - MEASURING RESISTANCE, ITEM A.

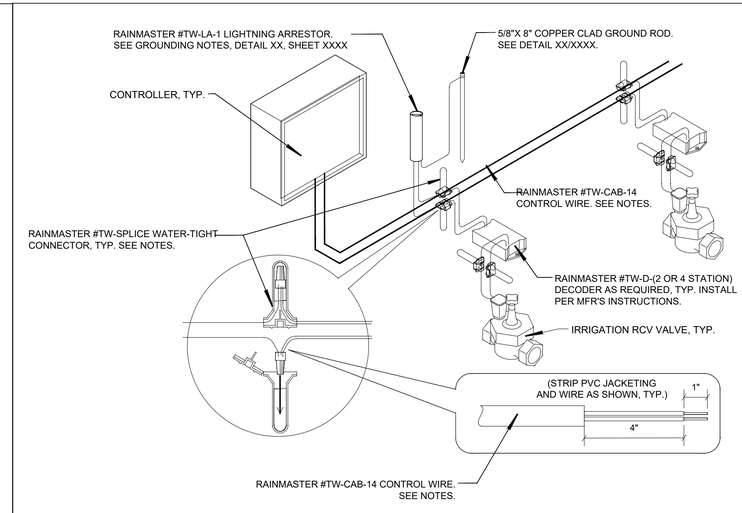
GROUND RODS SHALL BE LOCATED AT A MINIMUM DISTANCE TO ASSURE THAT THE TWO-WIRE PATH IS OUTSIDE OF THE ELECTRODE SPHERE OF INFLUENCE FOR THE GROUNDING ROD: THE GROUND ROD MUST BE CONNECTED AT LEAST 8' AWAY FROM THE TWO-WIRE PATH, AT A RIGHT ANGLE TO THE TWO-WIRE PATH.

UNDER NO CIRCUMSTANCES SHOULD A GROUND ROD BE INSTALLED IN OR UNDER A VALVE BOX, METER BOX OR ELECTRICAL BOX.

CONNECTIONS TO GROUNDING RODS
ALL CONNECTIONS TO GROUND RODS SHALL CONFORM TO ASIC EARTH GROUNDING GUIDELINE 100-2002, AND SHALL CONSIST OF EITHER A CADWELD TYPE OR SCREW CLAMP TYPE OF CONNECTION. CADWELD OR EQUIVALENT CONNECTIONS ARE PREFERRED.

ANY WIRE EXTENSIONS REQUIRED TO CONNECT FROM A GROUND ROD TO A SURGE PROTECTOR OR ENCLOSURE GROUND LUG SHALL BE BARE COPPER, AND SHALL NOT HAVE ANY SHARP BENDS OR KINKS. WIRE EXTENSIONS CONNECTED TO SURGE PROTECTORS SHALL USE A CADWELD TYPE OR SCREW CLAMP TYPE CONNECTION WHERE THE BARE COPPER GROUND WIRE MEETS THE GREEN GROUNDING WIRE FROM THE SURGE PROTECTOR.

E1	2-WIRE SYSTEM GROUNDING ROD
N.T.S.	



WIRING NOTES:
1.) CONTROL WIRE SHALL BE RAINMASTER #TW-CAB-14 OR APPROVED EQUAL: POLYETHYLENE DOUBLE-JACKETED OR UF-B UL PVC DOUBLE-JACKETED TWO-CONDUCTOR SOLID CORE DESIGNED FOR DIRECT BURIAL WITH INSULATION 3/16 INCH (.060Ô) THICK, HIGH DENSITY, SUNLIGHT RESISTANT INCASED IN AN OUTER JACKET OF POLYETHYLENE OR PVC CONFORMING TO ICEA S-GL-402 OR NEMA WC5, HAVING A MINIMUM WALL THICKNESS OF .045 INCHES. (TWO-WIRE POLYETHYLENE "TWISTED" CABLE OR SINGLE STRAND 14-GAUGE PVC IRRIGATION WIRE DOES NOT CONFORM TO THESE SPECIFICATIONS AND WILL NOT BE ACCEPTED).

2.) ALL WIRE INSULATION SHALL BE INTACT AND FREE OF NICKS AND CUTS

3.) ATTACHING DECODERS:

- TWIST WIRES TO PROVIDE A SOLID MECHANICAL CONNECTION BEFORE SECURING THE ATTACHMENT BY ADDING THE WIRE NUT.
- RAINMASTER #TW-SPLICE-14 OR APPROVED EQUAL (SURESPLICE, TRADEMARKED) GEL FILLED CONNECTORS (OR SIMILAR) SHALL BE USED ON ALL CONNECTIONS.
- GREASE FILLED WIRE NUTS WILL NOT BE ACCEPTED.
- TEST ALL CONNECTIONS BEFORE IMMERSING THE WIRE NUT IN THE GEL-FILLED CAP.
- ADHERE TO ALL LOCAL AND NATIONAL BUILDING AND ELECTRICAL CODES.
- CONTRACTOR SHALL GUARANTEE ALL WIRE CONNECTIONS TO BE ABSOLUTELY WATER TIGHT.

4.) ALL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

E9	2-WIRE IRRIGATION SYSTEM WIRING (RAINMASTER OR EQUAL)
N.T.S.	

PULL BOX

TERMINAL OR MANIFOLD BOX

NOTES:
1. ALL CONDUIT AND FITTINGS SHALL BE SCHEDULE 80 PVC. CHANGES IN DIRECTION OF CONDUIT PATH SHALL NOT EXCEED 360 DEG. FOR EACH SECTION BETWEEN PULL BOXES.
2. MAXIMUM DISTANCE BETWEEN PULL BOXES SHALL BE 200 FEET.
3. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM FIELD DECODER TO SOLENOID IS 450 FEET.
4. PROVIDE A COIL OF MIN. 24" OF 2-WIRE CABLE AT EACH SPLICE OR DECODER CONNECTION POINT.

TWO-WIRE SYSTEM GROUNDING REQUIREMENTS:

SURGE PROTECTION USING PROPER GROUNDING RODS IS REQUIRED FOR PROTECTION AGAINST SURGE DAMAGE DUE TO LIGHTNING OR OTHER ELECTRICAL SURGE EVENTS. CONFORMANCE TO THIS SURGE SUPPRESSION SPECIFICATION IS NECESSARY TO RETAIN WARRANTY PROTECTION UNDER MANUFACTURER'S WARRANTY TERMS.

THE INSTALLATION SHALL CONFORM TO MANUFACTURER'S INSTRUCTIONS, AND MUST MEET OR EXCEED THE AMERICAN SOCIETY OF IRRIGATION CONSULTANTS (ASIC) EARTH GROUNDING GUIDELINE 100-2002.
HTTP://WWW.ASIC.ORG/UPLOADS/ASSETS/011007_121320_ASIC_GROUNDING_GUIDELINES.DOC

GROUND RODS AS REFERRED TO IN THIS SPECIFICATION SHALL CONFORM TO THE FOLLOWING STANDARDS:

1.) ALL GROUNDING RODS SHALL BE BARE COPPER OF 5/8" DIAMETER OR GREATER, AND 8' LENGTH OR GREATER.

2.) A MEASURED RESISTANCE READING OF NO MORE THAN 10 OHMS IS NECESSARY AT EACH LIGHTNING ARRESTOR. ASIC SPEC: SECTION 7.0 - MEASURING RESISTANCE, ITEM A.

GROUND RODS SHALL BE LOCATED AT A MINIMUM DISTANCE TO ASSURE THAT THE TWO-WIRE PATH IS OUTSIDE OF THE ELECTRODE SPHERE OF INFLUENCE FOR THE GROUNDING ROD: THE GROUND ROD MUST BE CONNECTED AT LEAST 8' AWAY FROM THE TWO-WIRE PATH, AT A RIGHT ANGLE TO THE TWO-WIRE PATH.

UNDER NO CIRCUMSTANCES SHOULD A GROUND ROD BE INSTALLED IN OR UNDER A VALVE BOX, METER BOX OR ELECTRICAL BOX.

CONNECTIONS TO GROUNDING RODS:
ALL CONNECTIONS TO GROUND RODS SHALL CONFORM TO ASIC EARTH GROUNDING GUIDELINE 100-2002, AND SHALL CONSIST OF A SCREW CLAMP TYPE OF CONNECTION.

ANY WIRE EXTENSIONS REQUIRED TO CONNECT FROM A GROUND ROD TO A LIGHTNING ARRESTOR OR ENCLOSURE GROUND LUG SHALL BE BARE COPPER, AND SHALL NOT HAVE ANY SHARP BENDS OR KINKS. WIRE EXTENSIONS CONNECTED TO LIGHTNING ARRESTORS SHALL USE A CADWELD TYPE OR SCREW CLAMP TYPE CONNECTION WHERE THE BARE COPPER GROUND WIRE MEETS THE GREEN GROUNDING WIRE FROM THE LIGHTNING ARRESTOR.

A1	2-WIRE CABLE INSTALLATION AND GROUNDING	
N.T.S.		RP DETAIL L1430

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT ★ LICENSED ★ CHRISTOPHER W. FISHER ★ No. 3060 ★ STATE OF CALIFORNIA
Signature
Renewal Date 08-31-22
Date 03-01-22

DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION	LIC. NO. 3060	
ARCHITECT: Richard Fisher		03-01-22
DESIGNED BY: Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY: Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY: Jane Adrian		03-01-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE IRRIGATION DETAILS SHEET 2

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. 939

DRAWING NO. L603

SHEET 30 OF SHEETS 96

PLOTTED: 3/8/2023 9:13 AM

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 1/12/2023 2:33 PM FILE: C:\USERS\37574\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L603 IRRIG DETAILS SHT 2.DWG

PLANTING LEGEND

SYMBOL	QTY	SIZE	SCIENTIFIC NAME	HYDRO-ZONE	WUCOLS	COMMENTS
Ch	8	24" BOX	*CHILOPSIS* 'BURGUNDY' STD. ('BURGUNDY' DESERT WILLOW)	1	LOW	PLANT & DOUBLE STAKE PER DETAIL J13/L702.
CS	6	15 GAL.	*CALLISTEMON VIMINALIS 'SLIM'* ('SLIM' WEEPING BOTTLEBRUSH)	1	LOW	PLANT & DOUBLE STAKE PER DETAIL J13/L702.
Ab	15	5 GAL.	*ABUTILON PALMERI* (INDIAN MALLOW)	1	LOW	PLANT PER DETAIL A13,E13/L702.
BF	23	5 GAL.	*AGAVE 'BLUE FLAME'* ('BLUE FLAME' AGAVE)	1	LOW	PLANT PER DETAIL A13,E13/L702.
MG	32	5 GAL.	*ALOE 'MOONGLOW'* ('MOONGLOW' ALOE)	1	LOW	PLANT PER DETAIL A13,E13/L702.
As	22	1 GAL.	*ALOE STRIATA* (CORAL ALOE)	1	LOW	PLANT PER DETAIL A13,E13/L702.
Dw	14	5 GAL.	*DASYLIRION WHEELERI* (DESERT SPOON)	1	LOW	PLANT PER DETAIL A13,E13/L702.
Hp	45	5 GAL.	*HESPERALOE 'BRAKELIGHTS'* (RED-FLOWERED YUCCA)	1	LOW	PLANT PER DETAIL A13,E13/L702.
Kp	8	3 GAL.	*KALANCHOE PUMILA* (PINK KALANCHOE)	1	LOW	PLANT PER DETAIL A13,E13/L702.
LG	16	5 GAL.	*LEUCOPHYLLUM 'GREEN CLOUD'* (GREEN CLOUD LEUCOPHYLLUM)	1	LOW	PLANT PER DETAIL A13,E13/L702.
W	69	5 GAL.	*WESTRINGIA 'LOW HORIZON'* (LOW HORIZON COAST ROSEMARY)	1	LOW	PLANT PER DETAIL A13,E13/L702.

TREE PROTECTION ZONE: SEE TREE PROTECTION REQUIREMENTS, SHEET L001.

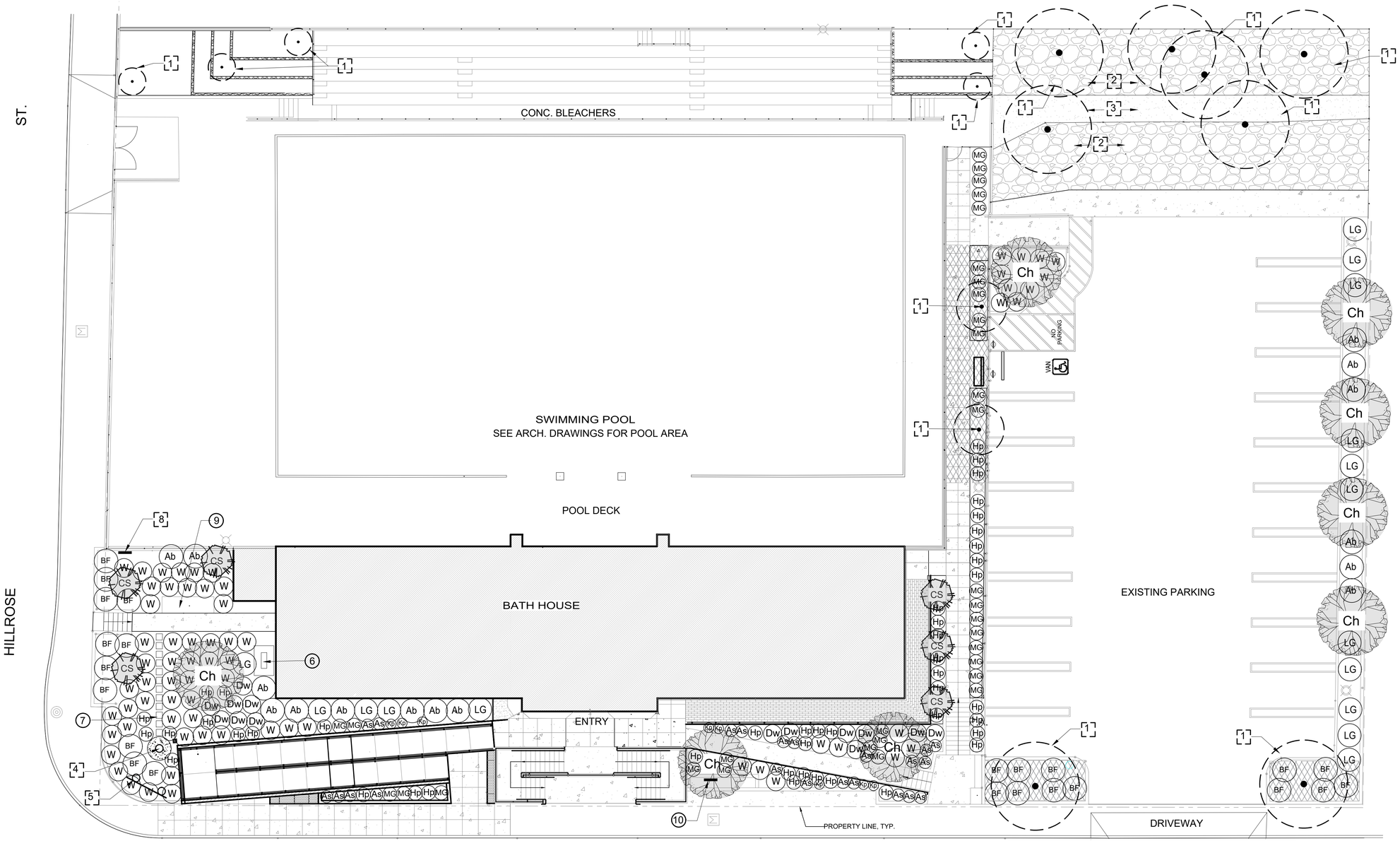
PLANTING KEYNOTES

1. EXISTING TREES OR SHRUBS TO REMAIN. PROTECT IN PLACE PER TREE PROTECTION REQUIREMENTS.
2. EXISTING SLOPE WITH STONE COVER.
3. EXISTING DIRT TERRACE.
4. EXISTING FLAGPOLE AND FOOTING.
5. EXISTING POOL SIGN & POSTS TO REMAIN.
6. NEW HVAC CONDENSER ON CONCRETE PAD. SEE MECH. PLANS.
7. NEW CONCRETE STEPPING STONES 16" X 16", APPROX. 2" THICK. LAY ON LAYER OF LEVELING SAND. PLACE WITH 6" GAP BETWEEN STEPPING STONES (12 REQUIRED).
8. REPLACE EXISTING GAS METER. SEE MECH. PLANS.
9. NEW DOMESTIC BACKFLOW DEVICES AND ENCLOSURE. SEE MECH. PLANS.
10. NEW IRRIGATION BACKFLOW DEVICE. SEE IRRIGATION PLANS.

NOTE: SEE SHEET L702 FOR PLANTING NOTES AND DETAILS.

MWELO NOTES:

1. FOR PURPOSES OF MAWA CALCULATION, ALL PLANTING AREAS SHALL BE CONSIDERED AS HYDROZONE 1.
2. REFER TO SHEET L703 FOR MWELO-COMPLIANCE AND GREEN BUILDING NOTES.



A1 SITE PLAN
Scale: 3/32" = 1' - 0"

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Underground Service Alert of Southern California

OFFICIAL RECORD

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER W. GREEN
No. 3060
Signature
Renewal Date
03-01-22
Date
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN, P.E.	03-01-22
ARCHITECTURAL DIVISION	
LIC. NO. 3060	03-01-22
ARCHITECT: Richard Fisher	03-01-22
DESIGNED BY: Gregory Nuno/Greg Mosser	03-01-22
DRAWN BY: Gregory Nuno/Greg Mosser	03-01-22
CHECKED BY: Jane Adrian	03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LANDSCAPE PLANTING PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

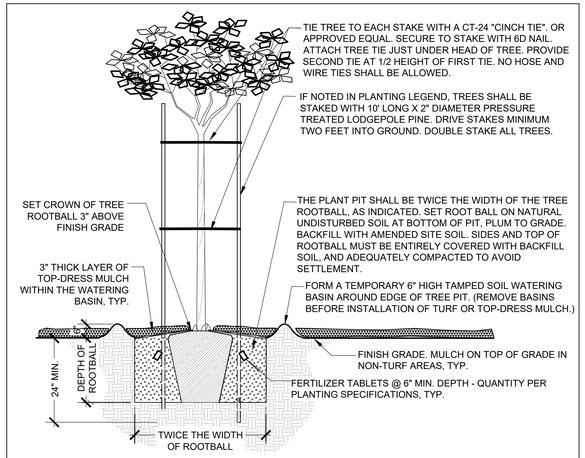
WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L701
SHEET 31 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)
REVISION DATE: 1/25/2023 4:01 PM
TEMPLATE SHEET REVISION DATE: 06/2006
FILE: C:\USERS\375740\BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L701 PLANTING PLAN.DWG

PLOTTED: 3/8/2023 9:15 AM

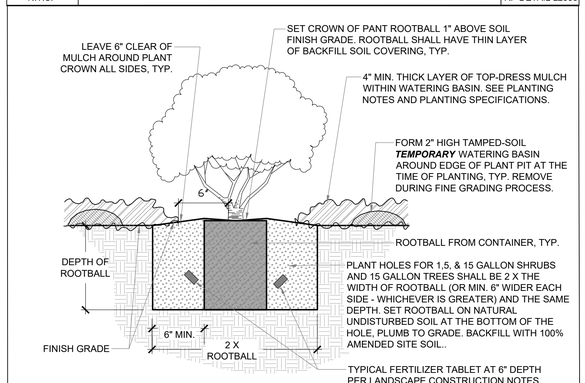
PLANTING NOTES:

1. EXISTING TREE PROTECTION: SEE TREE PROTECTION SECTION IN LANDSCAPE CONSTRUCTION NOTES.
2. ALL PLANTING AREAS SHALL RECEIVE SOIL PREPARATION PER THE LANDSCAPE CONSTRUCTION NOTES. PLANTING AREAS INSIDE TREE PROTECTION ZONES SHALL RECEIVE ALTERNATE SOIL PREPARATION METHODS AND MATERIALS PER THE LANDSCAPE CONSTRUCTION NOTES WHERE DESIGNATED.
3. SOIL PREPARATION FOR EACH AREA SHALL NOT BE PERFORMED UNTIL THE IRRIGATION SYSTEM IS COMPLETED, INSPECTED AND APPROVED PER THE LANDSCAPE CONSTRUCTION NOTES.
4. AVAILABILITY & SUBSTITUTIONS: NO SUBSTITUTIONS OF PLANT SPECIES, TYPE, CULTIVAR, SIZE ETC. WILL BE ACCEPTED WITHOUT PRIOR APPROVAL OF PROJECT MANAGER. CONTRACTOR IS EXPECTED TO UTILIZE ALL APPROPRIATE NURSERY RESOURCES IN THE SOUTHERN CALIFORNIA REGION BEFORE DETERMINING IF A SPECIFIED MATERIAL IS UNAVAILABLE. SEE LANDSCAPE CONSTRUCTION NOTES.
5. SEE THE LANDSCAPE CONSTRUCTION NOTES FOR REQUIRED INSPECTIONS OF PLANT MATERIALS PRIOR TO INSTALLATION.
6. AFTER PLANT MATERIALS ARE INSPECTED AND APPROVED, AND PLANTING AREA IS READY FOR PLANTING, CONTRACTOR SHALL PLACE ALL CONTAINER PLANTS IN A GIVEN AREA - STILL INSIDE THEIR RESPECTIVE NURSERY CONTAINERS - IN THE PLANTING AREAS PER THE LAYOUT SHOWN ON THE PLANTING PLAN FOR INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT. NO PLANTING SHALL BE INSTALLED (OR PLANTING HOLES EXCAVATED) UNTIL THE PLANT TYPE, QUALITY AND LOCATION HAS BEEN APPROVED BY THE LANDSCAPE ARCHITECT. ANY PLANTS INSTALLED PRIOR TO APPROVAL ARE SUBJECT TO REMOVAL AND RE-PLANTING OR REPLACEMENT AT THE CONTRACTOR'S EXPENSE. PROJECT MANAGER SHALL BE NOTIFIED MINIMUM 48 HOURS IN ADVANCE OF REQUESTED INSPECTION.
7. INSTALL PLANTS PER APPLICABLE DETAILS SHOWN ON THIS SHEET.
8. ALL PLANTING AREAS SHALL RECEIVE A MINIMUM (3) INCH DEEP LAYER OF TOP DRESSING MULCH PER THE PLANTING DETAILS AND THE LANDSCAPE CONSTRUCTION NOTES MATERIALS LIST. PRIOR TO PLACING MULCH, PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO THE SOIL PER LANDSCAPE CONSTRUCTION NOTES.
9. MULCH SHALL BE SPREAD EVENLY THROUGHOUT PLANTING BEDS. DO NOT BURY PLANT CROWNS.
10. SEE LANDSCAPE CONSTRUCTION NOTES FOR PLANTING MAINTENANCE AND ESTABLISHMENT PERIOD REQUIREMENTS.



NOTES:
1. SEE LANDSCAPE CONSTRUCTION NOTES FOR SOIL PREPARATION REQUIREMENTS.
2. SEE LANDSCAPE CONSTRUCTION NOTES FOR TREE TAGGING IN NURSERY.

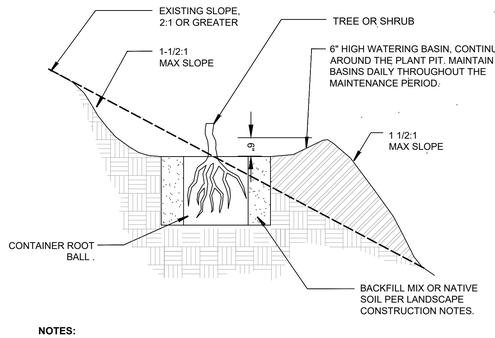
J13	TREE PLANTING AND STAKING
N.T.S.	RP DETAIL L2000



SECTION

NOTES:
1. PLANTING FINISH GRADE SHALL BE DEFINED AS TOP OF SOIL.
2. IN ALL CASES THE PLANT ROOTBALL SHALL BE COMPLETELY COVERED WITH BACKFILL SOIL - NO PORTION OF THE ROOTHBALL SHALL BE LEFT EXPOSED TO AIR OR SUNLIGHT ***BEFORE APPLICATION OF MULCH***.
3. DELETE FERTILIZER TABLETS FOR CERTAIN CALIF. NATIVE PLANTS - SEE PLANTING LEGEND.
4. SEE A13/L702 CROSS SECTION FOR ADDITIONAL REQUIREMENTS FOR SLOPE PLANTING.

E13	SHRUB PLANTING
N.T.S.	RP DETAIL L2030



NOTES:

1. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR PLANTING BACKFILL MIX AND PLANTING REQUIREMENTS.

A13	SHRUB & TREE SLOPE PLANTING
N.T.S.	RP DETAIL L2020

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED LANDSCAPE ARCHITECT No. 3060 Signature 3-30-23 Renewal date 03-01-22 Date STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

CITY ENGINEER
TED ALLEN, P.E.
ARCHITECTURAL DIVISION

		LIC. NO.	DATE:
ARCHITECT:	Richard Fisher	3060	03-01-22
DESIGNED BY:	Gregory Nuno/Greg Moeser		03-01-22
DRAWN BY:	Gregory Nuno/Greg Moeser		03-01-22
CHECKED BY:	Jane Adrian		03-01-22
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT		03-14-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PLANTING NOTES & DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L702
SHEET 32 OF SHEETS 96

PLOTTED: 3/8/2023 9:16 AM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/8/2023 9:10 AM
FILE: C:\USERS\37974\BOXARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L702 PLANTING NOTES & DETAILS.DWG

Reference Evapotranspiration ET(0) is 50.1

Hydrozone # / Planting Description	Water Use per WUCOLS	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq.ft.)	ETAF x Area	Estimated Total Water Use (ETWU) (gal/yr)
Regular Landscape Areas								
Zone 1 - Low Water Mixed Shurb and Tree Planting	Low	0.2	Stream Bubbler and Root-Zone Bubbler	0.75	0.27	3,580	955	29,654
					Totals	3,580	955	
Special Landscape								
NONE	NONE				1	0	0	0
					Totals	0	0	
							ETWU Total:	**29,654**
							Maximum Allowed Water Allowance	**50,041**

ETAF Calculations

Regular Landscape Areas & All Landscape Areas

(Notes: There's no special landscape area.)

Total ETAF x Area	955
Total Area	3,580
Average ETAF	0.267

GREEN BUILDING NOTES:

1. FOR PROJECTS THAT INCLUDE LANDSCAPE WORK, THE LANDSCAPE CERTIFICATION, FORM GRN 12, SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.
2. RECIRCULATING WATER SYSTEMS SHALL BE USED FOR WATER FEATURES.
3. A MINIMUM 3-INCH LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT TURF AREAS, CREEPING OR ROOTING GROUND COVERS, OR DIRECT DIRECT SEEDING APPLICATIONS WHERE MULCH IS CONTRAINDICATED.
4. FOR SOILS LESS THAN 6% ORGANIC MATTER IN THE TOP 6 INCHES OF SOIL, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1,000 SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOIL.
5. A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT AND CERTIFIED BY EITHER THE SIGNER OF THE LANDSCAPE PLANS, THE SIGNER OF THE IRRIGATION PLANS OR THE LICENSED LANDSCAPE CONTRACTOR FOR THE PROJECT.
6. I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE.

07/24/2020
RICHARD W. FISHER, LANDSCAPE ARCHITECT DATE

7. I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS.

07/24/2020
RICHARD W. FISHER, LANDSCAPE ARCHITECT DATE

WATER SUPPLY TYPE: POTABLE WATER
TOTAL LANDSCAPE SHRUB/TREE AREA: 3580 S.F.
TOTAL TURF AREA: 0

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THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 11/22/2023 2:32 PM FILE: C:\USERS\375740BOX\ARC_PROJECTS\VERDUGO HILLS POOL\3-DESIGN\LANDSCAPE\L703.MWELO.DWG

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO. | REVISIONS: | DATE: | BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LANDSCAPE ARCHITECT ★ RICHARD W. FISHER ★ LICENSED
No. 3060
Signature
Renewal Date
10-31-22
Date
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE
TED ALLEN, P.E.	03-01-22
ARCHITECTURAL DIVISION LIC. NO. 3060	03-01-22
ARCHITECT: Richard Fisher	03-01-22
DESIGNED BY: Gregory Nunn/Greg Moeser	03-01-22
DRAWN BY: Gregory Nunn/Greg Moeser	03-01-22
CHECKED BY: Jane Adlan	03-14-22
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

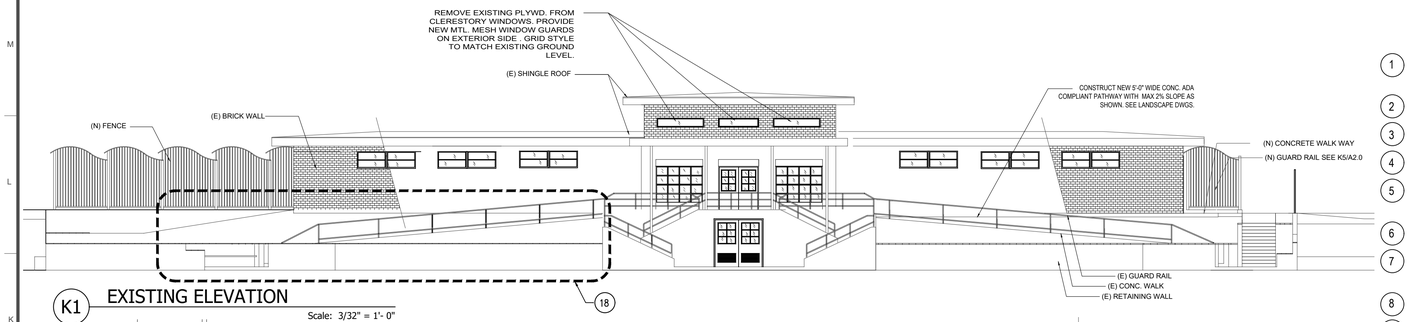
SHEET TITLE: MWELO COMPLIANCE DOCUMENTS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. 939
DRAWING NO. L703
SHEET 33 OF SHEETS 96

PLOTTED: 3/8/2023 9:17 AM



K1 EXISTING ELEVATION

Scale: 3/32" = 1'- 0"

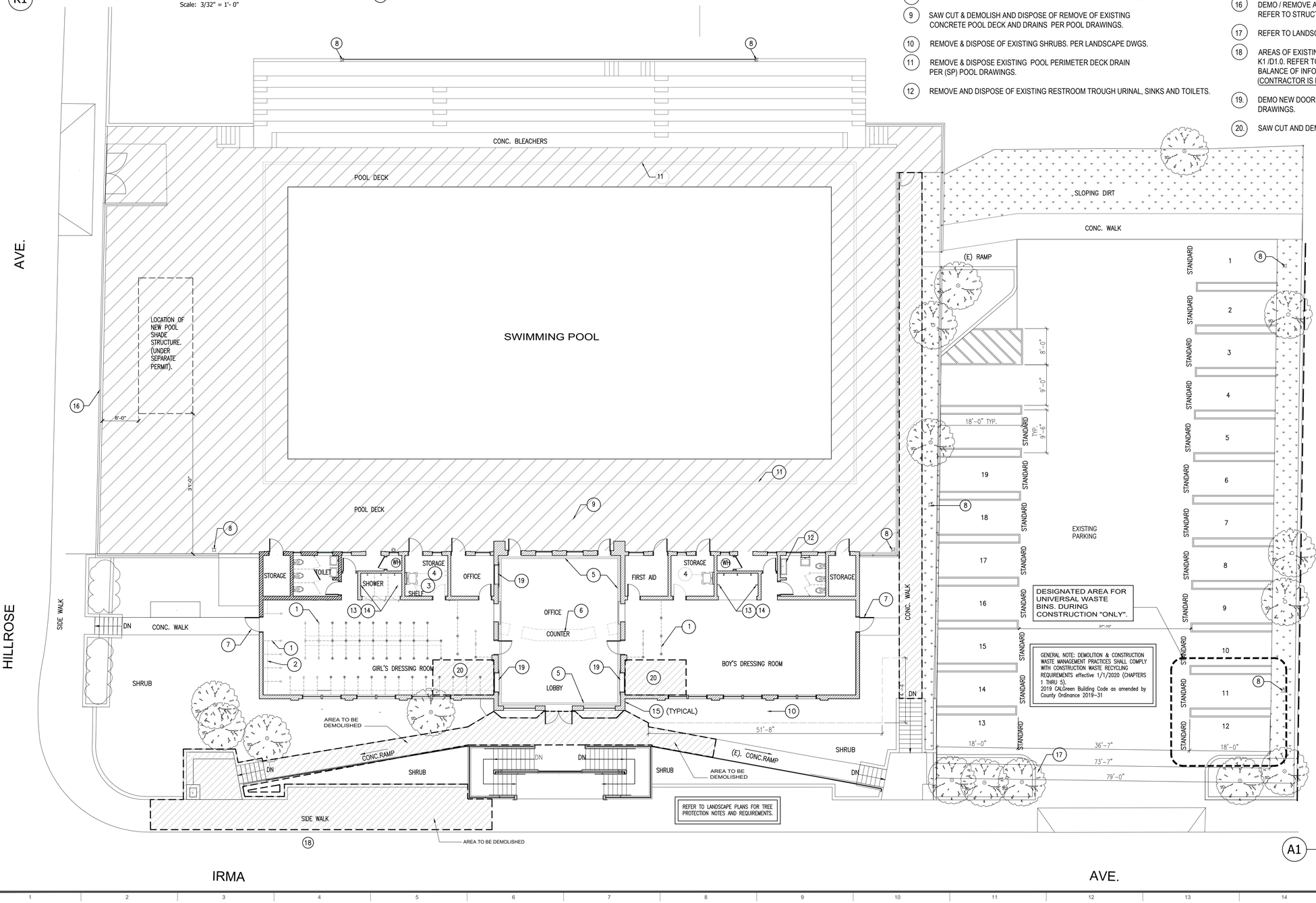
DEMOLITION NOTES

1. REMOVE & DISPOSE OF EXISTING STEEL POSTS ,DRESSING ROOM PARTITIONS & CONCRETE PEDESTALS FROM BOTH MEN AND WOMENS DRESSING ROOM.
2. REMOVE & DISPOSE OF EXISTING DRESSING ROOM BENCHES
3. REMOVE & DISPOSE OF EXISTING WOOD SHELVES
4. REMOVE & DISPOSE OF EXISTING MOP SINK, CAP EXISTING DRAINLINES FOR REUSE
5. RETAIN EXISTING VINTAGE LIGHTED SOFFIT, PROTECT IN PLACE AND PREPARE FOR LED LIGHTING RETROFIT FOR LED LIGHTING.
6. REMOVE & DISPOSE OF EXISTING WOOD CUSTOMER SERVICE COUNTER
7. REMOVE & DISPOSE OF EXISTING DOOR' SECURE OPENING FOR INSTALLATION OF NEW DOOR.
8. REMOVE AND DISPOSE EXISTING LIGHT POLES AS SHOWN. PER ELEC. DWGS.
9. SAW CUT & DEMOLISH AND DISPOSE OF REMOVE OF EXISTING CONCRETE POOL DECK AND DRAINS PER POOL DRAWINGS.
10. REMOVE & DISPOSE OF EXISTING SHRUBS. PER LANDSCAPE DWGS.
11. REMOVE & DISPOSE EXISTING POOL PERIMETER DECK DRAIN PER (SP) POOL DRAWINGS.
12. REMOVE AND DISPOSE OF EXISTING RESTROOM TROUGH URINAL, SINKS AND TOILETS.
13. REMOVE AND RECONFIGURE EXISTING SHOWERHEADS SHOWN. SEE PLUMBING PLANS. REMOVE AND CAP UNUSED PIPE LINES.
14. REMOVE EXISTING METAL WALL PANELS . PREP WALLS AND CEILING TO RECEIVE NEW WATERPROOF BACKER BOARD, MORTAR GROUT AND CERAMIC PORCELAIN TILE.
15. REMOVE EXISTING PLYWOOD FROM UPPER CLERESTORY WINDOWS. SECURE OPENING FROM WEATHER AND UNTIL REPAIR AND RESTORATION CAN PROCEED.
16. DEMO / REMOVE AND DISPOSE OF EXISTING CHAINLINK FENCE REFER TO STRUCTURAL DRAWING A1/S301.
17. REFER TO LANDSCAPE PLANS FOR LANDSCAPE WORK.
18. AREAS OF EXISTING CONC. RAMP TO BE DEMOLISHED. SEE EXISTING ELEVATION K1 /D1.0. REFER TO LANDSCAPE DRAWINGS AND STRUCTURAL DRAWINGS FOR BALANCE OF INFORMATION., PROVIDE STRUCTURAL SHORING AS NECESSARY. (CONTRACTOR IS RESPONSIBLE FOR OBTAINING RIGHT OF WAY PERMIT).
19. DEMO NEW DOOR OPENINGS IN EXISTING MASONRY WALL PER STRUCTURAL DRAWINGS.
20. SAW CUT AND DEMOLISH CONCRETE SLAB AND EXCAVATE FOR NEW PLUMBING.

LEGENDS

INDICATES WALL, SLAB OR FIXTURES TO BE DEMOLISHED OR REMOVED

INDICATES EXISTING WALL OR FIXTURES TO REMAIN.



WALL AND AREAS TO BE DEMOLISHED

WALLS AND AREAS TO REMAIN

N

A1 DEMOLITION PLAN

Scale: 1/8" = 1'- 0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
GELSO J. DEL POSO
LIC. NO. C. 29974
RENEWAL 31-2023
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED	ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION		
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DEMOLITION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. D1.0

SHEET 34 OF SHEETS 96

PLOTTED: 6/4/2022 5:04 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006

REVISION DATE: 6/4/2022 5:03 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\D1.0 DEMOLITION PLAN.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

28 REMOVE, WIRE BRUSH, SCRUB CLEAN AND REPAIR AS NECESSARY ALL EXISTING EXTERIOR GALV. METAL WINDOW GUARDS PER SECRETARY OF THE INTERIORS HISTORICAL PRESERVATION STANDARDS AND REINSTALL SECURELY. WIRE BRUSH + LIGHT ABRASIVE AND SCRUB CLEAN BY HAND WITH LIGHT ABRASIVE ALL EXISTING METAL WINDOW FRAMES AND EXPOSED BUILDING METALS THAT ARE TO REMAIN PER SAME STANDARD. CLEAN IN PLACE. REPLACE IN KIND ANY DAMAGED MATERIALS, WEATHER STRIPPING OR NON-FUNCTIONING LATCHES SCREWS OR HINGES .

29 REPLACE AND OR REPAIR ALL DAMAGED DETERIORATED METAL DOORS PANELS, STILES, RAILS AND KICK PLATES THROUGHOUT INTERIOR AND EXTERIOR AS NECESSARY. CLEAN, SAND AND REFINISH ALL DOOR SURFACES TOP AND BOTTOM PER SECRETARY OF THE INTERIORS HISTORICAL PRESERVATION STANDARDS. SAND ALL SURFACES THOROUGHLY, PRIME WITH RUSTPROOF METAL PRIMER AND PAINT WITH DUNN EDWARDS KYNAR METAL PAINT COLOR: TBD BY ARCHITECT. PROVIDE NEW MORTISE LOCKSETS AND ADA COMPLIANT DOOR LEVERS, THRESHOLDS AND CLOSURES

30 SAND PREP, PATCH AND REPAIR ALL INTERIOR SURFACE MATERIALS, WALLS, CEILING ETC. FOR PAINTING APPLY PRIMER AND PAINTING, STAINS AND OTHER RELATED FINISHES.

31 INSTALL NEW 48 x 36 WALL MOUNTED GLASS LOCKABLE DISPLAY CABINET, SUBMITTAL REQUIRED FOR APPROVAL

32 PROVIDE AND INSTALL NEW HEAVY GAUGE STEEL SECURITY DOOR WITH NEW HINGES, ADA COMPLIANT HARDWARE, SWEEP AND ADA COMPLIANT PANIC BAR.

33 INSTALL NEW CERAMIC TILE AT MENS URINAL. SCRUB AND CLEAN "ALL" EXISTING GLAZED C.M.U. BLOCK WALL. RE-POINT, REPAIR ALL CRACKS AND REPLACE LOOSE OR BROKEN GROUT.

34 EXISTING PARKING LOT. PROVIDE NEW PAINT STRIPING TO PROVIDE FOR 20 STANDARD STALLS 9'-0" X 18'-0" TYP. & 1 ADA STALL AND ACCESS AISLE.

35 PROVIDE AND INSTALL NEW GALVANIZED STEEL PERIMETER FENCING SEE DETAILS IN SHT. A9.0 AND STRUCTURAL DWG A1/S301 . AND LANDSCAPE DWGS.

36 REPAIR, AND RE-POINT INTERIOR AND EXTERIOR MASONRY BRICK IN LOCATIONS AS NEEDED.

37 REPLACE EXISTING SERVICE WINDOWS WITH NEW STAINLESS STEEL SERVICE WINDOWS.

38 PROVIDE AND INSTALL NEW ADA ACCESS ROUTE SIGN. SEE J12 / A10.0.

39 PROVIDE AND INSTALL NEW ADA PARKING SIGN. SEE J12 / A10.0.

40 COORDINATE ALL ROOF PENETRATIONS WITH PROJECT ARCHITECT. AND ASSOCIATED DISCIPLINES.

17 PROVIDE AND INSTALL NEW LED LIGHT POLES AS INDICATED. **(PER ELECTRICAL DWGS).**

18 REPLACE EXISTING POOL HEATER. **SEE MECHANICAL POOL DRAWINGS SP1.1**

19 INSTALL NEW LIGHTING TO ALL AREAS WHERE INDICATED. **(SEE ELECTRICAL DRAWINGS)**.

20 ADD SEISMIC SHUTOFF VALVE TO EXISTING GAS MAIN. SEE MECHANICAL DRAWINGS.

21 CLEAN AND REMOVE ALL RUST AND CORROSION FROM (E) STAIR AND RAMP HANDRAIL AND APPLY HIGH PERFORMANCE CLEAR PROTECTIVE WEATHER PROOF COATING..

22 PATCH AND REPAIR ALL VISIBLE CRACKS IN (E) CONCRETE FLOOR AND ACID WASH TO CONSISTENT UNIFORM APPEARANCE, COLOR BY ARCHITECT

23 PROVIDE AND INSTALL OR CONSTRUCT (N) 15' X 30' X 9' HIGH STEEL AND FABRIC SHADE "STRUCTURE UNDER SEPARATE PERMIT" **SEE A8.0**

24 NEW AC CONDENSER **(SEE MECHANICAL DWGS).**

25 CONSTRUCT NEW 46" INCH HIGH PONY WALL WITH FINISHED WOOD CAP W/ ALUM. REVEAL AND SPRING LOADED LAMINATED SWINGING DOOR.

26 PROVIDE AND INSTALL NEW LAVATORIES INCLUDE WATER SUPPLY, WASTE & DRAIN LINES ALL WITH ADA COMPLIANT CONTROLS. SEE MECHANICAL DWGS.

27 INSTALL NEW GALV. WIRE MESH WINDOW GUARDS OVER CLERESTORY WINDOWS, STYLE TO MATCH EXISTING

7 PROVIDE AND INSTALL NEW URBAN-FORM WALL PLASTIC SLAT MOUNTED BENCHES BY WISHBONE FURNISHINGS, Model Number : UFWM-17S SEAT SUPPORT BRACKET AND FWM-17E 2 x 6 RECYCLED-PLASTIC PLANKS. AND HILTI HIT-RE 100 (OR EQUAL). SEE K6/A3.1

8 PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN MORTAR & GROUT, OVER WATER PROOF CEMENT BACKER BOARD. AND INSTALL NEW WATER PROOF HARD CEILING IN SHOWER. INSTALL LIGHTING PER ELECTRICAL DWGS. DEMO ONE (E) METAL PANEL VIA EXPLORATION, FOR ARCHITECTS APPROVAL PRIOR TO FULL DEMOLITION.

9 CONSTRUCT NEW 4000 PSI CONCRETE SLAB WITH EPOXY COATED REBAR, SLOPE TO DRAIN AND PER ADA REQUIREMENTS **SEE A7/A3.0**.

10 PROVIDE AND INSTALL NEW ADA COMPLIANT HI-LOW DRINKING FOUNTAIN. **SEE PLUMBING.**

11 INSTALL NEW 1 $\frac{1}{2}$" Ø 316 STAINLESS STEEL HANDRAIL AS PER ADA REQUIREMENTS. **SEE A1/A4.0**

12 CONSTRUCT NEW CONCRETE POOL DECK WITH EPOXY COATED REBAR AND NEW POOL DRAINS. MECH AND POOL DWGS **SEE SP2.1** ("UNDER SEPARATE PERMIT")

13 REPLACE "ALL" EXTERIOR WINDOW GLAZING WITH LOW-E SOLARBAN-60 MONOLITHIC W/ PROTECTIVE LAMINATE.

14 RESTRIPE NEW ADA PARKING SPACE. AND PROVIDE NEW PARKING SIGNAGE (SEE LANDSCAPE DWGS).

15 INSTALL INFRA RED RADIANT HEAT IN DRESSING AREAS .SEE MECHANICAL DRAWINGS

16 CONSTRUCT NEW 5'-0" WIDE CONC. ADA COMPLIANT PATHWAY WITH MAX 2% SLOPE AS SHOWN. SEE LANDSCAPE DWGS.

CONSTRUCTION NOTES :

1 CONSTRUCT NEW 8 X 13 ADA COMPLIANT GENDER NEUTRAL RESTROOMS. PROVIDE NECESSARY PLUMBING, (N) FLOOR DRAINS 2% MIN. SLOPE, PLUMBING FIXTURES, MECHANICAL ELECTRICAL LIGHTING. AND ACCESSORIES. **SEE DETAIL A7/A3.0**

1.1 CONSTRUCT NEW ADA COMPLIANT LAVATORY AND PLUMBING WALL IN NEW FIRST AID RM. LOCATION # 203 AND NEWcADA COMPLIANT AQUATICS STAFF SHOWER/RESTROOM IN EXISTING MAINTENANCE ROOM # 104 LOCATION PROVIDE AND INSTALL NEW PLUMBING WALL,TOILET, LAVATORY AND SHOWER WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES AND FINISHES. SEAL OFF EXISTING DOOR FOR POTENTIAL FUTURE REUSE.

1.2 CONSTRUCT NEW ADA COMPLIANT STRUCTURAL DOOR OPENING PROVIDE AND INSTALL NEW DOOR AND HARDWARE IN EXISTING MASONRY BRICK WALL. **SEE STRUCTURAL DRAWINGS.**

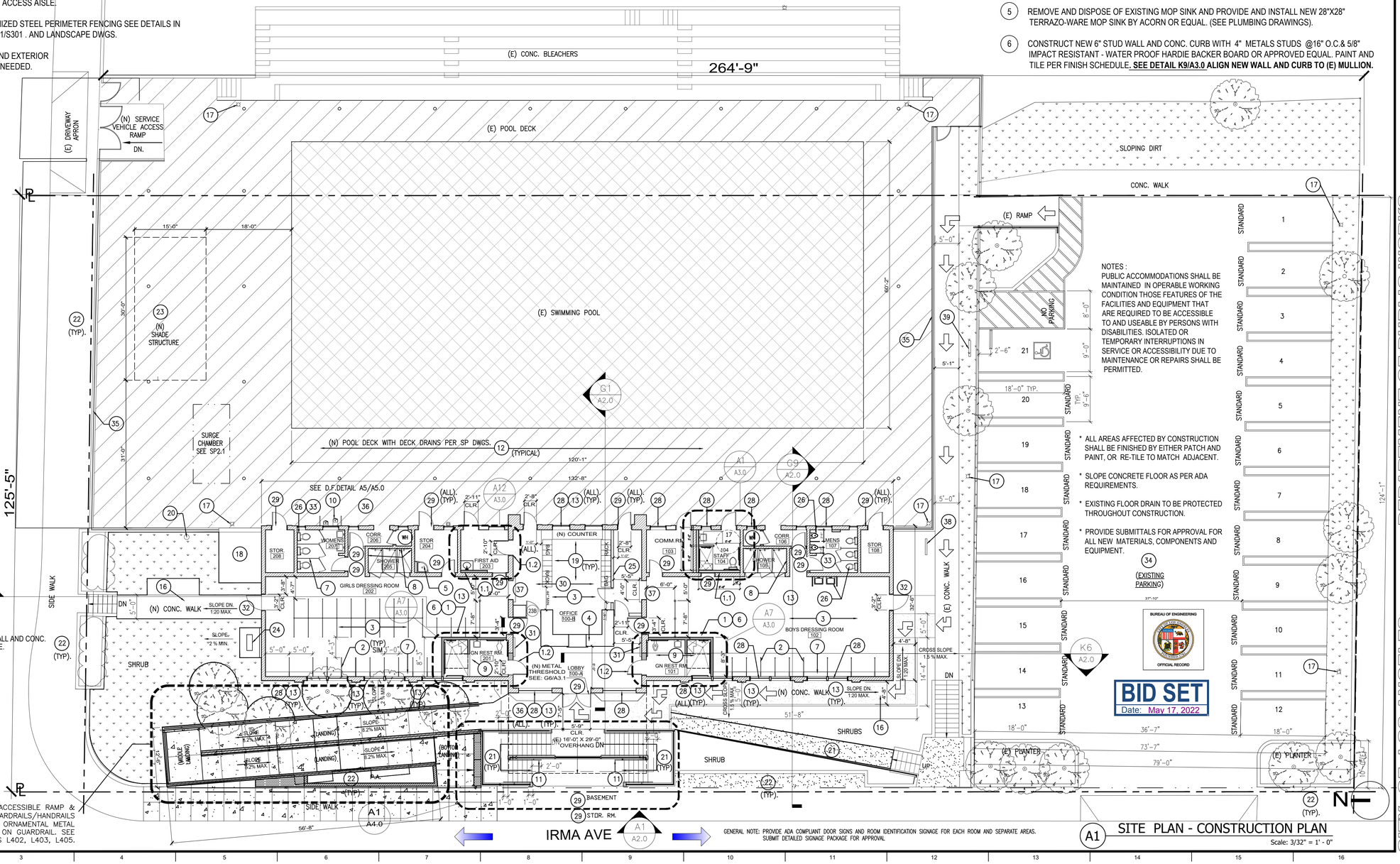
2 INSTALL NEW SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS AND SHOWER PARTITIONS WITH OPERABLE DOORS AND REQUIRED HARDWARE "SCRANTON ECLIPSE" (OR EQUAL) FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL.

3 REFINISH EXISTING CONCRETE FLOORS AND COVE BASE THROUGHOUT ENTIRE BUILDING INTERIOR. INCLUDING GRINDING, PROPER CRACK REPAIR, LEVELING AS NEEDED AND MATERIAL AREA REPLACEMENT AS NEEDED AND NECESSARY. PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT.Y CROWN POLYMER (OR EQUAL). BY APPROVED CONTRACTOR. COLOR TBD ARCHITECT. **SEE SCHEDULE A6.0**

4 PROVIDE AND/OR CONSTRUCT AND INSTALL NEW WOOD COUNTER WITH PLASTIC LAMINATE SURFACES AND DOOR FRONTS "PIONITE" (OR EQUAL) AND NECESSARY HARDWARE. INCLUDE QUARTZ COUNTERTOP AND KICK BASE AS SHOWN. INCLUDE POWER, COMMUNICATION, LINES PER APPROVED ELECTRICAL, DRAWINGS. SEE **DETAIL E1& E8 /A4.0**

5 REMOVE AND DISPOSE OF EXISTING MOP SINK AND PROVIDE AND INSTALL NEW 28"X28" TERRAZO-WARE MOP SINK BY ACORN OR EQUAL. (SEE PLUMBING DRAWINGS).

6 CONSTRUCT NEW 6" STUD WALL AND CONC. CURB WITH 4" METALS STUDS @16" O.C.& 5/8" IMPACT RESISTANT - WATER PROOF HARDIE BACKER BOARD OR APPROVED EQUAL. PAINT AND TILE PER FINISH SCHEDULE. **SEE DETAIL K9/A3.0 ALIGN NEW WALL AND CURB TO (E) MULLION.**



NOTES :
PUBLIC ACCOMMODATIONS SHALL BE MAINTAINED IN OPERABLE WORKING CONDITION THOSE FEATURES OF THE FACILITIES AND EQUIPMENT THAT ARE REQUIRED TO BE ACCESSIBLE TO AND USEABLE BY PERSONS WITH DISABILITIES. ISOLATED OR TEMPORARY INTERRUPTIONS IN SERVICE OR ACCESSIBILITY DUE TO MAINTENANCE OR REPAIRS SHALL BE PERMITTED.

* ALL AREAS AFFECTED BY CONSTRUCTION SHALL BE FINISHED BY EITHER PATCH AND PAINT, OR RE-TILE TO MATCH ADJACENT.
* SLOPE CONCRETE FLOOR AS PER ADA REQUIREMENTS.
* EXISTING FLOOR DRAIN TO BE PROTECTED THROUGHOUT CONSTRUCTION.
* PROVIDE SUBMITTALS FOR APPROVAL FOR ALL NEW MATERIALS, COMPONENTS AND EQUIPMENT.

LEGEND :
- NEW 2X6 METAL STUD - "ESR 3064P" WALL AND CONC. CURB BRACED TO (E) ROOF STRUCTURE.
- EXISTING BRICK WALL
- NEW SHOWER PARTITION
- NEW DRESSING PARTITION
- NEW CONCRETE SLAB FLOOR.
- CONCRETE DECK AND DECK DRAIN TO BE DEMOLISHED
- EXISTING SWIMMING POOL TANK (TO REMAIN)
- (P.O.T.) PATH OF TRAVEL

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

GENERAL NOTE: PROVIDE ADA COMPLIANT DOOR SIGNS AND ROOM IDENTIFICATION SIGNAGE FOR EACH ROOM AND SEPARATE AREAS. SUBMIT DETAILED SIGNAGE PACKAGE FOR APPROVAL

A1 SITE PLAN - CONSTRUCTION PLAN
Scale: 3/32" = 1' - 0"

BUILDING NO. -
INDEX NO. - RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW: 31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

TED ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION	
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974
DESIGNED BY:	John McNeil / Vinh Ha	
DRAWN BY:	Vinh Ha / John McNeil	
CHECKED BY:	Celso J. Del Poso	
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	

03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SITE PLAN - CONSTRUCTION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A1.0
SHEET 35 OF SHEETS 96

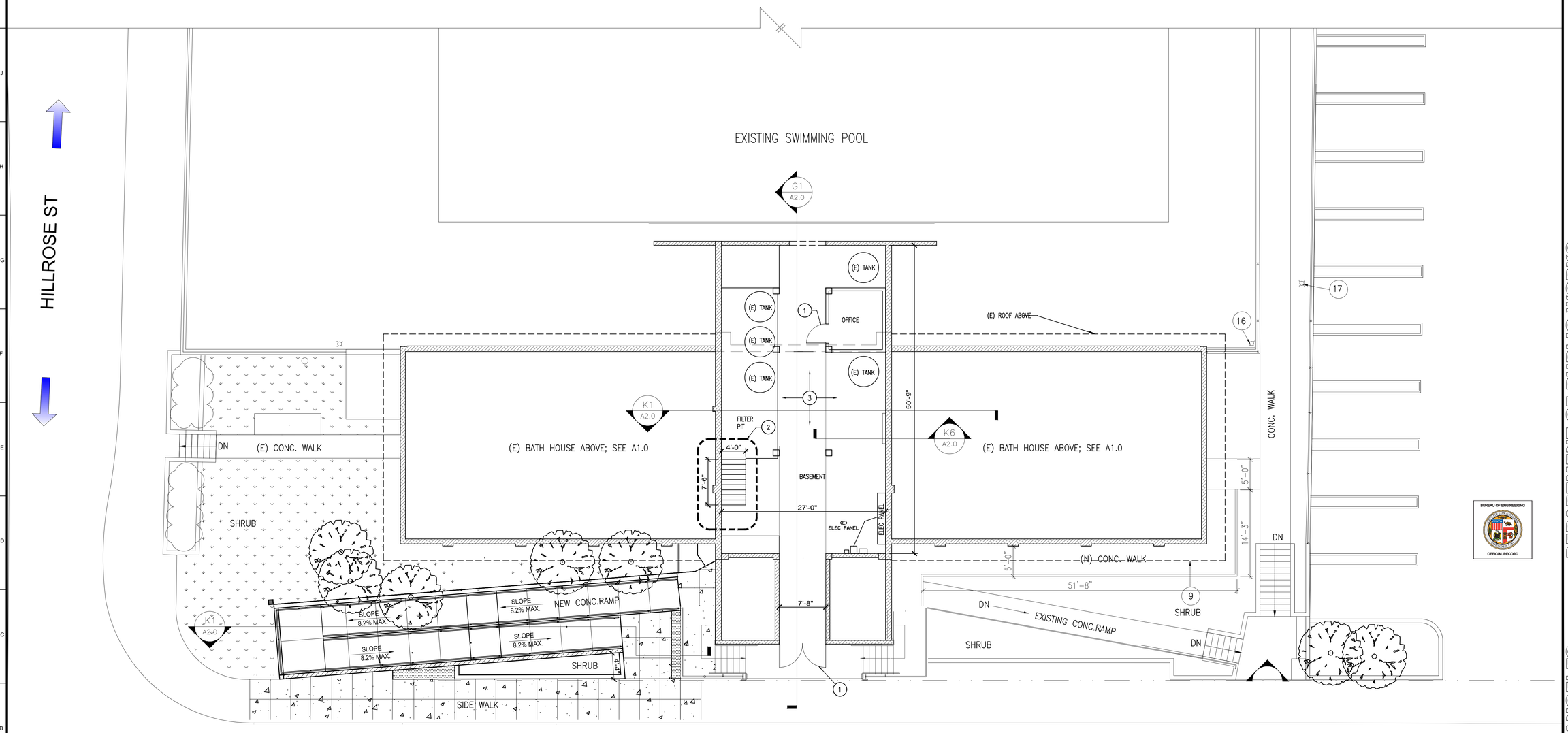
PLOTTED: 8/13/2022 9:07 AM

REVISION DATES: (DESIGN STAGE ONLY)
REVISION DATE: 7/27/2022 6:24 PM
TEMPLATE SHEET REVISION DATE: 06/2006
FILE: C:\USERS\23535\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A1.0 CONSTRUCTION PLAN_(BID SET) 022222.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

BASEMENT ARCHITECTURAL CONSTRUCTION NOTES :

1. REPAIR AND PAINT EXISTING METAL DOORS , DOOR GLAZING, AND PROVIDE NEW LOCKS, DOOR HARDWARE AND CLOSURES PER DOOR SCHEDULE . **SEE SHEET A6.0**
2. REPAIR EXISTING CONC. STAIR CORNER, SPALLING REPAIR OF (E) STAIR WELL . SAND, PREP REFINISH AND PAINT EXISTING GUARDRAIL AND HANDRAIL.
3. REPAIR ALL FLOOR AND CEILING CRACKS WITH APPROPRIATE WATERPROOF CONC. EPOXY FILLER .
4. PREPARE ALL CONCRETE BASEMENT FLOORS AND PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT. CROWN POLYMER (OR EQUAL). BY APPROVED CONTRACTOR. COLOR TBD ARCHITECT.
   SEE SCHEDULE A6.0



A1 / A1.2 EXISTING BASEMENT FLOOR PLAN
1/8"= 1'-0"

BID SET
Date: May 17, 2022

N

SEE (SP) SWIMMING POOL DRAWINGS FOR FULL SCOPE OF WORK AND BALANCE OF INFORMATION.

BUREAU OF ENGINEERING
OFFICIAL RECORD

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEWAL 08-31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:	
ARCHITECTURAL DIVISION			
ARCHITECT:	Celso Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil / Vinh Ha		03-10-22
DRAWN BY:	Vinh Ha / John McNeil		03-10-22
CHECKED BY:	Celso Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT			03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: EXISTING BASEMENT FLOOR PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A1.2

SHEET 36 OF SHEETS 96

PLOTTED: 6/4/2022 5:09 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 5/3/2022 8:38 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A1.2 BASEMENT FLOOR PLAN.DWG

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THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 7/27/2022 6:43 PM FILE: C:\USERS\25355\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A1.3 REFLECTED CEILING PLAN.DWG

SEE ELECTRICAL PLANS

HILLROSE ST

SIDE WALK

(E) CONC. BLEACHERS

(E) RAMP

(E) POOL DECK

SWIMMING POOL UNDER SEPARATE PERMIT
L.A.COUNTY PERMIT # SR0216201

(E) SWIMMING POOL

15'-0"

(N) SHADE STRUCTURE

30'-0"

UNDER SEPARATE PERMIT

8'-1"

SURGE CHAMBER SEE SP2.1

31'-0"

120'-1"

60'-2"

(E) SLOPING DIRT

(E) CONC. WALK

79'-4"

5'-6"

17'-10"

(E) RAMP

6'-0"

13'-8"

NO PARKING

8'-0"

9'-0"

18'-0"

38'-2"

9'-6"

2'-0"

7'-5"

7'-6"

2'-6"

113'-11"

114'-1"

EXISTING PARKING

38'-2"

ADA ACCESSIBLE ROUTE SIGN SEE DET. F1/A10.0

21'-10"

8'-9"

10'-0"

14'-3"

9'-10"

37'-5"

CORR. 206

WOMENS 207

SHOWER 205

STOR. 204

FIRST AID 203

OFFICE 100-B

COMM.RM 103

STAFF ROOM 104

SHOWER 105

MENS 107

STOR. 106

CORR. 106

STOR. 208

GIRLS DRESSING ROOM 202

DRESSING ROOMS TO COMPLY WITH LADBS 11B-803

(E) CEILING BEAM

GN REST RM. 201

LOBBY 100-A

COUNTER 34" HIGH MAX.

GN REST RM. 101

BOYS DRESSING ROOM 102

DRESSING ROOMS TO COMPLY WITH LADBS 11B-803

SLOPE DN. 1:20 MAX.

SLOPE DN. 1:20 MAX.

8.1% SLOPE

8.1% SLOPE

8.1% SLOPE

8.1% SLOPE

NEW ACCESSIBLE RAMP & GUARDRAILS/HANDRAILS WITH ORNAMENTAL METAL WORK ON GUARDRAIL. SEE SHEETS L402, L403, L405.

IRMA AVE

A1 REFLECTED CEILING - LIGHTING PLAN (Ref. Only)
Scale: 3/32" = 1' - 0"

BID SET
Date: May 17, 2022

N

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO. | REVISIONS: | DATE | BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 01-31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
OFFICIAL RECORD

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION DATE:
ARCHITECT: Celso Del Poso LIC. NO. C-29974
DESIGNED BY: John McNeil
DRAWN BY: Vin HYa, TY, DT
CHECKED BY: Celso J. Del Poso
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

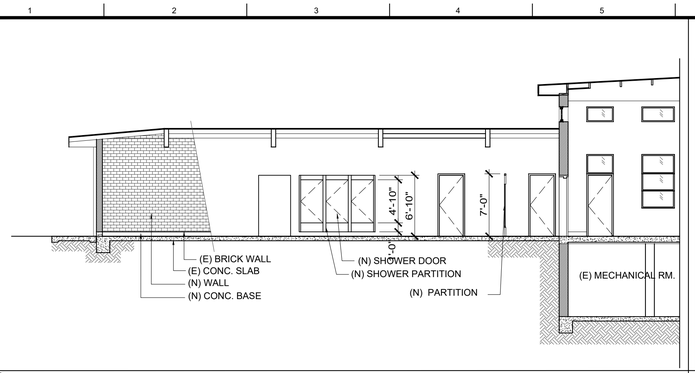
SHEET TITLE: REFLECTED CEILING PLAN

PROJECT: VERDUGO HILL POOL Tenant Improvement
BUILDING REFURBISHMENT

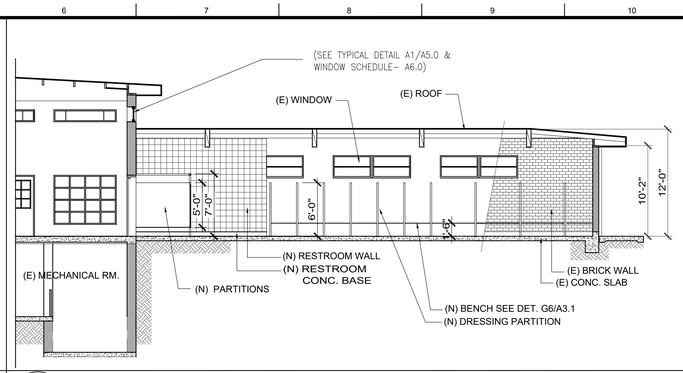
ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A1.3
SHEET 37 OF SHEETS 96

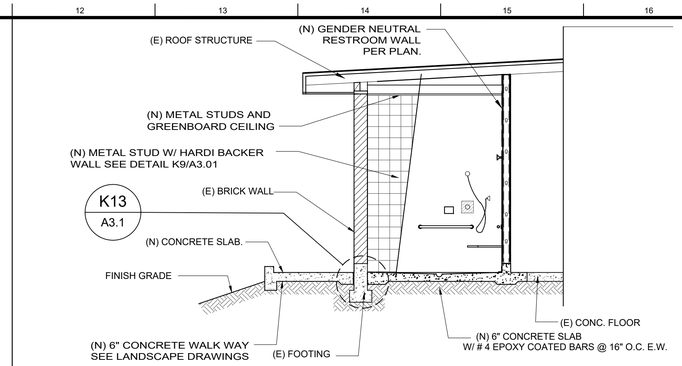
PLOTTED: 8/13/2022 9:10 AM



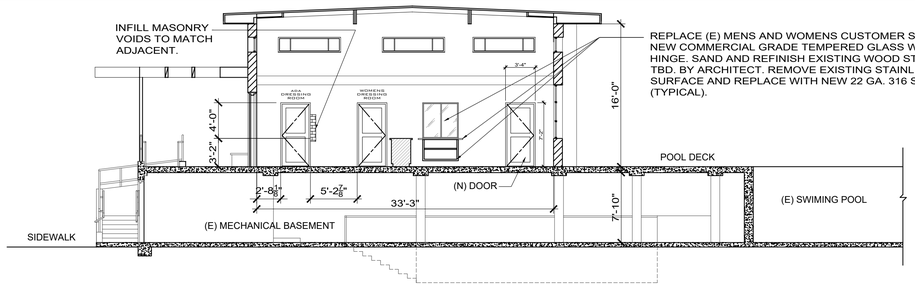
K1 / A1.0 SECTION C
1/8"= 1'-0"



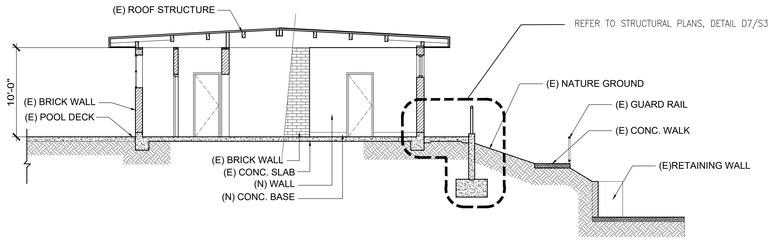
K6 / A1.0 SECTION D
1/8"= 1'-0"



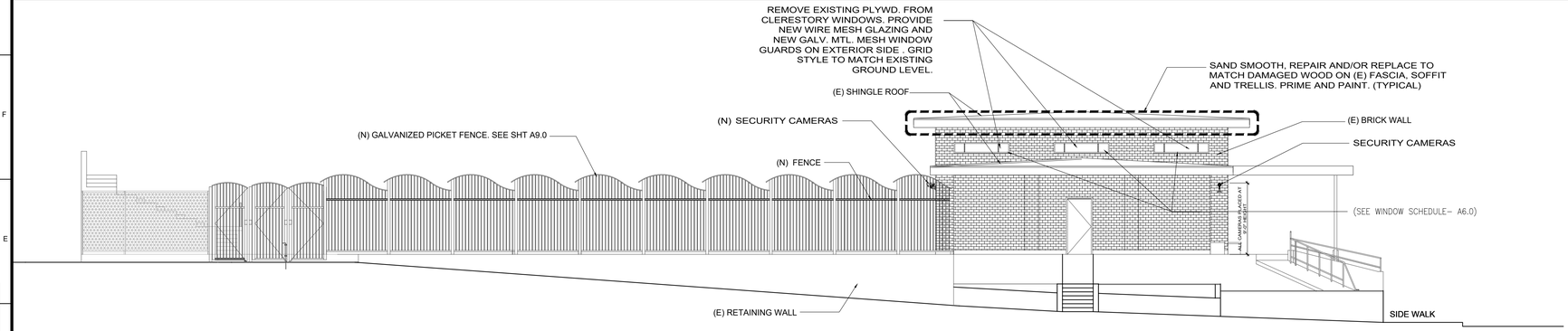
K12 / A3.0 ENLARGED SECTION - GENDER NEUTRAL REST RM. (TYP).
1/4"= 1'-0"



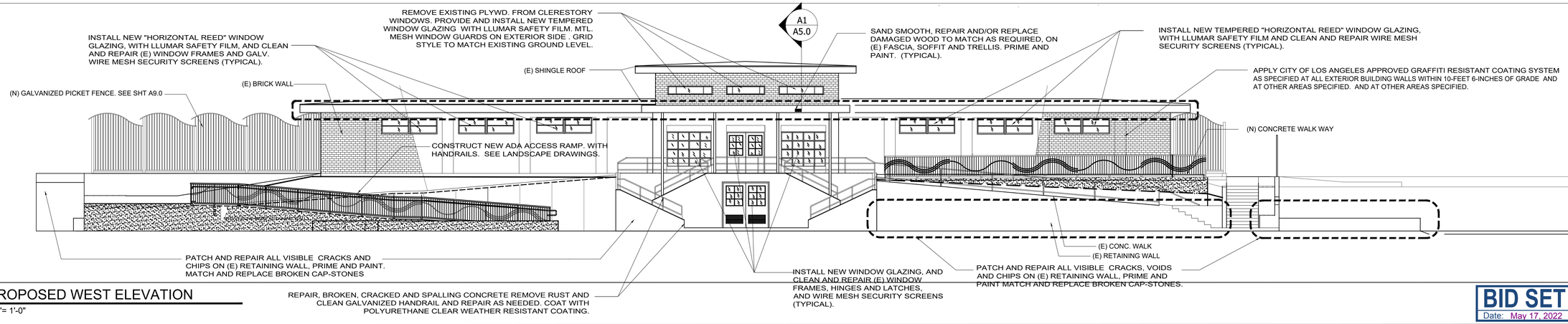
G1 / A1.0 SECTION A
1/8"= 1'-0"



G9 / A1.0 SECTION B
1/8"= 1'-0"



D1 / A1.0 EXISTING WEST ELEVATION
1/8"= 1'-0"



A1 / A1.0 PROPOSED WEST ELEVATION
1/8"= 1'-0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C-29974
REN 02-31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	NAME	LIC. NO.	DATE
CITY ENGINEER	TED ALLEN, P.E.		03-10-22
ARCHITECTURAL DIVISION			
ARCHITECT:	Celso J. Del Poso	C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: EXTERIOR ELEVATIONS & SECTIONS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A2.0

SHEET 38 OF SHEETS 96

BID SET
Date: May 17, 2022

PLOTTED: 8/13/2022 9:09 AM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 7/27/2022 7:01 PM FILE: C:\USERS\26359\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A2.0 EXTERIOR ELEVATIONS.DWG

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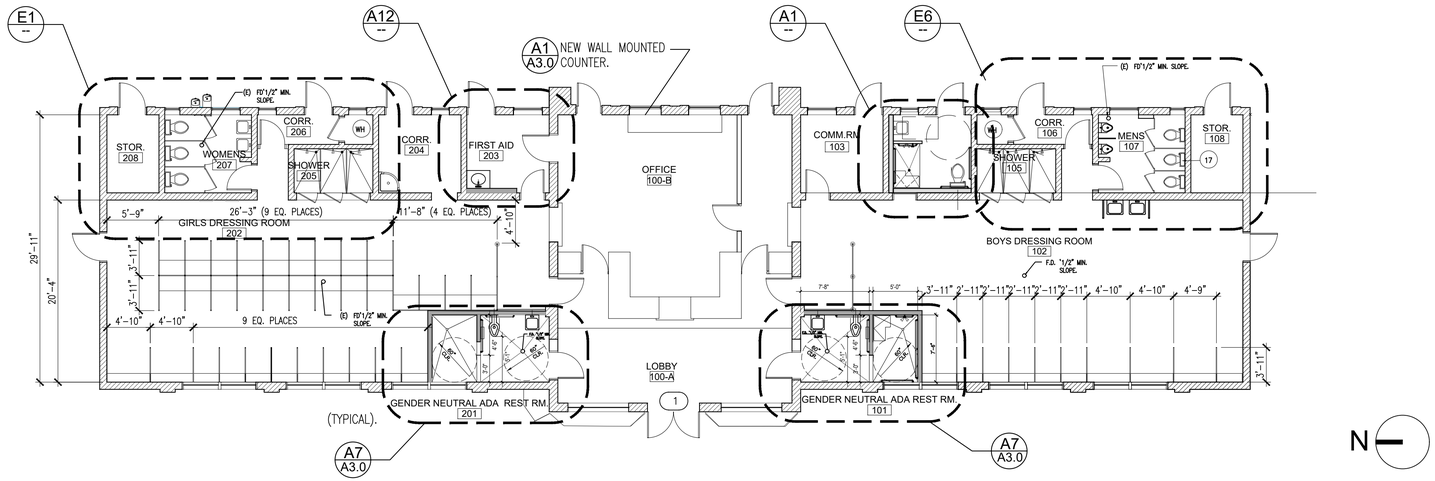
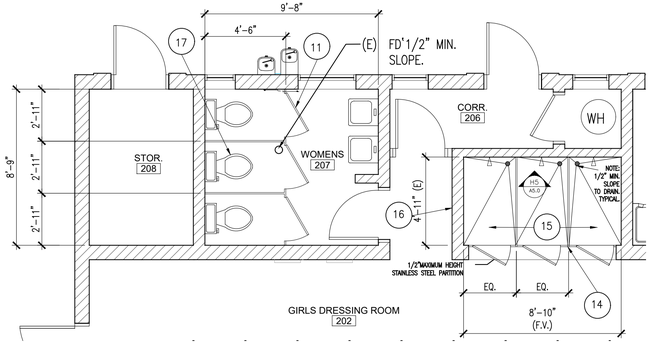
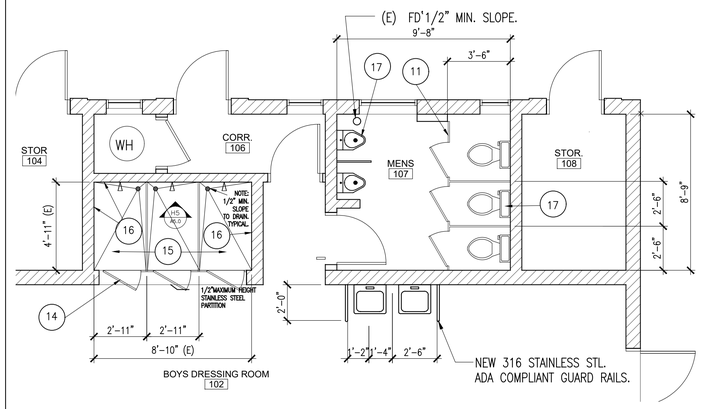


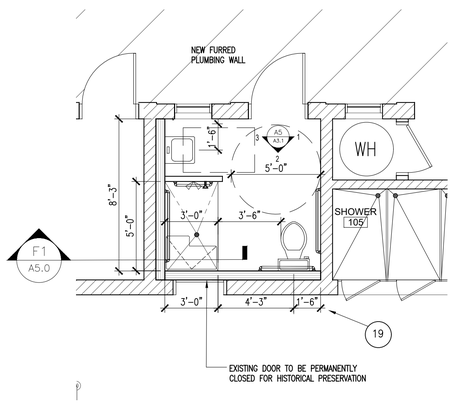
J1 ENLARGED PLAN
A1.0 1/8"= 1'-0"



E1 ENLARGED (E) WOMENS RESTRM & SHOWER PLAN
J1/A3.0 1/4"= 1'-0"

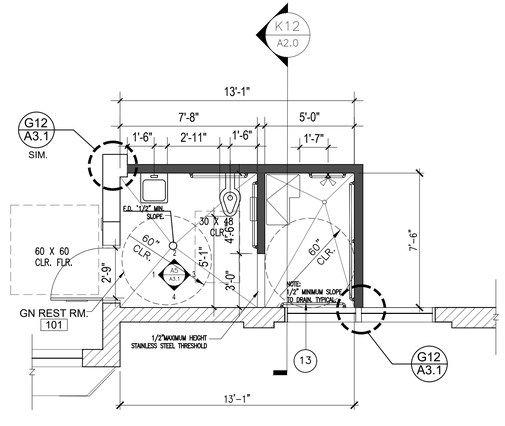


E6 ENLARGED (E) MENS RESTRM & SHOWER PLAN
J1/A3.0 1/4"= 1'-0"



NOTE: AQUATICS STAFF RESTROOM EXCEEDS THE REQUIRED PLUMBING FIXTURE COUNT AND IS INTENDED FOR USE BY ABLE BODIED LIFEGUARD STAFF ONLY. GENDER NEUTRAL ADA RESTROOMS WILL ACCOMMODATE DISABLED PERSONS.

A1 ENLARGED AQUATICS STAFF RESTROOM
J1/A3.0 1/4"= 1'-0"



A7 ENLARGED ADA COMPLIANT- GENDER NEUTRAL RESTROOMS
J1/A3.0 1/4"= 1'-0"

RESTROOM 201 OPPOSITE HAND (TYPICAL)

CONSTRUCTION KEY NOTES

GENERAL NOTE: SEE ELECTRICAL AND PLUMBING DRAWINGS FOR BALANCE OF INFORMATION.

1. CONSTRUCT NEW 8 X 13 ADA RESTROOMS. RENOVATE EXISTING SHOWERS,TOILETS, AND DRESSING ROOMS FOR BOYS AND GIRLS. SEE DETAIL A7/A3.0
2. INSTALL NEW ADA COMPLIANT WALL MOUNTED WATER CLOSET WITH 1.28 fpg. AND SEAT AT 17" TO 19" ABOVE FLOOR AND FLUSH VALVE LOCATED ON WIDE SIDE OF STALL BY AMERICAN STANDARD OR APPROVED EQUAL.
3. PROVIDE AND INSTALL NEW STAINLESS STEEL 1 -1/4" Ø GRAB BAR 30" & 42" LONG NONSLIP GRIPPING SURFACE 2 BY BOBRICK .B-5806 X36 & B5806.99X42 OR APPROVED EQUAL.
4. PROVIDE NEW LAVATORY WITH ADA COMPLIANT LEVER HANDLES. INSULATE DRAIN AND HOT WATER PIPES UNDERNEATH LAVATORY BY AMERICAN STANDARD OR APPROVED EQUAL.
5. PROVIDE NEW 3'-0" X 6'-8" FIBERGLASS 2-PANEL DOOR, DOOR FRAME, ADA COMPLIANT HARDWARE AND DOOR CLOSERS AT LOCATIONS AS SHOWN.
6. PROVIDE AND INSTALL SHOWER HEAD. SEE A5/A3.1
7. PROVIDE AND INSTALL ADA FOLDING SHOWER BENCH.
8. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.PH-GTSC-1-W. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
9. INSTALL NEW 18X24 STAINLESS STEEL FRAME MIRROR. B 290 BY BOBRICK OR EQUAL.
10. INSTALL NEW SURFACE MOUNTED SOAP DISPENSER 818615 BY BOBRICK OR EQUAL.
11. INSTALL NEW 1" PHENOLIC PARTITION WITH DOOR AT EXISTING TOILETS, PATCH AND REFINISH EXISTING WALL AS NEEDED. SUBMIT SHOP DRAWINGS FOR APPROVAL.
12. INSTALL BOBRICK SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS WITH PILOTROCK PLASTIC BENCHES FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL. SEE G6/A3 FOR BENCH DETAIL.
13. PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN GROUT, OVER CEMENT BACKER BOARD. PROVIDE AND INSTALL 1" PLASTIC SHOWER PARTITION WITH DOOR AT EXISTING SHOWERS. **SEE H5/A5.0** PROVIDE AND INSTALL NEW HARD CEILING IN SHOWER. INSTALL LIGHTING PER ELECTRICAL DWGS.
14. INSTALL NEW BOBRICK SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS AND SHOWER PARTITIONS WITH OPERABLE DOORS AND REQUIRED HARDWARE "HINEY HIDERS" (OR EQUAL) FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL.
15. REFINISH EXISTING CONCRETE FLOORS AND COVE BASE IN SHOWER. INCLUDING GRINDING, PROPER CRACK REPAIR, LEVELING AS NEEDED AND MATERIAL AREA REPLACEMENT AS NEEDED AND NECESSARY. MAINTAIN 1/4" TO 1/2" SLOPE TO DRAIN. PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT.Y CROWN POLYMER (OR EQUAL). **BY APPROVED CONTRACTOR.** COLOR: MERLOT. **SEE SCHEDULE A6.0**
16. PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN MORTAR & GROUT, OVER WATER PROOF CEMENT BACKER BOARD. AND INSTALL NEW WATER PROOF HARD CEILING IN SHOWER. DEMO ONE (E) METAL PANEL VIA EXPLORATION, FOR ARCHITECTS APPROVAL TO CONTINUE PRIOR TO FULL DEMOLITION. INSTALL LIGHTING PER ELECTRICAL DWGS.
17. PROVIDE AND INSTALL NEW URINALS LAVATORIES AND TOILET FIXTURES INCLUDE WATER SUPPLY, WASTE & DRAIN LINES ALL WITH ADA COMPLIANT CONTROLS. SEE MECHANICAL DWGS.
18. CONSTRUCT NEW ADA COMPLIANT LAVATORY AND PLUMBING WALL IN NEW FIRST AID ROOM. LOCATION # 203 PROVIDE AND INSTALL NEW LAVATORY AND FAUCET WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES, CABINETRY AND FINISHES.
19. CONSTRUCT NEW NON-ADA COMPLIANT AQUATICS STAFF SHOWER/RESTROOM IN EXISTING MAINTENANCE ROOM # 104 LOCATION PROVIDE AND INSTALL NEW PLUMBING WALL,TOILET, LAVATORY AND PORCELAIN TILED WATER PROOF SHOWER STALL WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES, WATER CONTROLS AND FINISHES. SEE DETAIL F1 / A5.0
20. CONSTRUCT NEW PONY WALL SEE DETAIL G9-A3.1
21. COORDINATE NEW MASONRY DOOR OPENING WITH STRUCTURAL DRAWINGS.
22. PROVIDE 3/4" THK. FIRE RETARDANT PLYWD ON COMM. RM. WALLS FOR MOUNTING ELEC. COMMUNICATIONS EQUIPMENT.

A12 ENLARGED FIRST AID ROOM
J1/A3.0 1/4"= 1'-0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING OFFICIAL RECORD

LICENSED ARCHITECT GELSO J. DEL POSO LIC. NO. C 29974 RENEWAL 08-31-2023 STATE OF CALIFORNIA

ENGINEERING CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN, P.E. C 23370	03-10-22
ARCHITECTURAL DIVISION C-23370	03-10-22
LIC. NO. C-29974	03-10-22
	03-10-22
PRINCIPAL ARCHITECT	03-10-22

ARCHITECT: Celso J. Del Poso
DESIGNED BY: JOHN McNEIL
DRAWN BY: Vin Ha, TY, DT
CHECKED BY: Celso J. Del Poso
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ENLARGED RESTROOM PLANS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A3.0
SHEET 39 OF SHEETS 96

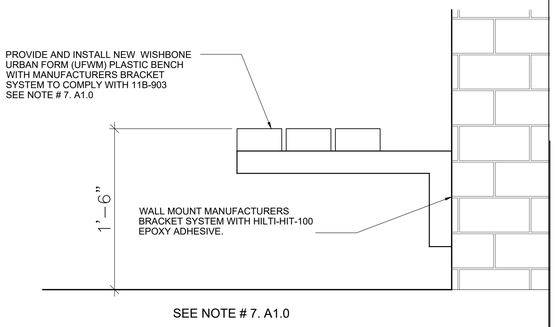
REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

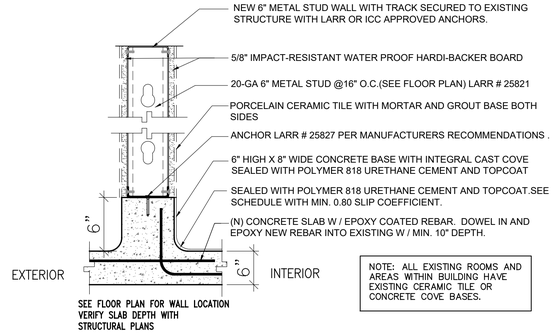
REVISION DATE: 7/27/2022 7:02 PM FILE: C:\USERS\25255510\BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A3.0 ENLARGED RESTROOM PLANS.DWG

CONSTRUCTION KEY NOTES

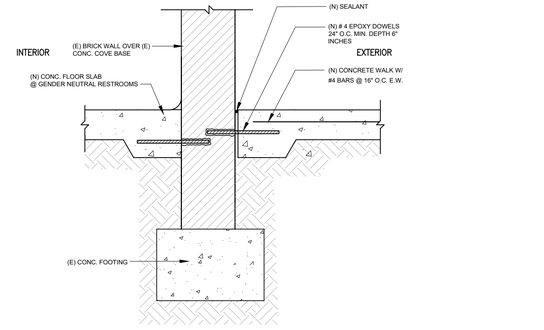
1. ADA COMPLIANT WALL MOUNTED TOILET (SEE PLUMBING DRAWINGS).
2. 1-1/4" DIAMETER X 36 LONG GRAB BAR, STAINLESS STEEL, PEENED NON-SLIP GRIPPING SURFACE FINISH. CONCEALED MOUNTING WITH (4) SCREWS TO COMPLY WITH BARRIER FREE DESIGN.
3. PROVIDE NEW ADA COMPLIANT WALL HUNG LAVATORY WITH ADA COMPLIANT LEVER HANDLES. INSULATE DRAIN AND HOT WATER PIPES UNDERNEATH. (SEE PLUMBING DWGS.)
4. POWERS E700 HYDROGUARD SHOWER SYSTEM WITH 60" INCH HAND HELD METAL HOSE AND 30" GUIDERAIL.
5. CMC 8 X 8 PORCELAIN CERAMIC TILE WITH CEMENT MORTAR BED AND GROUT JOINT INFILL OVER CEMENT BACKER BOARD.
6. 1-1/4" DIAMETER X 48 LONG GRAB BAR, STAINLESS STEEL, PEENED NON-SLIP GRIPPING SURFACE FINISH. CONCEALED MOUNTING WITH (4) SCREWS TO COMPLY WITH BARRIER FREE DESIGN.
7. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.PH-GTSC-1-W. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
8. RESTRM EXTERIOR DOOR SIGNAGE, SEE DETAIL J13/A4.0 (AT DOOR EXTERIOR ONLY) SUBMIT SAMPLE FOR APPROVAL.
9. INSTALL NEW 18X24 STAINLESS STEEL FRAME MIRROR. B 290 BY BOBRICK OR EQUAL.
10. INSTALL NEW SURFACE MOUNTED SOAP DISPENSER 818615 BY BOBRICK OR EQUAL
11. NEW BOBRICK B-5181 FOLDING SHOWER SEAT.
12. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
13. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.



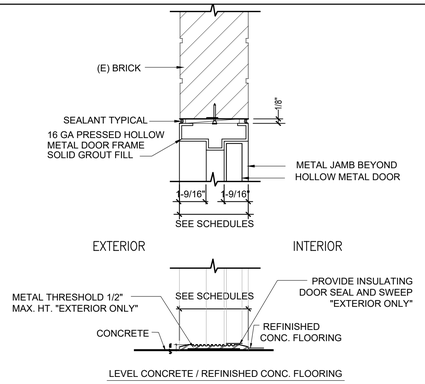
K6 / A1.0 — WALL MOUNTED PILOTROCK PLASTIC BENCH — 1-1/2"= 1'-0"



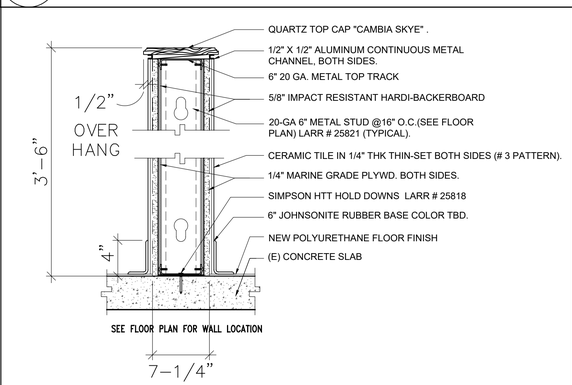
K9 / A1.0 — NEW INTERIOR RESTROOM WALL DETAIL — 1"= 1'-0"



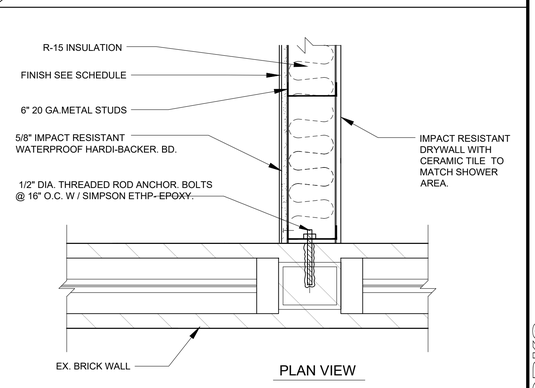
K13 / A3.0 — CONCRETE SLAB CONNECTION DETAIL — 1"= 1'-0"



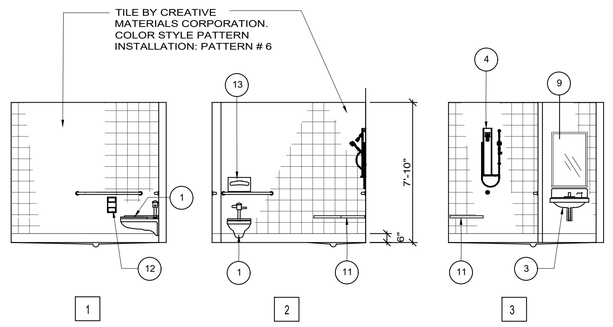
G6 / A3.0 — DOOR HEAD -THRESHOLD DETAIL (TYPICAL). — 1-1/2"= 1'-0" SEE STRUCT DWGS. FOR MASONY OPENINGS.



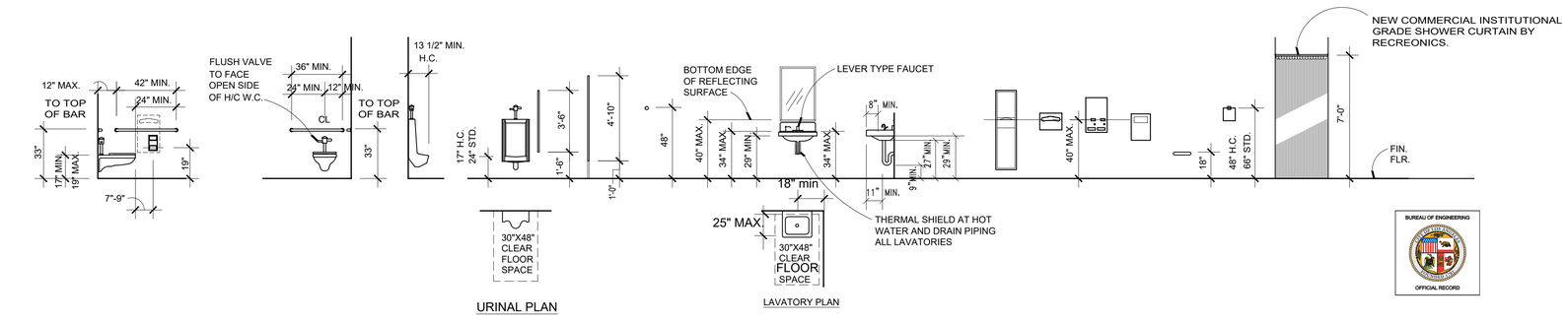
G9 / A3.0 — PONY WALL DETAIL (TYPICAL). — 1-1/2"= 1'-0"



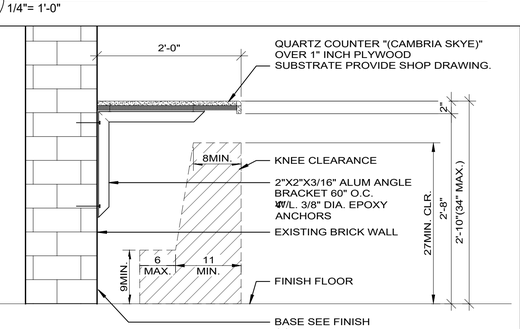
G12 / A3.0 — WALL CONNECTION DETAIL (TYPICAL). — 1"= 1'-0"



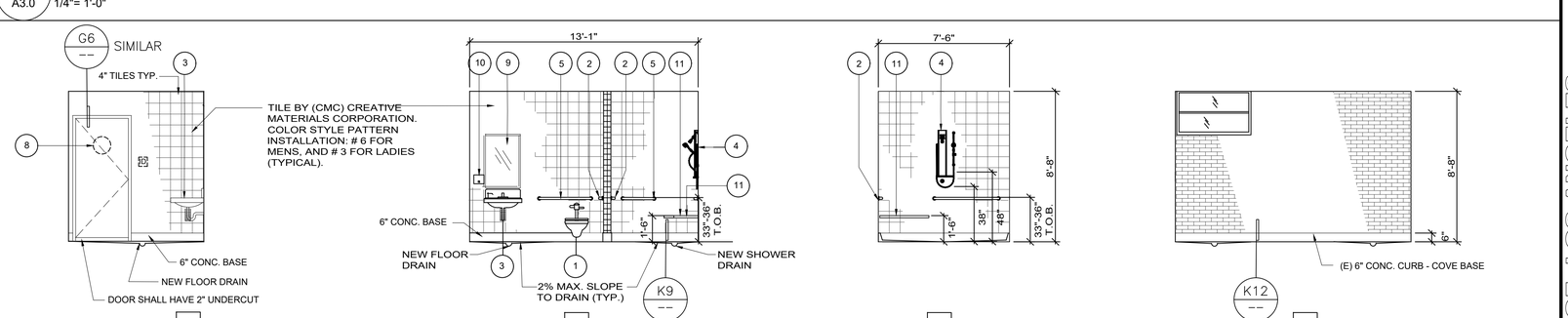
D1 / A3.0 — AQUATICS STAFF RESTROOM — 1/4"= 1'-0"



D6 / A3.0 — TYPICAL ADA ACCESSIBILITY DETAILS — 1/4"= 1'-0"



A1 / A3.0 — AQUATICS STAFF VIEWING COUNTER — 1"= 1'-0"



A5 / A3.0 — GENDER - NEUTRAL RESTROOM INTERIOR ELEVATIONS (LEFT AND RIGHT HAND TYPICAL) — 1/4"= 1'-0"

BID SET
Date: May 17, 2022

BUILDING NO. -
INDEX NO. - RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

LICENSED ARCHITECT — GELSO J. DEL POSO — UC. NO. C 29974 — RENEW: 31-2023 — STATE OF CALIFORNIA

BUREAU OF ENGINEERING — ENGINEERING — CITY OF LOS ANGELES

CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. — CITY ENGINEER — DATE: 03-10-22
ARCHITECTURAL DIVISION — LIC. NO. C-29974 — 03-10-22
ARCHITECT: Celso J. Del Poso — 03-10-22
DESIGNED BY: JOHN McNEIL
DRAWN BY: Vin Ha, TY, DT
CHECKED BY: Celso J. Del Poso — 03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT — 03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ENLARGED GEN-NEUTRAL ADA RSTRM. INTERIOR ELEVATIONS & WALL DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A3.1
SHEET 40 OF SHEETS 96

PLOTTED: 6/4/2022 5:19 PM

BUREAU OF ENGINEERING OFFICIAL RECORD

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 5:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A3.1 ENLARGED ADA RESTRM & WALL DETAILS.DWG

PAINT COLORS

PT–1: PAINT – DUNN EDWARDS – DE6185 LIGHT ASPIRATION

PT–2: PAINT – SHERWIN WILLIAMS – WS7757 HIGH REFLECTIVE WHITE

PT–3: PAINT – DUNN EDWARDS – DE5366 MIDLAND TAN

PT–4: PAINT – DUNN EDWARDS – DE5495 GRAPE LEAVES

PT–5: PAINT – DUNN EDWARDS – DE5180 SPANISH PEANUT

PT–6: PAINT – DUNN EDWARDS – DE5819 PEARL CITY

POR–1: PORCELAIN TILE – CREATIVE MATERIALS CORP – LAYOUT–3

POR–2: PORCELAIN TILE – CREATIVE MATERIALS CORP – LAYOUT–6

POLYU –POLYURETHANE FLOOR COATING

EXTERIOR WOOD FASICA BOARD AND EAVES — PC–2

EXTERIOR METAL COLUMNS — PC–5

EXTERIOR RETAINING WALL — PC–6

EXTERIOR PERIMETER FENCE — PC–4 (ARISTOSHIELD)

PAINT SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING	REMARKS
				NORTH	EAST	SOUTH	WEST		
100	LOBBY / OFFICE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2/PT–3	(PT–2 DIAGONAL SHIP–LAP) (PT–3 TRUSS BEAMS)
101	GENDER NEUTRAL SOUTH	POLYU	COVE	POR–1	POR–1	POR–1	PT–1	PT–2	
102	BOYS DRESSING ROOM	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2/PT–3	(PT–2 DIAGONAL SHIP–LAP) (PT–3 TRUSS BEAMS)
103	ELEC. COMM. RM.	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
104	AQUATICS STAFF RESTRM.	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
105	BOYS SHOWER	POLYU	COVE	PT–1	PT–1	PT–1	N/A	PT–4	
106	CORRIDOR	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–1	
107	BOYS RESTROOM	POLYU	COVE	GLZ BLOK	PT–4	GLZ BLOK	GLZ BLOK	PT–2	(PT–4 IS TO BE USED AS ACCENT COLOR)
108	STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
201	GENDER NEUTRAL NORTH	POLYU	COVE	POR–2	POR–2	POR–2	PT–1	PT–2	
202	GIRLS DRESSING ROOM	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PC–2/PC–3	(PC–2 DIAGONAL SHIP–LAP) (PC–3 TRUSS BEAMS)
203	FIRST AID	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
204	JANITORIAL/STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
205	GIRLS SHOWER	POLYU	COVE	POR–2	POR–2	POR–2	N/A	PT–4	
206	CORRIDOR	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–1	
207	GIRLS RESTROOM	POLYU	COVE	GLZ BLOK	GLZ BLOK	PT–4	GLZ BLOK	PT–2	(PT–4 IS TO BE USED AS ACCENT COLOR)
208	STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	

ROOM FINISH NOTES

1. THE CONTRACTOR SHALL SUBMIT ALL FINISH COLOR SAMPLE FOR REVIEW AND APPROVAL BY THE ARCHITECT PRIOR TO INSTALLATION.

2. PAINT ALL EXPOSED STRUCTURAL BEAMS, DECKS, A/C DUCTS, PIPES, ELECTRICAL CONDUITS & COMPONENTS ETC... WITH COLOR F2, PAINT ALL EXPOSED STRUCTURAL COLUMNS & BRACES WITH COLOR F2 (UNO), AND PAINT ALL AIR DIFFUSERS & CEILING ACCESS DOORS TO MATCH WITH ADJACENT SURFACES, TYPICAL FOR ALL INTERIOR OF THE BUILDING.

3. ALL INTERIOR FINISH MATERIALS APPLIED TO WALLS AND CEILINGS SHALL BE TESTED AS SPECIFIED IN SECTION 802 OF THE L.A. BUILDING CODE. FOR EXITWAYS, HALLWAYS AND CORRIDORS MUST HAVE MAXIMUM FLAME SPREAD OF CLASS–II, ALL OTHER ROOMS MUST HAVE MAXIMUM FLAME SPREAD OF CLASS–III.

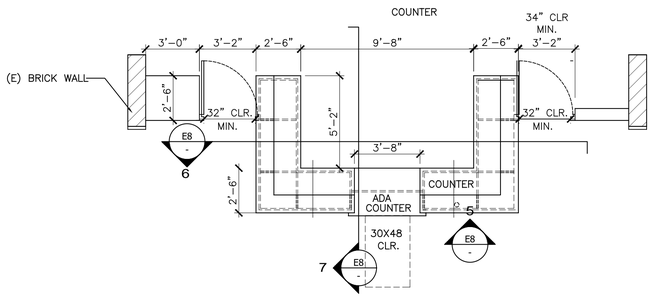
4. A SIGN WHICH INCLUDES THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED AND WORDING THAT STATES "ASSISTIVE–LISTENING SYSTEM AVAILABLE" SHALL BE POSTED IN A PROMINENT PLACE INDICATING THE AVAILABILITY OF ASSISTIVE–LISTENING DEVICES.

5. EXTEND PLYWOOD SHEATHING TO THE ENTIRE WALL WHERE SHEAR WALL PLYWOOD EXIST IN ORDER TO HAVE AN EVEN WALL SURFACE.

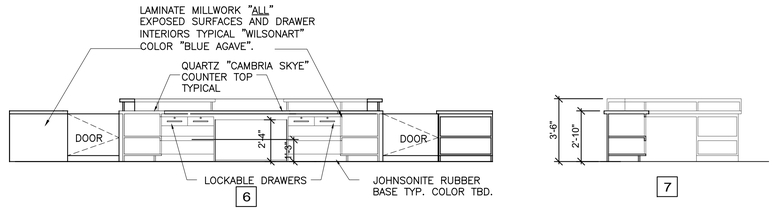
6. REFERENCE POINT FOR WALL AND FLOOR TILE INSTALLATION SHALL START FROM THE CENTER OF FLOOR OR WALL SURFACE.

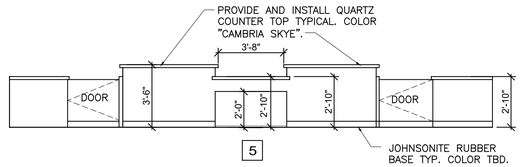
J1 / -- PAINT SCHEDULE - (SEE FINISH SCHEDULE PLAN A1/ A6.0)
N.T.S.

NOTES :
ADD COMPUTER DATA LINES FOR POOL OFFICE AND CLERK AREA.
ADD 4 PHONE LINE FOR POOL OFFICE, MANAGER'S OFFICE, POOL CLERK & FILTER ROOM

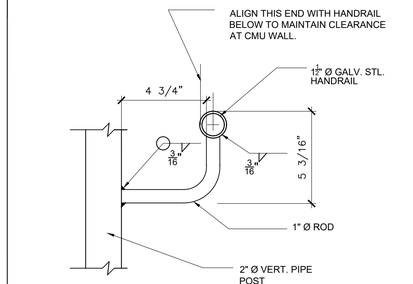


E1 / A1.0 COUNTER PLAN
1/4"= 1'-0"



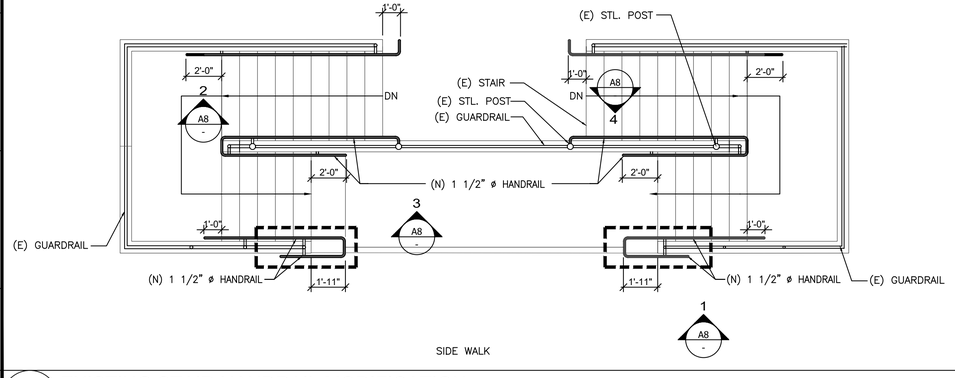


E8 / A1.0 COUNTER ELEVATIONS & SECTION
1/4"= 1'-0"

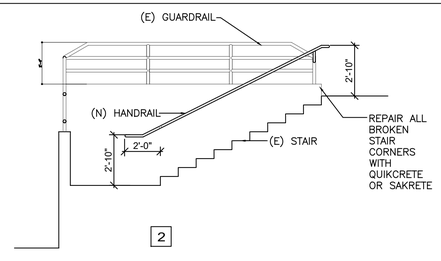


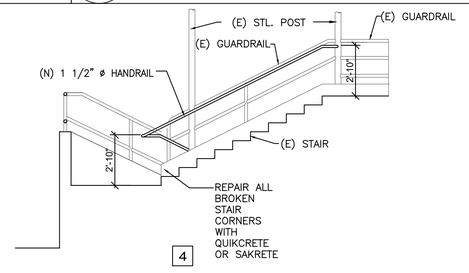
E13 / A8/A4.0 HANDRAIL DETAIL
3"= 1'-0"

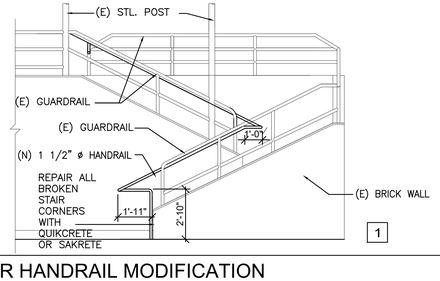
NOTE: EXTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND ALL TREADS MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST. THE STRIPE SHALL BE A MINIMUM OF 2 INCHES WIDE TO A MAXIMUM OF 4 INCHES WIDE PLACED PARALLEL TO, AND NOT MORE THAN 1 INCH FROM, THE NOSE OF THE STEP OR UPPER APPROACH. THE STRIPE SHALL EXTEND THE FULL WIDTH OF THE STEP OR UPPER APPROACH AND SHALL BE OF MATERIAL THAT IS AT LEAST AS SLIP RESISTANT AS THE OTHER TREADS OF THE STAIR. A PAINTED STRIPE SHALL BE ACCEPTABLE. GROOVES SHALL NOT BE USED TO SATISFY THIS REQUIREMENT. [11B–504.4.1]

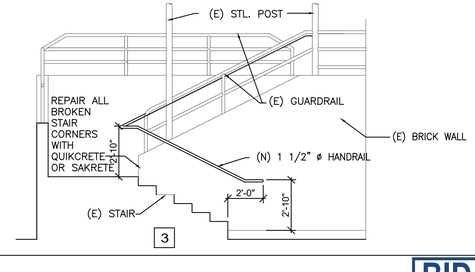


A1 / A1.0 EXISTING STAIR HANDRAIL MODIFICATION
1/4"= 1'-0"









A8 / A1.0 EXISTING STAIR HANDRAIL MODIFICATION
1/4"= 1'-0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:
		01-05-21	

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 03-31-2023
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.	CITY ENGINEER
ARCHITECTURAL DIVISION	DATE:
ARCHITECT: Celso J. Del Poso	LIC. NO. C-29974
DESIGNED BY: JOHN McNEIL	03-10-22
DRAWN BY: Vin Ha, TY. DT	03-10-22
CHECKED BY: Celso J. Del Poso	03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LOBBY SERVICE COUNTER, STAIR & HANDRAIL REPAIR, PAINT SCHEDULE

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A4.0

SHEET 41 OF SHEETS 96

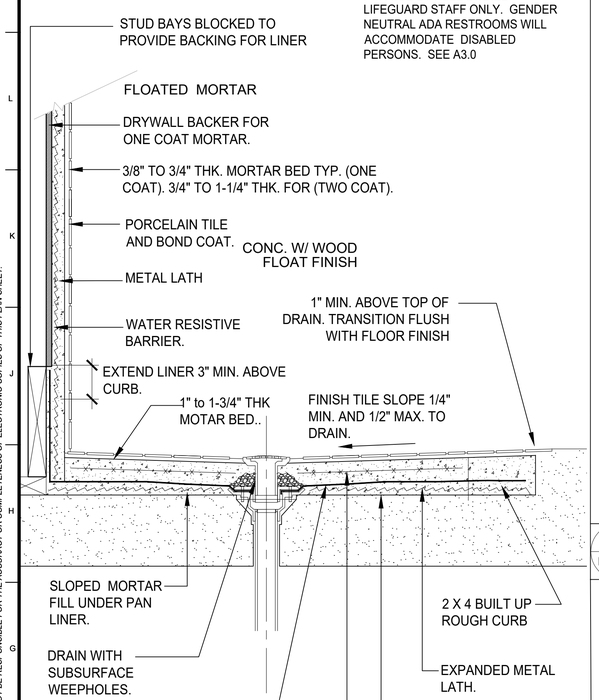
PLOTTED: 6/4/2022 5:23 PM

REVISION DATES (DESIGN STAGE ONLY)

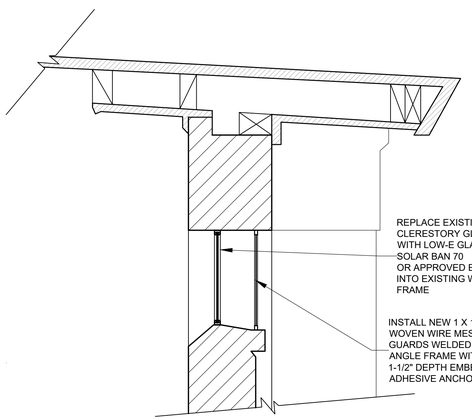
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A4.0 LOBBY SERVICE COUNTER DETAILS.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

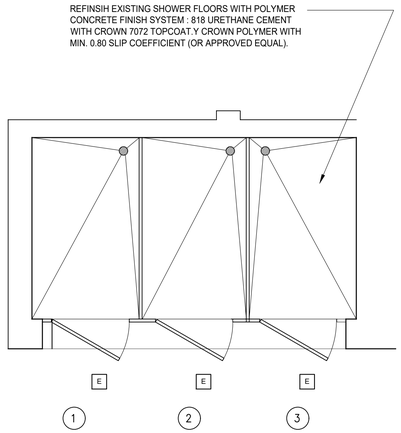
NOTE: AQUATICS STAFF RESTROOM EXCEEDS THE REQUIRED PLUMBING FIXTURE COUNT AND IS INTENDED FOR USE BY ABLE BODIED LIFEGUARD STAFF ONLY. GENDER NEUTRAL ADA RESTROOMS WILL ACCOMMODATE DISABLED PERSONS. SEE A3.0



F1 / A3.0 — SHOWER DETAIL FOR AQUATICS STAFF
1"= 1'-0"



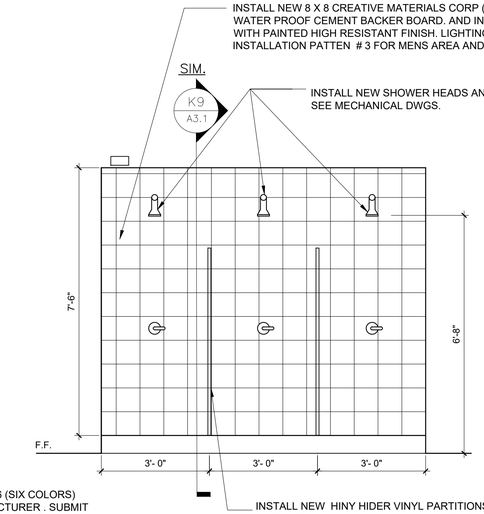
A1 / A2.0 — (E) CLERESTORY WINDOW REPAIR DETAIL - (TYP).
1"= 1'-0"



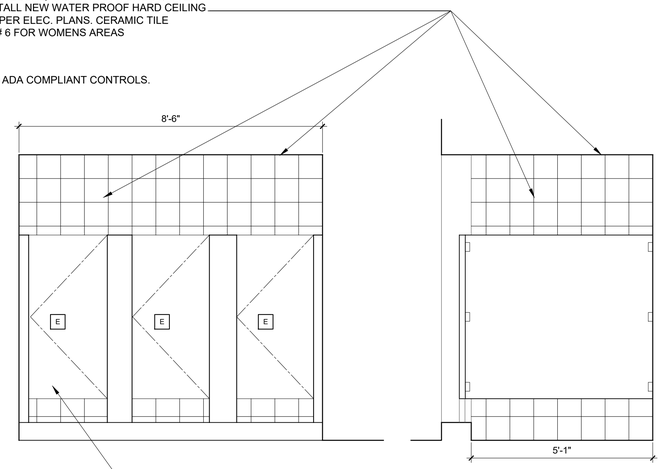
PLAN

WOMENS PORCELAIN WALL TILE LAYOUT - # 6 (SIX COLORS) RANDOM STACK WITH OFFSET. PER MANUFACTURER . SUBMIT LAYOUT FOR APPROVAL. CREATIVE MATERIALS CORP. (310) -570-7027 or (518) 213-8010.

MENS PORCELAIN WALL TILE LAYOUT - # 3 (THREE COLORS) RANDOM STACK WITH OFFSET.PER MANUFACTURER . SUBMIT LAYOUT FOR APPROVAL.



ELEVATION

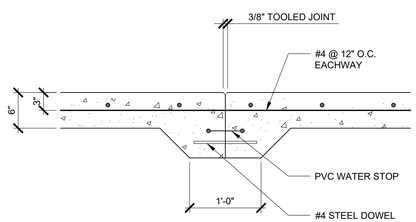


SECTION

NORTH/ SOUTH SHOWER WALLS

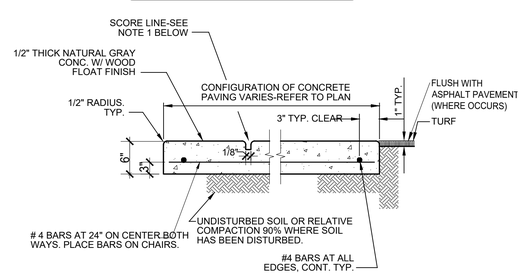
H5 / E6/A3.0 — EXISTING MENS & WOMENS SHOWER REMODEL & REPAIR (TYPICAL).
1/2"= 1'-0"

REFER TO LANDSCAPE AND CIVIL DRAWINGS



D5 / A1.0 — CONC. CONSTRUCTION JOINT-TYP.
1"= 1'-0"

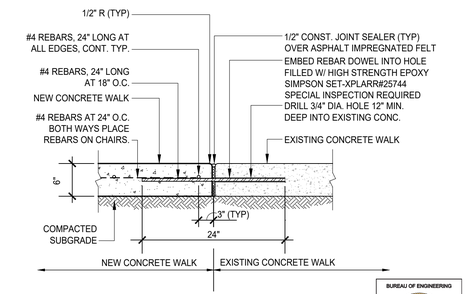
REFER TO LANDSCAPE AND CIVIL DRAWINGS



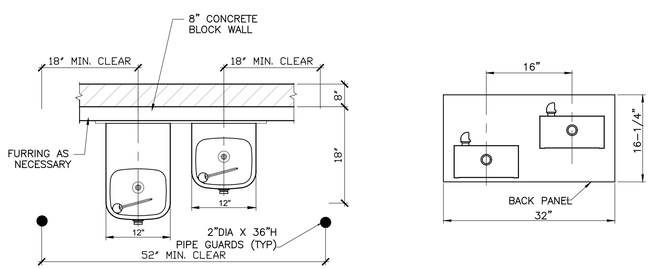
NOTES:
1. PROVIDE TOOLED SCORE LINES, MIN. 1" DEEP AT 10 FEET ON CENTER.
2. PROVIDE EXPANSION JOINT AGAINST PREVIOUSLY CONSTRUCTED FIXED ELEMENTS, AT A MAXIMUM OF 40 FEET ON CENTER.

D9 / G9/A2.0 — CONC. SCORE LINE TYP.
1"= 1'-0"

REFER TO LANDSCAPE AND CIVIL DRAWINGS

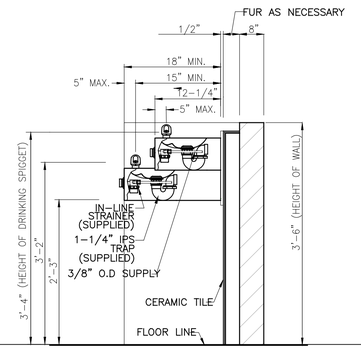


D13 / G9/A2.0 — EXIST. & NEW CONN.TYP.
1"= 1'-0"



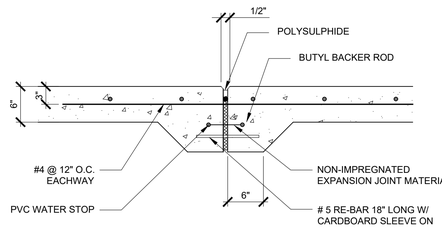
PLAN

ELEVATION



SECTION

A5 / A1.0 — HI LOW DRINKING FOUNTAIN
3/8"= 1'-0"



A13 / A1.0 — CONCRETE EXPANSION JOINT-TYP.
1"= 1'-0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 01-31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	NAME	DATE
CITY ENGINEER	TED ALLEN, P.E.	03-10-22
ARCHITECTURAL DIVISION		03-10-22
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL	03-10-22
DRAWN BY:	Vin Ha, TY, DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A5.0

SHEET 42 OF SHEETS 96

PLOTTED: 6/4/2022 5:24 PM

REVISION DATES: (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 10/15/2006
REVISION DATES: 10/15/2006

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

FILE:E:\2-WH-HOUSE\BUILDINGS\VERDUGO-HILLS-POOL\ARCHITECTURAL\A5.0-HI-LOW-DRINKING-FOUNTAIN-&-REPAIR-DETAILS.DWG

SHOWER PARTITION DOOR SCHEDULE

DOOR NO.	TYPE	NOMINAL SIZE W X H (NOTE 2)	THICKNESS	DOOR FRAME	DOOR FINISH	DOOR MAT'L	DOOR RATING	DETAIL NO. HEAD	DETAIL NO. JAMB	DETAIL NO. SILL	FRAME FINISH	TRESHOLD	PANIC HARDWARE	REMARKS
1	B	2'-6" X 5'-0"	1"	MTL	PHEN	PHEN	NR							BOBRICK PHENOLIC COLOR: TBD BY ARCHITECT
2	B	2'-6" X 5'-0"	1"	MTL	PHEN	PHEN	NR							BOBRICK PHENOLIC COLOR: TBD BY ARCHITECT

HARDWARE SCHEDULE

TYPE A DOOR
TOTALS EACH ASSEMBLY TO HAVE.

(1)	1 EA.	HM DOOR	16GA SEAMLESS		DRC
(1)	1 EA.	CONTINUOUS HINGE	CH83HD1	628	PEM
(1)	1 EA.	ENTRANCE LOCK	4100-4500 BEST LOCK	BRUSH CHROME	TRILOGY
(1)	1 EA.	KICK PLATE AS NEEDED	8400 10" X34"	630	IVE
(1)	1 EA.	SURFACE CLOSER	P4041 *	689	LCN

* PROVIDE 10 YEARS WARRANTY

LEGEND

ALUM	ALUMINUM	IR	IMPACT RESISTANT PLASTIC	PTD	PAINT
ANOD	ANODIZED	LE	LOW EMISSIVITY GLASS	SC	SOLID CORE
E	EXISTING	NR	NON-RATED	SG	SEMI GLOSS PAINT
FP	FACTORY PAINTED	PHEN	PHENOLIC	TG	TEMPERED GLASS
FF	FACTORY FINISH	PS	SEMI GLOSS PAINT	V.I.F.	VERIFY IN FIELD
GL	GLASS	PF	FLAT PAINT	WG	WIRED GLASS
HA	HOLLOW CORE ALUMINUM	PG	GLOSSY PAINT	X	REQUIRED INSTALLATION
HC	HOLLOW CORE WOOD	PM	PRESSED METAL		
HM	HOLLOW CORE METAL				

FINISH MATERIALS SCHEDULE (SEE J1/A4.0)

#	ITEM	MATERIALS	HEIGHT	FINISH	COLOR & MANUF.	REMARKS
A	NEW WALL	METAL STUDS, HARDI - BACKER BD. PAINTED / TILE. COLOR: TBD	8'-0" ± PER PLAN & ELEVS.	PAINT & TILE	DUNN EDWARDS: COLOR TBD BY ARCHITECT	CONSTRUCT NEW CONC. CURB W/ INTEGRAL CAST COVE BASE.
B	NEW CONCRETE. FLOOR REFINISHING	CROWN POLYMER 818 URETHANE CEMT W/ CROWN 7072 TOPCOAT	8'-0" ± PER PLAN & ELEVS.	AS NOTED	COLOR: MERLOT BY MANUFACTURERS APPVD INSTALLER. (COLOR MOCK-UP")	ALL FLOORS NON-ABSORBENT, FLOOR DRAINS SLOPE 2% MIN.
C	EXISTING WALLS & CEILINGS	C.M.U. (RED BRICK) - WOOD BM & PLAST.	FULL HEIGHT. FROM FLOOR	PAINTED	SEE PAINT SCHEDULE J1 / -A4.0	REPAIR ALL CRACKS REPLACE MISSING PIECES REPOINT AS NEEDED.
D	DRESSING PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
E	SHOWER PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
F	TOILET PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
G	RUBBER BASE	6" HIGH	AS SHOWN	--	T.B.D. BY ARCHITECT	ARMSTRONG, JOHNSONITE OR APPROVED EQUAL
H	SHOWER WALLS / GENDER NEURAL RESTROOM	PORCELAIN TILES WITH CEMENT MORTAR BED AND GROUT.	8'-0 ±	--	T.B.D. BY ARCHITECT	(CMC)-CREATIVE MATERIALS CORP. PORCELAIN OR APPROVED EQUALS

GENERAL DOOR & WINDOW NOTES:

1. PROVIDE CLEAR SPACE OF 12" PAST STRIKE EDGE OF THE DOOR ON THE OPPOSITE SIDE TO WHICH THE DOOR SWINGS IF THE DOOR IS EQUIPPED WITH A LATCH AND A CLOSER ON THE PUSH SIDE OF THE DOOR.
2. EACH LIGHT OF SAFETY GLAZING MATERIAL INSTALLED IN HAZADOUS LOCATIONS SHALL BE IDENTIFIED BY A PERMANENT LABEL THAT SPECIFIED THE LABELER, AND STATES THAT SAFETY GLAZING MATERIAL HAS BEEN UTILIZED IN SUCH INSTALLATIONS.
3. EXTERIOR SWINGING DOORS–LOCKING HARDWARE SHALL BE OPERATED FROM THE INSIDE BY A DEVICE NOT PROHIBITED BY CHAPTER 10 OF UBC.
4. PROVIDE DIRECTIONAL SIGN WITH 1–INCH HIGH LETTERS ON CONTRASTING BACKGROUND AT DOOR TRANSOM THAT READS "THESE DOORS TO REMAIN UNLOCKED DURING BUSINESS HOURS". EXITS AND EXIT SIGNS SHALL BE ILLUMINATED AT ANY TIME THE BUILDING IS OCCUPIED. ILLUMINATION SHALL INCLUDE POWER PROVIDED BY TWO SOURCES, ONE OF WHICH MUST BE AN EMERGENCY SYSTEM.
5. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, OR ANY SPECIAL KNOWLEDGE OR EFFORT AND OPERATE IN THE DIRECTION OF EGRESS.
6. DOOR PRIMER - METALIZE QUICK DRY ALKYD PRIMER (OR EQUAL).
7. DOOR FINISH - TNEMEC 740 ENDURA-SHEILD COLOR : LAVA - 13RD.

6. EXIT SIGNS SHALL BE INSTALLED AT REQUIRED EXITS (BOTH HIGH AND LOW). THE COLOR AND DESIGN OF LETTERING ON THE EXIT SIGNS SHALL BE IN HIGH CONTRAST WITH BACKGROUND. WORDS ON THE SIGN SHALL BE IN BLOCK LETTERS 6–INCHES HIGH WITH A STROKE OF NOT LESS THAN 3/4–INCHES.
7. WHEN INSTALLED, DOORS SHALL BE CAPABLE OF OPENING SO THAT THE CLEAR WIDTH IS NOT LESS 32" WHEN INSTALLED, DOORS SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES AND SHALL SO MOUNTED THAT CLEAR WIDTH IS NOT LESS THAN 32" MEASURED BETWEEN THE FACE OF THE DOOR AND THE OPPOSITE STOP.
8. FOR HINGED DOORS, THE OPENING WIDTH SHALL BE MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
9. PANIC HARDWARE WHEN INSTALLED SHALL COMPLY WITH THE REQUIREMENTS OF CBC CHAPTER 10. THE ACTIVATING MEMBER SHALL BE MOUNTED AT A HEIGHT OF NOT LESS THAN 30–INCHES NOR MORE THAN 44–INCHES ABOVE THE FINISH FLOOR. THE UNLATCHING FORCE NOT EXCEED 15– POUNDS WHEN APPLIED IN THE DIRECTION OF EXIT TRAVEL.
10. DOOR HARDWARE SHALL COMPLY WITH THE FOLLOWING:
    A. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH–PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. HARDWARE TO BE MOUNTED 34–44 INCHES ABOVE FINISH FLOOR.
    B. 5–POUND MAXIMUM CLOSING PRESSURE AT INTERIOR DOORS.
    C. 5–POUND MAXIMUM CLOSING PRESSURE AT EXTERIOR DOORS. THIS APPLIES TO ALL DOORS SERVING AREAS ACCESSIBLE TO THE PHYSICALLY DISABLED.
11. THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. FLOOR OR LANDING SHALL BE NO MORE THAN 1/2–INCH LOWER THAN THE THRESHOLD OF THE DOORWAY. WHEN DOORS OPENOVER LANDINGS THE LANDING SHALL BE LEVEL AND 60–INCHES IN THE DIRECTION THE DOOR SWINGS AND 44–INCHES IF SWINGING AWAY. THE FLOOR SHALL EXTEND BEYOND THE STRIKE EDGE 24–INCHES FOR EXTERIOR DOORS AND 18–INCHES FOR INTERIOR DOORS.
12. WHERE A PAIR OF DOOR IS UTILIZED, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32" WITH THE LEAF POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
13. PROVIDE CYLINDER GUARDS ON ALL MORTISE OR RIM TYPE CYLINDER LOCKS ON OUTSIDE OF DOOR WHEREVER CYLINDER PROJECTS BEYOND THE FACE OF DOOR OR IS OTHERWISE ACCESSIBLE TO GRIPPING TOOLS.
14. ALL PIN–TYPE HINGES WHICH ARE ACCESSIBLE FROM THE OUTSIDE WHEN THE DOOR IS CLOSED SHALL HAVE NON–REMOVABLE HINGES PINS. THEY SHALL HAVE A MINIMUM 1/4–INCH DIAMETER STEEL JAMB STUD WITH 1/4–INCH MINIMUM PROJECTIONS UNLESS THE HINGES ARE SHAPED TO PREVENT REMOVAL OF THE DOOR IF THE HINGE PINS ARE REMOVED.
15. THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. THE LEVEL AREA SHALL HAVE A LENGTH IN THE DIRECTION OF THE DOOR SWING OF AT LEAST 60" AND THE LENGTH OPPOSITE THE DIRECTION OF THE DOOR SWING OF 48" AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN THE CLOSED POSITION.
16. TOILET ROOM GEOMETRIC DOOR SIGNS SHALL BE 1/4–INCH THICK, CONTRASTING COLORS AND MOUNTED AT (60–INCHES ABOVE FINISH FLOOR. SEE DETAIL 16/A–19. SYMBOLS SHALL BE ALSO PROVIDED WITH BRAILLE PER ADA REQUIREMENTS ADJACENT TO THE DOOR 60–INCHES ABOVE FINISHED FLOOR.
17. BUILDING ENTRANCE DOOR SHALL BE IDENTIFIED BY A SIGN WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE SYMBOL SHALL BE A WHITE FIGURE ON A BLUE BACKGROUND.
18. FOR DOOR HARDWARE INFORMATION SEE SPECIFICATIONS.
19. THE WIDTH OF THE LEVEL AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS.
20. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS OR ANY OTHER TYPE OF DEVICE THAT MAY BE USED TO CLOSE OR RESTRAIN THE DOOR OTHER THAN BY OPERATION OF THE LOCKING DEVICE SHALL NOT BE USED. WHERE EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF HAVING THE AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOOR KNOB OR SURFACE–MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION.
21. ALL DOORS AND HARDWARE TO MEET ADA, TITLE 24,MINIMUM REQUIREMENTS
22. VERIFY ALL DIMENSIONS AT FIELD BEFORE MANUFACTURED.
23. WOOD FLUSH–TYPE DOORS SHALL BE 1 3/4" THICK MINIMUM WITH SOLID CORE CONSTRUCTION. 91.6709.1–DOOR STOPS OF IN–SWINGING DOORS SHALL BE OF ONE–PIECE CONSTRUCTION WITH THE JAMB OR JOINED BY RABBET TO THE JAMB.
24. PROVIDE DEAD BOLTS WITH HARDENED INSERTS; DEADLOCKING LATCH WITH KEY–OPERATED LOCKS ON EXTERIOR. LOCKS MUST BE OPENABLE FROM INSIDE WITHOUT KEY, SPECIAL KNOWLEDGE OR SPECIAL EFFORT (LATCH NOT REQUIRED IN B,F, AND S OCCUPANCIES).
25. STRAIGHT DEAD BOLTS SHALL HAVE A MIN. THROW OF 1"AND AN EMBEDMENT OF NOT LESS THAN 5/8", AND A HOOK–SHAPED OR AN EXPANDING–LUG DEADBOLT SHALL HAVE A MINIMUM THROW OF 3/4".

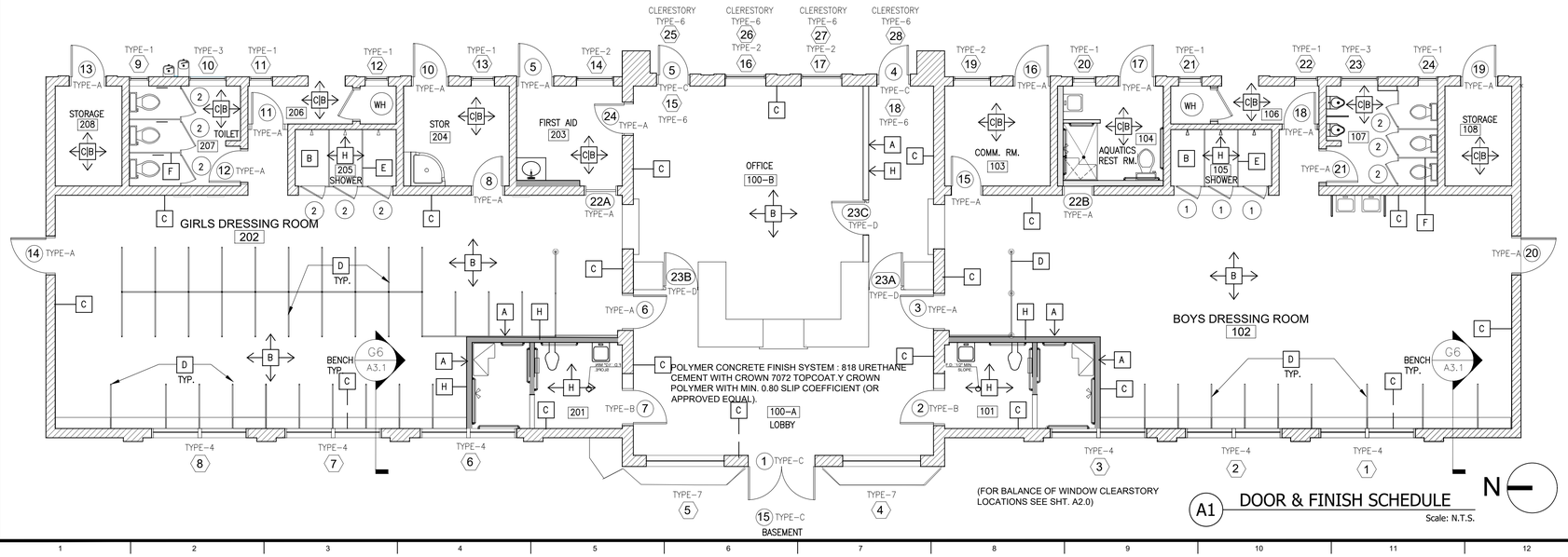
BUREAU OF ENGINEERING — OFFICIAL RECORD

DOOR SCHEDULE

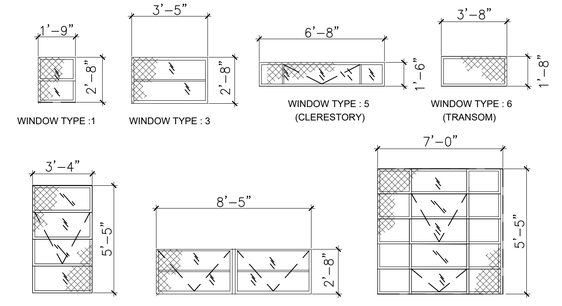
DOOR NO.	TYPE	NOMINAL SIZE W X H (NOTE 2)	THICKNESS	DOOR FRAME	DOOR FINISH	DOOR MAT'L	DOOR RATING	DETAIL NO. HEAD	DETAIL NO. JAMB	DETAIL NO. (N) LOCK	FRAME FINISH	TRESHOLD	PANIC HARDWARE	REMARKS
1	C	6'-0"X7'-0" CLR WIRE GLS	1-3/4"	-	PTD	HM	NR	G6/A3.1	G6/A3.1	Y		G6/A3.1	Y	SAND, REPAIR, PRIME AND PAINT REPLACE GLAZING, (E) DR & FRAME, (N) PANIC HRDW, THRESHOLD (TYP.)
2	A	3'-0"X7'-0"	1-3/4"	-	F.F.	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
3	A	3'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
4	C	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME , (N) GLAZING, REPAIR THRESHOLD (N) PANIC HRDW (TYP.)
5	C	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME , (N) GLAZING, REPAIR THRESHOLD (N) PANIC HRDW (TYP.)
6	A	3'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
7	A	3'-0"X7'-0"	1-3/4"	MTL	F.F.	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
8	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
9	A	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
10	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
11	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
12	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
13	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
14	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	PROVIDE AND INSTALL (N) COMMERCIAL GRADE SECURITY DR. W/ HRDW. CLSR. PROVIDE SUBMITTAL.
15	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
16	A	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
17	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
18	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
19	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
20	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	PROVIDE AND INSTALL (N) COMMERCIAL GRADE SECURITY DR. W/ HRDW. CLSR. PROVIDE SUBMITTAL.
21	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT REPLACE GLAZING, CLEAN FRAME, REPAIR THRESHOLD (TYP.)
22-AB	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT. (E) DOOR, CLOSE PERMANENTLY, REMAIN FOR HISTORIC VALUE
23-ABC	D	3'-0"X2'-6"	1-3/4"	WD	LAM	WD	NR	-	-	LATCH			N	(N) 36 X 30 LAMINATED SWING DOOR W/ 652 SATIN CHROME SPRING LOADED HINGE (TYP.)
24	A	3'-0"X7'-0"	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT. (E) DOOR, CLOSE PERMANENTLY, RETAIN FOR HISTORIC VALUE
25	C	6'-0"X7'-0" BASMNT FRSTD WIRE GLS	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DOOR, & FRAME REPLACE GLAZING, REPAIR THRESHOLD (TYP.) SEE A1.2
26	A	3'-0"X7'-0" BASEMENT STOR.	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. THRESHOLD, HDWARE + CLOSER SEE A1.2

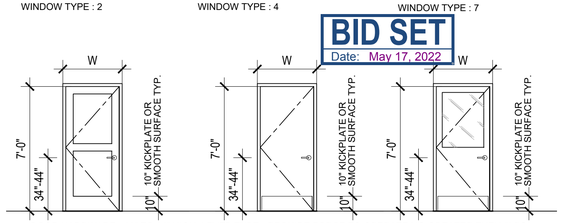
WINDOW SCHEDULE

WINDOW TYPE	MARK	NOMINAL SIZE W X H	GLASS TYPE RIBBD	GLASS TYPE CLEAR	GLASS TYPE FROST	REMARKS
1	(8)	1'-9" X 2'-8"			X	REMOVE (E) GLAZING AND REPLACE WITH (N) LOW-E SOLAR BAN 60 MONOLITHIC LAMINATE. CLEAN, REPAIR WINDOW FRAMES + MULLIONS, REPLACE HINGES AND LATCHES AS NEEDED.
2	(4)	3'-4" X 5'-5"		X		" "
3	(2)	3'-5" X 2'-8"			X	" "
4	(6)	8'-5" X 2'-8"	X			" "
5	(9)	6'-8" X 1'-6"			X	" "
6	(6)	3'-8" X 1'-8"			X	" "
7	(2)	5'-5" X 7'-0"		X		" "



A1 DOOR & FINISH SCHEDULE
Scale: N.T.S.





BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A6.0-DOOR WINDOW & FINISH & SCHEDULES.DWG
REVISION DATES (DESIGN STAGE ONLY)

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -
BUILDING NO. -
INDEX NO. - RP-300123

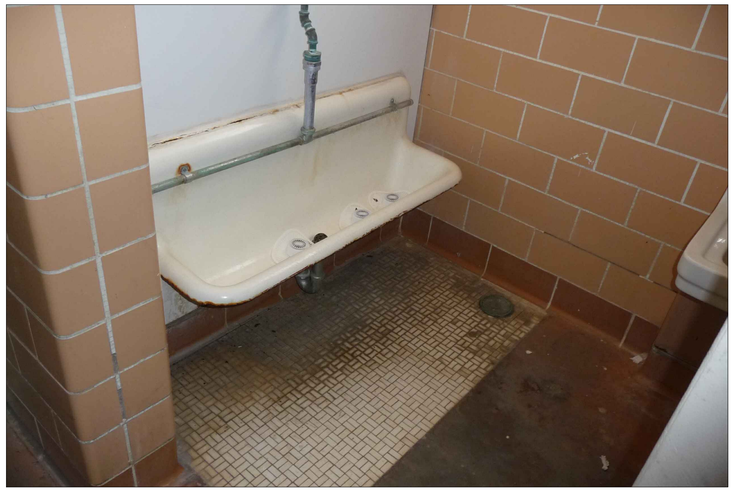
LICENSED ARCHITECT GELSO J. DEL POSO LIC. NO. C 29974 RENEW:1-2022 STATE OF CALIFORNIA

TED . ALLEN , P.E. CITY ENGINEER
ARCHITECTURAL DIVISION C 24970 DATE: 03-10-22
ARCHITECT: Celso J. Del Poso LIC. NO. C-29974 03-10-22
DESIGNED BY: JOHN McNEIL 03-10-22
DRAWN BY: Vin Ha, TY, DT 03-10-22
CHECKED BY: Celso J. Del Poso 03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT 03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: DOOR & WINDOW SCHEDULE FINISH SCHEDULE & DETAILS
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A6.0
SHEET 43 OF SHEETS 96

PLOTTED: 6/4/2022 5:26 PM



J1 | REMOVE AND REPLACE (E) URINAL TROUGH
NOT TO SCALE



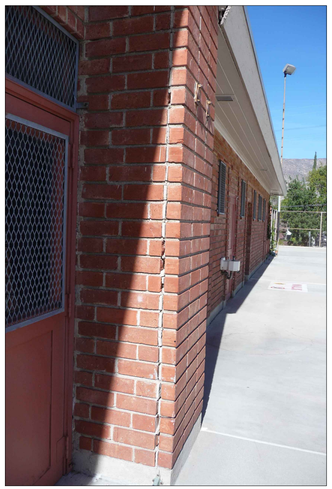
J7 | DEMO FRP SURFACE MATERIAL AND REPLACE WITH CERAMIC TILE
NOT TO SCALE



J12 | CONSTRUCT (N) ADA ACCESSIBLE WALKWAY
NOT TO SCALE



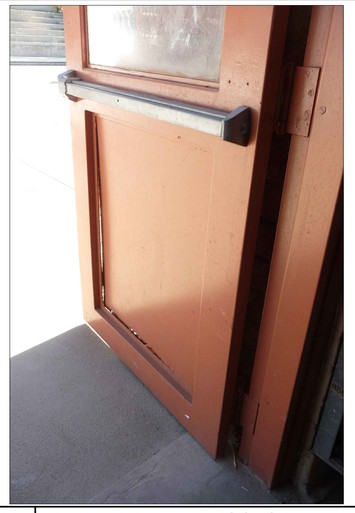
E1 | SAND AND PAINT EXISTING CANOPY AND TRELLIS REPAIR FASCIA BOARDS.
NOT TO SCALE



E7 | REPOINT BRICK MORTAR AS NEEDED
NOT TO SCALE



E12 | DEMO AND RECONSTRUCT POOL GUTTER DRAIN LIP
NOT TO SCALE

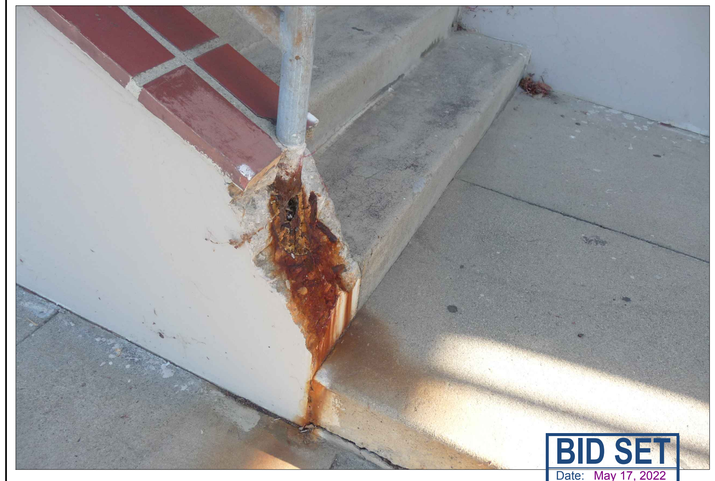




A1 | REPAIR (E) METAL DOORS
NOT TO SCALE



A7 | REPLACE (E) MODESTY PANELS, AND REPAIR CONC. FLOOR
NOT TO SCALE



A12 | REPAIR BROKEN STAIR STRINGERS (QUIKCRETE -SAKRETE)
NOT TO SCALE

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW: 3-1-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION	
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL	03-10-22
DRAWN BY:	Vin Ha, TY, DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SITE PHOTOS & PROJECT DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A7.0
SHEET 44 OF SHEETS 96

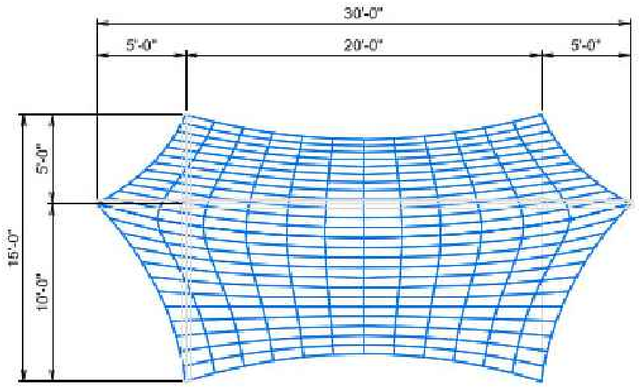
PLOTTED: 6/4/2022 5:28 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

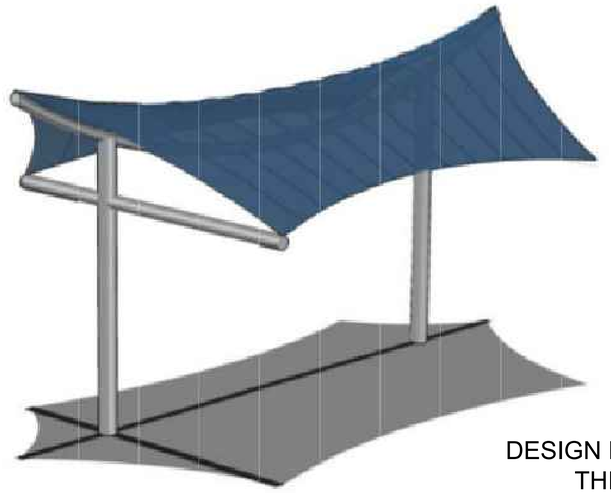
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A7.0 SITE PHOTOS & PROJECT DETAILS.DWG

NOTES:
-THESE DRAWINGS ARE A PICTORIAL REPRESENTATION OF FABRIC AND STEEL ONLY. NONE OF THE REQUIRED ATTACHMENT OR CONNECTION DETAILS HAVE BEEN DEPICTED.
-ALL DIMENSIONS AND HEIGHTS MUST BE FIELD VERIFIED PRIOR TO ANY FINAL DESIGN, FABRICATION OR INSTALLATION WORK.



PLAN VIEW



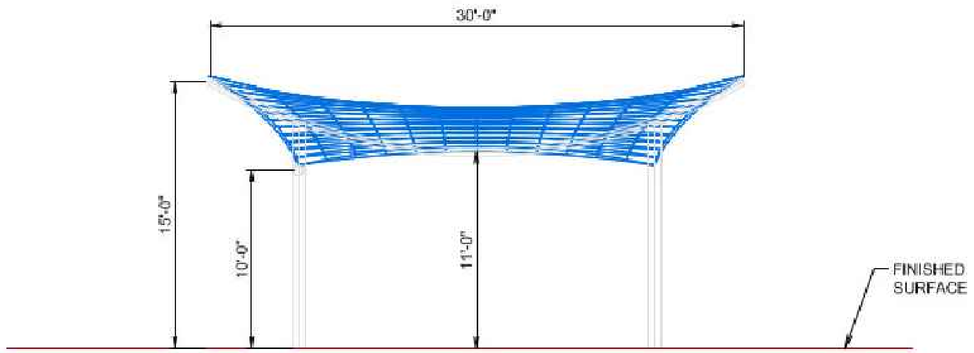


PERSPECTIVE VIEW

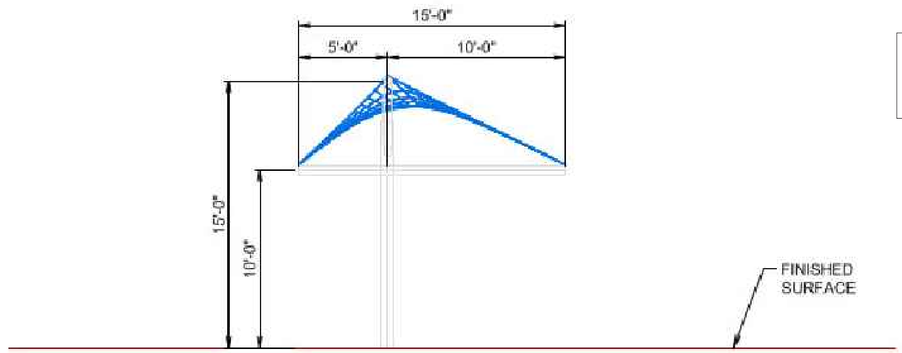
DESIGN BUILD ITEM UNDER THIS CONTRACT

SHADE STRUCTURE UNDER SEPARATE PERMIT

Contact USA SHADE Company.
Ben Cover, 949-466-4413
Liz Norton: 323.490.9502
See Project Specifictions



SOUTH ELEVATION



WEST ELEVATION

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A8.0 SHADESTRUCTURE.DWG

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEWAL 31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:	03-10-22
	ARCHITECTURAL DIVISION	C-23970	03-10-22
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT			03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: U.S. SHADE - CUSTOM CANTI

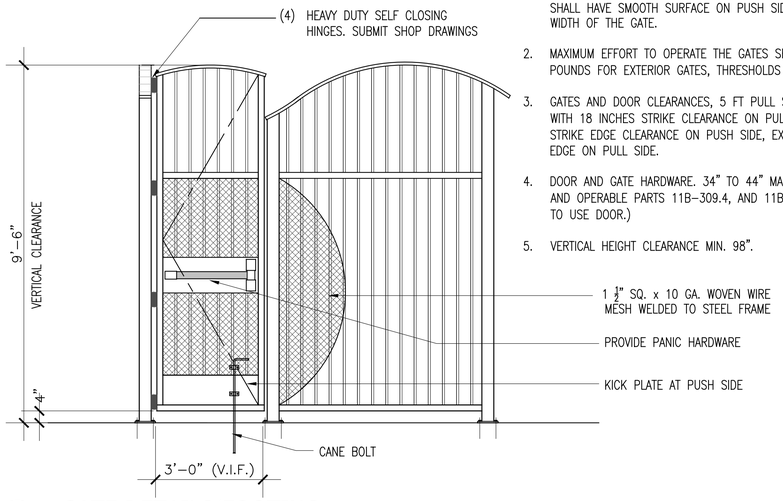
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A8.0
SHEET 45 OF SHEETS 96

PLOTTED: 6/4/2022 5:30 PM

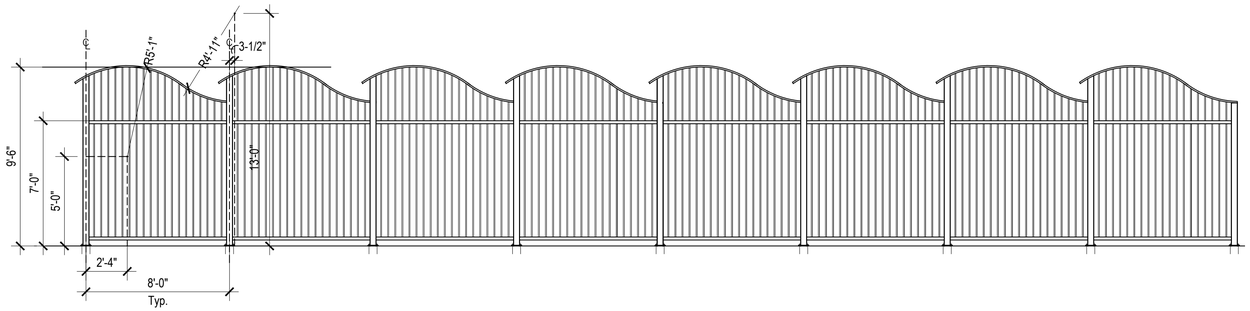
GATE NOTES:

1. GATES TO HAVE SMOOTH SURFACE, SWINGING DOOR OR GATE SURFACES WITHIN 10 INCHES OF FINISH FLOOR OR GROUND MEASURED VERTICALLY SHALL HAVE SMOOTH SURFACE ON PUSH SIDE EXTENDING THE FULL WIDTH OF THE GATE.
2. MAXIMUM EFFORT TO OPERATE THE GATES SHALL NOT EXCEED 8–1/2 POUNDS FOR EXTERIOR GATES, THRESHOLDS 1/2" MAX.
3. GATES AND DOOR CLEARANCES, 5 FT PULL SIDE AND 48" PUSH SIDE, WITH 18 INCHES STRIKE CLEARANCE ON PULL SIDE, 11B–404, 12" STRIKE EDGE CLEARANCE ON PUSH SIDE, EXTERIOR DOORS 24" STRIKE EDGE ON PULL SIDE.
4. DOOR AND GATE HARDWARE. 34" TO 44" MAX ABOVE FLOOR, 11B–404.2.7 AND OPERABLE PARTS 11B–309.4, AND 11B–404.2.7 (5 LBS PRESSURE TO USE DOOR.)
5. VERTICAL HEIGHT CLEARANCE MIN. 98".



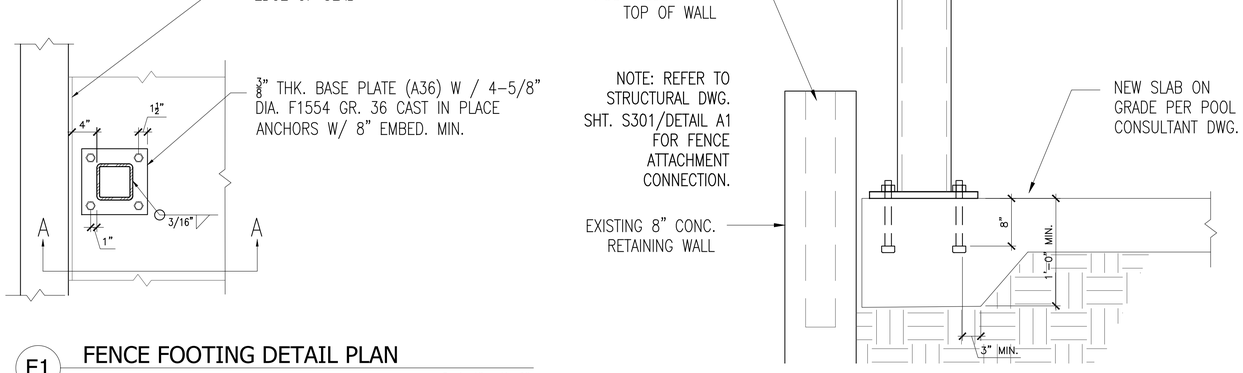
H1 GATE DETAILS/FOOTING

Scale:1/2" = 1' - 0"



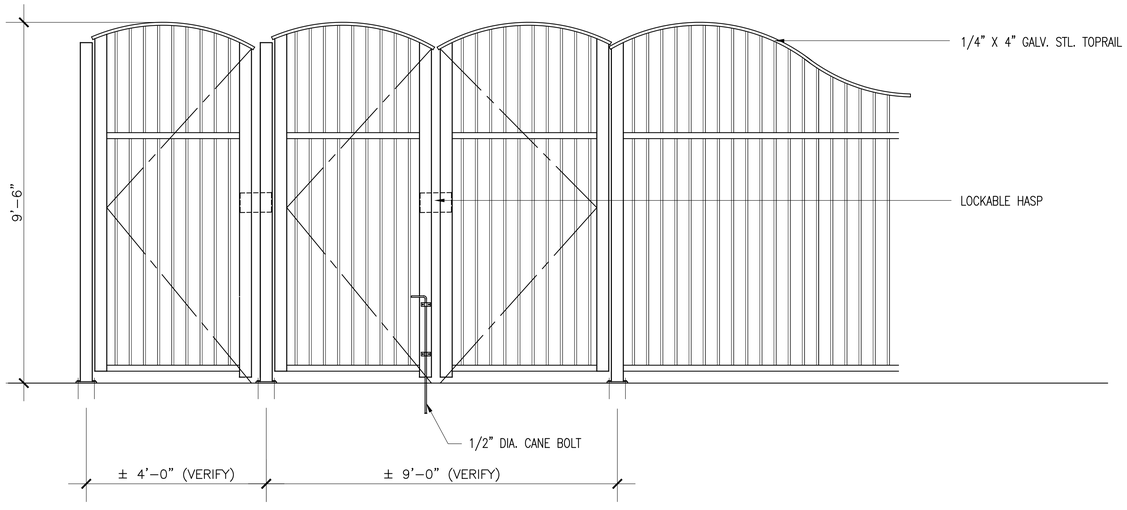
J13 POOL AREA FENCE (TYPICAL)

Scale:1/4" = 1' - 0"



E1 FENCE FOOTING DETAIL PLAN

Scale:1" = 1' - 0"



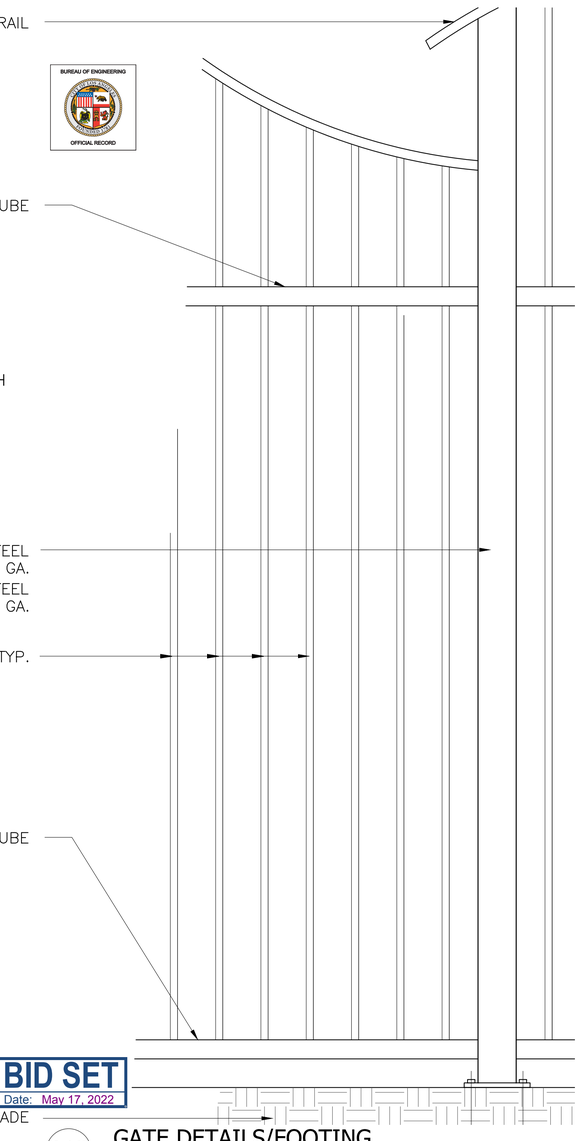
A1 GATE DETAILS/FOOTING

Scale:1/2" = 1' - 0"

NOTE:
PRIME ENTIRE FENCE WITH TNEMEC HIGH BUILD EPOXOLINE II L69 SERIES PER MANUFACTURERS INSTRUCTIONS. PAINT WITH TNEMEC 750 SEMI–GLOSS
COLOR: LAVA, 13S (RGB:167,84,74.)

NOTE:
SUBMIT SHOP DRAWINGS PRIOR TO FENCE FABRICATION

BID SET
Date: May 17, 2022



A13 GATE DETAILS/FOOTING

Scale:1" = 1' - 0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW:31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

CITY ENGINEER: TED ALLEN, P.E.

		DATE:
ARCHITECTURAL DIVISION		
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil	03-10-22
DRAWN BY:	Vinh Ha, TMY . DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FENCE DETAILS / ELEVATIONS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A9.0
SHEET 46 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

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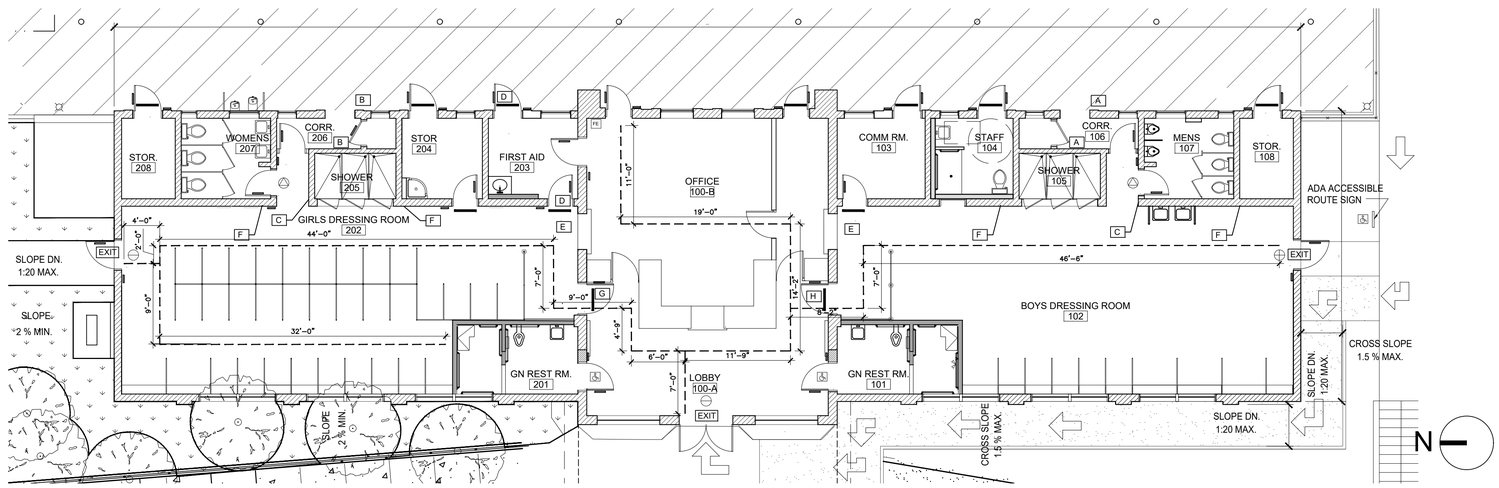
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 5:32 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A9.0 FENCE DETAIL.DWG

PLOTTED: 6/10/2022 2:03 PM



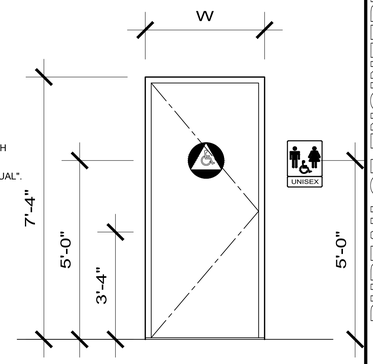
J1 -- SIGNAGE PLAN / EXIT TRAVEL PLAN

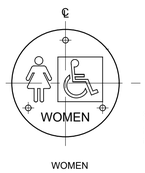
1/8"= 1'-0"

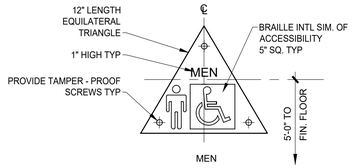
SIGN LEGEND

x11	▬	ROOM ID SIGN - ASI "IN-TAC" "OR EQUAL".
x3	◯	EXIT SIGN - TRANSPARENT ILLUMINATED
x4		STAIR SIGN WELL - BRUSHED ALUMINUM FINISH
x2		RESTROOM DOOR ID - BRUSHED ALUMINUM FINISH
x2		ADA ACCESSIBLE - ASI VENUS ALUMINUM "OR EQUAL".
x1	FE	FIRE EXTINGUISHER - ASI MESSENGER INTERIOR

PROVIDE SIGN SUBMITTAL FOR APPROVAL.





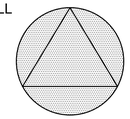


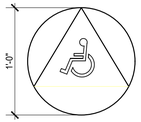
UNISEX WALL SIGN



UNISEX / FAMILY WALL SIGN





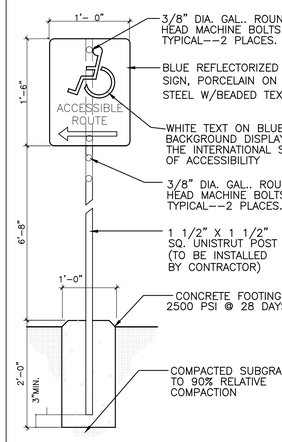


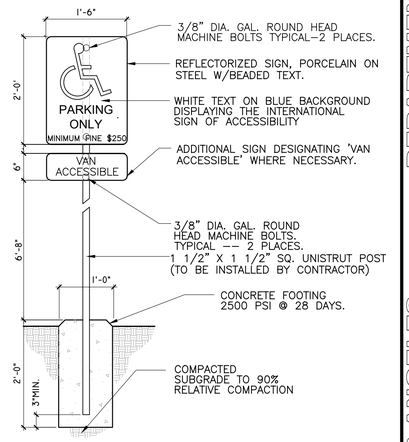
DOOR MOUNTED - SIGNAGE (TYP.)

NOTE: PICTOGRAMS AND / OR LETTERING ARE NOT REQUIRED ON DOOR-MOUNTED SIGNAGE

F12 -- A6.0 DOOR & WALL MOUNT SIGNAGE (TYP.)

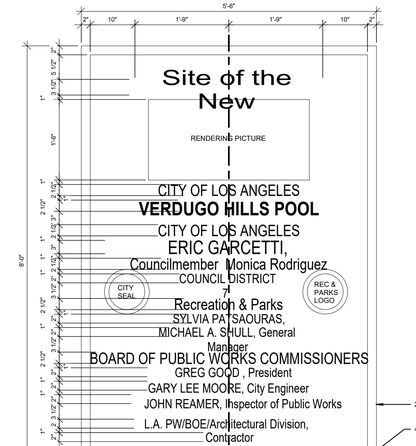
1/2"= 1'-0"



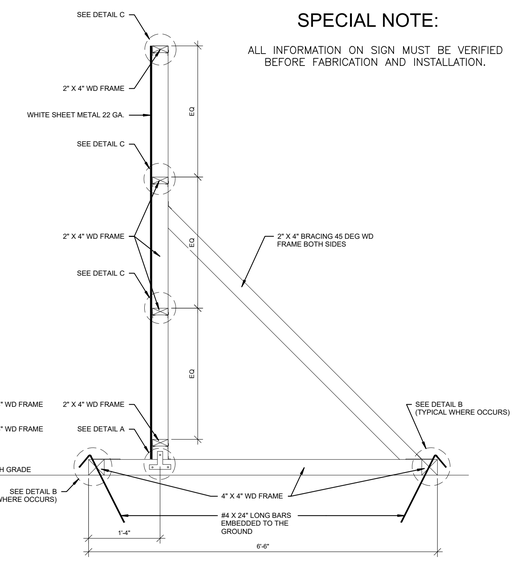


BUREAU OF ENGINEERING
OFFICIAL RECORD

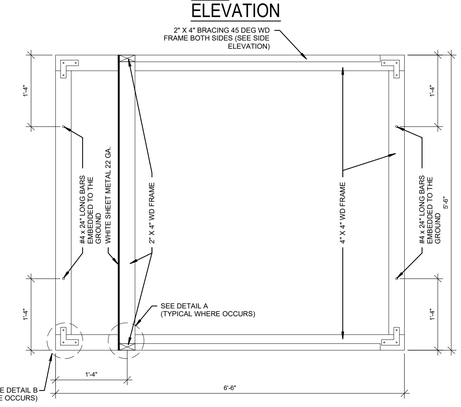
BID SET
Date: May 17, 2022



FRONT ELEVATION



SIDE ELEVATION



SPECIAL NOTE:

ALL INFORMATION ON SIGN MUST BE VERIFIED BEFORE FABRICATION AND INSTALLATION.

A
MENS 3"

B
WOMENS 3"

C
TO POOL 3"
(COLOR "RED")

D
FIRST AID 3"
(OUTLINE IN "WHITE")

TYPEFACE STYLE IS "ARIAL BOLD" IN DARK BLUE.

E
3" CHECK CLOTHES HERE

F
1" TAKE SOAP SHOWER
1" BEFORE ENTERING POOL

PROVIDE SUBMITTAL FOR APPROVAL

G
WOMENS 3"
DRESSING 3"
3" ROOM 3"

H
MENS 3"
DRESSING 3"
ROOM 3"

A1 -- CONSTRUCTION SIGN

3/4"=1'-0"

A8 -- A6.0 STENCIL PAINTED WALL SIGNS

1"= 1'-0"

A12 -- A1.3 ADA ACCESSIBLE ROUTE SIGN AND PARKING SIGN

1"= 1'-0"

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
FILE C:\USERS\25555\BOXARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A10.0 SIGNAGE PLANS.DWG
REVISION DATE: 6/4/2022 5:34 PM

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:
		01-19-21	

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
GELSO J. DEL POSO
LIC. NO. C 29974
REN2021-2022
STATE OF CALIFORNIA

TED ALLEN, P.E.	CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION		03-10-22
ARCHITECT: Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY: JOHN McNEIL		03-10-22
DRAWN BY: Vin Ha, TY. DT		03-10-22
CHECKED BY: Celso J. Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SIGNAGE PLAN / EXIT TRAVEL PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A10.0

SHEET 47 OF SHEETS 96

PLOTTED: 8/13/2022 9:13 AM

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
   A. 2017 CITY OF LOS ANGELES BUILDING CODE.
   B. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "SSPWC", ADOPTED BY THE BOARD OF PUBLIC WORKS OF THE CITY OF LOS ANGELES AS MODIFIED BY THE LATEST ISSUE OF THE BROWN BOOK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO STARTING ANY WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE COMMENCING WORK.
3. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF SCALED DIMENSIONS ON ANY PLAN. ALL DIMENSIONS SHALL BE AS DESIGNATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AT THE SITE PRIOR TO COMMENCING WORK AND/OR FABRICATION AND PROCUREMENT OF ANY ITEM.
4. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NOTES AND DETAILS ON DRAWINGS AND GENERAL NOTES AND TYPICAL DETAILS ARE IN CONFLICT WITH THE CONTRACT SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
5. A STAMPED SET OF PLANS AND SPECIFICATIONS SHALL BE KEPT AT THE JOBSITE AT ALL TIMES. THE CONTRACTOR SHALL ALSO MAINTAIN A SEPARATE FULL SIZE SET AND UPDATE WITH RECORD (I.E. AS-BUILT) INFORMATION. BOTH SETS SHALL BE MADE AVAILABLE TO THE INSPECTOR, BUILDING OFFICIAL OR CITY ENGINEER AT ALL TIMES.
6. MANUFACTURED MATERIALS SHALL BE APROVED BY THE CITY ENGINEER PRIOR TO THEIR USE. ALL REQUIREMENTS OF THOSE APPROVALS SHALL BE FOLLOWED.
7. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
   A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS.
   B. SIZE AND LOCATION OF ALL NON-BEARING PARTITIONS.
   C. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.
   D. SIZE AND LOCATIONS OF ALL FLOOR AND ROOF OPENINGS.
   E. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
8. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLOWING:
   A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL, ROOF AND FLOOR OPENINGS, ETC.
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS, IN WALLS AND SLABS.
   C. ANCHORAGE AND BRACING FOR ELECTRICAL, MECHANICAL OR EQUIPMENT.
   D. ANCHOR BOLTS FOR MOTOR MOUNTS.
   E. SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES.
9. PIPE SLEEVES, CONDUITS, DUCTS, INSERTS, AND OTHER SIMILAR EMBEDDED ITEMS SHALL BE IN PLACE PRIOR TO PLACEMENT OF CONCRETE.
10. NO PIPES, DUCTS, SLEEVES, OR OTHER MECHANICAL, PLUMBING, AND ELECTRICAL TRADE ITEMS SHALL PASS THROUGH STRUCTURAL MEMBERS UNLESS SHOWN ON THE THE STRUCTURAL PLANS OR APPROVED BY THE CITY ENGINEER OF RECORD.
11. SEWER AND UTILITY LINES ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO PLUMBING, ELECTRICAL AND CIVIL DRAWINGS FOR LOCATION. THE CONTRACTOR SHALL COORDINATE ALL SEWER AND UTILITY LINES WITH THE FOUNDATION DRAWINGS. THE CITY ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING FURTHER WITH THE WORK.
12. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED WORK. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL THE MEASURES NECESSARY TO PROTECT THE SAFETY OF THE STRUCTURE, EMPLOYEES, AND THE PUBLIC DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO THE BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION LOADING AND EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE CITY ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS AND DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS/HER RESPONSIBLITIES FOR THE ABOVE ITEMS.
13. THE CONTRACTOR SHALL NOT STACK CONSTRUCTION MATERIAL ON ANY ELEVATED ROOF OR FLOOR, THE MATERIAL SHALL BE SPREAD OUT AND THE LOAD SHALL NOT BE ALLOWED TO EXCEED 80% OF THE DESIGN LIVE LOAD. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH OR WHERE OVERLOAD IS ANTICIPATED.
14. REVIEW OF SUBMITTAL WILL BE FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. NOTED MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS OR DEPARTURES THEREFROM. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY FOR PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER.
15. THE CONTRACTOR SHALL PROVIDE PROTECTION FOR PEDESTRIANS AND VEHICLES ADJACENT TO THE PROJECT SITE DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL OBTAIN AND ARRANGE FOR ALL REQUIRED PERMITS AND INSPECTIONS.

EARTHWORK & FOUNDATION NOTES

1. THE GEOTECHNICAL REPORT W.O. #E170164D, GEO FILE # 17-137 DATED SEPTEMBER 13, 2018. ENTITLED " SUPPLEMENTAL GEOTECHNICAL REPORT- VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP"
2. THE CONTRACTOR SHALL CONFORM TO ALL RECOMMENDATIONS AND CONDITIONS INDICATED IN THE REPORT.
3. THE GEOTECHNICAL ENGINEER/ BUILDING INSPECTOR SHALL OBSERVE THE FOOTING EXCAVATIONS TO DETERMINE WHETHER THE FOUNDATIONS ARE FOUNDED ON ACCEPTABLE MATERIAL. IF ADVERSE SOIL CONDITIONS ARE ENCOUNTERED, A SOIL INVESTIGATION MAY BE REQUIRED.
4. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION BY THE CITY OF LOS ANGELES, DEPARTMENT OF BUILDING AND SAFETY, AT LEAST 48 HOURS IN ADVANCE.
5. ENGINEERED FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION PER GEOTECHNICAL REPORT.
6. SHORING WHERE REQUIRED SHALL BE PER RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.
7. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL FURNISH THE CITY ENGINEER A WRITTEN DESCRIPTION OF THE PROPOSED PROCEDURES AND CALCULATIONS PREPARED, SIGNED, AND SEALED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER FOR INFORMATION ONLY. NEVERTHELESS, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SHORING WORK AND SUBMITTAL TO THE CITY ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF HIS/HER OBLIGATIONS.

EARTHWORK & FOUNDATION NOTES (CONT.)

8. NO BACKFILL SHALL BE PLACED BEHIND RETAINING WALLS PRIOR TO THE CONCRETE/CMU REACHING ITS FULL DESIGN STRENGTH. THE CONTRACTOR SHALL PROTECT AND BRACE ALL BUILDING WALLS AND PITS BELOW GRADE AGAINST LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE REACHED THEIR FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE DESIGN, PERMIT, BRACING, AND INSTALLATION OF SUCH BRACING, AT NO ADDED COST TO THE CITY.
9. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL THE NECESSARY PERMITS FOR ALL TRENCHES AND EXCAVATIONS FIVE FEET OR MORE IN DEPTH, FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT BY THE CITY OF LOS ANGELES, DEPARTMENT OF BUILDING AND SAFETY.
10. NO FILL SHALL BE PLACED UNTIL THE GEOTECHNICAL ENGINEER AND BUILDING AND SAFETY GRADING INSPECTOR HAVE INSPECTED AND APPROVED THE BOTTOM EXCAVATION.
11. FROM THE TIME THAT BUILDING AND SAFETY AND GEOTECHNICAL ENGINEER APPROVES THE FOOTING EXCAVATIONS TO THE TIME THAT THE CONCRETE IS PLACED, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE FOOTINGS PROPERLY MOIST AND FREE OF LOOSE SOIL AND DEBRIS. IF EXCESSIVE SLOUGHING OR CAVING OCCURS OR IF MOISTURE IS ALLOWED INTO THE FOOTINGS PRIOR TO CONCRETE PLACEMENT, ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE FOOTINGS AND GEOTECHNICAL ENGINEER SHALL RE-INSPECT THE FOOTINGS PRIOR TO CONCRETE PLACEMENT.

CONCRETE NOTES

1. CONCRETE SHALL CONFORM TO SECTION 201 OF THE SSPWC U.N.O.
2. ALL CEMENT SHALL CONFORM TO ASTM C-150, PORTLAND CEMENT TYPE V FOR CONCRETE IN CONTACT WITH SOIL AND TYPE I FOR TOPPING SLAB, U.N.O.
3. ALL FLY ASH SHALL CONFORM TO C-618, CLASS F, U.N.O.
4. FINE AND COARSE AGGREGATE SHALL BE NONREACTIVE AND CONFORM TO ASTM C-33 AND SECTION 201-1.2.2 OF THE SSPWC.
5. UNLESS NOTED OTHERWISE, STRUCTURAL CONCRETE SHALL BE HARD ROCK - 145 LBS/ CU. FT. CONCRETE STRENGTH SHALL CONFORM TO THE FOLLOWING:
   SLAB ON GRADE AND OTHER MISC. CONCRETE..... 560-C-3250
   FOUNDATIONS AND WALL.....650-CW-4000
6. SUBMITTALS OF MIX DESIGN SHALL BE AS PER THE BUILDING CODE AND SHALL BE PREPARED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER, AND BE PROVIDED BY AN APPROVED LABORATORY. COPIES OF THE SUBMITTALS SHALL BE IN THE OFFICE OF THE BUILDING INSPECTOR, AT THE BATCH PLANT PRIOR TO BATCHING OF CONCRETE, AND AT THE JOB SITE PRIOR TO PLACING OF CONCRETE. MIX DESIGN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL OF THE PROJECT STRUCTURAL ENGINEER PRIOR TO PLACING OF CONCRETE.
7. CONTINUOUS INSPECTION OF CONCRETE BY A DEPUTY INSPECTOR IS REQUIRED FOR CONCRETE STRENGTHS OVER 2500 PSI - TO BE PROVIDED BY THE CITY.
8. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2017 EDITION OF THE LOS ANGELES CITY BUILDING CODE AND THE LATEST EDITION OF ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE - ACI 318, INCLUDING BAR BENDS AND HOOKS, UNLESS SPECIFICALY SHOWN ON THE DRAWINGS.
9. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS SHALL ONLY BE USED TO SUPPORT REINFORCING OFF GROUND.
10. THE LOCATION OF CONTRACTION JOINTS SHALL BE PER LOS ANGELES CITY STANDARD STRUCTURAL PLAN S505-1.
11. NOTIFY THE CITY ENGINEER 48 HOURS PRIOR TO ALL POURS.
12. ALL EXISTING CONCRETE SURFACES IN CONTACT WITH NEW CONCRETE AND ALL CONSTRUCTION JOINTS SHALL BE ROUGHENED TO 1/4" AMPLITUDE MINIMUM.
13. ALL FOUNDATIONS AND PILES SHALL BE POURED AGAINST UNDISTURBED NATURAL SOIL, OR COMPACTED FILL. THE PROJECT GEOTECHNICAL ENGINEER SHALL INSPECT ALL FOUNDATIONS, PILES AND SOIL PRIOR TO PLACING REINFORCING STEEL. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF INSPECTION.
14. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4", OR RADIUSED TO 1/2" R.
15. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECTION 303-1.10 OF THE SSPWC UNLESS OTHERWISE NOTED. THE CITY ENGINEER MUST FIRST APPROVE THE USE OF MEMBRANE CURING COMPOUNDS. IF APPROVED FOR USE, THE CONTRACTOR SHALL SUBMIT SAMPLES OF MATERIALS AND LOCATION OF USE FOR FINAL APPROVAL BY THE CITY ENGINEER.
16. BEFORE CONCRETE IS POURED, CHECK ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, EMBEDDED MATERIALS, ETC. RELATING TO THE WORK.
17. THE CONTRACTOR SHALL COORDINATE FOR CONTINUOUS INSPECTION OF ANCHOR BOLTS OR HEADED STUDS EMBEDDED IN CONCRETE PRIOR TO AND DURING THE PLACEMENT OF CONCRETE TO BE PROVIDED BY THE CITY.
18. ALL SLEEVES NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL BE LOCATED BY THE TRADES INVOLVED AND SHALL BE APPROVED BY THE CITY ENGINEER.
19. NO STAKE, STEEL OR WOOD WILL BE PERMITTED IN ANY CONCRETE POUR, UNLESS OTHERWISE SHOWN ON THE PLANS TO REMAIN. SUSPEND FORMS FROM ABOVE THE POUR.
20. FINAL SLABS SHALL BE LEVELED TO WITHIN 1/8" WHEN MEASURED WITH A 10 FEET STRAIGHT EDGE AND WITHIN 1/2" IN ANY 30 FEET BAY.
21. NO FOUNDATIONS OR SLABS-ON-GRADE SUPPORTED IN NEW COMPACTED FILL SHALL BE POURED UNTIL THE COMPACTION REPORT IS SUBMITTED AND APPROVED BY THE GRADING DIVISION OF LADBS.
22. NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAYS STRENGTH OF 4,000 PSI. CONTRACTOR TO SUBMIT MIX DESIGN FOR APPROVAL TO THE CITY ENGINEER, PRIOR TO PLACEMENT.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE FRABICATED AND ERECTED IN ACOORDANCE WITH THE LATEST EDITION OF THE AISC SPECIFICATIONS. FABRICATOR SHALL BE LICENSED AND APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY CITY OF LOS ANGELES FOR THE WORK INDICATED.
2. ALL STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A-992. PIPE COLUMNS SHALL COMPLY WITH ASTM A-53 GRADE B (Fy=35 KSI); STRUCTURAL HSS SHALL COMPLY WITH ASTM A-500 GRADE B (Fy=46 KSI). ALL ANGLES, CHANNELS, PLATES AND OTHER SHAPES SHALL COMPLY WITH ASTM A36.
3. CONNECTIONS NOT DETAILED ON DRAWINGS SHALL BE DETAILED BY THE FABRICATOR AND SHALL BE SUBMITTED IN THE SHOP DRAWINGS FOR REVIEW BY THE STRUCTURAL ENGINEER.
4. FABRICATOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. ALL HIGH STRENGTH (H.S.) BOLTS, NUTS AND WASHERS SHALL COMPLY WITH ASTM A325. ANCHOR BOLTS INTO CONCRETE OR MASONRY OR WHERE MACHINE BOLTS (M.B.) ARE SPECIFIED SHALL CONFORM TO ASTM A307.
6. BASE PLATES BEARING ON CONCRETE OR MASONRY SHALL BEAR A MINIMUM 1" THICK SOLID NON-SHRINK GROUT OR DRYPACK.
7. WELDING SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 SPECIFICATIONS. WELDING ELECTRODES SHALL BE E-70XX.
8. ALL COMPLETE JOINT PENETRATION SHOP WELDING, ALL FIELD WELDING AND HIGH STRENGTH BOLTING, EXCEPT MINOR OR TACK WELDING SHALL BE CONTINUOUSLY INSPECTED BY AN INSPECTOR APPROVED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY.
9. ALL STRUCTURAL STEEL TO BE EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED SURFACES, AND CUT SURFACES OF GALVANIZED STEEL SHALL BE THOROUGHLY CLEANED AND COATED IN ACCORDANCE WITH SECTION 210-3.5 OF THE SSPWC.
10. ALL STRUCTURAL STEEL NOT EXPOSED TO WEATHER SHALL HAVE A COAT OF SHOP PRIMER EXCEPT WHERE STEEL IS TO BE FIREPROOFED, ENCASED IN CONCRETE OR AREA IN CONTACT WITH HIGH STRENGTH BOLTS.

REINFORCING STEEL NOTES

1. ALL REINFORCING STEEL SHALL BE DEFORMED BARS, CONFORMING TO ASTM A615-60. REINFORCING STEEL, WHERE REQUIRED TO BE WELDED SHALL BE A-706 ASTM.
2. WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A-1064. MESH SHALL BE LAPPED (9" MINIMUM).
3. ALL BARS SHALL BE CLEAN OF LOOSE FLAKY RUST, GREASE OR OTHER MATERIALS LIKELY TO IMPAIR BOND.
4. ALL BENDS SHALL BE MADE COLD.
5. REINFORCING BARS SHALL BE SPLICED AND BENT IN STRICT ACCORDANCE WITH THE C.R.S.I. PUBLICATION AND DETAIL DRAWINGS. NO KINKS SHALL BE PERMITTED.
6. FOR BARS #7 THROUGH #11, THE CITY ENGINEER SHALL APPROVE LAP SPLICE LENGTH NOT SHOWN. BARS SHOWN SPLICED SHALL BE CONTINUOUS AT ALL OTHER LOCATIONS. SPLICES IN ADJACENT BARS SHALL BE STAGGERED AT LEAST ONE SPLICE LENGTH. ALL DOWELS SHALL HAVE THE SAME SIZE AND SPACING AS THAT OF THE REINFORCING STEEL TO WHICH THEY ARE SPLICED.
7. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER. IF WELDING OF REINFORCING IS APPROVED, IT SHALL CONFORM TO THE STRUCTURAL WELDING CODE-REINFORCING STEEL AWS D1.4 (LATEST EDITION) ALL SHOP WELDING SHALL BE DONE IN A SHOP CERTIFIED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY. FIELD WELDING SHALL BE DONE BY WELDERS CERTIFIED BY THE DEPARTMENT OF BUILDING AND SAFETY FOR REINFORCING STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.
8. MECHANICAL COUPLERS FOR REINFORCING BARS SHALL HAVE AND CONFORM TO A CURRENTLY APPROVED CITY OF LOS ANGELES RESERACH REPORT AND SHALL REQUIRE CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR PROVIDED BY THE CITY.
9. PROVIDE DOWELS OF SAME SIZE AND NUMBER FROM ADJACENT POUR, BOTH VERTICALLY AND HORIZONTALLY TO MATCH TYPICAL REINFORCING SHOWN. LAPS SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND DETAILS.
10. ALL DOWELS TO BE CLEANED AFTER POUR AND CARE SHALL BE TAKEN SO AS NOT TO BEND DOWELS EXTENDING FROM CONCRETE PREVIOUSLY POURED.
11. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS NOTED OTHERWISE.
12. ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING MORTAR OR GROUT.
13. SHOP DRAWINGS FOR REINFORCING STEEL SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
14. ALL REINFORCING SHALL BE ACCURATELY PLACED AND FIRMLY SUPPORTED AS RQUIRED BY THE ACI STANDARDS. REINFORCING SHALL HAVE THE FOLLOWING MINIMUM COVERAGE AND SHALL BE PLACED AS NEAR TO THE CONCRETE SURFACE AS THESE MINIMUMS WILL PERMIT UNLESS NOTED OR DETAILED OTHERWISE.
   CONCRETE POURING AGAINST EARTH.....3"
   FORMED CONCRETE IN CONTACT WITH EARTH OR WEATHER.....1-1/2"
   SLABS, WALLS, JOISTS.....1-1/2"
   BEAMS.....1-1/2"
   COLUMNS (TO MAIN STEEL).....2"
15. BARS INTERRUPTED BY STRUCTURAL STEEL SHALL EXTEND TO WITHIN 1" OF THE STRUCTURAL STEEL FLANGE OR WEB AND HAVE A 90-DEGREE HOOK UNLESS NOTED OTHERWISE.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. **RP-300123**

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
CIVIL STRUCTURAL
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	TED ALLEN, P.E. / SP	DATE:	8/17/2022
DESIGN GROUP	LIC. NO. S-6573	DATE:	8/17/2022
ENGINEER:	MANAN BHALJA, S.E.	DATE:	5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	DATE:	5/17/2022
DRAWN BY:	EMIL YOUSSEF	DATE:	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	DATE:	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		

CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL NOTES

PROJECT: VERDUGO HILL POOL
BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO.
E170164F

PLAN FILE NO.

DRAWING NO.
S001

SHEET 48 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TTLB TEMPLATE REVISION DATE: 4/2016

GENERAL NOTES FOR STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH THE INFORMATION BULLETIN NO. P/BC 2002-024. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION AT THE CONSTRUCTION SITE OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBLILITY FOR THE INSEPCTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR.
2. THE OWNER SHALL EMPLOY A STATE OF CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER OR LICENSED ARCHITECT TO PERFORM THE STRUCTURAL OBSERVATION. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) RECOMMENDS THE USE OF THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN WHO ARE INDEPENDENT OF THE CONTRACTOR.
3. THE STRUCTURAL OBSERVER SHALL PROVIDE EVIDENCE OF EMPLOYMENT BY THE OWNER OR THE OWNER'S REPRESENTATIVE. A LETTER FROM THE OWNER, THE OWNER'S REPRESENTATIVE, OR A COPY OF THE AGREEMENT FOR SERVICE SHALL BE SENT TO THE BUILDING INSPECTOR BEFORE THE FIRST SITE VISIT.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL COORDINATE AND CALL FOR A MEETING BETWEEN THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN, STRUCTURAL OBSERVER, CONTRACTOR, AFFECTED SUBCONTRACTORS AND DEPUTY INSPECTORS. THE PURPOSE OF THE MEETING SHALL BE TO IDENTIFY THE MAJOR STRUCTURAL ELEMENTS AND CONNECTIONS THAT AFFECT THE VERTICAL AND LATERAL LOADS SYSTEMS OF THE STRUCTURE AND TO REVIEW SCHEDULING OF THE REQUIRED OBSERVATIONS. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT SUBMITTED TO THE BUILDING INSPECTOR
5. THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE LISTED SIGNIFICANT CONSTRUCTION STAGES ON THE FOLLOWING STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGES TABLE REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.
6. THE STRUCTURAL OBSERVER SHALL PREPARE A REPORT OF THE STRUCTURAL OBSERVATION REPORT FORM IN/FORM.08 (PART 1) FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED. THE ORIGINAL OF THE STRUCTURAL OBSERVATION REPORT SHALL BE SENT TO THE BUILDING INSPECTOR'S OFFICE AND SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER. ONE COPY OF THE OBSERVATION REPORT SHALL BE ATTACHED TO THE APPROVED PLANS. THE COPY ATTACHED TO THE PLANS SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER OR THEIR DESIGNEE. COPIES OF THE REPORT SHALL ALSO BE GIVEN TO THE OWNER, CONTRACTOR, AND DEUPTY INSPECTOR, ANY DEFICIENCY NOTED ON THE OBSERVATION REPORT WILL BECOME THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD TO VERIFY ITS COMPLETION BY HIM/HER OR BY A REGISTERED DEUPTY INSPECTOR AT THE DISCRETION OF THE STRUCTURAL OBSERVER.
7. A FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR MUST BE SUBMITTED WHICH SHOWS THAT ALL OBSERVED DEFICIENCIES WERE RESOLVED AND STRUCTURAL SYSTEM GENERALLY CONFORMS WITH THE APPROVED PLANS AND SPECIFICATIONS. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) WILL NOT ACCEPT THE STRUCTURAL WORK WITHOUT THIS FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR (WHEN PROVIDED) AND THE CORRECTION OF SPECIFIC DEFIECIENCIES NOTED DURING NORMAL BUILDING INSPECTION.
8. THE STRUCTURAL OBSERVER SHALL PROVIDE THE ORIGINAL STAMPED AND SIGNED STRUCTURAL OBSERVATION REPORT TO THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY BUILDING INSPECTOR.
9. WHEN THE OWNER ELECTS TO CHANGE THE STRUCTURAL OBSERVER OF RECORD, THE OWNER SHALL:

   A) NOTIFY THE BUILDING INSPECTOR IN WRITING BEFORE THE NEXT INSPECTION BY SUBMITTING COMPLETED "STRUCTURAL OBSERVATION PROGRAM AND DESIGNATION OF THE STRUCTURAL OBSERVER FORM IN/FORM.08 (PART 2).
   B) CALL AN ADDITIONAL PRECONSTRUCTION MEETING, AND
   C) FURNISH THE REPLACEMENT STRUCTURAL OBSERVER WITH A COPY OF ALL PREVIOUS OBSERVATION REPORTS.

   THE REPLACEMENT STRUCTURAL OBSERVER SHALL APPROVE THE CORRECTION OF THE ORIGINAL OBSERVED DEFICIENCIES UNLESS OTHERWISE APPROVED BY PLAN CHECK SUPERVISION. THE POLICY OF THE DEPARTMENT SHALL BE TO CORRECT ANY PROPERLY NOTED DEFICIENCIES WITHOUT CONSIDERATION OF THEIR SOURCE.
10. THE ENGINEER OR ARCHITECT OF RECORD SHALL DEVELOP ALL CHANGES RELATING TO THE STRUCTURAL SYSTEM. THE BUILDING DEPARTMENT SHALL REVIEW AND APPROVE ALL CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS.

STRUCTURAL OBSERVATION/ SIGNIFICANT CONSTRUCTION STAGES
(ONLY CHECKED ITEMS ARE REQUIRED)

FIRM OR INDIVIDUAL TO BE RESPONSIBLE FOR THE " STRUCTURAL OBSERVATION "
NAME: MANAN BHALJA, S.E. ☐ LICENSED ARCHITECT ☒ REGISTERED ENGINEER
PHONE: (213) 485-5363 CALIFORNIA REGISTRATION NUMBER: S-6573

CONSTRUCTION STAGE	CONSTRUCTION TYPE	ELEMENTS/ CONNECTIONS TO BE OBSERVED
FOUNDATION	☒ FOOTING UNDER WALL ☐ SLAB ON GRADE ☐ GRADE BEAMS ☒ STEPPING/ RETAINING FOUNDATION, HILLSIDE SPECIAL ANCHORS ☐ OTHERS:	FOOTING: FOOTING LOCATION, LENGTH, WIDTH &THICKNESS, REBAR SIZE & SPACING RAMP SLAB: THICKNESS, REBAR SIZE & SPACING
WALL	☒ CONCRETE ☐ MASONRY ☐ WOOD ☐ OTHERS:	CONCRETE WALL: THICKNESS, REBAR SIZE & PLACEMENT
ROOF FRAMING	☐ STEEL MOMENT FRAME ☐ STEEL BRACED FRAME ☐ CONCRETE MOMENT FRAME ☐ MASONRY MOMENT FRAME ☐ STEEL TRUSS CONNECTION ☐ OTHERS:	
DIAPHRAGM	☐ CONCRETE ☐ STEEL DECK ☐ WOOD ☐ OTHERS:	
OTHERS	POST-INSTALLED THRU BOLTS AT NEW WALL OPENING	ANCHOR BOLT: SIZE AND SPACING

DECLARATION BY OWNER OR OWNER'S REPRESENTATIVE

I, ☐ THE OWNER OF THE PROJECT ☐ THE OWNER'S REPRESENTATIVE, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS HIRED BY ME TO BE THE STRUCTURAL OBSERVER.

SIGNATURE DATE

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (REQUIRED IF THE STRUCTURAL OBSERVER IS DIFFERENT FROM THE ARCHITECT OR ENGINEER OF RECORD)

I, THE ARCHITECT OR ENGINEER OF RECORD FOR THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS DESIGNATED BY ME TO BE RESPONSIBLE FOR THE " STRUCTURAL OBSERVATION ".

SIGNATURE LICENSE NO. DATE

STRUCTURAL OBSERVATION PROGRAM
AND DESIGNATION OF THE
STRUCTURAL OBSERVER

PROJECT ADDRESS: 10654 IRMA AVE, TUJUNGA, CA. 91042 PERMIT APPL NO:
DESCRIPTION OF WORK: VERDUGO HILL POOL
OWNER: CITY OF L.A. ARCHITECT: ROBERT LOMELIN ENGINEER: MANAN BHALJA, S.E.

STRUCTURAL OBSERVATION
(ONLY CHECKED ITEMS ARE REQUIRED)

FIRM OR INDIVIDUAL TO BE RESPONSIBLE FOR THE STRUCTURAL OBSERVATION:
NAME: MANAN BHALJA, S.E. PHONE: (213) 485-5363 CALIF REGISTRATION: S-6573

FOUNDATION	WALL	FRAME	DIAPHRAGM
☒ FOOTINGS	☒ CONCRETE	☐ STEEL MOMENT FRAME	☐ CONCRETE
☒ SLAB ON GRADE	☐ MASONRY	☐ STEEL BRACED FRAME	☐ STEEL DECK
☐ GRADE BEAMS	☐ WOOD	☐ CONCRETE MOMENT FRAME	☐ WOOD
☒ STEPP'G / RETAIN'G FOUNDATION HILLSIDE SPECIAL ANCHORS	☒ OTHERS: POST INSTALLED THRU ANCHORS	☐ MASONRY WALL FRAME	☐ OTHERS:
☐ OTHERS:		☐ OTHERS:	

DECLARATION BY OWNER

I, THE OWNER OF THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS HIRED BY ME TO BE THE STRUCTURAL OBSERVER.

SIGNATURE DATE

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (REQUIRED IF THE STRUCTURAL OBSERVER IS DIFFERENT FROM THE ARCHITECT OR ENGINEER OF RECORD)

I, THE ARCHITECT OR ENGINEER OF RECORD FOR THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS DESIGNATED BY ME TO BE RESPONSIBLE FOR THE STRUCTURAL OBSERVATION.

SIGNATURE LICENSE NO. DATE

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER DATE: 8/17/2022
DESIGN GROUP LIC. NO. S-6573 5/17/2022
ENGINEER: MANAN BHALJA, S.E. 5/17/2022
DESIGNED BY: MANAN BHALJA, S.E., QUYNH HO, P.E. 5/17/2022
DRAWN BY: EMIL YOUSSEF
CHECKED BY: MEL AGAGAS S.E., MOURAD AZIZ, P.E.
APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL NOTES FOR STRUCTURAL OBSERVATION
PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. S002
SHEET 49 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

DESIGN DATA

LOAD DATA:

RAMP AND EXIT WAYS LIVE LOAD.....100 PSF

WIND DATA:

1. BASIC WIND SPEED .....110 MPH
2. WIND EXPOSURE .....B
3. RISK CATEGORY.....II

SEISMIC DESIGN DATA:

1. SEISMIC IMPORTANCE FACTOR 1.0
2. OCCUPANCY CATEGORY.....II
3. MAPPED SPECTRAL RESPONSE ACCELERATION ..... S_S =2.675, S_1 = 0.963
4. SITE CLASS.....D
5. SPECTRAL RESPONSE COEFICIENTS..... S_{DS} = 1.784, S_{D1} = 0.963
6. SEISMIC DESIGN CATEGORY.....E
7. LATERAL FORCE RESISTING SYSTEM..... EXISTING REINFORCED BRICK SHEAR WALL

DESIGN LOAD BEARING VALUES OF SOILS:

1. ALLOWABLE SOIL BEARING ..... 2500 PSF (DL+LL) ADDITIONAL ONE-THIRD INCREASE IS PERMITTED FOR WIND OR SEISMIC EFFECTS.
2. LATERAL RESISTANCE.....PROVIDED BY FRICTION AND PASSIVE PRESSURE
3. ALLOWABLE COEFFICIENT OF FRICTION 0.35
4. ALLOWABLE PASSIVE SOIL PRESSURE .....250 PSF/FT OF DEPTH, A ONE-THIRD INCREASE IS PERMITTED FOR WIND OR SEISMIC EFFECTS.
5. CANTILEVER RETAINING WALL DESIGN EQUIVALENT FLUID PRESSURE:
   ACTIVE PRESSURE WITH LEVEL GRADE .....35 PSF/FT OF DEPTH
   SEISMIC .....30 PSF/FT OF DEPTH
6. RESTRAINED RETAINING WALL DESIGN EQUIVALENT FLUID PRESSURE:
   AT REST PRESSURE WITH LEVEL GRADE .....55 PSF/FT OF DEPTH
   SEISMIC ..... 11 PSFT/ FT OF DEPTH

DEPUTY INSPECTION - CITY OF LOS ANGELES

1. THIS SECTION APPLIES TO STRUCTURAL PORTION OF THE WORK REQUIRING SPECIAL INSPECTION IN ACCORDANCE WITH LABC SECTION 1704 & 1707.
2. CONTINUOUS INSPECTION REFERS TO ON-SITE INSPECTION ON A CONTINUOUS BASIS OBSERVING ALL WORK REQUIRING SPECIAL INSPECTION.
3. PERIODIC INSPECTION REFERS TO INTERMITTENT INSPECTION ON A PERIODIC BASIS. SATISFYING THE REQUIREMENTS OF CONTINUOUS INSPECTION AND PERFORMED AS OUTLINED ON THE PROJECT CONSTRUCTION DOCUMENTS, AND APPROVED BY THE BUILDING OFFICIAL.
4. SPECIAL INSPECTION IS NOT REQUIRED WHEN THE WORK IS DONE ON THE PREMISES OF A CITY OF LOS ANGELES APPROVED FABRICATION SHOP APPROVED TO PERFORM THE WORK.
5. SPECIAL INSPECTION SHALL BE PERFORMED BY A DEPUTY INSPECTOR REGISTERED IN THE CITY OF LOS ANGELES FOR THE PORTIONS OF THE WORK REQUIRING INSPECTION. THE DEPUTY INSPECTOR SHALL BE EMPLOYED BY THE OWNER, AND SHALL BE APPROVED BY AND BE RESPONSIBLE TO THE ENGINEER IN CHARGE OF THE STRUCTURAL DESIGN FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
6. THE EMPLOYMENT AND DUTIES OF THE DEPUTY INSPECTOR SHALL BE IN CONFORMANCE WITH THE LABC AND COLA INFORMATION BULLETIN P/BC 2014-34.
7. THE SPECIAL INSPECTOR SHALL FURNISH DEPUTY INSPECTION REPORTS (LADBS IN FORM 07) TO THE DEPARTMENT OF BUILDING AND SAFETY, THE CONTRACTOR, THE OWNER'S REPRESENTATIVE, AND THE ENGINEER OF RECORD. REPORTS SHALL BE FILLED OUT AT THE TIME OF INSPECTION AND SUBMITTED TO LADBS DAILY. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN IF UNCORRECTED, TO THE OWNER'S REPRESENTATIVE, THE ENGINEER OF RECORD, AND THE BUILDING OFFICIAL.
8. AT THE TIME OF COMPLETION OF THE PROJECT, THE STRUCTURAL OBSERVER OF RECORD SHALL COMPLETE A CERTIFICATE OF COMPLIANCE INDICATING THAT THE DEPUTY INSPECTORS WERE RESPONSIBLE TO THEM.
9. AT THE COMPLETION OF THE STRUCTURAL WORK, THE SPECIAL INSPECTORS SHALL SUBMIT A FINAL SIGNED REPORT STATING THAT ALL WORK WAS PERFORMED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE LABC.
10. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED FOR ALL CONCRETE DESIGNED WITH f'c GREATER THAN 2500 PSI.
11. CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/COMPONENT LISTED IN "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBLITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER SEC 1706.1.
12. SEE TABLE ON SAME PAGE FOR ITEMS REQUIRING SPECIAL INSPECTION.

WORK REQUIRING SPECIAL INSPECTION AND STRUCTURAL OBSERVATION:		SPECIAL * INSPECTION	
		CONT.	PERIODIC
CONCRETE	A. CONCRETE PLACEMENT. 1. FOUNDATION / FOOTINGS. 2. WALL 3. ALL OTHER STRUCTURAL CONCRETE.	✓	
	B. MOLDING OF COMPRESSION TEST SAMPLES.	✓	
	C. PLACEMENT OF HIGH STRENGTH NON SHRINK GROUT AND TAKING SAMPLES.	✓	
	D. PLACEMENT OF REINFORCING PRIOR TO CLOSING THE FORM.		✓
REINFORCING STEEL	A. PLACEMENT OF REINFORCING BARS.		✓
	B. SAMPLING FOR TESTING.		✓
	C. MILL REPORT VERIFICATION AND MATERIAL IDENTIFICATION.	✓	
WELDING	A. STRUCTURAL FIELD WELDING - OTHER	✓	
BOLTING ANCHORS	A. POST- INSTALL THRU ANCHORS B. GROUTING C. SIZE & SPACING	✓	

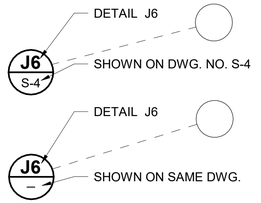
* FOR QUALIFICATION OF SPECIAL INSPECTOR, REFERENCE SPECIFICATIONS.

ABBREVIATIONS

AB	ANCHOR BOLTS
ADDL	ADDITIONAL
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAILING
BP	BASE PLATE
C	CHANNEL
CJ	CEILING JOIST
CJP	COMPLETE JOINT PENETRATION
COLA	CITY OF LOS ANGELES
CONT	CONTINUOUS
CTR	CENTER
DEMO	DEMOLISH / DEMOLITION
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DIST	DISTANCE
EMBED	EMBEDMENT
EN	EDGE NAILING
EOR	ENGINEER OF RECORD
EQ	EQUAL
EW	EACH WAY
EXIST.	EXISTING
FF	FINISH FLOOR
FS	FAR SIDE
FT	FEET OR FOOT
GALV.	GALVANIZE
HS	HEADED STUD
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
IN	INCH
K	KIPS
LADBS	LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY
LARR	LOS ANGELES RESEARCH REPORT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MC	MISCELLANEOUS CHANNEL
MIN	MINIMUM
MB	MACHINE BOLTS

ABBREVIATIONS: (CONT)

N	NORTH
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
PAF	POUDER ACTUATED FASTENERS
PCF	POUNDS PER CUBIC FOOT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PT	PRESSURE TREADED
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QTY	QUANTITY
RECT	RECTANGULAR
REQD	REQUIRED
REV	REVISION
RJ	ROOF JOIST
REF	REFERENCE
SE	STRUCTURAL ENGINEER
SHT	SHEET
SIM	SIMILAR
SMS	SHEET METAL SCREWS
SOG	SLAB ON GRADE
SQ	SQUARE
STL	STEEL
SYMM	SYMMETRICAL
t	THICKNESS
T&B	TOP AND BOTTOM
TOF	TOP OF FOUNDATION
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W/	WITH
W/0	WITHOUT
WP	WORKING POINT
WT	WEIGHT
YD	YARD



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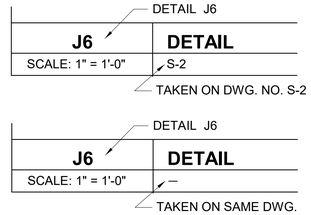

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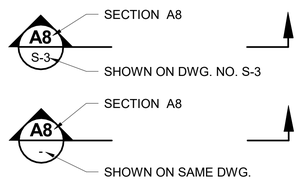

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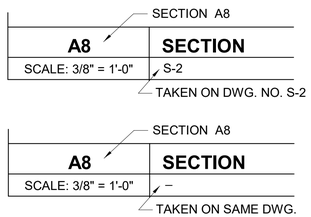

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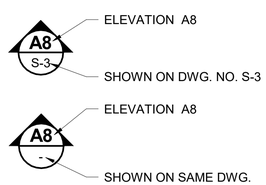


ELEVATION CALLOUT

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. 'SP CITY ENGINEER

	DESIGN GROUP*	LIC. NO.: S-6573	DATE:
ENGINEER:	MANAN BHALJA, S.E.		8/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.		5/17/2022
DRAWN BY:	EMIL YOUSSEF		5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.		5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DESIGN DATA, DEPUTY INSPECTION AND ABBREVIATIONS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S003

SHEET 50 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

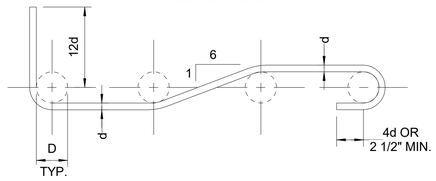
REVISION DATES: (DESIGN STAGE ONLY)

TTLB TEMPLATE REVISION DATE: 4/2016

NOTES:
1. ALL BENDS SHALL BE MADE COLD.
2. #14 & #18 BARS SHALL BE BEND-TESTED AT LAB AND APPROVED PRIOR TO BENDING.
3. FOR SIZE AND SPACING OF ALL TIES AND STIRRUPS, REFER TO SCHEDULE AND/OR DETAILS, TYP.

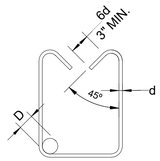
D = 4 db FOR #3 - #5
D = 6 db FOR #6 - #8
D = 8 db FOR #9 - #11

d = BAR DIAMETER
D = BENT DIAMETER

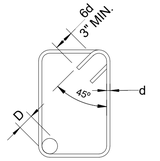


BAR DIAMETER DISTANCES IN INCHES									
BAR NO.	#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
3db=	1 1/8	1 1/2	1 7/8	2 1/4	2 5/8	3	3 3/8	3 3/4	4 1/4
4db=	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2
6db=	2 1/4	3	3 3/4	4 1/2	5 1/4	6	6 3/4	7 5/8	8 1/2
8db=	3	4	5	6	7	8	9	10 1/8	11 1/4
12db=	4 1/2	6	7 1/2	9	10 1/2	12	13 1/2	15 1/4	16 7/8

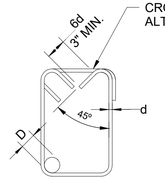
HOOPS AND TIE BEND DETAIL TABLE									
BAR NO.	#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
90º TEXT	6	6	8	10	12	12	14	16	18
135º TEXT	4	4	4	6	6	6	8	8	10
180º TEXT	4	4	4	4	4	4	6	6	6



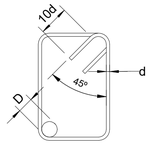
STD. BEAM STIRRUP



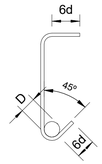
BEAM HOOP STIRRUP BENDS (WHERE OCCURS)



BEAM HOOP - ALTERNATE (WHERE OCCURS)



COLUMN TIE



CROSS TIE

F1 TYP STIRRUP, HOOP AND TIE BENDS DETAILS

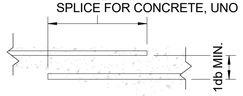
SCALE: 1" = 1'-0"

LIGHT WEIGHT CONCRETE LAP SPLICE LENGTH (in.)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
CLASS A	2000	40	54	67	80	117	134
	3000	33	44	55	66	96	110
	3250	32	42	53	63	92	105
	4000	28	38	47	57	83	95
	5000	25	34	42	51	74	85
	6000	23	31	39	46	68	77
CLASS B	2000	52	70	87	105	153	174
	3000	43	57	71	85	125	142
	3250	41	55	68	82	120	137
	4000	37	49	62	74	108	123
	5000	33	44	55	66	97	110
	6000	30	40	50	60	88	101

NORMAL WEIGHT CONCRETE LAP SPLICE LENGTH (in.)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
CLASS A	2000	30	40	50	60	88	101
	3000	25	33	41	49	72	82
	3250	24	32	39	47	69	79
	4000	21	28	36	43	62	71
	4500	20	27	34	40	59	67
	5000	19	25	32	38	56	64
	6000	17	23	29	35	51	58
CLASS B	2000	39	52	65	78	114	131
	3000	32	43	53	64	93	107
	3250	31	41	51	62	90	103
	4000	28	37	46	55	81	92
	4500	26	35	44	52	76	87
	5000	25	33	41	50	72	83
	6000	23	30	38	45	66	76

NOTES:
1. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.3 FOR TOP BARS SPLICE. TOP BAR REFERS TO HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE PLACED BELOW REINFORCING BAR DURING POUR.
2. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.25 FOR SPLICES OF CHORD BARS, VERTICAL BOUNDARY REINFORCING SPLICES, AND DRAG BAR SPLICE.
3. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED IN TENSION, SPLICE LENGTH SHALL BE THE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR AND SPLICE LENGTH OF THE SMALLER BAR.

USE CLASS B
SPLICE FOR CONCRETE, UNO



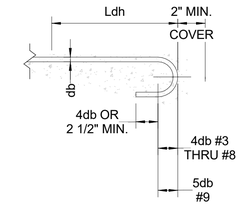
A1 TYPICAL REINFORCEMENT BAR LAP SPLICE LENGTH CONCRETE

NOT TO SCALE

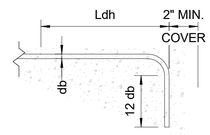
LIGHT WEIGHT CONCRETE MIN LENGTH FOR Ldh STANDARD HOOKS								
BAR NO.		#3	#4	#5	#6	#7	#8	#9
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8
GRADE (ksi)		60	60	60	60	60	60	60
GENERAL USE	2500	8	11	14	17	20	22	25
	3000	8	10	13	15	18	20	23
	3250	7	10	12	15	17	20	22
	4000	7	9	11	13	15	18	20
SPECIAL CONFINMENT HOOK IS WITHIN TIES OR STIRRUPS <3db	2500	7	9	11	13	15	18	20
	3000	6	8	10	12	14	16	18
	3250	6	8	10	12	14	16	18
	4000	6	7	9	11	12	14	16

NORMAL WEIGHT CONCRETE MIN LENGTH FOR Ldh STANDARD HOOKS								
BAR NO.		#3	#4	#5	#6	#7	#8	#9
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8
GRADE (ksi)		60	60	60	60	60	60	60
GENERAL USE	2500	6	8	11	13	15	17	19
	3000	6	8	10	12	13	15	17
	3250	6	7	9	11	13	15	17
	4000	6	7	8	10	12	13	15
SPECIAL CONFINMENT HOOK IS WITHIN TIES OR STIRRUPS <3db	2500	6	7	8	10	12	13	15
	3000	6	6	8	9	11	12	14
	3250	6	6	7	9	10	12	13
	4000	6	6	7	8	9	11	12

NOTES:
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE TO THE OPPOSITE FACE WITH A MINIMUM 2" END COVER AND EMBEDMENT NOT LESS THAN THE SCHEDULE.
2. SIDE COVER SHALL BE 2 1/2" MINIMUM.
3. L dh SHALL BE INCREASED 33% (L dh X 1.33) FOR DOWELS EMBEDED IN LIGHT WEIGHT CONCRETE.



STANDARD 180° HOOK



STANDARD 90° HOOK

F9 MIN EMBEDMENT LENGTH Ldh FOR STANDARD HOOKS

NOT TO SCALE

LIGHT WEIGHT CONCRETE DEVELOPMENT LENGTH (in)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
f'c (psi)	2000	40	54	67	80	117	134
	3000	33	44	55	66	96	110
	3250	32	42	53	63	92	105
	4000	28	38	47	57	83	95
	5000	25	34	42	51	74	85
	6000	23	31	39	46	68	77

NORMAL WEIGHT CONCRETE DEVELOPMENT LENGTH (in)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
f'c (psi)	2000	30	40	50	60	88	101
	3000	25	33	41	49	72	82
	3250	24	32	39	47	69	79
	4000	21	28	36	43	62	71
	4500	20	27	34	40	59	67
	5000	19	25	32	38	56	64
	6000	17	23	29	35	51	58

CONCRETE DEVELOPMENT LENGTH NOTES:
1. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.3 FOR TOP BAR CONDITION. 'TOP BAR' REFERS TO HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE PLACED BELOW REINFORCING BAR.
2. ALL TABULATED VALUES ARE FOR UNCOATED BARS.
3. WHERE REQUIRED DEVELOPMENT CANNOT BE ACHIEVED WITH STRAIGHT BARS, PROVIDE 180 OR 90 DEGREE HOOKS WITH ADEQUATE HOOKED BAR EMBEDMENT. REFER TO STANDARD HOOK SCHEDULE.



MASONRY DEVELOPMENT LENGTH										
BAR NO.		#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
GRADE (ksi)		60	60	60	60	60	60	60	60	60
f'm (psi)	1000	14	26	40	74	100	148	190	240	296
	1500	12	22	32	60	82	122	154	196	242
	2000	10	18	28	52	70	106	134	170	210
	2500	10	16	26	46	64	94	120	152	188
	3000	10	16	24	42	58	86	110	138	170

A9 TYPICAL REBAR DEVELOPMENT LENGTH

NOT TO SCALE

BID SET
Date: May 17, 2022

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TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
OFFICIAL RECORD

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALA ★ No. S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

TED ALLEN, P.E. / SP CITY ENGINEER
DESIGN GROUP
ENGINEER: MANAN BHALJA, S.E. LIC. NO. S-6573 DATE: 8/17/2022
DESIGNED BY: MANAN BHALJA, S.E., QUYNH HO, P.E. 5/17/2022
DRAWN BY: EMIL YOUSSEF 5/17/2022
CHECKED BY: MEL AGAGAS S.E., MOURAD AZIZ, P.E. 5/17/2022
APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.

VERTICAL CONTROL:
HORIZONTAL CONTROL:

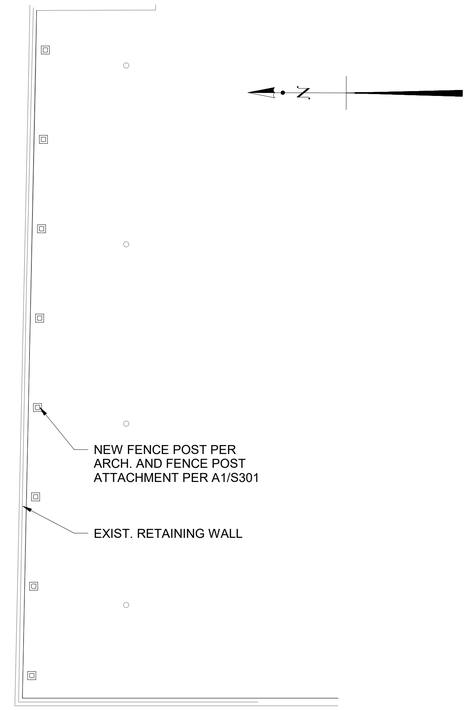
SHEET TITLE: TYPICAL DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. S004
SHEET 51 OF SHEETS 96

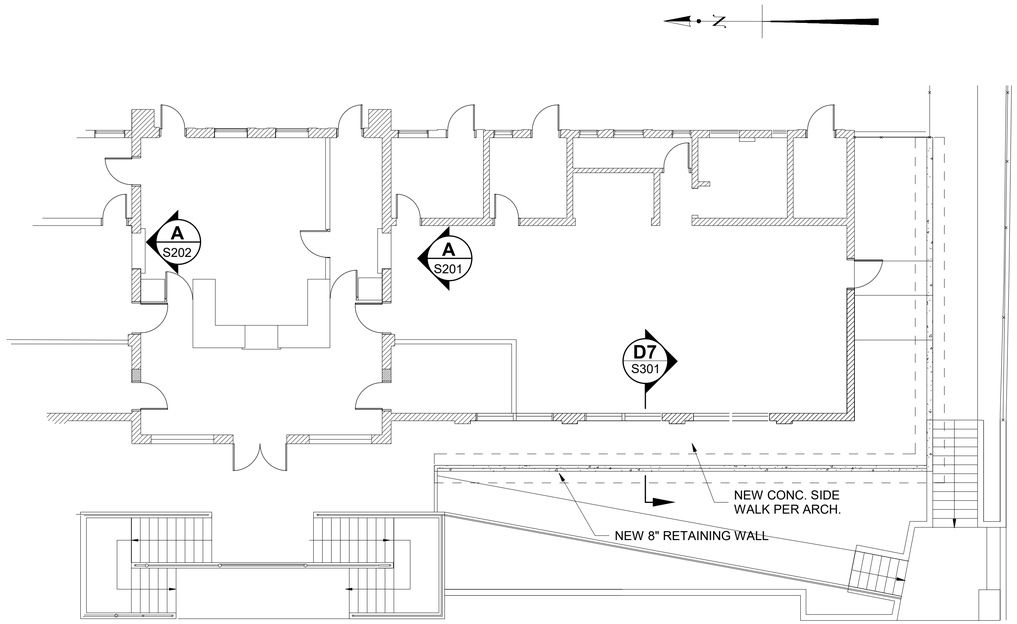
PLOTTED:8/10/2022 11:02:33 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



PARTIAL PLAN - SITE FENCE

1/8" = 1'-0"



PARTIAL PLAN - BUILDING FIRST FLOOR

1/8" = 1'-0"

PLAN AND FOUNDATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS & FENCE POSTS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. TOP OF FOOTING SHALL BE AT LEAST (-1'-0") MIN. BELOW FINISHED GRADE ELEVATION. REFER TO THE GRADING PLAN FOR FINISHED GRADE ELEVATION.
4. EXCAVATION SUPPORTS AND TEMPORARY SHORING OF EXISTING BUILDING ELEMENTS, ADJACENT STRUCTURES AND SOIL DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIR EXISTING SITEWORK DAMAGED BY EXCAVATIONS AS REQUIRED.
5. LOCATIONS OF STEPPED FOOTING SHOWN ON PLAN ARE APPROXIMATE. COORDINATE FINAL LOCATION OF STEPPED FOOTING WITH FINISHED GRADE PER GRADING PLAN AND MAX. WALL HEIGHT PER DETAIL D12/S301.
6. FOR RAILING INFORMATION, SEE LANDSCAPE DRAWINGS

LEGEND

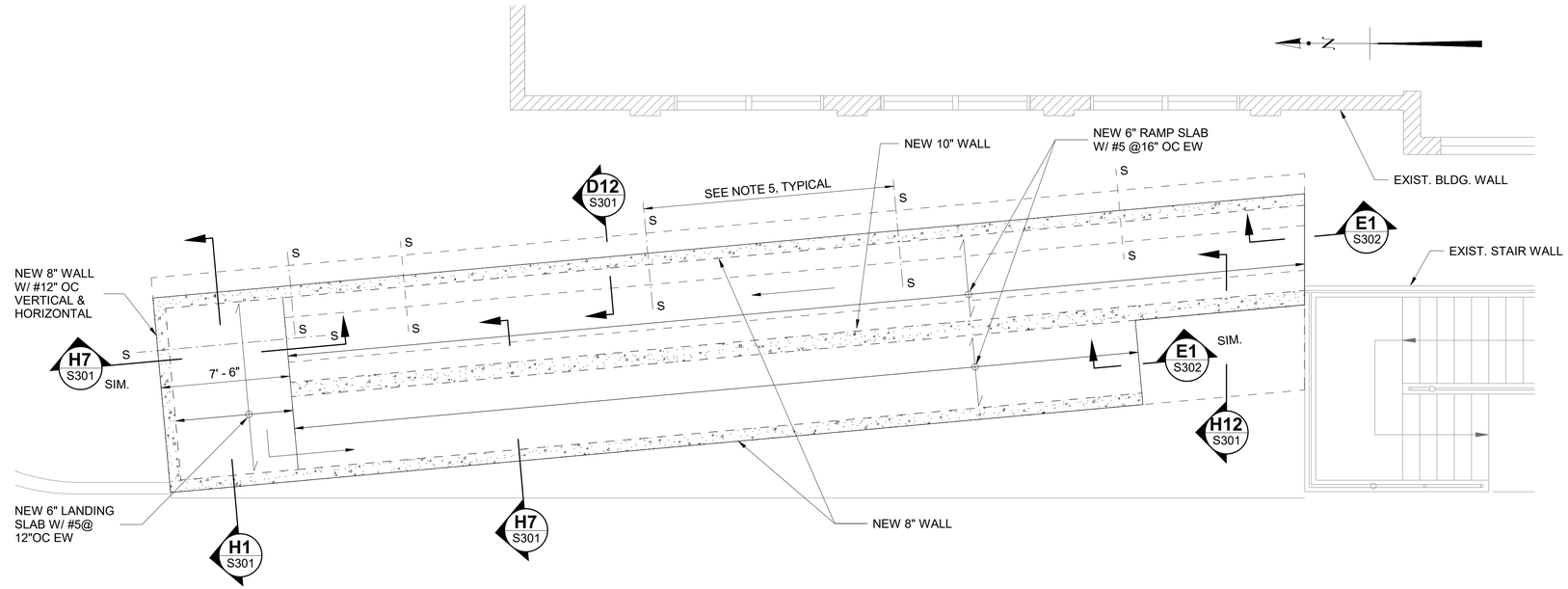
NEW CONCRETE WALL

WALL FOUNDATION BELOW

INDICATES SPAN OF SLAB

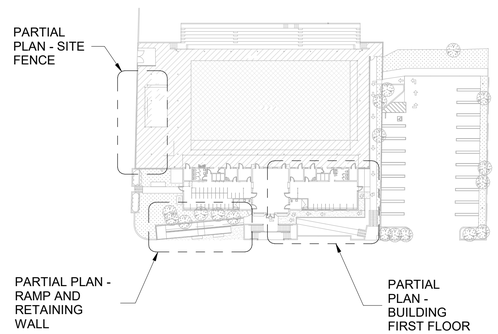
INDICATES EXTENT OF SLAB AND SLAB REINF. PLACEMENT

S ---·---·--- S STEPPED FOOTING PER D1/S301



PARTIAL PLAN - RAMP AND RETAINING WALL

1/4" = 1'-0"



KEY PLAN

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING OFFICIAL RECORD

BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

		DATE:
ENGINEER:	MANAN BHALJA, S.E.	LIC. NO. S-6573
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PARTIAL PLANS - RETAINING WALL, BUILDING FIRST FLOOR AND SITE FENCE

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

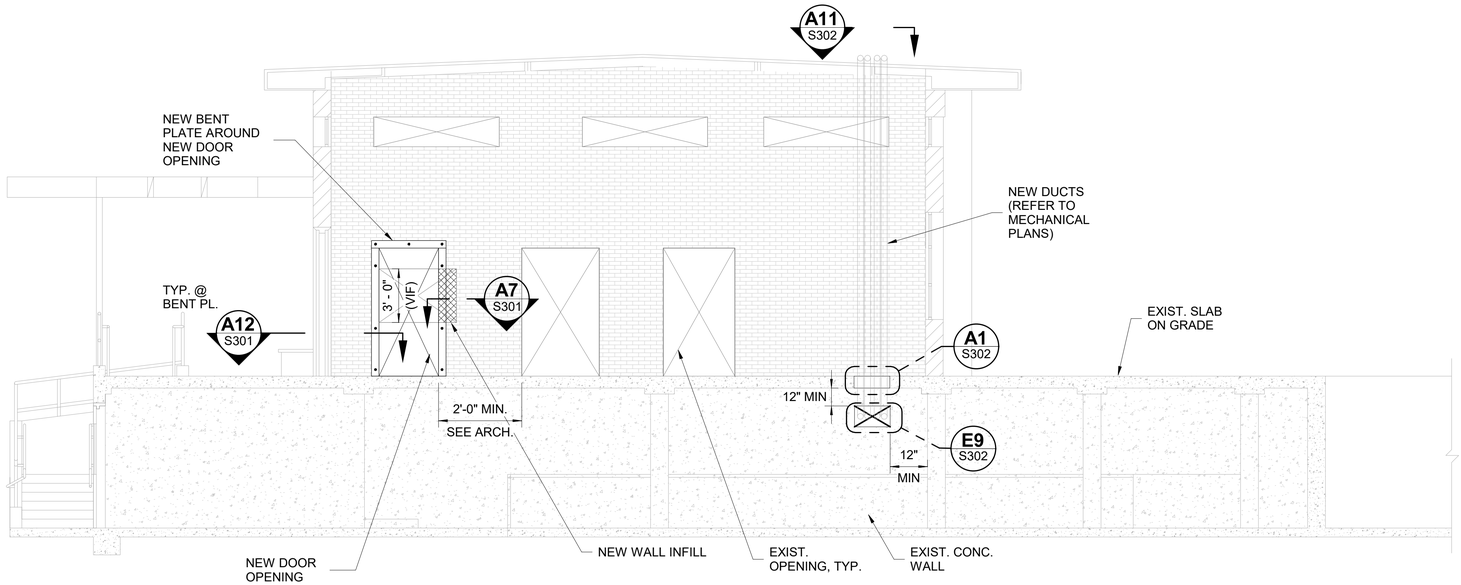
DRAWING NO. S101

SHEET 52 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES: (DESIGN STAGE ONLY)



A INTERIOR WALL ELEVATION LOOKING SOUTH

1/4" = 1'-0"

ELEVATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL NOTIFY CITY ENGINEER PRIOR TO CONSTRUCTION IF THERE IS DETERIORATION OR VOID IN EXISTING BRICK WALL.

LEGEND

EXIST. 10-1/2" BRICK WALL

NEW WALL INFILL

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

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BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
STRUCTURAL
STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS

CITY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E., 'SP CITY ENGINEER — DATE: 8/17/2022

DESIGN GROUP — LIC. NO. S-6573

ENGINEER: MANAN BHALJA, S.E. — LIC. NO. S-6573 — 5/17/2022

DESIGNED BY: MANAN BHALJA, S.E., QUYNH HO, P.E. — 5/17/2022

DRAWN BY: EMIL YOUSSEF — 5/17/2022

CHECKED BY: MEL AGAGAS S.E., MOURAD AZIZ, P.E. — 5/17/2022

APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.

VERTICAL CONTROL:

HORIZONTAL CONTROL:

SHEET TITLE: ELEVATION

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

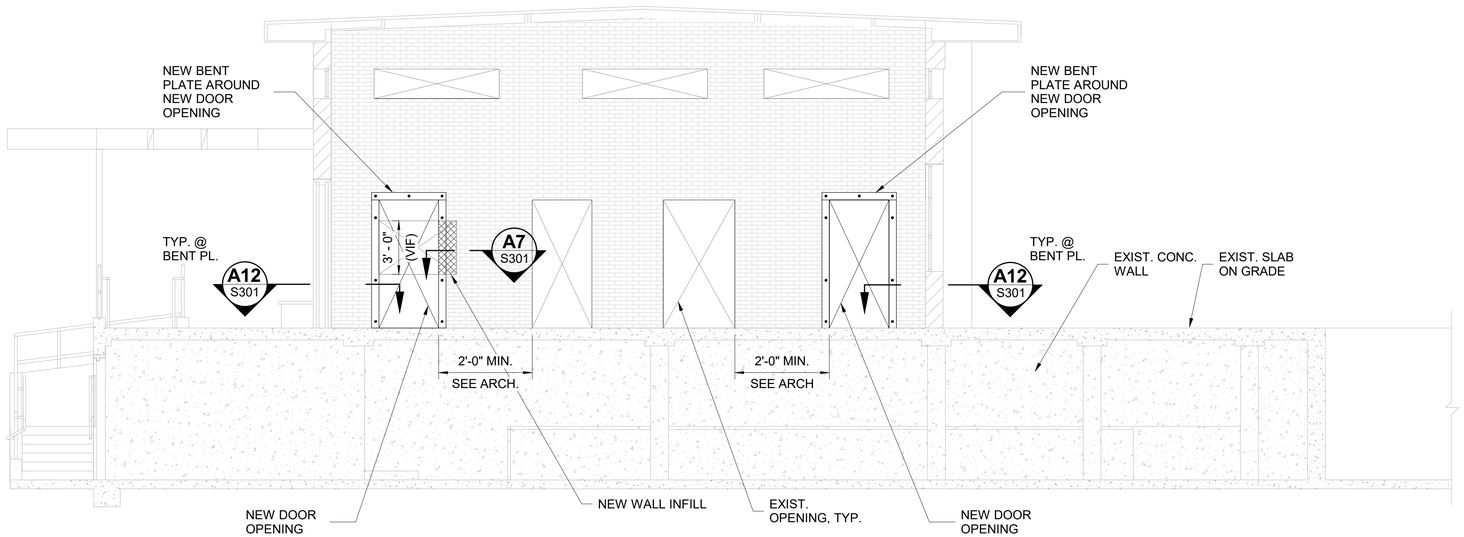
WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S201

SHEET 53 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM



A INTERIOR WALL ELEVATION LOOKING NORTH

1/4" = 1'-0"

ELEVATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL NOTIFY CITY ENGINEER PRIOR TO CONSTRUCTION IF THERE IS DETERIORATION OR VOID IN EXISTING BRICK WALL.

LEGEND

EXIST. 10-1/2" BRICK WALL

NEW WALL INFILL

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

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REVISION DATES: (DESIGN STAGE ONLY)

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ENGINEERING
CITY OF LOS ANGELES

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BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS

CITY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER DATE: 8/17/2022

DESIGN GROUP		LIC. NO. S-6573
ENGINEER:	MANAN BHALJA, S.E.	5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ELEVATION

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S202

SHEET 54 OF SHEETS 96

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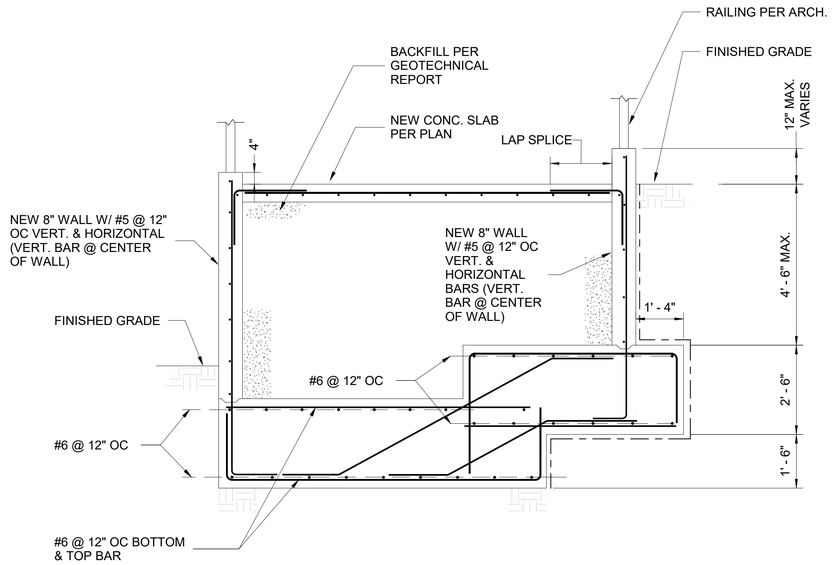
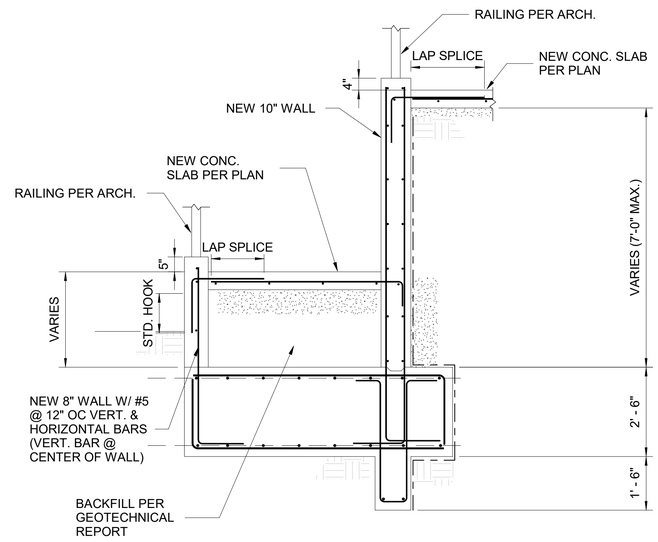


NOTE:
FOR INFORMATION NOT SHOWN, SEE DETAIL H12/S301 AND D1/S301

H1 RAMP RETAINING WALL AT LANDING DETAIL

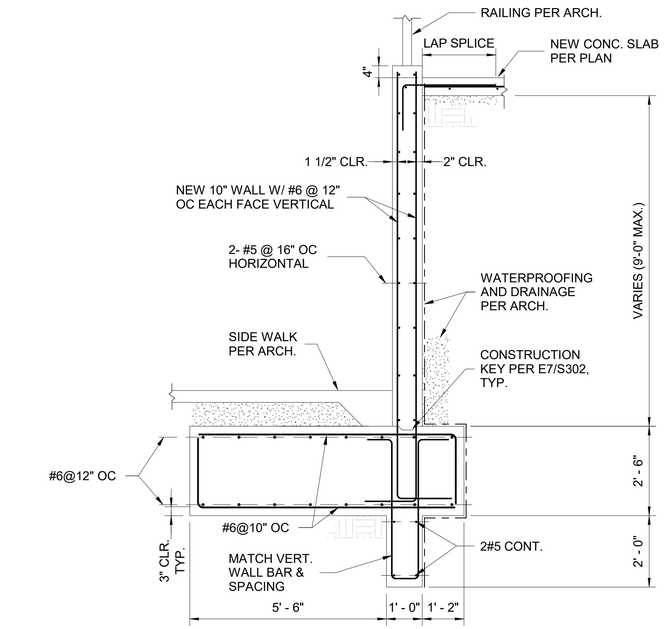
NOT TO SCALE | 3/ S101



NOTE:
FOR INFORMATION NOT SHOWN, SEE DETAIL H12/S301

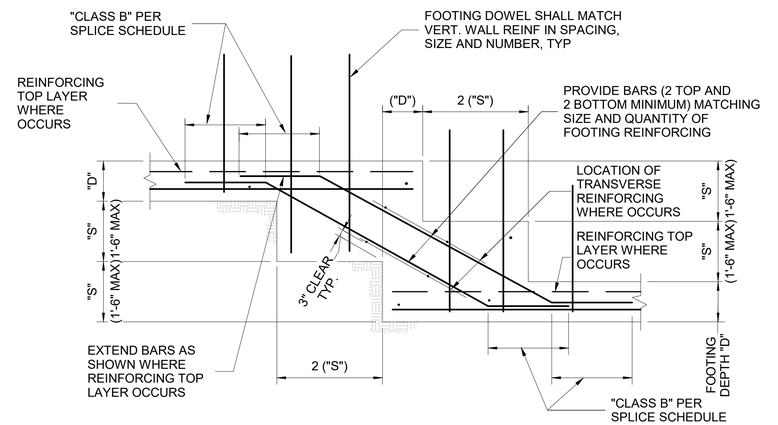
H7 RAMP RETAINING WALL DETAIL

NOT TO SCALE | 3/ S101



H12 RAMP RETAINING WALL DETAIL

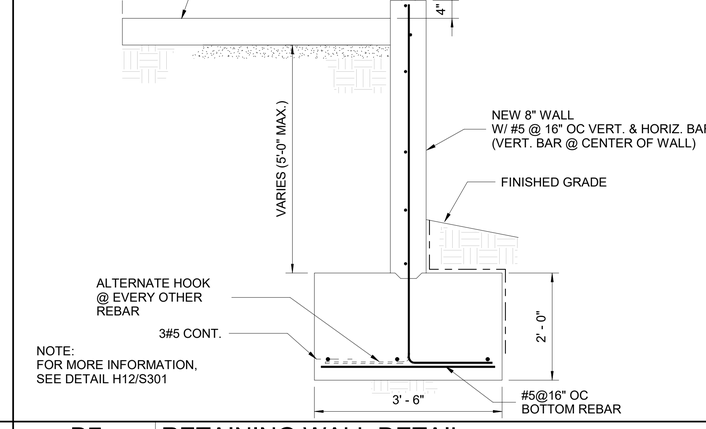
NOT TO SCALE | 3/ S101



STEEP SLOPE CONDITION

D1 STEP FOOTING DETAIL

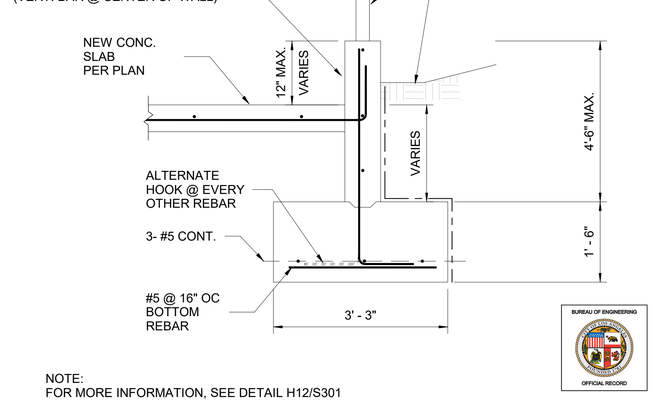
NOT TO SCALE



NOTE:
FOR MORE INFORMATION, SEE DETAIL H12/S301

D7 RETAINING WALL DETAIL

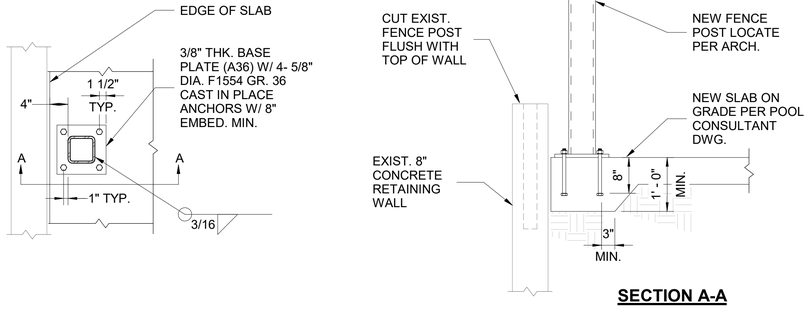
NOT TO SCALE | 2/ S101



NOTE:
FOR MORE INFORMATION, SEE DETAIL H12/S301

D12 RETAINING WALL DETAIL

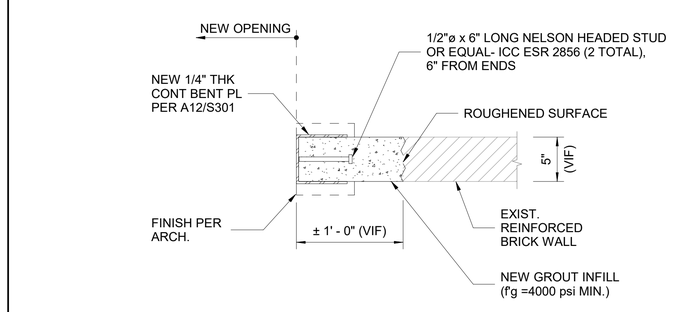
NOT TO SCALE | 3/ S101



SECTION A-A

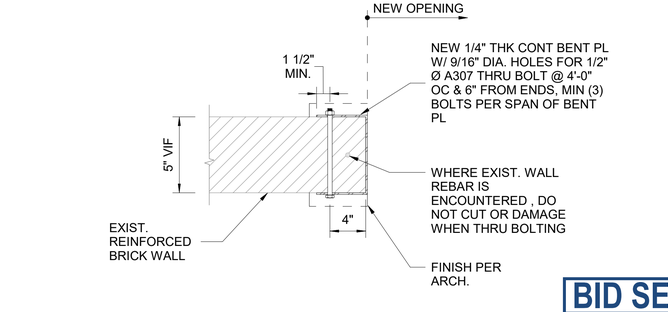
A1 FENCE POST ATTACHMENT

NOT TO SCALE



A7 BENT PLATE AT INFILL WALL

NOT TO SCALE | A/ S201



BID SET
Date: May 17, 2022

A12 BENT PLATE AT EXIST. BRICK WALL

NOT TO SCALE | A/ S201

BUREAU OF ENGINEERING
OFFICIAL RECORD

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
STRUCTURAL
STATE OF CALIFORNIA

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

ENGINEER:	MANAN BHALJA, S.E.	LIC. NO.: S-6573	DATE: 8/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.		5/17/2022
DRAWN BY:	EMIL YOUSSEF		5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.		5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		5/17/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FOUNDATION AND WALL DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

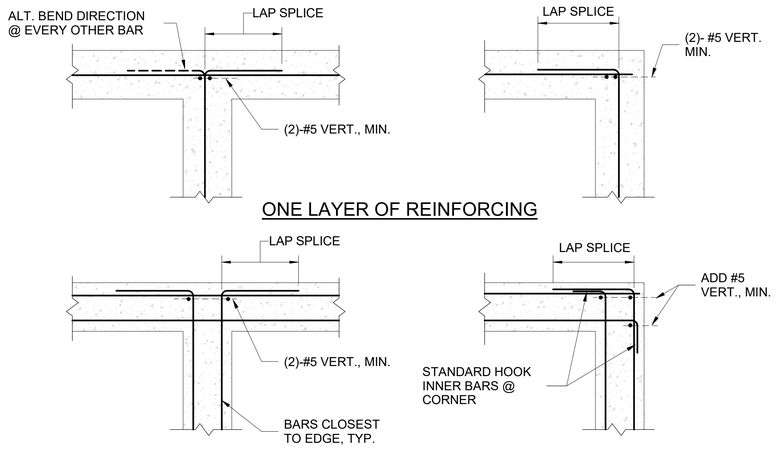
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. S301
SHEET 55 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

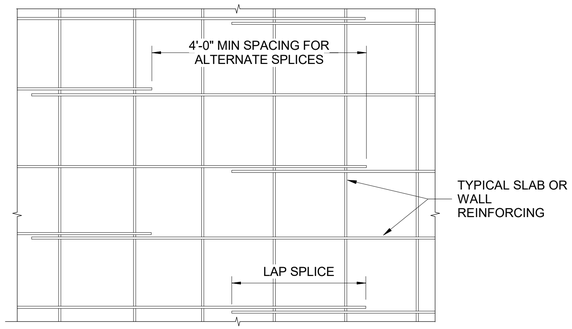


NOTES:

1. STEP GRADE BEAMS AND CONTINUOUS FOOTING AS REQUIRED TO MATCH LOWER B.O.C. ELEVATION.
2. 3" MIN COVER FOR REINFORCEMENT EXPOSED TO SOIL.

H1 REINFORCING AT WALL & FOOTING INTERSECTIONS

NOT TO SCALE



NOTE:

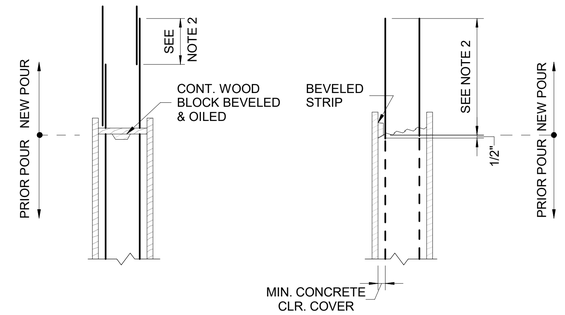
1. LAP SPLICE CLEAR SPACING OCCUR BOTH DIRECTIONS.
2. SPLICES IN HORIZONTAL REINFORCING SHALL BE STAGGERED. SPLICES IN TWO CURTAINS WHERE USED SHALL NOT OCCUR IN THE SAME LOCATION.
3. SEE TYPICAL CONCRETE WALL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL REQUIREMENT.

H7 TYP LAP SPLICE REINFORCING DETAIL

NOT TO SCALE

NOTES:

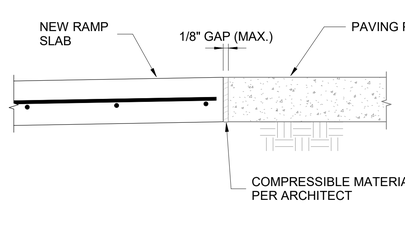
1. ALL JOINTS SHALL BE CLEANED IMMEDIATLEY PRIOR TO THE POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE & SPACING AS BEYOND THE JOINT. ALL JOINTS SHALL BE PREPARED TO EXPOSE AGGREGATE 1/4".
2. REBAR LAP SPLICE PER SCHEDULE OR PLAN/ ELEVATION. SEE PLAN/ ELEVATION FOR COUPLER LOCATIONS (WHERE OCCURS.)



VERTICAL JOINT HORIZONTAL JOINT

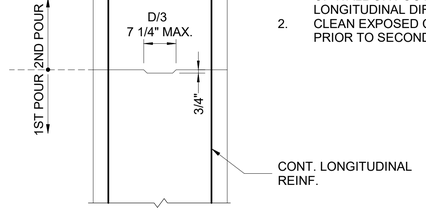
H12 CONCRETE WALL CONSTRUCTION JOINTS

NOT TO SCALE



E1 EDGE OF SLAB DETAIL

NOT TO SCALE 3/ S101

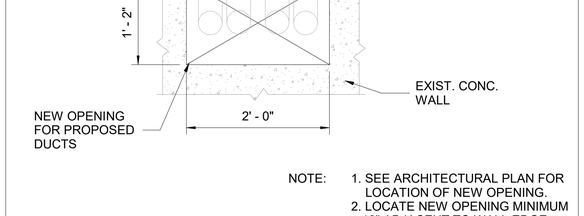


NOTES:

1. SECTIONS SHOWN ARE AT CENTER OF WALL OR FOOTING IN LONGITUDINAL DIRECTION.
2. CLEAN EXPOSED CONC. SURFACE PRIOR TO SECOND POUR.

E5 TYP. CONST. KEY DETAIL

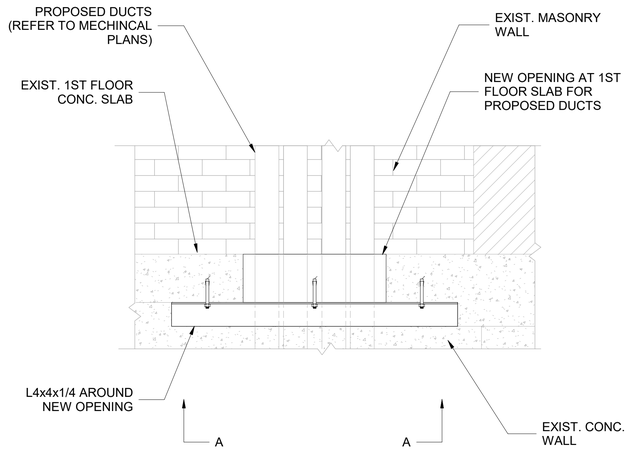
NOT TO SCALE

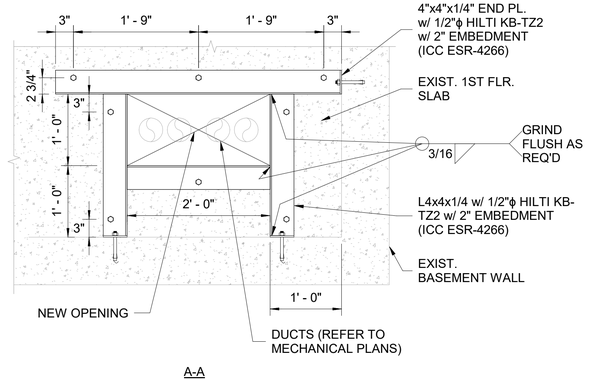


NOTE: 1. SEE ARCHITECTURAL PLAN FOR LOCATION OF NEW OPENING.
2. LOCATE NEW OPENING MINIMUM 12" ADJACENT TO WALL EDGE.

E9 NEW BASEMENT WALL OPENING

NOT TO SCALE A/ S201

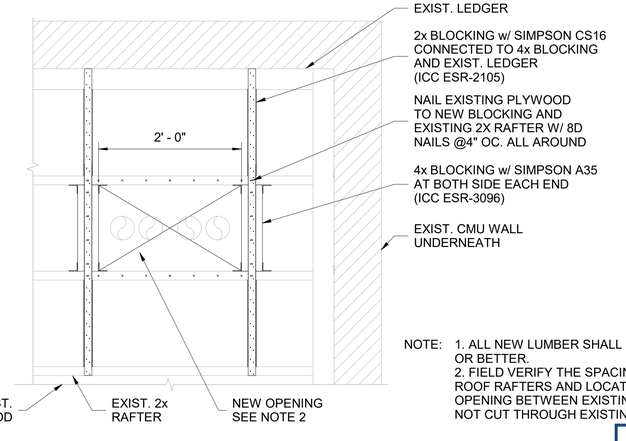




A-A

A1 WALL OPENING AT 1ST FLR SLAB

NOT TO SCALE A/ S201



NOTE: 1. ALL NEW LUMBER SHALL BE DOUG FIR # 1 OR BETTER.
2. FIELD VERIFY THE SPACING OF EXISTING ROOF RAFTERS AND LOCATE THE NEW OPENING BETWEEN EXISTING RAFTERS. DO NOT CUT THROUGH EXISTING RAFTERS.

BID SET
Date: May 17, 2022

A11 NEW OPENING AT ROOF

NOT TO SCALE A/ S201

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
CIVIL
STRUCTURAL
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

		DATE:
ENGINEER:	MANAN BHALJA, S.E.	8/17/2022
LIC. NO.: S-6573		8/17/2022
DESIGN GROUP		5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: CONCRETE DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S302

SHEET 56 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM

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TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

LEGEND			
SINGLE LINE	DOUBLE LINE	ABBREV	DESCRIPTION
R	R		DUCT RISE IN DIRECTION OF AIR FLOW
D	D		DUCT DROP IN DIRECTION OF AIR FLOW
			DUCT WITH SOUND LINING
			BRANCH TAKE OFF WITH 45° BOOT
		T.V.	TURNING VANES
			DUCT SECTION - SUPPLY
			DUCT SECTION - RETURN
			DUCT SECTION - EXHAUST
			RECTANGULAR TO ROUND TRANSITION
	D/L	D.L.	DOOR LOUVER
	U/C	U.C.	UNDERCUT DOOR
	T		ROOM THERMOSTAT
	3P		0-4 HR BY-PASS SWITCH
		OSA	OUTSIDE AIR
		S.A.	SUPPLY AIR
		R.A.	RETURN AIR
		E.A.	EXHAUST AIR
		MD	MOTORIZED DAMPER
		FD	AUTO. FIRE DAMPER
		VD	MANUAL VOLUME DAMPER
		CD	CEILING DIFFUSER
		SWR	SUPPLY WALL REGISTER
		RWR	RETURN WALL REGISTER
		ER	EXHAUST AIR REGISTER
		CR	CEILING RETURN
		C.S.F.D.	COMBINATION SMOKE/FIRE DAMPER
		B.D.	BAROMETRIC DAMPER
		F.C.	FLEXIBLE CONNECTION PIPE
	DS		DUCT SMOKE DETECTOR
	AS		AREA SMOKE DETECTOR (AT CEILING)
		G.V.	GATE VALVE
		C.V.	CHECK VALVE
		GL.V.	GLOBE VALVE
		B.F.V.	BUTTERFLY VALVE
		B.V.	BALL VALVE
		B.C.	BALANCING COCK
		STR.	STRAINER
		U.	UNION
		TH.	THERMOMETER
		AV.	AIR VENT VALVE
		P.G.	PRESSURE GUAGE
		P.C.	PET COCK
			SIGHT GLASS
			CALIBRATED BALANCING VALVE
CD			CONDENSATE DRAIN
HWS		H.W.S.	HOT WATER SUPPLY
HWR		H.W.R.	HOT WATER RETURN
		UTR	UP THRU ROOF
		POC	POINT OF CONNECTION
		POD	POINT OF DISCONNECT
			PIPING TO BE REMOVED
			EQUIP. TO BE REMOVED OR RELOCATED
		AP	ACCESS PANEL
			EXISTING CEILING DIFFUSER
			EXISTING RETURN REGISTER
		CD	CEILING DIFFUSER
		RR	CEILING RETURN REGISTER
		ER	CEILING EXHAUST REGISTER
		LSD	LINEAR SLOT DIFFUSER (SUPPLY)
		LSD	LINEAR SLOT DIFFUSER (RETURN)
		SAC	SUPPLY AIR CHAMBER
		RAC	RETURN AIR CHAMBER
	VAV	VAV	VARIABLE AIR VOLUME BOX
			AIR EXTRACTOR
			GRADUAL DUCT RISE/DROP, INDIRECTION OF FLOW
		TG	TRANSFER GRILLE
			TRIPLE DUTY VALVE
			NORMALLY CLOSED VALVE (ANY TYPE)
			VENTORY
			RELIEF VALVE
			3-WAY CONTROL VALVE
			2-WAY CONTROL VALVE
		PRV	PRESSURE REDUCING VALVE
CS		CS	CONDENSER WATER SUPPLY
CR		CR	CONDENSER WATER RETURN
CHWR		CHWR	CHILLED WATER RETURN

EXHAUST FAN SCHEDULE

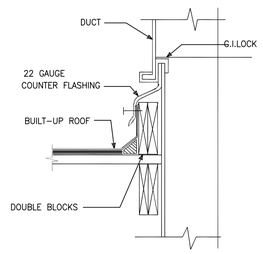
SYMBOL	LOCATION	SERVICE	MANUFACTURER	MODEL NO.	TYPE	CFM	FAN RPM	S.P. (IN.)	AMPS@60 HZ	WATTS	REMARKS
EF 1, EF 2, EF 3	ABOVE CEILING	GN RESTROOMS, STAFF RESTROOMS	GREENHECK	SP-B150	CEILING MOUNTED	152	1050	0.375	1.7	128	PROVIDE WITH BACKDRAFT DAMPER. PROVIDE DISCONNECT SWITCH WHICH INTERLOCK WITH LIGHT.

INFRARED RADIANT HEATER

SYMBOL	SERVICE	MANUFACTURER	MODEL NO.	LENGTH	WEIGHT (IBS)	GAS TYPE	INPUT(BTU/HR) HIGH FIRE	INPUT(BTU/HR) LOW FIRE	RECOMMENDED MOUNTING HEIGHT	ELECTRICAL DATA	REMARKS
IH 1, IH 2, IH 3, IH 4	MEN & WOMEN'S DRESSING ROOM	RE-VERBER-RAY	QTD2-60N	112"	140	NATURAL	60,000	40,000	8' TO 12'	120V/1 Ph/60 Hz	INSTALL ACCORDING TO MANUFACTURE RECOMMENDATION. VENTING MAY UTILIZE STANDARD B CAP AND VENT TERMINAL MUST EXTEND A MIN. 2' ABOVE THE ROOF. PROVIDE AND INSTALL THERMOSTAT FOR EACH DRESSING ROOM

SPLIT HEAT PUMP SCHEDULE

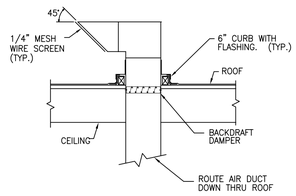
UNIT NO.	MAKE	MODEL	SERVICES	NOMINAL TON	SEER	EER	COOLING CAP BTU/HR	COOLING POWER INPUT(KW)	HEATING CAP BTU/HR	HEATING POWER INPUT(KW)	COMPRESSOR TYPE	COMPRESSOR LRA	COMPRESSOR RLA	REFRIDG. CONNECT SIZE LIQUID	REFRIDG. CONNECT SIZE VAPOR	MIN. CKT. AMPS	MAX. OVERCURRENT PROTECTION	NOMINAL V-PH-HZ	OPER. WT. LBS.	REMARKS
HP-1	MITSUBISHI	PUMY-P48NKMU1	FC-1 & FC-2	4	20.2	12.6	48,000	3.690	54,000	4.085	SCROLL HERMETIC COMPR.X1	–	43.6	3/8"	5/8"	31	44	208-1-60	269	PROVIDE 6" HIGH CONCRETE PAD. MOUNT UNIT ON NEOPRENE PAD & ANCHOR TO CONCRETE PAD WITH SPRING ISOLATOR. R-410 REFRIGERANT
FC-1	MITSUBISHI	PKFY-P24NKMU-E2	OFFICE	2		–	24,000	0.07	27,000	0.07	–	–	–	3/8"	5/8"	0.63	15	208-1-60	46	AUTOMATIC FAN SPEED CONTROL. WALL MOUNTED WIRED REMOTE CONTROLLER MODEL" MITSUBISHI PAR-U01MEDU-K"
FC-2	MITSUBISHI	PKFY-P24NKMU-E2	OFFICE	2		–	24,000	0.07	27,000	0.07	–	–	–	3/8"	5/8"	0.63	15	208-1-60	46	



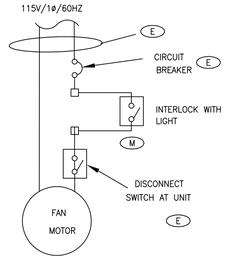
NOTES FOR THIS DETAIL:

1. CUT ROOFING MATERIALS AT CENTER IN ORDER TO LEAVE ENOUGH ROOFING MATERIAL TO RUN UP SIDE OF CURB. USE SIMILAR ROOFING MATERIAL TO FILL IN THE CORNERS. OVERLAP THE EXISTING ROOFING A MINIMUM OF 2 INCHES. SET THE CURB IN MASTIC. HOT MOP THE BOTTOM OF ALL THE ROOFING MATERIAL.
2. PROVIDE 2x PRESSURE-TREATED WOOD NAILER, MINIMUM 8" HIGH. TAPER TO PROVIDE LEVEL BASE FOR HOOD.
3. FRAMING WORK BELOW DECK PROVIDED UNDER SECTION

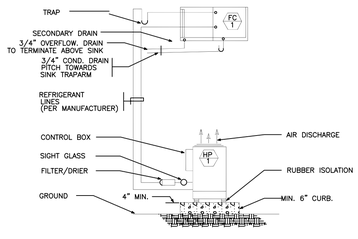
A1 / M100 DUCT-THRU-ROOF DETAIL
NOT TO SCALE



A2 / M100 DUCT TERMINATION DETAIL
NOT TO SCALE



A3 / M100 WIRING DIAGRAM FOR EF-1
NOT TO SCALE



A4 / M100 SPLIT HEAT PUMP INSTALATION
NOT TO SCALE

GENERAL NOTES:

1. ALL DUCTWORK, INSULATION, EQUIPMENT AND INSTALLATION SHALL CONFORM TO CALIFORNIA ADMINIS. CODE 24, U.M.C., CITY OF LOS ANGELES MECHANICAL CODE, AND/OR THE CALIFORNIA MECHANICAL CODE.
2. DUCTWORK SHALL BE GALVANIZED SHEET METAL OR APPROVED EQUAL.
3. MAINTENANCE LABEL SHALL BE AFFIXED TO MECHANICAL EQUIPMENT AND MAINTENANCE MANUALS SHALL BE PROVIDED FOR THE CITY'S USE AS INDICATED IN THE SPECIFICATIONS. AND CALIFORNIA ENERGY STANDARDS T-20-1517.
4. ALL DUCTWORK, EQUIPMENT, AND SMOKE DUCT DETECTORS EXPOSED TO THE WEATHER SHALL BE MADE WEATHERPROOFED.
5. MECHANICAL CONTRACTOR SHALL PERFORM INSTALLATION, START-UP AND TEST OF ALL AIR CONDITIONING UNITS.
6. FINAL LOCATION OF CEILING DIFFUSERS AND REGISTERS, WILL BE COORDINATED IN THE FIELD.
7. ALL SUPPLY AND RETURN AIR DUCTWORK IN UNCONDITIONED SPACE SHALL HAVE 2-INCH THERMAL INSULATION.
8. PROVIDE FIRE DAMPERS AT PENETRATIONS OF FIRE RATED WALLS, CEILINGS, ETC., AS INDICATED ON FLOOR PLANS AND AS REQUIRED BY CODE.
9. ALL LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT. WHEN WIRING IS EXPOSED TO THE WEATHER, USE CONDUIT APPROVED FOR EXTERIOR USE.
10. CONTRACTOR SHALL VISIT JOBSITE AND VERIFY ALL CONDITIONS, LOCATIONS AND DIMENSIONS BEFORE SUBMITTING THE BID AND STARTING WORK.
11. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLING ANY MATERIAL OR EQUIPMENT.
12. ALL WORK SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES, AND REGULATIONS OF GOVERNING AGENCIES AND SHALL COMPLY WITH THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES.
13. EXACT LOCATION OF HVAC SUPPLY AND RETURN REGISTERS, AND DUCT SHALL BE COORDINATED IN THE FIELD BY THE CONTRACTOR. PROVIDE NECESSARY ADJUSTMENTS, OFFSETS, FITTINGS, TRANSITIONS TO MISS BEAMS, OR OTHER STRUCTURAL MEMBERS, LIGHT FIXTURES, CONDUITS, ETC.. WITHOUT ANY ADDITIONAL COST TO THE CITY.
14. CONTRACTOR SHALL INSTALL REQUIRED HVAC COMPONENTS TO FIT ACTUAL JOBSITE CONDITIONS WITHOUT IMPAIRING THE CONCEPT OF THE DESIGN SYSTEM.
15. CONTRACTOR SHALL INCLUDE ANY DUCT OR PIPE TURNS OR ANY ADDITIONAL APPURTENANCE NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM EVEN IF THEY ARE NOT SHOWN IN THE DRAWINGS AND IN THE SPECIFICATIONS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF ROOF, WALL, AND FLOOR PENETRATIONS BY DUCTS AND PIPES. VERIFY IN FIELD.
17. FRESH AIR INTAKE SHALL BE 3 FT. BELOW OR 10 FT. AWAY FROM APPLIANCE VENTS, PLUMBING VENTS OR EXHAUST FAN OUTLETS.
18. ALL DUCT SIZES GIVEN ON THE DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS. DUCT SIZES INDICATED SHALL BE INCREASED TO COMPENSATE FOR THICKNESS OF INSULATION OR ACCOUSTICAL LINING.
19. PATCH AND REPAIR ALL EXISTING MATERIALS OR EQUIPMENT DAMAGED OR EXPOSED BY REMOVAL WORK OR BY ANY OTHER CONSTRUCTION WORK. MATCH ADJACENT SIMILAR MATERIALS IN TEXTURE AND COLOR.
20. UPON COMPLETION OF THE WORK, REMOVE ALL WASTES AND DEBRIS AND LEAVE PREMISES IN A CLEAN AND SAFE CONDITION.
21. ALL THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 10 DEGREES FARENHEIT BETWEEN FULL HEATING AND FULL COOLING AND SHALL HAVE THE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NO MORE THAN 70°F AND TERMINATING ALL COOLING AT A TEMPERATURE NOT LESS THAN 78°F. PROVIDE CLEAR LOCKING COVERS FOR ALL THERMOSTATS.
22. PERMANENT ACCESS TO EQUIPMENT SHALL BE PROVIDED.
23. ACCESS DOORS: WHERE NECESSARY IN DUCTWORK OR CASINGS, SUITABLE ACCESS DOORS AND FRAMES TO PERMIT INSPECTION, OPERATION AND MAINTENANCE OF ALL CONTROLS, MOTOR BEARINGS, OR OTHER APPARATUS CONCEALED BEHIND THE SHEET METAL WORK SHALL BE PROVIDED. ACCESS DOORS IN DUCTS MAY BE OF SINGLE PANEL CONSTRUCTION OF NOT LESS THAN NO. 18 GAUGE, GALVANIZED, AND SHALL HAVE SPONGE RUBBER GASKETS WITH HINGES AND LATCHES.
24. DUCT:
    A. HANGERS: PER UMC CHAPTER 6, TABLE 6-E.
    B. PROVIDE TURNING VANES AT ALL DIRECTION CHANGES OF AIR STREAM; THE VANES TO BE DOUBLE THICKNESS, SECURELY RIVETED OR WELDED IN FRAMES, AND TO BE OF ADEQUATE THICKNESS TO PREVENT BUCKLING OR VIBRATION DURING OPERATION OF THE SYSTEM.
    C. CONSTRUCTION SHALL BE PER U.M.C. CHAPTER 6, TABLE 6(A); DUCT SUPPORT PER TABLE 6(E).
25. PROVIDE LOCAL DISCONNECT SWITCH FOR A/C ROOFTOP PACKAGED UNIT, CONDENSING UNIT, AND EXHAUST FANS.
26. DRAWINGS, AND FOLLOW BALANCING PROCEDURES AS OUTLINED IN THE SPECIFICATIONS. THIS INCLUDES DIFFUSERS AND REGISTERS. AFTER BALANCING, THE CONTRACTOR SHALL DEMONSTRATE TO THE CITY ENGINEER/ THAT THE SYSTEM IS IN BALANCE AND SHALL SPOT-CHECK DIFFUSERS AND REGISTERS AT RANDOM TO ASCERTAIN PROPER AIR DELIVERY. SUBMIT FOUR (4) COPIES OF AIR BALANCE REPORTS TO CITY ENGINEER.
27. PROVIDE ISOLATION FOR ALL MOVING EQUIPMENT, AND BETWEEN EQUIPMENT AND DUCTWORK (I.E. ISOLATORS, FLEX CONNECTORS, AND ETC.).
28. ALL EQUIPMENT SHALL COMPLY WITH THE CALIFORNIA STATE ENERGY COMMISSION STANDARDS.
29. MOUNT ALL THERMOSTATS AND BY PASS TIMERS A DISTANCE OF 46-INCHES ABOVE THE FINISHED FOOR LEVEL TO THE CENTER OF DEVICE.
30. COORDINATE EXACT LOCATIONS OF HVAC UNITS AND EXHAUST FANS WITH MECHANICAL AND STRUCTURAL DESIGN DRAWINGS.
31. PROVIDE DUCT SMOKE DETECTORS ON ROOF TOP PACKAGE UNIT AND FAN COIL UNIT. DUCT DETECTORS SHALL BE LOCATED ON THE SUPPLY AIR DUCT AND BE ACCESSIBLE. DUCT DETECTORS SHALL BE PURCHASED AND INSTALLED BY THE MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WIRING, CONDUITS AND POWER TO THE DETECTORS. ALSO, FOR DETECTORS EXPOSED TO THE WEATHER, ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHERPROOF ENCLOSURES TO PROTECT THE DETECTORS.
32. PROVIDE TRAPEZE TYPE DUCT SUPPORTS FOR DUCTWORK LOCATED INSIDE OF SOFFITS. SUPPORT DUCTWORK INACCORDANCE WITH CALIFORNIA MECHANICAL CODE. MOUNT DUCKWORK AS CLOSE AS POSSIBLE TO THE BOTTOM OF THE STRUCTURAL BEAM TO ALLOW FOR THE INSTALLATION OF ANY LIGHT FIXTURES. DO NOT DEFORM OR CONCAVE THE TOP OF THE DUCTWORK.
33. ROOF CURB FOR HVAC UNITS AND EXHAUST FANS SHALL BE 6 INCHES MINIMUM ABOVE THE FINISH ROOF LINE.
34. ALL MANUAL VOLUME DAMPERS SHALL BE ACCESSIBLE. WHENEVER DAMPERS ARE LOCATED ABOVE GYPSUM BOARD, PLASTER CEILINGS OR ARE NOT ACCESSIBLE, PROVIDE BOWDEN REMOTE CABLE CONTROL SYSTEM, MODEL 270-301, FOR ADJUSTMENTS OF MANUAL VOLUME DAMPER. FOR DETAILS, SEE MECHANICAL DRAWING M3.1.
35. PROVIDE ALL THE REQUIRED SEISMIC BRACING FOR ALL EQUIPMENT AND DUCTWORK.

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HOSTLER-SEAD DARLENE HUANG No. M33534 EXP. 6-30-23 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN, P.E.	03/10/22
ENGINEER: HSU-LIANG HUANG, P.E. LIC. NO. M33534	03/10/22
DESIGNED BY: SAHAR MEHRZAD, P.E.	03/10/22
DRAWN BY: SAHAR MEHRZAD, P.E.	03/10/22
CHECKED BY: HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:STEVEN PIERCE, A.I.A, PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: MECHANICAL SCHEDULE & DETAILS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. M100

SHEET 57 OF SHEETS 96

PLOTTED: 3/18/2022 1:21 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:06 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\M100 MECHANICAL SCHEDULE & DETAILS.DWG

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/18/2022 11:44 AM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\M101 MECHANICAL PLAN.DWG

REVISION DATES (DESIGN STAGE ONLY)

120'-1"

132'-8"

4" VENT PIPE UP THROUGH ROOF

4X 4" DUCTS COMING UP FROM BASEMENT & GOING UP TO THE ROOF. THE EXHAUST DUCTS AND COMBUSTIBLE DUCTS SHALL BE TERMINATED 3' APART ON THE ROOF

24"X12" DOOR LOUVER ANEMOSTAT SRDL CUSTOM BAKED ENAMEL COLORS

HP-1 PROVIDE 6" CURB PROVIDE CAGE AROUND HP-1

4" VENT PIPE UP THROUGH ROOF

3'-8"

4'-7"

GIRLS DRESSING ROOM

IH 1

IH 2

FC-1 & FC-2 INSTALL ABOVE THE DOOR SIGNAGE

OFFICE

6"ø DUCT UP TO TO ROOF

EF 1

6ø"

12"X6" DOOR LOUVER ANEMOSTAT CHDL-2F ANODIZED ALUMINUM

EF 2

6ø"

6"ø DUCT UP TO TO ROOF

EF 3

6ø"

6"ø DUCT UP TO TO ROOF

8'-8"

3'-7"

4" VENT PIPE UP THROUGH ROOF

IH 3

IH 4

32'-6"

BOYS DRESSING ROOM

FIRST FLOOR MECHANICAL PLAN
3/16"=1'-0"

(E) TANK

(E) TANK

(E) TANK

(E) TANK

OFFICE

TWO 4" COMBUSTION AIR DUCTS AND TWO 4" EXHAUST DUCTS GOING UP TO THE COMM. ROOM

TWO (N)T.W.H-1 (TANKLESS GAS WATER HEATER)

FILTER PIT

(E) BATH HOUSE ABOVE; SEE A1.0

BASEMENT

(E) ELEC PANEL

ELEC PANEL

(E) BATH HOUSE ABOVE; SEE A1.0

CONC. WALK

(N) CONC. WALK

BASEMENT MECHANICAL PLAN
3/16"=1'-0"

16

17

DN

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO.
-

INDEX NO.
RP-300123

PROFESSIONAL ENGINEER * HSU-LIANG HUANG * No. M35364 * REGISTERED PROFESSIONAL ENGINEER * STATE OF CALIFORNIA * Exp. 6-30-23

TED ALLEN, P.E. CITY ENGINEER

		DATE:
ENGINEER:	HSU-LIANG HUANG, P.E. LIC. NO. M35364	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E. S.M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E. S.M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A. PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: MECHANICAL PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO.
E170164F

PLAN FILE NO.

DRAWING NO.
M101

SHEET 58 OF SHEETS 96

PLOTTED: 3/18/2022 11:48 AM

PLUMBING LEGEND

SYMBOL	ABBREV.	DESCRIPTION
— — —	W/S	WASTE/SEWER BELOW FLOOR/GRADE
———	W/S	WASTE/SEWER ABOVE FLOOR/GRADE
— —⊕	FCO/ COTG	FLOOR CLEANOUT OR CLEANOUT THRU GRADE
—OD—	OD	OVERFLOW DRAIN
—SD—	SD	STORM DRAIN
— — —	V	SANITARY VENT
—— - ——	CW	COLD WATER PIPE
—— - - ——	HW	HOT WATER
·····	HWR	HOT WATER RETURN
—CD—	CD	CONDENSATE DRAIN
—G—	G	FUEL GAS (LOW PRESSURE)
⊢———	CO	CLEANOUT
⊢D— —	WCO	WALL CLEANOUT
——◢——	CV	CHECK VALVE
——▷◁——	GV	GATE VALVE
——W——	GC	GAS COCK
——●——	WHA	WATER HAMMER ARRESTOR
—AFS—	AFS	AUTOMATIC FIRE SPRINKLER
—F—	F	FIRE LINE
	AP	ACCESS PANEL
	RI & C	ROUGH-IN & CONNECT
	AFF	ABOVE FINISHED FLOOR
	HC	HANDICAPPED
	WC	WATER CLOSET
	L	LAVATORY
	UR	URINAL
	ABV	ABOVE
	CLG	CEILING
	CONN	CONNECTION
	CONT	CONTINUATION
	CYB	CONCRETE YARD BOX
	DN	DOWN
	DS	DOWNSPOUT
(E)	EXIST	EXISTING
	FU	FIXTURE UNIT
	HDR	HEADER
	IE	INVERT ELEVATION
	NTS	NOT TO SCALE
◔	POC	POINT OF CONNECTION
◒	POD	POINT OF DISCONNECT
	SOV	SHUT-OFF VALVE
	VTR	VENT THRU ROOF
	MTD	MOUNTED
	TPV	TRAP PRIMER VALVE
	RP	REDUCED PRESSURE BACKFLOW PREVENTER
	BEL	BELOW
(N)	N	NEW
	TDL	TOTAL DEVELOPMENT LENGTH
●	OD	OVERFLOW DRAIN
⊕	RD	ROOF DRAIN
	NIC	NOT IN CONTRACT
⊷	HB	HOSE BIB
▨		PIPING TO BE REMOVED
▨		FIXTURES TO BE REMOVED
⊜	RCR	
⊜	FD	FLOOR DRAIN
▢	FS	FLOOR SINK
	CRS	CLASSROOM SINK
	WH	WATER HEATER

PLUMBING FIXTURE SCHEDULE

UNIT NO.	DESCRIPTION	ROUGH-IN CONNECTION SIZES						REMARKS
		TRAP	S/W	V	DFU	CW	HW	
WC-1	WATER CLOSET WALL-MOUNTED	INT.	4"	2"	4	1-1/4"	--	SLOAN "ST-2469" , WALL MOUNTED,VITROUS CHINA, WALL HUNG, ELONGATED BOWL, 1-1/2" I.P.S REAR SPUD INLET. 1.28 GPF @ MIN. 25 PSI OPERATING PRESSURE, HIGH EFFICIENCY TOILET, . PROVIDE BEMIS 1955CT. ADA COMPLIANT. FLUSHOMETER VALVE : SLOAN CROWN CONCEALED MANUAL FLUSHOMETER MODEL CROWN 9603-1.28
WC-1H	WATER CLOSET WALL-MOUNTED	INT.	4"	2"	4	1-1/4"	--	SLOAN "WETS-2450.1001" ST-2459 WATER CLOSET AND ROYAL 111 FLUSHOMETER , WALL MOUNTED,VITROUS CHINA, WALL HUNG, ELONGATED BOWL, 1-1/2" I.P.S TOP SPUD INLET. 1.28 GPF @ MIN. 25 PSI OPERATING PRESSURE, HIGH EFFICIENCY TOILET, . PROVIDE BEMIS 1955CT. ADA COMPLIANT.
L-1H	LAVATORY WALL-HUNG	1-1/2"	2"	1-1/2"	1	1/2"	1/2"	AMERICAN STANDARD "LUCERNE" MODEL NO. 0355.012, 4" CENTER TO CENTER HOLES, VITREOUS CHINA, FRONT OVERFLOW, FAUCET LEDGE, 20-1/2"X18-1/4", AERATOR AND GRID DRAIN #7723.018, ADA APPROVED, WITH CHICAGO FAUCET METERING FAUCET #3600-E2805AB,0.5 GPM VANDAL PROOF NON AERATING SPRAY, PROVIDE CHICAGO FAUCET MIXING VALVE 122-ABNF
FD-1	FLOOR DRAIN	2"	2"	1-1/2"	2	--	--	FLOOR DRAIN, CAST IRON BODY, FLASHING COLLAR 6" ROUND NICKEL BRONZE STRAINER, W/TRAP PRIMER CONNECTION. BY J.R. SMITH FIG. 2010A WITH 2" PIPE OUTLET.
DF-1H	DRINKING FOUNTAIN	1-1/2"	2"	1-1/2"	-	1/2"	--	HAWS MODEL "1119 HI-LO" , WALL MOUNTED, BARRIER FREE, VANDAL RESISTANT COMPONENTS, PUSH BUTTON ACTIVATION VALVE, 100% LEAD FREE WATER WAY, TYPE 304 STAINLESS STEEL, ADA APPROVED.
RPBF-1	REDUCED PRESSURE BACKFLOW PREVENTER	-	-	-	-	2"	--	ZURN WILKINS 375: REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY, LEAD-FREE SIZE 3". APPROVED BY FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA AND IAPMO LISTED.
RPBF-2	REDUCED PRESSURE BACKFLOW PREVENTER	-	-	-	-	3"	--	ZURN WILKINS 375XL: REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY, LEAD-FREE , SIZE 2". APPROVED BY FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA AND IAPMO LISTED.
PRV-1	PRESSURE REDUCING VALVE ASSEMBLY	-	-	-	-	1"	--	WILKINS MODEL 500XL: WATER PRESSURE REDUCING VALVE WITH LEAD-FREE, SIZE 1", SET @ 70 PSI. IAPMO LISTED AND CITY OF LOS ANGELES APPROVED.
PRV-2 PRV-3	PRESSURE REDUCING VALVE ASSEMBLY					2"		WILKINS MODEL 500XL: WATER PRESSURE REDUCING VALVE WITH LEAD-FREE, SIZE 2", SET @ 70 PSI. IAPMO LISTED AND CITY OF LOS ANGELES APPROVED.
SH-1H	SHOWER (ADA TYPE)	2"	2"	2'	2	3/4"	3/4"	POWERS e700 HYDROGUARD T/P MIXING VALVE MODEL e705000L00;1.5 GPM LOW FLOW HAND SHOWER SYSTEM WITH METAL HOSE AND 30" GLIDE RAIL.
SH-1	SHOWER	2"	2"	2'	2	3/4"	3/4"	POWERS e700 HYDROGUARD T/P MIXING VALVE. MODEL E705G10000; 1.5 GPM LOW FLOW SHOWERHEAD WITH STANDARD ARM AND FLANGE
EQV-1	EARTHQUAKE SHUT-OFF VALVE	-	-	-	-	--	--	PACIFIC SEISMIC PRODUCTS, HORIZONTAL VALVE, MODEL 316(60) NPT, EQUIVALENT LENGTH = 8.5 FT., MAX. PRESSURE=60 PSI, NOMINAL PIPE SIZE=4".
U-1H	URINAL	-	-	-	-	--	--	SLOAN "WEUS-1000.1001" WITH SU-1009 URINAL AND ROYAL 186 FLUSHOMETER 0.125 GPF, ADA COMPLIANT, SEE ARCHITECTURAL PLAN FOR INSTALLATIONS DETAILS.
MS-1	MOP SINK	-	-	-	-	--	--	ACORN TERRAZZO-WARE MOP SINK-CORNER SERIES "TCR-28", RPOVIDE BEEHIVE DOME STRAINER PROVIDE WITH ACORN KFC FAUCET,CHROME FINISH, FAUCET MAXIMUM FLO RATE 2.2 GPM
TPV-1	TRAP PRIMER VALVE	-	-	-	-	½"	-	TRAP PRIMER VALVE: PRECISION PLUMBING PRODUCTS MODEL P2-500
FS-1	FLOOR SINK		-	3"	--	3	--	--	J.R. SMITH FIG. 3100Y-03 8-1/2" TOP- MEDIUM RECEPTOR WITH SANI-CEPTOR ACID RESISTANT COATED FLOOR SINK; PROVIDE FIG.3591 FUNNEL ASSEMBLY WITH ARC OPTION.(ACID RESISTANT COATED CAST IRON)
TPV-2	TRAP PRIMER VALVE	-	-	-	-	½"	-	TRAP PRIMER VALVE: PRECISION PLUMBING PRODUCTS MODEL MPB-500-115V ELECTRONIC TRAP PRIMER, MINI-PRIME WITH BOX, 12" X 12" X 4", 16 GAUGE STEEL WITH SCREW ON COVER MAKE-UP WATER LINE SHALL NOT EXCEED 20 FEET. ADJUSTABLE TIMER MODEL: TMR-1-ADJ-115V
EEW-1	EMERGENCY SHOWER/EYE WASH	-	-	-	-	½"	-	HAWS MODEL #8330 ALL STAINLESS STEEL COMBINATION SHOWER AND EYE WASH PROVIDE 9201H THERMOSTATIC MIXING VALVE
HS-1	HAND WASH SINK	-	2"	1-1/2"	-	½"	½"	ELKAY "LRAD252165PD" LUSTERTONE CLASSIC STAINLESS STEEL 25"X21-1/4"X 6-1/2", SINGLE BOWL DROP-IN ADA SINK WITH PERFECT DRAIN. HOLE DRILLING CONFIGURATIONS: OPTION 2 (TWO HOLES), PROVIDE ELKAY COMMERCIAL ELECTRONIC SENSOR SCRUB/HANDWASH DECK MOUNT FAUCET, MODEL "LKB721C", PROVIDE AC PLUG-IN, FLOW RATE: 1.5 GPM

PIPE SCHEDULE

SERVICE		MATERIAL: COPPER, TYPE 'K'	COPPER, TYPE 'L'	DWV-COPPER *	IPS 200 PSI PVC W/ RING-TITE JTS.	BLACK STEEL	GAL VANIZED STEEL	NO-HUB CAST IRON	VITRIFIED CLAY
WATER	INSIDE		●						
	OUTSIDE	●							
SANITARY DRAINAGE	INSIDE							●	
	OUTSIDE							●	
SANITARY VENT	INSIDE			●		●			
	OUTSIDE			●		●			
GAS	INSIDE				●				
	OUTSIDE				●				
STORM DRAINAGE	INSIDE							●	
	OUTSIDE							●	
CONDENSATE DRAINAGE	INSIDE			●					
	OUTSIDE			●					

FIXTURE UNIT COUNTS (existing)

TYPE OF FIXTURES	NO.	CW F.U./Fix.	WASTE F.U./Fix.	TOTAL CW F.U.	TOTAL HW F.U.	TOTAL WASTE F.U.
Water Closet	6	5	4	30	0	24
Urinal	2	4	2	8	0	4
Lavatory	2	1	1	2	2	2
Shower	6	2	2	12	12	12
Service Sink	1	3	3	3	3	3
Floor Sink	0	0	0	0	0	0
Kitchen Sink	0	1.5	2	0	0	0
Floor Drain	2	0	2	0	0	4
Drinking Fountain	2	0.5	0.5	1.0	0	1.0
Emergency Eye wash	1	6	0	6	6	0
BUILDING TOTAL:				62	23	50

FIXTURE UNIT COUNTS (NEW)

TYPE OF FIXTURES	NO.	CW F.U./Fix.	WASTE F.U./Fix.	TOTAL CW F.U.	TOTAL HW F.U.	TOTAL WASTE F.U.
Water Closet	3	5	4	15	0	12
Lavatory	5	1	1	5	5	5
Shower	3	2	2	6	6	6
Floor Drain	3	0	2	0	0	6
Floor Sink	1	0	3	0	0	3
Hand Washing Sink	1	2	2	2	2	2
BUILDING TOTAL:				28	13	34

TANKLESS GAS WATER HEATER SCHEDULE

SYMBOL	MFR. & MODEL NO.	QTY.	LOCATION	SERVICE	GAS INPUT BTU/HR	VENT SIZE	DELIVER CAPACITY @70 F RISE	REMARKS
T.W.H-1	BOSCH C-1210-ESC	2	BASEMENT	EM. SHWR-EW	225,000	3"	6GPM	1. TWO TANKLESS WATER HEATER SHALL MANIFOLDED TOGETHER AND PIPED IN PARALLEL WITH 1" MIN. MANIFOLD PIPING. LINKED ELECTRICALLY TO FIRE IN SEQUENCE AND TO ALTERNATE THE PRIMARY (FIRST FIRED) WATER HEATER EVERY ONE HUNDRED HOURS OF OPERATION TO ENSURE EVEN USAGE. 2. 120 VAC-60HZ 2.5A POWER EQUIRED. 3. PROVIDE CASCADING LINK CABLE (BOSCH#7709003962); BOSCH ZNC-1KIT CONDENSATE NEUTRALIZER AND BOSCH ES-202-KIT OR JOMAR TWV-2-W-KIT LEAD FREE TANKLESS WATER HEATER VALVES WITH 225,000 BTU TEMPERATURE & PRESSURE RELIEF VALVES.

PLUMBING CALCULATIONS

1. ADDRESS: 10654 IRMA AVENUE, TUJUNGA, 91042
2. STREET PRESSURE: MAX. 104 MIN. 79 P.S.I.

SET P.R.V. PRESSURE @ 70 P.S.I

3. SIZE OF METER: 2" INCH WITH 160 G.P.M. @ 100% CAPACITY
4. PRESSURE LOSS THROUGH METER @ 117 G.P.M.: 6.4 P.S.I.
5. PRESSURE LOSS THROUGH NEW R.P.B.F.P.: 13 P.S.I.
6. PRESSURE LOSS THROUGH NEW P.R.V.: 5 P.S.I.
7. Elevation from water meter to highest fixture = 5 ft.
8. LOSS DUE TO ELEVATION: 5 ft. x 0.434 = 2.17 P.S.I.
9. RESIDUAL PRESSURE REQUIRED FOR FLUSHOMETER VALVE: 25 P.S.I.
10. PRESSURE AVAILABLE FOR FRICTION LOSS, P.A.F.L.: 18.43 P.S.I.
11. Length from PRV to furthest fixture = 170 ft.
12. DEVELOPED LENGTH, DL: 170 ft. x 150% = 255 ft.
13. AVERAGE PERMISSIBLE FRICTION LOSS PER 100 FT. OF PIPE:
14. A.P.F.L. = P.A.F.L. 18.43 x 100 / D.L. 255 = 7.2 P.S.I.
15. TOTAL C.W. FIXTURE UNITS: 90 F.U. = 66 G.P.M.
16. MISC. C.W. DEMAND (Future demand): 53 G.P.M.
    Swimming pool make up water (50 GPM) & future demand (3GPM)
17. TOTAL BUILDING C.W. DEMAND: 119 G.P.M.
18. SIZE OF MAIN C.W. SERVICE TO BLDG.: 3" inch

BASE CALCULATIONS ON 7 PSI PER 100 FT
5 FT/SEC VELOCITY FOR HOT WATER
TYPE "L" COPPER

PIPE SIZE	GPM	FIXTURE UNITS F.T.
1/2"	2	2
3/4"	7	8
1"	12	16
1-1/4"	19	28
1-1/2"	27	46
2"	48	119
2-1/2"	100	245
3"	105	406

BASE CALCULATIONS ON 7 PSI PER 100 FT
8 FT/SEC VELOCITY FOR COLD WATER
TYPE "L" COPPER

PIPE SIZE	GPM	FIXTURE UNITS F.T.	F.V.
1/2"	2	2	0
3/4"	7	8	0
1"	15	21	0
1-1/4"	27	46	10
1-1/2"	43	99	33
2"	76	254	132
2-1/2"	115	455	329
3"	165	719	666

DWP CONTACT: @ 213--367-1242
STATIC WATER PRESSURE: HIGH 104, LOW 79
DATE CALLED: 4/26/2017

GENERAL NOTES

1. VERIFY ALL CONDITIONS AND DIMENSIONS AT JOBSITE PRIOR TO START OF NEW WORK.
2. THE CONTRACTOR SHALL PAY FOR COST OF METERS, INSTALLATION COSTS, CONNECTION FEES, AND PERMIT FEES FOR ALL UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THE APPLICALBE UTILITY COMPANY.
3. ALL PLUMBING FIXTURES, PIPING MATERIALS, AND WORK SHALL BE IN ACCORDANCE WITH THE L.A. CITY AND CALIFORNIA PLUMBING CODES.
4. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL BE NEW.
5. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL HAVE ISOLATING VALVES ON WATER SUPPLY LINES.
6. HOT WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH TITLE 24.
7. ALL VALVES, CLEANOUTS, TRAP PRIMERS, AND WATER HAMMER ARRESTORS SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS LARGE ENOUGH TO FACILITATE REMOVAL OF COMPONENT OR EQUIPMENT. MINIMUM DOOR SIZE SHALL BE 8"X8" WITH TYPE 304 STAINLESS STEEL FRAME AND DOOR. PROVIDE WITH CONCEALED HINGE AND SCREWDRIVER OPERATED LATCH WHICH HOLDS THE DOOR SECURELY CLOSED.
   A. FOR CERAMIC TILE, MASONRY, OR DRY WALLS AND CEILINGS, FRAME SHALL BE MOUNTED ON THE SURFACE OF THE WALL OR CEILING.
   B. FOR PLASTER OR WET WALL CONSTRUCTION AND CEILINGS, FRAME AND DOOR SHALL BE MOUNTED FLUSH WITH THE FINISHED WALL OR CEILING.
8. ALL FAUCETS IN PUBLIC RESTROOMS SHALL BE SELF CLOSING OR SELF-CLOSING METERING FAUCETS.
9. ALL FITTINGS AND FIXTURES IN CONTACT WITH POTABLE WATER SHALL BE "LOW LEAD"
10. ALL PLUMBING FIXTURES SHALL MEET THE FLOW REQUIREMENTS SPECIFIED IN THE LOS ANGELES PLUMBING CODE SECTION 402.0
11. ALL FIXTURES,EQUIPMENT,PIPING AND MATERIALS SHALL BE APPROVED.
12. CLEANOUTS REQUIRED AS FOLLOWS:
    A. MATERIAL:
       A.1 ABOVE GROUND: CAST IRON, LOS ANGELES APPROVED TYPE.
       A.2 OUTSIDE BUILDING: EXTRA HEAVY CAST IRON BODY AND NONCORROSIVE LOS ANGELES CITY APPROVED PLASTIC FOR TAPERED PLUGS, BRASS FOR STRAIGHT THREAD PLUGS WITH LEAD SEAL.
    B. ACCESS COVER AND FRAME: REQUIRED; WHERE CLEANOUTS OCCUR IN FINISHED INTERIOR WALLS OR FLOORS.
    C. IN PAVED AREAS: SMITH FIG. 4020, SECURED ROUND TOP, SPIGOT CONNECTION, SET IN CONCRETE FLUSH WITH PAVING.
    D. IN UNPAVED AREAS: SMITH FIG. 4240 WITH EXTENSIONS TO FINISH GRADE.
    E. ON CAST IRON PIPE ABOVE GROUND: SMITH FIG. 4512, CLEANOUT TEE, LEAD SEAL BRONZE PLUGS.
    F. IN INTERIOR FLOORS: SMITH FIG. 4020, SECURED ROUND TOP, ADJUSTABLE FLUSH WITH FINISH FLOOR, POLISHED NICKEL BRONZE FRAME AND COVER. PROVIDE VANDAL PROOF SCREWS WHERE INDICATED OR REQUIRED.
    G. IN INTERIOR WALLS: FLUSH WITH THE INSIDE OF WALL, SMITH FIG. 4510, LEAD SEAL-BRONZE PLUG. PROVIDE ACCESS COVER AND FRAME AS SPECIFIED HEREIN.
    H. CLEANOUTS SHALL BE INSTALLED ON RAINWATER SYSTEM AS REQUIRED BY CHAPTER 7 & 11 OF THE L.A. CITY AND CALIFORNIA PLUMBING CODE.
13. WASTE, SOIL, AND VENT PIPING MATERIALS SHALL BE CAST IRON, GALVANIZED STEEL, COPPER, OR BRASS.

    HORIZONTAL DRAINAGE PIPE SHALL HAVE 1/4 INCH PER FOOT SLOPE.

    COLD WATER:
    A BELOW GROUND: 2" AND SMALLER, TYPE K HARD COPPER, CAST-COPPER-ALLOY SOLDER-JOINT PRESSURE FITTINGS, AND SOLDERED JOINTS.
    B ABOVE GROUND: TYPE L HARD COPPER, WROUGHT-COPPER OR CAST-COPPER-ALLOY PRESSURE FITTINGS, COPPER UNIONS, BRONZE FLANGES, AND SOLDERED JOINTS.
14. VENT PIPE OR STACK SHALL EXTEND SEPARATELY OR COMBINED THROUGH ITS FLASHING AND SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF NOR LESS THAN 1 FT. FROM ANY VERTICAL SURFACE. EACH VENT SHALL TERMINATE NOT LESS THAN 10 FT. FROM, OR AT LEAST 3 FT. ABOVE ANY OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, NOR LESS THAN 3 FT. IN EVERY DIRECTION FROM ANY LOT LINE; ALLEY AND STREET EXCEPTED.
15. LOCATIONS OF PLUMBING APPARATUS AND EQUIPMENT INDICATED ON THE DRAWINGS ARE APPROXIMATE ONLY. VERIFY WITH ARCHITECTURAL PLANS FOR LOCATIONS.
16. DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS, AND EXACT LOCATIONS ARE NOT SHOWN. EXAMINE DRAWINGS AND EXISTING JOB SITE CONDITIONS, IN ORDER TO DETERMINE THE BEST METHODS FOR INSTALLATION OF APPARATUS, EQUIPMENT, ROUTING OF PIPES, AND LOCATING ANY BUILDING OBSTRUCTIONS.
17. DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK, CHECK AND VERIFY DIMENSIONS AND SIZES, AND ASSUME FULL RESPONSIBILITY FOR FITTING IN OF EQUIPMENT AND MATERIALS TO OTHER PARTS OF EQUIPMENT, OTHER TRADES AND TO THE STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON THE DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF THE CLASS INDICATED. CHECK DRAWINGS TO VERIFY THAT EQUIPMENT SPECIFIED FOR USE WILL FIT INTO THE SPACED PROVIDED AND THERE IS AMPLE SPACE TO MEET REQUIREMENTS FOR MAINTENANCE.
18. WATER HEATER SHALL BE CERTIFIED AND LISTED BY THE CALIFORNIA ENERGY COMMISSION.
19. LAVATORY FAUCETS, SINK FAUCETS, SERVICE SINK FAUCETS SHALL MEET THE FLOW REQUIREMENTS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARDS (TITLE 24) OR CITY OF LOS ANGELES ORDINANCE 180822, WHICHEVER IS MORE STRINGENT.
20. WATER CLOSETS SHALL BE CITY OF LOS ANGELES MECHANICAL TEST LAB OR IAPMO APPROVED AND USE 1.28 GALLONS PER FLUSH.
21. URINALS SHALL BE CITY OF LOS ANGELES MECHANICAL TEST LAB OR IAPMO APPROVED AND USE 0.125 GALLONS PER FLUSH.
22. CONTRACTOR SHALL BE RESPONIBLE FOR ENSURING THAT ALL NEW PLUMBING FIXTURES BEING INSTALLED MEET THE REQUIREMENTS OF CITY OF LOS ANGELES ORDINANCE 180822 FOR WATER EFFICIENCY REQUIREMENTS FOR NEW DEVELOPMENT AND RENOVATION OF EXISTING BUILDINGS.
23. HANDICAPPED NOTES:
    A. ALL PLUMBING FIXTURES INDICATED WITH AN "H" SUBLETTER AFTER THE FIXTURE NUMBER SHALL BE INSTALLED FOR HANDICAPPED USE AS FOLLOWS:
       1. WATER CLOSET: INSTALL WITH TOP OF SEAT 17" TO 19" ABOVE FINISHED FLOOR. FLUSH VALVE, FLUSH CONTROLS SHALL BE OPERATED BY AN OSCILLATING HANDLE WITH A MAXIMUM OPERATING FORCE OF 3 LBS. THE FLUSH HANDLE SHALL FACE THE SIDEWALL FURTHEST FROM THE CENTER LINE OF THE FIXTURE.
       2. LAVATORIES: INSTALL WITH BOTTOM OF APRON 29" ABOVE FINISH FLOOR. HOT WATER STOP, DRAIN TAILPIECE AND TRAP SHALL BE INSULATED.
       3. URINALS: INSTALL WITH RIM 17" ABOVE FINISHED FLOOR. FLUSH VALVE HANDLE SHALL BE LOCATED NOT MORE THAN 44" ABOVE THE FINISHED FLOOR. THE URINAL SHALL BE AN ELONGATED TYPE L EXTENDING 14" MIN. OFF THE WALL.
       4. DRINKING WATER: INSTALL WITH THE CENTERLINE OF THE BUBBLER HEAD LOCATED 36" ABOVE THE FINISHED FLOOR.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

TED ALLEN, P.E. CITY ENGINEER

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HSU-LIANG HUANG, P.E. REGISTERED PROFESSIONAL ENGINEER No. M35354 Exp. 6-30-23 STATE OF CALIFORNIA

	NAME	LIC. NO.	DATE:
ENGINEER:	HSU-LIANG HUANG, P.E.	M35354	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S.M	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S.M	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.		03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A. PRINCIPAL ARCHITECT		03/10/22

SHEET TITLE: PLUMBING SCHEDULE

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. P100

SHEET 59 OF SHEETS 96

PLOTTED: 3/18/2022 1:07 PM

REVISION DATES (DESIGN STAGE ONLY)

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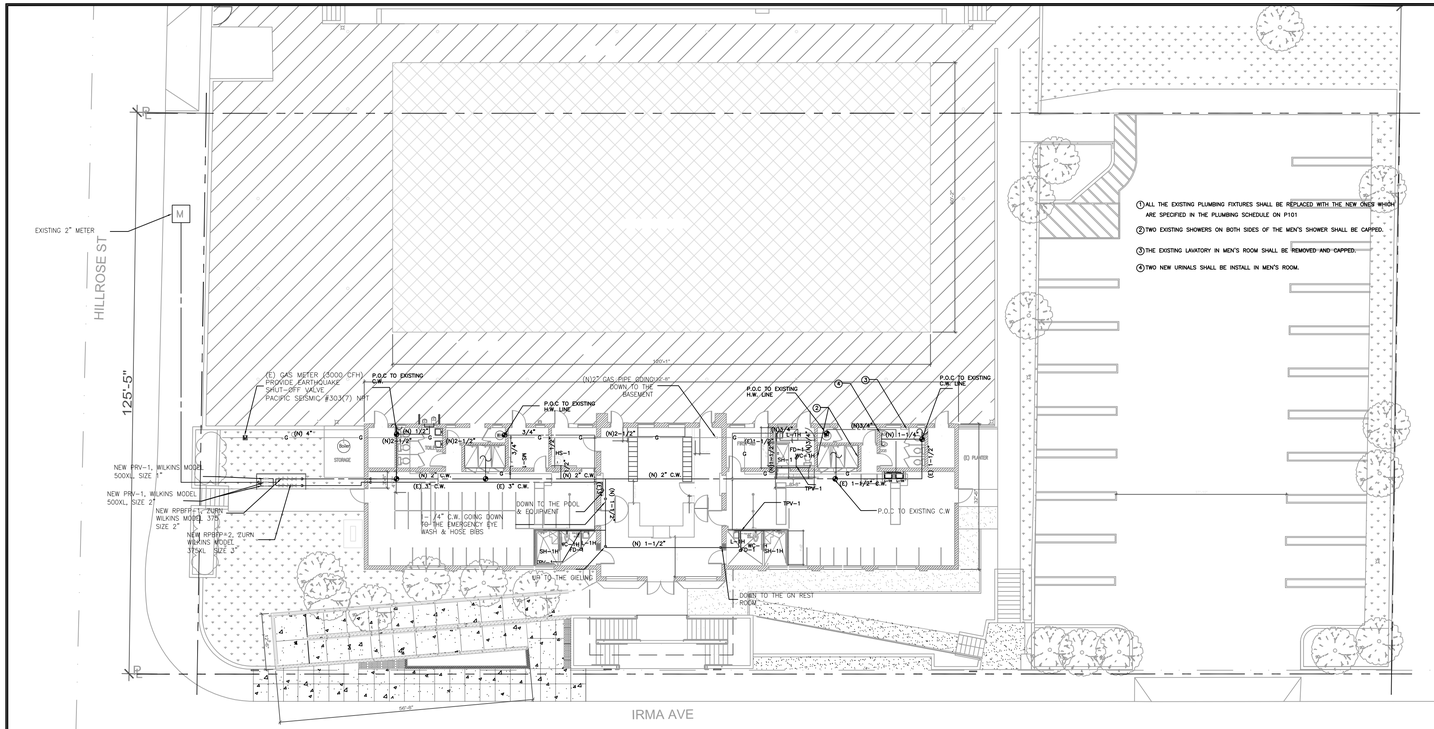
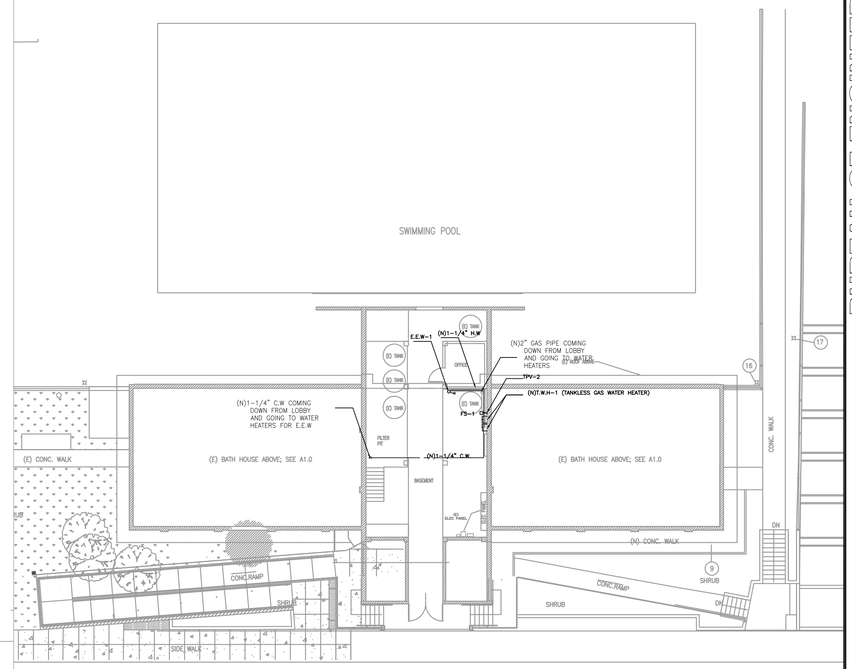
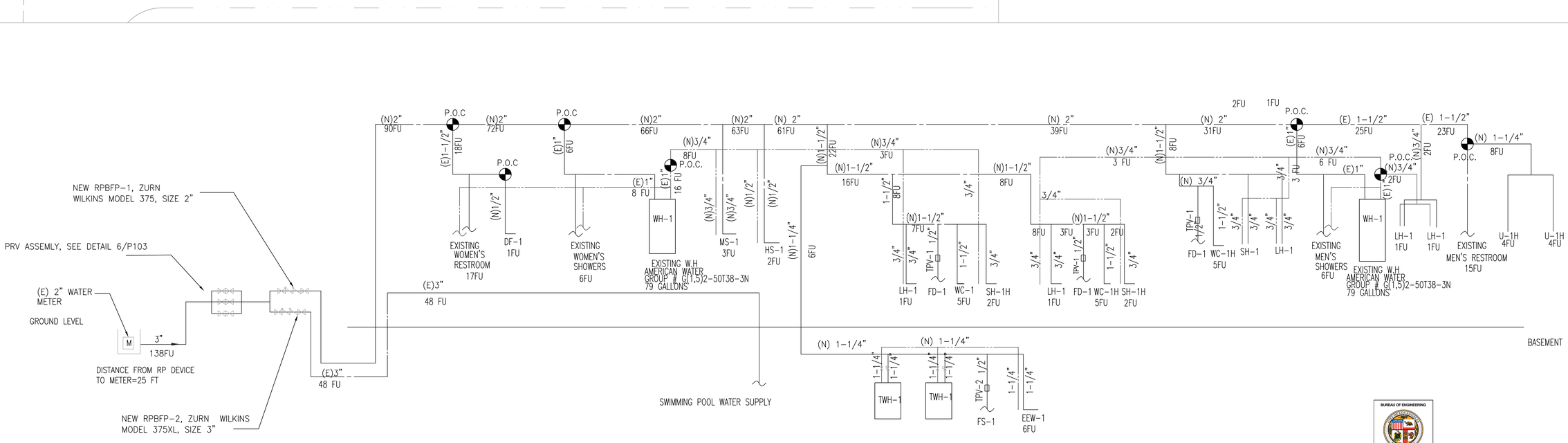
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 12:06 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P100 PLUMBING SCHEDULE.DWG



HW/ CW LAYOUT DETAIL FOR FIRST FLOOR
1/16"=1'-0"



HW/ CW LAYOUT DETAIL FOR BASEMENT
1/16"=1'-0"



BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/18/2022 3:00 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P101 C.W, H.W PLUMBING PLAN-2.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -
INDEX NO. RP-300123

PROFESSIONAL ENGINEER * HSU-LIANG HUANG * No. M36354 * REGISTERED CIVIL ENGINEER * STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

		DATE:
ENGINEER:	HSU-LIANG HUANG, P.E. LIC. NO. M36354	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:	STEVEN PIERCE, A.I.A., PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: C.W, H.W AND GAS PLUMBING PLAN
C.W & H.W RISER DIAGRAM
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. P101
SHEET 60 OF SHEETS 96

PLOTTED: 3/18/2022 3:01 PM

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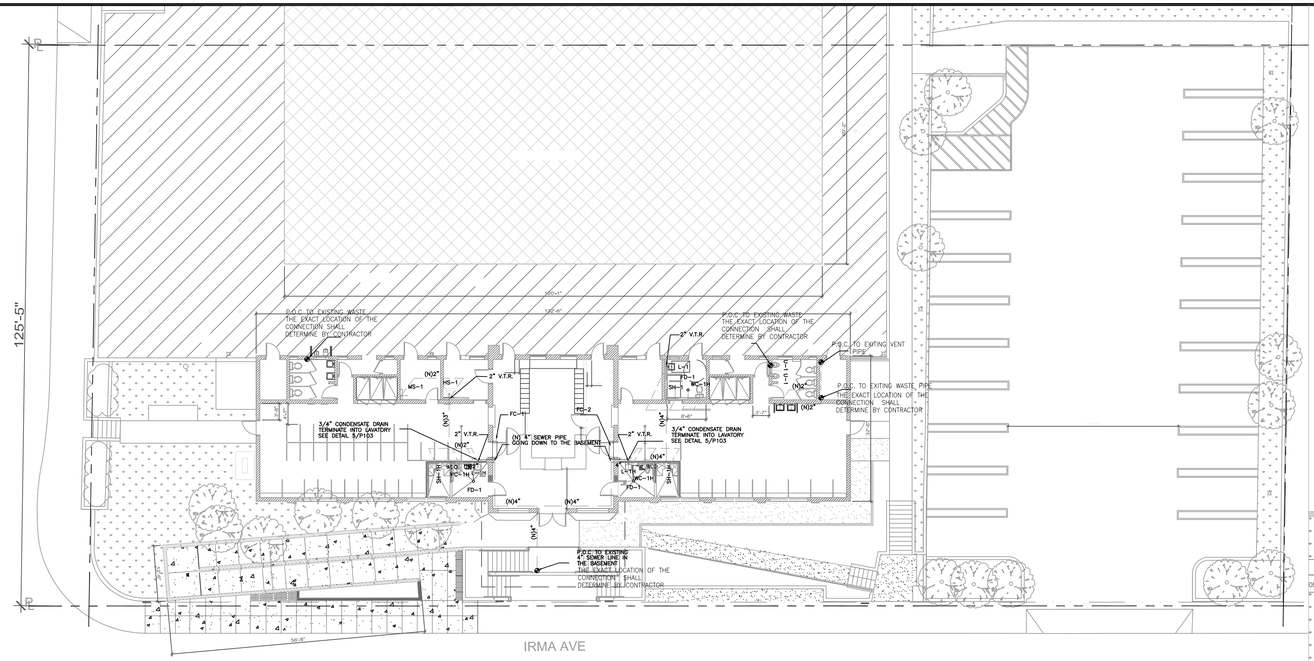
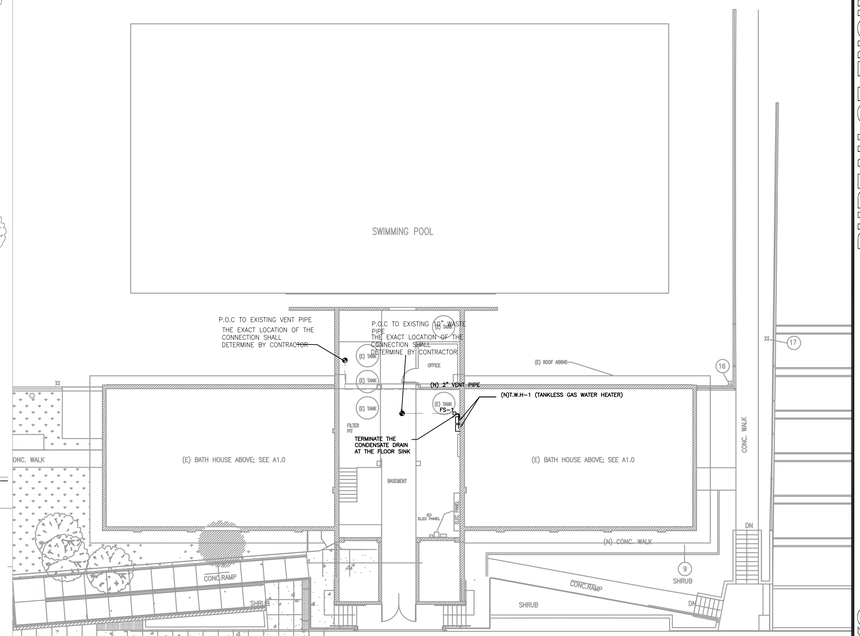


WASTE / VENT LAYOUT DETAIL FOR THE FIRST FLOOR

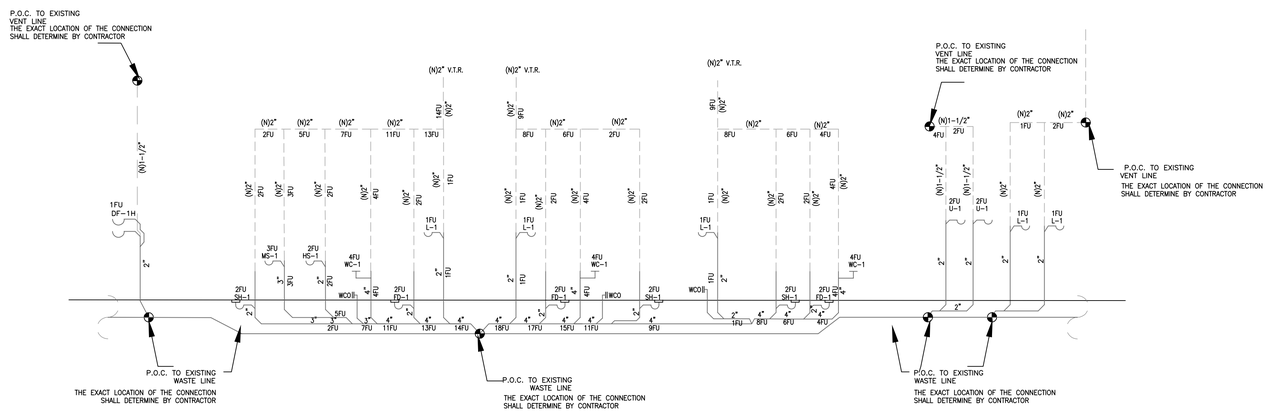
1/16"=1'-0"



WASTE / VENT LAYOUT DETAIL FOR BASEMENT

1/16"=1'-0"

NOTE: CONTRACTOR SHOULD VERIFY THE EXACT LOCATION OF THE EXISTING 4" SEWER LINE.



WASTE / VENT RISER DIAGRAM

N/A

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER * MECHANICAL * No. M35354 * LSU-LIANG HUANG * STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

ENGINEER:	LSU-LIANG HUANG, P.E.	LIC. NO. M35354	DATE: 03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S.M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S.M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	Hsu-Liang Huang	03/10/22
APPROVED BY:	STEVEN PIERCE, A.I.A. PRINCIPAL ARCHITECT		03/10/22

SHEET TITLE: WASTE & VENT FLOOR PLAN AND RISER DIAGRAM

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. P102

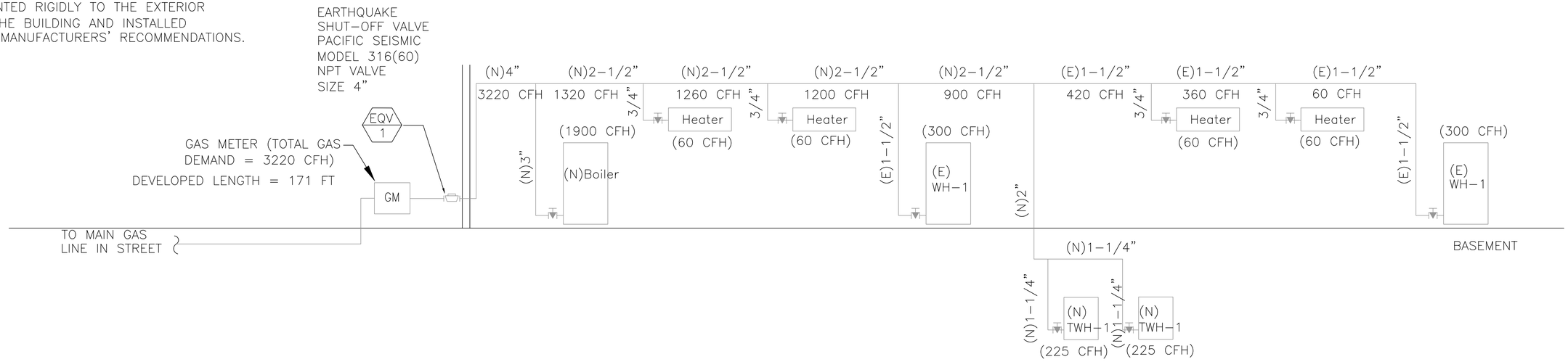
SHEET 61 OF SHEETS 96

PLOTTED: 3/22/2022 1:22 PM

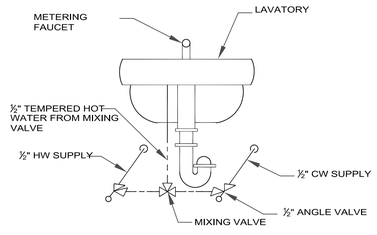
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/22/2022 1:15 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P102 WASTE & VENT PLUMBING PLAN-11-9-2021.DWG

REVISION DATES (DESIGN STAGE ONLY)

NOTE:
EARTHQUAKE VALVE SHALL BE MOUNTED RIGIDLY TO THE EXTERIOR OF THE BUILDING AND INSTALLED PER MANUFACTURERS' RECOMMENDATIONS.

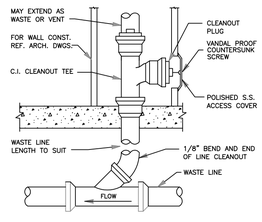


GAS RISER DIAGRAM
N/A

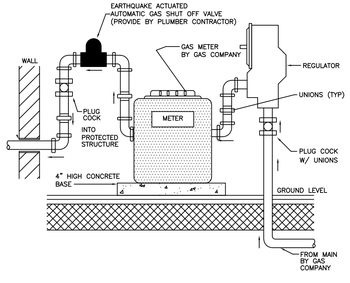


NOTE: FOR RESTROOMS 109 &110, INSTALL ANGLE VALVES AND MIXING VALVES INSIDE PIPE CHASE

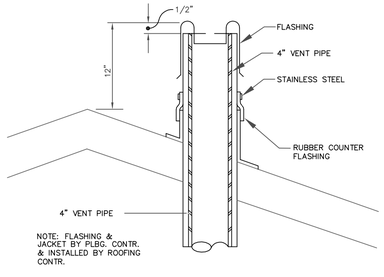
1 P103 LAVATORY PIPING DETAIL
SCALE: NONE



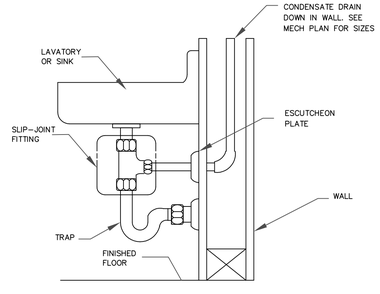
2 P103 WALL CLEANOUT
SCALE: NONE



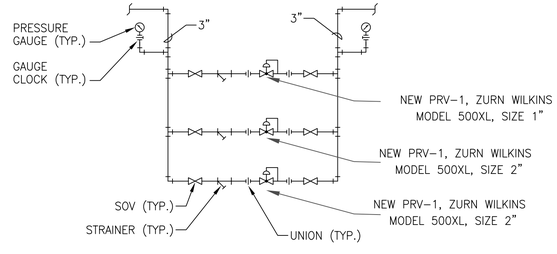
3 P103 EQ VALVE DETAIL
SCALE: NONE



4 P103 VENT THRU ROOF DETAIL
NOT TO SCALE



5 P103 CONDENSATE DRAIN TO LAV DETAIL
SCALE: NONE



6 P103 PRV ASSEMBLY DETAIL
SCALE: NONE

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HSU-LIANG HUANG PROFESSIONAL ENGINEER REGISTERED CIVIL ENGINEER No. M35354 Exp. 6-30-23 STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

ENGINEER:	HSU-LIANG HUANG, P.E.	LIC. NO. M35354	DATE: 03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S. M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S. M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	Hsu-Liang Huang	03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A.	PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: GAS RISER DIAGRAM & PLUMBING DETAILS
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. P103
SHEET 62 OF SHEETS 96

PLOTTED: 3/16/2022 3:08 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:05 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P103 GAS RISER DIAGRAM & PLUMBING DETAIL.DWG

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SYMBOLS LIST

(NOTE: NOT ALL SYMBOLS USE)

- MUSCO POLE LIGHTS. SEE MUSCO DRAWINGS.
- A 5a / A 5a — LIGHTING FIXTURES, "5" DENOTES CIRCUIT NUMBER, LOWER CASE "a" DENOTES CONTROLLING SWITCH, UPPER CASE "A" DENOTES FIXTURE TYPE.
- B — RECESSED CEILING MOUNTED FIXTURE: UPPER LETTER INDICATES TYPE (U.O.N.).
- S.L. OR N.L. — FIXTURES WITH "NL" SHALL BE PROGRAMMED FROM DUSK TO PROGRAM OFF TIME. FIXTURE WITH SUBSCRIPT "SL" SHALL BE PROGRAMMED FROM DUSK TO DAWN.
- F — WALL MOUNTED LIGHT FIXTURE: UPPER LETTER INDICATES TYPE.
- EXIT SIGN WITH JUNCTION BOX APPROVED FOR THROUGH WIRING. UNIVERSAL MOUNT. DIRECTIONAL ARROW AS SHOWN ON PLAN.
- LIGHTING FIXTURE WITH BUILT-IN EMERGENCY BATTERY PACK.
- JUNCTION BOX: MOUNT +15" UNLESS NOTED OTHERWISE.
- JUNCTION BOX: MOUNTED ABOVE ACCESSIBLE CEILING.
- DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15"U.O.N.
- WP G — WEATHERPROOF RECEPTACLE ("GFI" TYPE): 125v., 20 AMP., NEMA 5-20R WITH WEATHERPROOF WHILE IN USED COVER. MOUNT IN A 2" DEEP BOX. +15" UNLESS OTHERWISE NOTED.
- P — PLUG LOAD CONTROLLED DUPLEX RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15" U.O.N. PROVIDE PERMANENT LABEL "CONTROLLED" IN WHITE LETTER WITH BLACK BACKGROUND ON THE PLUG LOAD RECEPTACLE.
- P — QUAD RECEPTACLES. ONE NORMAL AND ONE PLUG LOAD CONTROLLED RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15" U.O.N. PROVIDE PERMANENT LABEL "CONTROLLED" IN WHITE LETTER WITH BLACK BACKGROUND ON THE PLUG LOAD RECEPTACLE.
  DOUBLE DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. +15" U.O.N.
- G — GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. MOUNT IN A 2" DEEP BOX. +15" UNLESS OTHERWISE NOTED.
- (S) — MOTOR. "5" INDICATES HORSEPOWER.
- (F) — EXHAUST FAN.
- A-1,3,5 — HOMERUN TO PANEL "A", CIRCUITS 1, 3, 5.
- CONDUIT: IN OR BELOW FLOOR OR BELOW GRADE.
- CONDUIT: EXPOSED IN UNFINISHED AREAS; CONCEALED ABOVE CEILING OR IN WALL IN FINISHED AREAS.
- -E- — (E) CONDUIT AND WIRES TO REMAIN.
- -XR- — DISCONNECT AND REMOVE (E) CONDUITS AND WIRES.
- 3/4"C, 2#12 & 1#12 GND
- 3/4"C, 3#12 & 1#12 GND
- 3/4"C, 4#12 & 1#12 GND
- 3/4"C, 5#12 & 1#12 GND
- 1"C, 3#6 & 1#10G — OTHER CONDUIT AND WIRE SIZE AS NOTED ON DRAWINGS.
  1"C, 2#10 & 1#10G
- LIGHTING PANEL.
- (A) — PANEL DESIGNATION, LETTER IDENTIFIES THE PANEL.
- POWER PANEL OR MOTOR CONTROL CENTER.
- MAIN SERVICE SWITCHBOARD.
- OR (T) — TRANSFORMER.
- S — SINGLE POLE SWITCH. } +48"
- S_2 — TWO POLE SWITCH. } +48"
- S_M — HORSEPOWER RATED SWITCH WITHOUT OVERLOADS.
- S_T — MANUAL MOTOR STARTER: TOGGLE TYPE WITH OVERLOADS.
- S_{2M} — HORSEPOWER RATED, 2P DISCONNECT SWITCH WITHOUT OVERLOADS.
- ab D — 0-10V DIMMER WITH RAISE, LOWER, ALL ON AND ALL OFF BUTTONS. QUANTITY AS NOTED ON PLANS. WATTSTOPPER #LMSW-104. +48" AFF.
- D — 0-10V DIMMER SWITCH. +48" AFF. "WATTSTOPPER" #LMDM-101.
- LINE VOLTAGE DIMMER SWITCH. +48" AFF.
- WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR AT +48" A.F.F. "WATT STOPPER" WA-200.
- ab — WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR WITH BUILT-IN TWO SWITCHES. "WATT STOPPER" WA-300. +48" AFF.
- CEILING MOUNTED PHOTOCELL. WATT STOPPER #LMLS-400.
- DIMMING ROOM CONTROLLER. WATT STOPPER #LRMC-212 OR LRMC-213.
- PLUG LOAD ROOM CONTROLLER. WATT STOPPER #LMPL-101.
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR FOR USE WITH DIMMING CONTROLLER. WATT STOPPER LMDC-100.
- T — THERMOSTAT OUTLET: 4" SQ. BOX AT +48".
- SP — J-BOX WITH BLANK COVER FOR OFOI SPEAKER. +10' A.F.F. FOR EXTERIOR; 4" BELOW CEILING FOR INTERIOR.
- M — J-BOX WITH BLANK COVER FOR OFOI MICROPHONE; +15" A.F.F. U.O.N.
- 5S DEEP OUTLET BOX WITH 1-GANG RING AND BLANK COVER FOR OWNERS DATA AND TEL OUTLETS, WALL MOUNTED +15" A.F.F. U.O.N.
- SC — 4S J-BOX FOR OWNERS WALL MOUNTED CCTV CAMERA. +10'-0" A.F.F. FOR EXTERIOR & 4" BELOW CEILING FOR INTERIOR OFOI EQUIPMENT.
- SC — 4S J-BOX FOR OWNERS CEILING MOUNTED CCTV CAMERA. OFOI EQUIPMENT.

- LC — 3/4"C - (1)DC CABLE FOR LIGHTING CONTROL. (CAT5E)
- DC — 3/4"C-2#18 FOR DIMMING CONTROLS.
- EC — ELECTRONIC TIME CLOCK.
- MDF — MAIN DISTRIBUTION FRAME.
- TEL — TELEPHONE.
- OFOI — OWNER FURNISHED OWNER INSTALLED.
- OFCI — OWNER FURNISHED CONTRACTOR INSTALLED.
- H.P. — HORSEPOWER.

SYMBOLS LIST CONT.

- KP — INTRUSION ALARM SECURITY KEYPAD. +48" A.F.F. OFOI EQUIPMENT.
- EXISTING J-BOX TO BE DEMOLISHED.
- DEMOLISH EXISTING FLUSH MOUNTED RECEPTACLE OUTLET INCLUDING ASSOCIATED WIRES. PROVIDE BLANK COVER PLATE IF NOT BEING RE-USED.
- SS — DEMOLISH (E) WALL SWITCH INCLUDING ASSOCIATED CONDUIT AND WIRES.
- DEMOLISH (E) LIGHTING FIXTURE INCLUDING ASSOCIATED CONDUIT AND WIRES.

A.F.F.	ABOVE FINISHED FLOOR.
N.F.	NONFUSED.
N.O.	NORMALLY OPEN.
LCP	LIGHTING CONTROL PANEL.
MLO	MAIN LUGS ONLY.
MTTB	MAIN TELEPHONE TERMINAL BACKBOARD.
OFOI	OWNER FURNISHED OWNER INSTALLED.
C.O.	CONDUIT ONLY WITH PULL WIRE.
A.I.C.	AMPERE INTERRUPTING CURRENT.
W.P.	WEATHERPROOF.
U.O.N.	UNLESS OTHERWISE NOTED.
N.C.	NORMALLY CLOSED.
C/B	CIRCUIT BREAKER.
A.F.G.	ABOVE FINISH GRADE.
PC	PHOTOCELL.

CCTV, INTRUSION ALARM, PUBLIC ADDRESS CABLE AND WIRING

- —C— 1" CONDUIT ONLY FOR CCTV CABLE.
- —2C— 1-1/4" CONDUIT ONLY FOR CCTV CABLE.
- —A— 1" CONDUIT ONLY FOR INTRUSION ALARM WIRING.
- —M— 1" CONDUIT ONLY FOR PA SYSTEM.
- —SP— 1"C.O. FOR PA SYSTEM.
- — —SP— — 1"C.O. FOR PA SYSTEM.

COMPUTER DATA/TELEPHONE, CABLE & WIRING

- —2D— 1"C.O. FOR OWNERS 2D DATA/TEL CABLES.
- —2D/1T— 1"C.O. FOR OWNERS 2D/1T DATA/TEL CABLES.
- —4D/2T— 1-1/4"C.O. FOR OWNERS 4D/2T DATA/TEL CABLES.
- —6D/3T— 1-1/2"C.O. FOR OWNERS 6D/3T DATA/TEL CABLES.

CABLE TYPE

"D" CABLE – 4 PAIR #24 UTP CATEGORY 6A CABLE.

"DC" CABLE – 4 PAIR #24 UTP CATEGORY 5E CABLE (LIGHTING CONTROL).

"T" CABLE – 3C#24 UTP CAT-3 CABLE.

CODES, STANDARDS & GUIDES

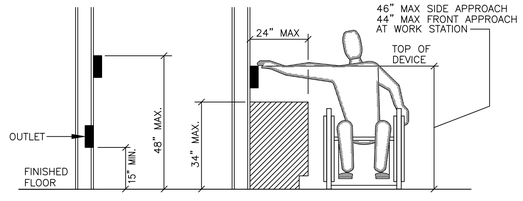
PARTIAL LIST OF APPLICABLE CODES AS OF January 1, 2017

2016 California Administrative Code, Part 1, Title 24 C.C.R.
2016 California Building Code (CBC), Part 2, Title 24 C.C.R.
(2015 International Building Code Volumes 1-2 and 2013 California Amendments)
2016 California Electrical Code (CEC), Part 3, Title 24 C.C.R.
(2014 National Electrical Code and 2016 California Amendments)
2016 California Mechanical Code (CMC) Part 4, Title 24 C.C.R.
(2015) Uniform Mechanical Code and 2016 California Amendments)
2016 California Plumbing Code (CPC), Part 5, Title 24 C.C.R.
(2015) Uniform Plumbing Code and 2016 California Amendments)
2016 California Energy Code (CEC), Part 6, Title 24 C.C.R.
2016 California Elevator Safety Construction Code (CEC), Part 7, Title 24 C.C.R.
2016 California Historical Building Code (CFC), Part 8, Title 24 C.C.R.
2016 California Fire Code, Part 9, Title 24 C.C.R.
(2015 International Fire Code and 2016 California Amendments)
2016 California Green Building Standards Code, Part 11, Title 24 C.C.R.
2016 California Referenced Standards, Part 12, Title 24 C.C.R.
Title 19 C.C.R., Public Safety, State Fire Marshal Regulations
2010 ASME A17.1(w/ A17.1a/CSA B44a-08 addenda) Safety Code For Elevators And Escalators

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13	Automatic Sprinkler Systems	2016 Edition
NFPA 14	Standpipe Systems	2016 Edition
NFPA 17	Dry Chemical Extinguishing Systems	2016 Edition
NFPA 17a	Wet Chemical Systems	2016 Edition
NFPA 20	Stationary Pumps	2016 Edition
NFPA 22	Water tanks for Private Fire Protection	2016 Edition
NFPA 24	Private Fire Mains	2016 Edition
NFPA 25	Inspection, Testing, Maintenance of Water-based Fire Protection Systems	2014 Edition
NFPA 72	National Fire Alarm Code	2016 Edition
NFPA 253	Critical Radiant Flux of Floor Covering Systems	2015 Edition
NFPA 2001	Clean Agent Fire Extinguishing Systems	2015 Edition
ICC 300	ICC Standards on Bleachers, Folding and Telescoping Seating and Grand stands	2012 Edition

Reference code section for NFPA Standards– 2016 CBC (SFM) Chapter 35. See Chapter 35 for State of California amendments to NFPA Standards.



MOUNTING HEIGHTS OVER OBSTRUCTION

MOUNTING HEIGHTS

N.T.S.

TYPICAL MOUNTING HEIGHTS ABOVE FINISHED FLOOR (UNLESS OTHERWISE NOTED ON DRAWINGS)

+48" TO TOP OF BOX	LIGHT SWITCHES, DIMMER SWITCHES, FIRE ALARM PULL STATION, DUCT DETECTOR TEST PANEL, INTERCOM CALL SWITCH, SPEAKER VOLUME CONTROL, T-STATS, BY-PASS TIMER, WALL TELEPHONE.
+15" TO BOTTOM OF BOX	ALL DUPLEX RECEPTACLES, WALL OUTLET FOR DESK TELEPHONE, COMPUTER OUTLET, UNLESS OTHERWISE NOTED.

GENERAL NOTES

1. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIAL FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
2. WORK INCLUDES ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, DELIVERY AND INSTALLATION OF ELECTRICAL SYSTEM, COMPLETE, AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
3. CONSTRUCT PROJECT IN ACCORDANCE WITH FOLLOWING CODES: REGULATIONS OF STATE AND LOCAL FIRE MARSHAL; NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION, EDITION IN FORCE; LOCAL CODES AND ORDINANCES; TITLE 19, 21 AND 24 CALIFORNIA ADMINISTRATIVE CODE.
4. PERMITS, FEES AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED BY ANY CONSTITUTED AUTHORITY HAVING JURISDICTION INCLUDING UTILITIES. ARRANGE AND PAY FOR ALL REQUIRED INSPECTIONS OR EXAMINATIONS AND DELIVER CERTIFICATES OF INSPECTION TO ARCHITECT.
5. SUBMIT A LIST OF MATERIALS AND EQUIPMENT MANUFACTURERS THAT CONTRACTOR INTENDS TO USE. SUBMIT SHOP DRAWINGS FOR: CONDUITS, PULLBOXES, LIGHTING PANEL CONDUIT, LIGHT FIXTURES, BREAKERS AND DISCONNECT SWITCHES.
6. THE TERM "PROVIDE" USED ON DRAWINGS SHALL BE CONSIDERED TO MEAN "FURNISH AND INSTALL".
7. BEFORE PROCEEDING WITH WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND ASSUME ALL RESPONSIBILITY FOR FITTING OF MATERIALS AND EQUIPMENT TO OTHER PARTS OF EQUIPMENT AND TO STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF CLASS INDICATED. CAREFULLY CHECK DRAWINGS AND SEE THAT EQUIPMENT WILL FIT INTO SPACES PROVIDED.
8. LOCATIONS OF CONDUITS, OUTLETS, APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED.
9. BE CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINEAR RUNS OF WIRING OR CONDUIT. WIRING DIAGRAMS DO NOT NECESSARILY SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT.
10. EXTRA WORK OR COSTS TO THIS CONTRACTOR DUE TO OTHER CONTRACTORS OR TRADES SHALL BE ADJUSTED BETWEEN THIS CONTRACTOR AND OFFENDING CONTRACTOR AT NO EXTRA COST TO OWNER. NOTIFY ARCHITECT BEFORE SUCH EXTRA WORK IS DONE.
11. WHERE EQUIPMENT IS MOUNTED ON VIBRATION ISOLATORS, USE FLEXIBLE CONNECTIONS TO REDUCE TRANSMISSION OF NOISE.
12. WHERE CONDUITS PASS THROUGH SLEEVES IN INTERIOR WALLS, FLOORS, OR CEILINGS, COMPLETELY FILL SPACE BETWEEN EACH CONDUIT AND ITS SLEEVE TO PROVIDE AN AIRTIGHT SEAL.
13. USE GLASS FIBER MATERIAL, "DUXSEAL" COMPOUND, FOR ACOUSTIC SEALS.
14. ALL EQUIPMENT SHALL BE BRACED AND/OR ANCHORED TO RESIST A HORIZONTAL FORCE PER TITLE 24, PART 2 SECTION 2312 FOR ZONE 4.
15. PROVIDE CAST OUTLET BOXES IN EXTERIOR LOCATIONS AND WET LOCATIONS.
16. WHERE BOXES ARE INSTALLED IN FIRE RATED CEILING OR WALLS, BE RESPONSIBLE FOR PRESERVING INTEGRITY OF FIRE RATING AS REQUIRED.
17. PROVIDE COPPER CONDUCTORS ONLY.
18. PROVIDE TYPE "THHN" OR "THWN" WIRES ONLY.
19. PROVIDE "U.L. APPROVED" OR "U.L. LISTED" ELECTRICAL EQUIPMENT ONLY.
20. USE RIGID GALVANIZED STEEL CONDUIT FOR ALL SIZES WHERE DIRECTLY EXPOSED TO WEATHER; WHERE SUBJECT TO ABNORMAL CONDITIONS OF HEAT, COLD, MOISTURE, HUMIDITY, FUMES AND HAZARDOUS ELEMENTS; WHERE INSTALLED EXPOSED BELOW 7-1/2 FEET, IN AREAS WHERE SUBJECT TO MECHANICAL INJURY INCLUDING MECHANICAL AND EQUIPMENT ROOMS; AND IN CONCRETE SLABS ON GRADE.
21. EMT CONDUIT WITH COMPRESSION TYPE FITTINGS MAY BE USED FOR ALL SIZES UP TO 1-1/2 INCHES MAXIMUM TRADE SIZE IN DRY LOCATIONS AS IN STUD PARTITIONS AND FURRED CEILING SPACES. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET TO PANEL EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED OR INDICATED. EMT SHALL NOT BE RUN EXPOSED, IN CONCRETE, RUNS MORE THAN 100 FEET FOR POWER FEEDERS.
22. USE FLEXIBLE STEEL CONDUIT ONLY WHERE INDICATED AND FOR SHORT MOTOR OR VIBRATING EQUIPMENT CONNECTIONS, MINIMUM 36 INCHES LONG, OR FOR CONNECTIONS TO RECESSED FIXTURES FROM JUNCTION OR PULLBOXES. MAXIMUM LENGTH FOR ANY APPLICATION SHALL BE 6 FEET. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT WITH SEPARATE INSULATED, STRANDED COPPER EQUIPMENT GROUND CONDUCTOR FOR CONNECTIONS IN AREAS EXPOSED TO THE WEATHER, DAMP OR WET LOCATIONS AND CONNECTIONS TO MOTORS AND TRANSFORMER ENCLOSURES, REGARDLESS OF LOCATION.
23. USE PVC (POLYVINYL CHLORIDE) CONDUIT BELOW GRADE ONLY. RUN AT MINIMUM OF 6" BELOW BOTTOM OF FLOOR SLAB OR 24" BELOW GRADE OUTSIDE OF BUILDING LINES UNLESS OTHERWISE NOTED. USE RIGID STEEL ELBOWS AND RISERS THROUGH SLAB.
24. SEAL ALL PVC CONDUITS AT BOTH ENDS WITH "PERMACEL" INCLUDING THOSE TERMINATING IN STEEL RISERS. MAKE GAS TIGHT.
25. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
26. PROVIDE A #12 PULL WIRE IN ALL CONDUITS INDICATED AS CONDUIT ONLY (C.O.) RATED 250 POUND TENSILE STRENGTH.
27. WIRING DEVICES: HIGHEST SPECIFICATION GRADE, COLOR AS SELECTED BY ARCHITECT.
28. WIRING DEVICE PLATES: COLOR-FINISH AS SELECTED BY ARCHITECT.
29. PROVIDE ALL NECESSARY J-BOXES AND PULL BOXES OF PROPER SIZES AS REQUIRED.
30. PROVIDE WEATHERPROOF TYPE ELECTRICAL EQUIPMENT FOR EXTERIOR LOCATIONS.
31. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF WORK. BE RESPONSIBLE FOR CHECKING AND COORDINATING WITH OTHER TRADES AND VERIFYING SPACE IN WHICH WORK WILL BE INSTALLED.
32. PROVIDE NAMEPLATES ON SWITCHBOARD, PANELBOARDS, DISCONNECT SWITCHES, TIME CLOCKS, CONTACTORS, TRANSFORMERS AND OTHER MAJOR ELECTRICAL EQUIPMENT. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON A BLACK BACKGROUND. SCREW NAMEPLATES TO EQUIPMENT.
33. SEAL ALL SPACE AROUND CONDUIT PENETRATION THROUGH FIRE-RATED WALL WITH A UL LISTED FIRE BARRIER COMPOUND. "3M" CAULKING OR EQUAL.
34. DRAWINGS DO NOT SHOW ALL NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED SURFACES WHERE THE BOXES ARE ATTACHED.
35. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE CITY OF LA BUILDING & SAFETY DEPARTMENT.
36. FUSIBLE DISCONNECT SWITCH SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
37. WHEN TRENCHING FOR NEW UNDERGROUND CONDUIT, EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ALL DAMAGED LINES. CONTRACTOR SHALL INSTALL "ELECTRICAL CONDUIT" WARNING YELLOW TRACING TAPE 6" BELOW FINISH GRADE FOR THE ENTIRE TRACE LENGTH.
38. AS PART OF CLOSEOUT DOCUMENT CONTRACTOR SHALL PROVIDE ONE SET OF AS-BUILTS DRAWINGS AT THE COMPLETION OF THE JOB. SHOW EXACT LOCATION AND MOUNTING OF EQUIPMENT INCLUDING DIMENSIONS.
39. CONDUITS ENTERING AND/OR LEAVING POLE FOOTING SHALL BE RIGID PVC COATED STEEL WITH PLASTIC BUSHING. MAKE TRANSITION FROM PVC TO METALLIC AT A MINIMUM DISTANCE OF 3'-0" FROM FOOTING.
40. UNDERGROUND CONDUIT RUNS IN RECREATION AND PARKS PROPERTY INSTALLED WITH SCHEDULE 40 PVC SHALL HAVE A MINIMUM 3" TOP COVER TO CONCRETE OVER ITS ENTIRE LENGTH (EXCEPT UNDER CONCRETE SIDEWALKS) AND SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE PREVAILING CODE BUT NOT LESS THAN SHOWN ON THE PLAN. CONCRETE COVER SHALL BE MINIMUM OF 100-E-100 SLURRY MIX.
41. ALL CONDUITS BENDS INSTALLED UNDERGROUND SHALL BE THE LONG RADIUS TYPE WITH RADII NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT AND WITH NOT MORE THAN THREE 90° BENDS IN ANY RUN. EXCEPTION: FOR POWER AND LIGHT CONDUIT ABOVE GROUND, FACTORY ELLS ARE PERMITTED.
42. CONDUITS IN UNDERGROUND PULL BOXES SHALL BE SEALED WITH "LHD1" OR "LHD5" DUCT SEAL AS MANUFACTURED BY DOTTIE CO. OR APPROVED EQUAL.
43. PLACE 6" WIDE, 4 MIL PLASTIC YELLOW MARKER TAPE AT 12 INCHES BELOW FINISH GRADE ALONG AND ABOVE BURIED CONDUITS. LABEL TAPE "CAUTION: ELECTRIC LINE BELOW" OR SIMILAR WORDING.
44. ALL SPLICES IN UNDERGROUND PULL BOXES SHALL BE SCOTCH BAGGED AND WATER TIGHT.
45. FOR EACH NEW LED LIGHTING INSTALLATION (OR RETROFIT OF EXISTING MH, HPS OR OTHER TYPE OF LIGHTING SOURCES) CONTRACTOR SHALL CONTACT MS. MAYCHELL YEE FROM DEPARTMENT OF WATER AND POWER (DWP) AND SUBMIT REBATE APPLICATION. PHONE # (213) 367-2306.
46. RECORD DRAWINGS: IMMEDIATELY AFTER WORK IS INSTALLED, CAREFULLY DRAW ON PRINTS IN RED INK ALL WORK WHICH IS INSTALLED AT VARIANCE WITH THE WORK AS INDICATED ON THE DRAWINGS. INDICATE BY MEASURED DIMENSION TO BUILDING CORNERS OR OTHER PERMANENT MONUMENTS THE EXACT LOCATION OF ALL CHANGES.
47. OPERATING MANUALS AND INSTRUCTIONS: THE CONTRACTOR SHALL FURNISH TO THE CITY FOUR BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS FOR ALL ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL EXPLAIN IN DETAIL ALL MANUALS FOR THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT TO THE RECREATION AND PARKS MAINTENANCE PERSONAL BEFORE COMPLETION AND ACCEPTANCE OF THE PROJECT.
48. ANTI-GRAFFITI COATINGS: THE CONTRACTOR TO APPLY AN ANTI-GRAFFITI COATING TO ALL LIGHT POLE CONCRETE BASES. ACCEPTABLE PRODUCTS: "SUPER-KOTE A-G5" SEALER MANUFACTURED BY VEN-CHEM COMPANY INC. P.O. BOX 3186, SANTA BARBARA, CALIFORNIA, PHONE (805)967-7600 OR "MONOCHEM PERMASHIELD" BY FRAZEE PAINT CO. RESEARCH REPORT NO. 28080, PHONE (800) 826-9048. THE "GRAFFITIRASOR SYSTEMS" MANUFACTURED BY RAINPROOF SYSTEMS, CITY OF COMMERCE, CA 90022, RESEARCH REPORT NO. 25035, PHONE (213) 887-8761. "VANDAL GUARD" BY RAINGUARD PRODUCTS CO., 821 W. HYDE PARK BLVD.; INGLEWOOD, CA 90302, PHONE (310) 670-2953. OR APPROVED EQUAL.
49. LIGHTING PANELBOARDS. PANELBOARDS SHALL BE DEAD-FRONT, FLUSH OR SURFACE MOUNTED AS INDICATED ON PANEL SCHEDULES. CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC TYPE, QUICK-MAKE QUICK-BREAK MECHANISM AND BOLT-ON CONSTRCTION. PROVIDE A HINGED LOCKABLE DOOR FOR EACH PANELBOARD WITH A TYPEWRITTEN DIRECTORY OF CIRCUITS CONTROLLED BEHIND EACH DOOR WITH A PLASTIC PROTECTION.
50. PROVIDE APPROVED PAD LOCKING DEVICE FOR EACH AND EVERY CIRCUIT BREAKER IN EVERY PANELBOARD (THESE ARE IN ADDITION TO ANY HANDLE LOCKOFFS INDICATED ON PANEL SCHEDULES).
51. ALL CIRCUIT BREAKERS IN ALL LIGHTING PANELBOARDS SHALL HAVE A MINIMUM INTERRUPTING CAPACITY RATING OF 10,000 AMPS FOR 120/208V AND 14,000 A.I.C. FOR 277/480V.

BUREAU OF ENGINEERING — OFFICIAL RECORD

BID SET
Date: May 17, 2022

SCOPE OF WORK

INSTALLATION OF LIGHTING, POWER, AND SECURITY SYSTEMS OF THE REFURBISHED BATHHOUSE BUILDING.

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

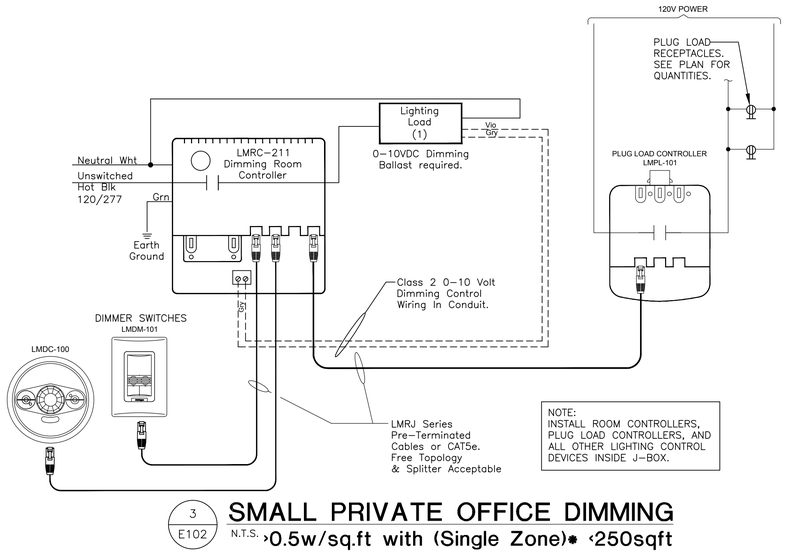
REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:49 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E101.DWG

CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS — BUREAU OF ENGINEERING
ENGINEERING — CITY OF LOS ANGELES
BUILDING NO. -
INDEX NO. RP-300123
REVISIONS: NO. | DATE | BY | SERIAL NO.
TED ALLEN, P.E. — CITY ENGINEER — DATE: 03/10/2022
ARCHITECTURAL DIVISION — LIC. NO. E14126 — DATE: 03/10/2022
ENGINEER: JIMMY FONG — DATE: 03/10/2022
DESIGNED BY: P.M. — DATE: 03/10/2022
DRAWN BY: H.Y. — DATE: 03/10/2022
CHECKED BY: P.M. — DATE: 03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT — DATE: 03/11/2022
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: SYMBOL LIST, CODES, AND NOTES
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042
WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E101
SHEET 63 OF SHEETS 96

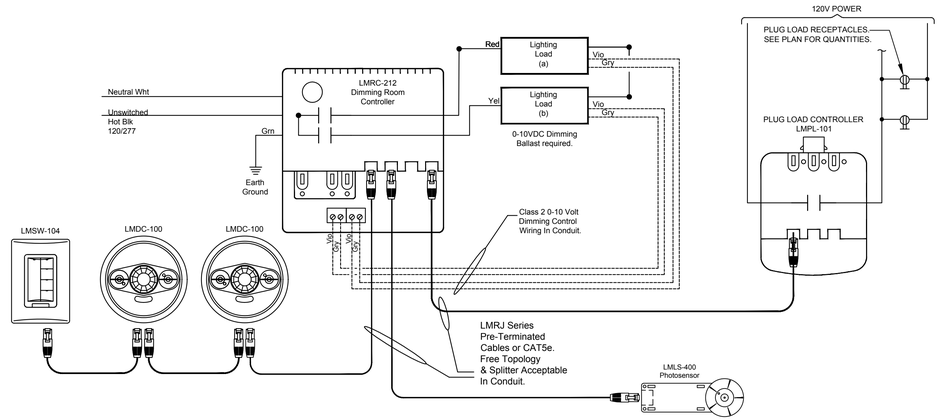
REGISTERED PROFESSIONAL ENGINEER — JIMMY L. FONG — No. E14126 — CIVIL — 3/10/2022 — STATE OF CALIFORNIA

PLOTTED: 3/10/2022 2:59 PM



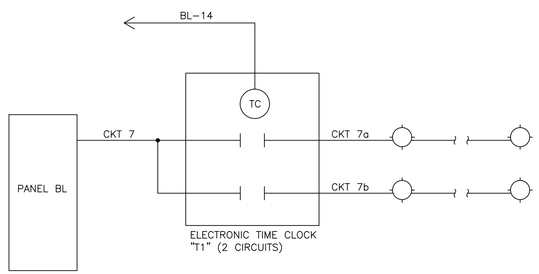
3 / E102 **SMALL PRIVATE OFFICE DIMMING**

N.T.S. ›0.5w/sq.ft with (Single Zone)* ‹250sqft



2 / E102 **OPEN OFFICE DIMMING / MULTI-ZONE**

N.T.S. ›0.5w/sq.ft with Daylighting (Multi-Zone)



1 / E102 **LIGHTING CONTROL DIAGRAM**

N.T.S.

NOTE: TIME CLOCK "TB" IS SIMILAR.

LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS:

CLG = CEILING
REC = RECESS
CHN = CHAIN HUNG
PEN = PENDANT
SPC = SPECIAL
WALL = WALL
STD = STANDARD
LED = LIGHT EMITTING DIODE

NOTES:

1. VERIFY EXACT CEILING TYPE AND PROVIDE PROPER FIXTURES WITH ALL NECESSARY MOUNTING ACCESSORIES.

	TYPE	MTG.	CLASS	MANUFACTURER AND CATALOG NUMBER	FINISH	LAMP TYPE	TOTAL WATTS	VOLT	DESCRIPTION
	A	PEN	LED	CONTECH LTG #CGL12100-40K MVD2-AL16-FC-PACDLA16-P	STD	LED 4000K	98	120	16" DIA PENDANT MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER.
	AE	PEN	LED	CONTECH LTG #CGL12100-40K MVD2-EC-A16-FC-PACDLA16-P	STD	LED 4000K	98	120	SAME AS FIXTURE "A" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	B	PEN	LED	CONTECH LTG #CGL1238-40K-MVD2-CW-FC-P-PACDLA12	STD	LED 4000K	38	120	12" DIA PENDANT LED FIXTURE WITH 12" DIAMETER METAL REFLECTOR, WIDE DISTRIBUTION WITH 0-10V DIMMING DRIVER.
	BE	PEN	LED	CONTECH LTG #CGL1238-40K-MVD2-EC-CW-FC-P-PACDLA12	STD	LED 4000K	38	120	SAME AS FIXTURE "B" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	C	CLG	LED	LUMINAIRE LED #VPF8-4-50W-4000K-120-277-CP-BLK-DM	STD	LED 4000K	50	120	4 FT SURFACE MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER.
	CE	CLG	LED	LUMINAIRE LED #VPF8-4-50W-4000K-120-277-CP-BLK-DM-4EMB310	STD	LED 4000K	50	120	SAME AS FIXTURE "C" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	D	CLG	LED	COLUMBIA LIGHTING #LCL8-40-LW-E-U	STD	LED 4000K	25	120	4 FT SURFACE MOUNTED LED STRIP.
	F	REC	LED	PRESCOLITE #LF6LEDG4-6LFLED7G4-40K-IP65-B6	STD	LED 4000K	27	120	6" DIA RECESS LED FIXTURE APPROVED FOR WET LOCATION.
	G	CLG	LED	ASL LIGHTING #DSF-24-4000K-DV-FW-LCU	STD	LED 4000K	24	120	CEILING MOUNTED LED FIXTURE, WET LOCATION TYPE.
	GE	CLG	LED	ASL LIGHTING #D5F-24-4000K-DV-FW-LCU-EMG	STD	LED 4000K	24	120	SAME AS FIXTURE TYPE "G" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK WITH BUILT-IN OCCUPANCY SENSOR. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	H	WALL	LED	EVENLITE #CCDS-EM-G-1-AA-1B-SD	STD	LED	25	120	UNIVERSAL MOUNTED LED EXIT SIGN, GREEN LETTERS, BRUSH ALUMINUM BODY WITH EMERGENCY BACK UP. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	J	CLG	LED	COLUMBIA LIGHTING #LXEM-4-40-LW-RFA-ED-U-OS1360WLK	STD	LED	36	120	4' SURFACE MOUNTED LED ENCLOSED AND GASKETED FIXTURE WITH BUILT-IN OCCUPANCY SENSOR.
	JE	CLG	LED	COLUMBIA LIGHTING #LXEM-4-40-LW-RFA-ED-U-ELL14-OS1360WLK	STD	LED	36	120	SAME AS FIXTURE "J" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	K	CLG	LED	HUBBELL #VBGL-GUARD	STD	LED	11	120	CEILING MOUNTED LED LTS WITH WIRE GUARD.
	K1	WALL	LED	HUBBELL #VWGL-GUARD	STD	LED	11	120	WALL MOUNTED LED LIGHTS WITH WIREGUARD.
*	L	POLE	LED	CREE LIGHTING #OSQ-WM-DM-3ME-K-40K-UL-BZ-DIM-PML2-XA-SENSREM	STD	LED	130	240	POLE MOUNTED LED FIXTURE MOUNTED ON MUSCO POLE FOR SECURITY LIGHTS.

* - THIS FIXTURE COMES WITH THE MUSCO POLE ASSEMBLY. IT IS SHOWN FOR TITLE 24 CALCULATIONS ONLY.

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
CITY OF LOS ANGELES ENGINEERING

NO.	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 12-31-2023 STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION		03/10/2022
ENGINEER: JIMMY FONG	LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		03/10/2022
CHECKED BY: P.M.		03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LIGHTING FIXTURE SCHEDULE & DETAILS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E102

SHEET 64 OF SHEETS 96

PLOTTED: 3/10/2022 2:59 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:51 PM FILE: S:\ACAD\JF\2015\V15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E102.DWG

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Control System Summary

Project Specific Notes:

Project Information

Project #:	185614
Project Name:	Verdugo Hills Recreation City Pool Deck [City Of LA
Date:	02/12/20
Project Engineer:	Daniel Lohman
Sales Representative:	Mike Higgins
Control System Type:	LED C&M
Communication Type:	PowerLine-ST
Scan:	185614B
Document ID:	185614P1V5-0212113156
Distribution Panel Location or ID:	Panel
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	240/60/1
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	5	30 AMP
Total Off/On/Auto Switches:	4	

Preliminary Plans
Confirm all Details - voltage,
# of distribution panels, etc.

Materials Checklist

Contractor/Customer Supplied:

- ❑ A dedicated control circuit must be supplied per distribution panel location.
  - — If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for circuits
  - — HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- ❑ Wiring:
  - — See chart on page 2 for wiring requirements
  - — Equipment grounding conductor and splices must be insulated. (per circuit)
  - — Lightning ground protection (per pole), if not Musco supplied.
- ❑ Electrical conduit wireway system
  - — Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

NOTE: Refer to Installation Instructions for more details on equipment information and ihe installation requirements

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Form: T-0030-1

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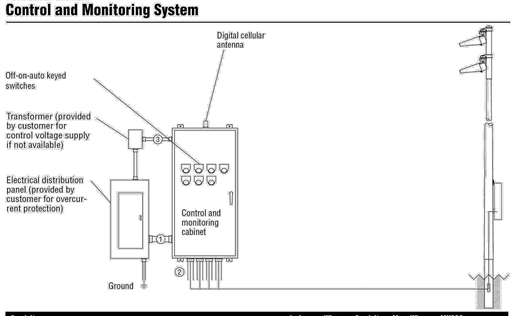
Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 2 of 4

Control•Link® Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
1	Power-line Communication Connection (dedicated, 20A)	*A	12	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E

* Notes: R60-100-00_A

A. See voltage and phasing per the notes on cover page.
B. Calculate per load and voltage drop.
C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
D. Equipment grounding conductor and any splices must be insulated.
E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).

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Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 3 of 4

SWITCHING SCHEDULE

Field/Zone Description	Zones
Pool	**1,2,3,4**
-Deck	1
-Security	2
-Spare 1	3
-Spare 2	4

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1798.0
	SEALED: 205.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
P1,P4	Deck	8	4	**16.0**	30	C1	1
P2,P3	Deck	6	4	**12.0**	30	C2	1
P1,P2,P3,P4	Security	4	4	**0.0**	30	C3	2
P5	Spare 1	1	0	**1.0**	30	C4	3
P6	Spare 2	1	0	**1.0**	30	C5	4

*Full Load Amps based on amps per driver.

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Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 4 of 4

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole P1,P4	16.00		
1	1	C2	Pole P2,P3	12.00		
1	1	C3	Pole P1,P2,P3,P4	0.00		
1	1	C4	Pole P5	1.00		
1	1	C5	Pole P6	1.00		

ZONE SCHEDULE

ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION: POLE ID	CIRCUIT DESCRIPTION: CONTACTOR ID
Zone 1	1	Deck	P1	C1
			P4	C1
			P2	C2
			P3	C2
Zone 2	2	Security	P1	C3
			P2	C3
			P3	C3
			P4	C3
Zone 3	3	Spare 1	P5	C4
Zone 4	4	Spare 2	P6	C5

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Verdugo Hills Recreation City Pool Deck

Tujunga,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
P1, P4	50'	30'	1	CREE OSQ	0.13 kW	B
		50'	4	TLC-LED-400	1.60 kW	A
P2-P3	50'	30'	1	CREE OSQ	0.13 kW	B
		50'	3	TLC-LED-400	1.20 kW	A
4			*18*		*6.12 kW*	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Pool	5.6 kW	14
B	Security	0.52 kW	4

Fixture Type Summary

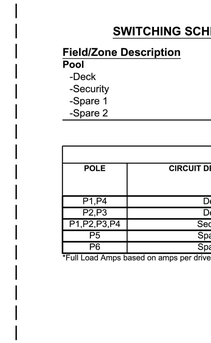
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
CREE OSQ	LED 5700K - 70 CRI	130W	17,000	--	--	--	4
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>81,000	>81,000	>81,000	14

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination: Ave	Min	Max	Max/Min	Ave/Min	Circuits	Fixture Qty
Deck	Horizontal	33.4	18	45	2.53	1.85	A	14
Pool	Horizontal Illuminance	42.3	37	52	1.43	1.14	A	14
Security	Horizontal	2.58	1	4	6.69	2.58	B	4
Security	Horizontal	2.58	1	4	6.69	2.58	B	4

From Hometown to Professional



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ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

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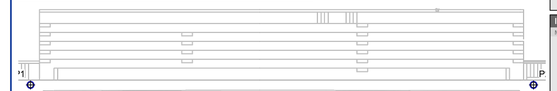
PROJECT SUMMARY

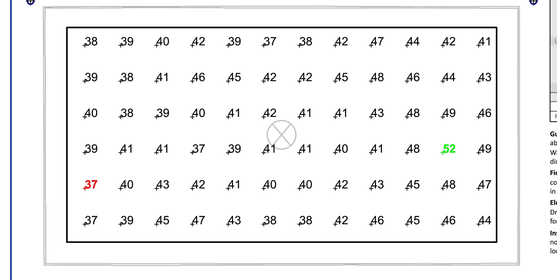
Verdugo Hills Recreation City Pool Deck

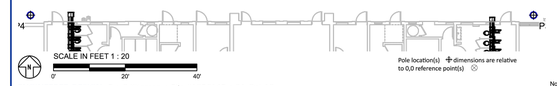
Tujunga,CA

EQUIPMENT LIST FOR AREAS SHOWN

Pole QTY	Pole LOCATION	Pole SIZE	Pole GRADE ELEVATION	Luminaires MOUNTING HEIGHT	Luminaires LUMINAIRE TYPE	Luminaires QTY / POLE	Luminaires THIS GRID	Luminaires OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	4	4	0
2	P2-P3	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	3	3	0
4	TOTALS					13	14	4







GRID SUMMARY

Name:	Pool
Size:	120' x 60'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Scan Average:	42.26
Maximum:	52
Minimum:	37
Avg / Min:	1.15
Max / Min:	1.43
UG (adjacent pts):	1.16
CU:	0.44
No. of Points:	72

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	14
Total Load:	5.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY

BUREAU OF ENGINEERING
OFFICIAL RECORD

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
EXP. 06/30/2023

TED ALLEN, P.E.
CITY ENGINEER
ARCHITECTURAL DIVISION
LIC. NO. E14126

		DATE:
CITY ENGINEER	TED ALLEN, P.E.	03/10/2022
ARCHITECTURAL DIVISION		03/10/2022
LIC. NO. E14126		03/10/2022
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/11/2022
DRAWN BY:	H.Y.	
CHECKED BY:	P.M.	
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: MUSCO LIGHTING CONTROL SUMMARY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E103
SHEET 65 OF SHEETS 96

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BID SET
Date: May 17, 2022

PLOTTED: 3/10/2022 2:59 PM

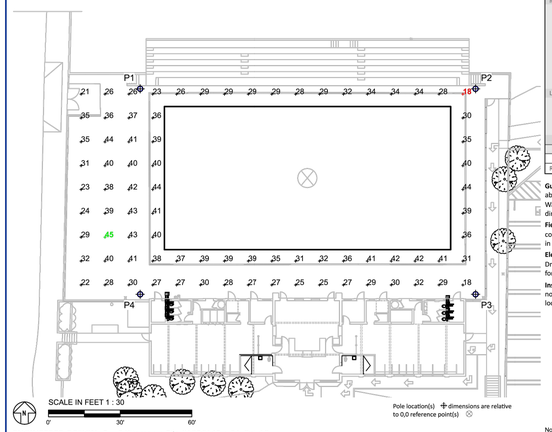
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:52 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E103.DWG

REVISION DATES (DESIGN STAGE ONLY)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	4	4	0
2	P2-P3	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	3	3	0
4	TOTALS					18	14	4



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

GRID SUMMARY

Name:	**Deck**
Size:	120' x 60'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**33.38**
Maximum:	45
Minimum:	18
Avg / Min:	1.89
Max / Min:	**2.53**
UG (adjacent pts):	1.68
CU:	0.39
No. of Points:	81

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	**14**
Total Load:	5.6 kW

Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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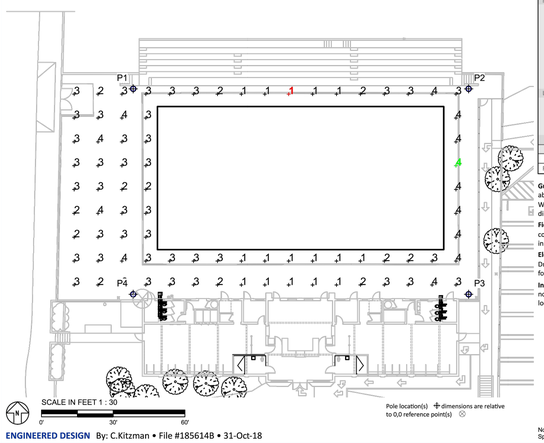
ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	1	0
				50'	TLC-LED-400	4	0	4
2	P2-P3	50'	-	30'	CREE OSQ	1	1	0
				50'	TLC-LED-400	3	0	3
4	TOTALS					18	4	14



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

GRID SUMMARY

Name:	**Security**
Size:	0' x 0'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**2.58**
Maximum:	4
Minimum:	1
Avg / Min:	4.31
Max / Min:	**6.69**
UG (adjacent pts):	1.80
CU:	0.32
No. of Points:	81

LUMINAIRE INFORMATION

Color / CRI:	5700K - 70 CRI
Luminaire Output:	17,000 lumens
No. of Luminaires:	**4**
Total Load:	0.52 kW

Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
CREE OSQ	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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ILLUMINATION SUMMARY

EQUIPMENT LAYOUT

INCLUDES:
- Pool
- Security

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

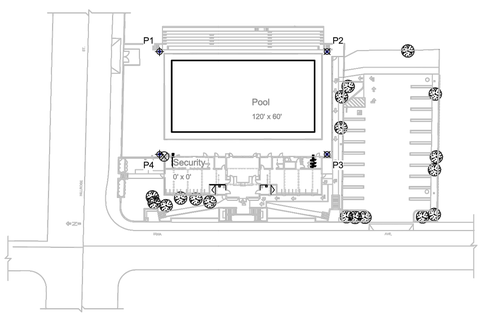
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	P1, P4	50'	-	30'	CREE OSQ	1
				50'	TLC-LED-400	4
2	P2-P3	50'	-	30'	CREE OSQ	1
				50'	TLC-LED-400	3
4	TOTALS					18

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (All min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Cree OSQ	-	-	-	-	-	-	-
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

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EQUIPMENT LAYOUT

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

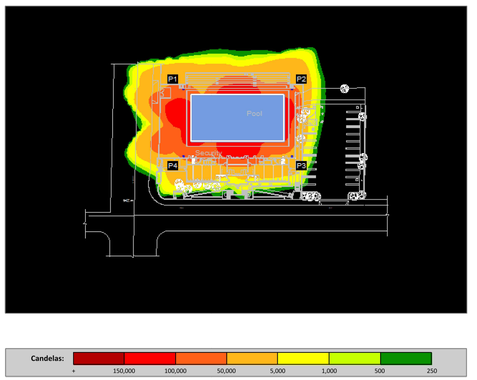
GLARE

Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

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ENVIRONMENTAL GLARE IMPACT

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
LIC. NO.	E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
BUILDING NO. -
SERIAL NO.
INDEX NO. RP-300123

NO.	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: MUSCO LIGHTING CONTROL SUMMARY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E104
SHEET 66 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES: (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:52 PM
FILE: S:\ACAD\JP\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E104.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

PANEL BL

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: FIRST AID

MAIN BRK: 150A

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 22K A.I.C. FULLY RATED

MOUNTING: FLUSH

SPLIT BUSSED PANEL

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
OFFICE, ENTRY LOBBY	594		6			1	20-1	*	20-1	2			12	412		STORAGE, TOILETS, OFFICE
STORAGE, TOILETS, FIRST AID		412	12			3	20-1	*	20-1	4			16		609	GIRLS DRESSING ROOM
BOYS DRESSING RM.	609		16			5	20-1		20-1	6			11	394		BASEMENT
* EXTERIOR LTS. WEST		299	13			7	20-1		20-1	8			5		500	(E) TUNNEL LTS-NORTH
SPARE						9	20-1		20-1	10			5	500		(E) TUNNEL LTS-SOUTH
SPARE						11	20-1		20-1	12	1				300	TIME CLOCK
SPARE						13	20-1		20-1	14						SPARE
SPARE						15	20-1		20-1	16						SPARE
SPARE						17	20-1		20-1	18						SPARE
SPARE						19	20-1		20-1	20						SPARE
STORAGE, TOILET, GIRLS DRESSING	900			5		21	20-1		20-1	22		5		900		STORAGE, TOILET, BOYS DRESSING
OFFICE, GIRLS DRESSING		900		5		23	20-1		20-1	24		5			900	STORAGE, TOILET, BOYS DRESSING
OFFICE	360			2		25	20-1		20-1	26		2		360		EXTERIOR RECEPT. - EAST
WATER HEATER, CIRC PUMP CONTROLS		400			1	27	20-1		20-1	28		2			800	CCTV/SEC
OFFICE, ENTRY LOBBY	900			5		29	20-1		20-1	30		1		500		MDF
OFFICE, ENTRY LOBBY		720		4		31	20-1		20-1	32						SPARE
OFFICE, ENTRY LOBBY	900			5		33	20-1		20-1	34						SPARE
SPARE						35	20-1		20-1	36						SPARE
SPARE						37	20-1		50-2	38	1			4380		SUB-FEED PANEL "AC"
SPARE						39	20-1		-	40					3870	- - - - -

PH-A= 11709 VA | PH-B= 9710 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 21419 VA OR 89.246 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 4329 VA X 1.25% = 5411.3 VA

FDL: 17090 VA + 5411 VA (LCL) = 22501 VA OR 93.76 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCK "TC". TC SHALL BE INTERMATIC #ET90215CE

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL P

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: BASEMENT

MAIN BRK: MLO

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 30K A.I.C. FULLY RATED

MOUNTING: SURFACE

SPLIT BUSSED PANEL

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
MUSCO POLE P1 & P4	1920		4			1	25-2	$	20-1	2			6	330		POOL LIGHTS *
- - - - -		1920				3	-	$	20-1	4			6		330	POOL LIGHTS *
MUSCO POLE P2 & P3	1440		4			5	25-2		20-1	6			11	396		BASEMENT LIGHTS
- - - - -		1440				7	-		20-2	8	1				500	MUSCO POWERLINE
SEC. LTS @ MUSCO POLE	260		4			9	20-2		-	10	-			500		- - - - -
- - - - -		260				11	-		20-1	14	1				300	TIME CLOCK TC-B
SPARE						13	20-1		20-1	16						SPARE
SPARE						15	20-1		20-1	18						SPARE
SPARE						17	20-1		20-1	18						SPARE
SPARE						19	20-1		20-1	20						SPARE
CHLORINE PUMP	510				1	21	15-1		20-1	22	1			300		MUSCO CONTROLLER
ACID PUMP		510			1	23	15-1	#	20-1	24	1				400	FACP
CHEMICAL CONTROLLER	400				1	25	20-1		20-1	26	1			1176		BACKWASH PUMP
CONV. RECEPT.		540		3		27	20-1		20-1	28						SPARE
SUMP DRAIN PUMP	1656				1	29	20-2		20-1	30						SPARE
- - - - -		1656				31	-		20-1	32						SPARE
SPARE						33	20-1		20-1	34						SPARE
SPARE						35	20-1		20-1	36						SPARE
SPACE						37				38						SPACE
SPACE						39				40						SPACE

PH-A= 8888 VA | PH-B= 7856 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 16744 VA OR 69.767 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 8036 VA X 1.25% = 10045 VA

FDL: 8708 VA + 10045 VA (LCL) = 18753 VA OR 78.14 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCKS. TIME CLOCK TC-B SHALL BE INTERMATIC #90215CE

\# PROVIDE "LOCK-ON" DEVICE ON CIRCUIT BREAKER AND RED LABEL "FIRE ALARM".

$ PROVIDE "GFCI" TYPE CIRCUIT BREAKER FOR POOL LIGHTS.

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL AC

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: STORAGE

MAIN BRK: 50A

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 22K A.I.C. FULLY RATED

MOUNTING: SURFACE

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
FC-1	75				1	1	15-2		20-1	2	4			510		INFRARED RADIANT HEATER
- - - - -		75				3	-		20-1	4						SPARE
FC-2	75				1	5	15-2		20-1	6						SPARE
- - - - -		75				7	-		20-1	8						SPARE
HP-1	3720				1	9	45-2		20-1	10						SPARE
- - - - -		3720				11	-		20-1	14						SPARE
SPARE						13	20-1			16						SPACE
SPARE						15	20-1			18						SPACE
SPARE						17	20-1			18						SPACE
SPARE						19	20-1			20						SPACE

PH-A= 4380 VA | PH-B= 3870 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 8250 VA OR 34.375 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 0 VA X 1.25% = 0 VA

FDL: 8250 VA + 0 VA (LCL) = 8250 VA OR 34.38 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCKS.

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL PP

240 VOLTS | 3 PHASE | 3 WIRE

LOCATION: BASEMENT

MAIN BRK: 175A

BUS RATING/TYPE: 225A/COPPER

S.C. RATING 30K A.I.C. FULLY RATED

MOUNTING: SURFACE

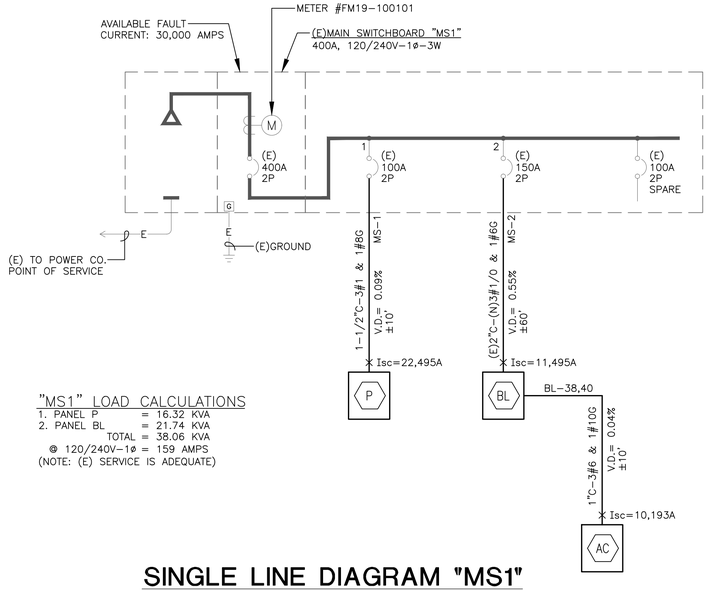
LOCATION	WATTAGE PH-A	WATTAGE PH-B	WATTAGE PH-C	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	WATTAGE PH-C	LOCATION
POOL CIRC. PUMP "CR1"	5810					1	1	80-3		80-3	2	1			5810			POOL CIRC PUMP "CP-2"
- - - - -		5810					3	-		-	4					5810		- - - - -
- - - - -			5810				5	-		-	6						5810	- - - - -
(E)DUPLEX SUMP PUMP	1881						7	20-3			8							SPACE
- - - - -		1881					9	-			10							SPACE
- - - - -			1881				11	-			12							SPACE
SPACE							13				14							SPACE
SPACE							15				16							SPACE
SPACE							17				18							SPACE

PH-A= 13501 VA | PH-B= 13501 VA | PH-C= 13501 VA

TOTAL CONNECTED LOAD: 40503 VA OR 97.598 AMPS @ 240 VOLTS -- 3 PHASE

25% OF L.M. 17430 VA X 25% = 4358 VA

FDL: 40503 VA + 4358 VA (LCL) = 44861 VA OR 108.1 A



"MS1" LOAD CALCULATIONS

1. PANEL P = 16.32 KVA
2. PANEL BL = 21.74 KVA

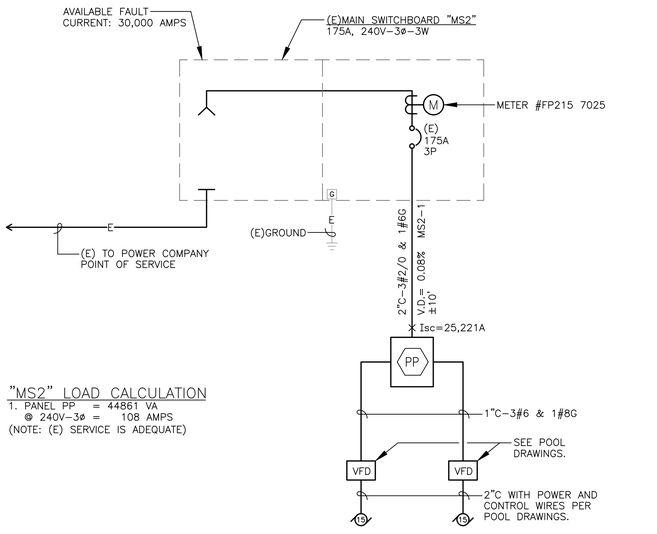
TOTAL = 38.06 KVA

@ 120/240V-1ø = 159 AMPS

(NOTE: (E) SERVICE IS ADEQUATE)

SINGLE LINE DIAGRAM "MS1"

N.T.S.



"MS2" LOAD CALCULATION

1. PANEL PP = 44861 VA

@ 240V-3ø = 108 AMPS

(NOTE: (E) SERVICE IS ADEQUATE)

SINGLE LINE DIAGRAM "MS2"

N.T.S.

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

BUILDING NO. -

INDEX NO. RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SINGLE LINE DIAGRAM & PANEL SCHEDULES

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

TED ALLEN, P.E.	CITY ENGINEER	DATE:	03/10/2022
	ARCHITECTURAL DIVISION	LIC. NO. E14126	03/10/2022
ENGINEER:	JIMMY FONG		03/10/2022
DESIGNED BY:	P.M.		03/10/2022
DRAWN BY:	H.Y.		
CHECKED BY:	P.M.		
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E105

SHEET 67 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E105.DWG

PLOTTED: 3/10/2022 3:00 PM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 1 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A. General Information

Climate Zone: 9	Conditioned Floor Area: 976 SF			
	Unconditioned Floor Area: 4597 SF			
Building Type:	☑ Nonresidential	☐ High-Rise Residential	☐ Hotel/Motel	
☐ Schools	☐ Relocatable Public Schools	☑ Conditioned Spaces	☑ Unconditioned Spaces	
Phase of Construction:	☐ New Construction	☐ Addition	☑ Alteration	
Method of Compliance:	☐ Complete Building	☑ Area Category	☐ Tailored	
Project Address:				

B. LIGHTING COMPLIANCE DOCUMENTS (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential manual published by the California Energy Commission.

YES	NO	FORM	TITLE
YES		NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
YES		NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, an PAF Calculation. All Pages required on plans for all submittals.
	NO	NRCC-LTI-03-E	Indoor Lighting Power Allowance
	NO	NRC-LTI-04-E	Tailored Method Worksheets
	NO	NRC-LTI-05-E	Line Voltage Track Lighting Worksheets

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 2 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts		Indoor Lighting Power for Unconditioned Spaces		Watts
1.	**Installed** Lighting NRCC-LTI-01-E, page 4	+	688		**Installed** Lighting NRCC-LTI-01-E, page 4	+	2438
2.	PORTABLE ONLY FOR OFFICES NRCC-LTI-01-E, page 3	+	0				
3.	Minus Lighting Control Credits NRCC-LTI-01-E, page 2	-	0		Minus Lighting Control Credits NRCC-LTI-01-E, page 2	-	0
4.	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	688		Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	2438
5.	Complies ONLY if **Installed** ≤ **Allowed**				Complies ONLY if **Installed** ≤ **Allowed**		
6.	**Allowed** Lighting Power Conditioned NRCC-LTI-03-E, page 1		753		**Allowed** Lighting Power Unconditioned NRCC-LTI-03-E, page 1		3284

D. Declaration of Required Installation Certificates
Declare by selecting yes for all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Form/Title	
✓		NRCI-LTI-01-E - Must be submitted for all buildings.	☐ Field Inspector
✓		NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 3 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retail copies and verify forms are completed and signed.)

YES	NO	Form/Title	
✓		NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
✓		NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
	✓	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACES** ☑ **UNCONDITIONED SPACES**

F. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST
☐ The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
☑ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines.
☐ Also include track lighting in schedule, and submit the track lighting compliance form (LTG-5C when line-voltage track lighting is used.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

BID SET
Date: May 17, 2022

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 4 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACES** ☐ **UNCONDITIONED SPACES**

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule			Installed Watts				Location	Field Inspector	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this (C3 x C5)	Primary Function area in which these luminaires are installed	Pass	Fail
A/AE	16" DIA. PENDANT LIGHT	98	☑	☐	6	588	OFFICE/MAIN ENTRY	☐	☐
C	4' SURFACE MTD. LED FIXTURE	50	☑	☐	2	100	OFFICE	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
		INSTALLED TOTAL WATTS PAGE TOTAL:				688	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 4 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☐ **CONDITIONED SPACES** ☑ **UNCONDITIONED SPACES**

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule			Installed Watts				Location	Field Inspector	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this (C3 x C5)	Primary Function area in which these luminaires are installed	Pass	Fail
B/BE	PENDANT DOME LED LT.	38	☐	☐	28	1064	DRESSING ROOM	☐	☐
C	4' SURFACE LED	50	☐	☐	14	700	.	☐	☐
D	4' SURFACE LED	25	☐	☐	2	50	STORAGE, TOILETS	☐	☐
F	6" DIA RECESS LED	27	☐	☐	6	162	SHOWER, TOILETS	☐	☐
J/JE	4' SURFACE LED	36	☐	☐	11	396	STORAGE	☐	☐
K	CEILING MOUNTED LED	11	☐	☐	6	66	STORAGE	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
		INSTALLED TOTAL WATTS PAGE TOTAL:				2438	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 5 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certifate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY L. FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/HERS Certification Identification (If applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY L. FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 1 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

The NRCC-LTI-02-E shall be used to document all mandatory and prescriptive lighting controls that are applicable to the project.

Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
✓		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
✓		Lighting shall be controlled by a lighting control a system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
	✓	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
	✓	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.3. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
✓		All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
✓		All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
✓		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.0(a)4.
✓		The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
✓		All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
✓		Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
	✓	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
✓		Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 2 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ **CONDITIONED SPACES** ☐ **UNCONDITIONED SPACES**

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule		Standards Complying With [1] (✓all that apply, or enter "E" if Exempted)							PAF Credit Calculations [2]				✓ If Acceptance Test Required	Field Inspector	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.1(b)	§130.1(c)	§130.1(d)	§130.1(e)	§130.1(f)2	§130.1(f)3	Counted Lighting	Watts	PAF	Credit (K x L)		Pass	Fail
OFFICES, ENTRY LOBBY	OCCUPANCY SENSOR	3	✓	✓	✓	✓										
		Control Credit PAGE TOTAL (Sum of Column M):														
		IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):														

1. S130.1(a) = Manual area controls; s130.0(b) = Multi Level; s130.1(c) = Auto Shut-Off; s130.0(d) = Mandatory daylight; s130.1(e) Demand Responsive; s140.6(d) = Additional lighting controls installed to earn a PAF; s140.6(d) = Prescriptive Secondary Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 2 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☐ **CONDITIONED SPACES** ☑ **UNCONDITIONED SPACES**

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule		Standards Complying With [1] (✓all that apply, or enter "E" if Exempted)							PAF Credit Calculations [2]				✓ If Acceptance Test Required	Field Inspector	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.1(b)	§130.1(c)	§130.1(d)	§130.1(e)	§130.1(f)2	§130.1(f)3	Counted Lighting	Watts	PAF	Credit (K x L)		Pass	Fail
DRESSING ROOMS	OCCUPANCY SENSOR	4	✓	✓	✓	✓	✓									
STORAGE, TOILETS	OCCUPANCY SENSOR	12	✓	✓	✓	✓	✓									
EQUIP. ROOMS	OCCUPANCY SENSOR	11	✓	✓	✓	✓	✓									
		Control Credit PAGE TOTAL (Sum of Column M):														
		IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):														

1. S130.1(a) = Manual area controls; s130.0(b) = Multi Level; s130.1(c) = Auto Shut-Off; s130.0(d) = Mandatory daylight; s130.1(e) Demand Responsive; s140.6(d) = Additional lighting controls installed to earn a PAF; s140.6(d) = Prescriptive Secondary Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. _
RP-300123

JIMMY L. FONG — No. E14126 — REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.
CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	LIC. NO. E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: TITLE 24 FORMS - INDOOR
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E106
SHEET 68 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E106.DWG

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certifate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY L. FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/HERS Certification Identification (If applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY L. FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

ALLOWED LIGHTING POWER

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☑ If using Area Category Method, Tailored Method, or a combination of Area Category and tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		753
3. Tailored Method Allowed Watts. Documented in section B of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		753

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A TYPE OF BUILDING (From §140.6 Table 140.6-B)	B WATTS PER (ft^2)	X	C COMPLETE BLDG. AREA	=	D ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C2 plus C-3)	Watts
Total From section C-2	753
Total From section C-3	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)	753

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

ALLOWED LIGHTING POWER

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
☐ CONDITIONED SPACES ☑ UNCONDITIONED SPACES

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☑ If using Area Category Method, Tailored Method, or a combination of Area Category and tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		3284
3. Tailored Method Allowed Watts. Documented in section B of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		3284

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A TYPE OF BUILDING (From §140.6 Table 140.6-B)	B WATTS PER (ft^2)	X	C COMPLETE BLDG. AREA	=	D ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C2 plus C-3)	Watts
Total From section C-2	3284
Total From section C-3	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)	3284

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B or NRCC-LTI-01-E
☑ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A AREA CATEGORY (From §140.6 Table 140.6-C)		B WATTS PER (ft^2)	X	C AREA(ft^2)	=	D ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
OFFICE	OFFICE ± 250 SF	1.0		85		85
OFFICE/MAIN ENTRY	OFFICE > 250 SF	0.75		891		668
		TOTALS		976		
Enter sum total Area Category allowed watts into section C-1 of NRC-LTI-03-E (this compliance form)						753 WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
☐ CONDITIONED SPACES ☑ UNCONDITIONED SPACES

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B or NRCC-LTI-01-E
☑ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A AREA CATEGORY (From §140.6 Table 140.6-C)		B WATTS PER (ft^2)	X	C AREA(ft^2)	=	D ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
FIIRST FLOOR	DRESSING ROOMS	0.8		1918		1534
FIRST FLOOR	STORAGE, TOILETS & SUPPORT AREAS	0.6		1244		746
BASEMENT	EQUIPMENT/ELEC. ROOM	0.7		1435		1004
		TOTALS		4597		
Enter sum total Area Category allowed watts into section C-1 of NRC-LTI-03-E (this compliance form)						3284 WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certifate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY L. FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/HERS Certification Identification (If applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY L. FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 12-31-2023 STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E. CITY ENGINEER

ARCHITECTURAL DIVISION	LIC. NO. E14126	DATE:
ENGINEER: JIMMY FONG		03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		03/10/2022
CHECKED BY: P.M.		03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TITLE 24 FORMS - INDOOR

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E107
SHEET 69 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM FILE: S:\ACAD\JP2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E107.DWG

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

A. General Information

Project Address:	Total Illuminated Hardscape Area
10654 IRMA AVE., TUJUNGA, CA. 91042	11,740 SQ. FT.

Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration

Outdoor Lighting Zone (OLZ) ☐ OLZ-1 ☐ OLZ-2 ☑ OLZ-3 ☐ OLZ-4

I have confirmed with the AHJ which OLZ applies to this site. For default lighting zone designation, see Title 24 Part6, §10-114.

B. LIGHTING COMPLIANCE DOCUMENTS (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

☑	NRCC-LTO-01-E	Certificate of Compliance
☑	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate
☑	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance

C. Summary of Allowed Outdoor Lighting Power

			Watts
1.	Sum Total ALLOWED Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1	=	2,361
	Complies ONLY if Installed < Allowed		↕
2.	Sum Total INSTALLED Outdoor lighting Wattage from NRCC-LTO-01-E, page 3		843

D. Declaration of Required Installation Certificates
Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

☑ NRCI-LTO-01-E - Must be submitted for all buildings	☐ Field Inspector
☑ NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

☑ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls.	☐ Field Inspector

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

F. Schedule of luminaires exempt from the outdoor lighting power requirements in §140.7

Name or Symbol	Description of exempt luminaire in accordance with the exemptions

G. Schedule of luminaires exempt from the cutoff requirements in §130.2(b)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions
G/GE	LED CEILING MOUNTED LUMINAIRE
K1	LED WALL MOUNTED LUMINAIRE

H. Schedule of luminaires exempt from the outdoor lighting control requirements in §130.2(c)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15)

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

I. OUTDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule		Installed Watts				Location	Cutoff	Field Inspector	
A	B	C	D	E	F	G	H	I	
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How wattage was determined: CEC Default from NA8	How wattage was determined: According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	BUG Rating	IWd	IFd
G/GE	CEILING MOUNTED LED LT.	24	☑	☐	13	312	WALKWAY		☐	☐
K1	WALL MOUNTED LED LT.	11	☑	☐	1	11	WALKWAY		☐	☐
M	MUSCO POLE MTD LED	130	☑	☐	4	520	POOL DECK		☐	☐
			☐	☐					☐	☐
			☐	☐					☐	☐
			☐	☐		

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

General Information

Project Address:	Climate Zone:	Conditioned Floor Area:
10654 IRMA AVE., TUJUNGA, CA. 91042	9	976 SF
		Unconditioned Floor Area: 4597 SF

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel ☐ Schools ☐ Relocatable Public Schools
Phase of Construction: ☐ New Construction ☐ Addition ☑ Alteration

In the table below identify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (e.g. 130.5(a) for service electrical metering)
E103	SINGLE LINE DIAGRAMS		130.5a

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A. Service Electrical Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(a).

☑ For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). *Fill out Column 1 thru 6 of table below.*

☐ For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2Pi. *Fill out Column 1 thru 6 of table below.*

☐ EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. *Fill out Column 1, 2 and 6 of table below with the compliance information.*

Fill out a separate line for each electrical service that is connected to the building. If additional table space is needed for electrical service information, submit additional page with the information.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)				Exception to 130.5(a)	Field Inspector
01	02	03	04	05	06	07	08
Electrical Service Designation/Location/Description	kVA	Instantaneous (at the time) kW	Historical peak (kW)	Tracking kWh for a specific defined period	kWh per rate period	Utility metering system	Check that the metering complies
1-PHASE SERVICE/BASEMENT/ MS-1	20.23	☑	☑	☐	☐	☐	☐
3-PHASE SERVICE/STORAGE/ MS-2	44.86	☑	☑	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

B. Separation of Electrical Circuits for Electrical Energy Monitoring

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

☒ The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 130.5(b). The electrical power distribution systems is designed so that measurement devices can monitor the electrical energy usage of load types according to TABLE 130.5-B.

☐ Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with the compliance information.

General information	Electrical Power Distribution System information and Method of compliance	Electrical Service Rating	Enforcement Agency
01	02	03	04
Electrical Service Designation/Location/Description	Describe the electrical power distribution system installed and the compliance method used.	kVA	Check that the system complies
MS1-1/BASEMENT/ PANEL P	LIGHTING LOADS AND EQUIPMENT LOADS SEPARATED BY SPLIT BUSSED.	10.38	☐
MS1-2/STORAGE/ PANEL BL	LIGHTING LOADS AND RECEPTACLE LOADS SEPARATED BY SPLIT BUSSED.	9.94	☐
BL-38,40/FIRST AID/ PANEL AC	MECHANICAL A/C LOADS	7.74	☐

Field Inspector Notes:

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

C. Voltage Drop

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).

	Enforcement Agency Check that the system complies
☑ The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.	☐
☐ Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.	☐

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles

Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.

	Field Inspector Cehck that the system complies
☑ The control is capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an override control that allows the controlled receptacle to remain ON for no more than 2 hours when an override is initiated and an automatic holiday "shut-OFF" feature that turns OFF all loads for at least 24 hours and then resumes the normally scheduled operation. Countdown timer switches are not be used to comply with the automatic time switch control requirements. The controls meet the requirement of Section 130.5(d)1.	☐
☑ There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☑ There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☑ Permanent and durable marking for controlled receptacles or circuits to differentiate them from uncontrolled receptacles or circuits is provided. The markings meet the requirement of Section 130.5(d)3.	☐
☐ For hotel and motel guest rooms, there are controlled receptacles for at least one-half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no longer than 30 minutes after the guest room has been vacated. The receptacles meet the requirement of Section 130.5(d)4.	☐
☑ Receptacles that are only for the following purposes are excepted from Section 130.5(d): -Receptacles specifically for refrigerators and water dispensers in kitchen areas. -Receptacles located a minimum of six ft above the floor that are specifically for clocks. -Receptacles for network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms. -Receptacles on circuits rated more than 20 amperes. -Receptacles connected to an uninterruptible power supply (UPS) that are intended to be in continuous use, 24 hours per day/365 days per year, and are marked to differentiate them from other uncontrolled receptacles or circuits.	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY LEI FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY LEI FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Date Signed: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

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REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E109.DWG

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. -
RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
ELECTRICAL
STRUCTURAL
STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION LIC. NO. E14126

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

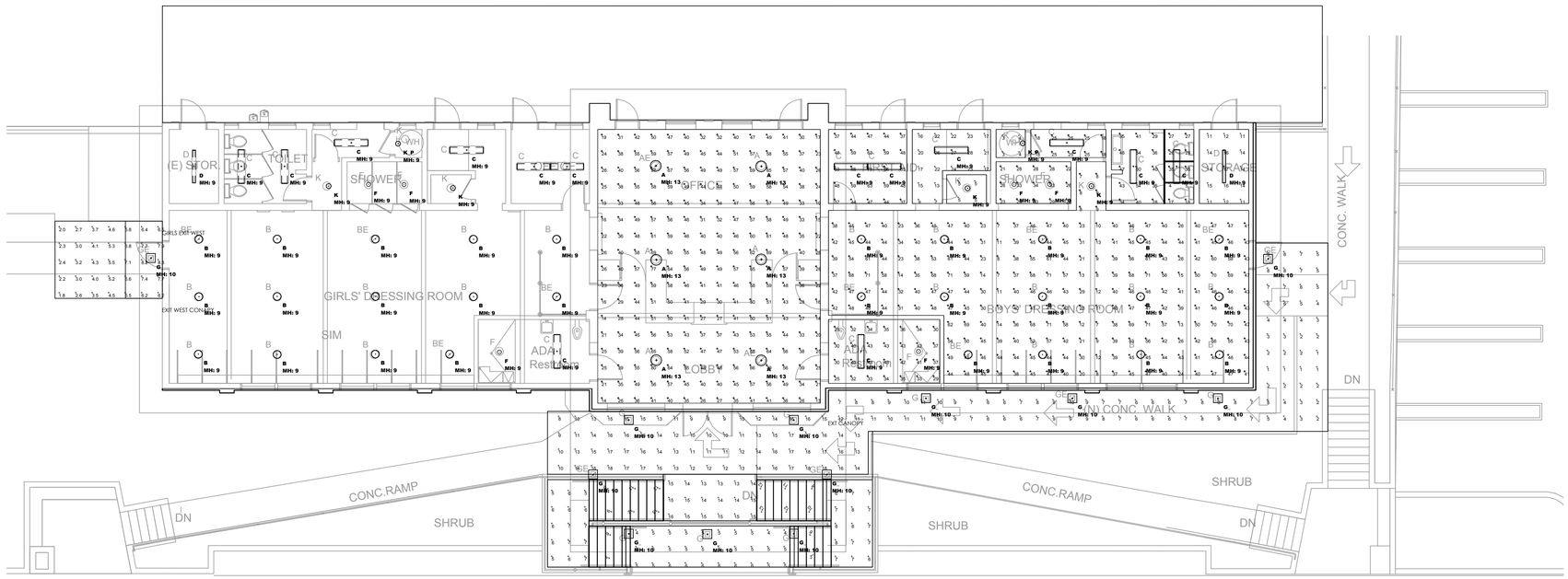
VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TITLE 24 FORMS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E109
SHEET 71 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM



VERDUGO HILLS POOL - PHOTOMETRIC STUDY

FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N

Jobname
VerdugoHillsPool_2017-08.AGI
Report For: PACIFIC ENGINEERS GROUP
Prudential Rep: CRISSY COSCI
Report by: Charlie Evangelista / Applications Engineer
and Christian Almonte / Applications Engineer
Mounting Ht.: See Drawing
See Luminaire Schedule for Light Loss Factor - Unless otherwise specified by customer
Reflectance: 80/50/20 & OUTDOORS- Unless otherwise specified by customer
Date:8/17/2017

------Disclaimer------
Luminaire data is obtained according to IES procedures
under controlled laboratory conditions. Field results
may differ from computer predictions due to many
uncontrollable factors including, but not limited to
Line Voltage Variations, Lamp Performance, Ballast input watts,
LED Drivers input watts, Temperature Variations and Jobsite Conditions.

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	LLF	Description
	6	A	SINGLE	1.110	CONTECK LTG // CGL12100-40K-MVD2-A16-FC-P_prorate8500lm
	28	B	SINGLE	0.485	Contech: CGL1254-40K-MVD2-CW (LLF derated from 60W ies file)
	14	C	SINGLE	0.850	Luminaire LED // VPF84-50W-4000K-CP
	2	D	SINGLE	0.850	COLUMBIA LIGHTING // LCL4-40LW-E-U
	6	F	SINGLE	0.850	PRESCOLITE // LF6LEDG4-w-6LFLED7G440K
	12	G_	SINGLE	0.850	Hubbell Outdoor // NRG4-30LU-4K-035
	4	K	SINGLE	0.850	Hubbell Outdoor // VBGL1-GUARD-CLG-11w-250mA-120-4100K
	2	K_P	SINGLE	0.850	Hubbell Outdoor // VWGL1-GUARD-PENDANT-11w-250mA-120-4100K

Calculation Summary					
Label	CalcType	Units	Avg	Max	Min
1st AID_Workplane	Illuminance	Fc	51.24	71	37
ADA RR_Workplane	Illuminance	Fc	35.75	43	25
BOTTOM STAIR LDNG_Planar	Illuminance	Fc	5.10	6	4
BOYS DRESSING RM_Workplane	Illuminance	Fc	40.99	71	7
EXT CONC WALK_Floor	Illuminance	Fc	9.48	18	1
ExteriorStairBottom_1_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairBottom_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairTop_1_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_1_Side_21	Illuminance	Fc	12.50	13	12
ExteriorStairTop_1_Side_9	Illuminance	Fc	9.00	10	8
ExteriorStairTop_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_Side_21	Illuminance	Fc	13.00	13	13
ExteriorStairTop_Side_9	Illuminance	Fc	8.50	9	8
GIRLS EXIT WEST_GIRLS EXIT W	Illuminance	Fc	4.98	8.3	1.8
INTERM STAIR LDNG_1_Planar	Illuminance	Fc	7.13	8	6
INTERM STAIR LDNG_Planar	Illuminance	Fc	6.13	7	5
OFFICE - LOBBY_Workplane	Illuminance	Fc	44.17	87	13
RESTRM_Workplane	Illuminance	Fc	33.72	60	4
ROOM_Floor	Illuminance	Fc	5.00	5	5
SHWR_Floor	Illuminance	Fc	27.47	34	21
STOR_Floor	Illuminance	Fc	13.47	17	11
TOP STAIR LNDG_Planar	Illuminance	Fc	14.44	16	13
VEST_Floor	Illuminance	Fc	22.20	25	18
VEST_Floor_1	Illuminance	Fc	19.42	28	7
WH_Floor	Illuminance	Fc	3.50	4	3

GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION	
ENGINEER: JIMMY FONG LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.	03/10/2022
DRAWN BY: H.Y.	03/10/2022
CHECKED BY: P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PHOTOMETRIC STUDY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E110

SHEET 72 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM FILE: S:\ACAD\P2016\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E110.DWG

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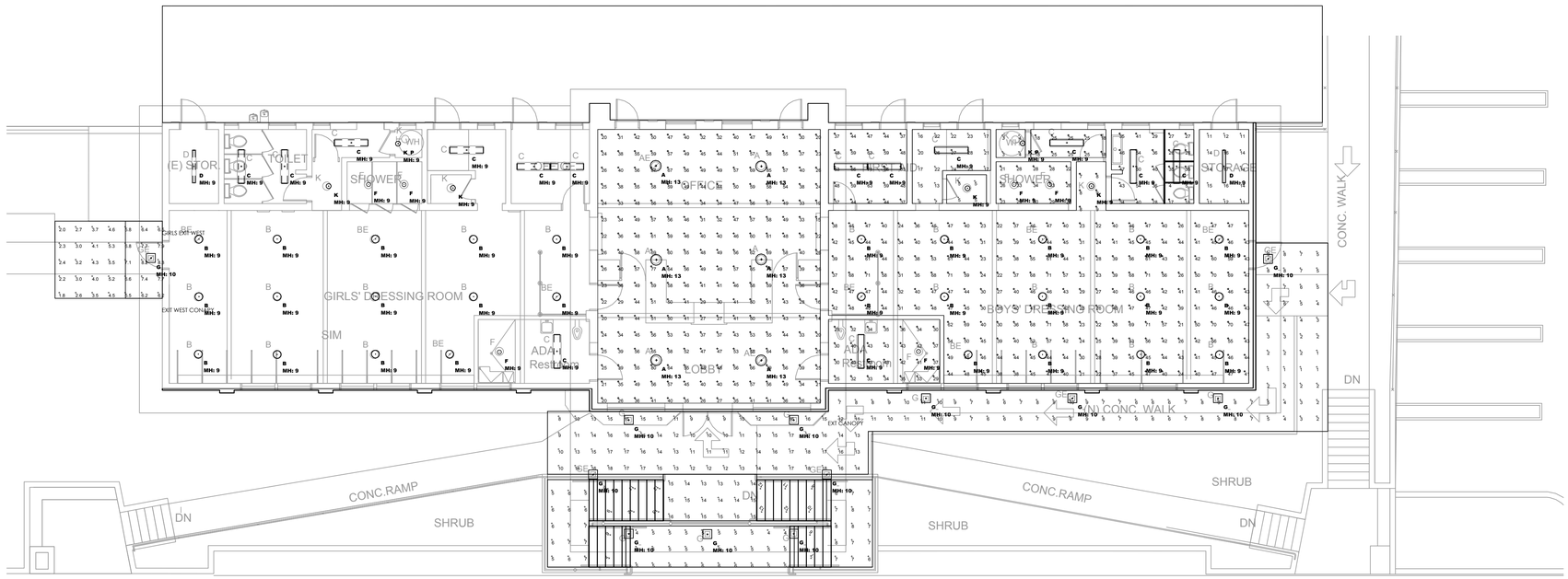

VERDUGO HILLS POOL - PHOTOMETRIC STUDY

FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N

Jobname
VerdugoHillsPool_2017-08.AGI
Report For: PACIFIC ENGINEERS GROUP
Prudential Rep: CRISSY COSCI
Report by: Charlie Evangelista / Applications Engineer
and Christian Almonte / Applications Engineer
Mounting Ht.: See Drawing
See Luminaire Schedule for Light Loss Factor - Unless otherwise specified by customer
Reflectance: 80/50/20 & OUTDOORS- Unless otherwise specified by customer
Date:8/17/2017

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Luminaire data is obtained according to IES procedures
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BUREAU OF ENGINEERING
OFFICIAL RECORD

GRAPHIC SCALE: 1/8" = 1'- 0"
0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION LIC. NO. E14126

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PHOTOMETRIC STUDY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E111

SHEET 73 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM FILE: S:\ACAD\P2016\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E111.DWG

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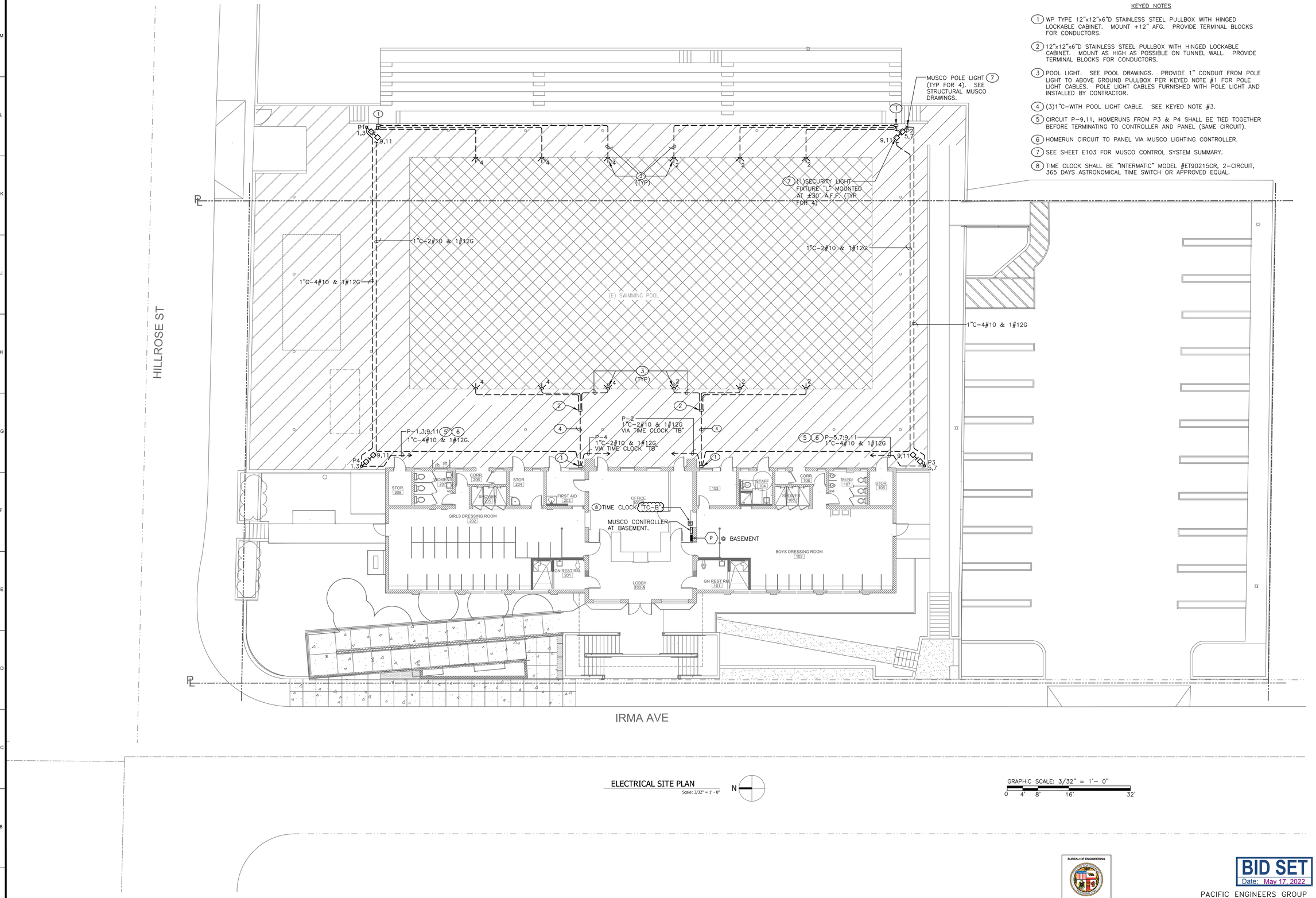

KEYED NOTES

1. WP TYPE 12"x12"x6"D STAINLESS STEEL PULLBOX WITH HINGED LOCKABLE CABINET. MOUNT +12" AFG. PROVIDE TERMINAL BLOCKS FOR CONDUCTORS.
2. 12"x12"x6"D STAINLESS STEEL PULLBOX WITH HINGED LOCKABLE CABINET. MOUNT AS HIGH AS POSSIBLE ON TUNNEL WALL. PROVIDE TERMINAL BLOCKS FOR CONDUCTORS.
3. POOL LIGHT. SEE POOL DRAWINGS. PROVIDE 1" CONDUIT FROM POLE LIGHT TO ABOVE GROUND PULLBOX PER KEYED NOTE #1 FOR POLE LIGHT CABLES. POLE LIGHT CABLES FURNISHED WITH POLE LIGHT AND INSTALLED BY CONTRACTOR.
4. (3)1"C-WITH POOL LIGHT CABLE. SEE KEYED NOTE #3.
5. CIRCUIT P-9,11, HOMERUNS FROM P3 & P4 SHALL BE TIED TOGETHER BEFORE TERMINATING TO CONTROLLER AND PANEL (SAME CIRCUIT).
6. HOMERUN CIRCUIT TO PANEL VIA MUSCO LIGHTING CONTROLLER.
7. SEE SHEET E103 FOR MUSCO CONTROL SYSTEM SUMMARY.
8. TIME CLOCK SHALL BE "INTERMATIC" MODEL #ET90215CR, 2-CIRCUIT, 365 DAYS ASTRONOMICAL TIME SWITCH OR APPROVED EQUAL.

ELECTRICAL SITE PLAN
Scale: 3/32" = 1' - 0"

GRAPHIC SCALE: 3/32" = 1'- 0"
0 4' 8' 16' 32'

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

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3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
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CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 STATE OF CALIFORNIA

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	JIMMY FONG LIC. NO. E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ELECTRICAL SITE PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E112
SHEET 74 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

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REVISION DATES (DESIGN STAGE ONLY)

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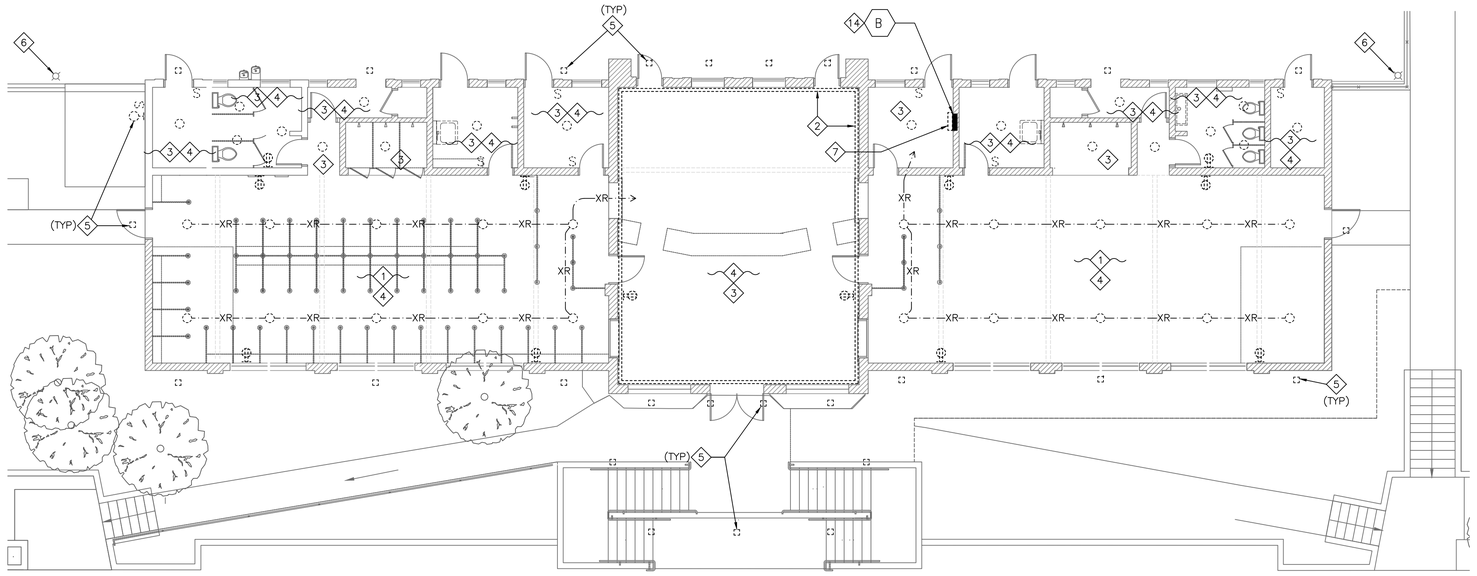
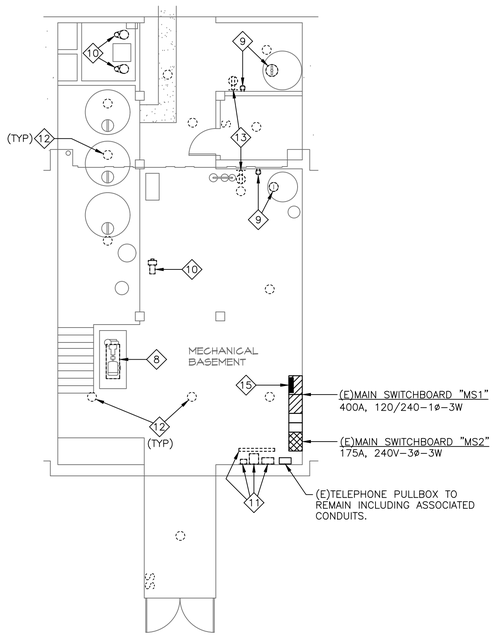


FIRST FLOOR DEMOLITION PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT DEMOLITION PLAN

Scale: 1/8" = 1' - 0"

N

DEMOLITION KEYED NOTES

1. DISCONNECT AND REMOVE (E) PENDANT LIGHTS IN THIS ROOM INCLUDING SWITCHES AND ASSOCIATED CONDUIT AND WIRES.
2. DISCONNECT AND REMOVE (E) WALL MOUNTED UPLIGHT COVE LIGHTS IN THIS ROOM INCLUDING SWITCHES AND WIRES BACK TO PANEL.
3. DISCONNECT AND REMOVE (E) LIGHTS IN THIS ROOM INCLUDING CONTROLLING SWITCHES AND WIRING UP TO PANEL.
4. DISCONNECT AND REMOVE (E) RECEPTACLE OUTLETS IN THIS ROOM INCLUDING WIRING BACK TO PANEL.
5. DISCONNECT AND REMOVE (E) RECESS MOUNTED EXTERIOR LIGHTS INCLUDING CONDUITS AND CABLES TO (E) PANEL. PATCH (E)CEILING TO MATCH CEILING SURFACE.
6. DISCONNECT AND REMOVE (E) POLE LIGHT INCLUDING ASSOCIATED CONDUITS AND WIRES UP TO (E) PANEL.
7. EXISTING 6"x6"x24" LONG GUTTER TO REMAIN INCLUDING ASSOCIATED CONDUITS AND TO BE RE–USED FOR NEW WORK.
8. DEMOLISHED (E) ELECTRICAL INSTALLATION ASSOCIATED TO (E) POOL CIRC. PUMP UP TO (E) SWITCHBOARD.
9. DEMOLISHED (E) ELECTRICAL INSTALLATION ASSOCIATED TO (E) ACID PUMP AND/OR CHLORINE PUMP UP TO (E) SERVING PANEL.
10. (E) SUMP PUMPS FOR BACKWASH PIT AND/OR DRAIN PUMP TO REMAIN INCLUDING CONTROLLER. DEMOLISH (E)FEEDER UP TO SERVING PANEL AND SHALL BE REPLACED WITH NEW. SEE POWER PLAN. PROTECT THESE PUMPS INCLUDING CONTROLLER DURING THE ENTIRE PHASE OF CONSTRUCTION.
11. DEMOLISH PULLBOXES, GUTTERS, DISCONNECT SWITCHES, MOTOR STARTERS AND CIRCUIT BREAKERS ON THIS AREA U.O.N.
12. DEMOLISH CEILING MOUNTED LIGHT INCLUDING SWITCHES AND SURFACE MOUNTED CONDUITS AND WIRES. REMOVE WIRES IN (E) CONDUIT IF CONDUIT IS EMBEDDED IN CEILING.
13. DEMOLISH RECEPTACLE INCLUDING WIRING UP TO SERVING PANEL.
14. REMOVE (E)CIRCUIT BREAKERS, BUSSBARS, LUGS AND PANEL COVER LEAVING ONLY THE RECESS CAN AND RETROFIT THIS PANEL WITH NEW INTERIOR DEVICES/EQUIPMENT. SEE POWER PLAN.
15. DEMOLISHED (E) PANEL MOUNTED ON SWITCHBOARD INCLUDING ASSOCIATED WIRING AND PROVIDE BLANK COVER.

BID SET
Date: May 17, 2022

GRAPHIC SCALE: 1/8" = 1'– 0"

0 4' 8' 16' 32'

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INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
3/10/2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER DATE: 03/10/2022
ARCHITECTURAL DIVISION LIC. NO. E14126 03/10/2022
ENGINEER: JIMMY FONG 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y.
CHECKED BY: P.M. 03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR DEMOLITION PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E113

SHEET 75 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

REVISION DATES (DESIGN STAGE ONLY)

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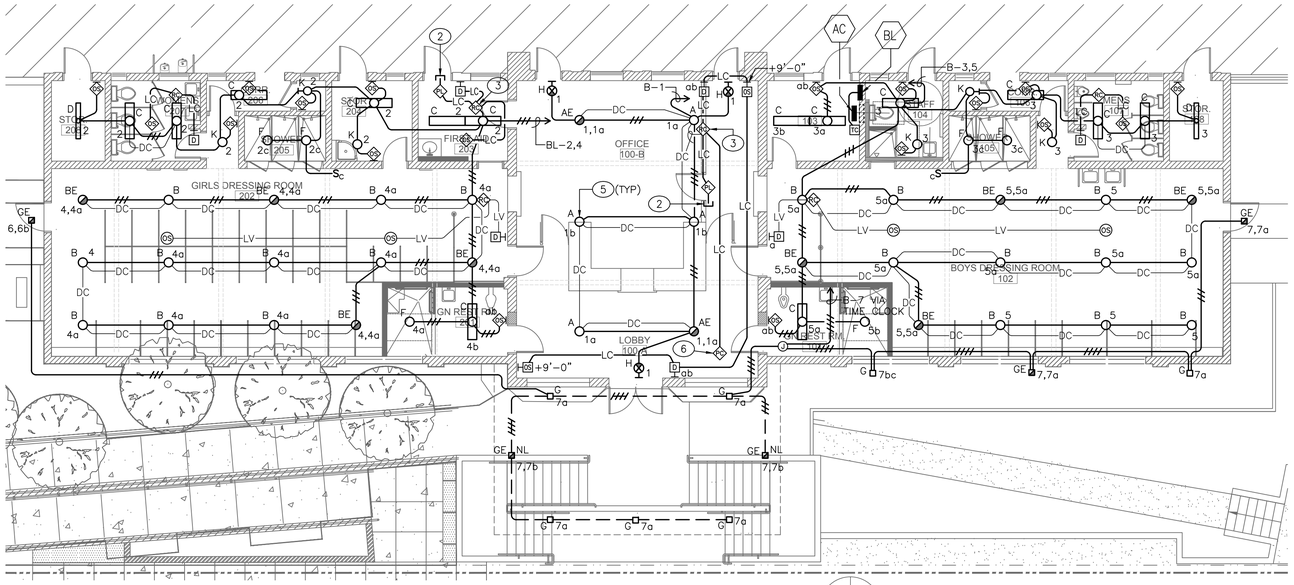
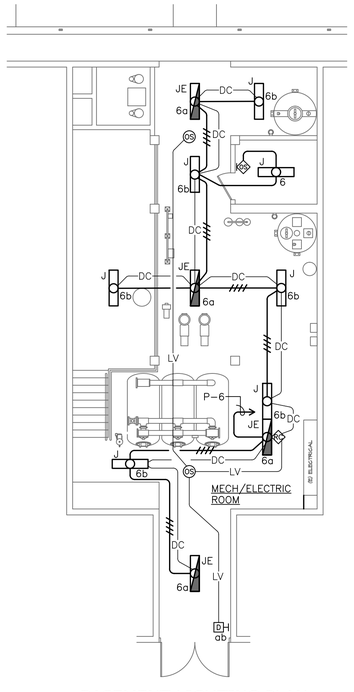
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:55 PM FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E113.DWG



FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N

KEYED NOTES

1. MOUNT SENSOR ON THE BOTTOM OF THE BEAM.
2. CONNECT TO PLUG LOAD RECEPTACLE. SEE POWER PLAN. SEE DETAIL #3/E102.
3. LIGHTING CONTROLLER. SEE DETAILS 2,3/E102.
4. MOUNT FIXTURE AT +9' AFF.
5. MOUNT FIXTURE AT +13' AFF.
6. PENDANT MOUNT PHOTO SENSOR AT +13' AFF.

GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

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3611 Cahuenga Blvd W, First Floor
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CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
3/10/2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE: 03/10/2022
	ARCHITECTURAL DIVISION	03/10/2022
ENGINEER: JIMMY FONG	LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		
CHECKED BY: P.M.		03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR LIGHTING PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E114

SHEET 76 OF SHEETS 96

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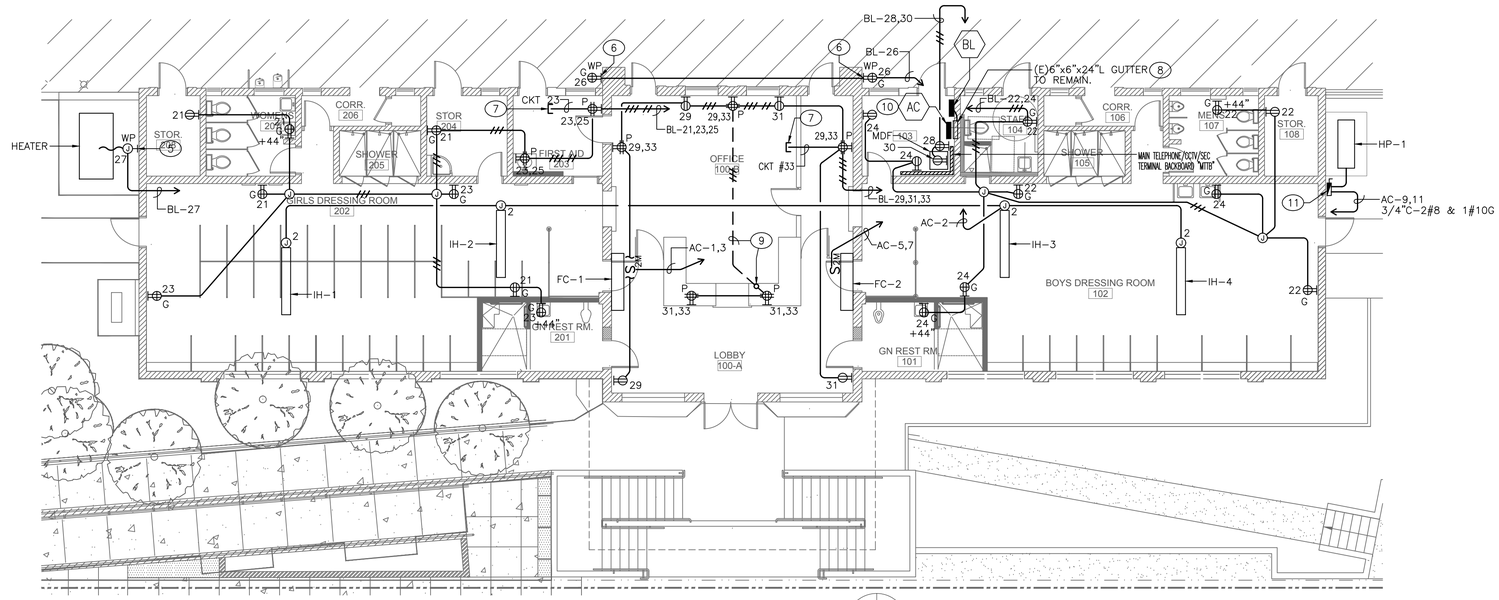
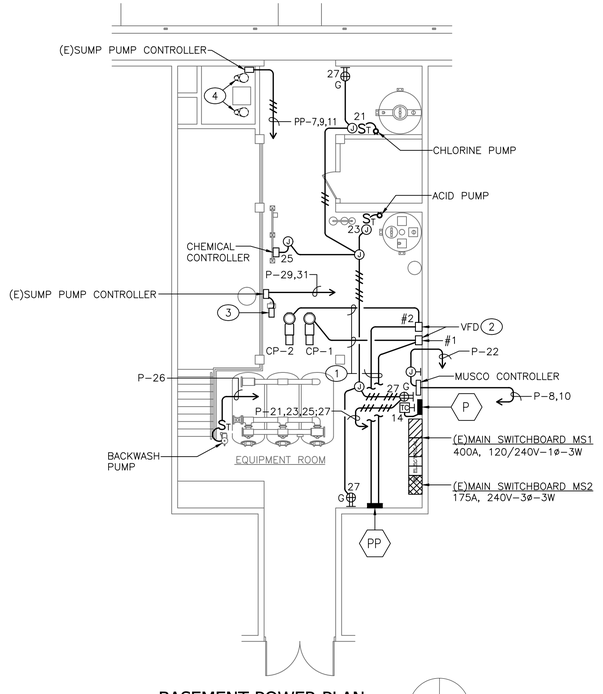
REVISION DATE: 3/10/2022 2:55 PM: FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E114.DWG



FIRST FLOOR POWER PLAN

Scale: 1/8" = 1' - 0"



BASEMENT POWER PLAN

Scale: 1/8" = 1' - 0"

KEYED NOTES

1. SEE SINGLE LINE DIAGRAM ON SHEET E103 FOR SIZE.
2. FURNISHED AND INSTALLED BY POOL CONTRACTOR.
3. (E) SUMP DRAIN PUMP TO REMAIN INCLUDING CONTROLLER. PROVIDE NEW POWER AS SHOWN.
4. (E) DUPLEX SUMP PUMP TO REMAIN INCLUDING CONTROLLER. PROVIDE NEW POWER AS SHOWN.
5. EXTEND WIRING TO CIRCULATING PUMP AND TIME CLOCK. SEE POOL DRAWINGS FOR EXACT LOCATION.
6. MOUNT RECEPTACLE IN A 6"x6"x4"D WP CABINET WITH HINGED LOCKABLE ENCLOSURE.
7. CONNECT TO PLUG LOAD CONTROLLER. SEE LIGHTING PLAN FOR LOCATION.
8. UTILIZE (E)CONDUITS BETWEEN GUTTER AND PANEL "AC" FOR NEW WIRES. EXTEND 2"C FEEDER FROM (E) GUTTER TO NEW PANEL "BL".
9. CORE DRILL (E)FLOOR AND STUB DOWN CONDUIT TO BASEMENT CEILING AND RUN CONDUIT ON BASEMENT CEILING AND STUB-UP BACK TO WALL MOUNTED RECEPTACLE AS SHOWN.
10. RETROFIT PANEL TO HAVE NEW BUSS BARS, LUGS, CIRCUIT BREAKERS AND PANEL COVERS. SEE PANEL SCHEDULE.
11. WP, 60AS-3P, 250VAC HEAVY DUTY DISCONNECT SWITCH WITH 45A DUAL ELEMENT FUSES.

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GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

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REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 03/10/2022 CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE: 03/10/2022
	ARCHITECTURAL DIVISION	03/10/2022
	LIC. NO. E14126	03/10/2022
ENGINEER: JIMMY FONG		03/10/2022
DESIGNED BY: P.M.		
DRAWN BY: H.Y.		
CHECKED BY: P.M.		03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR POWER PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E115

SHEET 77 OF SHEETS 96

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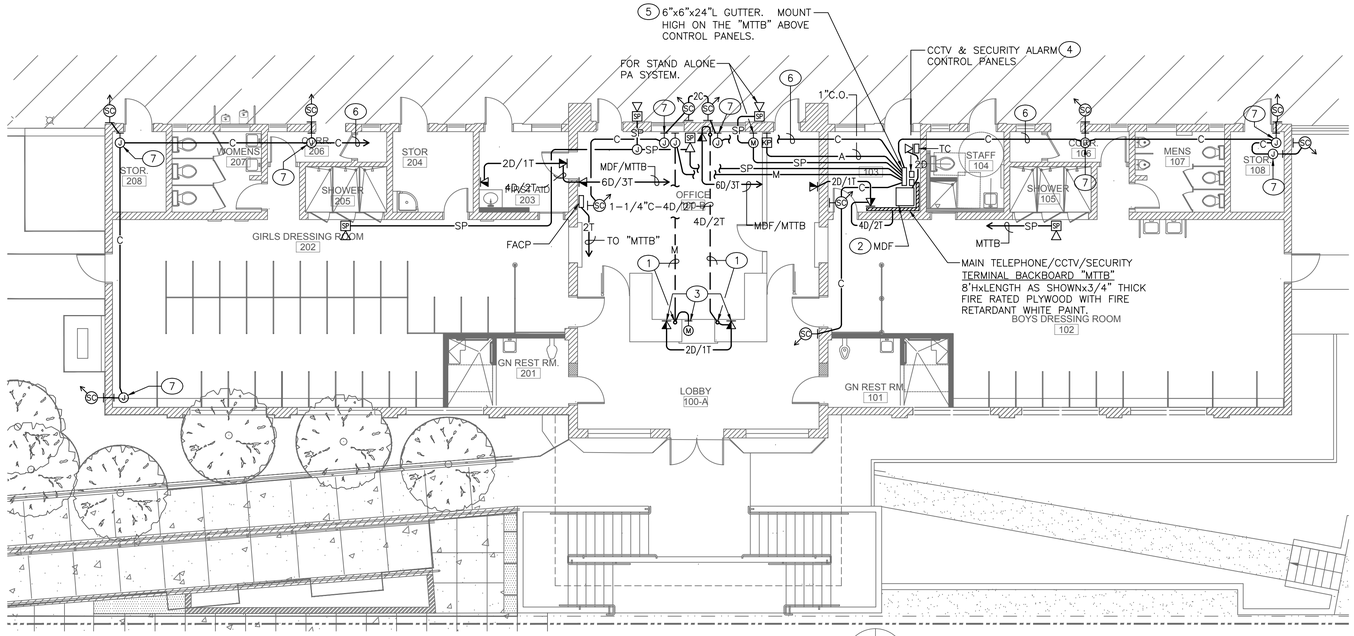
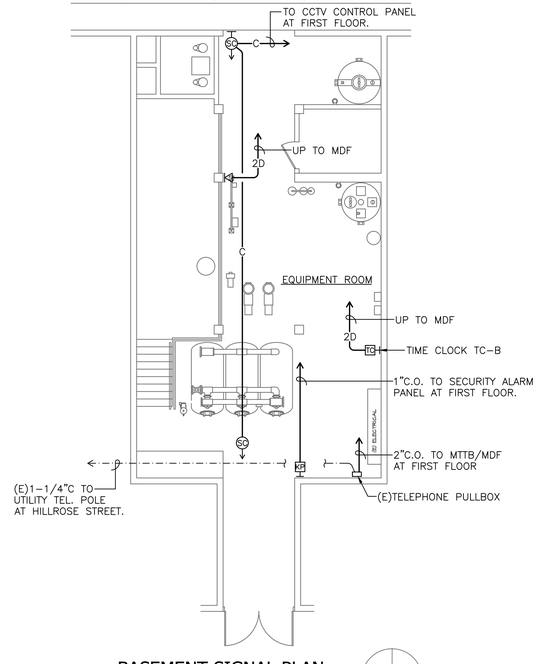


FIRST FLOOR SIGNAL PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT SIGNAL PLAN

Scale: 1/8" = 1' - 0"

N

KEYED NOTES

1. CORE DRILL (E) FLOOR AND STUB DOWN CONDUIT TO BASEMENT CEILING AND RUN CONDUIT ON BASEMENT CEILING AND STUB-UP ON EAST WALL AS SHOWN AND HOMERUN TO MDF/MTTB.
2. 24"x24"x48"H CABINET. MDF SHALL BE SELECTED BY OWNER AND FURNISHED AND INSTALLED BY CONTRACTOR. MOUNT 12" BELOW CEILING.
3. MOUNT OUTLETS INSIDE CABINET. COORDINATE EXACT LOCATION AT SITE.
4. CONTROL PANELS ARE OFOI EQUIPMENT.
5. TERMINATE HOMERUN CONDUITS FOR CCTV CAMERA AND INTRUSION ALARM KEYPAD TO WIRE GUTTER. EXTEND CONDUITS TO OFOI CONTROL PANEL EQUIPMENT.
6. TO CCTV CONTROL PANEL VIA WIRE GUTTER.
7. PROVIDE J-BOX IN THE INTERIOR SIDE & PROVIDE STUB-OUT 1"C TO EXTERIOR FORM CCTV CAMERA. SEAL ALL CONDUIT PENETRATION. MOUNT CABLE AT +10'-0" AFF.

ALL LOW VOLTAGE CONDUIT SHALL BE 1"C MINIMUM (EMT, RGS) AND 1-1/4"C.O. MINIMUM IF FLEX CONDUIT.

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SHEET TITLE: BASEMENT AND FIRST FLOOR SIGNAL PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E116

SHEET 78 OF SHEETS 96

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SYMBOLS LIST

JH	JUNCTION BOX: MOUNT +18" UNLESS NOTED OTHERWISE.
J	JUNCTION BOX: MOUNTED ABOVE ACCESSIBLE CEILING.
DH	DUPLEX RECEPTACLE: 125V., 15 AMP., NEMA 5-15R. UNLESS OTHERWISE NOTED. +18"U.O.N.
A-1,3,5	HOMERUN TO PANEL "A", CIRCUITS 1, 3, 5.
	CONDUIT: IN OR BELOW FLOOR OR BELOW GRADE.
	CONDUIT: EXPOSED IN UNFINISHED AREAS; CONCEALED ABOVE CEILING OR IN WALL IN FINISHED AREAS.
	3/4"C, 2#12 & 1#12 GND — 3/4"C, 3#12 & 1#12 GND
1"C,3#6	OTHER CONDUIT AND WIRE SIZE AS NOTED ON DRAWINGS.
	FIRE ALARM CONTROL PANEL.
	LIGHTING PANEL.
A	PANEL DESIGNATION, LETTER IDENTIFIES THE PANEL.
S-1 FH	MANUAL PULL STATION. +48" A.F.F. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
cd V-1	FIRE ALARM STROBE. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80" A.F.F. MIN, +96" A.F.F. MAXIMUM. "V-1" DENOTES VISUAL FA CIRCUIT NUMBER.
A-1 V-1 H cd	FIRE ALARM HORN/STROBE. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80 A.F.F. MIN, +96" A.F.F. MAXIMUM. "V-1" DENOTES VISUAL FA CIRCUIT NUMBER.
WP H	FIRE ALARM EXTERIOR HORN. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80 A.F.F. MIN, +96" A.F.F. MAXIMUM. "A-1" DENOTES AUDIBLE FA CIRCUIT NUMBER.
S-1 SD	SMOKE DETECTOR. NOTIFIER PHOTOELECTRIC TYPE. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
S-1 HD	HEAT DETECTOR. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
	FIRE ALARM CONTROL PANEL. "FACP" – NOTIFIER NFS-320.

A.F.F.	ABOVE FINISHED FLOOR.	N.C.	NORMALLY CLOSED.
N.O.	NORMALLY OPEN.	C/B	CIRCUIT BREAKER.
EOL	END OF LINE RESISTOR REQUIRED AT DEVICE.	A.F.G.	ABOVE FINISH GRADE.
MTTB	MAIN TELEPHONE TERMINAL BACKBOARD.	FA	FIRE ALARM.
C.O.	CONDUIT ONLY WITH PULL WIRE.	FACP	FIRE ALARM CONTROL PANEL.
W.P.	WEATHERPROOF.	TEL	TELEPHONE.
U.O.N.	UNLESS OTHERWISE NOTED	PLFA	POWER LIMITED FIRE ALARM.

FIRE ALARM CABLE AND WIRING

- 3/4" CONDUIT WITH 2#12.
- 3/4" CONDUIT WITH 4#12.
- 3/4" CONDUIT WITH 6#12.
- 3/4" CONDUIT WITH 8#12.
- F4 — 1"C, F CABLE PLUS 4#12 THWN.
- F6 — 1"C, F CABLE PLUS 6#12 THWN.
- F2 — 1"C, F CABLE PLUS 2#12 THWN.
- F — 3/4" CONDUIT (1)F CABLE.
- 2F4 — 1" CONDUIT WITH (2)F CABLE & 4#12.
- 2F8 — 1" CONDUIT WITH (2)F CABLE & 8#12.
- 2F — 3/4" CONDUIT (2)F CABLE.

TELEPHONE CABLE AND WIRING

- 2T — 1" CONDUIT WITH (2) "T" CABLES.

CABLE TYPE

"T" CABLE – 4 PAIR #24 UTP CATEGORY 6 CABLE.

"F" CABLE – WEST PENN D990, 1 PAIR #18 UNSHIELDED.

CODES & STANDARDS FOR FIRE ALARM SYSTEM REQUIREMENTS

- Health & Safety Code Section 13145
- California Code of Regulations (CCR), Title 19
- CCR, Title 24, Part 2: 2016 California Building Code (CBC)
- CCR, Title 24, Part 3: 2016 California Electrical Code (CEC)
- CCR, Title 24, Part 4: 2016 California Mechanical Code (CMC)
- CCR, Title 24, Part 9: 2016 California Fire Code (CFC)

National Fire Protection Association (NFPA) 72, 2016 edition, as amended in Chapter 80 of the 2013 CFC

GENERAL FIRE ALARM NOTES

1. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF THE CALIFORNIA ELECTRICAL CODE, CURRENT CALIFORNIA TITLE 24 REQUIREMENTS, CALIFORNIA FIRE CODE, NFPA 72 STANDARDS, AMERICAN WITH DISABILITY ACT (ADA) REQUIREMENTS.
2. SPECIFIC COMPONENTS ON CATALOG CUT SHEETS MUST BE HIGHLIGHTED OR IDENTIFIED.
3. PANELS MUST NOT BE MOUNTED HIGHER THAN 6 FEET AND SYSTEM STATUS DISPLAYS ARE TO BE AT EYE LEVEL (+60" A.F.F.). NO EQUIPMENT OR RACEWAY MAY BE LOCATED UNDER A CABINET CONTAINING BATTERIES.
4. CONTRACTOR SHALL INSTALL AND FURNISH A COMPLETE MANUAL FIRE ALARM SYSTEM, INCLUDING BUT NO LIMITED TO WIRING, CONDUITS AND DEVICES REQUIRED FOR SATISFACTORY OPERATION OF SYSTEM.
5. FIRE ALARM WIRING FOR INITIATING DEVICES; I.E. PULL STATION SMOKE DETECTORS, MONITOR AND CONTROL MODULES ETC. SHALL BE LOOPED IN AND OUT FROM ANY DEVICES. T-TAPPING IS NOT ALLOWED.
6. ALL EXPOSED CONDUITS AND BOXES SHALL BE PAINTED TO MATCH THE SURFACES WHERE INSTALLED AND LABELED "FA CIRCUITS."
7. QUANTITY OF WIRES SHOWN IN ALL CONDUITS IS FOR GENERAL GUIDELINE. SUPPLIER OF FIRE ALARM SYSTEM SHALL PREPARE CONSTRUCTION DRAWINGS SHOWING ALL NECESSARY WIRES AND SIZES OF ALL CONDUITS SHOWN. PROVIDE SPARE WIRES BETWEEN BUILDINGS.
8. DRAWINGS DO NOT SHOW ALL THE NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE INTERMEDIATE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED BUILDING WALLS.
9. ALL JUNCTION BOXES AND DEVICES INDICATED ON BUILDING EXTERIORS SHALL BE WEATHERPROOF TYPE.
10. FIRE ALARM WIRES SHALL BE COPPER TYPE THWN/THHN.
11. WHEN ALL FIRE ALARM DEVICES ARE INSTALLED AND PROGRAMMING IS COMPLETE, PROVIDE A FIRE ALARM DEVICE MAP NEXT TO FACP TO INDICATE TO PERSONNEL THE LOCATIONS OF THE NEW DEVICES.
12. JUNCTION BOXES SHALL NOT CONTAIN SPLICES. CONDUCTORS SHALL BE PULLED THROUGH. TERMINATIONS SHALL BE PERFORMED.
13. "LABEL DESCRIPTIONS" INDICATING DEVICE TYPES AND LOCATIONS THAT ARE DISPLAYED ON THE FIRE ALARM LCD. DISPLAY SHOULD BE CLEAR EASILY UNDERSTOOD BY THE OFFICE STAFF. DESCRIPTIONS SHOULD BE BASED ON THE STAFF'S UNDERSTANDING OF THE SITE AND NOT ON INFORMATION TAKEN FROM PRINTS.
14. THE FIRE ALARM SYSTEM IS A "MANUAL" FIRE ALARM WITH ADDED SMOKE DETECTORS FOR PROTECTION OF THE PROPERTY.
15. THE EQUIPMENT SUPPLYING PLFA CIRCUIT SHALL BE DURABLY MARKED WHERE PLAINLY VISIBLE TO INDICATE EACH CIRCUIT THAT IS A POWER-LIMITED FIRE ALARM CIRCUIT (LAEC 760.42).
16. ALL FIRE ALARM DEVICES AND THE FIRE ALARM PANEL SHALL BE LISTED BY A RECOGNIZED TESTING LABORATORY FOR THE INTENDED USE (LAED 93.0204).
17. ALL ELECTRIC LIGHT , POWER, CLASS 1, AND MEDIUM POWER NETWORK-POWER BROADBAND COMMUNICATION CIRCUIT CONDUCTORS SHALL BE SEPARATED FROM PLFA CIRCUITS BY AT LEAST 2 INCHES BY A FIXED NONCONDUCTOR, BY A RACEWAY, OR BY CABLES THAT ARE METAL-SHEATHED, METAL-CLAD, NONMETALLIC-SHEATHED, TYPE UF, OR A COMBINATION OF SUCH CABLING. (LAEC 760.55)
18. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION.
19. WIRING SHALL NOT BE LOOPED THROUGH DEVICES, WIRES MUST BE CUT FOR IN AND OUT.
20. POINT AND COMMON ANNUNCIATOR AND T-TAPPING ARE PROHIBITED.
21. ALL WIRING, INITIATING DEVICES, AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION (F/A PANEL TO SUPERVISE THE ANNUNCIATOR PANEL ALL CIRCUITS AND INITIATING DEVICES).
22. WIRING SHALL NOT BE LOOPED THROUGH DEVICES; WIRE MUST BE CUT FOR IN AND OUT.
23. POINT AND COMMON ANNUNCIATION PROHIBITED. NON-ADDRESSABLE CIRCUITS T-TAPPING IS PROHIBITED.
24. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED TO MANUFACTURERS SPECIFICATIONS.
25. AUDIBILITY OF ALARM AND VOICE COMMUNICATION SHALL BE NOT LESS THAN 15 DBA ABOVE AMBIENT SOUND, BUT NOT LESS THAN 75 DBA, THROUGHOUT AREA OF ALARM.
26. AREAS HAVING MORE THAN 2 STROBES IN THE FIELD OF VIEW SHALL BE SYNCHRONIZED (2010 NFPA 72, 18.5.4.3.2.(4)).
27. SMOKE DETECTORS AND HEAT DETECTOR LOCATIONS ARE BASED ON SMOOTH CEILING WITH MAXIMUM HEIGHT.
28. STROBE LOCATION IS BASED ON 10 FOOT CEILING HEIGHT AND ARE INSTALLED ACCORDING TO NFPA 72 REQUIREMENTS UNLESS OTHERWISE NOTED.
29. WALL-MOUNTED STROBES SHALL HAVE THEIR BOTTOMS NOT LESS THAN 80 INCHES ABOVE FINISHED FLOOR AND NO GREATER THAN 96 INCHES ABOVE FINISHED FLOOR.
30. STROBES IN SLEEPING AREAS SHALL BE LOCATED WITHIN 16 FEET OF PILLOW AND HAVE MINIMUM INTENSITY OF 110cd. FOR STROBES LOCATED LESS THAN 24 INCHES FROM CEILING, MINIMUM INTENSITY SHALL BE 177cd.
31. MANUAL PULL STATIONS SHALL BE MOUNTED NO HIGHER THAN 48" TO TOP OF OUTLET BOX. (2010 CBC ADA C 1136A.2 AND 1142A.2).
32. FIRE ALARM SIGNAL SHALL MEET ANSI S3.41, AUDIBLE EMERGENCY EVACUATION SIGNAL (TEMPORAL PATTER).
33. ALL DWELLING UNITS AND SLEEPING UNITS SHALL BE PROVIDED WITH CAPABILITY TO SUPPORT VISIBLE ALARM NOTIFICATION APPLIANCES IN ACCORDANCE WITH NFPA 72. (CFC 907.6.2.3.4).
34. AUDIBLE APPLIANCES PROVIDED FOR THE SLEEPING AREAS TO AWAKEN OCCUPANTS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH THE FOLLOWING:
    i. THE ALARM SIGNAL SHALL BE SQUARE WAVE OR PROVIDE EQUIVALENT AWAKENING ABILITY.
    ii. THE WAVE SHALL HAVE FUNDAMENTAL FREQUENCY OF 520 Hz ± 10 PERCENT.

GENERAL NOTES

1. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIAL FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
2. WORK INCLUDES ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, DELIVERY AND INSTALLATION OF ELECTRICAL SYSTEM, COMPLETE, AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
3. CONSTRUCT PROJECT IN ACCORDANCE WITH FOLLOWING CODES: REGULATIONS OF STATE AND LOCAL FIRE MARSHAL; NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION, EDITION IN FORCE; LOCAL CODES AND ORDINANCES; TITLE 19, 21 AND 24 CALIFORNIA ADMINISTRATIVE CODE.
4. PERMITS, FEES AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED BY ANY CONSTITUTED AUTHORITY HAVING JURISDICTION INCLUDING UTILITIES. ARRANGE AND PAY FOR ALL REQUIRED INSPECTIONS OR EXAMINATIONS AND DELIVER CERTIFICATES OF INSPECTION TO ARCHITECT.
5. SUBMIT A LIST OF MATERIALS AND EQUIPMENT MANUFACTURERS THAT CONTRACTOR INTENDS TO USE. SUBMIT SHOP DRAWINGS FOR: FIRE ALARM PANELS, DEVICES, CONDUITS, PULLBOXES AND CABLES.
6. THE TERM "PROVIDE" USED ON DRAWINGS SHALL BE CONSIDERED TO MEAN "FURNISH AND INSTALL".
7. BEFORE PROCEEDING WITH WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND ASSUME ALL RESPONSIBILITY FOR FITTING OF MATERIALS AND EQUIPMENT TO OTHER PARTS OF EQUIPMENT AND TO STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF CLASS INDICATED. CAREFULLY CHECK DRAWINGS AND SEE THAT EQUIPMENT WILL FIT INTO SPACES PROVIDED.
8. LOCATIONS OF CONDUITS, OUTLETS, APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED.
9. BE CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINEAL RUNS OF WIRING OR CONDUIT. WIRING DIAGRAMS DO NOT NECESSARILY SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT.
10. EXTRA WORK OR COSTS TO THIS CONTRACTOR DUE TO OTHER CONTRACTORS OR TRADES SHALL BE ADJUSTED BETWEEN THIS CONTRACTOR AND OFFENDING CONTRACTOR AT NO EXTRA COST TO OWNER. NOTIFY ARCHITECT BEFORE SUCH EXTRA WORK IS DONE.
11. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.
12. WHERE CONDUITS PASS THROUGH SLEEVES IN INTERIOR WALLS, FLOORS, OR CEILINGS, COMPLETELY FILL SPACE BETWEEN EACH CONDUIT AND ITS SLEEVE TO PROVIDE AN AIRTIGHT SEAL.
13. USE GLASS FIBER MATERIAL, "DUXSEAL" COMPOUND, FOR ACOUSTIC SEALS.
14. ALL EQUIPMENT SHALL BE BRACED AND/OR ANCHORED TO RESIST A HORIZONTAL FORCE PER TITLE 24, PART 2 SECTION 2312 FOR ZONE 4.
15. PROVIDE CAST OUTLET BOXES IN EXTERIOR LOCATIONS AND WET LOCATIONS.
16. WHERE BOXES ARE INSTALLED IN FIRE RATED CEILING OR WALLS, BE RESPONSIBLE FOR PRESERVING INTEGRITY OF FIRE RATING AS REQUIRED.
17. IN FIRE-RATED WALL, USE 4" SQUARE DEEP BOXES. DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES OF BOXES FOR ANY 100 SQUARE FEET OF WALL OR PARTITIONS. SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITION BY A MINIMUM HORIZONTAL DISTANCE OF 24 INCHES.
18. PROVIDE COPPER CONDUCTORS ONLY.
19. PROVIDE TYPE "THHN" OR "THWN" WIRES ONLY.
20. MOUNT RECEPTACLES, TELEPHONES AND J-BOXES LOCATED IN WALL AT +18" FROM FLOOR LINE TO BOTTOM LINE OF OUTLET UNLESS OTHERWISE NOTED ON PLAN.
21. PROVIDE "U.L. APPROVED" OR "U.L. LISTED" ELECTRICAL EQUIPMENT ONLY.
22. USE RIGID GALVANIZED STEEL CONDUIT FOR ALL SIZES WHERE DIRECTLY EXPOSED TO WEATHER; WHERE SUBJECT TO ABNORMAL CONDITIONS OF HEAT, COLD, MOISTURE, HUMIDITY, FUMES AND HAZARDOUS ELEMENTS; WHERE INSTALLED EXPOSED BELOW 7-1/2 FEET, IN AREAS WHERE SUBJECT TO MECHANICAL INJURY INCLUDING MECHANICAL AND EQUIPMENT ROOMS; AND IN CONCRETE SLABS ON GRADE.
23. EMT CONDUIT WITH COMPRESSION TYPE FITTINGS MAY BE USED FOR ALL SIZES UP TO 1-1/2 INCHES MAXIMUM TRADE SIZE IN DRY LOCATIONS AS IN STUD PARTITIONS AND FURRED CEILING SPACES. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET TO PANEL EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED OR INDICATED. EMT SHALL NOT BE RUN EXPOSED, IN CONCRETE, RUNS MORE THAN 100 FEET FOR POWER FEEDERS.
24. ALL UNDERGROUND CONDUITS SHALL BE ENTIRELY ENCASED IN CONCRETE 3" THICK ON ALL SIDES WITH MULTIPLE CONDUITS SPACED NOT LESS THAN 1-1/2" APART. MINIMUM DEPTH OF NOT LESS THAN 27" BELOW FINISHED GRADE TO THE TOP OF CONCRETE ENVELOPE.
25. USE PVC (POLYVINYL CHLORIDE) SCHEDULE 40 CONDUIT BELOW GRADE ONLY. RUN AT MINIMUM OF 6" BELOW BOTTOM OF FLOOR SLAB OR 24" BELOW GRADE OUTSIDE OF BUILDING LINES UNLESS OTHERWISE NOTED. USE PVC COATED RIGID STEEL ELBOWS AND RISERS THROUGH SLAB.
26. SEAL ALL PVC CONDUITS AT BOTH ENDS WITH "PERMACEL" INCLUDING THOSE TERMINATING IN STEEL RISERS. MAKE GAS TIGHT.
27. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
28. PROVIDE A #12 PULL WIRE IN ALL CONDUITS INDICATED AS CONDUIT ONLY (C.O.) RATED 250 POUND TENSILE STRENGTH.
29. WIRING DEVICE PLATES: COLOR-FINISH AS SELECTED BY ARCHITECT OR OWNER.
30. PROVIDE ALL NECESSARY J-BOXES AND PULL BOXES OF PROPER SIZES AS REQUIRED.
31. PROVIDE WEATHERPROOF TYPE ELECTRICAL EQUIPMENT FOR EXTERIOR LOCATIONS.
32. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF WORK. BE RESPONSIBLE FOR CHECKING AND COORDINATING WITH OTHER TRADES AND VERIFYING SPACE IN WHICH WORK WILL BE INSTALLED.
33. SEAL ALL SPACE AROUND CONDUIT PENETRATION THROUGH FIRE-RATED WALL WITH A UL LISTED FIRE BARRIER COMPOUND. "3M" CAULKING OR EQUAL.
34. OPERATING MANUALS AND INSTRUCTIONS: THE CONTRACTOR SHALL FURNISH TO THE CITY FOUR BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS FOR ALL ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL EXPLAIN IN DETAIL ALL MANUALS FOR THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT TO THE DEPARTMENT OF PUBLIC WORKS PERSONNEL BEFORE COMPLETION AND ACCEPTANCE OF THE PROJECT.
35. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
36. AS PART OF CLOSEOUT DOCUMENT CONTRACTOR SHALL PROVIDE ONE SET OF AS-BUILTS DRAWINGS AT THE COMPLETION OF THE JOB. SHOW EXACT LOCATION AND MOUNTING OF EQUIPMENT INCLUDING DIMENSIONS.
37. CONDUITS ENTERING AND/OR LEAVING POLE FOOTING SHALL BE RIGID PVC COATED STEEL WITH PLASTIC BUSHING. MAKE TRANSITION FROM PVC TO METALLIC AT A MINIMUM DISTANCE OF 3'-0" FROM FOOTING.
38. UNDERGROUND CONDUIT RUNS INSTALLED WITH SCHEDULE 40 PVC SHALL HAVE A MINIMUM 3" TOP COVER TO CONCRETE OVER ITS ENTIRE LENGTH (EXCEPT UNDER CONCRETE SIDEWALKS) AND SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE PREVAILING CODE BUT NOT LESS THAN SHOWN ON THE PLAN. CONCRETE COVER SHALL BE MINIMUM OF 100-E-100 SLURRY MIX.
39. ALL CONDUITS BENDS INSTALLED UNDERGROUND SHALL BE THE LONG RADIUS TYPE WITH RADII NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER TON THE CONDUIT AND WITH NOT MORE THAN THREE 90° BENDS IN ANY RUN. EXCEPTION: FOR POWER AND LIGHT CONDUIT ABOVE GROUND, FACTORY ELLS ARE PERMITTED.
40. CONDUITS IN UNDERGROUND PULL BOXES SHALL BE SEALED WITH "LHD1" OR "LHD5" DUCT SEAL AS MANUFACTURED BY DOTTIE CO. OR APPROVED EQUAL.
41. PLACE 6" WIDE, 4 MIL PLASTIC YELLOW MARKER TAPE AT 12 INCHES BELOW FINISH GRADE ALONG AND ABOVE BURIED CONDUITS. LABEL TAPE "CAUTION: ELECTRIC LINE BELOW" OR SIMILAR WORDING.
42. RECORD DRAWINGS: IMMEDIATELY AFTER WORK IS INSTALLED, CAREFULLY DRAW ON PRINTS IN RED INK ALL WORK WHICH IS INSTALLED AT VARIANCE WITH THE WORK AS INDICATED ON THE DRAWINGS. INDICATE BY MEASURED DIMENSION TO BUILDING CORNERS OR OTHER PERMANENT MONUMENTS THE EXACT LOCATION OF ALL CHANGES.

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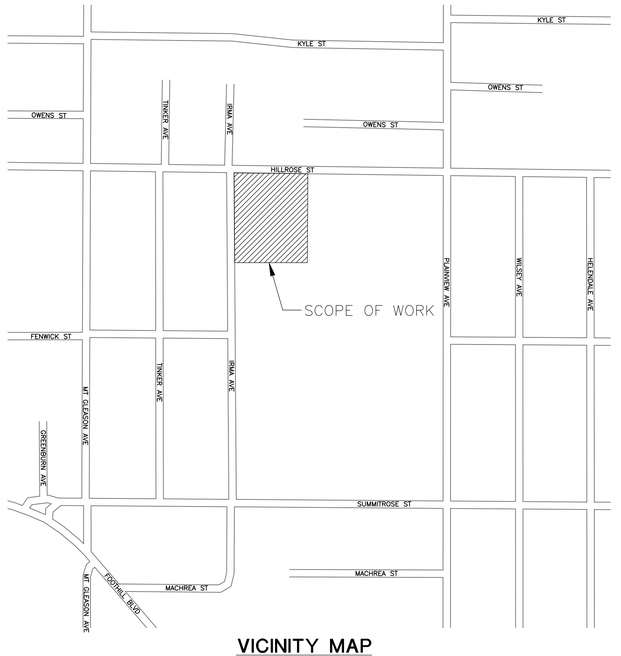

VICINITY MAP

N.T.S.

SCOPE OF WORK

INSTALLATION OF MANUAL FIRE ALARM SYSTEM FOR THE MODERNIZATION OF THE BATHHOUSE BUILDING.

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
03/10/2022
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	TED ALLEN, P.E.	DATE:	03/10/2022
ARCHITECTURAL DIVISION			03/10/2022
ENGINEER:	JIMMY FONG	LIC. NO.	E14126
DESIGNED BY:	P.M.		
DRAWN BY:	H.Y.		
CHECKED BY:	P.M.		
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SYMBOL LIST AND NOTES

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. FA101

SHEET 79 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

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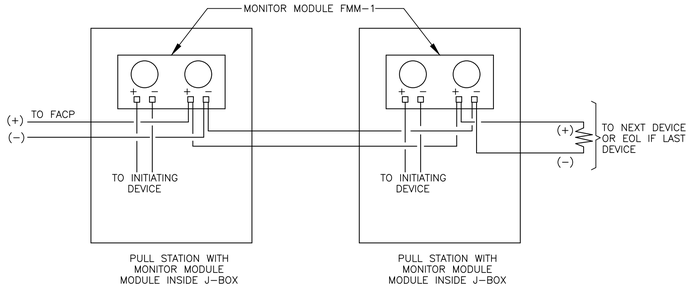
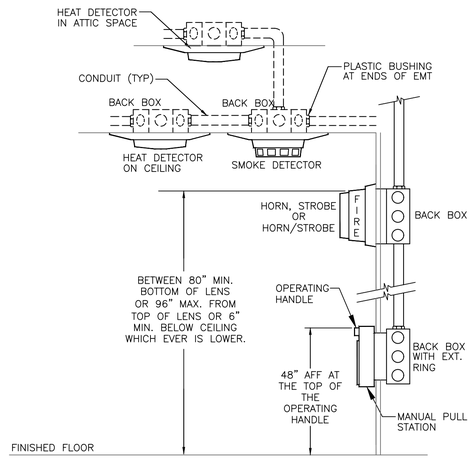
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:56 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_FA101.DWG

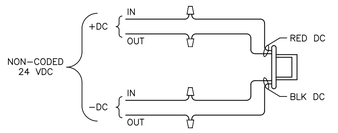
REVISION DATES (DESIGN STAGE ONLY)



7 / FA102 ADDRESSABLE PULL STATION
N.T.S.



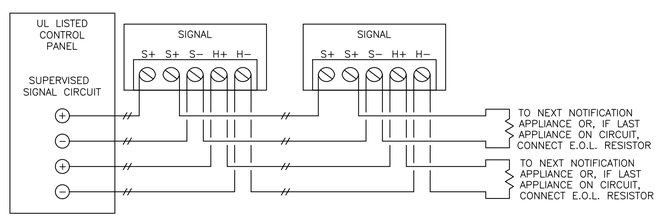
6 / FA102 PULL STATION, HORN & STROBE HEIGHT REQUIREMENTS
N.T.S.



NOTE:
NOTIFICATION APPLIANCE IS RATED PER INDIVIDUAL NAMEPLATE.

VISUAL WIRING DIAGRAM

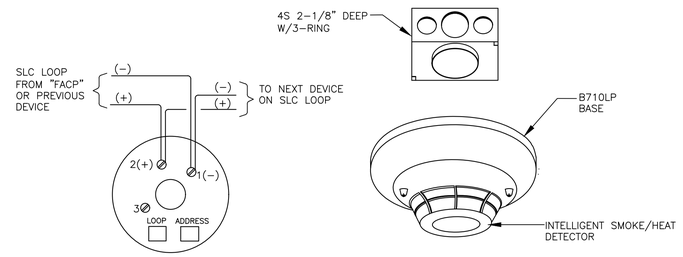
5 / FA102 STROBE LIGHT
N.T.S.



TEMPORAL CODE 3 FOR ALL AUDIBLE DEVICES OBTAINED FROM FIRE ALARM CONTROL PANEL.

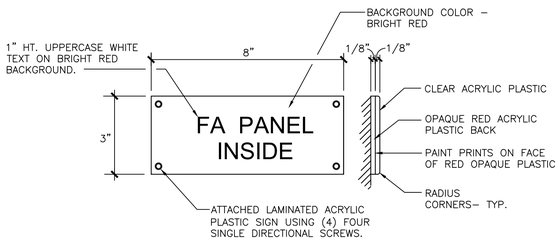
VISUAL/HORN WIRING DIAGRAM

4 / FA102 DUAL INPUT HORN/STROBE
N.T.S.

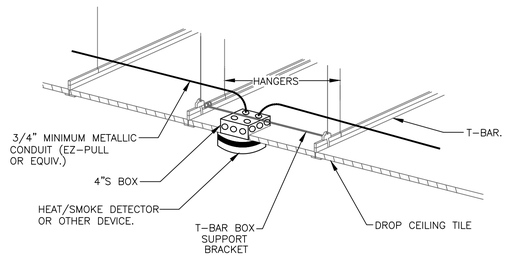


3 / FA102 LOW PROFILE SMOKE/HEAT DETECTOR
N.T.S.

QUANTITY	SYMBOLS	DEVICE NAME	NOTIFIER CAT. NO. (U.O.N.)	CSFM NO.
1		FIRE ALARM CONTROL PANEL	NFS-320	7165-0028:243
1	UDACT	UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER	UDACT	7165-0028:243
6	FH	INTERIOR MANUAL PULL STATION	NBG-12LX	7150-0028:199
2	WP H	EXTERIOR HORN WITH WP BACK BOX	SYSTEM SENSOR HWK	7135-1653:0189
4	(cd) H	HORN - STROBE (cd)	SYSTEM SENSOR P4W	7125-1653:0188
11	(cd) L	WALL MOUNTED STROBE	SYSTEM SENSOR SW	7125-1653:0186
37	SD	SMOKE DETECTOR	FAPT-851(A)	7272-0028:0206
		SMOKE DETECTOR BASE	B210LP(A)	7300-0028:0173
N/A	F	1 PAIR UNSHIELED	WEST PENN NO. D990	7161-0859:0101



2 / FA102 FA CONTROL PANEL SIGNAGE
N.T.S.



TYPICAL SMOKE/HEAT DETECTOR, CEILING MOUNT HORN/STROBE INSTALLATION DETAIL
1 / FA102 N.T.S.

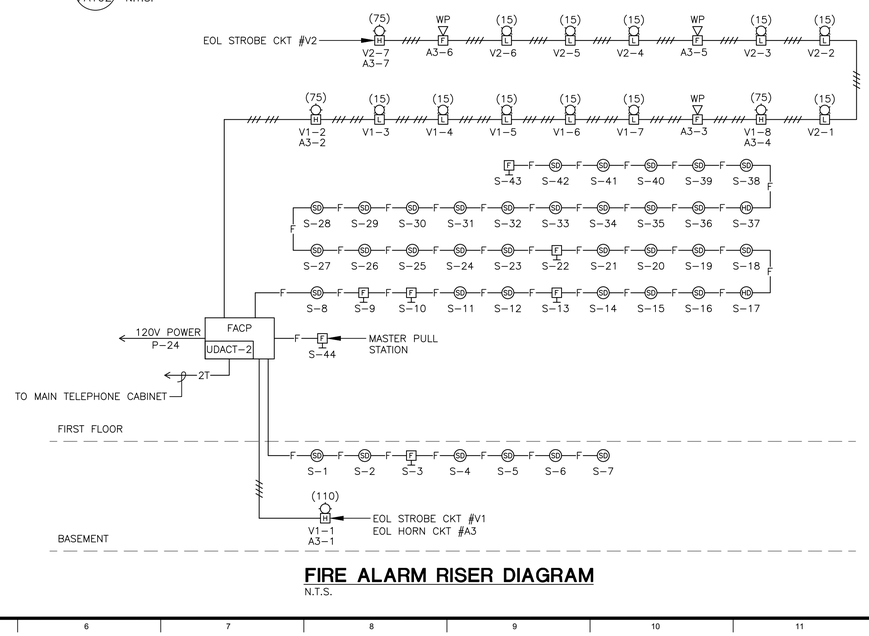
FIRE ALARM SIGNAL CIRCUIT SCHEDULE AND VOLTAGE DROP CALCULATIONS												
CKT. NO.	WALL QUAN. INT. HORN 0.069	WALL QUAN. STROBE 15 cd 0.066	WALL QUAN. STROBE 30 cd 0.094	WALL QUAN. STROBE 75 cd 0.158	WALL QUAN. STROBE 110cd 0.202	QUAN EXT. HORN 0.069	TOTAL AMPS	WIRE SIZE	DISTANCE (IN FEET)	TO FACP	TO POWER EXTENDER	PERCENT VOLTAGE DROP
V1		5		2	1		0.85	#12	280	X		3.83
V2		6		1			0.55	#12	440	X		3.89
A3	4					3	0.48	#12	230	X		1.78

I = TOTAL CURRENT FLOW IN ALARM CONDITION
L = 2 TIMES LENGTH OF CIRCUIT FROM SUPPLY TO LAST DEVICE (IN FEET)
1.93 = DC RESISTANCE OF #12 COPPER CONDUCTOR PER 1000 FT

%VOLTAGE DROP = $\frac{2 \times L \times 1.93 \times I}{1000 \times \text{SYSTEM VDC}} \times \frac{100}{24}$

BATTERY SIZING CALCULATIONS - FACP NFS-320					
		STANDBY CURRENT		ALARM CURRENT	
DEVICE NAME (NOTIFIER)	QTY	UNIT	TOTAL	UNIT	TOTAL
BE 320 BASIC EQUIPMENT	1	0.17	0.17	0.25	0.25
LIB-200-LOOP INTERFACE BOARD	1	0.049	0.049	0.01	0.01
AVPS-24 AUXILIARY POWER SUPPLY	1	0.009	0.009	0.009	0.009
LCD2-80 REMOTE ANNUNCIATOR	1	0.05	0.05	0.1	0.1
PHOTOELECTRIC SMOKE DETECTOR	35	0.00021	0.00735	0.0065	0.2275
HEAT DETECTOR	2	0.00021	0.00042	0.0065	0.013
DIGITAL COMMUNICATOR - UDACT	1	0.035	0.035	0.085	0.085
MANUAL PULL STATION	6	0.0004	0.0024	0.0006	0.0036
INTERIOR HORN	4	0.021	0.084	0.069	0.276
EXTERIOR HORN	3	0	0	0.069	0.207
15cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	11	0	0	0.066	0.726
75cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	3	0	0	0.158	0.474
110cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	1	0	0	0.202	0.202
		SUB TOTAL	0.41	SUB TOTAL	2.5831
		HOURS	24.00	HOURS	0.083
		AH STANDBY	9.77	AH ALARM	0.2143973

TOTAL	9.99 A.H.
BATTERY WITH 25% DERATING INCLUDED	12.48 A.H.
BATTERY	25.00 A.H.
SPARE	12.52 A.H.



FIRE ALARM RISER DIAGRAM
N.T.S.

FIRE ALARM SEQUENCE OF OPERATION				
DEVICE / ACTION	MANUAL PULL STATION	SMOKE DETECTOR	HEAT DETECTOR	AC POWER FAILURE
SOUND ALARM THROUGHOUT BUILDING	X	X	X	
ACTIVATE RELAY FOR MONITORING	X	X	X	X
ANNUNCIATE AT PANEL & ANNUNCIATOR	X	X	X	X SUPERVISORY
SOUND TROUBLE BUZZER	ON WIRING FAULT	ON WIRING FAULT	ON WIRING FAULT	X
NOTIFY CENTRAL STATION	X ALARM	X ALARM	X ALARM	X SUPERVISORY

BUREAU OF ENGINEERING
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BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
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CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY ENGINEER: TED ALLEN, P.E.
ARCHITECTURAL DIVISION
ENGINEER: JIMMY FONG LIC. NO. E14126 DATE: 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y. 03/10/2022
CHECKED BY: P.M. 03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT 03/11/2022
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: FIRE ALARM DETAILS AND CALCULATIONS
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

REVISIONS: NO. | DATE | BY | SERIAL NO.
BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL STATE OF CALIFORNIA 12/31/2023

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. FA102
SHEET 80 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:56 PM
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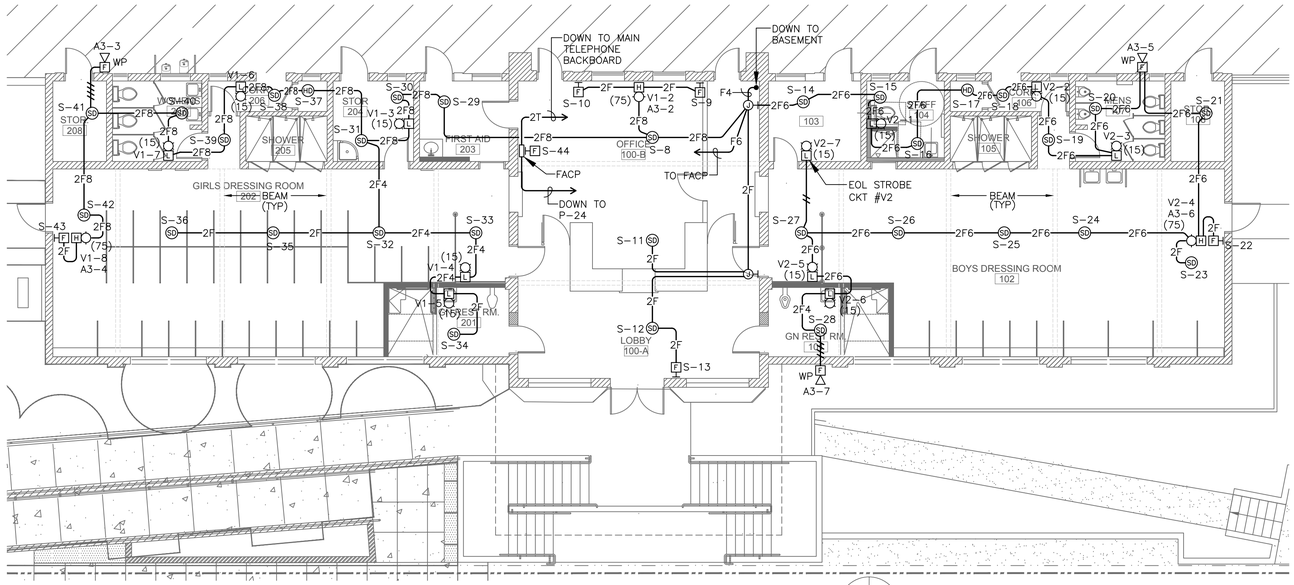
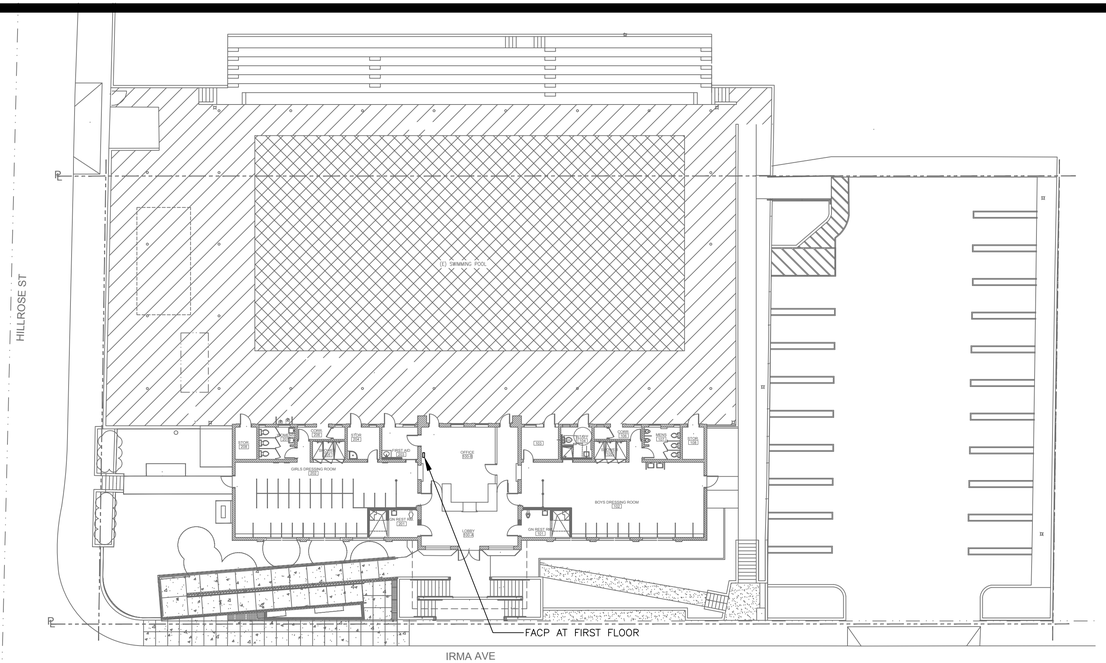


FIRST FLOOR FIRE ALARM PLAN

Scale: 1/8" = 1' - 0"

N



FIRE ALARM SITE PLAN

Scale: 1" = 20'-0"

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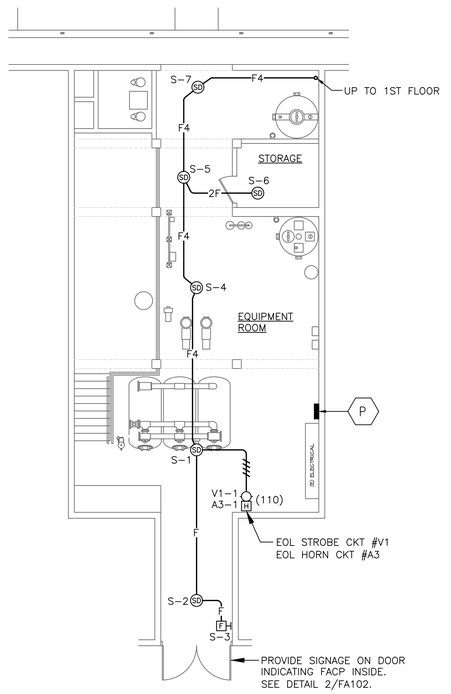

BASEMENT FIRE ALARM PLAN

Scale: 1/8" = 1' - 0"

N

BID SET
Date: May 17, 2022

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Consulting Electrical Engineers
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NO.	REVISIONS:	DATE:	BY:

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BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
03/10/2022
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

TED ALLEN, P.E. CITY ENGINEER DATE: 03/10/2022
ARCHITECTURAL DIVISION 03/10/2022
ENGINEER: JIMMY FONG LIC. NO. E14126 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y.
CHECKED BY: P.M. 03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FIRE ALARM SITE PLAN, BASEMENT AND FIRST FLOOR FIRE ALARM PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. FA103

SHEET 81 OF SHEETS 96

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REVISION DATES (DESIGN STAGE ONLY)

REVISION DATE: 3/10/2022 2:57 PM FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_FA103.DWG

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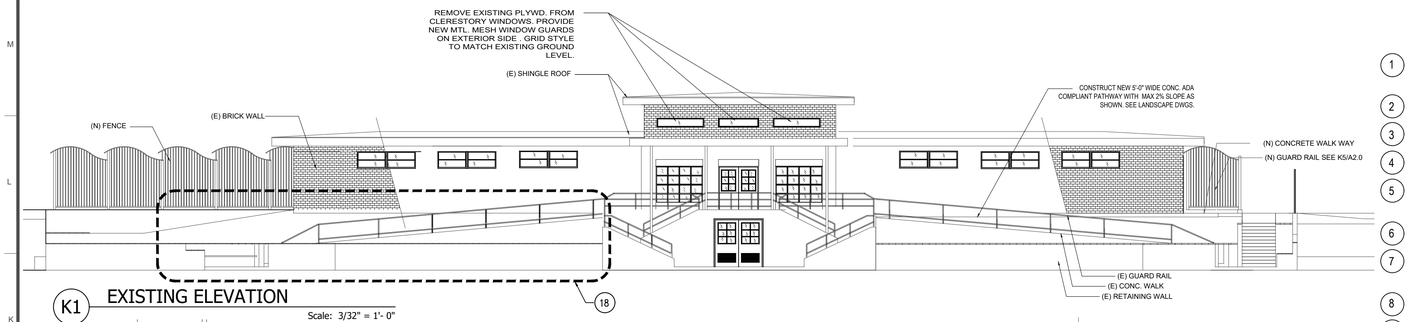


K1 EXISTING ELEVATION

Scale: 3/32" = 1'- 0"

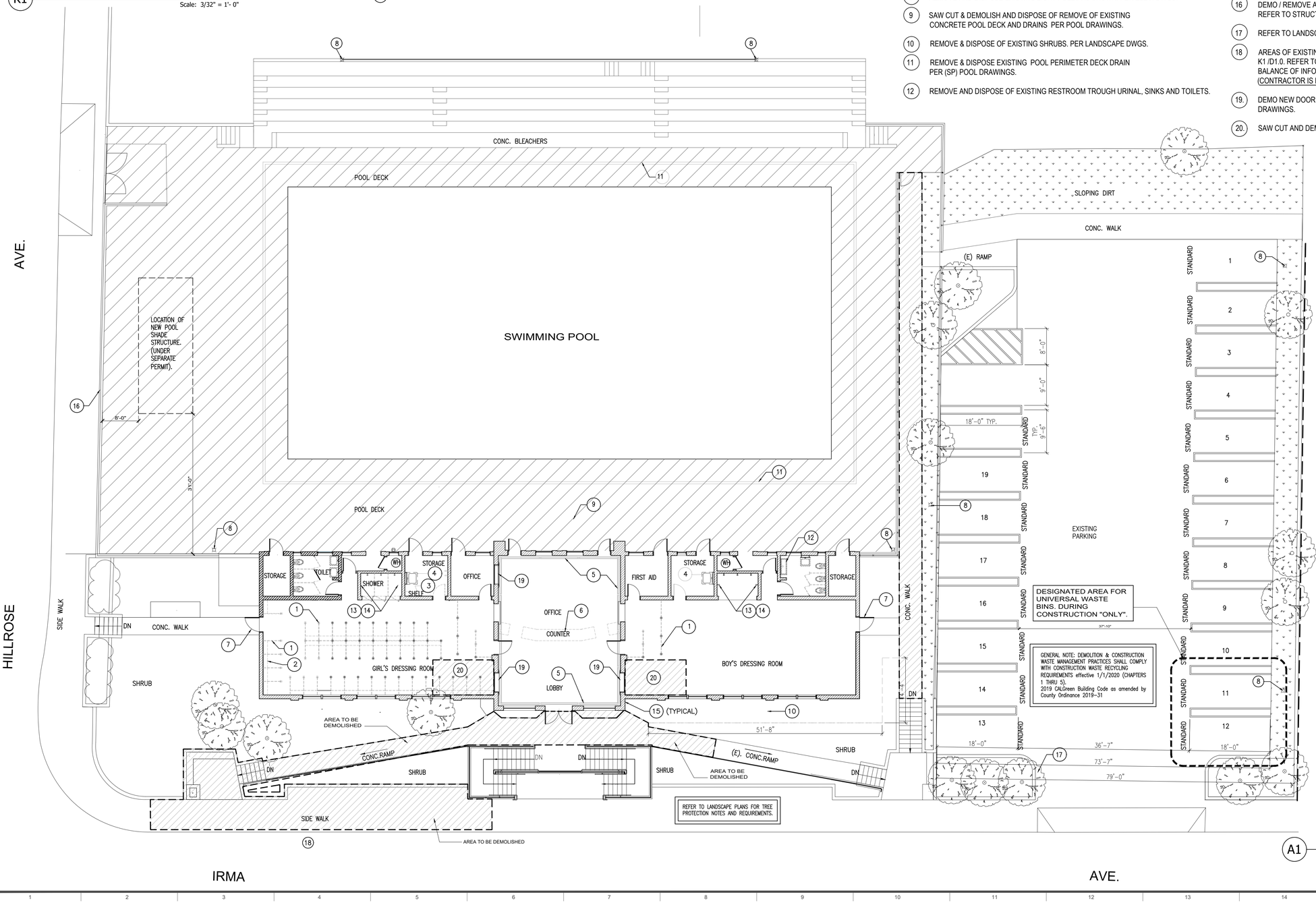
DEMOLITION NOTES

1. REMOVE & DISPOSE OF EXISTING STEEL POSTS ,DRESSING ROOM PARTITIONS & CONCRETE PEDESTALS FROM BOTH MEN AND WOMENS DRESSING ROOM.
2. REMOVE & DISPOSE OF EXISTING DRESSING ROOM BENCHES
3. REMOVE & DISPOSE OF EXISTING WOOD SHELVES
4. REMOVE & DISPOSE OF EXISTING MOP SINK, CAP EXISTING DRAINLINES FOR REUSE
5. RETAIN EXISTING VINTAGE LIGHTED SOFFIT, PROTECT IN PLACE AND PREPARE FOR LED LIGHTING RETROFIT FOR LED LIGHTING.
6. REMOVE & DISPOSE OF EXISTING WOOD CUSTOMER SERVICE COUNTER
7. REMOVE & DISPOSE OF EXISTING DOOR' SECURE OPENING FOR INSTALLATION OF NEW DOOR.
8. REMOVE AND DISPOSE EXISTING LIGHT POLES AS SHOWN. PER ELEC. DWGS.
9. SAW CUT & DEMOLISH AND DISPOSE OF REMOVE OF EXISTING CONCRETE POOL DECK AND DRAINS PER POOL DRAWINGS.
10. REMOVE & DISPOSE OF EXISTING SHRUBS. PER LANDSCAPE DWGS.
11. REMOVE & DISPOSE EXISTING POOL PERIMETER DECK DRAIN PER (SP) POOL DRAWINGS.
12. REMOVE AND DISPOSE OF EXISTING RESTROOM TROUGH URINAL, SINKS AND TOILETS.
13. REMOVE AND RECONFIGURE EXISTING SHOWERHEADS SHOWN. SEE PLUMBING PLANS. REMOVE AND CAP UNUSED PIPE LINES.
14. REMOVE EXISTING METAL WALL PANELS . PREP WALLS AND CEILING TO RECEIVE NEW WATERPROOF BACKER BOARD, MORTAR GROUT AND CERAMIC PORCELAIN TILE.
15. REMOVE EXISTING PLYWOOD FROM UPPER CLERESTORY WINDOWS. SECURE OPENING FROM WEATHER AND UNTIL REPAIR AND RESTORATION CAN PROCEED.
16. DEMO / REMOVE AND DISPOSE OF EXISTING CHAINLINK FENCE REFER TO STRUCTURAL DRAWING A1/S301.
17. REFER TO LANDSCAPE PLANS FOR LANDSCAPE WORK.
18. AREAS OF EXISTING CONC. RAMP TO BE DEMOLISHED. SEE EXISTING ELEVATION K1 /D1.0. REFER TO LANDSCAPE DRAWINGS AND STRUCTURAL DRAWINGS FOR BALANCE OF INFORMATION., PROVIDE STRUCTURAL SHORING AS NECESSARY. (CONTRACTOR IS RESPONSIBLE FOR OBTAINING RIGHT OF WAY PERMIT).
19. DEMO NEW DOOR OPENINGS IN EXISTING MASONRY WALL PER STRUCTURAL DRAWINGS.
20. SAW CUT AND DEMOLISH CONCRETE SLAB AND EXCAVATE FOR NEW PLUMBING.

LEGENDS

INDICATES WALL, SLAB OR FIXTURES TO BE DEMOLISHED OR REMOVED

INDICATES EXISTING WALL OR FIXTURES TO REMAIN.



WALL AND AREAS TO BE DEMOLISHED

WALLS AND AREAS TO REMAIN

N

A1 DEMOLITION PLAN

Scale: 1/8" = 1'- 0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
GELSO J. DEL POSO
LIC. NO. C. 29974
RENEWAL 31-2023
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED	ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION		
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DEMOLITION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. D1.0

SHEET 34 OF SHEETS 96

PLOTTED: 6/4/2022 5:04 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006

REVISION DATE: 6/4/2022 5:03 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\D1.0 DEMOLITION PLAN.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

28 REMOVE, WIRE BRUSH, SCRUB CLEAN AND REPAIR AS NECESSARY ALL EXISTING EXTERIOR GALV. METAL WINDOW GUARDS PER SECRETARY OF THE INTERIORS HISTORICAL PRESERVATION STANDARDS AND REINSTALL SECURELY. WIRE BRUSH + LIGHT ABRASIVE AND SCRUB CLEAN BY HAND WITH LIGHT ABRASIVE ALL EXISTING METAL WINDOW FRAMES AND EXPOSED BUILDING METALS THAT ARE TO REMAIN PER SAME STANDARD. CLEAN IN PLACE. REPLACE IN KIND ANY DAMAGED MATERIALS, WEATHER STRIPPING OR NON-FUNCTIONING LATCHES SCREWS OR HINGES .

29 REPLACE AND OR REPAIR ALL DAMAGED DETERIORATED METAL DOORS PANELS, STILES, RAILS AND KICK PLATES THROUGHOUT INTERIOR AND EXTERIOR AS NECESSARY. CLEAN, SAND AND REFINISH ALL DOOR SURFACES TOP AND BOTTOM PER SECRETARY OF THE INTERIORS HISTORICAL PRESERVATION STANDARDS. SAND ALL SURFACES THOROUGHLY, PRIME WITH RUSTPROOF METAL PRIMER AND PAINT WITH DUNN EDWARDS KYNAR METAL PAINT COLOR: TBD BY ARCHITECT. PROVIDE NEW MORTISE LOCKSETS AND ADA COMPLIANT DOOR LEVERS, THRESHOLDS AND CLOSURES

30 SAND PREP, PATCH AND REPAIR ALL INTERIOR SURFACE MATERIALS, WALLS, CEILING ETC. FOR PAINTING APPLY PRIMER AND PAINTING, STAINS AND OTHER RELATED FINISHES.

31 INSTALL NEW 48 x 36 WALL MOUNTED GLASS LOCKABLE DISPLAY CABINET, SUBMITTAL REQUIRED FOR APPROVAL

32 PROVIDE AND INSTALL NEW HEAVY GAUGE STEEL SECURITY DOOR WITH NEW HINGES, ADA COMPLIANT HARDWARE, SWEEP AND ADA COMPLIANT PANIC BAR.

33 INSTALL NEW CERAMIC TILE AT MENS URINAL. SCRUB AND CLEAN "ALL" EXISTING GLAZED C.M.U. BLOCK WALL. RE-POINT, REPAIR ALL CRACKS AND REPLACE LOOSE OR BROKEN GROUT.

34 EXISTING PARKING LOT. PROVIDE NEW PAINT STRIPING TO PROVIDE FOR 20 STANDARD STALLS 9'-0" X 18'-0" TYP. & 1 ADA STALL AND ACCESS AISLE.

35 PROVIDE AND INSTALL NEW GALVANIZED STEEL PERIMETER FENCING SEE DETAILS IN SHT. A9.0 AND STRUCTURAL DWG A1/S301 . AND LANDSCAPE DWGS.

36 REPAIR, AND RE-POINT INTERIOR AND EXTERIOR MASONRY BRICK IN LOCATIONS AS NEEDED.

37 REPLACE EXISTING SERVICE WINDOWS WITH NEW STAINLESS STEEL SERVICE WINDOWS.

38 PROVIDE AND INSTALL NEW ADA ACCESS ROUTE SIGN. SEE J12 / A10.0.

39 PROVIDE AND INSTALL NEW ADA PARKING SIGN. SEE J12 / A10.0.

40 COORDINATE ALL ROOF PENETRATIONS WITH PROJECT ARCHITECT. AND ASSOCIATED DISCIPLINES.

17 PROVIDE AND INSTALL NEW LED LIGHT POLES AS INDICATED. **(PER ELECTRICAL DWGS).**

18 REPLACE EXISTING POOL HEATER. **SEE MECHANICAL POOL DRAWINGS SP1.1**

19 INSTALL NEW LIGHTING TO ALL AREAS WHERE INDICATED. **(SEE ELECTRICAL DRAWINGS)**.

20 ADD SEISMIC SHUTOFF VALVE TO EXISTING GAS MAIN. SEE MECHANICAL DRAWINGS.

21 CLEAN AND REMOVE ALL RUST AND CORROSION FROM (E) STAIR AND RAMP HANDRAIL AND APPLY HIGH PERFORMANCE CLEAR PROTECTIVE WEATHER PROOF COATING..

22 PATCH AND REPAIR ALL VISIBLE CRACKS IN (E) CONCRETE FLOOR AND ACID WASH TO CONSISTENT UNIFORM APPEARANCE, COLOR BY ARCHITECT

23 PROVIDE AND INSTALL OR CONSTRUCT (N) 15' X 30' X 9' HIGH STEEL AND FABRIC SHADE "STRUCTURE UNDER SEPARATE PERMIT" **SEE A8.0**

24 NEW AC CONDENSER **(SEE MECHANICAL DWGS).**

25 CONSTRUCT NEW 46" INCH HIGH PONY WALL WITH FINISHED WOOD CAP W/ ALUM. REVEAL AND SPRING LOADED LAMINATED SWINGING DOOR.

26 PROVIDE AND INSTALL NEW LAVATORIES INCLUDE WATER SUPPLY, WASTE & DRAIN LINES ALL WITH ADA COMPLIANT CONTROLS. SEE MECHANICAL DWGS.

27 INSTALL NEW GALV. WIRE MESH WINDOW GUARDS OVER CLERESTORY WINDOWS, STYLE TO MATCH EXISTING

7 PROVIDE AND INSTALL NEW URBAN-FORM WALL PLASTIC SLAT MOUNTED BENCHES BY WISHBONE FURNISHINGS, Model Number : UFWM-17S SEAT SUPPORT BRACKET AND FWM-17E 2 x 6 RECYCLED-PLASTIC PLANKS. AND HILTI HIT-RE 100 (OR EQUAL). SEE K6/A3.1

8 PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN MORTAR & GROUT, OVER WATER PROOF CEMENT BACKER BOARD. AND INSTALL NEW WATER PROOF HARD CEILING IN SHOWER. INSTALL LIGHTING PER ELECTRICAL DWGS. DEMO ONE (E) METAL PANEL VIA EXPLORATION, FOR ARCHITECTS APPROVAL PRIOR TO FULL DEMOLITION.

9 CONSTRUCT NEW 4000 PSI CONCRETE SLAB WITH EPOXY COATED REBAR, SLOPE TO DRAIN AND PER ADA REQUIREMENTS **SEE A7/A3.0**.

10 PROVIDE AND INSTALL NEW ADA COMPLIANT HI-LOW DRINKING FOUNTAIN. **SEE PLUMBING.**

11 INSTALL NEW 1 $\frac{1}{2}$" Ø 316 STAINLESS STEEL HANDRAIL AS PER ADA REQUIREMENTS. **SEE A1/A4.0**

12 CONSTRUCT NEW CONCRETE POOL DECK WITH EPOXY COATED REBAR AND NEW POOL DRAINS. MECH AND POOL DWGS **SEE SP2.1** ("UNDER SEPARATE PERMIT")

13 REPLACE "ALL" EXTERIOR WINDOW GLAZING WITH LOW-E SOLARBAN-60 MONOLITHIC W/ PROTECTIVE LAMINATE.

14 RESTRIPE NEW ADA PARKING SPACE. AND PROVIDE NEW PARKING SIGNAGE (SEE LANDSCAPE DWGS).

15 INSTALL INFRA RED RADIANT HEAT IN DRESSING AREAS .SEE MECHANICAL DRAWINGS

16 CONSTRUCT NEW 5'-0" WIDE CONC. ADA COMPLIANT PATHWAY WITH MAX 2% SLOPE AS SHOWN. SEE LANDSCAPE DWGS.

CONSTRUCTION NOTES :

1 CONSTRUCT NEW 8 X 13 ADA COMPLIANT GENDER NEUTRAL RESTROOMS. PROVIDE NECESSARY PLUMBING, (N) FLOOR DRAINS 2% MIN. SLOPE, PLUMBING FIXTURES, MECHANICAL ELECTRICAL LIGHTING. AND ACCESSORIES. **SEE DETAIL A7/A3.0**

1.1 CONSTRUCT NEW ADA COMPLIANT LAVATORY AND PLUMBING WALL IN NEW FIRST AID RM. LOCATION # 203 AND NEWcADA COMPLIANT AQUATICS STAFF SHOWER/RESTROOM IN EXISTING MAINTENANCE ROOM # 104 LOCATION PROVIDE AND INSTALL NEW PLUMBING WALL,TOILET, LAVATORY AND SHOWER WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES AND FINISHES. SEAL OFF EXISTING DOOR FOR POTENTIAL FUTURE REUSE.

1.2 CONSTRUCT NEW ADA COMPLIANT STRUCTURAL DOOR OPENING PROVIDE AND INSTALL NEW DOOR AND HARDWARE IN EXISTING MASONRY BRICK WALL. **SEE STRUCTURAL DRAWINGS.**

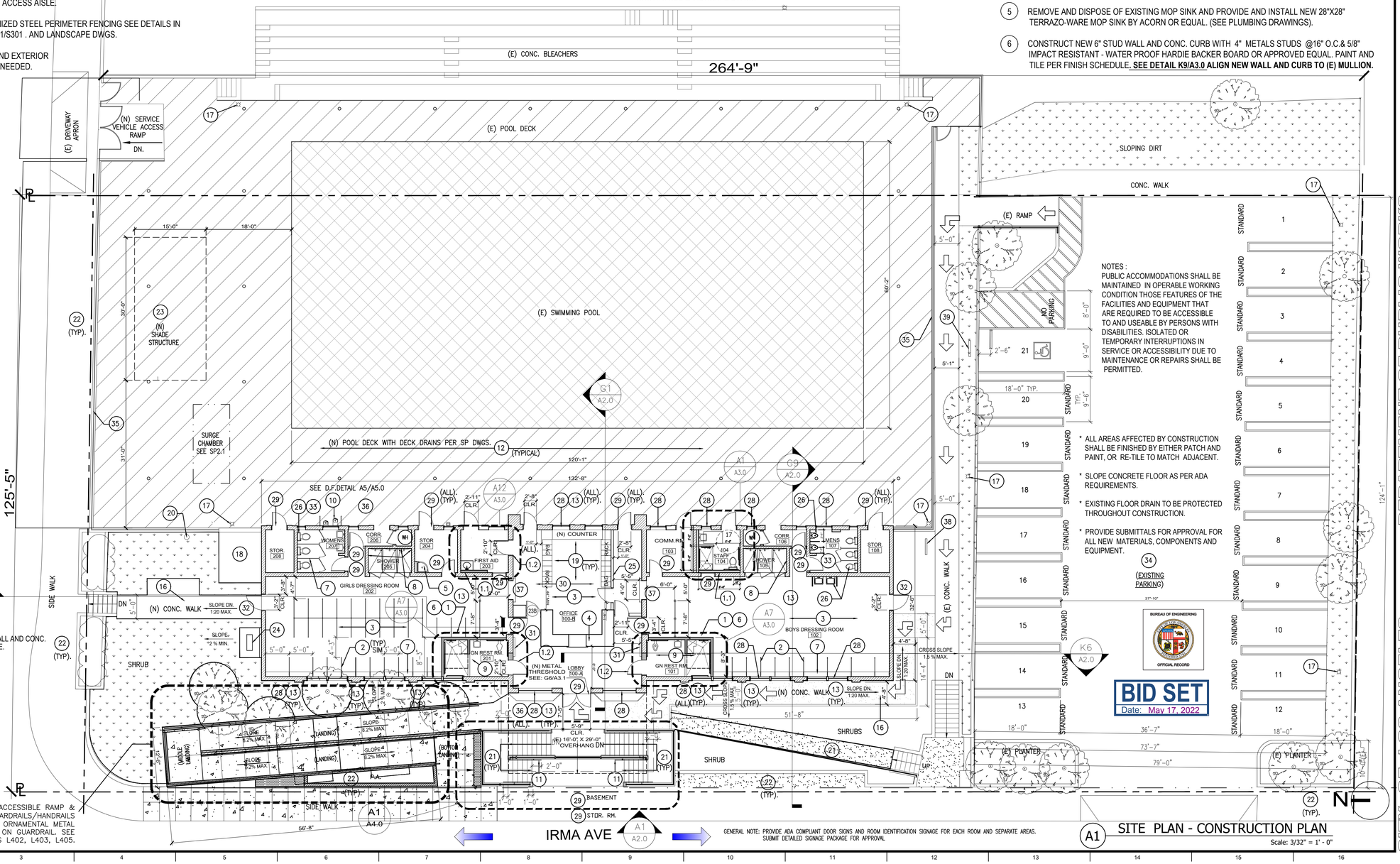
2 INSTALL NEW SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS AND SHOWER PARTITIONS WITH OPERABLE DOORS AND REQUIRED HARDWARE "SCRANTON ECLIPSE" (OR EQUAL) FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL.

3 REFINISH EXISTING CONCRETE FLOORS AND COVE BASE THROUGHOUT ENTIRE BUILDING INTERIOR. INCLUDING GRINDING, PROPER CRACK REPAIR, LEVELING AS NEEDED AND MATERIAL AREA REPLACEMENT AS NEEDED AND NECESSARY. PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT.Y CROWN POLYMER (OR EQUAL). BY APPROVED CONTRACTOR. COLOR TBD ARCHITECT. **SEE SCHEDULE A6.0**

4 PROVIDE AND/OR CONSTRUCT AND INSTALL NEW WOOD COUNTER WITH PLASTIC LAMINATE SURFACES AND DOOR FRONTS "PIONITE" (OR EQUAL) AND NECESSARY HARDWARE. INCLUDE QUARTZ COUNTERTOP AND KICK BASE AS SHOWN. INCLUDE POWER, COMMUNICATION, LINES PER APPROVED ELECTRICAL, DRAWINGS. SEE **DETAIL E1& E8 /A4.0**

5 REMOVE AND DISPOSE OF EXISTING MOP SINK AND PROVIDE AND INSTALL NEW 28"X28" TERRAZO-WARE MOP SINK BY ACORN OR EQUAL. (SEE PLUMBING DRAWINGS).

6 CONSTRUCT NEW 6" STUD WALL AND CONC. CURB WITH 4" METALS STUDS @16" O.C.& 5/8" IMPACT RESISTANT - WATER PROOF HARDIE BACKER BOARD OR APPROVED EQUAL. PAINT AND TILE PER FINISH SCHEDULE. **SEE DETAIL K9/A3.0 ALIGN NEW WALL AND CURB TO (E) MULLION.**



NOTES :
PUBLIC ACCOMMODATIONS SHALL BE MAINTAINED IN OPERABLE WORKING CONDITION THOSE FEATURES OF THE FACILITIES AND EQUIPMENT THAT ARE REQUIRED TO BE ACCESSIBLE TO AND USEABLE BY PERSONS WITH DISABILITIES. ISOLATED OR TEMPORARY INTERRUPTIONS IN SERVICE OR ACCESSIBILITY DUE TO MAINTENANCE OR REPAIRS SHALL BE PERMITTED.

* ALL AREAS AFFECTED BY CONSTRUCTION SHALL BE FINISHED BY EITHER PATCH AND PAINT, OR RE-TILE TO MATCH ADJACENT.
* SLOPE CONCRETE FLOOR AS PER ADA REQUIREMENTS.
* EXISTING FLOOR DRAIN TO BE PROTECTED THROUGHOUT CONSTRUCTION.
* PROVIDE SUBMITTALS FOR APPROVAL FOR ALL NEW MATERIALS, COMPONENTS AND EQUIPMENT.

LEGEND :
- NEW 2X6 METAL STUD - "ESR 3064P" WALL AND CONC. CURB BRACED TO (E) ROOF STRUCTURE.
- EXISTING BRICK WALL
- NEW SHOWER PARTITION
- NEW DRESSING PARTITION
- NEW CONCRETE SLAB FLOOR.
- CONCRETE DECK AND DECK DRAIN TO BE DEMOLISHED
- EXISTING SWIMMING POOL TANK (TO REMAIN)
- (P.O.T.) PATH OF TRAVEL

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

GENERAL NOTE: PROVIDE ADA COMPLIANT DOOR SIGNS AND ROOM IDENTIFICATION SIGNAGE FOR EACH ROOM AND SEPARATE AREAS. SUBMIT DETAILED SIGNAGE PACKAGE FOR APPROVAL

A1 SITE PLAN - CONSTRUCTION PLAN
Scale: 3/32" = 1' - 0"

BUILDING NO. -
INDEX NO. - RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW: 31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

TED ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION	
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974
DESIGNED BY:	John McNeil / Vinh Ha	
DRAWN BY:	Vinh Ha / John McNeil	
CHECKED BY:	Celso J. Del Poso	
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	

03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SITE PLAN - CONSTRUCTION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A1.0
SHEET 35 OF SHEETS 96

PLOTTED: 8/13/2022 9:07 AM

REVISION DATES: (DESIGN STAGE ONLY)
REVISION DATE: 7/27/2022 6:24 PM
TEMPLATE SHEET REVISION DATE: 06/2006
FILE: C:\USERS\23535\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A1.0 CONSTRUCTION PLAN_(BID SET) 022222.DWG

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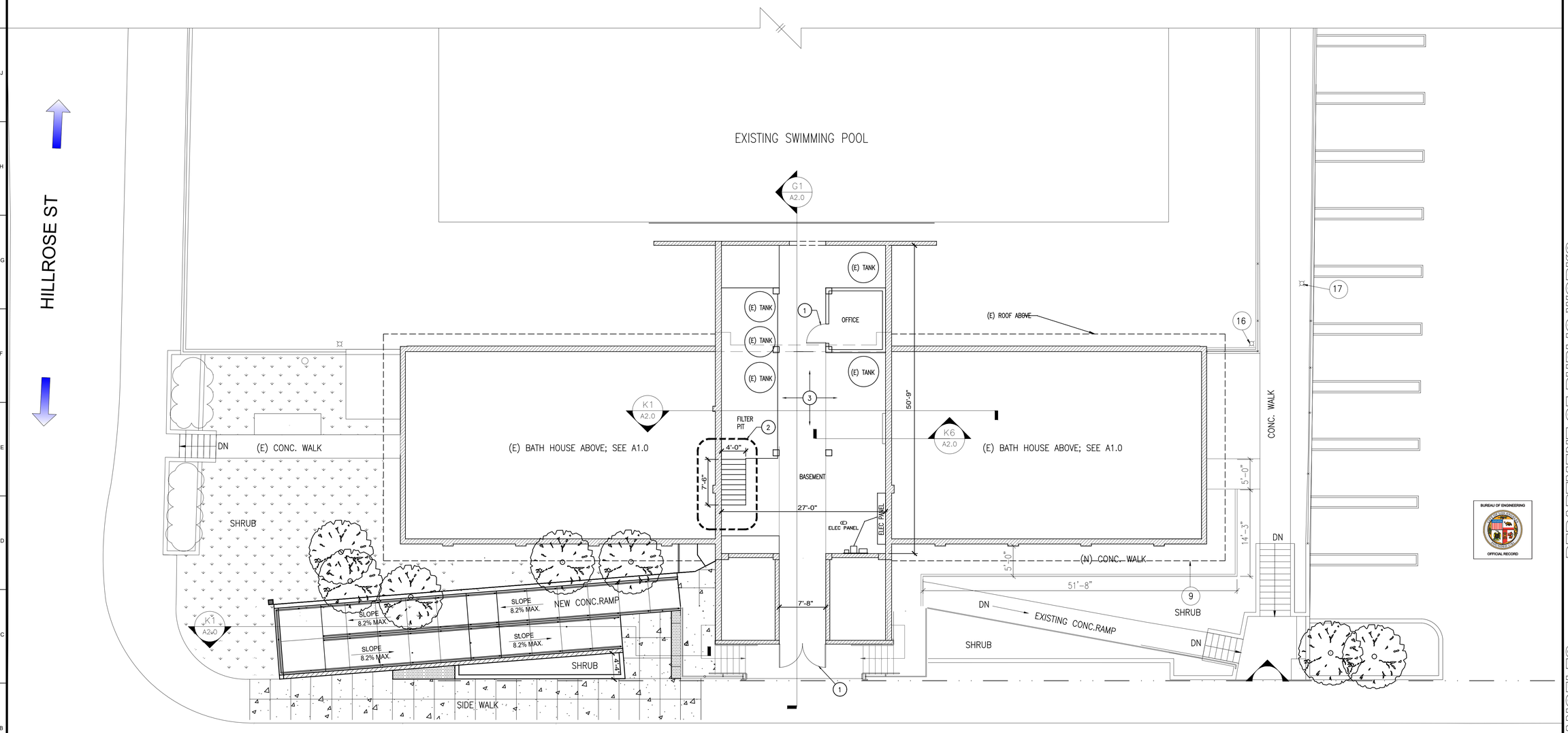
BASEMENT ARCHITECTURAL CONSTRUCTION NOTES :

1. REPAIR AND PAINT EXISTING METAL DOORS , DOOR GLAZING, AND PROVIDE NEW LOCKS, DOOR HARDWARE AND CLOSURES PER DOOR SCHEDULE . **SEE SHEET A6.0**
2. REPAIR EXISTING CONC. STAIR CORNER, SPALLING REPAIR OF (E) STAIR WELL . SAND, PREP REFINISH AND PAINT EXISTING GUARDRAIL AND HANDRAIL.
3. REPAIR ALL FLOOR AND CEILING CRACKS WITH APPROPRIATE WATERPROOF CONC. EPOXY FILLER .
4. PREPARE ALL CONCRETE BASEMENT FLOORS AND PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT. CROWN POLYMER (OR EQUAL). BY APPROVED CONTRACTOR. COLOR TBD ARCHITECT.
   SEE SCHEDULE A6.0



A1 / A1.2 EXISTING BASEMENT FLOOR PLAN
1/8"= 1'-0"

BID SET
Date: May 17, 2022

N

SEE (SP) SWIMMING POOL DRAWINGS FOR FULL SCOPE OF WORK AND BALANCE OF INFORMATION.

BUREAU OF ENGINEERING
OFFICIAL RECORD

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEWAL 08-31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:	
ARCHITECTURAL DIVISION			
ARCHITECT:	Celso Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil / Vinh Ha		03-10-22
DRAWN BY:	Vinh Ha / John McNeil		03-10-22
CHECKED BY:	Celso Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT			03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: EXISTING BASEMENT FLOOR PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A1.2

SHEET 36 OF SHEETS 96

PLOTTED: 6/4/2022 5:09 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 5/3/2022 8:38 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A1.2 BASEMENT FLOOR PLAN.DWG

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 7/27/2022 6:43 PM FILE: C:\USERS\25355\BOX\ARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A1.3 REFLECTED CEILING PLAN.DWG

SEE ELECTRICAL PLANS

HILLROSE ST

SIDE WALK

(E) CONC. BLEACHERS

(E) RAMP

(E) POOL DECK

SWIMMING POOL UNDER SEPARATE PERMIT
L.A.COUNTY PERMIT # SR0216201

(E) SWIMMING POOL

15'-0"

(N) SHADE STRUCTURE

30'-0"

UNDER SEPARATE PERMIT

8'-1"

SURGE CHAMBER SEE SP2.1

31'-0"

120'-1"

60'-2"

(E) SLOPING DIRT

(E) CONC. WALK

79'-4"

5'-6"

17'-10"

(E) RAMP

6'-0"

13'-8"

NO PARKING

8'-0"

9'-0"

18'-0"

38'-2"

9'-6"

2'-0"

7'-5"

7'-6"

2'-6"

113'-11"

114'-1"

EXISTING PARKING

38'-2"

ADA ACCESSIBLE ROUTE SIGN SEE DET. F1/A10.0

21'-10"

8'-9"

10'-0"

14'-3"

9'-10"

37'-5"

CORR. 206

WOMENS 207

SHOWER 205

STOR. 204

FIRST AID 203

OFFICE 100-B

COMM.RM 103

STAFF ROOM 104

SHOWER 105

MENS 107

STOR. 106

CORR. 106

STOR. 208

GIRLS DRESSING ROOM 202

DRESSING ROOMS TO COMPLY WITH LADBS 11B-803

(E) CEILING BEAM

GN REST RM. 201

LOBBY 100-A

COUNTER 34" HIGH MAX.

GN REST RM. 101

BOYS DRESSING ROOM 102

DRESSING ROOMS TO COMPLY WITH LADBS 11B-803

SLOPE DN. 1:20 MAX.

SLOPE DN. 1:20 MAX.

8.1% SLOPE

8.1% SLOPE

8.1% SLOPE

8.1% SLOPE

NEW ACCESSIBLE RAMP & GUARDRAILS/HANDRAILS WITH ORNAMENTAL METAL WORK ON GUARDRAIL. SEE SHEETS L402, L403, L405.

IRMA AVE

A1 REFLECTED CEILING - LIGHTING PLAN (Ref. Only)
Scale: 3/32" = 1' - 0"

BID SET
Date: May 17, 2022

N

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO. | REVISIONS: | DATE | BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 01-31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
OFFICIAL RECORD

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION DATE:
ARCHITECT: Celso Del Poso LIC. NO. C-29974
DESIGNED BY: John McNeil
DRAWN BY: Vin HYa, TY, DT
CHECKED BY: Celso J. Del Poso
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

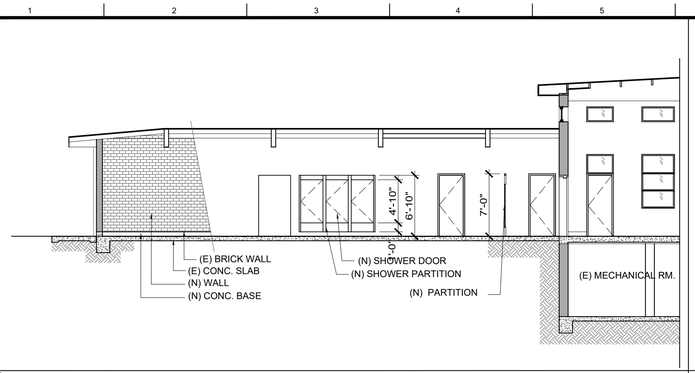
SHEET TITLE: REFLECTED CEILING PLAN

PROJECT: VERDUGO HILL POOL Tenant Improvement
BUILDING REFURBISHMENT

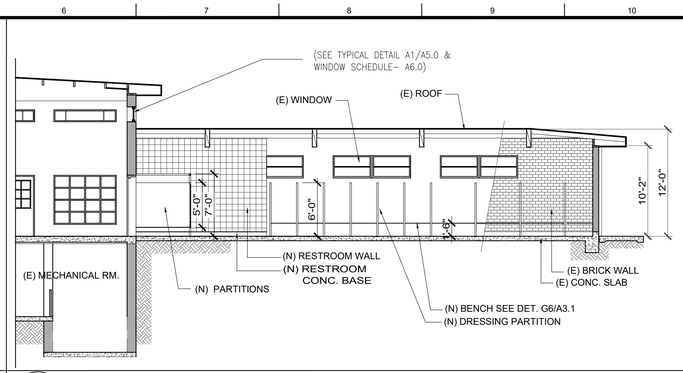
ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A1.3
SHEET 37 OF SHEETS 96

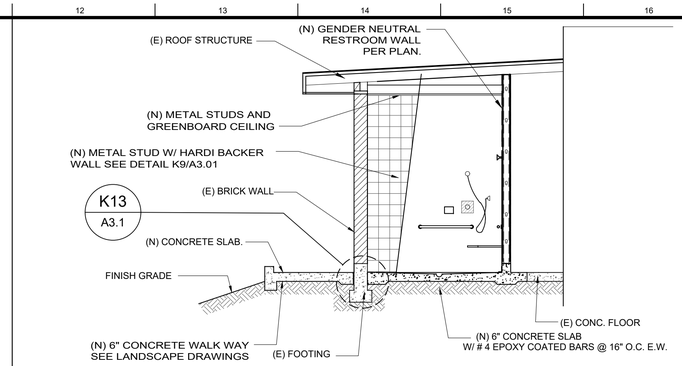
PLOTTED: 8/13/2022 9:10 AM



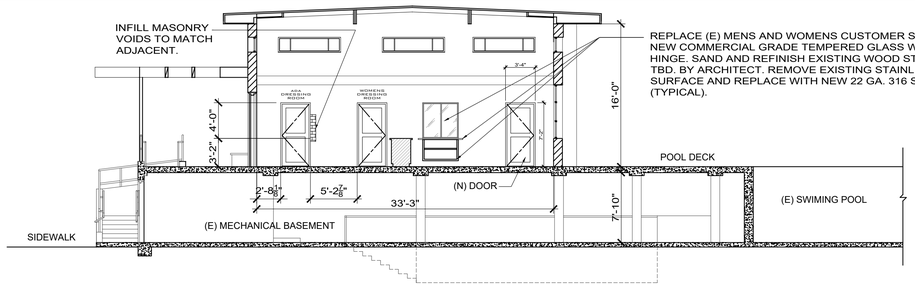
K1 / A1.0 SECTION C
1/8"= 1'-0"



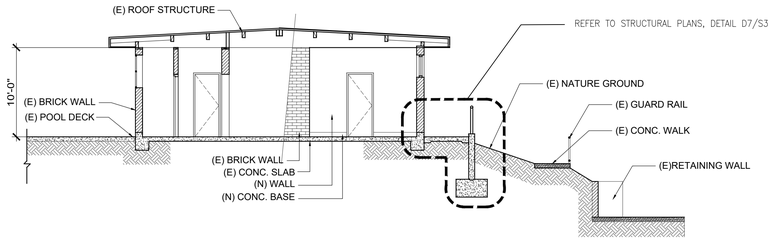
K6 / A1.0 SECTION D
1/8"= 1'-0"



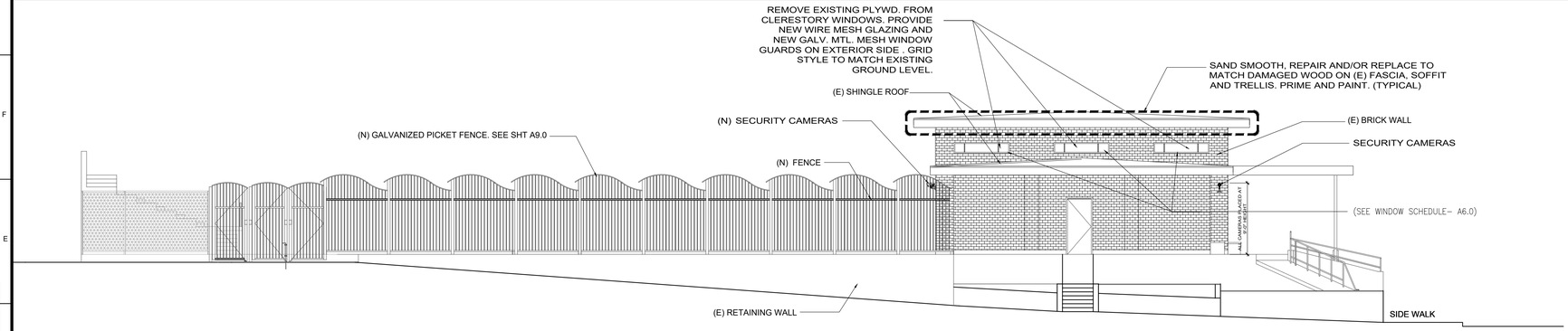
K12 / A3.0 ENLARGED SECTION - GENDER NEUTRAL REST RM. (TYP).
1/4"= 1'-0"



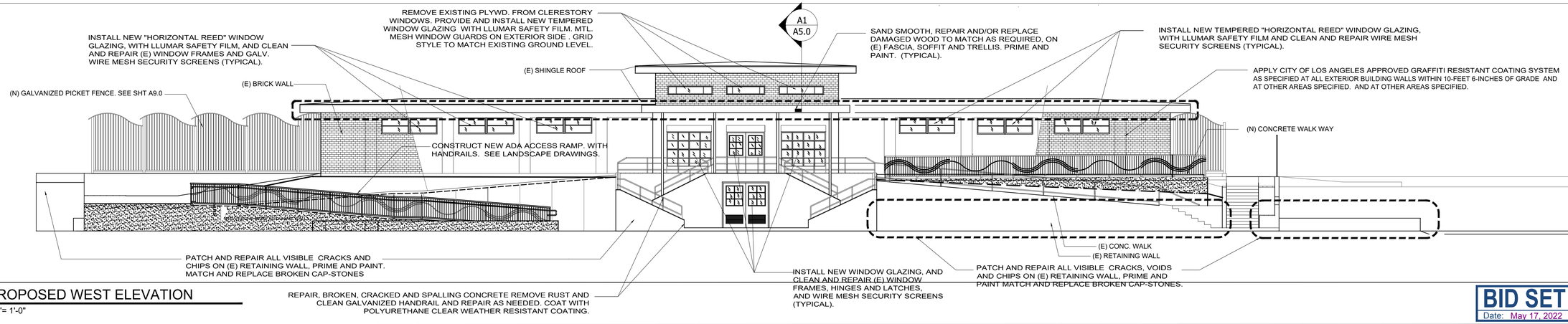
G1 / A1.0 SECTION A
1/8"= 1'-0"



G9 / A1.0 SECTION B
1/8"= 1'-0"



D1 / A1.0 EXISTING WEST ELEVATION
1/8"= 1'-0"



A1 / A1.0 PROPOSED WEST ELEVATION
1/8"= 1'-0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C-29974
REN 02-31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	NAME	LIC. NO.	DATE
CITY ENGINEER	TED ALLEN, P.E.		03-10-22
ARCHITECTURAL DIVISION			
ARCHITECT:	Celso J. Del Poso	C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: EXTERIOR ELEVATIONS & SECTIONS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A2.0

SHEET 38 OF SHEETS 96

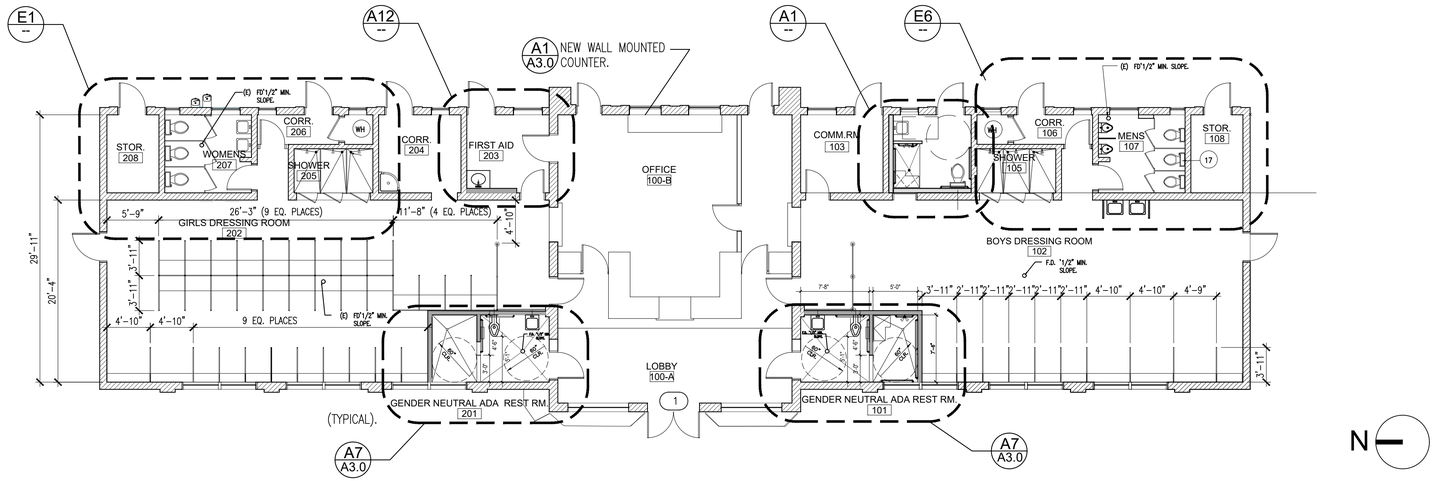
BID SET
Date: May 17, 2022

PLOTTED: 8/13/2022 9:09 AM

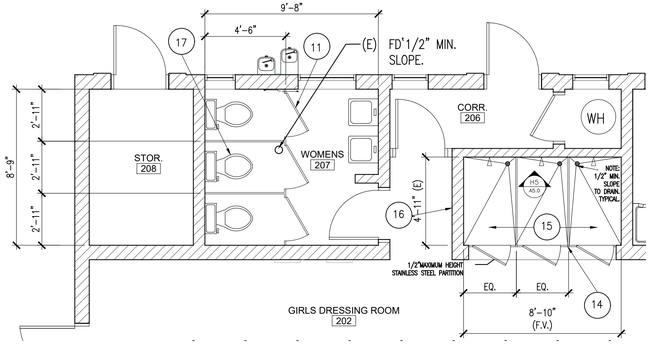
REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 7/27/2022 7:01 PM FILE: C:\USERS\26359\BOX\ARCI_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A2.0 EXTERIOR ELEVATIONS.DWG

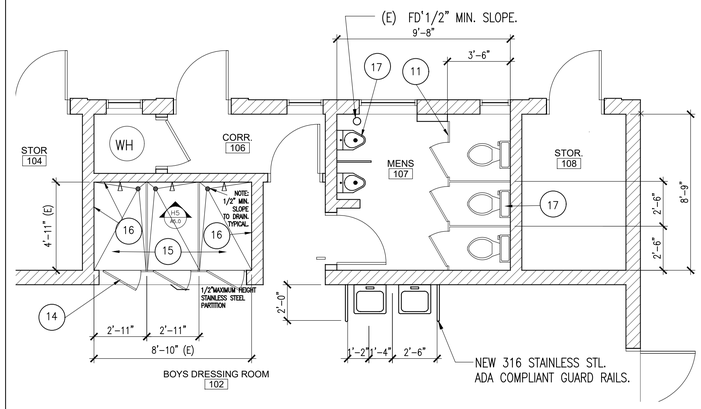
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



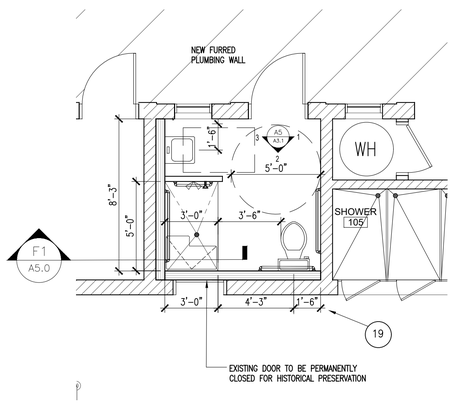
J1 ENLARGED PLAN
A1.0 1/8"= 1'-0"



E1 ENLARGED (E) WOMENS RESTRM & SHOWER PLAN
J1/A3.0 1/4"= 1'-0"

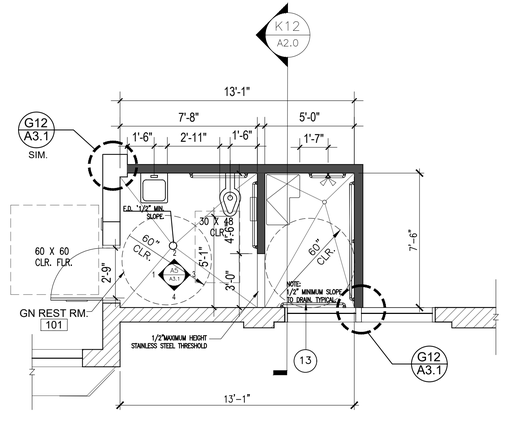


E6 ENLARGED (E) MENS RESTRM & SHOWER PLAN
J1/A3.0 1/4"= 1'-0"



NOTE: AQUATICS STAFF RESTROOM EXCEEDS THE REQUIRED PLUMBING FIXTURE COUNT AND IS INTENDED FOR USE BY ABLE BODIED LIFEGUARD STAFF ONLY. GENDER NEUTRAL ADA RESTROOMS WILL ACCOMMODATE DISABLED PERSONS.

A1 ENLARGED AQUATICS STAFF RESTROOM
J1/A3.0 1/4"= 1'-0"



A7 ENLARGED ADA COMPLIANT- GENDER NEUTRAL RESTROOMS
J1/A3.0 1/4"= 1'-0"

RESTROOM 201 OPPOSITE HAND (TYPICAL)

CONSTRUCTION KEY NOTES

GENERAL NOTE: SEE ELECTRICAL AND PLUMBING DRAWINGS FOR BALANCE OF INFORMATION.

1. CONSTRUCT NEW 8 X 13 ADA RESTROOMS. RENOVATE EXISTING SHOWERS,TOILETS, AND DRESSING ROOMS FOR BOYS AND GIRLS. SEE DETAIL A7/A3.0
2. INSTALL NEW ADA COMPLIANT WALL MOUNTED WATER CLOSET WITH 1.28 fpg. AND SEAT AT 17" TO 19" ABOVE FLOOR AND FLUSH VALVE LOCATED ON WIDE SIDE OF STALL BY AMERICAN STANDARD OR APPROVED EQUAL.
3. PROVIDE AND INSTALL NEW STAINLESS STEEL 1 -1/4" Ø GRAB BAR 30" & 42" LONG NONSLIP GRIPPING SURFACE 2 BY BOBRICK .B-5806 X36 & B5806.99X42 OR APPROVED EQUAL.
4. PROVIDE NEW LAVATORY WITH ADA COMPLIANT LEVER HANDLES. INSULATE DRAIN AND HOT WATER PIPES UNDERNEATH LAVATORY BY AMERICAN STANDARD OR APPROVED EQUAL.
5. PROVIDE NEW 3'-0" X 6'-8" FIBERGLASS 2-PANEL DOOR, DOOR FRAME, ADA COMPLIANT HARDWARE AND DOOR CLOSERS AT LOCATIONS AS SHOWN.
6. PROVIDE AND INSTALL SHOWER HEAD. SEE A5/A3.1
7. PROVIDE AND INSTALL ADA FOLDING SHOWER BENCH.
8. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.PH-GTSC-1-W. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
9. INSTALL NEW 18X24 STAINLESS STEEL FRAME MIRROR. B 290 BY BOBRICK OR EQUAL.
10. INSTALL NEW SURFACE MOUNTED SOAP DISPENSER 818615 BY BOBRICK OR EQUAL.
11. INSTALL NEW 1" PHENOLIC PARTITION WITH DOOR AT EXISTING TOILETS, PATCH AND REFINISH EXISTING WALL AS NEEDED. SUBMIT SHOP DRAWINGS FOR APPROVAL.
12. INSTALL BOBRICK SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS WITH PILOTROCK PLASTIC BENCHES FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL. SEE G6/A3 FOR BENCH DETAIL.
13. PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN GROUT, OVER CEMENT BACKER BOARD. PROVIDE AND INSTALL 1" PLASTIC SHOWER PARTITION WITH DOOR AT EXISTING SHOWERS. **SEE H5/A5.0** PROVIDE AND INSTALL NEW HARD CEILING IN SHOWER. INSTALL LIGHTING PER ELECTRICAL DWGS.
14. INSTALL NEW BOBRICK SOLID PHENOLIC OR 1" THK VINYL DRESSING STALLS AND SHOWER PARTITIONS WITH OPERABLE DOORS AND REQUIRED HARDWARE "HINEY HIDERS" (OR EQUAL) FOR BOYS AND GIRLS ROOMS. PROVIDE SHOP DRAWINGS FOR APPROVAL.
15. REFINISH EXISTING CONCRETE FLOORS AND COVE BASE IN SHOWER. INCLUDING GRINDING, PROPER CRACK REPAIR, LEVELING AS NEEDED AND MATERIAL AREA REPLACEMENT AS NEEDED AND NECESSARY. MAINTAIN 1/4" TO 1/2" SLOPE TO DRAIN. PROVIDE AND APPLY POLYMER CONCRETE FINISH SYSTEM : 818 URETHANE CEMENT WITH CROWN 7072 TOPCOAT.Y CROWN POLYMER (OR EQUAL). **BY APPROVED CONTRACTOR.** COLOR: MERLOT. **SEE SCHEDULE A6.0**
16. PROVIDE AND INSTALL NEW PORCELAIN SHOWER TILES IN MORTAR & GROUT, OVER WATER PROOF CEMENT BACKER BOARD. AND INSTALL NEW WATER PROOF HARD CEILING IN SHOWER. DEMO ONE (E) METAL PANEL VIA EXPLORATION, FOR ARCHITECTS APPROVAL TO CONTINUE PRIOR TO FULL DEMOLITION. INSTALL LIGHTING PER ELECTRICAL DWGS.
17. PROVIDE AND INSTALL NEW URINALS LAVATORIES AND TOILET FIXTURES INCLUDE WATER SUPPLY, WASTE & DRAIN LINES ALL WITH ADA COMPLIANT CONTROLS. SEE MECHANICAL DWGS.
18. CONSTRUCT NEW ADA COMPLIANT LAVATORY AND PLUMBING WALL IN NEW FIRST AID ROOM. LOCATION # 203 PROVIDE AND INSTALL NEW LAVATORY AND FAUCET WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES, CABINETRY AND FINISHES.
19. CONSTRUCT NEW NON-ADA COMPLIANT AQUATICS STAFF SHOWER/RESTROOM IN EXISTING MAINTENANCE ROOM # 104 LOCATION PROVIDE AND INSTALL NEW PLUMBING WALL,TOILET, LAVATORY AND PORCELAIN TILED WATER PROOF SHOWER STALL WITH ALL NECESSARY PLUMBING WATER SUPPLY AND DRAIN LINES, WATER CONTROLS AND FINISHES. SEE DETAIL F1 / A5.0
20. CONSTRUCT NEW PONY WALL SEE DETAIL G9-A3.1
21. COORDINATE NEW MASONRY DOOR OPENING WITH STRUCTURAL DRAWINGS.
22. PROVIDE 3/4" THK. FIRE RETARDANT PLYWD ON COMM. RM. WALLS FOR MOUNTING ELEC. COMMUNICATIONS EQUIPMENT.

A12 ENLARGED FIRST AID ROOM
J1/A3.0 1/4"= 1'-0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING OFFICIAL RECORD

LICENSED ARCHITECT GELSO J. DEL POSO LIC. NO. C 29974 RENEWAL 08-31-2023 STATE OF CALIFORNIA

ENGINEERING CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN, P.E. C 23370	03-10-22
ARCHITECTURAL DIVISION C-23370	03-10-22
LIC. NO. C-29974	03-10-22
	03-10-22
PRINCIPAL ARCHITECT	03-10-22

ARCHITECT: Celso J. Del Poso
DESIGNED BY: JOHN McNEIL
DRAWN BY: Vin Ha, TY, DT
CHECKED BY: Celso J. Del Poso
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ENLARGED RESTROOM PLANS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A3.0
SHEET 39 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

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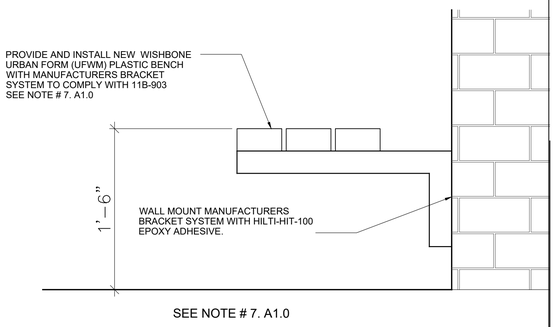
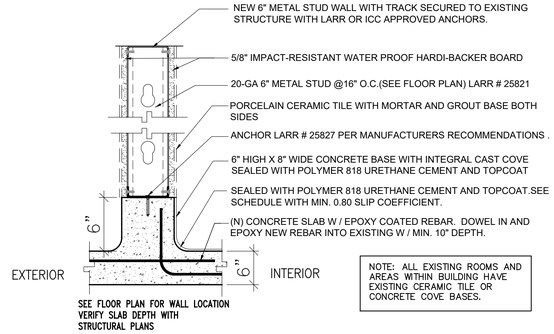
REVISION DATE: 7/27/2022 7:02 PM FILE: C:\USERS\25255510\BOX\ARCH_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A3.0 ENLARGED RESTROOM PLANS.DWG

CONSTRUCTION KEY NOTES

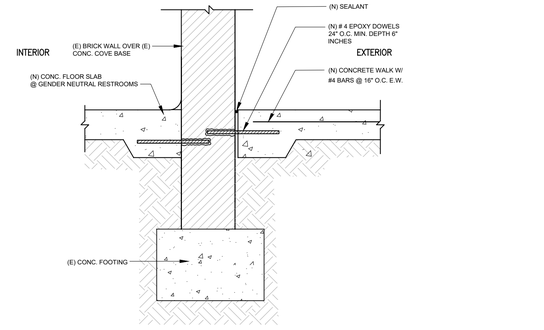
1. ADA COMPLIANT WALL MOUNTED TOILET (SEE PLUMBING DRAWINGS).
2. 1-1/4" DIAMETER X 36 LONG GRAB BAR, STAINLESS STEEL, PEENED NON-SLIP GRIPPING SURFACE FINISH. CONCEALED MOUNTING WITH (4) SCREWS TO COMPLY WITH BARRIER FREE DESIGN.
3. PROVIDE NEW ADA COMPLIANT WALL HUNG LAVATORY WITH ADA COMPLIANT LEVER HANDLES. INSULATE DRAIN AND HOT WATER PIPES UNDERNEATH. (SEE PLUMBING DWGS.)
4. POWERS E700 HYDROGUARD SHOWER SYSTEM WITH 60" INCH HAND HELD METAL HOSE AND 30" GUIDERAIL.
5. CMC 8 X 8 PORCELAIN CERAMIC TILE WITH CEMENT MORTAR BED AND GROUT JOINT INFILL OVER CEMENT BACKER BOARD.
6. 1-1/4" DIAMETER X 48 LONG GRAB BAR, STAINLESS STEEL, PEENED NON-SLIP GRIPPING SURFACE FINISH. CONCEALED MOUNTING WITH (4) SCREWS TO COMPLY WITH BARRIER FREE DESIGN.
7. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.PH-GTSC-1-W. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
8. RESTRM EXTERIOR DOOR SIGNAGE, SEE DETAIL J13/A4.0 (AT DOOR EXTERIOR ONLY) SUBMIT SAMPLE FOR APPROVAL.
9. INSTALL NEW 18X24 STAINLESS STEEL FRAME MIRROR. B 290 BY BOBRICK OR EQUAL.
10. INSTALL NEW SURFACE MOUNTED SOAP DISPENSER 818615 BY BOBRICK OR EQUAL
11. NEW BOBRICK B-5181 FOLDING SHOWER SEAT.
12. SANITARY NAPKIN B4353 BY BOBRICK , DOUBLE TOILET ROLL HOLDER BY GLEN PRODUCT INC. PH-E 200DR-EH OR APPROVED EQUAL.
13. INSTALL NEW SURFACE MOUNTED TOILET SEAT COVER DISPENSER BY GLEN PRODUCT INC.



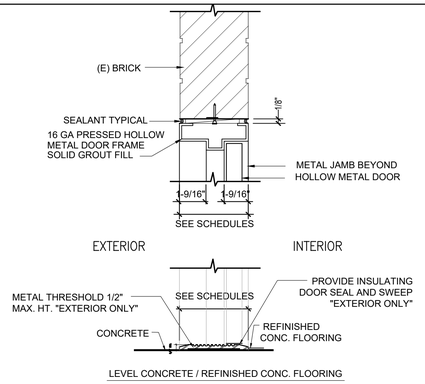
K6 / A1.0 — WALL MOUNTED PILOTROCK PLASTIC BENCH — 1-1/2"= 1'-0"



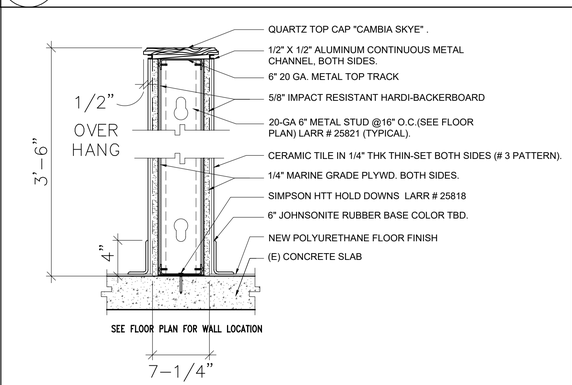
K9 / A1.0 — NEW INTERIOR RESTROOM WALL DETAIL — 1"= 1'-0"



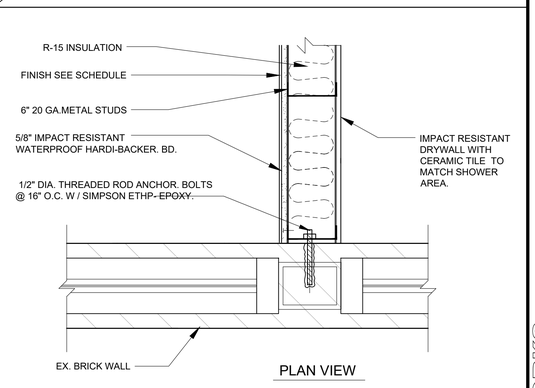
K13 / A3.0 — CONCRETE SLAB CONNECTION DETAIL — 1"= 1'-0"



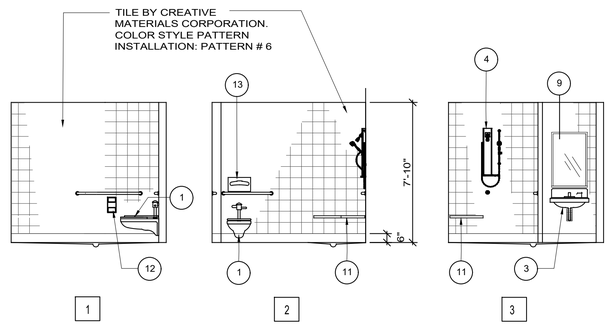
G6 / A3.0 — DOOR HEAD -THRESHOLD DETAIL (TYPICAL). — 1-1/2"= 1'-0" SEE STRUCT DWGS. FOR MASONY OPENINGS.



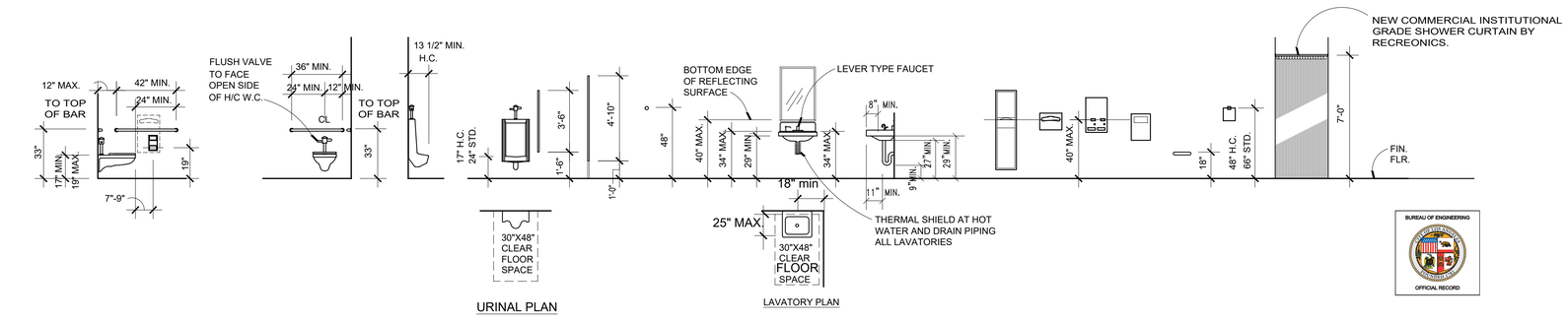
G9 / A3.0 — PONY WALL DETAIL (TYPICAL). — 1-1/2"= 1'-0"



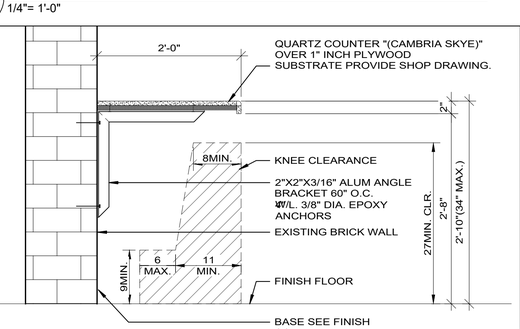
G12 / A3.0 — WALL CONNECTION DETAIL (TYPICAL). — 1"= 1'-0"



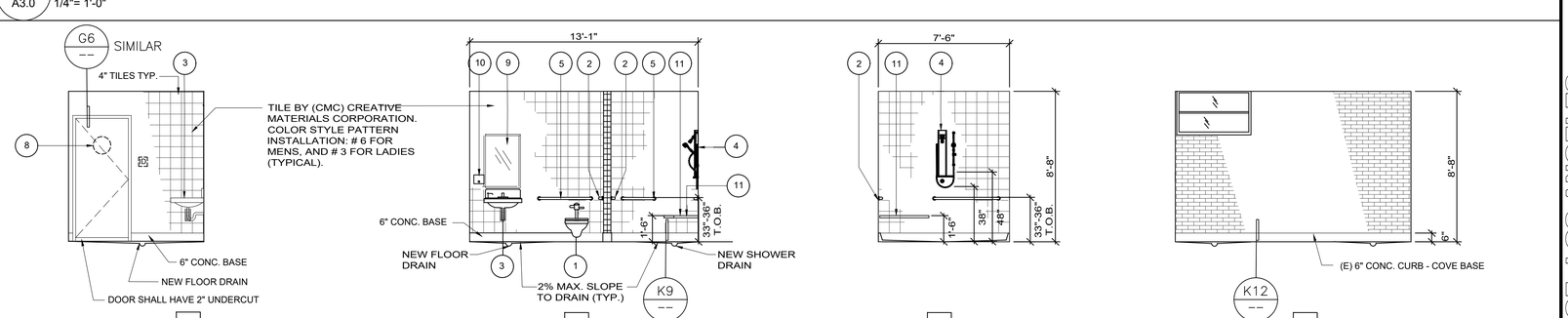
D1 / A3.0 — AQUATICS STAFF RESTROOM — 1/4"= 1'-0"



D6 / A3.0 — TYPICAL ADA ACCESSIBILITY DETAILS — 1/4"= 1'-0"



A1 / A3.0 — AQUATICS STAFF VIEWING COUNTER — 1"= 1'-0"



A5 / A3.0 — GENDER - NEUTRAL RESTROOM INTERIOR ELEVATIONS (LEFT AND RIGHT HAND TYPICAL) — 1/4"= 1'-0"

BID SET
Date: May 17, 2022

BUILDING NO. -
INDEX NO. - RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

LICENSED ARCHITECT — GELSO J. DEL POSO — UC. NO. C 29974 — RENEW: 31-2023 — STATE OF CALIFORNIA

BUREAU OF ENGINEERING — ENGINEERING — CITY OF LOS ANGELES

CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. — CITY ENGINEER — DATE: 03-10-22
ARCHITECTURAL DIVISION — LIC. NO. C-29974 — 03-10-22
ARCHITECT: Celso J. Del Poso — 03-10-22
DESIGNED BY: JOHN McNEIL
DRAWN BY: Vin Ha, TY, DT
CHECKED BY: Celso J. Del Poso — 03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT — 03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ENLARGED GEN-NEUTRAL ADA RSTRM. INTERIOR ELEVATIONS & WALL DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A3.1
SHEET 40 OF SHEETS 96

PLOTTED: 6/4/2022 5:19 PM

BUREAU OF ENGINEERING OFFICIAL RECORD

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 5:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A3.1 ENLARGED ADA RESTRM & WALL DETAILS.DWG

PAINT COLORS

PT–1: PAINT – DUNN EDWARDS – DE6185 LIGHT ASPIRATION

PT–2: PAINT – SHERWIN WILLIAMS – WS7757 HIGH REFLECTIVE WHITE

PT–3: PAINT – DUNN EDWARDS – DE5366 MIDLAND TAN

PT–4: PAINT – DUNN EDWARDS – DE5495 GRAPE LEAVES

PT–5: PAINT – DUNN EDWARDS – DE5180 SPANISH PEANUT

PT–6: PAINT – DUNN EDWARDS – DE5819 PEARL CITY

POR–1: PORCELAIN TILE – CREATIVE MATERIALS CORP – LAYOUT–3

POR–2: PORCELAIN TILE – CREATIVE MATERIALS CORP – LAYOUT–6

POLYU –POLYURETHANE FLOOR COATING

EXTERIOR WOOD FASICA BOARD AND EAVES — PC–2

EXTERIOR METAL COLUMNS — PC–5

EXTERIOR RETAINING WALL — PC–6

EXTERIOR PERIMETER FENCE — PC–4 (ARISTOSHIELD)

PAINT SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING	REMARKS
				NORTH	EAST	SOUTH	WEST		
100	LOBBY / OFFICE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2/PT–3	(PT–2 DIAGONAL SHIP–LAP) (PT–3 TRUSS BEAMS)
101	GENDER NEUTRAL SOUTH	POLYU	COVE	POR–1	POR–1	POR–1	PT–1	PT–2	
102	BOYS DRESSING ROOM	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2/PT–3	(PT–2 DIAGONAL SHIP–LAP) (PT–3 TRUSS BEAMS)
103	ELEC. COMM. RM.	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
104	AQUATICS STAFF RESTRM.	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
105	BOYS SHOWER	POLYU	COVE	PT–1	PT–1	PT–1	N/A	PT–4	
106	CORRIDOR	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–1	
107	BOYS RESTROOM	POLYU	COVE	GLZ BLOK	PT–4	GLZ BLOK	GLZ BLOK	PT–2	(PT–4 IS TO BE USED AS ACCENT COLOR)
108	STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
201	GENDER NEUTRAL NORTH	POLYU	COVE	POR–2	POR–2	POR–2	PT–1	PT–2	
202	GIRLS DRESSING ROOM	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PC–2/PC–3	(PC–2 DIAGONAL SHIP–LAP) (PC–3 TRUSS BEAMS)
203	FIRST AID	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
204	JANITORIAL/STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	
205	GIRLS SHOWER	POLYU	COVE	POR–2	POR–2	POR–2	N/A	PT–4	
206	CORRIDOR	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–1	
207	GIRLS RESTROOM	POLYU	COVE	GLZ BLOK	GLZ BLOK	PT–4	GLZ BLOK	PT–2	(PT–4 IS TO BE USED AS ACCENT COLOR)
208	STORAGE	POLYU	COVE	PT–1	PT–1	PT–1	PT–1	PT–2	

ROOM FINISH NOTES

1. THE CONTRACTOR SHALL SUBMIT ALL FINISH COLOR SAMPLE FOR REVIEW AND APPROVAL BY THE ARCHITECT PRIOR TO INSTALLATION.

2. PAINT ALL EXPOSED STRUCTURAL BEAMS, DECKS, A/C DUCTS, PIPES, ELECTRICAL CONDUITS & COMPONENTS ETC... WITH COLOR F2, PAINT ALL EXPOSED STRUCTURAL COLUMNS & BRACES WITH COLOR F2 (UNO), AND PAINT ALL AIR DIFFUSERS & CEILING ACCESS DOORS TO MATCH WITH ADJACENT SURFACES, TYPICAL FOR ALL INTERIOR OF THE BUILDING.

3. ALL INTERIOR FINISH MATERIALS APPLIED TO WALLS AND CEILINGS SHALL BE TESTED AS SPECIFIED IN SECTION 802 OF THE L.A. BUILDING CODE. FOR EXITWAYS, HALLWAYS AND CORRIDORS MUST HAVE MAXIMUM FLAME SPREAD OF CLASS–II, ALL OTHER ROOMS MUST HAVE MAXIMUM FLAME SPREAD OF CLASS–III.

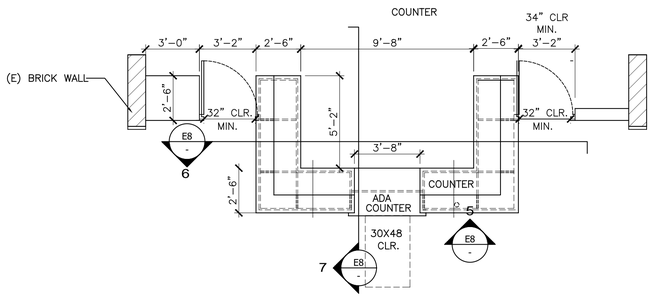
4. A SIGN WHICH INCLUDES THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED AND WORDING THAT STATES "ASSISTIVE–LISTENING SYSTEM AVAILABLE" SHALL BE POSTED IN A PROMINENT PLACE INDICATING THE AVAILABILITY OF ASSISTIVE–LISTENING DEVICES.

5. EXTEND PLYWOOD SHEATHING TO THE ENTIRE WALL WHERE SHEAR WALL PLYWOOD EXIST IN ORDER TO HAVE AN EVEN WALL SURFACE.

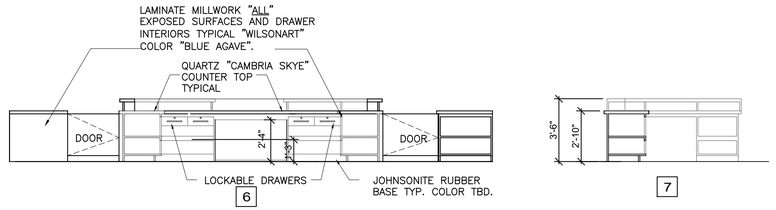
6. REFERENCE POINT FOR WALL AND FLOOR TILE INSTALLATION SHALL START FROM THE CENTER OF FLOOR OR WALL SURFACE.

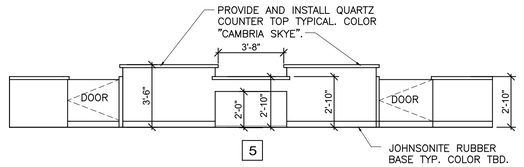
J1 / -- PAINT SCHEDULE - (SEE FINISH SCHEDULE PLAN A1/ A6.0)
N.T.S.

NOTES :
ADD COMPUTER DATA LINES FOR POOL OFFICE AND CLERK AREA.
ADD 4 PHONE LINE FOR POOL OFFICE, MANAGER'S OFFICE, POOL CLERK & FILTER ROOM

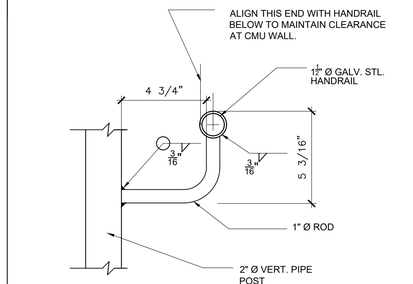


E1 / A1.0 COUNTER PLAN
1/4"= 1'-0"



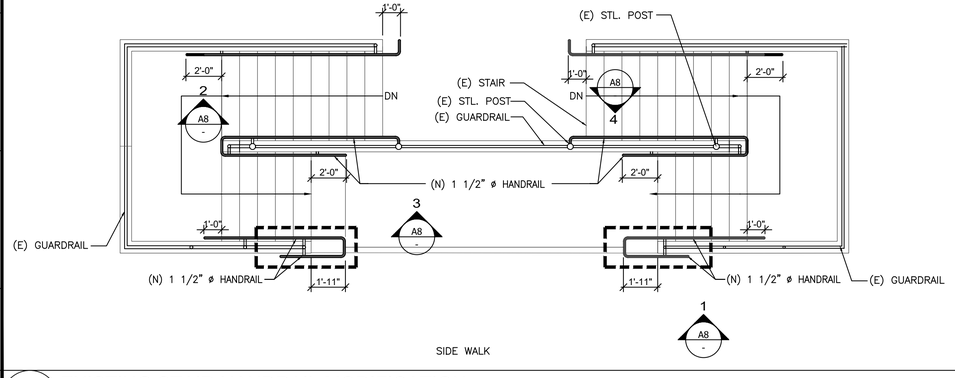


E8 / A1.0 COUNTER ELEVATIONS & SECTION
1/4"= 1'-0"

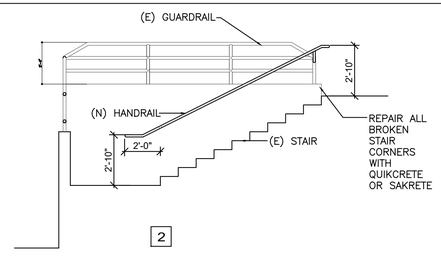


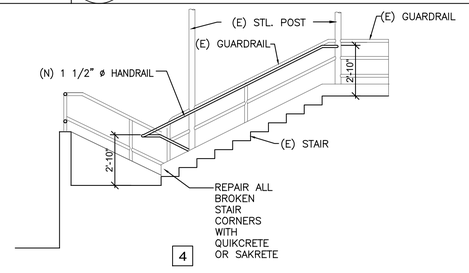
E13 / A8/A4.0 HANDRAIL DETAIL
3"= 1'-0"

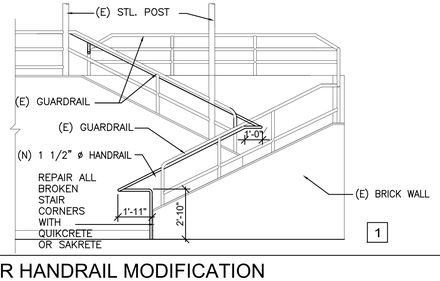
NOTE: EXTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND ALL TREADS MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST. THE STRIPE SHALL BE A MINIMUM OF 2 INCHES WIDE TO A MAXIMUM OF 4 INCHES WIDE PLACED PARALLEL TO, AND NOT MORE THAN 1 INCH FROM, THE NOSE OF THE STEP OR UPPER APPROACH. THE STRIPE SHALL EXTEND THE FULL WIDTH OF THE STEP OR UPPER APPROACH AND SHALL BE OF MATERIAL THAT IS AT LEAST AS SLIP RESISTANT AS THE OTHER TREADS OF THE STAIR. A PAINTED STRIPE SHALL BE ACCEPTABLE. GROOVES SHALL NOT BE USED TO SATISFY THIS REQUIREMENT. [11B–504.4.1]

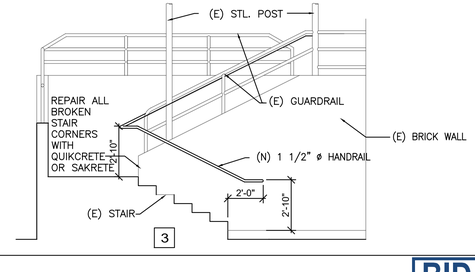


A1 / A1.0 EXISTING STAIR HANDRAIL MODIFICATION
1/4"= 1'-0"









A8 / A1.0 EXISTING STAIR HANDRAIL MODIFICATION
1/4"= 1'-0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:
		01-05-21	

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 03-31-2023
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.	CITY ENGINEER
ARCHITECTURAL DIVISION	DATE:
ARCHITECT: Celso J. Del Poso	LIC. NO. C-29974
DESIGNED BY: JOHN McNEIL	03-10-22
DRAWN BY: Vin Ha, TY. DT	03-10-22
CHECKED BY: Celso J. Del Poso	03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LOBBY SERVICE COUNTER, STAIR & HANDRAIL REPAIR, PAINT SCHEDULE

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A4.0

SHEET 41 OF SHEETS 96

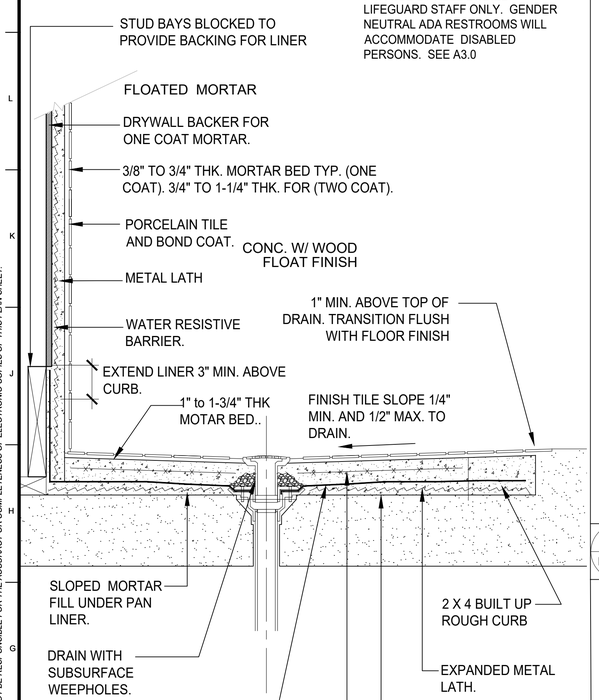
PLOTTED: 6/4/2022 5:23 PM

REVISION DATES (DESIGN STAGE ONLY)

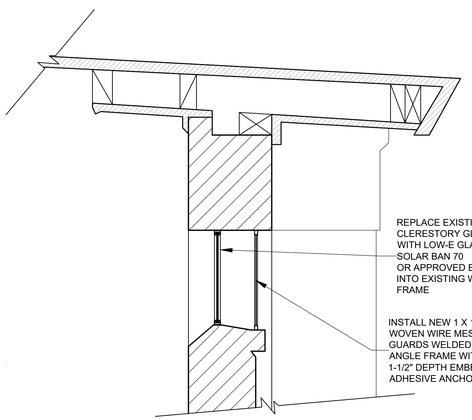
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A4.0 LOBBY SERVICE COUNTER DETAILS.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

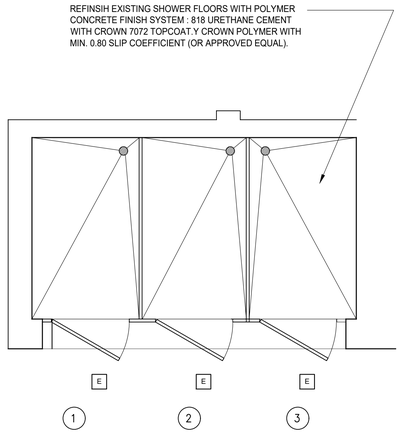
NOTE: AQUATICS STAFF RESTROOM EXCEEDS THE REQUIRED PLUMBING FIXTURE COUNT AND IS INTENDED FOR USE BY ABLE BODIED LIFEGUARD STAFF ONLY. GENDER NEUTRAL ADA RESTROOMS WILL ACCOMMODATE DISABLED PERSONS. SEE A3.0



F1 / A3.0 — SHOWER DETAIL FOR AQUATICS STAFF
1"= 1'-0"



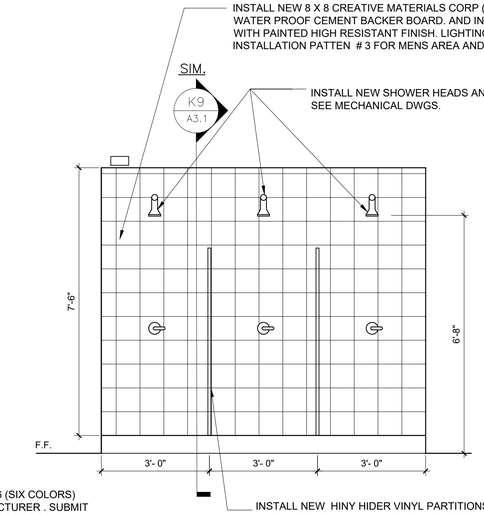
A1 / A2.0 — (E) CLERESTORY WINDOW REPAIR DETAIL - (TYP).
1"= 1'-0"



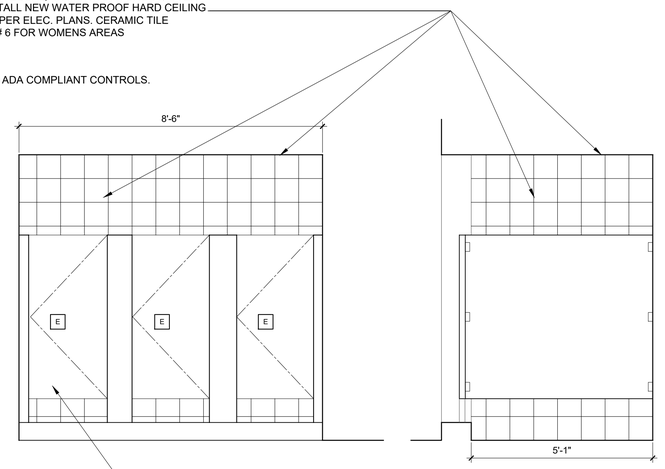
PLAN

WOMENS PORCELAIN WALL TILE LAYOUT - # 6 (SIX COLORS) RANDOM STACK WITH OFFSET. PER MANUFACTURER . SUBMIT LAYOUT FOR APPROVAL. CREATIVE MATERIALS CORP. (310) -570-7027 or (518) 213-8010.

MENS PORCELAIN WALL TILE LAYOUT - # 3 (THREE COLORS) RANDOM STACK WITH OFFSET.PER MANUFACTURER . SUBMIT LAYOUT FOR APPROVAL.



ELEVATION

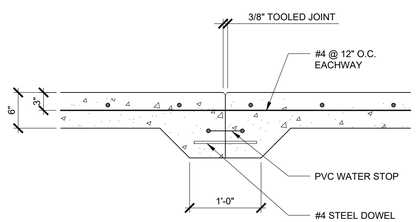


SECTION

NORTH/ SOUTH SHOWER WALLS

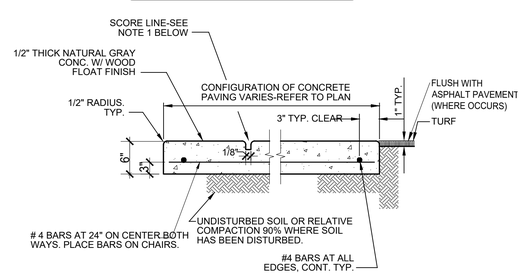
H5 / E6/A3.0 — EXISTING MENS & WOMENS SHOWER REMODEL & REPAIR (TYPICAL).
1/2"= 1'-0"

REFER TO LANDSCAPE AND CIVIL DRAWINGS



D5 / A1.0 — CONC. CONSTRUCTION JOINT-TYP.
1"= 1'-0"

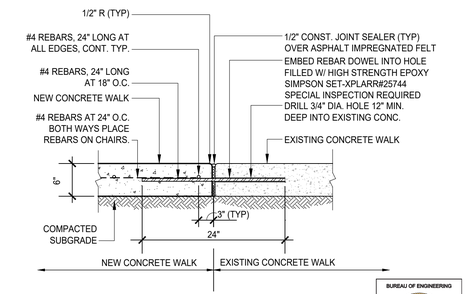
REFER TO LANDSCAPE AND CIVIL DRAWINGS



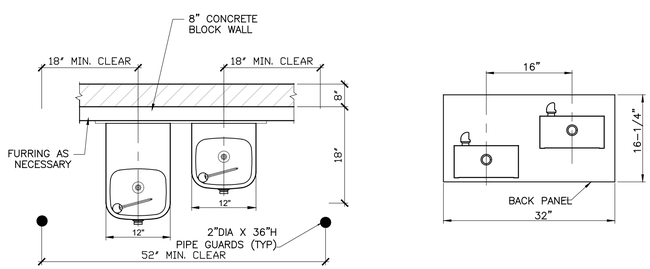
NOTES:
1. PROVIDE TOOLED SCORE LINES, MIN. 1" DEEP AT 10 FEET ON CENTER.
2. PROVIDE EXPANSION JOINT AGAINST PREVIOUSLY CONSTRUCTED FIXED ELEMENTS, AT A MAXIMUM OF 40 FEET ON CENTER.

D9 / G9/A2.0 — CONC. SCORE LINE TYP.
1"= 1'-0"

REFER TO LANDSCAPE AND CIVIL DRAWINGS

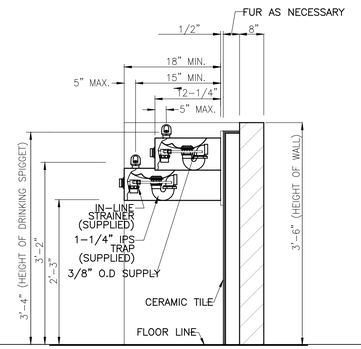


D13 / G9/A2.0 — EXIST. & NEW CONN.TYP.
1"= 1'-0"



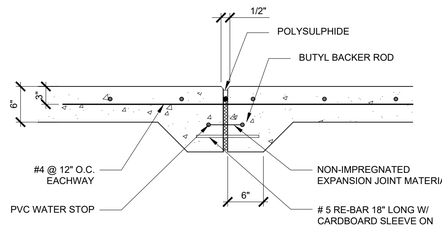
PLAN

ELEVATION



SECTION

A5 / A1.0 — HI LOW DRINKING FOUNTAIN
3/8"= 1'-0"



A13 / A1.0 — CONCRETE EXPANSION JOINT-TYP.
1"= 1'-0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
REN 01-31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

	NAME	DATE
CITY ENGINEER	TED ALLEN, P.E.	03-10-22
ARCHITECTURAL DIVISION		03-10-22
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL	03-10-22
DRAWN BY:	Vin Ha, TY, DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A5.0

SHEET 42 OF SHEETS 96

PLOTTED: 6/4/2022 5:24 PM

REVISION DATES: (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 10/15/2006
REVISION DATES: 10/15/2006

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FILE:E:\2-WH-HOUSE\BUILDINGS\VERDUGO-HILLS-POOL\ARCHITECTURAL\A5.0-HI-LOW-DRINKING-FOUNTAIN-&-REPAIR-DETAILS.DWG

SHOWER PARTITION DOOR SCHEDULE

DOOR NO.	TYPE	NOMINAL SIZE W X H (NOTE 2)	THICKNESS	DOOR FRAME	DOOR FINISH	DOOR MAT'L	DOOR RATING	DETAIL NO. HEAD	DETAIL NO. JAMB	DETAIL NO. SILL	FRAME FINISH	TRESHOLD	PANIC HARDWARE	REMARKS
1	B	2'-6" X 5'-0"	1"	MTL	PHEN	PHEN	NR							BOBRICK PHENOLIC COLOR: TBD BY ARCHITECT
2	B	2'-6" X 5'-0"	1"	MTL	PHEN	PHEN	NR							BOBRICK PHENOLIC COLOR: TBD BY ARCHITECT

HARDWARE SCHEDULE

TYPE A DOOR
TOTALS EACH ASSEMBLY TO HAVE.

(1)	1 EA.	HM DOOR	16GA SEAMLESS		DRC
(1)	1 EA.	CONTINUOUS HINGE	CH83HD1	628	PEM
(1)	1 EA.	ENTRANCE LOCK	4100-4500 BEST LOCK	BRUSH CHROME	TRILOGY
(1)	1 EA.	KICK PLATE AS NEEDED	8400 10" X34"	630	IVE
(1)	1 EA.	SURFACE CLOSER	P4041 *	689	LCN

* PROVIDE 10 YEARS WARRANTY

LEGEND

ALUM	ALUMINUM	IR	IMPACT RESISTANT PLASTIC	PTD	PAINT
ANOD	ANODIZED	LE	LOW EMISSIVITY GLASS	SC	SOLID CORE
E	EXISTING	NR	NON-RATED	SG	SEMI GLOSS PAINT
FP	FACTORY PAINTED	PHEN	PHENOLIC	TG	TEMPERED GLASS
FF	FACTORY FINISH	PS	SEMI GLOSS PAINT	V.I.F.	VERIFY IN FIELD
GL	GLASS	PF	FLAT PAINT	WG	WIRED GLASS
HA	HOLLOW CORE ALUMINUM	PG	GLOSSY PAINT	X	REQUIRED INSTALLATION
HC	HOLLOW CORE WOOD	PM	PRESSED METAL		
HM	HOLLOW CORE METAL				

FINISH MATERIALS SCHEDULE (SEE J1/A4.0)

#	ITEM	MATERIALS	HEIGHT	FINISH	COLOR & MANUF.	REMARKS
A	NEW WALL	METAL STUDS, HARDI - BACKER BD. PAINTED / TILE. COLOR: TBD	8'-0" ± PER PLAN & ELEVS.	PAINT & TILE	DUNN EDWARDS: COLOR TBD BY ARCHITECT	CONSTRUCT NEW CONC. CURB W/ INTEGRAL CAST COVE BASE.
B	NEW CONCRETE. FLOOR REFINISHING	CROWN POLYMER 818 URETHANE CEMT W/ CROWN 7072 TOPCOAT	8'-0" ± PER PLAN & ELEVS.	AS NOTED	COLOR: MERLOT BY MANUFACTURERS APPVD INSTALLER. (COLOR MOCK-UP")	ALL FLOORS NON-ABSORBENT, FLOOR DRAINS SLOPE 2% MIN.
C	EXISTING WALLS & CEILINGS	C.M.U. (RED BRICK) - WOOD BM & PLAST.	FULL HEIGHT. FROM FLOOR	PAINTED	SEE PAINT SCHEDULE J1 / -A4.0	REPAIR ALL CRACKS REPLACE MISSING PIECES REPOINT AS NEEDED.
D	DRESSING PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
E	SHOWER PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
F	TOILET PARTITION	SOLID CORE PHENOLIC SMOOTH NON ABSORBENT	6' PROVIDE SHOP DWG. FOR APRVAL	AS NOTED	BOBRICK PHENOLIC OR APPROVED EQUAL	COLOR TBD BY ARCHITECT PROVIDE SUBMITTAL
G	RUBBER BASE	6" HIGH	AS SHOWN	--	T.B.D. BY ARCHITECT	ARMSTRONG, JOHNSONITE OR APPROVED EQUAL
H	SHOWER WALLS / GENDER NEURAL RESTROOM	PORCELAIN TILES WITH CEMENT MORTAR BED AND GROUT.	8'-0 ±	--	T.B.D. BY ARCHITECT	(CMC)-CREATIVE MATERIALS CORP. PORCELAIN OR APPROVED EQUALS

GENERAL DOOR & WINDOW NOTES:

1. PROVIDE CLEAR SPACE OF 12" PAST STRIKE EDGE OF THE DOOR ON THE OPPOSITE SIDE TO WHICH THE DOOR SWINGS IF THE DOOR IS EQUIPPED WITH A LATCH AND A CLOSER ON THE PUSH SIDE OF THE DOOR.
2. EACH LIGHT OF SAFETY GLAZING MATERIAL INSTALLED IN HAZADOUS LOCATIONS SHALL BE IDENTIFIED BY A PERMANENT LABEL THAT SPECIFIED THE LABELER, AND STATES THAT SAFETY GLAZING MATERIAL HAS BEEN UTILIZED IN SUCH INSTALLATIONS.
3. EXTERIOR SWINGING DOORS–LOCKING HARDWARE SHALL BE OPERATED FROM THE INSIDE BY A DEVICE NOT PROHIBITED BY CHAPTER 10 OF UBC.
4. PROVIDE DIRECTIONAL SIGN WITH 1–INCH HIGH LETTERS ON CONTRASTING BACKGROUND AT DOOR TRANSOM THAT READS "THESE DOORS TO REMAIN UNLOCKED DURING BUSINESS HOURS". EXITS AND EXIT SIGNS SHALL BE ILLUMINATED AT ANY TIME THE BUILDING IS OCCUPIED. ILLUMINATION SHALL INCLUDE POWER PROVIDED BY TWO SOURCES, ONE OF WHICH MUST BE AN EMERGENCY SYSTEM.
5. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, OR ANY SPECIAL KNOWLEDGE OR EFFORT AND OPERATE IN THE DIRECTION OF EGRESS.
6. DOOR PRIMER - METALIZE QUICK DRY ALKYD PRIMER (OR EQUAL).
7. DOOR FINISH - TNEMEC 740 ENDURA-SHEILD COLOR : LAVA - 13RD.

6. EXIT SIGNS SHALL BE INSTALLED AT REQUIRED EXITS (BOTH HIGH AND LOW). THE COLOR AND DESIGN OF LETTERING ON THE EXIT SIGNS SHALL BE IN HIGH CONTRAST WITH BACKGROUND. WORDS ON THE SIGN SHALL BE IN BLOCK LETTERS 6–INCHES HIGH WITH A STROKE OF NOT LESS THAN 3/4–INCHES.
7. WHEN INSTALLED, DOORS SHALL BE CAPABLE OF OPENING SO THAT THE CLEAR WIDTH IS NOT LESS 32" WHEN INSTALLED, DOORS SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES AND SHALL SO MOUNTED THAT CLEAR WIDTH IS NOT LESS THAN 32" MEASURED BETWEEN THE FACE OF THE DOOR AND THE OPPOSITE STOP.
8. FOR HINGED DOORS, THE OPENING WIDTH SHALL BE MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
9. PANIC HARDWARE WHEN INSTALLED SHALL COMPLY WITH THE REQUIREMENTS OF CBC CHAPTER 10. THE ACTIVATING MEMBER SHALL BE MOUNTED AT A HEIGHT OF NOT LESS THAN 30–INCHES NOR MORE THAN 44–INCHES ABOVE THE FINISH FLOOR. THE UNLATCHING FORCE NOT EXCEED 15– POUNDS WHEN APPLIED IN THE DIRECTION OF EXIT TRAVEL.
10. DOOR HARDWARE SHALL COMPLY WITH THE FOLLOWING:
    A. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH–PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. HARDWARE TO BE MOUNTED 34–44 INCHES ABOVE FINISH FLOOR.
    B. 5–POUND MAXIMUM CLOSING PRESSURE AT INTERIOR DOORS.
    C. 5–POUND MAXIMUM CLOSING PRESSURE AT EXTERIOR DOORS. THIS APPLIES TO ALL DOORS SERVING AREAS ACCESSIBLE TO THE PHYSICALLY DISABLED.
11. THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. FLOOR OR LANDING SHALL BE NO MORE THAN 1/2–INCH LOWER THAN THE THRESHOLD OF THE DOORWAY. WHEN DOORS OPENOVER LANDINGS THE LANDING SHALL BE LEVEL AND 60–INCHES IN THE DIRECTION THE DOOR SWINGS AND 44–INCHES IF SWINGING AWAY. THE FLOOR SHALL EXTEND BEYOND THE STRIKE EDGE 24–INCHES FOR EXTERIOR DOORS AND 18–INCHES FOR INTERIOR DOORS.
12. WHERE A PAIR OF DOOR IS UTILIZED, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32" WITH THE LEAF POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
13. PROVIDE CYLINDER GUARDS ON ALL MORTISE OR RIM TYPE CYLINDER LOCKS ON OUTSIDE OF DOOR WHEREVER CYLINDER PROJECTS BEYOND THE FACE OF DOOR OR IS OTHERWISE ACCESSIBLE TO GRIPPING TOOLS.
14. ALL PIN–TYPE HINGES WHICH ARE ACCESSIBLE FROM THE OUTSIDE WHEN THE DOOR IS CLOSED SHALL HAVE NON–REMOVABLE HINGES PINS. THEY SHALL HAVE A MINIMUM 1/4–INCH DIAMETER STEEL JAMB STUD WITH 1/4–INCH MINIMUM PROJECTIONS UNLESS THE HINGES ARE SHAPED TO PREVENT REMOVAL OF THE DOOR IF THE HINGE PINS ARE REMOVED.
15. THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. THE LEVEL AREA SHALL HAVE A LENGTH IN THE DIRECTION OF THE DOOR SWING OF AT LEAST 60" AND THE LENGTH OPPOSITE THE DIRECTION OF THE DOOR SWING OF 48" AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN THE CLOSED POSITION.
16. TOILET ROOM GEOMETRIC DOOR SIGNS SHALL BE 1/4–INCH THICK, CONTRASTING COLORS AND MOUNTED AT (60–INCHES ABOVE FINISH FLOOR. SEE DETAIL 16/A–19. SYMBOLS SHALL BE ALSO PROVIDED WITH BRAILLE PER ADA REQUIREMENTS ADJACENT TO THE DOOR 60–INCHES ABOVE FINISHED FLOOR.
17. BUILDING ENTRANCE DOOR SHALL BE IDENTIFIED BY A SIGN WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE SYMBOL SHALL BE A WHITE FIGURE ON A BLUE BACKGROUND.
18. FOR DOOR HARDWARE INFORMATION SEE SPECIFICATIONS.
19. THE WIDTH OF THE LEVEL AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS.
20. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS OR ANY OTHER TYPE OF DEVICE THAT MAY BE USED TO CLOSE OR RESTRAIN THE DOOR OTHER THAN BY OPERATION OF THE LOCKING DEVICE SHALL NOT BE USED. WHERE EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF HAVING THE AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOOR KNOB OR SURFACE–MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION.
21. ALL DOORS AND HARDWARE TO MEET ADA, TITLE 24,MINIMUM REQUIREMENTS
22. VERIFY ALL DIMENSIONS AT FIELD BEFORE MANUFACTURED.
23. WOOD FLUSH–TYPE DOORS SHALL BE 1 3/4" THICK MINIMUM WITH SOLID CORE CONSTRUCTION. 91.6709.1–DOOR STOPS OF IN–SWINGING DOORS SHALL BE OF ONE–PIECE CONSTRUCTION WITH THE JAMB OR JOINED BY RABBET TO THE JAMB.
24. PROVIDE DEAD BOLTS WITH HARDENED INSERTS; DEADLOCKING LATCH WITH KEY–OPERATED LOCKS ON EXTERIOR. LOCKS MUST BE OPENABLE FROM INSIDE WITHOUT KEY, SPECIAL KNOWLEDGE OR SPECIAL EFFORT (LATCH NOT REQUIRED IN B,F, AND S OCCUPANCIES).
25. STRAIGHT DEAD BOLTS SHALL HAVE A MIN. THROW OF 1"AND AN EMBEDMENT OF NOT LESS THAN 5/8", AND A HOOK–SHAPED OR AN EXPANDING–LUG DEADBOLT SHALL HAVE A MINIMUM THROW OF 3/4".

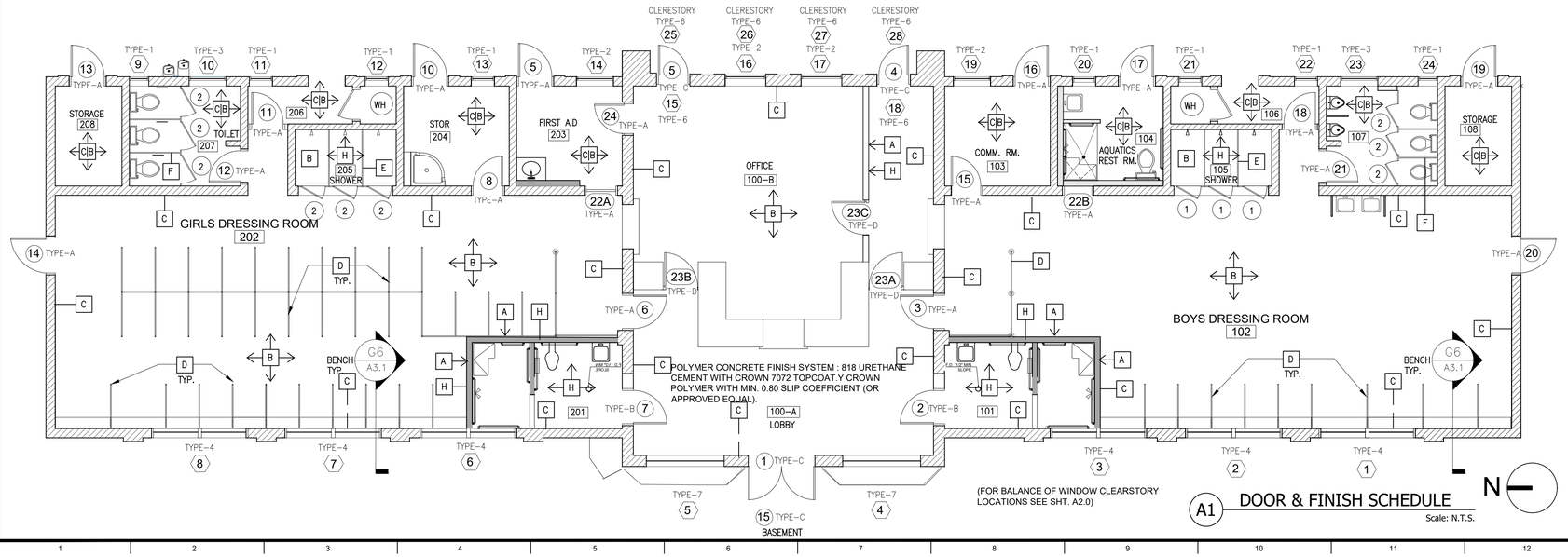
BUREAU OF ENGINEERING — OFFICIAL RECORD

DOOR SCHEDULE

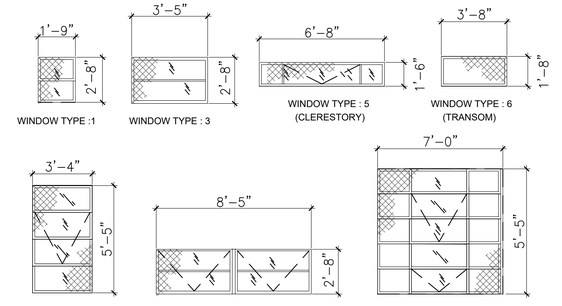
DOOR NO.	TYPE	NOMINAL SIZE W X H (NOTE 2)	THICKNESS	DOOR FRAME	DOOR FINISH	DOOR MAT'L	DOOR RATING	DETAIL NO. HEAD	DETAIL NO. JAMB	DETAIL NO. (N) LOCK	FRAME FINISH	TRESHOLD	PANIC HARDWARE	REMARKS
1	C	6'-0"X7'-0" CLR WIRE GLS	1-3/4"	-	PTD	HM	NR	G6/A3.1	G6/A3.1	Y		G6/A3.1	Y	SAND, REPAIR, PRIME AND PAINT REPLACE GLAZING, (E) DR & FRAME, (N) PANIC HRDW, THRESHOLD (TYP.)
2	A	3'-0"X7'-0"	1-3/4"	-	F.F.	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
3	A	3'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
4	C	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME , (N) GLAZING, REPAIR THRESHOLD (N) PANIC HRDW (TYP.)
5	C	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME , (N) GLAZING, REPAIR THRESHOLD (N) PANIC HRDW (TYP.)
6	A	3'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
7	A	3'-0"X7'-0"	1-3/4"	MTL	F.F.	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
8	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y	STRUCT A12/S301		N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. INCLUDE THRESHOLD, HARDWARE + CLOSR
9	A	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
10	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR & FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
11	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
12	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
13	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DR + FRAME CLEAN, REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
14	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	PROVIDE AND INSTALL (N) COMMERCIAL GRADE SECURITY DR. W/ HRDW. CLSR. PROVIDE SUBMITTAL.
15	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
16	A	3'-0"X7'-0" CLR WIRE GLS	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
17	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
18	A	2'-10"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
19	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT DR + FRAME CLEAN , REPAIR W/ (N) THRESHOLD AND HARDWARE (TYP.)
20	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			Y	PROVIDE AND INSTALL (N) COMMERCIAL GRADE SECURITY DR. W/ HRDW. CLSR. PROVIDE SUBMITTAL.
21	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT REPLACE GLAZING, CLEAN FRAME, REPAIR THRESHOLD (TYP.)
22-AB	A	3'-0"X7'-0"	1-3/4"	MTL	PTD	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT. (E) DOOR, CLOSE PERMANENTLY, REMAIN FOR HISTORIC VALUE
23-ABC	D	3'-0"X2'-6"	1-3/4"	WD	LAM	WD	NR	-	-	LATCH			N	(N) 36 X 30 LAMINATED SWING DOOR W/ 652 SATIN CHROME SPRING LOADED HINGE (TYP.)
24	A	3'-0"X7'-0"	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT. (E) DOOR, CLOSE PERMANENTLY, RETAIN FOR HISTORIC VALUE
25	C	6'-0"X7'-0" BASMNT FRSTD WIRE GLS	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	SAND, REPAIR, PRIME AND PAINT (E) DOOR, & FRAME REPLACE GLAZING, REPAIR THRESHOLD (TYP.) SEE A1.2
26	A	3'-0"X7'-0" BASEMENT STOR.	1-3/4"	MTL	F.F.	HM	NR	-	-	Y			N	PROVIDE NEW STEEL METAL 2-PANEL DOOR TO MATCH EXISTING. THRESHOLD, HDWARE + CLOSER SEE A1.2

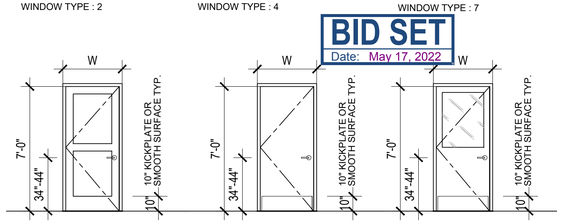
WINDOW SCHEDULE

WINDOW TYPE	MARK	NOMINAL SIZE W X H	GLASS TYPE RIBBD	GLASS TYPE CLEAR	GLASS TYPE FROST	REMARKS
1	(8)	1'-9" X 2'-8"			X	REMOVE (E) GLAZING AND REPLACE WITH (N) LOW-E SOLAR BAN 60 MONOLITHIC LAMINATE. CLEAN, REPAIR WINDOW FRAMES + MULLIONS, REPLACE HINGES AND LATCHES AS NEEDED.
2	(4)	3'-4" X 5'-5"		X		" "
3	(2)	3'-5" X 2'-8"			X	" "
4	(6)	8'-5" X 2'-8"	X			" "
5	(9)	6'-8" X 1'-6"			X	" "
6	(6)	3'-8" X 1'-8"			X	" "
7	(2)	5'-5" X 7'-0"		X		" "



A1 DOOR & FINISH SCHEDULE
Scale: N.T.S.





BID SET
Date: May 17, 2022

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TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A6.0-DOOR WINDOW & FINISH & SCHEDULES.DWG
REVISION DATES (DESIGN STAGE ONLY)

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO. -
BUILDING NO. -
INDEX NO. - RP-300123

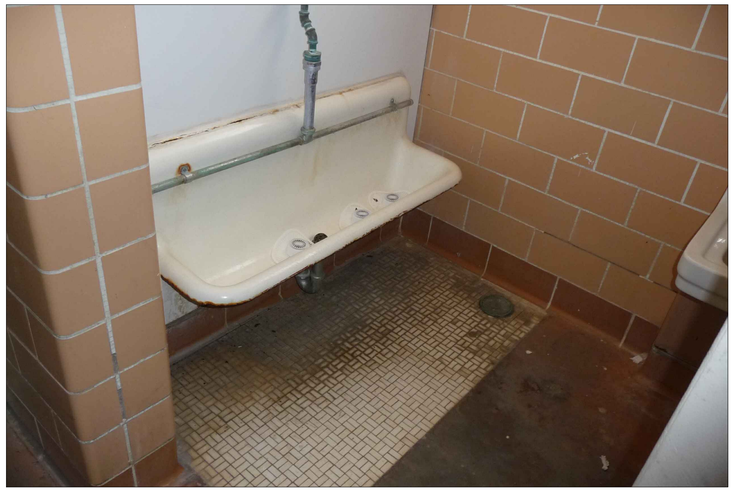
LICENSED ARCHITECT GELSO J. DEL POSO LIC. NO. C 29974 RENEW:1-2022 STATE OF CALIFORNIA

TED . ALLEN , P.E. CITY ENGINEER
ARCHITECTURAL DIVISION C 24970 DATE: 03-10-22
ARCHITECT: Celso J. Del Poso LIC. NO. C-29974 03-10-22
DESIGNED BY: JOHN McNEIL 03-10-22
DRAWN BY: Vin Ha, TY, DT 03-10-22
CHECKED BY: Celso J. Del Poso 03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT 03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: DOOR & WINDOW SCHEDULE FINISH SCHEDULE & DETAILS
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A6.0
SHEET 43 OF SHEETS 96

PLOTTED: 6/4/2022 5:26 PM



J1 | REMOVE AND REPLACE (E) URINAL TROUGH
NOT TO SCALE



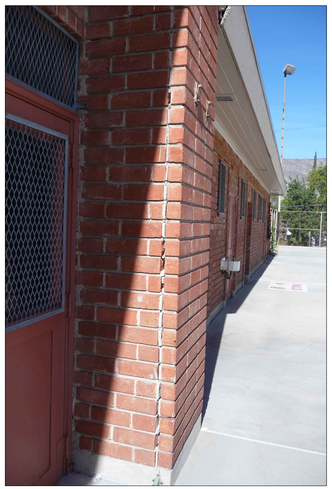
J7 | DEMO FRP SURFACE MATERIAL AND REPLACE WITH CERAMIC TILE
NOT TO SCALE



J12 | CONSTRUCT (N) ADA ACCESSIBLE WALKWAY
NOT TO SCALE



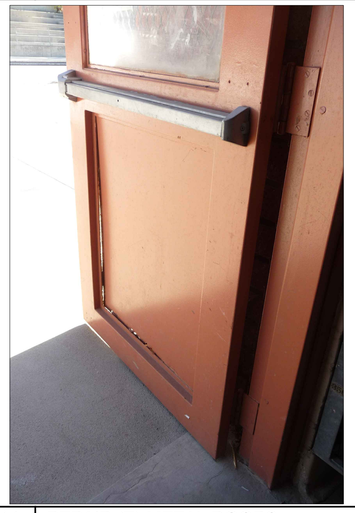
E1 | SAND AND PAINT EXISTING CANOPY AND TRELLIS REPAIR FASCIA BOARDS.
NOT TO SCALE



E7 | REPOINT BRICK MORTAR AS NEEDED
NOT TO SCALE



E12 | DEMO AND RECONSTRUCT POOL GUTTER DRAIN LIP
NOT TO SCALE

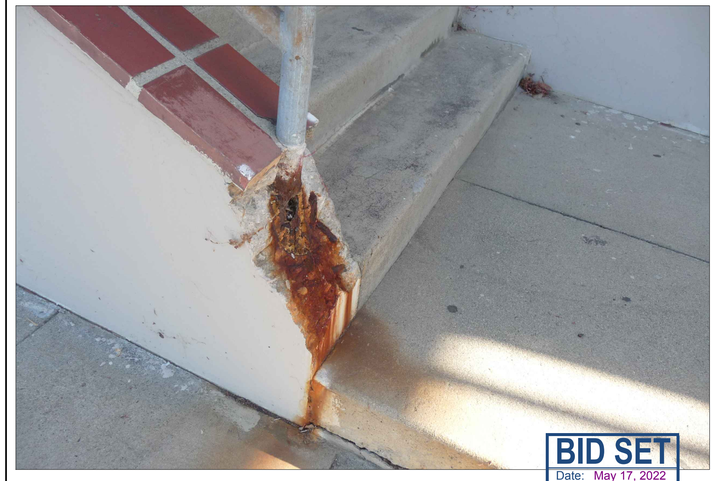




A1 | REPAIR (E) METAL DOORS
NOT TO SCALE



A7 | REPLACE (E) MODESTY PANELS, AND REPAIR CONC. FLOOR
NOT TO SCALE



A12 | REPAIR BROKEN STAIR STRINGERS (QUIKCRETE -SAKRETE)
NOT TO SCALE

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW: 3-1-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:
	ARCHITECTURAL DIVISION	
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL	03-10-22
DRAWN BY:	Vin Ha, TY, DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SITE PHOTOS & PROJECT DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A7.0
SHEET 44 OF SHEETS 96

PLOTTED: 6/4/2022 5:28 PM

REVISION DATES (DESIGN STAGE ONLY)

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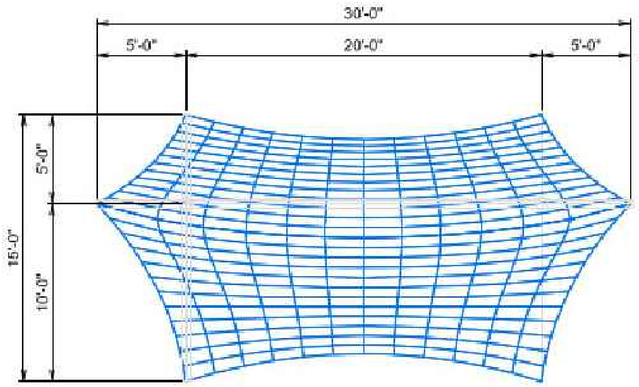
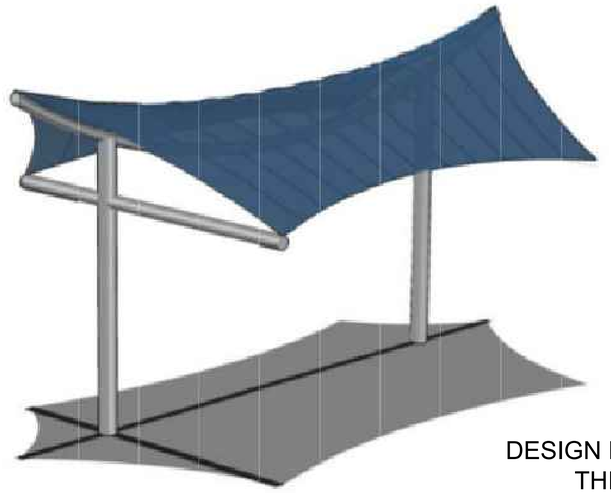
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A7.0 SITE PHOTOS & PROJECT DETAILS.DWG

NOTES:
-THESE DRAWINGS ARE A PICTORIAL REPRESENTATION OF FABRIC AND STEEL ONLY. NONE OF THE REQUIRED ATTACHMENT OR CONNECTION DETAILS HAVE BEEN DEPICTED.
-ALL DIMENSIONS AND HEIGHTS MUST BE FIELD VERIFIED PRIOR TO ANY FINAL DESIGN, FABRICATION OR INSTALLATION WORK.



PLAN VIEW



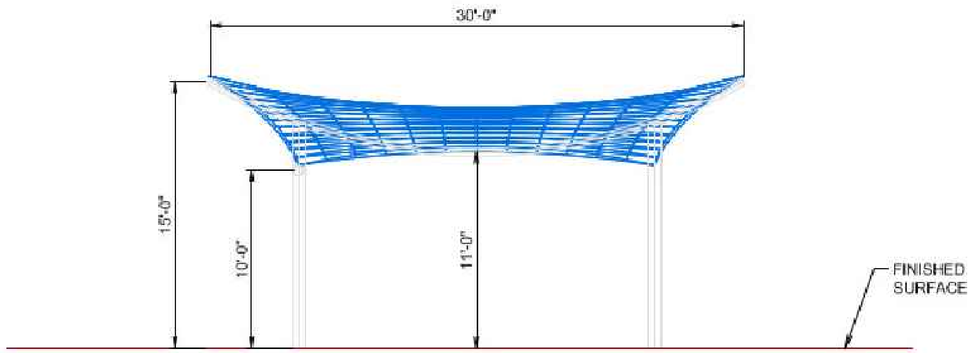


PERSPECTIVE VIEW

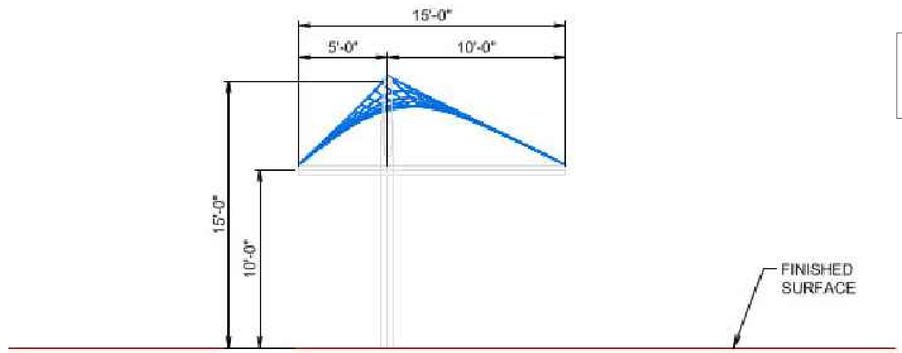
DESIGN BUILD ITEM UNDER THIS CONTRACT

SHADE STRUCTURE UNDER SEPARATE PERMIT

Contact USA SHADE Company.
Ben Cover, 949-466-4413
Liz Norton: 323.490.9502
See Project Specifictions



SOUTH ELEVATION



WEST ELEVATION

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

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REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:19 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A8.0 SHADESTRUCTURE.DWG

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEWAL 31-2023
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:	03-10-22
	ARCHITECTURAL DIVISION	C-23970	03-10-22
ARCHITECT:	Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY:	JOHN McNEIL		03-10-22
DRAWN BY:	Vin Ha, TY, DT		03-10-22
CHECKED BY:	Celso J. Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT			03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: U.S. SHADE - CUSTOM CANTI

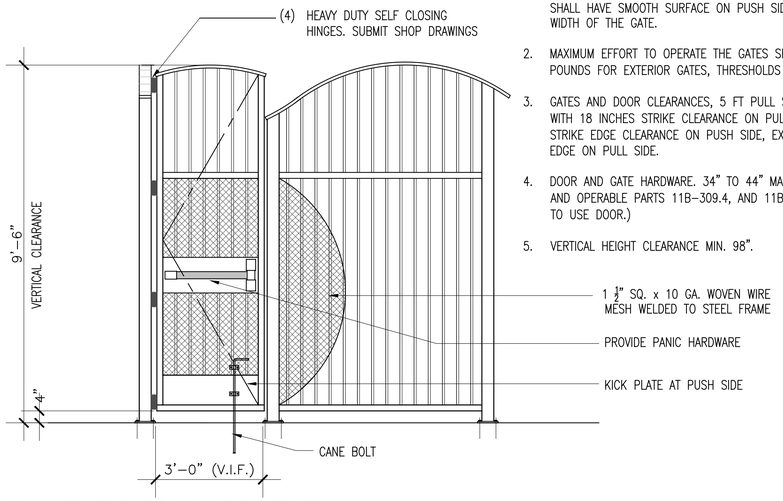
PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A8.0
SHEET 45 OF SHEETS 96

PLOTTED: 6/4/2022 5:30 PM

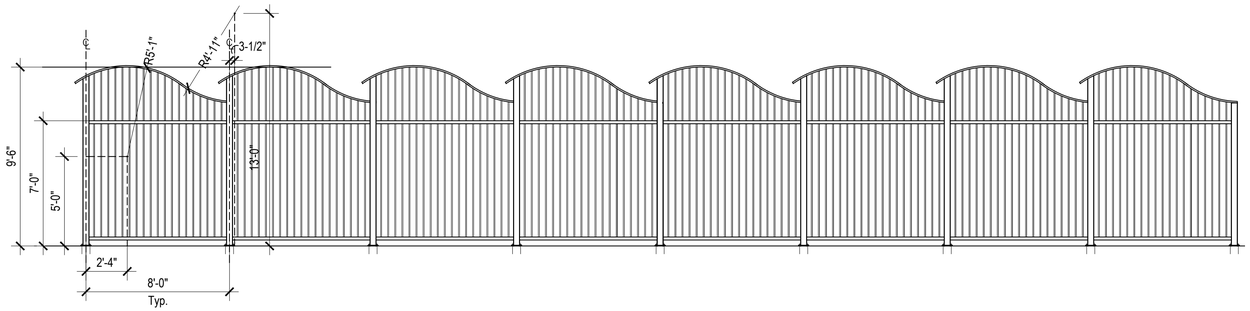
GATE NOTES:

1. GATES TO HAVE SMOOTH SURFACE, SWINGING DOOR OR GATE SURFACES WITHIN 10 INCHES OF FINISH FLOOR OR GROUND MEASURED VERTICALLY SHALL HAVE SMOOTH SURFACE ON PUSH SIDE EXTENDING THE FULL WIDTH OF THE GATE.
2. MAXIMUM EFFORT TO OPERATE THE GATES SHALL NOT EXCEED 8–1/2 POUNDS FOR EXTERIOR GATES, THRESHOLDS 1/2" MAX.
3. GATES AND DOOR CLEARANCES, 5 FT PULL SIDE AND 48" PUSH SIDE, WITH 18 INCHES STRIKE CLEARANCE ON PULL SIDE, 11B–404, 12" STRIKE EDGE CLEARANCE ON PUSH SIDE, EXTERIOR DOORS 24" STRIKE EDGE ON PULL SIDE.
4. DOOR AND GATE HARDWARE. 34" TO 44" MAX ABOVE FLOOR, 11B–404.2.7 AND OPERABLE PARTS 11B–309.4, AND 11B–404.2.7 (5 LBS PRESSURE TO USE DOOR.)
5. VERTICAL HEIGHT CLEARANCE MIN. 98".



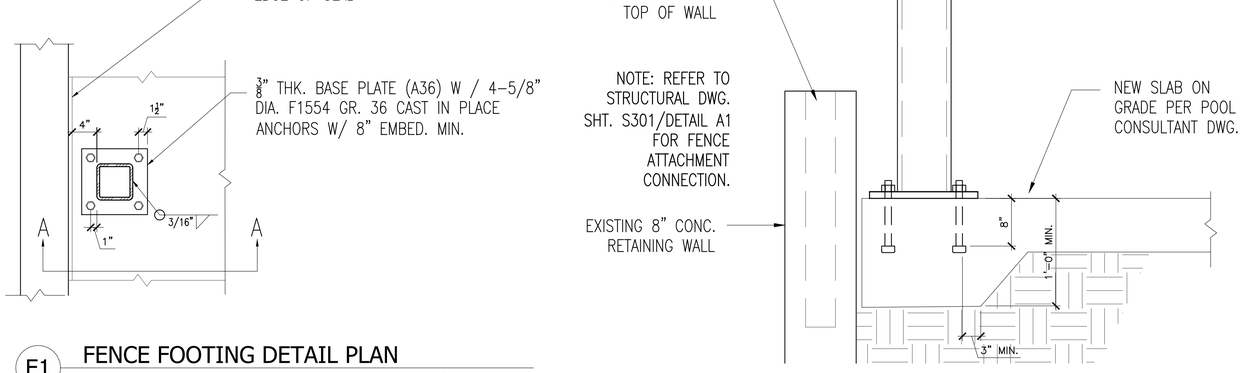
H1 GATE DETAILS/FOOTING

Scale:1/2" = 1' - 0"



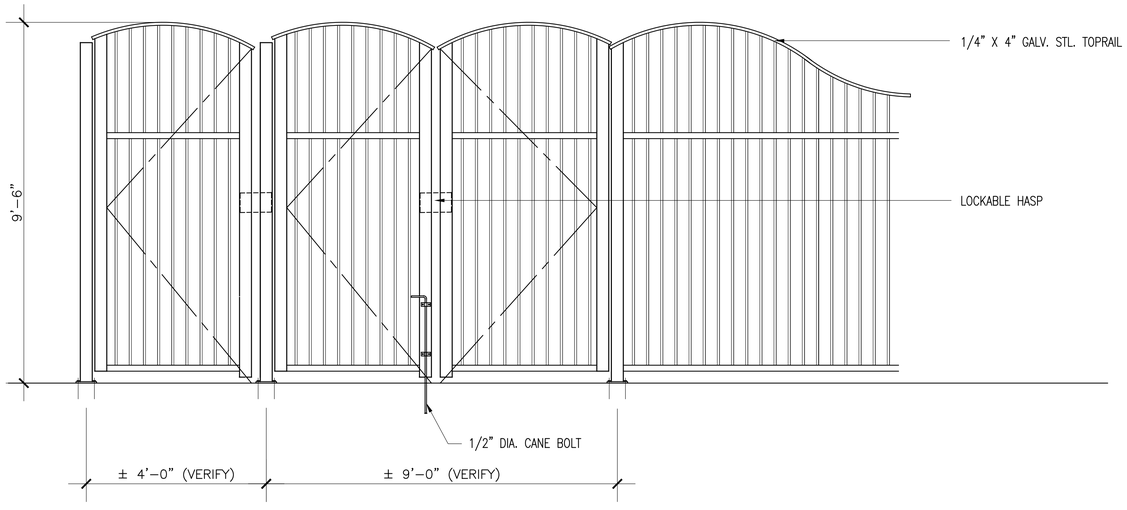
J13 POOL AREA FENCE (TYPICAL)

Scale:1/4" = 1' - 0"



E1 FENCE FOOTING DETAIL PLAN

Scale:1" = 1' - 0"



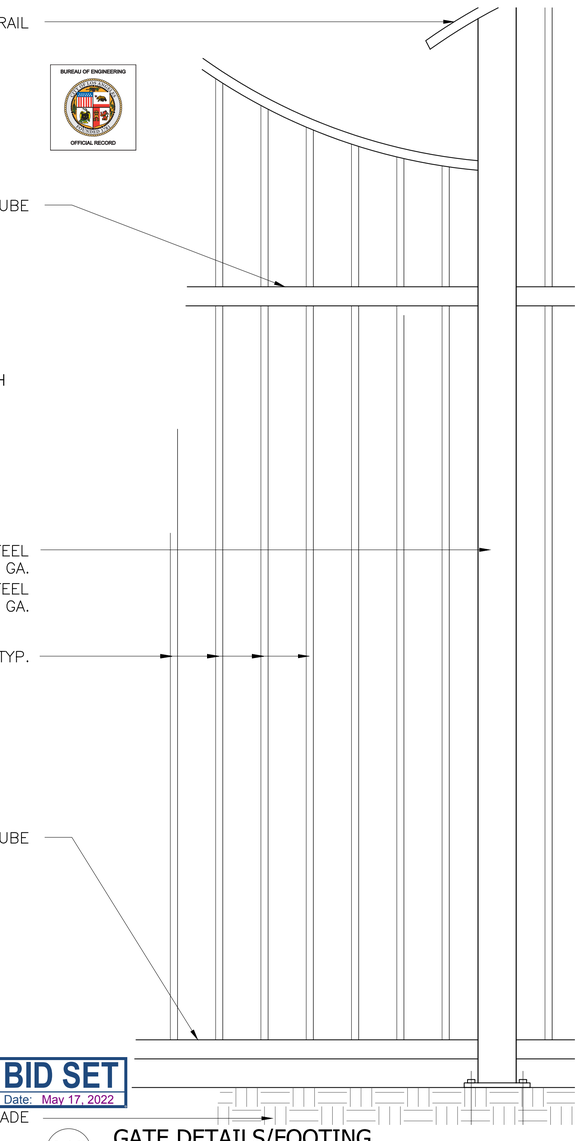
A1 GATE DETAILS/FOOTING

Scale:1/2" = 1' - 0"

NOTE:
PRIME ENTIRE FENCE WITH TNEMEC HIGH BUILD EPOXOLINE II L69 SERIES PER MANUFACTURERS INSTRUCTIONS. PAINT WITH TNEMEC 750 SEMI–GLOSS
COLOR: LAVA, 13S (RGB:167,84,74.)

NOTE:
SUBMIT SHOP DRAWINGS PRIOR TO FENCE FABRICATION

BID SET
Date: May 17, 2022



A13 GATE DETAILS/FOOTING

Scale:1" = 1' - 0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

LICENSED ARCHITECT
CELSO J. DEL POSO
LIC. NO. C 29974
RENEW:31-2023
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

CITY ENGINEER: TED ALLEN, P.E.

		DATE:
ARCHITECTURAL DIVISION		
ARCHITECT:	Celso J. Del Poso LIC. NO. C-29974	03-10-22
DESIGNED BY:	John McNeil	03-10-22
DRAWN BY:	Vinh Ha, TMY . DT	03-10-22
CHECKED BY:	Celso J. Del Poso	03-10-22
APPROVED BY:	STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT	03-10-22

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FENCE DETAILS / ELEVATIONS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

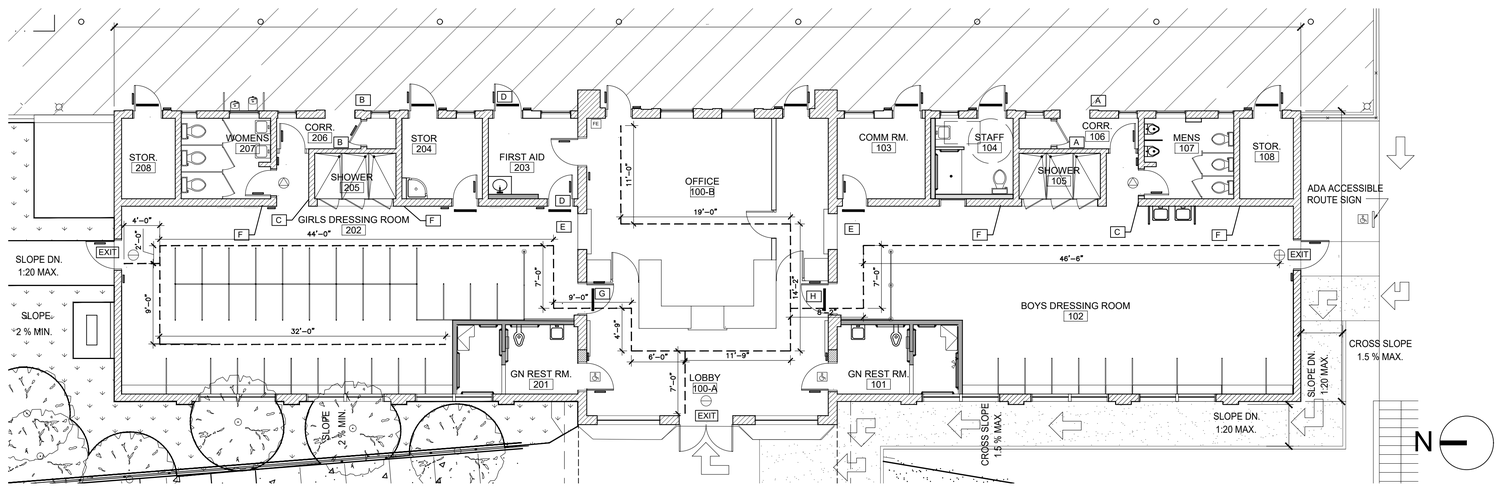
WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. A9.0
SHEET 46 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 6/4/2022 5:32 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\ARCHITECTURE\A9.0 FENCE DETAIL.DWG

PLOTTED: 6/10/2022 2:03 PM



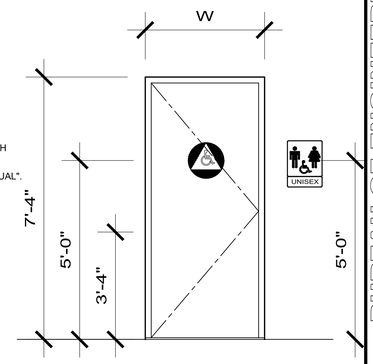
J1 -- SIGNAGE PLAN / EXIT TRAVEL PLAN

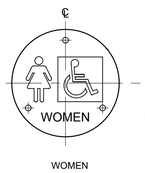
1/8"= 1'-0"

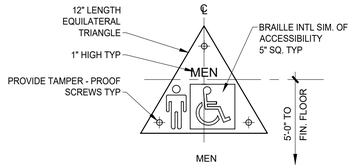
SIGN LEGEND

x11	▬	ROOM ID SIGN - ASI "IN-TAC" "OR EQUAL".
x3	◯	EXIT SIGN - TRANSPARENT ILLUMINATED
x4		STAIR SIGN WELL - BRUSHED ALUMINUM FINISH
x2		RESTROOM DOOR ID - BRUSHED ALUMINUM FINISH
x2		ADA ACCESSIBLE - ASI VENUS ALUMINUM "OR EQUAL".
x1	FE	FIRE EXTINGUISHER - ASI MESSENGER INTERIOR

PROVIDE SIGN SUBMITTAL FOR APPROVAL.





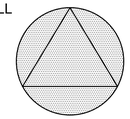


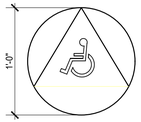
UNISEX WALL SIGN



UNISEX / FAMILY WALL SIGN





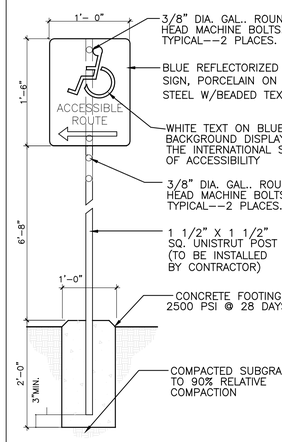


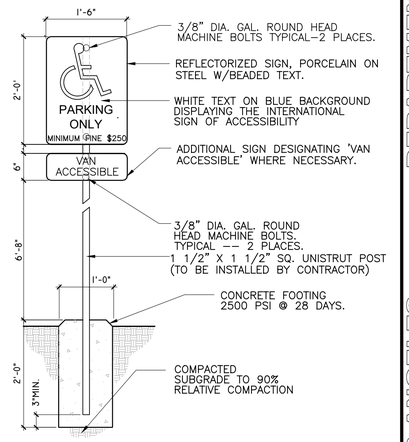
DOOR MOUNTED - SIGNAGE (TYP.)

NOTE: PICTOGRAMS AND / OR LETTERING ARE NOT REQUIRED ON DOOR-MOUNTED SIGNAGE

F12 -- A6.0 DOOR & WALL MOUNT SIGNAGE (TYP.)

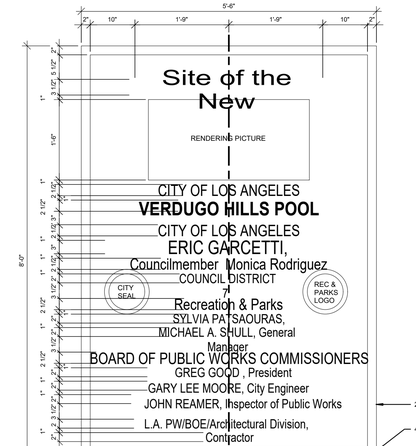
1/2"= 1'-0"



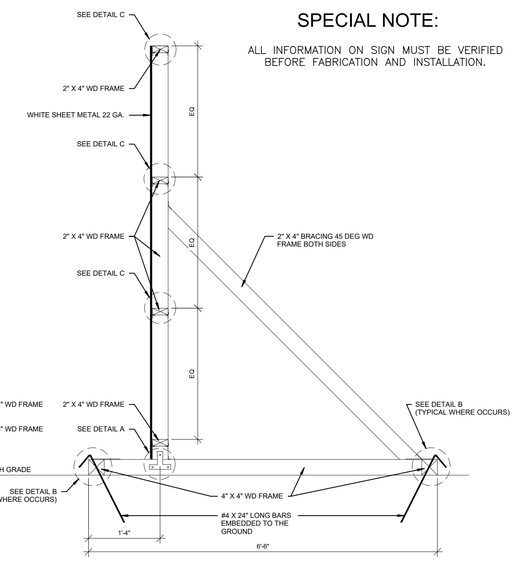


BUREAU OF ENGINEERING
OFFICIAL RECORD

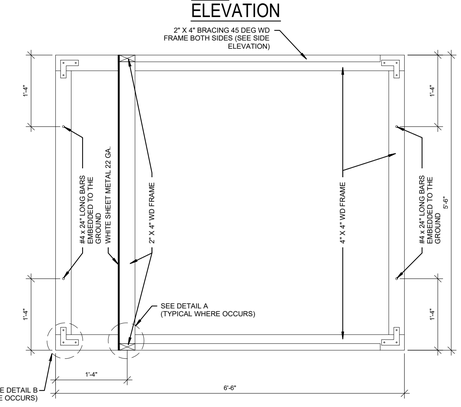
BID SET
Date: May 17, 2022



FRONT ELEVATION



SIDE ELEVATION



SPECIAL NOTE:

ALL INFORMATION ON SIGN MUST BE VERIFIED BEFORE FABRICATION AND INSTALLATION.

A
MENS 3"

B
WOMENS 3"

C
TO POOL 3"
(COLOR "RED")

D
FIRST AID 3"
(OUTLINE IN "WHITE")

TYPEFACE STYLE IS "ARIAL BOLD" IN DARK BLUE.

E
3" CHECK CLOTHES HERE

F
1" TAKE SOAP SHOWER
1" BEFORE ENTERING POOL

PROVIDE SUBMITTAL FOR APPROVAL

G
WOMENS 3"
DRESSING 3"
3" ROOM 3"

H
MENS 3"
DRESSING 3"
ROOM 3"

A1 -- CONSTRUCTION SIGN

3/4"=1'-0"

A8 -- A6.0 STENCIL PAINTED WALL SIGNS

1"= 1'-0"

A12 -- A1.3 ADA ACCESSIBLE ROUTE SIGN AND PARKING SIGN

1"= 1'-0"

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
FILE C:\USERS\25555\BOXARC_PROJECTS\VERDUGO HILLS POOL\ARCHITECTURE\A10.0 SIGNAGE PLANS.DWG
REVISION DATE: 6/4/2022 5:34 PM

BUREAU OF ENGINEERING
CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:
		01-19-21	

SERIAL NO.

BUILDING NO. -

INDEX NO. - RP-300123

LICENSED ARCHITECT
GELSO J. DEL POSO
LIC. NO. C 29974
REN2021-2022
STATE OF CALIFORNIA

TED ALLEN, P.E.	CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION		03-10-22
ARCHITECT: Celso J. Del Poso	LIC. NO. C-29974	03-10-22
DESIGNED BY: JOHN McNEIL		03-10-22
DRAWN BY: Vin Ha, TY. DT		03-10-22
CHECKED BY: Celso J. Del Poso		03-10-22
APPROVED BY: STEVE FIERCE, A.I.A., PRINCIPAL ARCHITECT		

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SIGNAGE PLAN / EXIT TRAVEL PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. A10.0

SHEET 47 OF SHEETS 96

PLOTTED: 8/13/2022 9:13 AM

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
   A. 2017 CITY OF LOS ANGELES BUILDING CODE.
   B. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "SSPWC", ADOPTED BY THE BOARD OF PUBLIC WORKS OF THE CITY OF LOS ANGELES AS MODIFIED BY THE LATEST ISSUE OF THE BROWN BOOK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO STARTING ANY WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE COMMENCING WORK.
3. THE ENGINEER DOES NOT WARRANT THE ACCURACY OF SCALED DIMENSIONS ON ANY PLAN. ALL DIMENSIONS SHALL BE AS DESIGNATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AT THE SITE PRIOR TO COMMENCING WORK AND/OR FABRICATION AND PROCUREMENT OF ANY ITEM.
4. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NOTES AND DETAILS ON DRAWINGS AND GENERAL NOTES AND TYPICAL DETAILS ARE IN CONFLICT WITH THE CONTRACT SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
5. A STAMPED SET OF PLANS AND SPECIFICATIONS SHALL BE KEPT AT THE JOBSITE AT ALL TIMES. THE CONTRACTOR SHALL ALSO MAINTAIN A SEPARATE FULL SIZE SET AND UPDATE WITH RECORD (I.E. AS-BUILT) INFORMATION. BOTH SETS SHALL BE MADE AVAILABLE TO THE INSPECTOR, BUILDING OFFICIAL OR CITY ENGINEER AT ALL TIMES.
6. MANUFACTURED MATERIALS SHALL BE APROVED BY THE CITY ENGINEER PRIOR TO THEIR USE. ALL REQUIREMENTS OF THOSE APPROVALS SHALL BE FOLLOWED.
7. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
   A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS.
   B. SIZE AND LOCATION OF ALL NON-BEARING PARTITIONS.
   C. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.
   D. SIZE AND LOCATIONS OF ALL FLOOR AND ROOF OPENINGS.
   E. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
8. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLOWING:
   A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL, ROOF AND FLOOR OPENINGS, ETC.
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS, IN WALLS AND SLABS.
   C. ANCHORAGE AND BRACING FOR ELECTRICAL, MECHANICAL OR EQUIPMENT.
   D. ANCHOR BOLTS FOR MOTOR MOUNTS.
   E. SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES.
9. PIPE SLEEVES, CONDUITS, DUCTS, INSERTS, AND OTHER SIMILAR EMBEDDED ITEMS SHALL BE IN PLACE PRIOR TO PLACEMENT OF CONCRETE.
10. NO PIPES, DUCTS, SLEEVES, OR OTHER MECHANICAL, PLUMBING, AND ELECTRICAL TRADE ITEMS SHALL PASS THROUGH STRUCTURAL MEMBERS UNLESS SHOWN ON THE THE STRUCTURAL PLANS OR APPROVED BY THE CITY ENGINEER OF RECORD.
11. SEWER AND UTILITY LINES ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO PLUMBING, ELECTRICAL AND CIVIL DRAWINGS FOR LOCATION. THE CONTRACTOR SHALL COORDINATE ALL SEWER AND UTILITY LINES WITH THE FOUNDATION DRAWINGS. THE CITY ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING FURTHER WITH THE WORK.
12. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED WORK. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL THE MEASURES NECESSARY TO PROTECT THE SAFETY OF THE STRUCTURE, EMPLOYEES, AND THE PUBLIC DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO THE BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION LOADING AND EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE CITY ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS AND DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS/HER RESPONSIBLITIES FOR THE ABOVE ITEMS.
13. THE CONTRACTOR SHALL NOT STACK CONSTRUCTION MATERIAL ON ANY ELEVATED ROOF OR FLOOR, THE MATERIAL SHALL BE SPREAD OUT AND THE LOAD SHALL NOT BE ALLOWED TO EXCEED 80% OF THE DESIGN LIVE LOAD. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH OR WHERE OVERLOAD IS ANTICIPATED.
14. REVIEW OF SUBMITTAL WILL BE FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. NOTED MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS OR DEPARTURES THEREFROM. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY FOR PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER.
15. THE CONTRACTOR SHALL PROVIDE PROTECTION FOR PEDESTRIANS AND VEHICLES ADJACENT TO THE PROJECT SITE DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL OBTAIN AND ARRANGE FOR ALL REQUIRED PERMITS AND INSPECTIONS.

EARTHWORK & FOUNDATION NOTES

1. THE GEOTECHNICAL REPORT W.O. #E170164D, GEO FILE # 17-137 DATED SEPTEMBER 13, 2018. ENTITLED " SUPPLEMENTAL GEOTECHNICAL REPORT- VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP"
2. THE CONTRACTOR SHALL CONFORM TO ALL RECOMMENDATIONS AND CONDITIONS INDICATED IN THE REPORT.
3. THE GEOTECHNICAL ENGINEER/ BUILDING INSPECTOR SHALL OBSERVE THE FOOTING EXCAVATIONS TO DETERMINE WHETHER THE FOUNDATIONS ARE FOUNDED ON ACCEPTABLE MATERIAL. IF ADVERSE SOIL CONDITIONS ARE ENCOUNTERED, A SOIL INVESTIGATION MAY BE REQUIRED.
4. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION BY THE CITY OF LOS ANGELES, DEPARTMENT OF BUILDING AND SAFETY, AT LEAST 48 HOURS IN ADVANCE.
5. ENGINEERED FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION PER GEOTECHNICAL REPORT.
6. SHORING WHERE REQUIRED SHALL BE PER RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.
7. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL FURNISH THE CITY ENGINEER A WRITTEN DESCRIPTION OF THE PROPOSED PROCEDURES AND CALCULATIONS PREPARED, SIGNED, AND SEALED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER FOR INFORMATION ONLY. NEVERTHELESS, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SHORING WORK AND SUBMITTAL TO THE CITY ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF HIS/HER OBLIGATIONS.

EARTHWORK & FOUNDATION NOTES (CONT.)

8. NO BACKFILL SHALL BE PLACED BEHIND RETAINING WALLS PRIOR TO THE CONCRETE/CMU REACHING ITS FULL DESIGN STRENGTH. THE CONTRACTOR SHALL PROTECT AND BRACE ALL BUILDING WALLS AND PITS BELOW GRADE AGAINST LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE REACHED THEIR FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE DESIGN, PERMIT, BRACING, AND INSTALLATION OF SUCH BRACING, AT NO ADDED COST TO THE CITY.
9. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL THE NECESSARY PERMITS FOR ALL TRENCHES AND EXCAVATIONS FIVE FEET OR MORE IN DEPTH, FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT BY THE CITY OF LOS ANGELES, DEPARTMENT OF BUILDING AND SAFETY.
10. NO FILL SHALL BE PLACED UNTIL THE GEOTECHNICAL ENGINEER AND BUILDING AND SAFETY GRADING INSPECTOR HAVE INSPECTED AND APPROVED THE BOTTOM EXCAVATION.
11. FROM THE TIME THAT BUILDING AND SAFETY AND GEOTECHNICAL ENGINEER APPROVES THE FOOTING EXCAVATIONS TO THE TIME THAT THE CONCRETE IS PLACED, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE FOOTINGS PROPERLY MOIST AND FREE OF LOOSE SOIL AND DEBRIS. IF EXCESSIVE SLOUGHING OR CAVING OCCURS OR IF MOISTURE IS ALLOWED INTO THE FOOTINGS PRIOR TO CONCRETE PLACEMENT, ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE FOOTINGS AND GEOTECHNICAL ENGINEER SHALL RE-INSPECT THE FOOTINGS PRIOR TO CONCRETE PLACEMENT.

CONCRETE NOTES

1. CONCRETE SHALL CONFORM TO SECTION 201 OF THE SSPWC U.N.O.
2. ALL CEMENT SHALL CONFORM TO ASTM C-150, PORTLAND CEMENT TYPE V FOR CONCRETE IN CONTACT WITH SOIL AND TYPE I FOR TOPPING SLAB, U.N.O.
3. ALL FLY ASH SHALL CONFORM TO C-618, CLASS F, U.N.O.
4. FINE AND COARSE AGGREGATE SHALL BE NONREACTIVE AND CONFORM TO ASTM C-33 AND SECTION 201-1.2.2 OF THE SSPWC.
5. UNLESS NOTED OTHERWISE, STRUCTURAL CONCRETE SHALL BE HARD ROCK - 145 LBS/ CU. FT. CONCRETE STRENGTH SHALL CONFORM TO THE FOLLOWING:
   SLAB ON GRADE AND OTHER MISC. CONCRETE..... 560-C-3250
   FOUNDATIONS AND WALL.....650-CW-4000
6. SUBMITTALS OF MIX DESIGN SHALL BE AS PER THE BUILDING CODE AND SHALL BE PREPARED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER, AND BE PROVIDED BY AN APPROVED LABORATORY. COPIES OF THE SUBMITTALS SHALL BE IN THE OFFICE OF THE BUILDING INSPECTOR, AT THE BATCH PLANT PRIOR TO BATCHING OF CONCRETE, AND AT THE JOB SITE PRIOR TO PLACING OF CONCRETE. MIX DESIGN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL OF THE PROJECT STRUCTURAL ENGINEER PRIOR TO PLACING OF CONCRETE.
7. CONTINUOUS INSPECTION OF CONCRETE BY A DEPUTY INSPECTOR IS REQUIRED FOR CONCRETE STRENGTHS OVER 2500 PSI - TO BE PROVIDED BY THE CITY.
8. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2017 EDITION OF THE LOS ANGELES CITY BUILDING CODE AND THE LATEST EDITION OF ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE - ACI 318, INCLUDING BAR BENDS AND HOOKS, UNLESS SPECIFICALY SHOWN ON THE DRAWINGS.
9. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS SHALL ONLY BE USED TO SUPPORT REINFORCING OFF GROUND.
10. THE LOCATION OF CONTRACTION JOINTS SHALL BE PER LOS ANGELES CITY STANDARD STRUCTURAL PLAN S505-1.
11. NOTIFY THE CITY ENGINEER 48 HOURS PRIOR TO ALL POURS.
12. ALL EXISTING CONCRETE SURFACES IN CONTACT WITH NEW CONCRETE AND ALL CONSTRUCTION JOINTS SHALL BE ROUGHENED TO 1/4" AMPLITUDE MINIMUM.
13. ALL FOUNDATIONS AND PILES SHALL BE POURED AGAINST UNDISTURBED NATURAL SOIL, OR COMPACTED FILL. THE PROJECT GEOTECHNICAL ENGINEER SHALL INSPECT ALL FOUNDATIONS, PILES AND SOIL PRIOR TO PLACING REINFORCING STEEL. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF INSPECTION.
14. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4", OR RADIUSED TO 1/2" R.
15. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECTION 303-1.10 OF THE SSPWC UNLESS OTHERWISE NOTED. THE CITY ENGINEER MUST FIRST APPROVE THE USE OF MEMBRANE CURING COMPOUNDS. IF APPROVED FOR USE, THE CONTRACTOR SHALL SUBMIT SAMPLES OF MATERIALS AND LOCATION OF USE FOR FINAL APPROVAL BY THE CITY ENGINEER.
16. BEFORE CONCRETE IS POURED, CHECK ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, EMBEDDED MATERIALS, ETC. RELATING TO THE WORK.
17. THE CONTRACTOR SHALL COORDINATE FOR CONTINUOUS INSPECTION OF ANCHOR BOLTS OR HEADED STUDS EMBEDDED IN CONCRETE PRIOR TO AND DURING THE PLACEMENT OF CONCRETE TO BE PROVIDED BY THE CITY.
18. ALL SLEEVES NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL BE LOCATED BY THE TRADES INVOLVED AND SHALL BE APPROVED BY THE CITY ENGINEER.
19. NO STAKE, STEEL OR WOOD WILL BE PERMITTED IN ANY CONCRETE POUR, UNLESS OTHERWISE SHOWN ON THE PLANS TO REMAIN. SUSPEND FORMS FROM ABOVE THE POUR.
20. FINAL SLABS SHALL BE LEVELED TO WITHIN 1/8" WHEN MEASURED WITH A 10 FEET STRAIGHT EDGE AND WITHIN 1/2" IN ANY 30 FEET BAY.
21. NO FOUNDATIONS OR SLABS-ON-GRADE SUPPORTED IN NEW COMPACTED FILL SHALL BE POURED UNTIL THE COMPACTION REPORT IS SUBMITTED AND APPROVED BY THE GRADING DIVISION OF LADBS.
22. NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAYS STRENGTH OF 4,000 PSI. CONTRACTOR TO SUBMIT MIX DESIGN FOR APPROVAL TO THE CITY ENGINEER, PRIOR TO PLACEMENT.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE FRABICATED AND ERECTED IN ACOORDANCE WITH THE LATEST EDITION OF THE AISC SPECIFICATIONS. FABRICATOR SHALL BE LICENSED AND APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY CITY OF LOS ANGELES FOR THE WORK INDICATED.
2. ALL STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A-992. PIPE COLUMNS SHALL COMPLY WITH ASTM A-53 GRADE B (Fy=35 KSI); STRUCTURAL HSS SHALL COMPLY WITH ASTM A-500 GRADE B (Fy=46 KSI). ALL ANGLES, CHANNELS, PLATES AND OTHER SHAPES SHALL COMPLY WITH ASTM A36.
3. CONNECTIONS NOT DETAILED ON DRAWINGS SHALL BE DETAILED BY THE FABRICATOR AND SHALL BE SUBMITTED IN THE SHOP DRAWINGS FOR REVIEW BY THE STRUCTURAL ENGINEER.
4. FABRICATOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. ALL HIGH STRENGTH (H.S.) BOLTS, NUTS AND WASHERS SHALL COMPLY WITH ASTM A325. ANCHOR BOLTS INTO CONCRETE OR MASONRY OR WHERE MACHINE BOLTS (M.B.) ARE SPECIFIED SHALL CONFORM TO ASTM A307.
6. BASE PLATES BEARING ON CONCRETE OR MASONRY SHALL BEAR A MINIMUM 1" THICK SOLID NON-SHRINK GROUT OR DRYPACK.
7. WELDING SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 SPECIFICATIONS. WELDING ELECTRODES SHALL BE E-70XX.
8. ALL COMPLETE JOINT PENETRATION SHOP WELDING, ALL FIELD WELDING AND HIGH STRENGTH BOLTING, EXCEPT MINOR OR TACK WELDING SHALL BE CONTINUOUSLY INSPECTED BY AN INSPECTOR APPROVED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY.
9. ALL STRUCTURAL STEEL TO BE EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED SURFACES, AND CUT SURFACES OF GALVANIZED STEEL SHALL BE THOROUGHLY CLEANED AND COATED IN ACCORDANCE WITH SECTION 210-3.5 OF THE SSPWC.
10. ALL STRUCTURAL STEEL NOT EXPOSED TO WEATHER SHALL HAVE A COAT OF SHOP PRIMER EXCEPT WHERE STEEL IS TO BE FIREPROOFED, ENCASED IN CONCRETE OR AREA IN CONTACT WITH HIGH STRENGTH BOLTS.

REINFORCING STEEL NOTES

1. ALL REINFORCING STEEL SHALL BE DEFORMED BARS, CONFORMING TO ASTM A615-60. REINFORCING STEEL, WHERE REQUIRED TO BE WELDED SHALL BE A-706 ASTM.
2. WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A-1064. MESH SHALL BE LAPPED (9" MINIMUM).
3. ALL BARS SHALL BE CLEAN OF LOOSE FLAKY RUST, GREASE OR OTHER MATERIALS LIKELY TO IMPAIR BOND.
4. ALL BENDS SHALL BE MADE COLD.
5. REINFORCING BARS SHALL BE SPLICED AND BENT IN STRICT ACCORDANCE WITH THE C.R.S.I. PUBLICATION AND DETAIL DRAWINGS. NO KINKS SHALL BE PERMITTED.
6. FOR BARS #7 THROUGH #11, THE CITY ENGINEER SHALL APPROVE LAP SPLICE LENGTH NOT SHOWN. BARS SHOWN SPLICED SHALL BE CONTINUOUS AT ALL OTHER LOCATIONS. SPLICES IN ADJACENT BARS SHALL BE STAGGERED AT LEAST ONE SPLICE LENGTH. ALL DOWELS SHALL HAVE THE SAME SIZE AND SPACING AS THAT OF THE REINFORCING STEEL TO WHICH THEY ARE SPLICED.
7. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER. IF WELDING OF REINFORCING IS APPROVED, IT SHALL CONFORM TO THE STRUCTURAL WELDING CODE-REINFORCING STEEL AWS D1.4 (LATEST EDITION) ALL SHOP WELDING SHALL BE DONE IN A SHOP CERTIFIED BY THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY. FIELD WELDING SHALL BE DONE BY WELDERS CERTIFIED BY THE DEPARTMENT OF BUILDING AND SAFETY FOR REINFORCING STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.
8. MECHANICAL COUPLERS FOR REINFORCING BARS SHALL HAVE AND CONFORM TO A CURRENTLY APPROVED CITY OF LOS ANGELES RESERACH REPORT AND SHALL REQUIRE CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR PROVIDED BY THE CITY.
9. PROVIDE DOWELS OF SAME SIZE AND NUMBER FROM ADJACENT POUR, BOTH VERTICALLY AND HORIZONTALLY TO MATCH TYPICAL REINFORCING SHOWN. LAPS SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND DETAILS.
10. ALL DOWELS TO BE CLEANED AFTER POUR AND CARE SHALL BE TAKEN SO AS NOT TO BEND DOWELS EXTENDING FROM CONCRETE PREVIOUSLY POURED.
11. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS NOTED OTHERWISE.
12. ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING MORTAR OR GROUT.
13. SHOP DRAWINGS FOR REINFORCING STEEL SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
14. ALL REINFORCING SHALL BE ACCURATELY PLACED AND FIRMLY SUPPORTED AS RQUIRED BY THE ACI STANDARDS. REINFORCING SHALL HAVE THE FOLLOWING MINIMUM COVERAGE AND SHALL BE PLACED AS NEAR TO THE CONCRETE SURFACE AS THESE MINIMUMS WILL PERMIT UNLESS NOTED OR DETAILED OTHERWISE.
   CONCRETE POURING AGAINST EARTH.....3"
   FORMED CONCRETE IN CONTACT WITH EARTH OR WEATHER.....1-1/2"
   SLABS, WALLS, JOISTS.....1-1/2"
   BEAMS.....1-1/2"
   COLUMNS (TO MAIN STEEL).....2"
15. BARS INTERRUPTED BY STRUCTURAL STEEL SHALL EXTEND TO WITHIN 1" OF THE STRUCTURAL STEEL FLANGE OR WEB AND HAVE A 90-DEGREE HOOK UNLESS NOTED OTHERWISE.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. **RP-300123**

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
CIVIL STRUCTURAL
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	TED ALLEN, P.E. / SP	DATE:	8/17/2022
DESIGN GROUP	LIC. NO. S-6573	DATE:	8/17/2022
ENGINEER:	MANAN BHALJA, S.E.	DATE:	5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	DATE:	5/17/2022
DRAWN BY:	EMIL YOUSSEF	DATE:	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	DATE:	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		

CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL NOTES

PROJECT: VERDUGO HILL POOL
BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE.
TUJUNGA, CA. 91042

WORK ORDER NO.
E170164F

PLAN FILE NO.

DRAWING NO.
S001

SHEET 48 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TTLB TEMPLATE REVISION DATE: 4/2016

GENERAL NOTES FOR STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH THE INFORMATION BULLETIN NO. P/BC 2002-024. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION AT THE CONSTRUCTION SITE OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBLILITY FOR THE INSEPCTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR.
2. THE OWNER SHALL EMPLOY A STATE OF CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER OR LICENSED ARCHITECT TO PERFORM THE STRUCTURAL OBSERVATION. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) RECOMMENDS THE USE OF THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN WHO ARE INDEPENDENT OF THE CONTRACTOR.
3. THE STRUCTURAL OBSERVER SHALL PROVIDE EVIDENCE OF EMPLOYMENT BY THE OWNER OR THE OWNER'S REPRESENTATIVE. A LETTER FROM THE OWNER, THE OWNER'S REPRESENTATIVE, OR A COPY OF THE AGREEMENT FOR SERVICE SHALL BE SENT TO THE BUILDING INSPECTOR BEFORE THE FIRST SITE VISIT.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL COORDINATE AND CALL FOR A MEETING BETWEEN THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN, STRUCTURAL OBSERVER, CONTRACTOR, AFFECTED SUBCONTRACTORS AND DEPUTY INSPECTORS. THE PURPOSE OF THE MEETING SHALL BE TO IDENTIFY THE MAJOR STRUCTURAL ELEMENTS AND CONNECTIONS THAT AFFECT THE VERTICAL AND LATERAL LOADS SYSTEMS OF THE STRUCTURE AND TO REVIEW SCHEDULING OF THE REQUIRED OBSERVATIONS. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT SUBMITTED TO THE BUILDING INSPECTOR
5. THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE LISTED SIGNIFICANT CONSTRUCTION STAGES ON THE FOLLOWING STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGES TABLE REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.
6. THE STRUCTURAL OBSERVER SHALL PREPARE A REPORT OF THE STRUCTURAL OBSERVATION REPORT FORM IN/FORM.08 (PART 1) FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED. THE ORIGINAL OF THE STRUCTURAL OBSERVATION REPORT SHALL BE SENT TO THE BUILDING INSPECTOR'S OFFICE AND SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER. ONE COPY OF THE OBSERVATION REPORT SHALL BE ATTACHED TO THE APPROVED PLANS. THE COPY ATTACHED TO THE PLANS SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER OR THEIR DESIGNEE. COPIES OF THE REPORT SHALL ALSO BE GIVEN TO THE OWNER, CONTRACTOR, AND DEUPTY INSPECTOR, ANY DEFICIENCY NOTED ON THE OBSERVATION REPORT WILL BECOME THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD TO VERIFY ITS COMPLETION BY HIM/HER OR BY A REGISTERED DEUPTY INSPECTOR AT THE DISCRETION OF THE STRUCTURAL OBSERVER.
7. A FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR MUST BE SUBMITTED WHICH SHOWS THAT ALL OBSERVED DEFICIENCIES WERE RESOLVED AND STRUCTURAL SYSTEM GENERALLY CONFORMS WITH THE APPROVED PLANS AND SPECIFICATIONS. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) WILL NOT ACCEPT THE STRUCTURAL WORK WITHOUT THIS FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR (WHEN PROVIDED) AND THE CORRECTION OF SPECIFIC DEFIECIENCIES NOTED DURING NORMAL BUILDING INSPECTION.
8. THE STRUCTURAL OBSERVER SHALL PROVIDE THE ORIGINAL STAMPED AND SIGNED STRUCTURAL OBSERVATION REPORT TO THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY BUILDING INSPECTOR.
9. WHEN THE OWNER ELECTS TO CHANGE THE STRUCTURAL OBSERVER OF RECORD, THE OWNER SHALL:

   A) NOTIFY THE BUILDING INSPECTOR IN WRITING BEFORE THE NEXT INSPECTION BY SUBMITTING COMPLETED "STRUCTURAL OBSERVATION PROGRAM AND DESIGNATION OF THE STRUCTURAL OBSERVER FORM IN/FORM.08 (PART 2).
   B) CALL AN ADDITIONAL PRECONSTRUCTION MEETING, AND
   C) FURNISH THE REPLACEMENT STRUCTURAL OBSERVER WITH A COPY OF ALL PREVIOUS OBSERVATION REPORTS.

   THE REPLACEMENT STRUCTURAL OBSERVER SHALL APPROVE THE CORRECTION OF THE ORIGINAL OBSERVED DEFICIENCIES UNLESS OTHERWISE APPROVED BY PLAN CHECK SUPERVISION. THE POLICY OF THE DEPARTMENT SHALL BE TO CORRECT ANY PROPERLY NOTED DEFICIENCIES WITHOUT CONSIDERATION OF THEIR SOURCE.
10. THE ENGINEER OR ARCHITECT OF RECORD SHALL DEVELOP ALL CHANGES RELATING TO THE STRUCTURAL SYSTEM. THE BUILDING DEPARTMENT SHALL REVIEW AND APPROVE ALL CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS.

STRUCTURAL OBSERVATION/ SIGNIFICANT CONSTRUCTION STAGES
(ONLY CHECKED ITEMS ARE REQUIRED)

FIRM OR INDIVIDUAL TO BE RESPONSIBLE FOR THE " STRUCTURAL OBSERVATION "
NAME: MANAN BHALJA, S.E. ☐ LICENSED ARCHITECT ☒ REGISTERED ENGINEER
PHONE: (213) 485-5363 CALIFORNIA REGISTRATION NUMBER: S-6573

CONSTRUCTION STAGE	CONSTRUCTION TYPE	ELEMENTS/ CONNECTIONS TO BE OBSERVED
FOUNDATION	☒ FOOTING UNDER WALL ☐ SLAB ON GRADE ☐ GRADE BEAMS ☒ STEPPING/ RETAINING FOUNDATION, HILLSIDE SPECIAL ANCHORS ☐ OTHERS:	FOOTING: FOOTING LOCATION, LENGTH, WIDTH &THICKNESS, REBAR SIZE & SPACING RAMP SLAB: THICKNESS, REBAR SIZE & SPACING
WALL	☒ CONCRETE ☐ MASONRY ☐ WOOD ☐ OTHERS:	CONCRETE WALL: THICKNESS, REBAR SIZE & PLACEMENT
ROOF FRAMING	☐ STEEL MOMENT FRAME ☐ STEEL BRACED FRAME ☐ CONCRETE MOMENT FRAME ☐ MASONRY MOMENT FRAME ☐ STEEL TRUSS CONNECTION ☐ OTHERS:	
DIAPHRAGM	☐ CONCRETE ☐ STEEL DECK ☐ WOOD ☐ OTHERS:	
OTHERS	POST-INSTALLED THRU BOLTS AT NEW WALL OPENING	ANCHOR BOLT: SIZE AND SPACING

DECLARATION BY OWNER OR OWNER'S REPRESENTATIVE

I, ☐ THE OWNER OF THE PROJECT ☐ THE OWNER'S REPRESENTATIVE, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS HIRED BY ME TO BE THE STRUCTURAL OBSERVER.

SIGNATURE DATE

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (REQUIRED IF THE STRUCTURAL OBSERVER IS DIFFERENT FROM THE ARCHITECT OR ENGINEER OF RECORD)

I, THE ARCHITECT OR ENGINEER OF RECORD FOR THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS DESIGNATED BY ME TO BE RESPONSIBLE FOR THE " STRUCTURAL OBSERVATION ".

SIGNATURE LICENSE NO. DATE

STRUCTURAL OBSERVATION PROGRAM
AND DESIGNATION OF THE
STRUCTURAL OBSERVER

PROJECT ADDRESS: 10654 IRMA AVE, TUJUNGA, CA. 91042 PERMIT APPL NO:
DESCRIPTION OF WORK: VERDUGO HILL POOL
OWNER: CITY OF L.A. ARCHITECT: ROBERT LOMELIN ENGINEER: MANAN BHALJA, S.E.

STRUCTURAL OBSERVATION
(ONLY CHECKED ITEMS ARE REQUIRED)

FIRM OR INDIVIDUAL TO BE RESPONSIBLE FOR THE STRUCTURAL OBSERVATION:
NAME: MANAN BHALJA, S.E. PHONE: (213) 485-5363 CALIF REGISTRATION: S-6573

FOUNDATION	WALL	FRAME	DIAPHRAGM
☒ FOOTINGS	☒ CONCRETE	☐ STEEL MOMENT FRAME	☐ CONCRETE
☒ SLAB ON GRADE	☐ MASONRY	☐ STEEL BRACED FRAME	☐ STEEL DECK
☐ GRADE BEAMS	☐ WOOD	☐ CONCRETE MOMENT FRAME	☐ WOOD
☒ STEPP'G / RETAIN'G FOUNDATION HILLSIDE SPECIAL ANCHORS	☒ OTHERS: POST INSTALLED THRU ANCHORS	☐ MASONRY WALL FRAME	☐ OTHERS:
☐ OTHERS:		☐ OTHERS:	

DECLARATION BY OWNER

I, THE OWNER OF THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS HIRED BY ME TO BE THE STRUCTURAL OBSERVER.

SIGNATURE DATE

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (REQUIRED IF THE STRUCTURAL OBSERVER IS DIFFERENT FROM THE ARCHITECT OR ENGINEER OF RECORD)

I, THE ARCHITECT OR ENGINEER OF RECORD FOR THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS DESIGNATED BY ME TO BE RESPONSIBLE FOR THE STRUCTURAL OBSERVATION.

SIGNATURE LICENSE NO. DATE

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER DATE: 8/17/2022
DESIGN GROUP LIC. NO. S-6573 5/17/2022
ENGINEER: MANAN BHALJA, S.E. 5/17/2022
DESIGNED BY: MANAN BHALJA, S.E., QUYNH HO, P.E. 5/17/2022
DRAWN BY: EMIL YOUSSEF
CHECKED BY: MEL AGAGAS S.E., MOURAD AZIZ, P.E.
APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: GENERAL NOTES FOR STRUCTURAL OBSERVATION
PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. S002
SHEET 49 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

DESIGN DATA

LOAD DATA:

RAMP AND EXIT WAYS LIVE LOAD.....100 PSF

WIND DATA:

1. BASIC WIND SPEED .....110 MPH
2. WIND EXPOSURE .....B
3. RISK CATEGORY.....II

SEISMIC DESIGN DATA:

1. SEISMIC IMPORTANCE FACTOR 1.0
2. OCCUPANCY CATEGORY.....II
3. MAPPED SPECTRAL RESPONSE ACCELERATION ..... S_S =2.675, S_1 = 0.963
4. SITE CLASS.....D
5. SPECTRAL RESPONSE COEFICIENTS..... S_{DS} = 1.784, S_{D1} = 0.963
6. SEISMIC DESIGN CATEGORY.....E
7. LATERAL FORCE RESISTING SYSTEM..... EXISTING REINFORCED BRICK SHEAR WALL

DESIGN LOAD BEARING VALUES OF SOILS:

1. ALLOWABLE SOIL BEARING ..... 2500 PSF (DL+LL) ADDITIONAL ONE-THIRD INCREASE IS PERMITTED FOR WIND OR SEISMIC EFFECTS.
2. LATERAL RESISTANCE.....PROVIDED BY FRICTION AND PASSIVE PRESSURE
3. ALLOWABLE COEFFICIENT OF FRICTION 0.35
4. ALLOWABLE PASSIVE SOIL PRESSURE .....250 PSF/FT OF DEPTH, A ONE-THIRD INCREASE IS PERMITTED FOR WIND OR SEISMIC EFFECTS.
5. CANTILEVER RETAINING WALL DESIGN EQUIVALENT FLUID PRESSURE:
   ACTIVE PRESSURE WITH LEVEL GRADE .....35 PSF/FT OF DEPTH
   SEISMIC .....30 PSF/FT OF DEPTH
6. RESTRAINED RETAINING WALL DESIGN EQUIVALENT FLUID PRESSURE:
   AT REST PRESSURE WITH LEVEL GRADE .....55 PSF/FT OF DEPTH
   SEISMIC ..... 11 PSFT/ FT OF DEPTH

DEPUTY INSPECTION - CITY OF LOS ANGELES

1. THIS SECTION APPLIES TO STRUCTURAL PORTION OF THE WORK REQUIRING SPECIAL INSPECTION IN ACCORDANCE WITH LABC SECTION 1704 & 1707.
2. CONTINUOUS INSPECTION REFERS TO ON-SITE INSPECTION ON A CONTINUOUS BASIS OBSERVING ALL WORK REQUIRING SPECIAL INSPECTION.
3. PERIODIC INSPECTION REFERS TO INTERMITTENT INSPECTION ON A PERIODIC BASIS. SATISFYING THE REQUIREMENTS OF CONTINUOUS INSPECTION AND PERFORMED AS OUTLINED ON THE PROJECT CONSTRUCTION DOCUMENTS, AND APPROVED BY THE BUILDING OFFICIAL.
4. SPECIAL INSPECTION IS NOT REQUIRED WHEN THE WORK IS DONE ON THE PREMISES OF A CITY OF LOS ANGELES APPROVED FABRICATION SHOP APPROVED TO PERFORM THE WORK.
5. SPECIAL INSPECTION SHALL BE PERFORMED BY A DEPUTY INSPECTOR REGISTERED IN THE CITY OF LOS ANGELES FOR THE PORTIONS OF THE WORK REQUIRING INSPECTION. THE DEPUTY INSPECTOR SHALL BE EMPLOYED BY THE OWNER, AND SHALL BE APPROVED BY AND BE RESPONSIBLE TO THE ENGINEER IN CHARGE OF THE STRUCTURAL DESIGN FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
6. THE EMPLOYMENT AND DUTIES OF THE DEPUTY INSPECTOR SHALL BE IN CONFORMANCE WITH THE LABC AND COLA INFORMATION BULLETIN P/BC 2014-34.
7. THE SPECIAL INSPECTOR SHALL FURNISH DEPUTY INSPECTION REPORTS (LADBS IN FORM 07) TO THE DEPARTMENT OF BUILDING AND SAFETY, THE CONTRACTOR, THE OWNER'S REPRESENTATIVE, AND THE ENGINEER OF RECORD. REPORTS SHALL BE FILLED OUT AT THE TIME OF INSPECTION AND SUBMITTED TO LADBS DAILY. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN IF UNCORRECTED, TO THE OWNER'S REPRESENTATIVE, THE ENGINEER OF RECORD, AND THE BUILDING OFFICIAL.
8. AT THE TIME OF COMPLETION OF THE PROJECT, THE STRUCTURAL OBSERVER OF RECORD SHALL COMPLETE A CERTIFICATE OF COMPLIANCE INDICATING THAT THE DEPUTY INSPECTORS WERE RESPONSIBLE TO THEM.
9. AT THE COMPLETION OF THE STRUCTURAL WORK, THE SPECIAL INSPECTORS SHALL SUBMIT A FINAL SIGNED REPORT STATING THAT ALL WORK WAS PERFORMED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE LABC.
10. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED FOR ALL CONCRETE DESIGNED WITH f'c GREATER THAN 2500 PSI.
11. CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/COMPONENT LISTED IN "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBLITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER SEC 1706.1.
12. SEE TABLE ON SAME PAGE FOR ITEMS REQUIRING SPECIAL INSPECTION.

WORK REQUIRING SPECIAL INSPECTION AND STRUCTURAL OBSERVATION:		SPECIAL * INSPECTION	
		CONT.	PERIODIC
CONCRETE	A. CONCRETE PLACEMENT. 1. FOUNDATION / FOOTINGS. 2. WALL 3. ALL OTHER STRUCTURAL CONCRETE.	✓	
	B. MOLDING OF COMPRESSION TEST SAMPLES.	✓	
	C. PLACEMENT OF HIGH STRENGTH NON SHRINK GROUT AND TAKING SAMPLES.	✓	
	D. PLACEMENT OF REINFORCING PRIOR TO CLOSING THE FORM.		✓
REINFORCING STEEL	A. PLACEMENT OF REINFORCING BARS.		✓
	B. SAMPLING FOR TESTING.		✓
	C. MILL REPORT VERIFICATION AND MATERIAL IDENTIFICATION.	✓	
WELDING	A. STRUCTURAL FIELD WELDING - OTHER	✓	
BOLTING ANCHORS	A. POST- INSTALL THRU ANCHORS B. GROUTING C. SIZE & SPACING	✓	

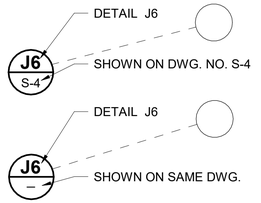
* FOR QUALIFICATION OF SPECIAL INSPECTOR, REFERENCE SPECIFICATIONS.

ABBREVIATIONS

AB	ANCHOR BOLTS
ADDL	ADDITIONAL
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAILING
BP	BASE PLATE
C	CHANNEL
CJ	CEILING JOIST
CJP	COMPLETE JOINT PENETRATION
COLA	CITY OF LOS ANGELES
CONT	CONTINUOUS
CTR	CENTER
DEMO	DEMOLISH / DEMOLITION
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DIST	DISTANCE
EMBED	EMBEDMENT
EN	EDGE NAILING
EOR	ENGINEER OF RECORD
EQ	EQUAL
EW	EACH WAY
EXIST.	EXISTING
FF	FINISH FLOOR
FS	FAR SIDE
FT	FEET OR FOOT
GALV.	GALVANIZE
HS	HEADED STUD
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
IN	INCH
K	KIPS
LADBS	LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY
LARR	LOS ANGELES RESEARCH REPORT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MC	MISCELLANEOUS CHANNEL
MIN	MINIMUM
MB	MACHINE BOLTS

ABBREVIATIONS: (CONT)

N	NORTH
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
PAF	POUDER ACTUATED FASTENERS
PCF	POUNDS PER CUBIC FOOT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PT	PRESSURE TREADED
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QTY	QUANTITY
RECT	RECTANGULAR
REQD	REQUIRED
REV	REVISION
RJ	ROOF JOIST
REF	REFERENCE
SE	STRUCTURAL ENGINEER
SHT	SHEET
SIM	SIMILAR
SMS	SHEET METAL SCREWS
SOG	SLAB ON GRADE
SQ	SQUARE
STL	STEEL
SYMM	SYMMETRICAL
t	THICKNESS
T&B	TOP AND BOTTOM
TOF	TOP OF FOUNDATION
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W/	WITH
W/0	WITHOUT
WP	WORKING POINT
WT	WEIGHT
YD	YARD



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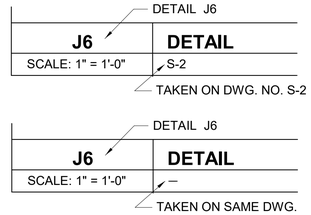
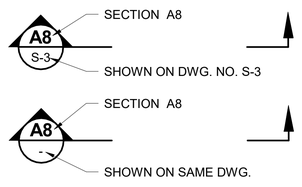
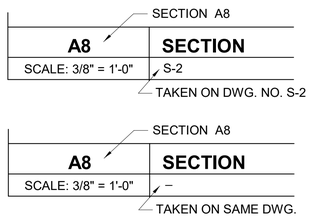


DETAIL TITLE



SECTION CALLOUT



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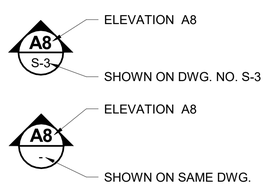


ELEVATION CALLOUT

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. 'SP CITY ENGINEER

	DESIGN GROUP*	LIC. NO.: S-6573	DATE:
ENGINEER:	MANAN BHALJA, S.E.		8/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.		5/17/2022
DRAWN BY:	EMIL YOUSSEF		5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.		5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: DESIGN DATA, DEPUTY INSPECTION AND ABBREVIATIONS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S003

SHEET 50 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

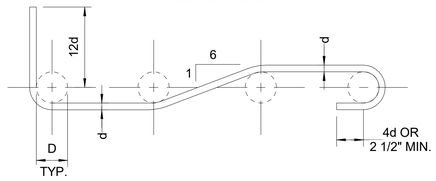
REVISION DATES: (DESIGN STAGE ONLY)

TTLB TEMPLATE REVISION DATE: 4/2016

NOTES:
1. ALL BENDS SHALL BE MADE COLD.
2. #14 & #18 BARS SHALL BE BEND-TESTED AT LAB AND APPROVED PRIOR TO BENDING.
3. FOR SIZE AND SPACING OF ALL TIES AND STIRRUPS, REFER TO SCHEDULE AND/OR DETAILS, TYP.

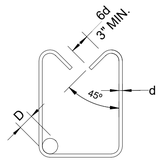
D = 4 db FOR #3 - #5
D = 6 db FOR #6 - #8
D = 8 db FOR #9 - #11

d = BAR DIAMETER
D = BENT DIAMETER

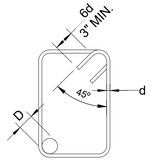


BAR DIAMETER DISTANCES IN INCHES									
BAR NO.	#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
3db=	1 1/8	1 1/2	1 7/8	2 1/4	2 5/8	3	3 3/8	3 3/4	4 1/4
4db=	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2
6db=	2 1/4	3	3 3/4	4 1/2	5 1/4	6	6 3/4	7 5/8	8 1/2
8db=	3	4	5	6	7	8	9	10 1/8	11 1/4
12db=	4 1/2	6	7 1/2	9	10 1/2	12	13 1/2	15 1/4	16 7/8

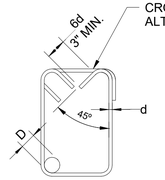
HOOPS AND TIE BEND DETAIL TABLE									
BAR NO.	#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
90º TEXT	6	6	8	10	12	12	14	16	18
135º TEXT	4	4	4	6	6	6	8	8	10
180º TEXT	4	4	4	4	4	4	6	6	6



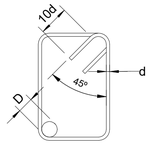
STD. BEAM STIRRUP



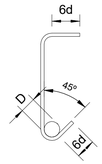
BEAM HOOP STIRRUP BENDS (WHERE OCCURS)



BEAM HOOP - ALTERNATE (WHERE OCCURS)



COLUMN TIE



CROSS TIE

F1 TYP STIRRUP, HOOP AND TIE BENDS DETAILS

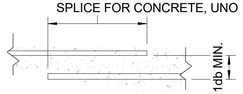
SCALE: 1" = 1'-0"

LIGHT WEIGHT CONCRETE LAP SPLICE LENGTH (in.)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
CLASS A	2000	40	54	67	80	117	134
	3000	33	44	55	66	96	110
	3250	32	42	53	63	92	105
	4000	28	38	47	57	83	95
	5000	25	34	42	51	74	85
	6000	23	31	39	46	68	77
CLASS B	2000	52	70	87	105	153	174
	3000	43	57	71	85	125	142
	3250	41	55	68	82	120	137
	4000	37	49	62	74	108	123
	5000	33	44	55	66	97	110
	6000	30	40	50	60	88	101

NORMAL WEIGHT CONCRETE LAP SPLICE LENGTH (in.)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
CLASS A	2000	30	40	50	60	88	101
	3000	25	33	41	49	72	82
	3250	24	32	39	47	69	79
	4000	21	28	36	43	62	71
	4500	20	27	34	40	59	67
	5000	19	25	32	38	56	64
	6000	17	23	29	35	51	58
CLASS B	2000	39	52	65	78	114	131
	3000	32	43	53	64	93	107
	3250	31	41	51	62	90	103
	4000	28	37	46	55	81	92
	4500	26	35	44	52	76	87
	5000	25	33	41	50	72	83
	6000	23	30	38	45	66	76

NOTES:
1. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.3 FOR TOP BARS SPLICE. TOP BAR REFERS TO HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE PLACED BELOW REINFORCING BAR DURING POUR.
2. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.25 FOR SPLICES OF CHORD BARS, VERTICAL BOUNDARY REINFORCING SPLICES, AND DRAG BAR SPLICE.
3. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED IN TENSION, SPLICE LENGTH SHALL BE THE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR AND SPLICE LENGTH OF THE SMALLER BAR.

USE CLASS B
SPLICE FOR CONCRETE, UNO



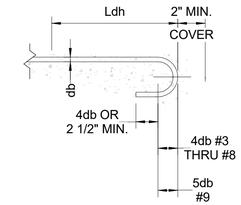
A1 TYPICAL REINFORCEMENT BAR LAP SPLICE LENGTH CONCRETE

NOT TO SCALE

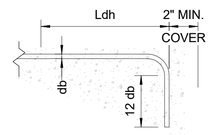
LIGHT WEIGHT CONCRETE MIN LENGTH FOR Ldh STANDARD HOOKS								
BAR NO.		#3	#4	#5	#6	#7	#8	#9
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8
GRADE (ksi)		60	60	60	60	60	60	60
GENERAL USE	2500	8	11	14	17	20	22	25
	3000	8	10	13	15	18	20	23
	3250	7	10	12	15	17	20	22
	4000	7	9	11	13	15	18	20
SPECIAL CONFINMENT HOOK IS WITHIN TIES OR STIRRUPS <3db	2500	7	9	11	13	15	18	20
	3000	6	8	10	12	14	16	18
	3250	6	8	10	12	14	16	18
	4000	6	7	9	11	12	14	16

NORMAL WEIGHT CONCRETE MIN LENGTH FOR Ldh STANDARD HOOKS								
BAR NO.		#3	#4	#5	#6	#7	#8	#9
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8
GRADE (ksi)		60	60	60	60	60	60	60
GENERAL USE	2500	6	8	11	13	15	17	19
	3000	6	8	10	12	13	15	17
	3250	6	7	9	11	13	15	17
	4000	6	7	8	10	12	13	15
SPECIAL CONFINMENT HOOK IS WITHIN TIES OR STIRRUPS <3db	2500	6	7	8	10	12	13	15
	3000	6	6	8	9	11	12	14
	3250	6	6	7	9	10	12	13
	4000	6	6	7	8	9	11	12

NOTES:
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE TO THE OPPOSITE FACE WITH A MINIMUM 2" END COVER AND EMBEDMENT NOT LESS THAN THE SCHEDULE.
2. SIDE COVER SHALL BE 2 1/2" MINIMUM.
3. L dh SHALL BE INCREASED 33% (L dh X 1.33) FOR DOWELS EMBEDED IN LIGHT WEIGHT CONCRETE.



STANDARD 180° HOOK



STANDARD 90° HOOK

F9 MIN EMBEDMENT LENGTH Ldh FOR STANDARD HOOKS

NOT TO SCALE

LIGHT WEIGHT CONCRETE DEVELOPMENT LENGTH (in)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
f'c (psi)	2000	40	54	67	80	117	134
	3000	33	44	55	66	96	110
	3250	32	42	53	63	92	105
	4000	28	38	47	57	83	95
	5000	25	34	42	51	74	85
	6000	23	31	39	46	68	77

NORMAL WEIGHT CONCRETE DEVELOPMENT LENGTH (in)							
BAR NO.		#3	#4	#5	#6	#7	#8
BAR DIA. (in)		3/8	1/2	5/8	3/4	7/8	1
GRADE (ksi)		60	60	60	60	60	60
f'c (psi)	2000	30	40	50	60	88	101
	3000	25	33	41	49	72	82
	3250	24	32	39	47	69	79
	4000	21	28	36	43	62	71
	4500	20	27	34	40	59	67
	5000	19	25	32	38	56	64
	6000	17	23	29	35	51	58

CONCRETE DEVELOPMENT LENGTH NOTES:
1. ALL TABULATED VALUES SHALL BE MULTIPLIED BY 1.3 FOR TOP BAR CONDITION. 'TOP BAR' REFERS TO HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE PLACED BELOW REINFORCING BAR.
2. ALL TABULATED VALUES ARE FOR UNCOATED BARS.
3. WHERE REQUIRED DEVELOPMENT CANNOT BE ACHIEVED WITH STRAIGHT BARS, PROVIDE 180 OR 90 DEGREE HOOKS WITH ADEQUATE HOOKED BAR EMBEDMENT. REFER TO STANDARD HOOK SCHEDULE.



MASONRY DEVELOPMENT LENGTH										
BAR NO.		#3	#4	#5	#6	#7	#8	#9	#10	#11
BAR DIA. (IN)		3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
GRADE (ksi)		60	60	60	60	60	60	60	60	60
f'm (psi)	1000	14	26	40	74	100	148	190	240	296
	1500	12	22	32	60	82	122	154	196	242
	2000	10	18	28	52	70	106	134	170	210
	2500	10	16	26	46	64	94	120	152	188
	3000	10	16	24	42	58	86	110	138	170

A9 TYPICAL REBAR DEVELOPMENT LENGTH

NOT TO SCALE

BID SET
Date: May 17, 2022

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TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALA ★ S 6573 ★ CIVIL STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER DATE: 8/17/2022

		LIC. NO.
ENGINEER:	MANAN BHALJA, S.E.	S-6573
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TYPICAL DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S004

SHEET 51 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

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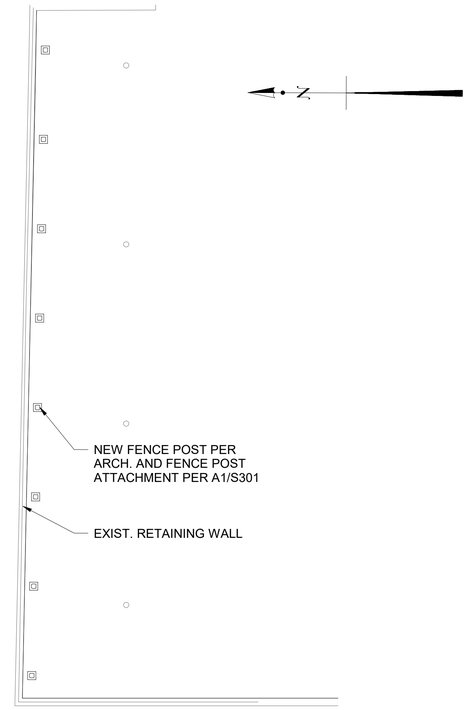
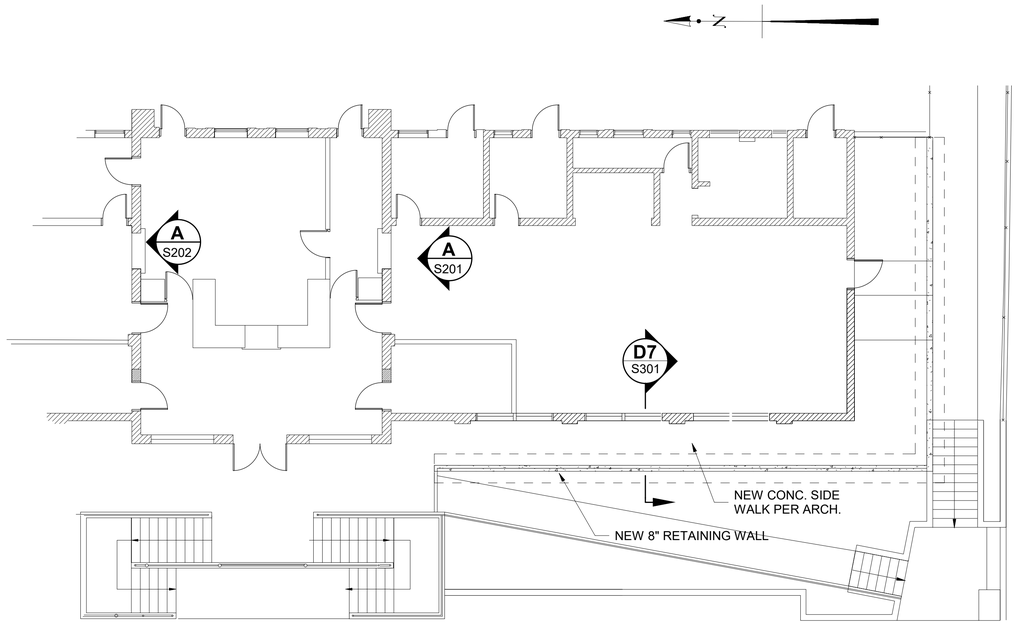


PARTIAL PLAN - SITE FENCE

1/8" = 1'-0"



PARTIAL PLAN - BUILDING FIRST FLOOR

1/8" = 1'-0"

PLAN AND FOUNDATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS & FENCE POSTS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. TOP OF FOOTING SHALL BE AT LEAST (-1'-0") MIN. BELOW FINISHED GRADE ELEVATION. REFER TO THE GRADING PLAN FOR FINISHED GRADE ELEVATION.
4. EXCAVATION SUPPORTS AND TEMPORARY SHORING OF EXISTING BUILDING ELEMENTS, ADJACENT STRUCTURES AND SOIL DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIR EXISTING SITEWORK DAMAGED BY EXCAVATIONS AS REQUIRED.
5. LOCATIONS OF STEPPED FOOTING SHOWN ON PLAN ARE APPROXIMATE. COORDINATE FINAL LOCATION OF STEPPED FOOTING WITH FINISHED GRADE PER GRADING PLAN AND MAX. WALL HEIGHT PER DETAIL D12/S301.
6. FOR RAILING INFORMATION, SEE LANDSCAPE DRAWINGS

LEGEND

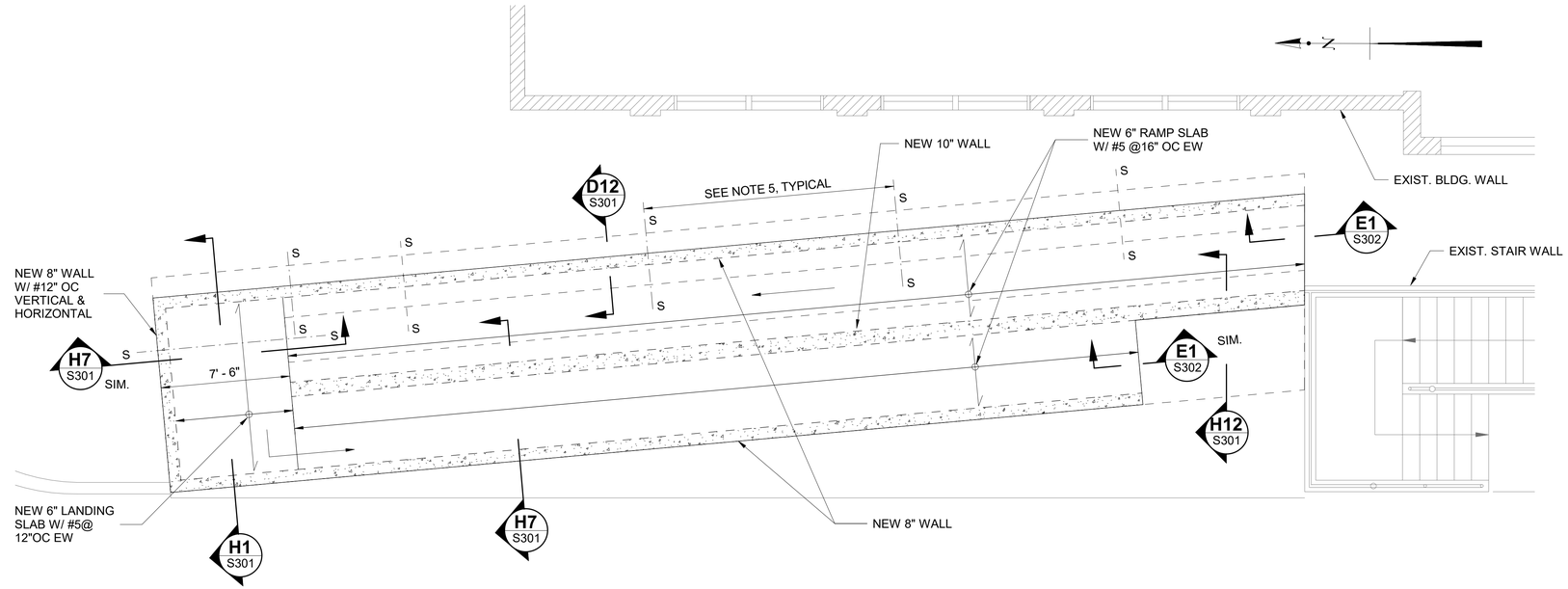
NEW CONCRETE WALL

WALL FOUNDATION BELOW

INDICATES SPAN OF SLAB

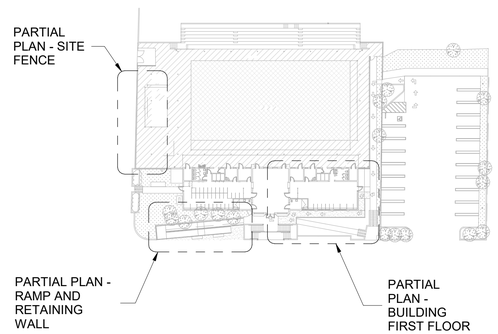
INDICATES EXTENT OF SLAB AND SLAB REINF. PLACEMENT

S ---·---·--- S STEPPED FOOTING PER D1/S301



PARTIAL PLAN - RAMP AND RETAINING WALL

1/4" = 1'-0"



KEY PLAN

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING OFFICIAL RECORD

BUREAU OF ENGINEERING

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CITY OF LOS ANGELES

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REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

		DATE:
ENGINEER:	MANAN BHALJA, S.E.	LIC. NO. S-6573
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PARTIAL PLANS - RETAINING WALL, BUILDING FIRST FLOOR AND SITE FENCE

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

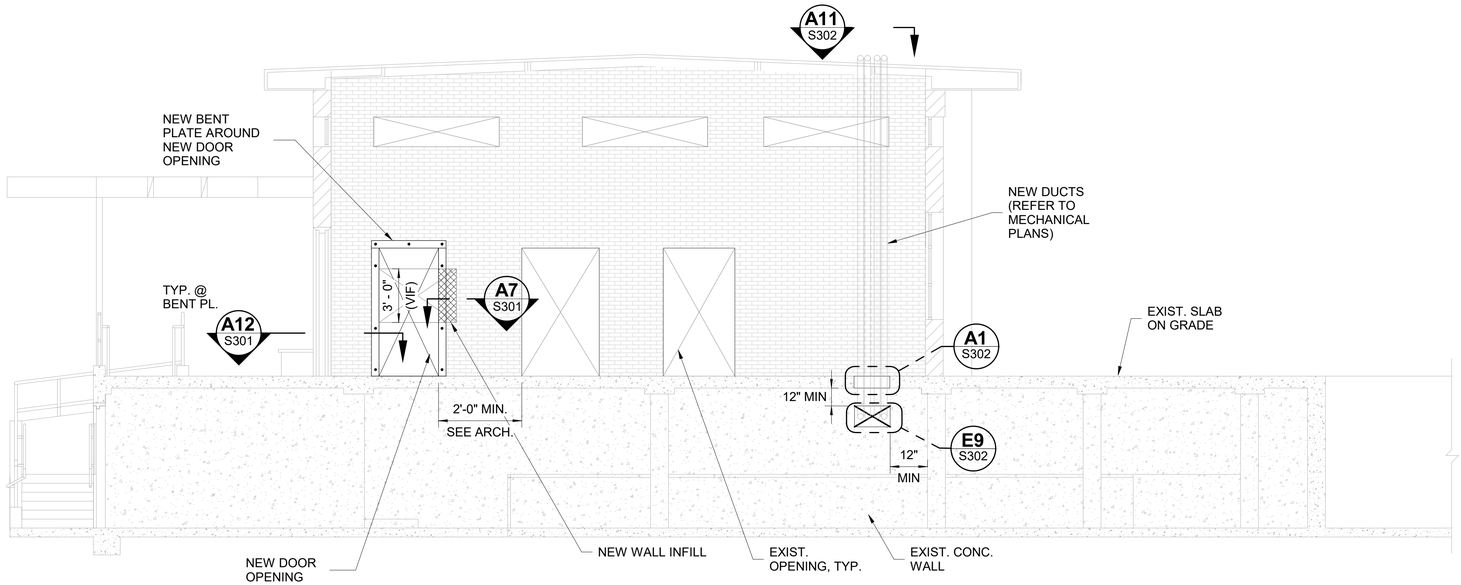
DRAWING NO. S101

SHEET 52 OF SHEETS 96

PLOTTED:8/10/2022 11:02:33 AM

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES: (DESIGN STAGE ONLY)



A INTERIOR WALL ELEVATION LOOKING SOUTH

1/4" = 1'-0"

ELEVATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL NOTIFY CITY ENGINEER PRIOR TO CONSTRUCTION IF THERE IS DETERIORATION OR VOID IN EXISTING BRICK WALL.

LEGEND

EXIST. 10-1/2" BRICK WALL

NEW WALL INFILL

BUREAU OF ENGINEERING
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MANAN J. BHALJA
S 6573
STRUCTURAL
STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS

CITY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E., 'SP CITY ENGINEER — DATE: 8/17/2022

DESIGN GROUP — LIC. NO. S-6573

ENGINEER: MANAN BHALJA, S.E. — LIC. NO. S-6573 — 5/17/2022

DESIGNED BY: MANAN BHALJA, S.E., QUYNH HO, P.E. — 5/17/2022

DRAWN BY: EMIL YOUSSEF — 5/17/2022

CHECKED BY: MEL AGAGAS S.E., MOURAD AZIZ, P.E. — 5/17/2022

APPROVED BY: SHAILESH "SUNNY" PATEL, S.E.

VERTICAL CONTROL:

HORIZONTAL CONTROL:

SHEET TITLE: ELEVATION

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

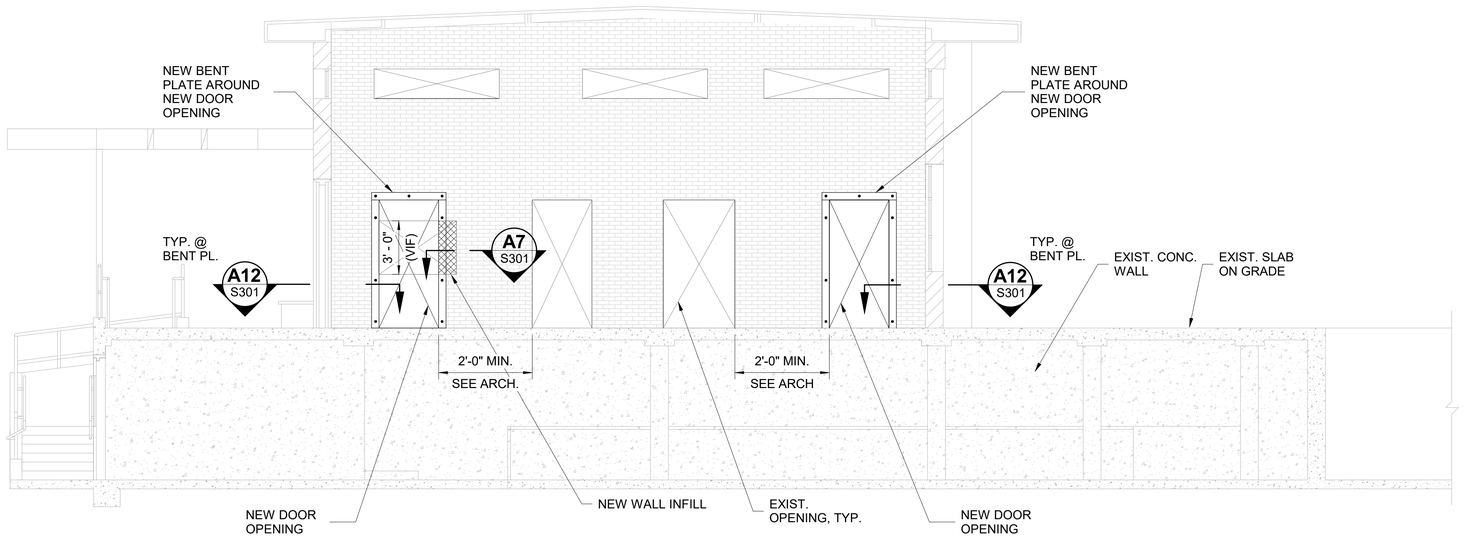
WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S201

SHEET 53 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM



A INTERIOR WALL ELEVATION LOOKING NORTH

1/4" = 1'-0"

ELEVATION NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATION OF NEW OPENINGS.
2. ALL EXISTING STRUCTURAL INFORMATION HAS BEEN TAKEN FROM FIELD OBSERVATION. NOTIFY CITY ENGINEER OF ANY DISCREPANCIES.
3. CONTRACTOR SHALL NOTIFY CITY ENGINEER PRIOR TO CONSTRUCTION IF THERE IS DETERIORATION OR VOID IN EXISTING BRICK WALL.

LEGEND

EXIST. 10-1/2" BRICK WALL

NEW WALL INFILL

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES: (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER ★ MANAN J. BHALJA ★ S 6573 ★ CIVIL ★ STRUCTURAL ★ STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS

CITY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER DATE: 8/17/2022

DESIGN GROUP		LIC. NO. S-6573
ENGINEER:	MANAN BHALJA, S.E.	5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ELEVATION

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S202

SHEET 54 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM

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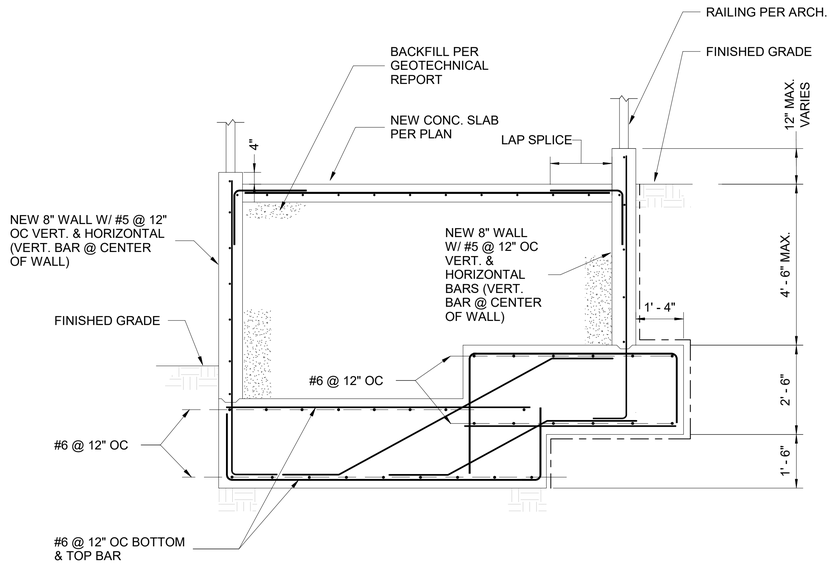
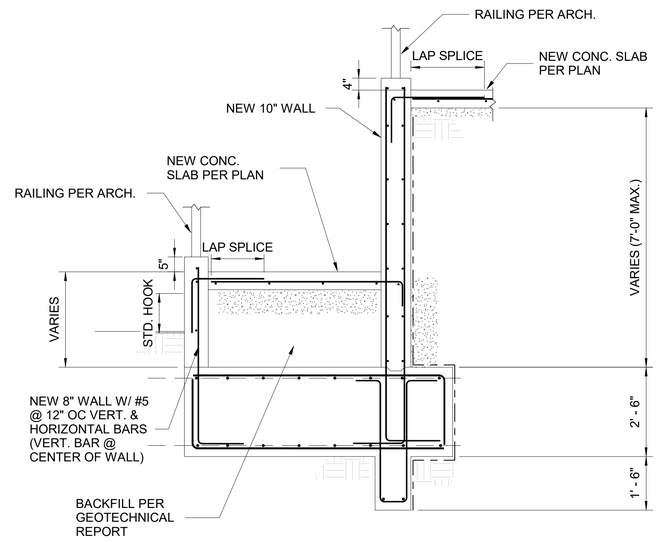


NOTE:
FOR INFORMATION NOT SHOWN, SEE DETAIL H12/S301 AND D1/S301

H1 RAMP RETAINING WALL AT LANDING DETAIL

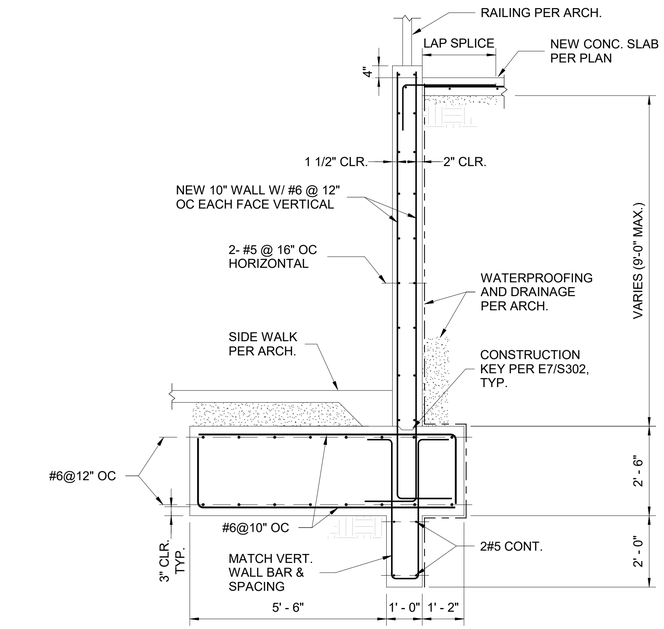
NOT TO SCALE | 3/ S101



NOTE:
FOR INFORMATION NOT SHOWN, SEE DETAIL H12/S301

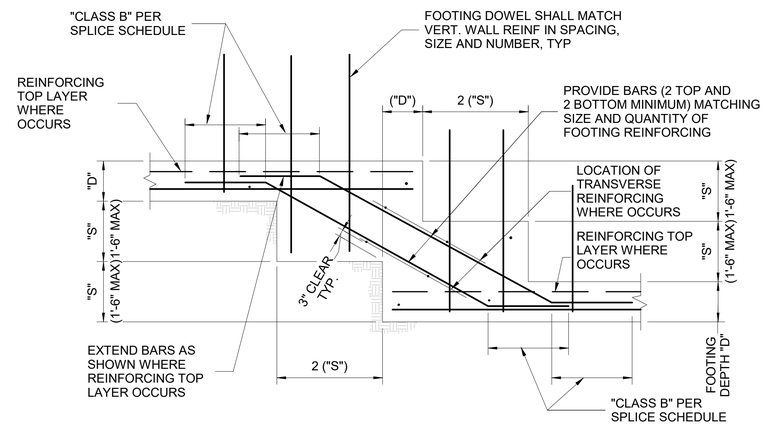
H7 RAMP RETAINING WALL DETAIL

NOT TO SCALE | 3/ S101



H12 RAMP RETAINING WALL DETAIL

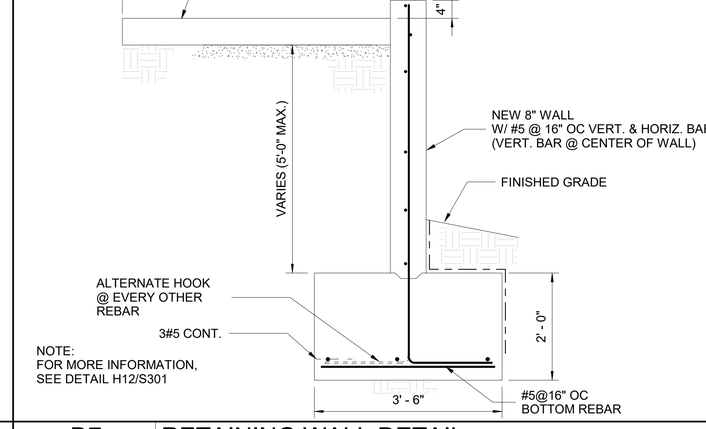
NOT TO SCALE | 3/ S101



STEEP SLOPE CONDITION

D1 STEP FOOTING DETAIL

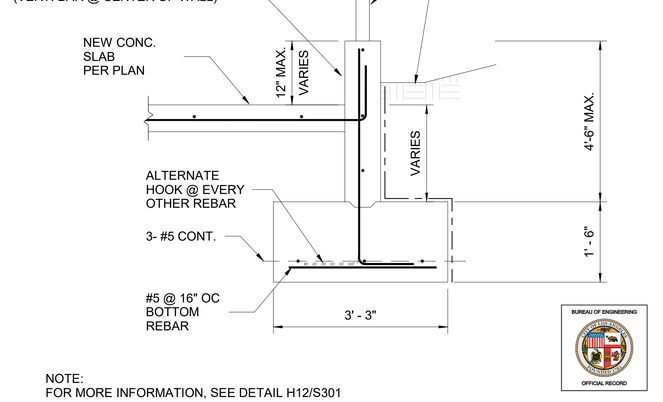
NOT TO SCALE



NOTE:
FOR MORE INFORMATION, SEE DETAIL H12/S301

D7 RETAINING WALL DETAIL

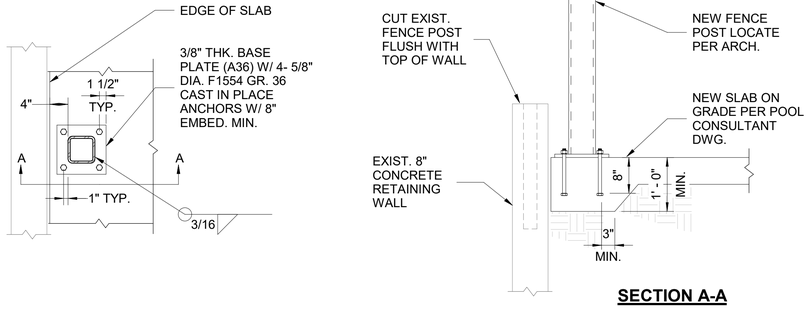
NOT TO SCALE | 2/ S101



NOTE:
FOR MORE INFORMATION, SEE DETAIL H12/S301

D12 RETAINING WALL DETAIL

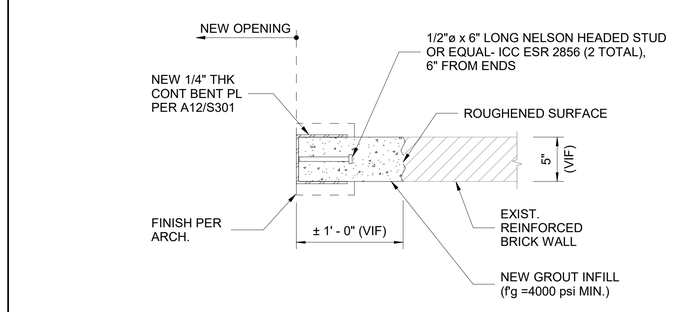
NOT TO SCALE | 3/ S101



SECTION A-A

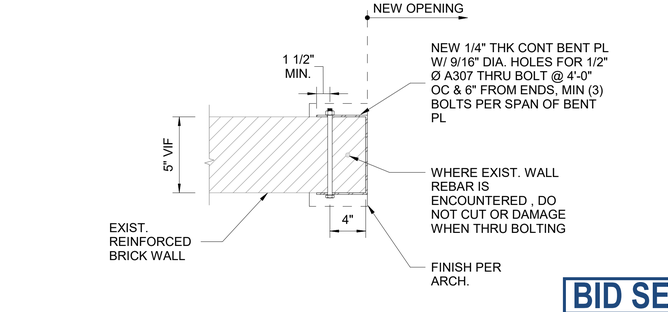
A1 FENCE POST ATTACHMENT

NOT TO SCALE



A7 BENT PLATE AT INFILL WALL

NOT TO SCALE | A/ S201



BID SET
Date: May 17, 2022

A12 BENT PLATE AT EXIST. BRICK WALL

NOT TO SCALE | A/ S201

BUREAU OF ENGINEERING
OFFICIAL RECORD

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
STRUCTURAL
STATE OF CALIFORNIA

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

ENGINEER:	MANAN BHALJA, S.E.	LIC. NO.: S-6573	DATE: 8/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.		5/17/2022
DRAWN BY:	EMIL YOUSSEF		5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.		5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.		5/17/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FOUNDATION AND WALL DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

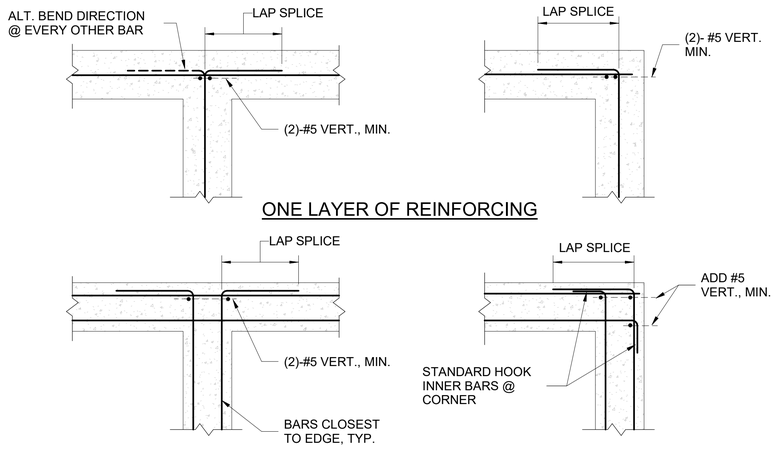
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. S301
SHEET 55 OF SHEETS 96

PLOTTED:8/10/2022 11:02:34 AM

TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

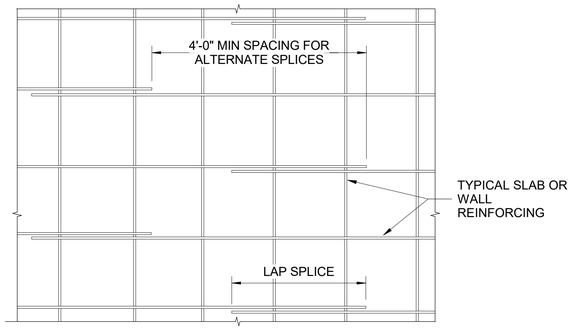


NOTES:

1. STEP GRADE BEAMS AND CONTINUOUS FOOTING AS REQUIRED TO MATCH LOWER B.O.C. ELEVATION.
2. 3" MIN COVER FOR REINFORCEMENT EXPOSED TO SOIL.

H1 REINFORCING AT WALL & FOOTING INTERSECTIONS

NOT TO SCALE



NOTE:

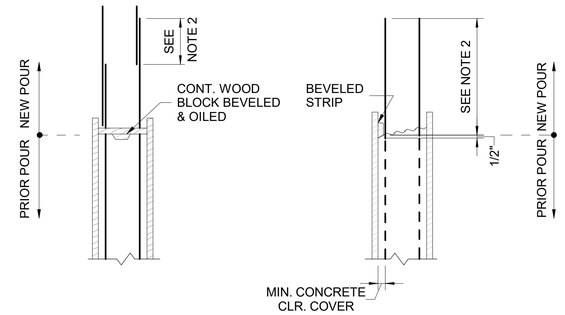
1. LAP SPLICE CLEAR SPACING OCCUR BOTH DIRECTIONS.
2. SPLICES IN HORIZONTAL REINFORCING SHALL BE STAGGERED. SPLICES IN TWO CURTAINS WHERE USED SHALL NOT OCCUR IN THE SAME LOCATION.
3. SEE TYPICAL CONCRETE WALL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL REQUIREMENT.

H7 TYP LAP SPLICE REINFORCING DETAIL

NOT TO SCALE

NOTES:

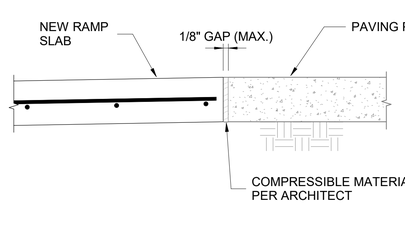
1. ALL JOINTS SHALL BE CLEANED IMMEDIATLEY PRIOR TO THE POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE & SPACING AS BEYOND THE JOINT. ALL JOINTS SHALL BE PREPARED TO EXPOSE AGGREGATE 1/4".
2. REBAR LAP SPLICE PER SCHEDULE OR PLAN/ ELEVATION. SEE PLAN/ ELEVATION FOR COUPLER LOCATIONS (WHERE OCCURS.)



VERTICAL JOINT HORIZONTAL JOINT

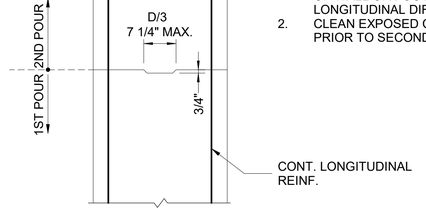
H12 CONCRETE WALL CONSTRUCTION JOINTS

NOT TO SCALE



E1 EDGE OF SLAB DETAIL

NOT TO SCALE 3/ S101

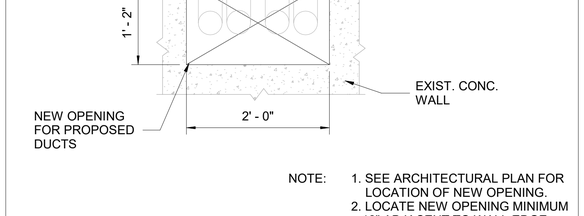


NOTES:

1. SECTIONS SHOWN ARE AT CENTER OF WALL OR FOOTING IN LONGITUDINAL DIRECTION.
2. CLEAN EXPOSED CONC. SURFACE PRIOR TO SECOND POUR.

E5 TYP. CONST. KEY DETAIL

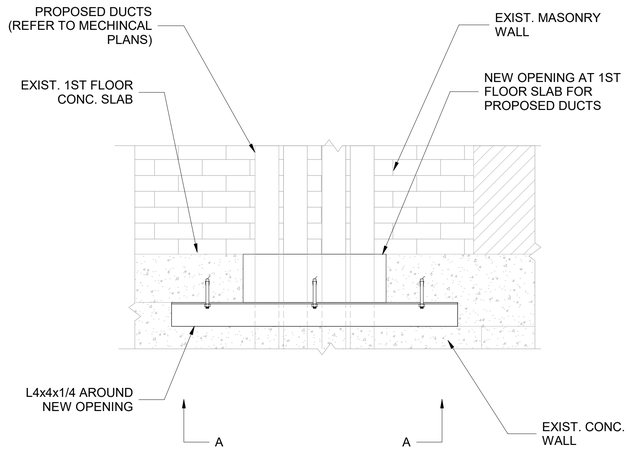
NOT TO SCALE

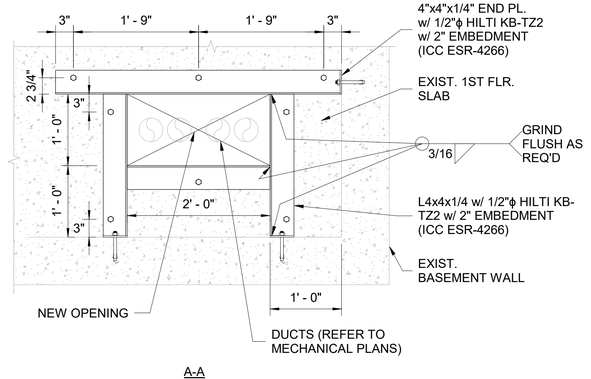


NOTE: 1. SEE ARCHITECTURAL PLAN FOR LOCATION OF NEW OPENING.
2. LOCATE NEW OPENING MINIMUM 12" ADJACENT TO WALL EDGE.

E9 NEW BASEMENT WALL OPENING

NOT TO SCALE A/ S201

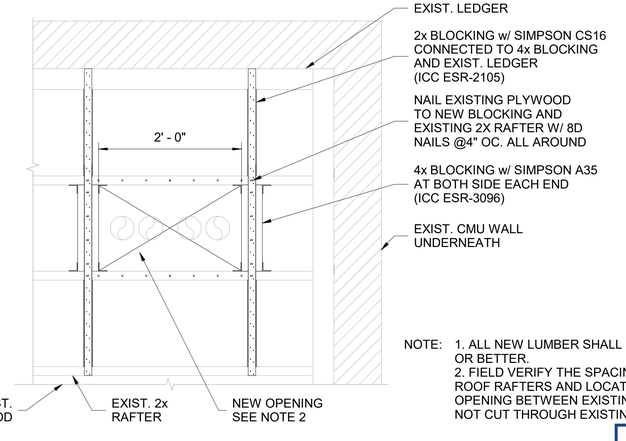




A-A

A1 WALL OPENING AT 1ST FLR SLAB

NOT TO SCALE A/ S201



NOTE: 1. ALL NEW LUMBER SHALL BE DOUG FIR # 1 OR BETTER.
2. FIELD VERIFY THE SPACING OF EXISTING ROOF RAFTERS AND LOCATE THE NEW OPENING BETWEEN EXISTING RAFTERS. DO NOT CUT THROUGH EXISTING RAFTERS.

BID SET
Date: May 17, 2022

A11 NEW OPENING AT ROOF

NOT TO SCALE A/ S201

BUREAU OF ENGINEERING
OFFICIAL RECORD

ENGINEERING
CITY OF LOS ANGELES

BUREAU OF ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
MANAN J. BHALJA
S 6573
CIVIL
STRUCTURAL
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. / SP CITY ENGINEER

		DATE:
ENGINEER:	MANAN BHALJA, S.E.	8/17/2022
LIC. NO.: S-6573		8/17/2022
DESIGN GROUP		5/17/2022
DESIGNED BY:	MANAN BHALJA, S.E., QUYNH HO, P.E.	5/17/2022
DRAWN BY:	EMIL YOUSSEF	5/17/2022
CHECKED BY:	MEL AGAGAS S.E., MOURAD AZIZ, P.E.	5/17/2022
APPROVED BY:	SHAILESH "SUNNY" PATEL, S.E.	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: CONCRETE DETAILS

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. S302

SHEET 56 OF SHEETS 96

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TTLB TEMPLATE REVISION DATE: 4/2016

REVISION DATES (DESIGN STAGE ONLY)

LEGEND			
SINGLE LINE	DOUBLE LINE	ABBREV	DESCRIPTION
R	R		DUCT RISE IN DIRECTION OF AIR FLOW
D	D		DUCT DROP IN DIRECTION OF AIR FLOW
			DUCT WITH SOUND LINING
			BRANCH TAKE OFF WITH 45° BOOT
		T.V.	TURNING VANES
			DUCT SECTION - SUPPLY
			DUCT SECTION - RETURN
			DUCT SECTION - EXHAUST
			RECTANGULAR TO ROUND TRANSITION
	D/L	D.L.	DOOR LOUVER
	U/C	U.C.	UNDERCUT DOOR
	T		ROOM THERMOSTAT
	3P		0-4 HR BY-PASS SWITCH
		OSA	OUTSIDE AIR
		S.A.	SUPPLY AIR
		R.A.	RETURN AIR
		E.A.	EXHAUST AIR
		MD	MOTORIZED DAMPER
		FD	AUTO. FIRE DAMPER
		VD	MANUAL VOLUME DAMPER
		CD	CEILING DIFFUSER
		SWR	SUPPLY WALL REGISTER
		RWR	RETURN WALL REGISTER
		ER	EXHAUST AIR REGISTER
		CR	CEILING RETURN
		C.S.F.D.	COMBINATION SMOKE/FIRE DAMPER
		B.D.	BAROMETRIC DAMPER
		F.C.	FLEXIBLE CONNECTION PIPE
	DS		DUCT SMOKE DETECTOR
	AS		AREA SMOKE DETECTOR (AT CEILING)
		G.V.	GATE VALVE
		C.V.	CHECK VALVE
		GL.V.	GLOBE VALVE
		B.F.V.	BUTTERFLY VALVE
		B.V.	BALL VALVE
		B.C.	BALANCING COCK
		STR.	STRAINER
		U.	UNION
		TH.	THERMOMETER
		AV.	AIR VENT VALVE
		P.G.	PRESSURE GUAGE
		P.C.	PET COCK
			SIGHT GLASS
			CALIBRATED BALANCING VALVE
CD			CONDENSATE DRAIN
HWS		H.W.S.	HOT WATER SUPPLY
HWR		H.W.R.	HOT WATER RETURN
		UTR	UP THRU ROOF
		POC	POINT OF CONNECTION
		POD	POINT OF DISCONNECT
			PIPING TO BE REMOVED
			EQUIP. TO BE REMOVED OR RELOCATED
		AP	ACCESS PANEL
			EXISTING CEILING DIFFUSER
			EXISTING RETURN REGISTER
		CD	CEILING DIFFUSER
		RR	CEILING RETURN REGISTER
		ER	CEILING EXHAUST REGISTER
		LSD	LINEAR SLOT DIFFUSER (SUPPLY)
		LSD	LINEAR SLOT DIFFUSER (RETURN)
		SAC	SUPPLY AIR CHAMBER
		RAC	RETURN AIR CHAMBER
	VAV	VAV	VARIABLE AIR VOLUME BOX
			AIR EXTRACTOR
			GRADUAL DUCT RISE/DROP, INDIRECTION OF FLOW
		TG	TRANSFER GRILLE
			TRIPLE DUTY VALVE
			NORMALLY CLOSED VALVE (ANY TYPE)
			VENTORY
			RELIEF VALVE
			3-WAY CONTROL VALVE
			2-WAY CONTROL VALVE
		PRV	PRESSURE REDUCING VALVE
CS		CS	CONDENSER WATER SUPPLY
CR		CR	CONDENSER WATER RETURN
CHWR		CHWR	CHILLED WATER RETURN

EXHAUST FAN SCHEDULE

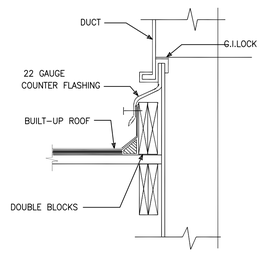
SYMBOL	LOCATION	SERVICE	MANUFACTURER	MODEL NO.	TYPE	CFM	FAN RPM	S.P. (IN.)	AMPS@60 HZ	WATTS	REMARKS
EF 1, EF 2, EF 3	ABOVE CEILING	GN RESTROOMS, STAFF RESTROOMS	GREENHECK	SP-B150	CEILING MOUNTED	152	1050	0.375	1.7	128	PROVIDE WITH BACKDRAFT DAMPER. PROVIDE DISCONNECT SWITCH WHICH INTERLOCK WITH LIGHT.

INFRARED RADIANT HEATER

SYMBOL	SERVICE	MANUFACTURER	MODEL NO.	LENGTH	WEIGHT (IBS)	GAS TYPE	INPUT(BTU/HR) HIGH FIRE	INPUT(BTU/HR) LOW FIRE	RECOMMENDED MOUNTING HEIGHT	ELECTRICAL DATA	REMARKS
IH 1, IH 2, IH 3, IH 4	MEN & WOMEN'S DRESSING ROOM	RE-VERBER-RAY	QTD2-60N	112"	140	NATURAL	60,000	40,000	8' TO 12'	120V/1 Ph/60 Hz	INSTALL ACCORDING TO MANUFACTURE RECOMMENDATION. VENTING MAY UTILIZE STANDARD B CAP AND VENT TERMINAL MUST EXTEND A MIN. 2' ABOVE THE ROOF. PROVIDE AND INSTALL THERMOSTAT FOR EACH DRESSING ROOM

SPLIT HEAT PUMP SCHEDULE

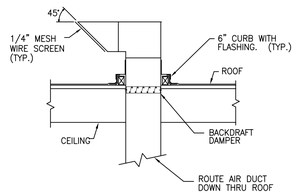
UNIT NO.	MAKE	MODEL	SERVICES	NOMINAL TON	SEER	EER	COOLING CAP BTU/HR	COOLING POWER INPUT(KW)	HEATING CAP BTU/HR	HEATING POWER INPUT(KW)	COMPRESSOR TYPE	COMPRESSOR LRA	COMPRESSOR RLA	REFRIDG. CONNECT SIZE LIQUID	REFRIDG. CONNECT SIZE VAPOR	MIN. CKT. AMPS	MAX. OVERCURRENT PROTECTION	NOMINAL V-PH-HZ	OPER. WT. LBS.	REMARKS
HP-1	MITSUBISHI	PUMY-P48NKMU1	FC-1 & FC-2	4	20.2	12.6	48,000	3.690	54,000	4.085	SCROLL HERMETIC COMPR.X1	–	43.6	3/8"	5/8"	31	44	208-1-60	269	PROVIDE 6" HIGH CONCRETE PAD. MOUNT UNIT ON NEOPRENE PAD & ANCHOR TO CONCRETE PAD WITH SPRING ISOLATOR. R-410 REFRIGERANT
FC-1	MITSUBISHI	PKFY-P24NKMU-E2	OFFICE	2		–	24,000	0.07	27,000	0.07	–	–	–	3/8"	5/8"	0.63	15	208-1-60	46	AUTOMATIC FAN SPEED CONTROL. WALL MOUNTED WIRED REMOTE CONTROLLER MODEL" MITSUBISHI PAR-U01MEDU-K"
FC-2	MITSUBISHI	PKFY-P24NKMU-E2	OFFICE	2		–	24,000	0.07	27,000	0.07	–	–	–	3/8"	5/8"	0.63	15	208-1-60	46	



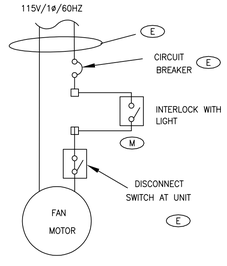
NOTES FOR THIS DETAIL:

1. CUT ROOFING MATERIALS AT CENTER IN ORDER TO LEAVE ENOUGH ROOFING MATERIAL TO RUN UP SIDE OF CURB. USE SIMILAR ROOFING MATERIAL TO FILL IN THE CORNERS. OVERLAP THE EXISTING ROOFING A MINIMUM OF 2 INCHES. SET THE CURB IN MASTIC. HOT MOP THE BOTTOM OF ALL THE ROOFING MATERIAL.
2. PROVIDE 2x PRESSURE-TREATED WOOD NAILER, MINIMUM 8" HIGH. TAPER TO PROVIDE LEVEL BASE FOR HOOD.
3. FRAMING WORK BELOW DECK PROVIDED UNDER SECTION

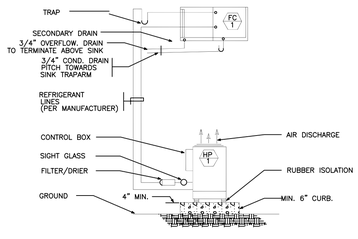
A1 / M100 DUCT-THRU-ROOF DETAIL
NOT TO SCALE



A2 / M100 DUCT TERMINATION DETAIL
NOT TO SCALE



A3 / M100 WIRING DIAGRAM FOR EF-1
NOT TO SCALE



A4 / M100 SPLIT HEAT PUMP INSTALATION
NOT TO SCALE

GENERAL NOTES:

1. ALL DUCTWORK, INSULATION, EQUIPMENT AND INSTALLATION SHALL CONFORM TO CALIFORNIA ADMINIS. CODE 24, U.M.C., CITY OF LOS ANGELES MECHANICAL CODE, AND/OR THE CALIFORNIA MECHANICAL CODE.
2. DUCTWORK SHALL BE GALVANIZED SHEET METAL OR APPROVED EQUAL.
3. MAINTENANCE LABEL SHALL BE AFFIXED TO MECHANICAL EQUIPMENT AND MAINTENANCE MANUALS SHALL BE PROVIDED FOR THE CITY'S USE AS INDICATED IN THE SPECIFICATIONS. AND CALIFORNIA ENERGY STANDARDS T-20-1517.
4. ALL DUCTWORK, EQUIPMENT, AND SMOKE DUCT DETECTORS EXPOSED TO THE WEATHER SHALL BE MADE WEATHERPROOFED.
5. MECHANICAL CONTRACTOR SHALL PERFORM INSTALLATION, START-UP AND TEST OF ALL AIR CONDITIONING UNITS.
6. FINAL LOCATION OF CEILING DIFFUSERS AND REGISTERS, WILL BE COORDINATED IN THE FIELD.
7. ALL SUPPLY AND RETURN AIR DUCTWORK IN UNCONDITIONED SPACE SHALL HAVE 2-INCH THERMAL INSULATION.
8. PROVIDE FIRE DAMPERS AT PENETRATIONS OF FIRE RATED WALLS, CEILINGS, ETC., AS INDICATED ON FLOOR PLANS AND AS REQUIRED BY CODE.
9. ALL LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT. WHEN WIRING IS EXPOSED TO THE WEATHER, USE CONDUIT APPROVED FOR EXTERIOR USE.
10. CONTRACTOR SHALL VISIT JOBSITE AND VERIFY ALL CONDITIONS, LOCATIONS AND DIMENSIONS BEFORE SUBMITTING THE BID AND STARTING WORK.
11. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLING ANY MATERIAL OR EQUIPMENT.
12. ALL WORK SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES, AND REGULATIONS OF GOVERNING AGENCIES AND SHALL COMPLY WITH THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES.
13. EXACT LOCATION OF HVAC SUPPLY AND RETURN REGISTERS, AND DUCT SHALL BE COORDINATED IN THE FIELD BY THE CONTRACTOR. PROVIDE NECESSARY ADJUSTMENTS, OFFSETS, FITTINGS, TRANSITIONS TO MISS BEAMS, OR OTHER STRUCTURAL MEMBERS, LIGHT FIXTURES, CONDUITS, ETC.. WITHOUT ANY ADDITIONAL COST TO THE CITY.
14. CONTRACTOR SHALL INSTALL REQUIRED HVAC COMPONENTS TO FIT ACTUAL JOBSITE CONDITIONS WITHOUT IMPAIRING THE CONCEPT OF THE DESIGN SYSTEM.
15. CONTRACTOR SHALL INCLUDE ANY DUCT OR PIPE TURNS OR ANY ADDITIONAL APPURTENANCE NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM EVEN IF THEY ARE NOT SHOWN IN THE DRAWINGS AND IN THE SPECIFICATIONS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF ROOF, WALL, AND FLOOR PENETRATIONS BY DUCTS AND PIPES. VERIFY IN FIELD.
17. FRESH AIR INTAKE SHALL BE 3 FT. BELOW OR 10 FT. AWAY FROM APPLIANCE VENTS, PLUMBING VENTS OR EXHAUST FAN OUTLETS.
18. ALL DUCT SIZES GIVEN ON THE DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS. DUCT SIZES INDICATED SHALL BE INCREASED TO COMPENSATE FOR THICKNESS OF INSULATION OR ACCOUSTICAL LINING.
19. PATCH AND REPAIR ALL EXISTING MATERIALS OR EQUIPMENT DAMAGED OR EXPOSED BY REMOVAL WORK OR BY ANY OTHER CONSTRUCTION WORK. MATCH ADJACENT SIMILAR MATERIALS IN TEXTURE AND COLOR.
20. UPON COMPLETION OF THE WORK, REMOVE ALL WASTES AND DEBRIS AND LEAVE PREMISES IN A CLEAN AND SAFE CONDITION.
21. ALL THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 10 DEGREES FARENHEIT BETWEEN FULL HEATING AND FULL COOLING AND SHALL HAVE THE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NO MORE THAN 70°F AND TERMINATING ALL COOLING AT A TEMPERATURE NOT LESS THAN 78°F. PROVIDE CLEAR LOCKING COVERS FOR ALL THERMOSTATS.
22. PERMANENT ACCESS TO EQUIPMENT SHALL BE PROVIDED.
23. ACCESS DOORS: WHERE NECESSARY IN DUCTWORK OR CASINGS, SUITABLE ACCESS DOORS AND FRAMES TO PERMIT INSPECTION, OPERATION AND MAINTENANCE OF ALL CONTROLS, MOTOR BEARINGS, OR OTHER APPARATUS CONCEALED BEHIND THE SHEET METAL WORK SHALL BE PROVIDED. ACCESS DOORS IN DUCTS MAY BE OF SINGLE PANEL CONSTRUCTION OF NOT LESS THAN NO. 18 GAUGE, GALVANIZED, AND SHALL HAVE SPONGE RUBBER GASKETS WITH HINGES AND LATCHES.
24. DUCT:
    A. HANGERS: PER UMC CHAPTER 6, TABLE 6-E.
    B. PROVIDE TURNING VANES AT ALL DIRECTION CHANGES OF AIR STREAM; THE VANES TO BE DOUBLE THICKNESS, SECURELY RIVETED OR WELDED IN FRAMES, AND TO BE OF ADEQUATE THICKNESS TO PREVENT BUCKLING OR VIBRATION DURING OPERATION OF THE SYSTEM.
    C. CONSTRUCTION SHALL BE PER U.M.C. CHAPTER 6, TABLE 6(A); DUCT SUPPORT PER TABLE 6(E).
25. PROVIDE LOCAL DISCONNECT SWITCH FOR A/C ROOFTOP PACKAGED UNIT, CONDENSING UNIT, AND EXHAUST FANS.
26. DRAWINGS, AND FOLLOW BALANCING PROCEDURES AS OUTLINED IN THE SPECIFICATIONS. THIS INCLUDES DIFFUSERS AND REGISTERS. AFTER BALANCING, THE CONTRACTOR SHALL DEMONSTRATE TO THE CITY ENGINEER/ THAT THE SYSTEM IS IN BALANCE AND SHALL SPOT-CHECK DIFFUSERS AND REGISTERS AT RANDOM TO ASCERTAIN PROPER AIR DELIVERY. SUBMIT FOUR (4) COPIES OF AIR BALANCE REPORTS TO CITY ENGINEER.
27. PROVIDE ISOLATION FOR ALL MOVING EQUIPMENT, AND BETWEEN EQUIPMENT AND DUCTWORK (I.E. ISOLATORS, FLEX CONNECTORS, AND ETC.).
28. ALL EQUIPMENT SHALL COMPLY WITH THE CALIFORNIA STATE ENERGY COMMISSION STANDARDS.
29. MOUNT ALL THERMOSTATS AND BY PASS TIMERS A DISTANCE OF 46-INCHES ABOVE THE FINISHED FOOR LEVEL TO THE CENTER OF DEVICE.
30. COORDINATE EXACT LOCATIONS OF HVAC UNITS AND EXHAUST FANS WITH MECHANICAL AND STRUCTURAL DESIGN DRAWINGS.
31. PROVIDE DUCT SMOKE DETECTORS ON ROOF TOP PACKAGE UNIT AND FAN COIL UNIT. DUCT DETECTORS SHALL BE LOCATED ON THE SUPPLY AIR DUCT AND BE ACCESSIBLE. DUCT DETECTORS SHALL BE PURCHASED AND INSTALLED BY THE MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WIRING, CONDUITS AND POWER TO THE DETECTORS. ALSO, FOR DETECTORS EXPOSED TO THE WEATHER, ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHERPROOF ENCLOSURES TO PROTECT THE DETECTORS.
32. PROVIDE TRAPEZE TYPE DUCT SUPPORTS FOR DUCTWORK LOCATED INSIDE OF SOFFITS. SUPPORT DUCTWORK INACCORDANCE WITH CALIFORNIA MECHANICAL CODE. MOUNT DUCKWORK AS CLOSE AS POSSIBLE TO THE BOTTOM OF THE STRUCTURAL BEAM TO ALLOW FOR THE INSTALLATION OF ANY LIGHT FIXTURES. DO NOT DEFORM OR CONCAVE THE TOP OF THE DUCTWORK.
33. ROOF CURB FOR HVAC UNITS AND EXHAUST FANS SHALL BE 6 INCHES MINIMUM ABOVE THE FINISH ROOF LINE.
34. ALL MANUAL VOLUME DAMPERS SHALL BE ACCESSIBLE. WHENEVER DAMPERS ARE LOCATED ABOVE GYPSUM BOARD, PLASTER CEILINGS OR ARE NOT ACCESSIBLE, PROVIDE BOWDEN REMOTE CABLE CONTROL SYSTEM, MODEL 270-301, FOR ADJUSTMENTS OF MANUAL VOLUME DAMPER. FOR DETAILS, SEE MECHANICAL DRAWING M3.1.
35. PROVIDE ALL THE REQUIRED SEISMIC BRACING FOR ALL EQUIPMENT AND DUCTWORK.

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HOSTLER-SEAD DARLENE HUANG No. M33534 EXP. 6-30-23 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	DATE:
TED ALLEN, P.E.	03/10/22
ENGINEER: HSU-LIANG HUANG, P.E. LIC. NO. M33534	03/10/22
DESIGNED BY: SAHAR MEHRZAD, P.E.	03/10/22
DRAWN BY: SAHAR MEHRZAD, P.E.	03/10/22
CHECKED BY: HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:STEVEN PIERCE, A.I.A, PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: MECHANICAL SCHEDULE & DETAILS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. M100

SHEET 57 OF SHEETS 96

PLOTTED: 3/18/2022 1:21 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:06 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\M100 MECHANICAL SCHEDULE & DETAILS.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/18/2022 11:44 AM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\M101 MECHANICAL PLAN.DWG

REVISION DATES (DESIGN STAGE ONLY)

120'-1"

132'-8"

4" VENT PIPE UP THROUGH ROOF

4X 4" DUCTS COMING UP FROM BASEMENT & GOING UP TO THE ROOF. THE EXHAUST DUCTS AND COMBUSTIBLE DUCTS SHALL BE TERMINATED 3' APART ON THE ROOF

24"X12" DOOR LOUVER ANEMOSTAT SRDL CUSTOM BAKED ENAMEL COLORS

HP-1 PROVIDE 6" CURB PROVIDE CAGE AROUND HP-1

4" VENT PIPE UP THROUGH ROOF

3'-8"

4'-7"

GIRLS DRESSING ROOM

IH 1

IH 2

FC-1 & FC-2 INSTALL ABOVE THE DOOR SIGNAGE

OFFICE

6"ø DUCT UP TO TO ROOF

EF 1

6ø"

12"X6" DOOR LOUVER ANEMOSTAT CHDL-2F ANODIZED ALUMINUM

EF 2

6ø"

6"ø DUCT UP TO TO ROOF

EF 3

6ø"

6"ø DUCT UP TO TO ROOF

8'-8"

3'-7"

4" VENT PIPE UP THROUGH ROOF

IH 3

IH 4

32'-6"

BOYS DRESSING ROOM

FIRST FLOOR MECHANICAL PLAN
3/16"=1'-0"

(E) TANK

(E) TANK

(E) TANK

(E) TANK

OFFICE

TWO 4" COMBUSTION AIR DUCTS AND TWO 4" EXHAUST DUCTS GOING UP TO THE COMM. ROOM

TWO (N)T.W.H-1 (TANKLESS GAS WATER HEATER)

FILTER PIT

(E) BATH HOUSE ABOVE; SEE A1.0

BASEMENT

(E) ELEC PANEL

ELEC PANEL

(E) BATH HOUSE ABOVE; SEE A1.0

CONC. WALK

(N) CONC. WALK

BASEMENT MECHANICAL PLAN
3/16"=1'-0"

16

17

DN

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO.
-

INDEX NO.
RP-300123

PROFESSIONAL ENGINEER * HSU-LIANG HUANG * No. M35364 * REGISTERED PROFESSIONAL ENGINEER * STATE OF CALIFORNIA * Exp. 6-30-23

TED ALLEN, P.E. CITY ENGINEER

		DATE:
ENGINEER:	HSU-LIANG HUANG, P.E. LIC. NO. M35364	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E. S.M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E. S.M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A. PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: MECHANICAL PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO.
E170164F

PLAN FILE NO.

DRAWING NO.
M101

SHEET 58 OF SHEETS 96

PLOTTED: 3/18/2022 11:48 AM

PLUMBING LEGEND

SYMBOL	ABBREV.	DESCRIPTION
— — —	W/S	WASTE/SEWER BELOW FLOOR/GRADE
———	W/S	WASTE/SEWER ABOVE FLOOR/GRADE
— —⊕	FCO/ COTG	FLOOR CLEANOUT OR CLEANOUT THRU GRADE
—OD—	OD	OVERFLOW DRAIN
—SD—	SD	STORM DRAIN
— — —	V	SANITARY VENT
—— - ——	CW	COLD WATER PIPE
—— - - ——	HW	HOT WATER
·····	HWR	HOT WATER RETURN
—CD—	CD	CONDENSATE DRAIN
—G—	G	FUEL GAS (LOW PRESSURE)
⊢———	CO	CLEANOUT
⊢D— —	WCO	WALL CLEANOUT
——◢——	CV	CHECK VALVE
——▷◁——	GV	GATE VALVE
——W——	GC	GAS COCK
——●——	WHA	WATER HAMMER ARRESTOR
—AFS—	AFS	AUTOMATIC FIRE SPRINKLER
—F—	F	FIRE LINE
	AP	ACCESS PANEL
	RI & C	ROUGH-IN & CONNECT
	AFF	ABOVE FINISHED FLOOR
	HC	HANDICAPPED
	WC	WATER CLOSET
	L	LAVATORY
	UR	URINAL
	ABV	ABOVE
	CLG	CEILING
	CONN	CONNECTION
	CONT	CONTINUATION
	CYB	CONCRETE YARD BOX
	DN	DOWN
	DS	DOWNSPOUT
(E)	EXIST	EXISTING
	FU	FIXTURE UNIT
	HDR	HEADER
	IE	INVERT ELEVATION
	NTS	NOT TO SCALE
◔	POC	POINT OF CONNECTION
◒	POD	POINT OF DISCONNECT
	SOV	SHUT-OFF VALVE
	VTR	VENT THRU ROOF
	MTD	MOUNTED
	TPV	TRAP PRIMER VALVE
	RP	REDUCED PRESSURE BACKFLOW PREVENTER
	BEL	BELOW
(N)	N	NEW
	TDL	TOTAL DEVELOPMENT LENGTH
●	OD	OVERFLOW DRAIN
⊕	RD	ROOF DRAIN
	NIC	NOT IN CONTRACT
⊷	HB	HOSE BIB
▨		PIPING TO BE REMOVED
▨		FIXTURES TO BE REMOVED
⊜	RCR	
⊜	FD	FLOOR DRAIN
▢	FS	FLOOR SINK
	CRS	CLASSROOM SINK
	WH	WATER HEATER

PLUMBING FIXTURE SCHEDULE

UNIT NO.	DESCRIPTION	ROUGH-IN CONNECTION SIZES						REMARKS
		TRAP	S/W	V	DFU	CW	HW	
WC-1	WATER CLOSET WALL-MOUNTED	INT.	4"	2"	4	1-1/4"	--	SLOAN "ST-2469" , WALL MOUNTED,VITROUS CHINA, WALL HUNG, ELONGATED BOWL, 1-1/2" I.P.S REAR SPUD INLET. 1.28 GPF @ MIN. 25 PSI OPERATING PRESSURE, HIGH EFFICIENCY TOILET, . PROVIDE BEMIS 1955CT. ADA COMPLIANT. FLUSHOMETER VALVE : SLOAN CROWN CONCEALED MANUAL FLUSHOMETER MODEL CROWN 9603-1.28
WC-1H	WATER CLOSET WALL-MOUNTED	INT.	4"	2"	4	1-1/4"	--	SLOAN "WETS-2450.1001" ST-2459 WATER CLOSET AND ROYAL 111 FLUSHOMETER , WALL MOUNTED,VITROUS CHINA, WALL HUNG, ELONGATED BOWL, 1-1/2" I.P.S TOP SPUD INLET. 1.28 GPF @ MIN. 25 PSI OPERATING PRESSURE, HIGH EFFICIENCY TOILET, . PROVIDE BEMIS 1955CT. ADA COMPLIANT.
L-1H	LAVATORY WALL-HUNG	1-1/2"	2"	1-1/2"	1	1/2"	1/2"	AMERICAN STANDARD "LUCERNE" MODEL NO. 0355.012, 4" CENTER TO CENTER HOLES, VITREOUS CHINA, FRONT OVERFLOW, FAUCET LEDGE, 20-1/2"X18-1/4", AERATOR AND GRID DRAIN #7723.018, ADA APPROVED, WITH CHICAGO FAUCET METERING FAUCET #3600-E2805AB,0.5 GPM VANDAL PROOF NON AERATING SPRAY, PROVIDE CHICAGO FAUCET MIXING VALVE 122-ABNF
FD-1	FLOOR DRAIN	2"	2"	1-1/2"	2	--	--	FLOOR DRAIN, CAST IRON BODY, FLASHING COLLAR 6" ROUND NICKEL BRONZE STRAINER, W/TRAP PRIMER CONNECTION. BY J.R. SMITH FIG. 2010A WITH 2" PIPE OUTLET.
DF-1H	DRINKING FOUNTAIN	1-1/2"	2"	1-1/2"	-	1/2"	--	HAWS MODEL "1119 HI-LO" , WALL MOUNTED, BARRIER FREE, VANDAL RESISTANT COMPONENTS, PUSH BUTTON ACTIVATION VALVE, 100% LEAD FREE WATER WAY, TYPE 304 STAINLESS STEEL, ADA APPROVED.
RPBF-1	REDUCED PRESSURE BACKFLOW PREVENTER	-	-	-	-	2"	--	ZURN WILKINS 375: REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY, LEAD-FREE SIZE 3". APPROVED BY FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA AND IAPMO LISTED.
RPBF-2	REDUCED PRESSURE BACKFLOW PREVENTER	-	-	-	-	3"	--	ZURN WILKINS 375XL: REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY, LEAD-FREE , SIZE 2". APPROVED BY FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA AND IAPMO LISTED.
PRV-1	PRESSURE REDUCING VALVE ASSEMBLY	-	-	-	-	1"	--	WILKINS MODEL 500XL: WATER PRESSURE REDUCING VALVE WITH LEAD-FREE, SIZE 1", SET @ 70 PSI. IAPMO LISTED AND CITY OF LOS ANGELES APPROVED.
PRV-2 PRV-3	PRESSURE REDUCING VALVE ASSEMBLY					2"		WILKINS MODEL 500XL: WATER PRESSURE REDUCING VALVE WITH LEAD-FREE, SIZE 2", SET @ 70 PSI. IAPMO LISTED AND CITY OF LOS ANGELES APPROVED.
SH-1H	SHOWER (ADA TYPE)	2"	2"	2'	2	3/4"	3/4"	POWERS e700 HYDROGUARD T/P MIXING VALVE MODEL e705000L00;1.5 GPM LOW FLOW HAND SHOWER SYSTEM WITH METAL HOSE AND 30" GLIDE RAIL.
SH-1	SHOWER	2"	2"	2'	2	3/4"	3/4"	POWERS e700 HYDROGUARD T/P MIXING VALVE. MODEL E705G10000; 1.5 GPM LOW FLOW SHOWERHEAD WITH STANDARD ARM AND FLANGE
EQV-1	EARTHQUAKE SHUT-OFF VALVE	-	-	-	-	--	--	PACIFIC SEISMIC PRODUCTS, HORIZONTAL VALVE, MODEL 316(60) NPT, EQUIVALENT LENGTH = 8.5 FT., MAX. PRESSURE=60 PSI, NOMINAL PIPE SIZE=4".
U-1H	URINAL	-	-	-	-	--	--	SLOAN "WEUS-1000.1001" WITH SU-1009 URINAL AND ROYAL 186 FLUSHOMETER 0.125 GPF, ADA COMPLIANT, SEE ARCHITECTURAL PLAN FOR INSTALLATIONS DETAILS.
MS-1	MOP SINK	-	-	-	-	--	--	ACORN TERRAZZO-WARE MOP SINK-CORNER SERIES "TCR-28", RPOVIDE BEEHIVE DOME STRAINER PROVIDE WITH ACORN KFC FAUCET,CHROME FINISH, FAUCET MAXIMUM FLO RATE 2.2 GPM
TPV-1	TRAP PRIMER VALVE	-	-	-	-	½"	-	TRAP PRIMER VALVE: PRECISION PLUMBING PRODUCTS MODEL P2-500
FS-1	FLOOR SINK		-	3"	--	3	--	--	J.R. SMITH FIG. 3100Y-03 8-1/2" TOP- MEDIUM RECEPTOR WITH SANI-CEPTOR ACID RESISTANT COATED FLOOR SINK; PROVIDE FIG.3591 FUNNEL ASSEMBLY WITH ARC OPTION.(ACID RESISTANT COATED CAST IRON)
TPV-2	TRAP PRIMER VALVE	-	-	-	-	½"	-	TRAP PRIMER VALVE: PRECISION PLUMBING PRODUCTS MODEL MPB-500-115V ELECTRONIC TRAP PRIMER, MINI-PRIME WITH BOX, 12" X 12" X 4", 16 GAUGE STEEL WITH SCREW ON COVER MAKE-UP WATER LINE SHALL NOT EXCEED 20 FEET. ADJUSTABLE TIMER MODEL: TMR-1-ADJ-115V
EEW-1	EMERGENCY SHOWER/EYE WASH	-	-	-	-	½"	-	HAWS MODEL #8330 ALL STAINLESS STEEL COMBINATION SHOWER AND EYE WASH PROVIDE 9201H THERMOSTATIC MIXING VALVE
HS-1	HAND WASH SINK	-	2"	1-1/2"	-	½"	½"	ELKAY "LRAD252165PD" LUSTERTONE CLASSIC STAINLESS STEEL 25"X21-1/4"X 6-1/2", SINGLE BOWL DROP-IN ADA SINK WITH PERFECT DRAIN. HOLE DRILLING CONFIGURATIONS: OPTION 2 (TWO HOLES), PROVIDE ELKAY COMMERCIAL ELECTRONIC SENSOR SCRUB/HANDWASH DECK MOUNT FAUCET, MODEL "LKB721C", PROVIDE AC PLUG-IN, FLOW RATE: 1.5 GPM

PIPE SCHEDULE

SERVICE		MATERIAL: COPPER, TYPE 'K'	COPPER, TYPE 'L'	DWV-COPPER *	IPS 200 PSI PVC W/ RING-TITE JTS.	BLACK STEEL	GAL VANIZED STEEL	NO-HUB CAST IRON	VITRIFIED CLAY
WATER	INSIDE		●						
	OUTSIDE	●							
SANITARY DRAINAGE	INSIDE							●	
	OUTSIDE							●	
SANITARY VENT	INSIDE			●		●			
	OUTSIDE			●		●			
GAS	INSIDE				●				
	OUTSIDE				●				
STORM DRAINAGE	INSIDE							●	
	OUTSIDE							●	
CONDENSATE DRAINAGE	INSIDE			●					
	OUTSIDE			●					

FIXTURE UNIT COUNTS (existing)

TYPE OF FIXTURES	NO.	CW F.U./Fix.	WASTE F.U./Fix.	TOTAL CW F.U.	TOTAL HW F.U.	TOTAL WASTE F.U.
Water Closet	6	5	4	30	0	24
Urinal	2	4	2	8	0	4
Lavatory	2	1	1	2	2	2
Shower	6	2	2	12	12	12
Service Sink	1	3	3	3	3	3
Floor Sink	0	0	0	0	0	0
Kitchen Sink	0	1.5	2	0	0	0
Floor Drain	2	0	2	0	0	4
Drinking Fountain	2	0.5	0.5	1.0	0	1.0
Emergency Eye wash	1	6	0	6	6	0
BUILDING TOTAL:				62	23	50

FIXTURE UNIT COUNTS (NEW)

TYPE OF FIXTURES	NO.	CW F.U./Fix.	WASTE F.U./Fix.	TOTAL CW F.U.	TOTAL HW F.U.	TOTAL WASTE F.U.
Water Closet	3	5	4	15	0	12
Lavatory	5	1	1	5	5	5
Shower	3	2	2	6	6	6
Floor Drain	3	0	2	0	0	6
Floor Sink	1	0	3	0	0	3
Hand Washing Sink	1	2	2	2	2	2
BUILDING TOTAL:				28	13	34

TANKLESS GAS WATER HEATER SCHEDULE

SYMBOL	MFR. & MODEL NO.	QTY.	LOCATION	SERVICE	GAS INPUT BTU/HR	VENT SIZE	DELIVER CAPACITY @70 F RISE	REMARKS
T.W.H-1	BOSCH C-1210-ESC	2	BASEMENT	EM. SHWR-EW	225,000	3"	6GPM	1. TWO TANKLESS WATER HEATER SHALL MANIFOLDED TOGETHER AND PIPED IN PARALLEL WITH 1" MIN. MANIFOLD PIPING. LINKED ELECTRICALLY TO FIRE IN SEQUENCE AND TO ALTERNATE THE PRIMARY (FIRST FIRED) WATER HEATER EVERY ONE HUNDRED HOURS OF OPERATION TO ENSURE EVEN USAGE. 2. 120 VAC-60HZ 2.5A POWER EQUIRED. 3. PROVIDE CASCADING LINK CABLE (BOSCH#7709003962); BOSCH ZNC-1KIT CONDENSATE NEUTRALIZER AND BOSCH ES-202-KIT OR JOMAR TWV-2-W-KIT LEAD FREE TANKLESS WATER HEATER VALVES WITH 225,000 BTU TEMPERATURE & PRESSURE RELIEF VALVES.

PLUMBING CALCULATIONS

1. ADDRESS: 10654 IRMA AVENUE, TUJUNGA, 91042
2. STREET PRESSURE: MAX. 104 MIN. 79 P.S.I.

SET P.R.V. PRESSURE @ 70 P.S.I

3. SIZE OF METER: 2" INCH WITH 160 G.P.M. @ 100% CAPACITY
4. PRESSURE LOSS THROUGH METER @ 117 G.P.M.: 6.4 P.S.I.
5. PRESSURE LOSS THROUGH NEW R.P.B.F.P.: 13 P.S.I.
6. PRESSURE LOSS THROUGH NEW P.R.V.: 5 P.S.I.
7. Elevation from water meter to highest fixture = 5 ft.
8. LOSS DUE TO ELEVATION: 5 ft. x 0.434 = 2.17 P.S.I.
9. RESIDUAL PRESSURE REQUIRED FOR FLUSHOMETER VALVE: 25 P.S.I.
10. PRESSURE AVAILABLE FOR FRICTION LOSS, P.A.F.L.: 18.43 P.S.I.
11. Length from PRV to furthest fixture = 170 ft.
12. DEVELOPED LENGTH, DL: 170 ft. x 150% = 255 ft.
13. AVERAGE PERMISSIBLE FRICTION LOSS PER 100 FT. OF PIPE:
14. A.P.F.L. = P.A.F.L. 18.43 x 100 / D.L. 255 = 7.2 P.S.I.
15. TOTAL C.W. FIXTURE UNITS: 90 F.U. = 66 G.P.M.
16. MISC. C.W. DEMAND (Future demand): 53 G.P.M.
    Swimming pool make up water (50 GPM) & future demand (3GPM)
17. TOTAL BUILDING C.W. DEMAND: 119 G.P.M.
18. SIZE OF MAIN C.W. SERVICE TO BLDG.: 3" inch

BASE CALCULATIONS ON 7 PSI PER 100 FT
5 FT/SEC VELOCITY FOR HOT WATER
TYPE "L" COPPER

PIPE SIZE	GPM	FIXTURE UNITS F.T.
1/2"	2	2
3/4"	7	8
1"	12	16
1-1/4"	19	28
1-1/2"	27	46
2"	48	119
2-1/2"	100	245
3"	105	406

BASE CALCULATIONS ON 7 PSI PER 100 FT
8 FT/SEC VELOCITY FOR COLD WATER
TYPE "L" COPPER

PIPE SIZE	GPM	FIXTURE UNITS F.T.	F.V.
1/2"	2	2	0
3/4"	7	8	0
1"	15	21	0
1-1/4"	27	46	10
1-1/2"	43	99	33
2"	76	254	132
2-1/2"	115	455	329
3"	165	719	666

DWP CONTACT: @ 213--367-1242
STATIC WATER PRESSURE: HIGH 104, LOW 79
DATE CALLED: 4/26/2017

GENERAL NOTES

1. VERIFY ALL CONDITIONS AND DIMENSIONS AT JOBSITE PRIOR TO START OF NEW WORK.
2. THE CONTRACTOR SHALL PAY FOR COST OF METERS, INSTALLATION COSTS, CONNECTION FEES, AND PERMIT FEES FOR ALL UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THE APPLICALBE UTILITY COMPANY.
3. ALL PLUMBING FIXTURES, PIPING MATERIALS, AND WORK SHALL BE IN ACCORDANCE WITH THE L.A. CITY AND CALIFORNIA PLUMBING CODES.
4. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL BE NEW.
5. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL HAVE ISOLATING VALVES ON WATER SUPPLY LINES.
6. HOT WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH TITLE 24.
7. ALL VALVES, CLEANOUTS, TRAP PRIMERS, AND WATER HAMMER ARRESTORS SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS LARGE ENOUGH TO FACILITATE REMOVAL OF COMPONENT OR EQUIPMENT. MINIMUM DOOR SIZE SHALL BE 8"X8" WITH TYPE 304 STAINLESS STEEL FRAME AND DOOR. PROVIDE WITH CONCEALED HINGE AND SCREWDRIVER OPERATED LATCH WHICH HOLDS THE DOOR SECURELY CLOSED.
   A. FOR CERAMIC TILE, MASONRY, OR DRY WALLS AND CEILINGS, FRAME SHALL BE MOUNTED ON THE SURFACE OF THE WALL OR CEILING.
   B. FOR PLASTER OR WET WALL CONSTRUCTION AND CEILINGS, FRAME AND DOOR SHALL BE MOUNTED FLUSH WITH THE FINISHED WALL OR CEILING.
8. ALL FAUCETS IN PUBLIC RESTROOMS SHALL BE SELF CLOSING OR SELF-CLOSING METERING FAUCETS.
9. ALL FITTINGS AND FIXTURES IN CONTACT WITH POTABLE WATER SHALL BE "LOW LEAD"
10. ALL PLUMBING FIXTURES SHALL MEET THE FLOW REQUIREMENTS SPECIFIED IN THE LOS ANGELES PLUMBING CODE SECTION 402.0
11. ALL FIXTURES,EQUIPMENT,PIPING AND MATERIALS SHALL BE APPROVED.
12. CLEANOUTS REQUIRED AS FOLLOWS:
    A. MATERIAL:
       A.1 ABOVE GROUND: CAST IRON, LOS ANGELES APPROVED TYPE.
       A.2 OUTSIDE BUILDING: EXTRA HEAVY CAST IRON BODY AND NONCORROSIVE LOS ANGELES CITY APPROVED PLASTIC FOR TAPERED PLUGS, BRASS FOR STRAIGHT THREAD PLUGS WITH LEAD SEAL.
    B. ACCESS COVER AND FRAME: REQUIRED; WHERE CLEANOUTS OCCUR IN FINISHED INTERIOR WALLS OR FLOORS.
    C. IN PAVED AREAS: SMITH FIG. 4020, SECURED ROUND TOP, SPIGOT CONNECTION, SET IN CONCRETE FLUSH WITH PAVING.
    D. IN UNPAVED AREAS: SMITH FIG. 4240 WITH EXTENSIONS TO FINISH GRADE.
    E. ON CAST IRON PIPE ABOVE GROUND: SMITH FIG. 4512, CLEANOUT TEE, LEAD SEAL BRONZE PLUGS.
    F. IN INTERIOR FLOORS: SMITH FIG. 4020, SECURED ROUND TOP, ADJUSTABLE FLUSH WITH FINISH FLOOR, POLISHED NICKEL BRONZE FRAME AND COVER. PROVIDE VANDAL PROOF SCREWS WHERE INDICATED OR REQUIRED.
    G. IN INTERIOR WALLS: FLUSH WITH THE INSIDE OF WALL, SMITH FIG. 4510, LEAD SEAL-BRONZE PLUG. PROVIDE ACCESS COVER AND FRAME AS SPECIFIED HEREIN.
    H. CLEANOUTS SHALL BE INSTALLED ON RAINWATER SYSTEM AS REQUIRED BY CHAPTER 7 & 11 OF THE L.A. CITY AND CALIFORNIA PLUMBING CODE.
13. WASTE, SOIL, AND VENT PIPING MATERIALS SHALL BE CAST IRON, GALVANIZED STEEL, COPPER, OR BRASS.

    HORIZONTAL DRAINAGE PIPE SHALL HAVE 1/4 INCH PER FOOT SLOPE.

    COLD WATER:
    A BELOW GROUND: 2" AND SMALLER, TYPE K HARD COPPER, CAST-COPPER-ALLOY SOLDER-JOINT PRESSURE FITTINGS, AND SOLDERED JOINTS.
    B ABOVE GROUND: TYPE L HARD COPPER, WROUGHT-COPPER OR CAST-COPPER-ALLOY PRESSURE FITTINGS, COPPER UNIONS, BRONZE FLANGES, AND SOLDERED JOINTS.
14. VENT PIPE OR STACK SHALL EXTEND SEPARATELY OR COMBINED THROUGH ITS FLASHING AND SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF NOR LESS THAN 1 FT. FROM ANY VERTICAL SURFACE. EACH VENT SHALL TERMINATE NOT LESS THAN 10 FT. FROM, OR AT LEAST 3 FT. ABOVE ANY OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, NOR LESS THAN 3 FT. IN EVERY DIRECTION FROM ANY LOT LINE; ALLEY AND STREET EXCEPTED.
15. LOCATIONS OF PLUMBING APPARATUS AND EQUIPMENT INDICATED ON THE DRAWINGS ARE APPROXIMATE ONLY. VERIFY WITH ARCHITECTURAL PLANS FOR LOCATIONS.
16. DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS, AND EXACT LOCATIONS ARE NOT SHOWN. EXAMINE DRAWINGS AND EXISTING JOB SITE CONDITIONS, IN ORDER TO DETERMINE THE BEST METHODS FOR INSTALLATION OF APPARATUS, EQUIPMENT, ROUTING OF PIPES, AND LOCATING ANY BUILDING OBSTRUCTIONS.
17. DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK, CHECK AND VERIFY DIMENSIONS AND SIZES, AND ASSUME FULL RESPONSIBILITY FOR FITTING IN OF EQUIPMENT AND MATERIALS TO OTHER PARTS OF EQUIPMENT, OTHER TRADES AND TO THE STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON THE DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF THE CLASS INDICATED. CHECK DRAWINGS TO VERIFY THAT EQUIPMENT SPECIFIED FOR USE WILL FIT INTO THE SPACED PROVIDED AND THERE IS AMPLE SPACE TO MEET REQUIREMENTS FOR MAINTENANCE.
18. WATER HEATER SHALL BE CERTIFIED AND LISTED BY THE CALIFORNIA ENERGY COMMISSION.
19. LAVATORY FAUCETS, SINK FAUCETS, SERVICE SINK FAUCETS SHALL MEET THE FLOW REQUIREMENTS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARDS (TITLE 24) OR CITY OF LOS ANGELES ORDINANCE 180822, WHICHEVER IS MORE STRINGENT.
20. WATER CLOSETS SHALL BE CITY OF LOS ANGELES MECHANICAL TEST LAB OR IAPMO APPROVED AND USE 1.28 GALLONS PER FLUSH.
21. URINALS SHALL BE CITY OF LOS ANGELES MECHANICAL TEST LAB OR IAPMO APPROVED AND USE 0.125 GALLONS PER FLUSH.
22. CONTRACTOR SHALL BE RESPONIBLE FOR ENSURING THAT ALL NEW PLUMBING FIXTURES BEING INSTALLED MEET THE REQUIREMENTS OF CITY OF LOS ANGELES ORDINANCE 180822 FOR WATER EFFICIENCY REQUIREMENTS FOR NEW DEVELOPMENT AND RENOVATION OF EXISTING BUILDINGS.
23. HANDICAPPED NOTES:
    A. ALL PLUMBING FIXTURES INDICATED WITH AN "H" SUBLETTER AFTER THE FIXTURE NUMBER SHALL BE INSTALLED FOR HANDICAPPED USE AS FOLLOWS:
       1. WATER CLOSET: INSTALL WITH TOP OF SEAT 17" TO 19" ABOVE FINISHED FLOOR. FLUSH VALVE, FLUSH CONTROLS SHALL BE OPERATED BY AN OSCILLATING HANDLE WITH A MAXIMUM OPERATING FORCE OF 3 LBS. THE FLUSH HANDLE SHALL FACE THE SIDEWALL FURTHEST FROM THE CENTER LINE OF THE FIXTURE.
       2. LAVATORIES: INSTALL WITH BOTTOM OF APRON 29" ABOVE FINISH FLOOR. HOT WATER STOP, DRAIN TAILPIECE AND TRAP SHALL BE INSULATED.
       3. URINALS: INSTALL WITH RIM 17" ABOVE FINISHED FLOOR. FLUSH VALVE HANDLE SHALL BE LOCATED NOT MORE THAN 44" ABOVE THE FINISHED FLOOR. THE URINAL SHALL BE AN ELONGATED TYPE L EXTENDING 14" MIN. OFF THE WALL.
       4. DRINKING WATER: INSTALL WITH THE CENTERLINE OF THE BUBBLER HEAD LOCATED 36" ABOVE THE FINISHED FLOOR.

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

TED ALLEN, P.E. CITY ENGINEER

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HSU-LIANG HUANG, P.E. REGISTERED PROFESSIONAL ENGINEER No. M35354 Exp. 6-30-23 STATE OF CALIFORNIA

	NAME	LIC. NO.	DATE:
ENGINEER:	HSU-LIANG HUANG, P.E.	M35354	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S.M	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S.M	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.		03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A. PRINCIPAL ARCHITECT		03/10/22

SHEET TITLE: PLUMBING SCHEDULE

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. P100

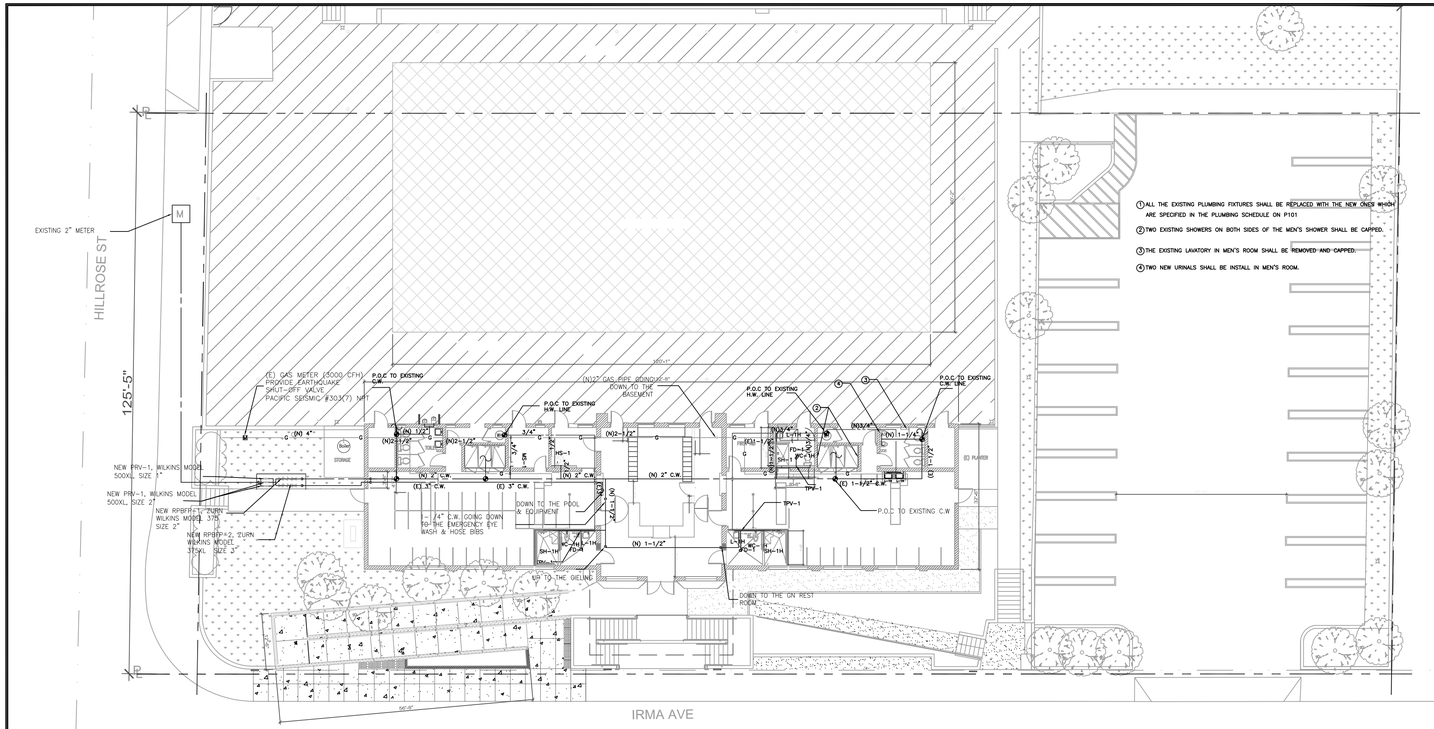
SHEET 59 OF SHEETS 96

PLOTTED: 3/18/2022 1:07 PM

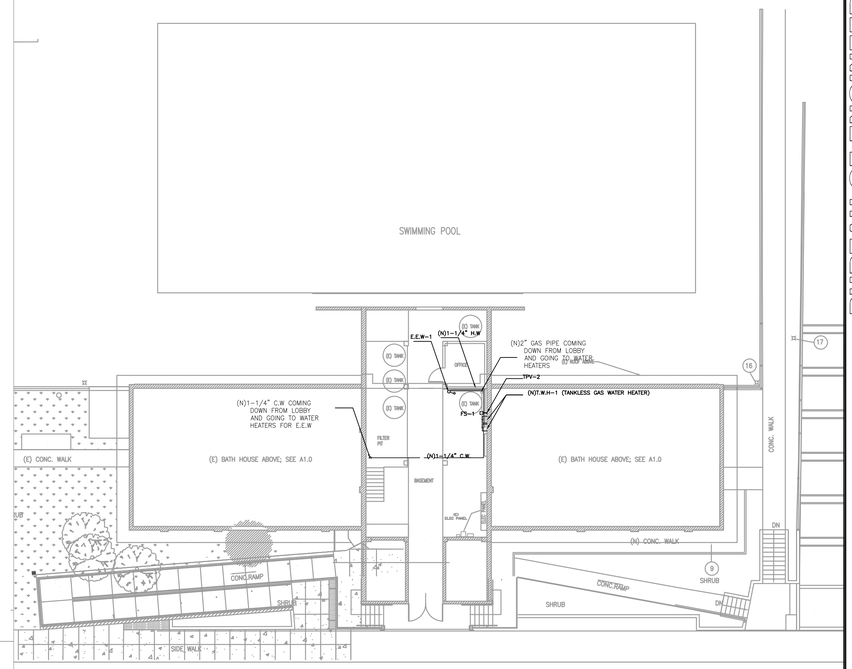
REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

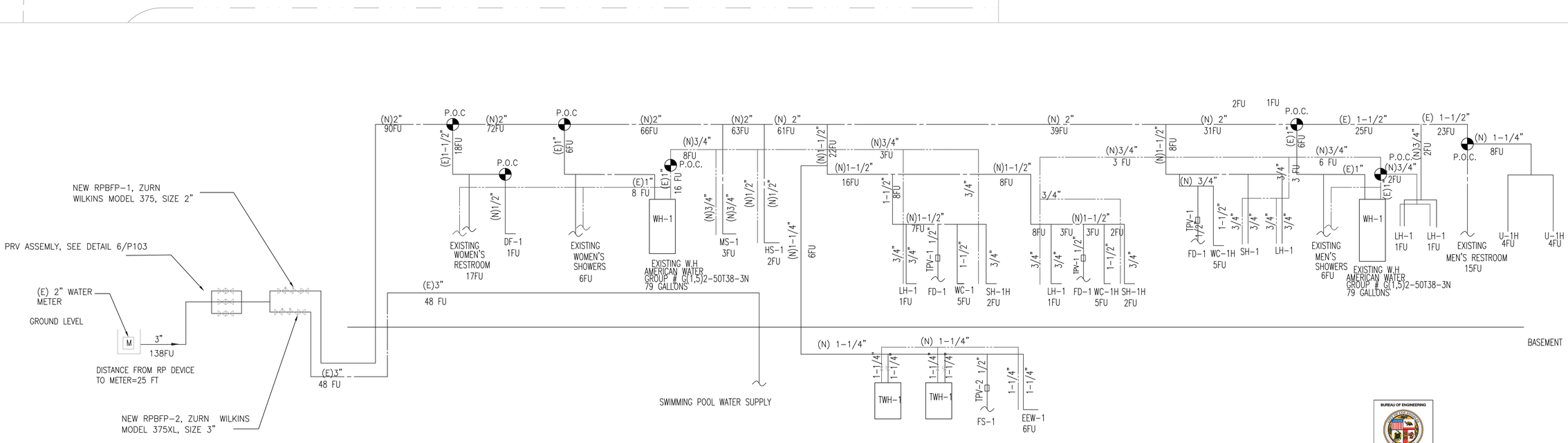
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 12:06 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P100 PLUMBING SCHEDULE.DWG



HW/ CW LAYOUT DETAIL FOR FIRST FLOOR
1/16"=1'-0"



HW/ CW LAYOUT DETAIL FOR BASEMENT
1/16"=1'-0"



BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/18/2022 3:00 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P101 C.W, H.W PLUMBING PLAN-2.DWG

REVISION DATES (DESIGN STAGE ONLY)

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -
INDEX NO. RP-300123

PROFESSIONAL ENGINEER * HSU-LIANG HUANG * No. M36354 * REGISTERED CIVIL ENGINEER * STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

		DATE:
ENGINEER:	HSU-LIANG HUANG, P.E. LIC. NO. M36354	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	03/10/22
APPROVED BY:	STEVEN PIERCE, A.I.A., PRINCIPAL ARCHITECT	03/10/22

SHEET TITLE: C.W, H.W AND GAS PLUMBING PLAN
C.W & H.W RISER DIAGRAM
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. P101
SHEET 60 OF SHEETS 96

PLOTTED: 3/18/2022 3:01 PM

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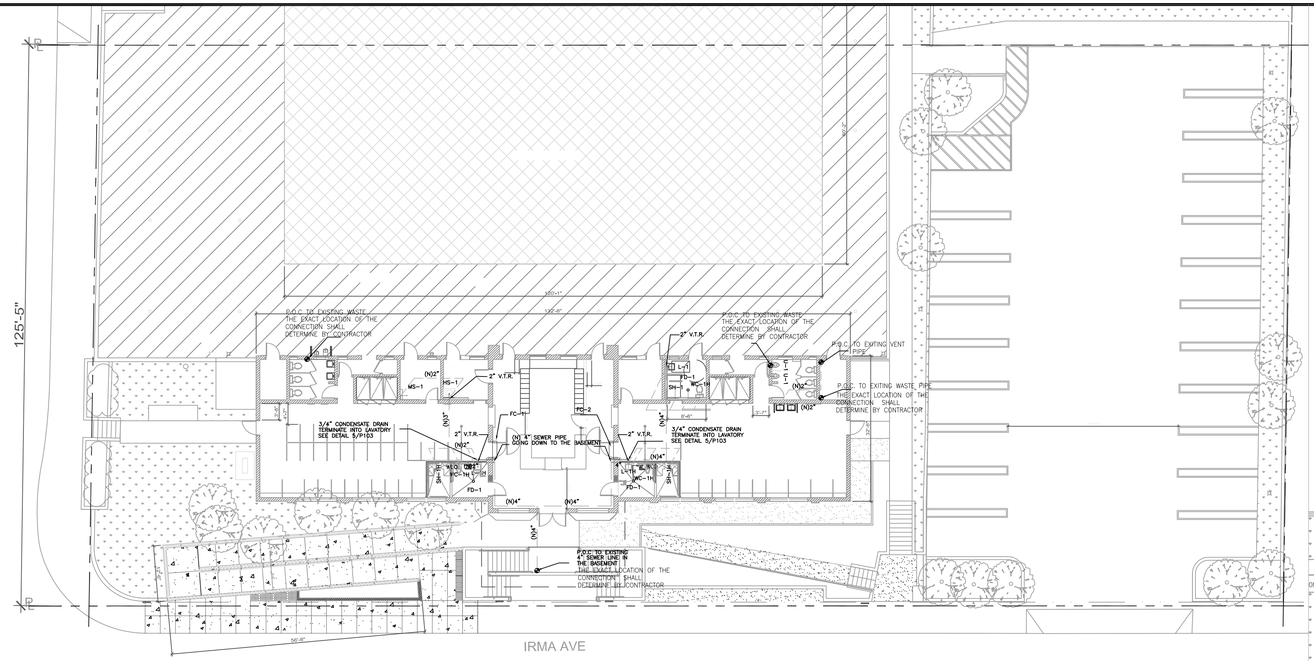
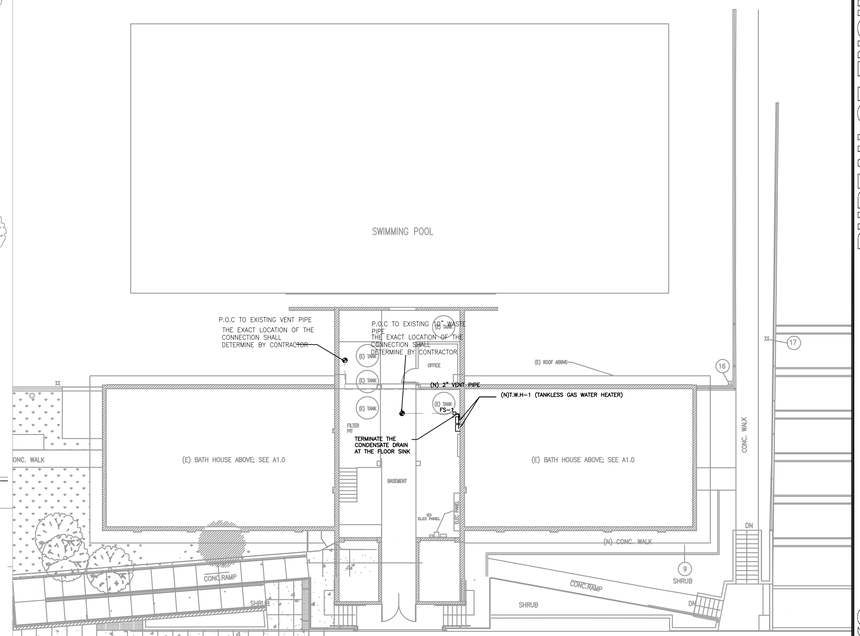


WASTE / VENT LAYOUT DETAIL FOR THE FIRST FLOOR

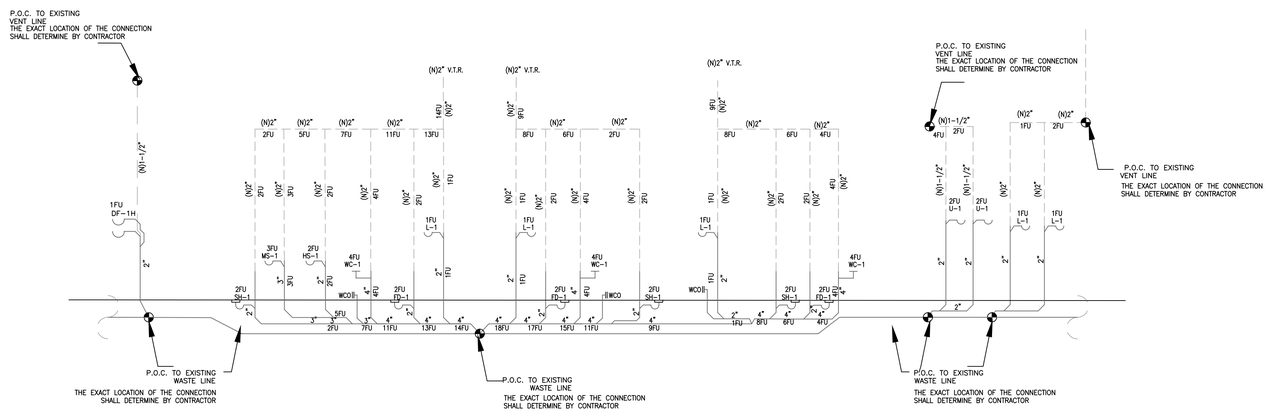
1/16"=1'-0"



WASTE / VENT LAYOUT DETAIL FOR BASEMENT

1/16"=1'-0"

NOTE: CONTRACTOR SHOULD VERIFY THE EXACT LOCATION OF THE EXISTING 4" SEWER LINE.



WASTE / VENT RISER DIAGRAM

N/A

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER * MECHANICAL * No. M35354 * LSU-LIANG HUANG * STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

ENGINEER:	LSU-LIANG HUANG, P.E.	LIC. NO. M35354	DATE: 03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S.M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S.M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	Hsu-Liang Huang	03/10/22
APPROVED BY:	STEVEN PIERCE, A.I.A. PRINCIPAL ARCHITECT		03/10/22

SHEET TITLE: WASTE & VENT FLOOR PLAN AND RISER DIAGRAM

PROJECT: VERDUGO HILL POOL BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO.

DRAWING NO. P102

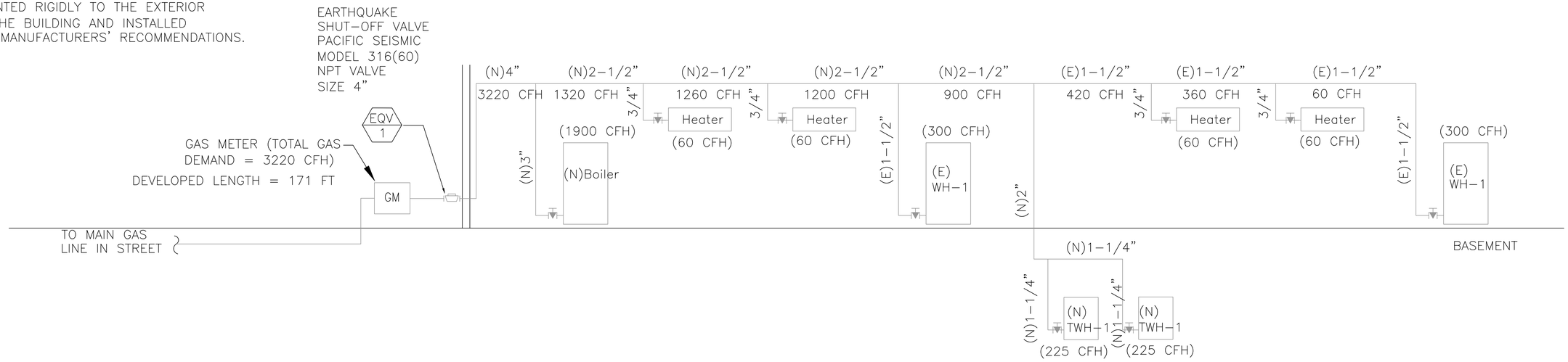
SHEET 61 OF SHEETS 96

PLOTTED: 3/22/2022 1:22 PM

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/22/2022 1:15 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECHANICAL\P102 WASTE & VENT PLUMBING PLAN-11-9-2021.DWG

REVISION DATES (DESIGN STAGE ONLY)

NOTE:
EARTHQUAKE VALVE SHALL BE MOUNTED RIGIDLY TO THE EXTERIOR OF THE BUILDING AND INSTALLED PER MANUFACTURERS' RECOMMENDATIONS.



GAS RISER DIAGRAM
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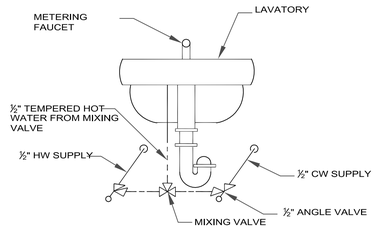
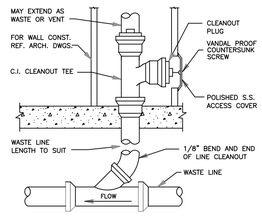
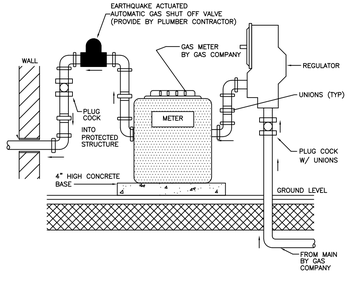


NOTE: FOR RESTROOMS 109 &110, INSTALL ANGLE VALVES AND MIXING VALVES INSIDE PIPE CHASE

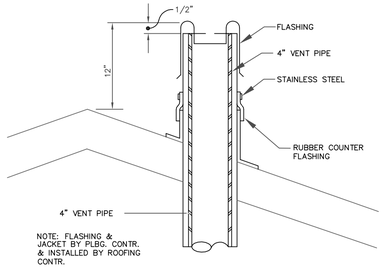
1 P103 LAVATORY PIPING DETAIL
SCALE: NONE



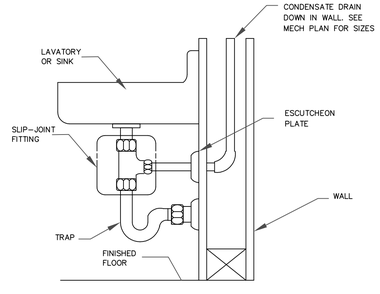
2 P103 WALL CLEANOUT
SCALE: NONE



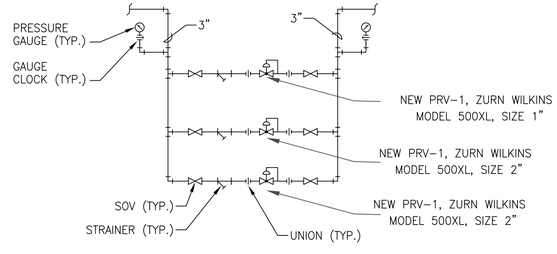
3 P103 EQ VALVE DETAIL
SCALE: NONE



4 P103 VENT THRU ROOF DETAIL
NOT TO SCALE



5 P103 CONDENSATE DRAIN TO LAV DETAIL
SCALE: NONE



6 P103 PRV ASSEMBLY DETAIL
SCALE: NONE

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

BUILDING NO. -

INDEX NO. RP-300123

HSU-LIANG HUANG PROFESSIONAL ENGINEER REGISTERED CIVIL ENGINEER No. M35354 Exp. 6-30-23 STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER

ENGINEER:	HSU-LIANG HUANG, P.E.	LIC. NO. M35354	03/10/22
DESIGNED BY:	SAHAR MEHRZAD, P.E.	S. M.	03/10/22
DRAWN BY:	SAHAR MEHRZAD, P.E.	S. M.	03/10/22
CHECKED BY:	HSU-LIANG HUANG, P.E.	Hsu-Liang Huang	03/10/22
APPROVED BY:	STEVEN FIERCE, A.I.A.	PRINCIPAL ARCHITECT	

SHEET TITLE: GAS RISER DIAGRAM & PLUMBING DETAILS
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO.
DRAWING NO. P103
SHEET 62 OF SHEETS 96

PLOTTED: 3/16/2022 3:08 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/16/2022 4:05 PM
FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\MECH\ANICAL\P103 GAS RISER DIAGRAM & PLUMBING DETAIL.DWG

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SYMBOLS LIST

(NOTE: NOT ALL SYMBOLS USE)

- MUSCO POLE LIGHTS. SEE MUSCO DRAWINGS.
- A 5a / A 5a — LIGHTING FIXTURES, "5" DENOTES CIRCUIT NUMBER, LOWER CASE "a" DENOTES CONTROLLING SWITCH, UPPER CASE "A" DENOTES FIXTURE TYPE.
- B — RECESSED CEILING MOUNTED FIXTURE: UPPER LETTER INDICATES TYPE (U.O.N.).
- S.L. OR N.L. — FIXTURES WITH "NL" SHALL BE PROGRAMMED FROM DUSK TO PROGRAM OFF TIME. FIXTURE WITH SUBSCRIPT "SL" SHALL BE PROGRAMMED FROM DUSK TO DAWN.
- F — WALL MOUNTED LIGHT FIXTURE: UPPER LETTER INDICATES TYPE.
- EXIT SIGN WITH JUNCTION BOX APPROVED FOR THROUGH WIRING. UNIVERSAL MOUNT. DIRECTIONAL ARROW AS SHOWN ON PLAN.
- LIGHTING FIXTURE WITH BUILT-IN EMERGENCY BATTERY PACK.
- JUNCTION BOX: MOUNT +15" UNLESS NOTED OTHERWISE.
- JUNCTION BOX: MOUNTED ABOVE ACCESSIBLE CEILING.
- DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15"U.O.N.
- WP G — WEATHERPROOF RECEPTACLE ("GFI" TYPE): 125v., 20 AMP., NEMA 5-20R WITH WEATHERPROOF WHILE IN USED COVER. MOUNT IN A 2" DEEP BOX. +15" UNLESS OTHERWISE NOTED.
- P — PLUG LOAD CONTROLLED DUPLEX RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15" U.O.N. PROVIDE PERMANENT LABEL "CONTROLLED" IN WHITE LETTER WITH BLACK BACKGROUND ON THE PLUG LOAD RECEPTACLE.
- P — QUAD RECEPTACLES. ONE NORMAL AND ONE PLUG LOAD CONTROLLED RECEPTACLE: 125V., 20 AMP., NEMA 5-20R. UNLESS OTHERWISE NOTED. +15" U.O.N. PROVIDE PERMANENT LABEL "CONTROLLED" IN WHITE LETTER WITH BLACK BACKGROUND ON THE PLUG LOAD RECEPTACLE.
  DOUBLE DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. +15" U.O.N.
- G — GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE: 125v., 20 AMP., NEMA 5-20R. MOUNT IN A 2" DEEP BOX. +15" UNLESS OTHERWISE NOTED.
- (S) — MOTOR. "5" INDICATES HORSEPOWER.
- (F) — EXHAUST FAN.
- A-1,3,5 — HOMERUN TO PANEL "A", CIRCUITS 1, 3, 5.
- CONDUIT: IN OR BELOW FLOOR OR BELOW GRADE.
- CONDUIT: EXPOSED IN UNFINISHED AREAS; CONCEALED ABOVE CEILING OR IN WALL IN FINISHED AREAS.
- -E- — (E) CONDUIT AND WIRES TO REMAIN.
- -XR- — DISCONNECT AND REMOVE (E) CONDUITS AND WIRES.
- 3/4"C, 2#12 & 1#12 GND
- 3/4"C, 3#12 & 1#12 GND
- 3/4"C, 4#12 & 1#12 GND
- 3/4"C, 5#12 & 1#12 GND
- 1"C, 3#6 & 1#10G — OTHER CONDUIT AND WIRE SIZE AS NOTED ON DRAWINGS.
  1"C, 2#10 & 1#10G
- LIGHTING PANEL.
- (A) — PANEL DESIGNATION, LETTER IDENTIFIES THE PANEL.
- POWER PANEL OR MOTOR CONTROL CENTER.
- MAIN SERVICE SWITCHBOARD.
- OR (T) — TRANSFORMER.
- S — SINGLE POLE SWITCH. } +48"
- S_2 — TWO POLE SWITCH. } +48"
- S_M — HORSEPOWER RATED SWITCH WITHOUT OVERLOADS.
- S_T — MANUAL MOTOR STARTER: TOGGLE TYPE WITH OVERLOADS.
- S_{2M} — HORSEPOWER RATED, 2P DISCONNECT SWITCH WITHOUT OVERLOADS.
- ab D — 0-10V DIMMER WITH RAISE, LOWER, ALL ON AND ALL OFF BUTTONS. QUANTITY AS NOTED ON PLANS. WATTSTOPPER #LMSW-104. +48" AFF.
- D — 0-10V DIMMER SWITCH. +48" AFF. "WATTSTOPPER" #LMDM-101.
- LINE VOLTAGE DIMMER SWITCH. +48" AFF.
- WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR AT +48" A.F.F. "WATT STOPPER" WA-200.
- ab — WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR WITH BUILT-IN TWO SWITCHES. "WATT STOPPER" WA-300. +48" AFF.
- CEILING MOUNTED PHOTOCELL. WATT STOPPER #LMLS-400.
- DIMMING ROOM CONTROLLER. WATT STOPPER #LRMC-212 OR LRMC-213.
- PLUG LOAD ROOM CONTROLLER. WATT STOPPER #LMPL-101.
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR FOR USE WITH DIMMING CONTROLLER. WATT STOPPER LMDC-100.
- T — THERMOSTAT OUTLET: 4" SQ. BOX AT +48".
- SP — J-BOX WITH BLANK COVER FOR OFOI SPEAKER. +10' A.F.F. FOR EXTERIOR; 4" BELOW CEILING FOR INTERIOR.
- M — J-BOX WITH BLANK COVER FOR OFOI MICROPHONE; +15" A.F.F. U.O.N.
- 5S DEEP OUTLET BOX WITH 1-GANG RING AND BLANK COVER FOR OWNERS DATA AND TEL OUTLETS, WALL MOUNTED +15" A.F.F. U.O.N.
- SC — 4S J-BOX FOR OWNERS WALL MOUNTED CCTV CAMERA. +10'-0" A.F.F. FOR EXTERIOR & 4" BELOW CEILING FOR INTERIOR OFOI EQUIPMENT.
- SC — 4S J-BOX FOR OWNERS CEILING MOUNTED CCTV CAMERA. OFOI EQUIPMENT.

- LC — 3/4"C - (1)DC CABLE FOR LIGHTING CONTROL. (CAT5E)
- DC — 3/4"C-2#18 FOR DIMMING CONTROLS.
- EC — ELECTRONIC TIME CLOCK.
- MDF — MAIN DISTRIBUTION FRAME.
- TEL — TELEPHONE.
- OFOI — OWNER FURNISHED OWNER INSTALLED.
- OFCI — OWNER FURNISHED CONTRACTOR INSTALLED.
- H.P. — HORSEPOWER.

SYMBOLS LIST CONT.

- KP — INTRUSION ALARM SECURITY KEYPAD. +48" A.F.F. OFOI EQUIPMENT.
- EXISTING J-BOX TO BE DEMOLISHED.
- DEMOLISH EXISTING FLUSH MOUNTED RECEPTACLE OUTLET INCLUDING ASSOCIATED WIRES. PROVIDE BLANK COVER PLATE IF NOT BEING RE-USED.
- SS — DEMOLISH (E) WALL SWITCH INCLUDING ASSOCIATED CONDUIT AND WIRES.
- DEMOLISH (E) LIGHTING FIXTURE INCLUDING ASSOCIATED CONDUIT AND WIRES.

A.F.F.	ABOVE FINISHED FLOOR.
N.F.	NONFUSED.
N.O.	NORMALLY OPEN.
LCP	LIGHTING CONTROL PANEL.
MLO	MAIN LUGS ONLY.
MTTB	MAIN TELEPHONE TERMINAL BACKBOARD.
OFOI	OWNER FURNISHED OWNER INSTALLED.
C.O.	CONDUIT ONLY WITH PULL WIRE.
A.I.C.	AMPERE INTERRUPTING CURRENT.
W.P.	WEATHERPROOF.
U.O.N.	UNLESS OTHERWISE NOTED.
N.C.	NORMALLY CLOSED.
C/B	CIRCUIT BREAKER.
A.F.G.	ABOVE FINISH GRADE.
PC	PHOTOCELL.

CCTV, INTRUSION ALARM, PUBLIC ADDRESS CABLE AND WIRING

- —C— 1" CONDUIT ONLY FOR CCTV CABLE.
- —2C— 1-1/4" CONDUIT ONLY FOR CCTV CABLE.
- —A— 1" CONDUIT ONLY FOR INTRUSION ALARM WIRING.
- —M— 1" CONDUIT ONLY FOR PA SYSTEM.
- —SP— 1"C.O. FOR PA SYSTEM.
- — —SP— — 1"C.O. FOR PA SYSTEM.

COMPUTER DATA/TELEPHONE, CABLE & WIRING

- —2D— 1"C.O. FOR OWNERS 2D DATA/TEL CABLES.
- —2D/1T— 1"C.O. FOR OWNERS 2D/1T DATA/TEL CABLES.
- —4D/2T— 1-1/4"C.O. FOR OWNERS 4D/2T DATA/TEL CABLES.
- —6D/3T— 1-1/2"C.O. FOR OWNERS 6D/3T DATA/TEL CABLES.

CABLE TYPE

"D" CABLE – 4 PAIR #24 UTP CATEGORY 6A CABLE.

"DC" CABLE – 4 PAIR #24 UTP CATEGORY 5E CABLE (LIGHTING CONTROL).

"T" CABLE – 3C#24 UTP CAT-3 CABLE.

CODES, STANDARDS & GUIDES

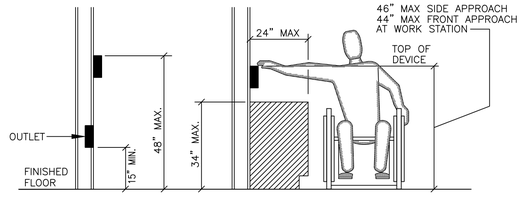
PARTIAL LIST OF APPLICABLE CODES AS OF January 1, 2017

2016 California Administrative Code, Part 1, Title 24 C.C.R.
2016 California Building Code (CBC), Part 2, Title 24 C.C.R.
(2015 International Building Code Volumes 1-2 and 2013 California Amendments)
2016 California Electrical Code (CEC), Part 3, Title 24 C.C.R.
(2014 National Electrical Code and 2016 California Amendments)
2016 California Mechanical Code (CMC) Part 4, Title 24 C.C.R.
(2015) Uniform Mechanical Code and 2016 California Amendments)
2016 California Plumbing Code (CPC), Part 5, Title 24 C.C.R.
(2015) Uniform Plumbing Code and 2016 California Amendments)
2016 California Energy Code (CEC), Part 6, Title 24 C.C.R.
2016 California Elevator Safety Construction Code (CEC), Part 7, Title 24 C.C.R.
2016 California Historical Building Code (CFC), Part 8, Title 24 C.C.R.
2016 California Fire Code, Part 9, Title 24 C.C.R.
(2015 International Fire Code and 2016 California Amendments)
2016 California Green Building Standards Code, Part 11, Title 24 C.C.R.
2016 California Referenced Standards, Part 12, Title 24 C.C.R.
Title 19 C.C.R., Public Safety, State Fire Marshal Regulations
2010 ASME A17.1(w/ A17.1a/CSA B44a-08 addenda) Safety Code For Elevators And Escalators

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13	Automatic Sprinkler Systems	2016 Edition
NFPA 14	Standpipe Systems	2016 Edition
NFPA 17	Dry Chemical Extinguishing Systems	2016 Edition
NFPA 17a	Wet Chemical Systems	2016 Edition
NFPA 20	Stationary Pumps	2016 Edition
NFPA 22	Water tanks for Private Fire Protection	2016 Edition
NFPA 24	Private Fire Mains	2016 Edition
NFPA 25	Inspection, Testing, Maintenance of Water-based Fire Protection Systems	2014 Edition
NFPA 72	National Fire Alarm Code	2016 Edition
NFPA 253	Critical Radiant Flux of Floor Covering Systems	2015 Edition
NFPA 2001	Clean Agent Fire Extinguishing Systems	2015 Edition
ICC 300	ICC Standards on Bleachers, Folding and Telescoping Seating and Grand stands	2012 Edition

Reference code section for NFPA Standards– 2016 CBC (SFM) Chapter 35. See Chapter 35 for State of California amendments to NFPA Standards.



MOUNTING HEIGHTS OVER OBSTRUCTION

MOUNTING HEIGHTS

N.T.S.

TYPICAL MOUNTING HEIGHTS ABOVE FINISHED FLOOR (UNLESS OTHERWISE NOTED ON DRAWINGS)

+48" TO TOP OF BOX	LIGHT SWITCHES, DIMMER SWITCHES, FIRE ALARM PULL STATION, DUCT DETECTOR TEST PANEL, INTERCOM CALL SWITCH, SPEAKER VOLUME CONTROL, T-STATS, BY-PASS TIMER, WALL TELEPHONE.
+15" TO BOTTOM OF BOX	ALL DUPLEX RECEPTACLES, WALL OUTLET FOR DESK TELEPHONE, COMPUTER OUTLET, UNLESS OTHERWISE NOTED.

GENERAL NOTES

1. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIAL FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
2. WORK INCLUDES ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, DELIVERY AND INSTALLATION OF ELECTRICAL SYSTEM, COMPLETE, AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
3. CONSTRUCT PROJECT IN ACCORDANCE WITH FOLLOWING CODES: REGULATIONS OF STATE AND LOCAL FIRE MARSHAL; NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION, EDITION IN FORCE; LOCAL CODES AND ORDINANCES; TITLE 19, 21 AND 24 CALIFORNIA ADMINISTRATIVE CODE.
4. PERMITS, FEES AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED BY ANY CONSTITUTED AUTHORITY HAVING JURISDICTION INCLUDING UTILITIES. ARRANGE AND PAY FOR ALL REQUIRED INSPECTIONS OR EXAMINATIONS AND DELIVER CERTIFICATES OF INSPECTION TO ARCHITECT.
5. SUBMIT A LIST OF MATERIALS AND EQUIPMENT MANUFACTURERS THAT CONTRACTOR INTENDS TO USE. SUBMIT SHOP DRAWINGS FOR: CONDUITS, PULLBOXES, LIGHTING PANEL CONDUIT, LIGHT FIXTURES, BREAKERS AND DISCONNECT SWITCHES.
6. THE TERM "PROVIDE" USED ON DRAWINGS SHALL BE CONSIDERED TO MEAN "FURNISH AND INSTALL".
7. BEFORE PROCEEDING WITH WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND ASSUME ALL RESPONSIBILITY FOR FITTING OF MATERIALS AND EQUIPMENT TO OTHER PARTS OF EQUIPMENT AND TO STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF CLASS INDICATED. CAREFULLY CHECK DRAWINGS AND SEE THAT EQUIPMENT WILL FIT INTO SPACES PROVIDED.
8. LOCATIONS OF CONDUITS, OUTLETS, APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED.
9. BE CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINEAR RUNS OF WIRING OR CONDUIT. WIRING DIAGRAMS DO NOT NECESSARILY SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT.
10. EXTRA WORK OR COSTS TO THIS CONTRACTOR DUE TO OTHER CONTRACTORS OR TRADES SHALL BE ADJUSTED BETWEEN THIS CONTRACTOR AND OFFENDING CONTRACTOR AT NO EXTRA COST TO OWNER. NOTIFY ARCHITECT BEFORE SUCH EXTRA WORK IS DONE.
11. WHERE EQUIPMENT IS MOUNTED ON VIBRATION ISOLATORS, USE FLEXIBLE CONNECTIONS TO REDUCE TRANSMISSION OF NOISE.
12. WHERE CONDUITS PASS THROUGH SLEEVES IN INTERIOR WALLS, FLOORS, OR CEILINGS, COMPLETELY FILL SPACE BETWEEN EACH CONDUIT AND ITS SLEEVE TO PROVIDE AN AIRTIGHT SEAL.
13. USE GLASS FIBER MATERIAL, "DUXSEAL" COMPOUND, FOR ACOUSTIC SEALS.
14. ALL EQUIPMENT SHALL BE BRACED AND/OR ANCHORED TO RESIST A HORIZONTAL FORCE PER TITLE 24, PART 2 SECTION 2312 FOR ZONE 4.
15. PROVIDE CAST OUTLET BOXES IN EXTERIOR LOCATIONS AND WET LOCATIONS.
16. WHERE BOXES ARE INSTALLED IN FIRE RATED CEILING OR WALLS, BE RESPONSIBLE FOR PRESERVING INTEGRITY OF FIRE RATING AS REQUIRED.
17. PROVIDE COPPER CONDUCTORS ONLY.
18. PROVIDE TYPE "THHN" OR "THWN" WIRES ONLY.
19. PROVIDE "U.L. APPROVED" OR "U.L. LISTED" ELECTRICAL EQUIPMENT ONLY.
20. USE RIGID GALVANIZED STEEL CONDUIT FOR ALL SIZES WHERE DIRECTLY EXPOSED TO WEATHER; WHERE SUBJECT TO ABNORMAL CONDITIONS OF HEAT, COLD, MOISTURE, HUMIDITY, FUMES AND HAZARDOUS ELEMENTS; WHERE INSTALLED EXPOSED BELOW 7-1/2 FEET, IN AREAS WHERE SUBJECT TO MECHANICAL INJURY INCLUDING MECHANICAL AND EQUIPMENT ROOMS; AND IN CONCRETE SLABS ON GRADE.
21. EMT CONDUIT WITH COMPRESSION TYPE FITTINGS MAY BE USED FOR ALL SIZES UP TO 1-1/2 INCHES MAXIMUM TRADE SIZE IN DRY LOCATIONS AS IN STUD PARTITIONS AND FURRED CEILING SPACES. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET TO PANEL EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED OR INDICATED. EMT SHALL NOT BE RUN EXPOSED, IN CONCRETE, RUNS MORE THAN 100 FEET FOR POWER FEEDERS.
22. USE FLEXIBLE STEEL CONDUIT ONLY WHERE INDICATED AND FOR SHORT MOTOR OR VIBRATING EQUIPMENT CONNECTIONS, MINIMUM 36 INCHES LONG, OR FOR CONNECTIONS TO RECESSED FIXTURES FROM JUNCTION OR PULLBOXES. MAXIMUM LENGTH FOR ANY APPLICATION SHALL BE 6 FEET. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT WITH SEPARATE INSULATED, STRANDED COPPER EQUIPMENT GROUND CONDUCTOR FOR CONNECTIONS IN AREAS EXPOSED TO THE WEATHER, DAMP OR WET LOCATIONS AND CONNECTIONS TO MOTORS AND TRANSFORMER ENCLOSURES, REGARDLESS OF LOCATION.
23. USE PVC (POLYVINYL CHLORIDE) CONDUIT BELOW GRADE ONLY. RUN AT MINIMUM OF 6" BELOW BOTTOM OF FLOOR SLAB OR 24" BELOW GRADE OUTSIDE OF BUILDING LINES UNLESS OTHERWISE NOTED. USE RIGID STEEL ELBOWS AND RISERS THROUGH SLAB.
24. SEAL ALL PVC CONDUITS AT BOTH ENDS WITH "PERMACEL" INCLUDING THOSE TERMINATING IN STEEL RISERS. MAKE GAS TIGHT.
25. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
26. PROVIDE A #12 PULL WIRE IN ALL CONDUITS INDICATED AS CONDUIT ONLY (C.O.) RATED 250 POUND TENSILE STRENGTH.
27. WIRING DEVICES: HIGHEST SPECIFICATION GRADE, COLOR AS SELECTED BY ARCHITECT.
28. WIRING DEVICE PLATES: COLOR-FINISH AS SELECTED BY ARCHITECT.
29. PROVIDE ALL NECESSARY J-BOXES AND PULL BOXES OF PROPER SIZES AS REQUIRED.
30. PROVIDE WEATHERPROOF TYPE ELECTRICAL EQUIPMENT FOR EXTERIOR LOCATIONS.
31. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF WORK. BE RESPONSIBLE FOR CHECKING AND COORDINATING WITH OTHER TRADES AND VERIFYING SPACE IN WHICH WORK WILL BE INSTALLED.
32. PROVIDE NAMEPLATES ON SWITCHBOARD, PANELBOARDS, DISCONNECT SWITCHES, TIME CLOCKS, CONTACTORS, TRANSFORMERS AND OTHER MAJOR ELECTRICAL EQUIPMENT. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON A BLACK BACKGROUND. SCREW NAMEPLATES TO EQUIPMENT.
33. SEAL ALL SPACE AROUND CONDUIT PENETRATION THROUGH FIRE-RATED WALL WITH A UL LISTED FIRE BARRIER COMPOUND. "3M" CAULKING OR EQUAL.
34. DRAWINGS DO NOT SHOW ALL NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED SURFACES WHERE THE BOXES ARE ATTACHED.
35. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE CITY OF LA BUILDING & SAFETY DEPARTMENT.
36. FUSIBLE DISCONNECT SWITCH SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
37. WHEN TRENCHING FOR NEW UNDERGROUND CONDUIT, EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ALL DAMAGED LINES. CONTRACTOR SHALL INSTALL "ELECTRICAL CONDUIT" WARNING YELLOW TRACING TAPE 6" BELOW FINISH GRADE FOR THE ENTIRE TRACE LENGTH.
38. AS PART OF CLOSEOUT DOCUMENT CONTRACTOR SHALL PROVIDE ONE SET OF AS-BUILTS DRAWINGS AT THE COMPLETION OF THE JOB. SHOW EXACT LOCATION AND MOUNTING OF EQUIPMENT INCLUDING DIMENSIONS.
39. CONDUITS ENTERING AND/OR LEAVING POLE FOOTING SHALL BE RIGID PVC COATED STEEL WITH PLASTIC BUSHING. MAKE TRANSITION FROM PVC TO METALLIC AT A MINIMUM DISTANCE OF 3'-0" FROM FOOTING.
40. UNDERGROUND CONDUIT RUNS IN RECREATION AND PARKS PROPERTY INSTALLED WITH SCHEDULE 40 PVC SHALL HAVE A MINIMUM 3" TOP COVER TO CONCRETE OVER ITS ENTIRE LENGTH (EXCEPT UNDER CONCRETE SIDEWALKS) AND SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE PREVAILING CODE BUT NOT LESS THAN SHOWN ON THE PLAN. CONCRETE COVER SHALL BE MINIMUM OF 100-E-100 SLURRY MIX.
41. ALL CONDUITS BENDS INSTALLED UNDERGROUND SHALL BE THE LONG RADIUS TYPE WITH RADII NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT AND WITH NOT MORE THAN THREE 90° BENDS IN ANY RUN. EXCEPTION: FOR POWER AND LIGHT CONDUIT ABOVE GROUND, FACTORY ELLS ARE PERMITTED.
42. CONDUITS IN UNDERGROUND PULL BOXES SHALL BE SEALED WITH "LHD1" OR "LHD5" DUCT SEAL AS MANUFACTURED BY DOTTIE CO. OR APPROVED EQUAL.
43. PLACE 6" WIDE, 4 MIL PLASTIC YELLOW MARKER TAPE AT 12 INCHES BELOW FINISH GRADE ALONG AND ABOVE BURIED CONDUITS. LABEL TAPE "CAUTION: ELECTRIC LINE BELOW" OR SIMILAR WORDING.
44. ALL SPLICES IN UNDERGROUND PULL BOXES SHALL BE SCOTCH BAGGED AND WATER TIGHT.
45. FOR EACH NEW LED LIGHTING INSTALLATION (OR RETROFIT OF EXISTING MH, HPS OR OTHER TYPE OF LIGHTING SOURCES) CONTRACTOR SHALL CONTACT MS. MAYCHELL YEE FROM DEPARTMENT OF WATER AND POWER (DWP) AND SUBMIT REBATE APPLICATION. PHONE # (213) 367-2306.
46. RECORD DRAWINGS: IMMEDIATELY AFTER WORK IS INSTALLED, CAREFULLY DRAW ON PRINTS IN RED INK ALL WORK WHICH IS INSTALLED AT VARIANCE WITH THE WORK AS INDICATED ON THE DRAWINGS. INDICATE BY MEASURED DIMENSION TO BUILDING CORNERS OR OTHER PERMANENT MONUMENTS THE EXACT LOCATION OF ALL CHANGES.
47. OPERATING MANUALS AND INSTRUCTIONS: THE CONTRACTOR SHALL FURNISH TO THE CITY FOUR BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS FOR ALL ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL EXPLAIN IN DETAIL ALL MANUALS FOR THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT TO THE RECREATION AND PARKS MAINTENANCE PERSONAL BEFORE COMPLETION AND ACCEPTANCE OF THE PROJECT.
48. ANTI-GRAFFITI COATINGS: THE CONTRACTOR TO APPLY AN ANTI-GRAFFITI COATING TO ALL LIGHT POLE CONCRETE BASES. ACCEPTABLE PRODUCTS: "SUPER-KOTE A-G5" SEALER MANUFACTURED BY VEN-CHEM COMPANY INC. P.O. BOX 3186, SANTA BARBARA, CALIFORNIA, PHONE (805)967-7600 OR "MONOCHEM PERMASHIELD" BY FRAZEE PAINT CO. RESEARCH REPORT NO. 28080, PHONE (800) 826-9048. THE "GRAFFITIRASOR SYSTEMS" MANUFACTURED BY RAINPROOF SYSTEMS, CITY OF COMMERCE, CA 90022, RESEARCH REPORT NO. 25035, PHONE (213) 887-8761. "VANDAL GUARD" BY RAINGUARD PRODUCTS CO., 821 W. HYDE PARK BLVD.; INGLEWOOD, CA 90302, PHONE (310) 670-2953. OR APPROVED EQUAL.
49. LIGHTING PANELBOARDS. PANELBOARDS SHALL BE DEAD-FRONT, FLUSH OR SURFACE MOUNTED AS INDICATED ON PANEL SCHEDULES. CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC TYPE, QUICK-MAKE QUICK-BREAK MECHANISM AND BOLT-ON CONSTRCTION. PROVIDE A HINGED LOCKABLE DOOR FOR EACH PANELBOARD WITH A TYPEWRITTEN DIRECTORY OF CIRCUITS CONTROLLED BEHIND EACH DOOR WITH A PLASTIC PROTECTION.
50. PROVIDE APPROVED PAD LOCKING DEVICE FOR EACH AND EVERY CIRCUIT BREAKER IN EVERY PANELBOARD (THESE ARE IN ADDITION TO ANY HANDLE LOCKOFFS INDICATED ON PANEL SCHEDULES).
51. ALL CIRCUIT BREAKERS IN ALL LIGHTING PANELBOARDS SHALL HAVE A MINIMUM INTERRUPTING CAPACITY RATING OF 10,000 AMPS FOR 120/208V AND 14,000 A.I.C. FOR 277/480V.

BUREAU OF ENGINEERING — OFFICIAL RECORD

BID SET
Date: May 17, 2022

SCOPE OF WORK

INSTALLATION OF LIGHTING, POWER, AND SECURITY SYSTEMS OF THE REFURBISHED BATHHOUSE BUILDING.

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

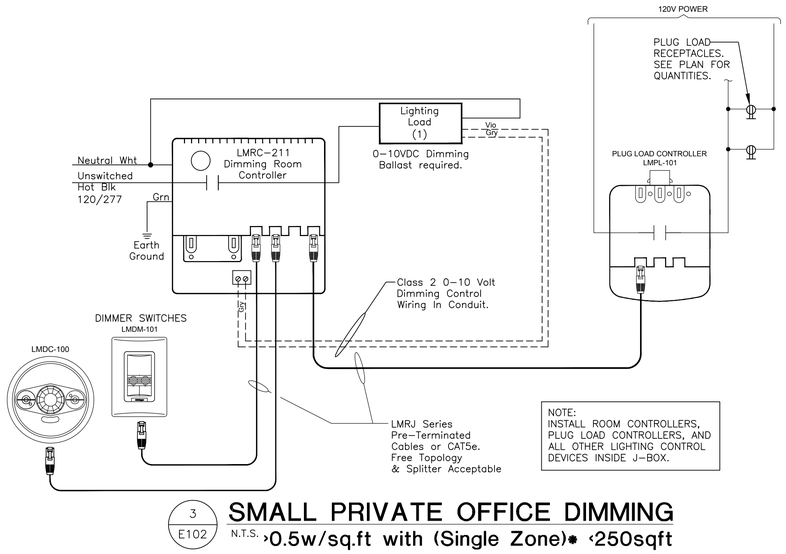
REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:49 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E101.DWG

CITY OF LOS ANGELES — DEPARTMENT OF PUBLIC WORKS — BUREAU OF ENGINEERING
ENGINEERING — CITY OF LOS ANGELES
BUILDING NO. -
INDEX NO. RP-300123
REVISIONS: NO. | DATE | BY | SERIAL NO.
TED ALLEN, P.E. — CITY ENGINEER — DATE: 03/10/2022
ARCHITECTURAL DIVISION — LIC. NO. E14126 — DATE: 03/10/2022
ENGINEER: JIMMY FONG — DATE: 03/10/2022
DESIGNED BY: P.M. — DATE: 03/10/2022
DRAWN BY: H.Y. — DATE: 03/10/2022
CHECKED BY: P.M. — DATE: 03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT — DATE: 03/11/2022
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: SYMBOL LIST, CODES, AND NOTES
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042
WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E101
SHEET 63 OF SHEETS 96

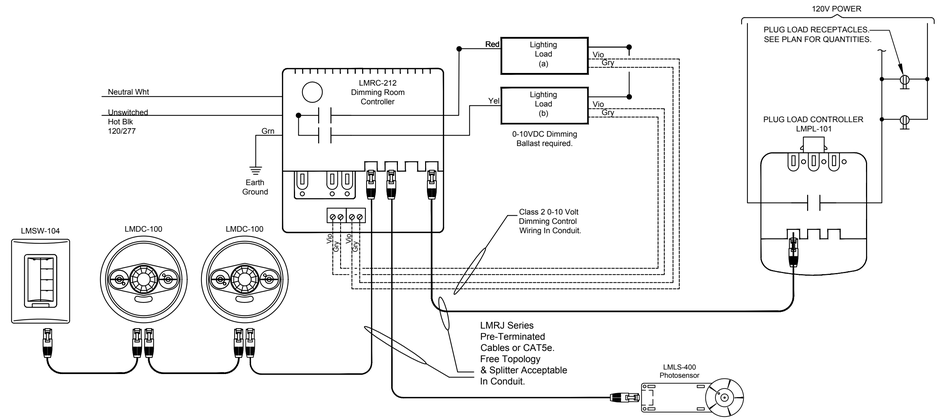
REGISTERED PROFESSIONAL ENGINEER — JIMMY L. FONG — No. E14126 — CIVIL — 3/10/2022 — STATE OF CALIFORNIA

PLOTTED: 3/10/2022 2:59 PM



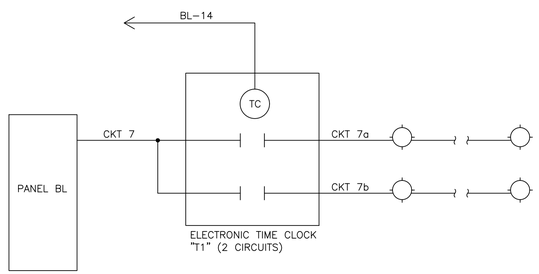
3 / E102 **SMALL PRIVATE OFFICE DIMMING**

N.T.S. ›0.5w/sq.ft with (Single Zone)* ‹250sqft



2 / E102 **OPEN OFFICE DIMMING / MULTI-ZONE**

N.T.S. ›0.5w/sq.ft with Daylighting (Multi-Zone)



1 / E102 **LIGHTING CONTROL DIAGRAM**

N.T.S.

NOTE: TIME CLOCK "TB" IS SIMILAR.

LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS:

CLG = CEILING
REC = RECESS
CHN = CHAIN HUNG
PEN = PENDANT
SPC = SPECIAL
WALL = WALL
STD = STANDARD
LED = LIGHT EMITTING DIODE

NOTES:

1. VERIFY EXACT CEILING TYPE AND PROVIDE PROPER FIXTURES WITH ALL NECESSARY MOUNTING ACCESSORIES.

	TYPE	MTG.	CLASS	MANUFACTURER AND CATALOG NUMBER	FINISH	LAMP TYPE	TOTAL WATTS	VOLT	DESCRIPTION
	A	PEN	LED	CONTECH LTG #CGL12100-40K MVD2-AL16-FC-PACDLA16-P	STD	LED 4000K	98	120	16" DIA PENDANT MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER.
	AE	PEN	LED	CONTECH LTG #CGL12100-40K MVD2-EC-A16-FC-PACDLA16-P	STD	LED 4000K	98	120	SAME AS FIXTURE "A" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	B	PEN	LED	CONTECH LTG #CGL1238-40K-MVD2-CW-FC-P-PACDLA12	STD	LED 4000K	38	120	12" DIA PENDANT LED FIXTURE WITH 12" DIAMETER METAL REFLECTOR, WIDE DISTRIBUTION WITH 0-10V DIMMING DRIVER.
	BE	PEN	LED	CONTECH LTG #CGL1238-40K-MVD2-EC-CW-FC-P-PACDLA12	STD	LED 4000K	38	120	SAME AS FIXTURE "B" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	C	CLG	LED	LUMINAIRE LED #VPF8-4-50W-4000K-120-277-CP-BLK-DM	STD	LED 4000K	50	120	4 FT SURFACE MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER.
	CE	CLG	LED	LUMINAIRE LED #VPF8-4-50W-4000K-120-277-CP-BLK-DM-4EMB310	STD	LED 4000K	50	120	SAME AS FIXTURE "C" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	D	CLG	LED	COLUMBIA LIGHTING #LCL8-40-LW-E-U	STD	LED 4000K	25	120	4 FT SURFACE MOUNTED LED STRIP.
	F	REC	LED	PRESCOLITE #LF6LEDG4-6LFLED7G4-40K-IP65-B6	STD	LED 4000K	27	120	6" DIA RECESS LED FIXTURE APPROVED FOR WET LOCATION.
	G	CLG	LED	ASL LIGHTING #DSF-24-4000K-DV-FW-LCU	STD	LED 4000K	24	120	CEILING MOUNTED LED FIXTURE, WET LOCATION TYPE.
	GE	CLG	LED	ASL LIGHTING #D5F-24-4000K-DV-FW-LCU-EMG	STD	LED 4000K	24	120	SAME AS FIXTURE TYPE "G" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK WITH BUILT-IN OCCUPANCY SENSOR. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	H	WALL	LED	EVENLITE #CCDS-EM-G-1-AA-1B-SD	STD	LED	25	120	UNIVERSAL MOUNTED LED EXIT SIGN, GREEN LETTERS, BRUSH ALUMINUM BODY WITH EMERGENCY BACK UP. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	J	CLG	LED	COLUMBIA LIGHTING #LXEM-4-40-LW-RFA-ED-U-OS1360WLK	STD	LED	36	120	4' SURFACE MOUNTED LED ENCLOSED AND GASKETED FIXTURE WITH BUILT-IN OCCUPANCY SENSOR.
	JE	CLG	LED	COLUMBIA LIGHTING #LXEM-4-40-LW-RFA-ED-U-ELL14-OS1360WLK	STD	LED	36	120	SAME AS FIXTURE "J" EXCEPT EQUIPPED WITH EMERGENCY BATTERY PACK. PROVIDE CONSTANT HOT WIRE TO EMERGENCY BATTERY PACK.
	K	CLG	LED	HUBBELL #VBGL-GUARD	STD	LED	11	120	CEILING MOUNTED LED LTS WITH WIRE GUARD.
	K1	WALL	LED	HUBBELL #VWGL-GUARD	STD	LED	11	120	WALL MOUNTED LED LIGHTS WITH WIREGUARD.
*	L	POLE	LED	CREE LIGHTING #OSQ-WM-DM-3ME-K-40K-UL-BZ-DIM-PML2-XA-SENSREM	STD	LED	130	240	POLE MOUNTED LED FIXTURE MOUNTED ON MUSCO POLE FOR SECURITY LIGHTS.

* - THIS FIXTURE COMES WITH THE MUSCO POLE ASSEMBLY. IT IS SHOWN FOR TITLE 24 CALCULATIONS ONLY.

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
OFFICIAL RECORD

BUREAU OF ENGINEERING
CITY OF LOS ANGELES ENGINEERING

NO.	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 12-31-2023 STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE:
ARCHITECTURAL DIVISION		03/10/2022
ENGINEER: JIMMY FONG	LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		03/10/2022
CHECKED BY: P.M.		03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: LIGHTING FIXTURE SCHEDULE & DETAILS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E102

SHEET 64 OF SHEETS 96

PLOTTED: 3/10/2022 2:59 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:51 PM FILE: S:\ACAD\JF\2015\V15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E102.DWG

<UTF-8>

Control System Summary

Project Specific Notes:

Project Information

Project #:	185614
Project Name:	Verdugo Hills Recreation City Pool Deck [City Of LA
Date:	02/12/20
Project Engineer:	Daniel Lohman
Sales Representative:	Mike Higgins
Control System Type:	LED C&M
Communication Type:	PowerLine-ST
Scan:	185614B
Document ID:	185614P1V5-0212113156
Distribution Panel Location or ID:	Panel
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	240/60/1
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	5	30 AMP
Total Off/On/Auto Switches:	4	

Preliminary Plans
Confirm all Details - voltage,
# of distribution panels, etc.

Materials Checklist

Contractor/Customer Supplied:

- ❑ A dedicated control circuit must be supplied per distribution panel location.
  - — If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for circuits
  - — HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- ❑ Wiring:
  - — See chart on page 2 for wiring requirements
  - — Equipment grounding conductor and splices must be insulated. (per circuit)
  - — Lightning ground protection (per pole), if not Musco supplied.
- ❑ Electrical conduit wireway system
  - — Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central ™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

NOTE: Refer to Installation Instructions for more details on equipment information and ihe installation requirements

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Form: T-0030-1

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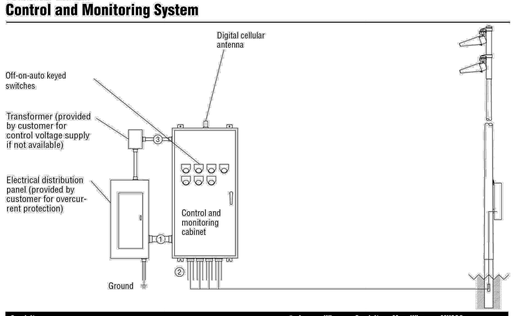
Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 2 of 4

Control•Link® Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
1	Power-line Communication Connection (dedicated, 20A)	*A	12	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E

* Notes: R60-100-00_A

A. See voltage and phasing per the notes on cover page.
B. Calculate per load and voltage drop.
C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
D. Equipment grounding conductor and any splices must be insulated.
E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).

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Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 3 of 4

SWITCHING SCHEDULE

Field/Zone Description	Zones
Pool	**1,2,3,4**
-Deck	1
-Security	2
-Spare 1	3
-Spare 2	4

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 1798.0
	SEALED: 205.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
P1,P4	Deck	8	4	**16.0**	30	C1	1
P2,P3	Deck	6	4	**12.0**	30	C2	1
P1,P2,P3,P4	Security	4	4	**0.0**	30	C3	2
P5	Spare 1	1	0	**1.0**	30	C4	3
P6	Spare 2	1	0	**1.0**	30	C5	4

*Full Load Amps based on amps per driver.

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Control System Summary

Verdugo Hills Recreation City Pool Deck [City Of LA] / 185614 - 185614B
Panel - Page 4 of 4

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole P1,P4	16.00		
1	1	C2	Pole P2,P3	12.00		
1	1	C3	Pole P1,P2,P3,P4	0.00		
1	1	C4	Pole P5	1.00		
1	1	C5	Pole P6	1.00		

ZONE SCHEDULE

ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION: POLE ID	CIRCUIT DESCRIPTION: CONTACTOR ID
Zone 1	1	Deck	P1	C1
			P4	C1
			P2	C2
			P3	C2
Zone 2	2	Security	P1	C3
			P2	C3
			P3	C3
			P4	C3
Zone 3	3	Spare 1	P5	C4
Zone 4	4	Spare 2	P6	C5

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Verdugo Hills Recreation City Pool Deck

Tujunga,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
P1, P4	50'	30'	1	CREE OSQ	0.13 kW	B
		50'	4	TLC-LED-400	1.60 kW	A
P2-P3	50'	30'	1	CREE OSQ	0.13 kW	B
		50'	3	TLC-LED-400	1.20 kW	A
4			*18*		*6.12 kW*	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Pool	5.6 kW	14
B	Security	0.52 kW	4

Fixture Type Summary

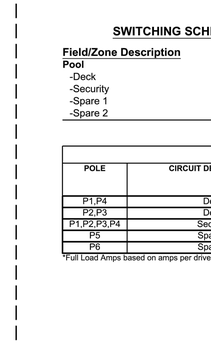
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
CREE OSQ	LED 5700K - 70 CRI	130W	17,000	--	--	--	4
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>81,000	>81,000	>81,000	14

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination: Ave	Min	Max	Max/Min	Ave/Min	Circuits	Fixture Qty
Deck	Horizontal	33.4	18	45	2.53	1.85	A	14
Pool	Horizontal Illuminance	42.3	37	52	1.43	1.14	A	14
Security	Horizontal	2.58	1	4	6.69	2.58	B	4
Security	Horizontal	2.58	1	4	6.69	2.58	B	4

From Hometown to Professional



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ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

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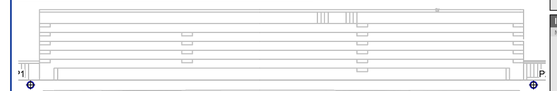
PROJECT SUMMARY

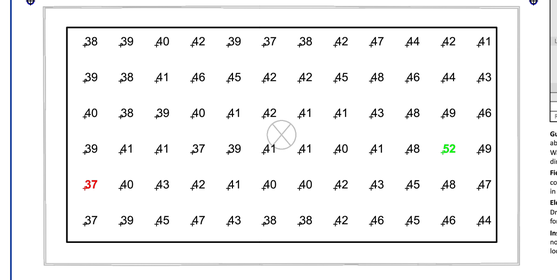
Verdugo Hills Recreation City Pool Deck

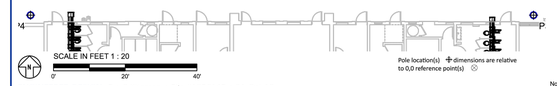
Tujunga,CA

EQUIPMENT LIST FOR AREAS SHOWN

Pole QTY	Pole LOCATION	Pole SIZE	Pole GRADE ELEVATION	Luminaires MOUNTING HEIGHT	Luminaires LUMINAIRE TYPE	Luminaires QTY / POLE	Luminaires THIS GRID	Luminaires OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	4	4	0
2	P2-P3	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	3	3	0
4	TOTALS					13	14	4







GRID SUMMARY

Name:	Pool
Size:	120' x 60'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Scan Average:	42.26
Maximum:	52
Minimum:	37
Avg / Min:	1.15
Max / Min:	1.43
UG (adjacent pts):	1.16
CU:	0.44
No. of Points:	72

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	14
Total Load:	5.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

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ILLUMINATION SUMMARY

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CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
EXP. 06/30/2023

TED ALLEN, P.E.
CITY ENGINEER
ARCHITECTURAL DIVISION
LIC. NO. E14126

		DATE:
CITY ENGINEER	TED ALLEN, P.E.	03/10/2022
ARCHITECTURAL DIVISION		03/10/2022
LIC. NO. E14126		03/10/2022
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/11/2022
DRAWN BY:	H.Y.	
CHECKED BY:	P.M.	
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: MUSCO LIGHTING CONTROL SUMMARY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E103
SHEET 65 OF SHEETS 96

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BID SET
Date: May 17, 2022

PLOTTED: 3/10/2022 2:59 PM

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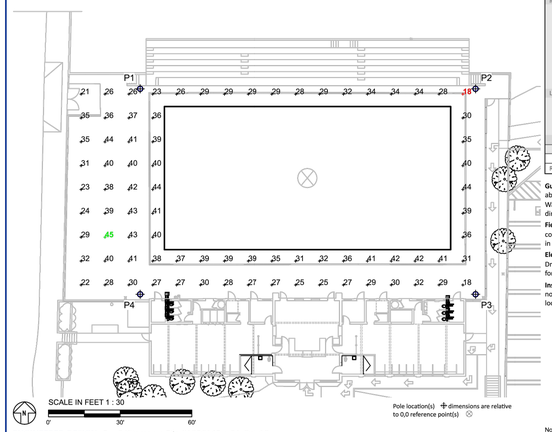
TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:52 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E103.DWG

REVISION DATES (DESIGN STAGE ONLY)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	4	4	0
2	P2-P3	50'	-	30'	CREE OSQ	1	0	1
				50'	TLC-LED-400	3	3	0
4	TOTALS					18	14	4



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

GRID SUMMARY

Name:	**Deck**
Size:	120' x 60'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**33.38**
Maximum:	45
Minimum:	18
Avg / Min:	1.89
Max / Min:	**2.53**
UG (adjacent pts):	1.68
CU:	0.39
No. of Points:	81

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	46,500 lumens
No. of Luminaires:	**14**
Total Load:	5.6 kW

Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	>81,000	>81,000	>81,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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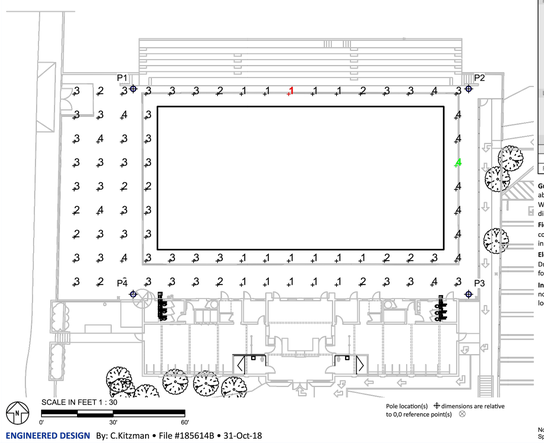
ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	P1, P4	50'	-	30'	CREE OSQ	1	1	0
				50'	TLC-LED-400	4	0	4
2	P2-P3	50'	-	30'	CREE OSQ	1	1	0
				50'	TLC-LED-400	3	0	3
4	TOTALS					18	4	14



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

GRID SUMMARY

Name:	**Security**
Size:	0' x 0'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**2.58**
Maximum:	4
Minimum:	1
Avg / Min:	4.31
Max / Min:	**6.69**
UG (adjacent pts):	1.80
CU:	0.32
No. of Points:	81

LUMINAIRE INFORMATION

Color / CRI:	5700K - 70 CRI
Luminaire Output:	17,000 lumens
No. of Luminaires:	**4**
Total Load:	0.52 kW

Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
CREE OSQ	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY

EQUIPMENT LAYOUT

INCLUDES:
- Pool
- Security

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

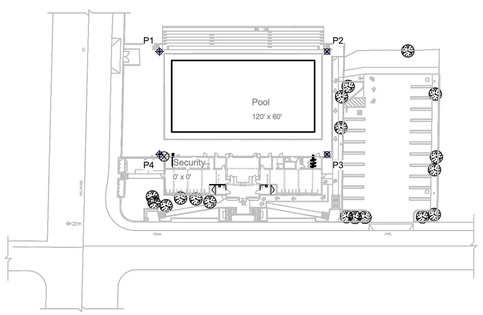
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	P1, P4	50'	-	30'	CREE OSQ	1
				50'	TLC-LED-400	4
2	P2-P3	50'	-	30'	CREE OSQ	1
				50'	TLC-LED-400	3
4	TOTALS					18

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (All min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Cree OSQ	-	-	-	-	-	-	-
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0



Pole location(s) ✛ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

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EQUIPMENT LAYOUT

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

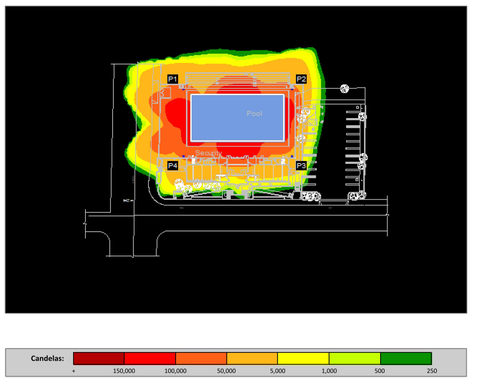
GLARE

Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



ENGINEERED DESIGN By: C.Kitzman • File #185614B • 31-Oct-18

Verdugo Hills Recreation City Pool Deck
Tujunga,CA

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ENVIRONMENTAL GLARE IMPACT

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
LIC. NO.	E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
BUILDING NO. -
SERIAL NO.
INDEX NO. RP-300123

NO.	REVISIONS:	DATE:	BY:
1			
2			
3			
4			
5			

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: MUSCO LIGHTING CONTROL SUMMARY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E104
SHEET 66 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES: (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:52 PM
FILE: S:\ACAD\JP\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E104.DWG

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

PANEL BL

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: FIRST AID

MAIN BRK: 150A

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 22K A.I.C. FULLY RATED

MOUNTING: FLUSH

SPLIT BUSSED PANEL

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
OFFICE, ENTRY LOBBY	594		6			1	20-1	*	20-1	2			12	412		STORAGE, TOILETS, OFFICE
STORAGE, TOILETS, FIRST AID		412	12			3	20-1	*	20-1	4			16		609	GIRLS DRESSING ROOM
BOYS DRESSING RM.	609		16			5	20-1		20-1	6			11	394		BASEMENT
* EXTERIOR LTS. WEST		299	13			7	20-1		20-1	8			5		500	(E) TUNNEL LTS-NORTH
SPARE						9	20-1		20-1	10			5	500		(E) TUNNEL LTS-SOUTH
SPARE						11	20-1		20-1	12	1				300	TIME CLOCK
SPARE						13	20-1		20-1	14						SPARE
SPARE						15	20-1		20-1	16						SPARE
SPARE						17	20-1		20-1	18						SPARE
SPARE						19	20-1		20-1	20						SPARE
STORAGE, TOILET, GIRLS DRESSING	900			5		21	20-1		20-1	22		5		900		STORAGE, TOILET, BOYS DRESSING
OFFICE, GIRLS DRESSING		900		5		23	20-1		20-1	24		5			900	STORAGE, TOILET, BOYS DRESSING
OFFICE	360			2		25	20-1		20-1	26		2		360		EXTERIOR RECEPT. - EAST
WATER HEATER, CIRC PUMP CONTROLS		400			1	27	20-1		20-1	28		2			800	CCTV/SEC
OFFICE, ENTRY LOBBY	900			5		29	20-1		20-1	30		1		500		MDF
OFFICE, ENTRY LOBBY		720		4		31	20-1		20-1	32						SPARE
OFFICE, ENTRY LOBBY	900			5		33	20-1		20-1	34						SPARE
SPARE						35	20-1		20-1	36						SPARE
SPARE						37	20-1		50-2	38	1			4380		SUB-FEED PANEL "AC"
SPARE						39	20-1		-	40					3870	- - - - -

PH-A= 11709 VA | PH-B= 9710 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 21419 VA OR 89.246 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 4329 VA X 1.25% = 5411.3 VA

FDL: 17090 VA + 5411 VA (LCL) = 22501 VA OR 93.76 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCK "TC". TC SHALL BE INTERMATIC #ET90215CE

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL P

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: BASEMENT

MAIN BRK: MLO

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 30K A.I.C. FULLY RATED

MOUNTING: SURFACE

SPLIT BUSSED PANEL

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
MUSCO POLE P1 & P4	1920		4			1	25-2	$	20-1	2			6	330		POOL LIGHTS *
- - - - -		1920				3	-	$	20-1	4			6		330	POOL LIGHTS *
MUSCO POLE P2 & P3	1440		4			5	25-2		20-1	6			11	396		BASEMENT LIGHTS
- - - - -		1440				7	-		20-2	8	1				500	MUSCO POWERLINE
SEC. LTS @ MUSCO POLE	260		4			9	20-2		-	10	-			500		- - - - -
- - - - -		260				11	-		20-1	14	1				300	TIME CLOCK TC-B
SPARE						13	20-1		20-1	16						SPARE
SPARE						15	20-1		20-1	18						SPARE
SPARE						17	20-1		20-1	18						SPARE
SPARE						19	20-1		20-1	20						SPARE
CHLORINE PUMP	510				1	21	15-1		20-1	22	1			300		MUSCO CONTROLLER
ACID PUMP		510			1	23	15-1	#	20-1	24	1				400	FACP
CHEMICAL CONTROLLER	400				1	25	20-1		20-1	26	1			1176		BACKWASH PUMP
CONV. RECEPT.		540		3		27	20-1		20-1	28						SPARE
SUMP DRAIN PUMP	1656				1	29	20-2		20-1	30						SPARE
- - - - -		1656				31	-		20-1	32						SPARE
SPARE						33	20-1		20-1	34						SPARE
SPARE						35	20-1		20-1	36						SPARE
SPACE						37				38						SPACE
SPACE						39				40						SPACE

PH-A= 8888 VA | PH-B= 7856 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 16744 VA OR 69.767 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 8036 VA X 1.25% = 10045 VA

FDL: 8708 VA + 10045 VA (LCL) = 18753 VA OR 78.14 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCKS. TIME CLOCK TC-B SHALL BE INTERMATIC #90215CE

\# PROVIDE "LOCK-ON" DEVICE ON CIRCUIT BREAKER AND RED LABEL "FIRE ALARM".

$ PROVIDE "GFCI" TYPE CIRCUIT BREAKER FOR POOL LIGHTS.

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL AC

120/240 VOLTS | 1 PHASE | 3 WIRE

LOCATION: STORAGE

MAIN BRK: 50A

BUS RATING/TYPE: 100A/COPPER

S.C. RATING 22K A.I.C. FULLY RATED

MOUNTING: SURFACE

LOCATION	WATTAGE PH-A	WATTAGE PH-B	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	LOCATION
FC-1	75				1	1	15-2		20-1	2	4			510		INFRARED RADIANT HEATER
- - - - -		75				3	-		20-1	4						SPARE
FC-2	75				1	5	15-2		20-1	6						SPARE
- - - - -		75				7	-		20-1	8						SPARE
HP-1	3720				1	9	45-2		20-1	10						SPARE
- - - - -		3720				11	-		20-1	14						SPARE
SPARE						13	20-1			16						SPACE
SPARE						15	20-1			18						SPACE
SPARE						17	20-1			18						SPACE
SPARE						19	20-1			20						SPACE

PH-A= 4380 VA | PH-B= 3870 VA | PH-C= 0 VA

TOTAL CONNECTED LOAD: 8250 VA OR 34.375 AMPS @ 120/240 VOLTS -- 1 PHASE

LCL: 0 VA X 1.25% = 0 VA

FDL: 8250 VA + 0 VA (LCL) = 8250 VA OR 34.38 A

* INDICATES CIRCUITS TO BE CONTROLLED BY ELECTRONIC TIME CLOCKS.

NOTE: PROVIDE TIE BAR DISCONNECTING MEANS TO CIRCUIT BREAKERS SERVING MULTI-WIRE CIRCUITS (SHARED NEUTRAL CONDUCTORS).

PANEL PP

240 VOLTS | 3 PHASE | 3 WIRE

LOCATION: BASEMENT

MAIN BRK: 175A

BUS RATING/TYPE: 225A/COPPER

S.C. RATING 30K A.I.C. FULLY RATED

MOUNTING: SURFACE

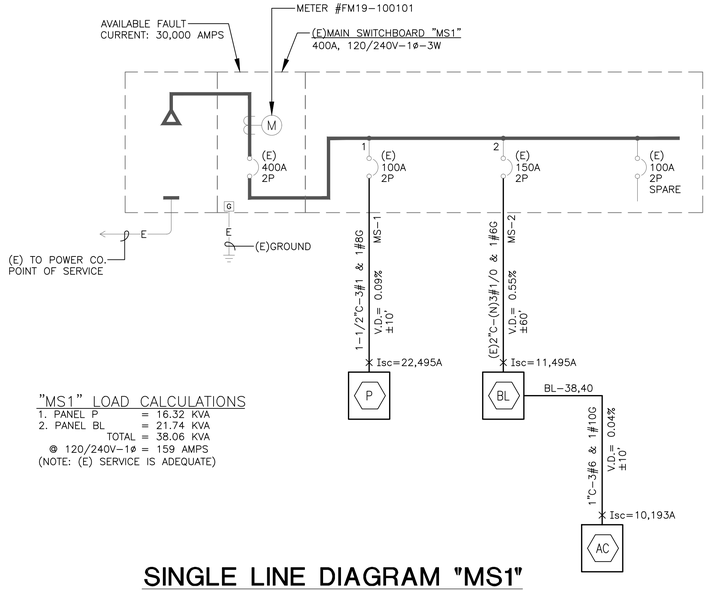
LOCATION	WATTAGE PH-A	WATTAGE PH-B	WATTAGE PH-C	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE PH-A	WATTAGE PH-B	WATTAGE PH-C	LOCATION
POOL CIRC. PUMP "CR1"	5810					1	1	80-3		80-3	2	1			5810			POOL CIRC PUMP "CP-2"
- - - - -		5810					3	-		-	4					5810		- - - - -
- - - - -			5810				5	-		-	6						5810	- - - - -
(E)DUPLEX SUMP PUMP	1881						7	20-3			8							SPACE
- - - - -		1881					9	-			10							SPACE
- - - - -			1881				11	-			12							SPACE
SPACE							13				14							SPACE
SPACE							15				16							SPACE
SPACE							17				18							SPACE

PH-A= 13501 VA | PH-B= 13501 VA | PH-C= 13501 VA

TOTAL CONNECTED LOAD: 40503 VA OR 97.598 AMPS @ 240 VOLTS -- 3 PHASE

25% OF L.M. 17430 VA X 25% = 4358 VA

FDL: 40503 VA + 4358 VA (LCL) = 44861 VA OR 108.1 A



"MS1" LOAD CALCULATIONS

1. PANEL P = 16.32 KVA
2. PANEL BL = 21.74 KVA

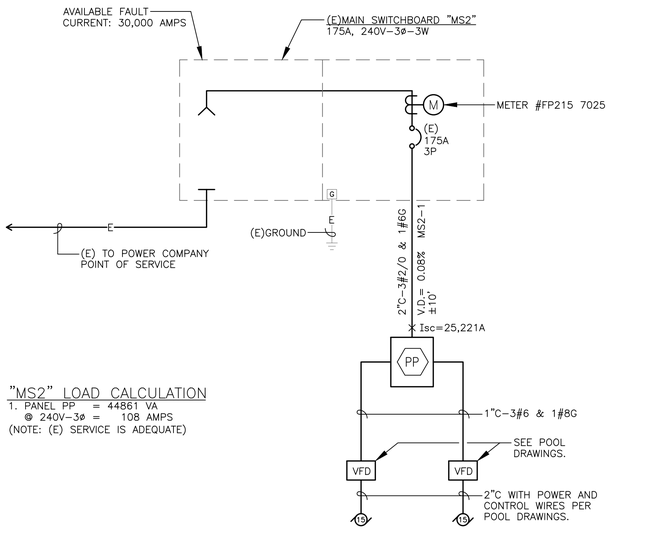
TOTAL = 38.06 KVA

@ 120/240V-1ø = 159 AMPS

(NOTE: (E) SERVICE IS ADEQUATE)

SINGLE LINE DIAGRAM "MS1"

N.T.S.



"MS2" LOAD CALCULATION

1. PANEL PP = 44861 VA

@ 240V-3ø = 108 AMPS

(NOTE: (E) SERVICE IS ADEQUATE)

SINGLE LINE DIAGRAM "MS2"

N.T.S.

BUREAU OF ENGINEERING OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

BUILDING NO. -

INDEX NO. RP-300123

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SINGLE LINE DIAGRAM & PANEL SCHEDULES

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

TED ALLEN, P.E.	CITY ENGINEER	DATE:	03/10/2022
	ARCHITECTURAL DIVISION	LIC. NO. E14126	03/10/2022
ENGINEER:	JIMMY FONG		03/10/2022
DESIGNED BY:	P.M.		03/10/2022
DRAWN BY:	H.Y.		
CHECKED BY:	P.M.		
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E105

SHEET 67 OF SHEETS 96

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E105.DWG

PLOTTED: 3/10/2022 3:00 PM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 1 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A. General Information

Climate Zone: 9	Conditioned Floor Area: 976 SF			
	Unconditioned Floor Area: 4597 SF			
Building Type:	☑ Nonresidential	☐ High-Rise Residential	☐ Hotel/Motel	
☐ Schools	☐ Relocatable Public Schools	☑ Conditioned Spaces	☑ Unconditioned Spaces	
Phase of Construction:	☐ New Construction	☐ Addition	☑ Alteration	
Method of Compliance:	☐ Complete Building	☑ Area Category	☐ Tailored	
Project Address:				

B. LIGHTING COMPLIANCE DOCUMENTS (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential manual published by the California Energy Commission.

YES	NO	FORM	TITLE
YES		NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
YES		NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, an PAF Calculation. All Pages required on plans for all submittals.
	NO	NRCC-LTI-03-E	Indoor Lighting Power Allowance
	NO	NRC-LTI-04-E	Tailored Method Worksheets
	NO	NRC-LTI-05-E	Line Voltage Track Lighting Worksheets

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 2 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts		Indoor Lighting Power for Unconditioned Spaces		Watts
1.	**Installed** Lighting NRCC-LTI-01-E, page 4	+	688		**Installed** Lighting NRCC-LTI-01-E, page 4	+	2438
2.	PORTABLE ONLY FOR OFFICES NRCC-LTI-01-E, page 3	+	0				
3.	Minus Lighting Control Credits NRCC-LTI-01-E, page 2	-	0		Minus Lighting Control Credits NRCC-LTI-01-E, page 2	-	0
4.	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	688		Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	2438
5.	Complies ONLY if **Installed** ≤ **Allowed**				Complies ONLY if **Installed** ≤ **Allowed**		
6.	**Allowed** Lighting Power Conditioned NRCC-LTI-03-E, page 1		753		**Allowed** Lighting Power Unconditioned NRCC-LTI-03-E, page 1		3284

D. Declaration of Required Installation Certificates
Declare by selecting yes for all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Form/Title	
✓		NRCI-LTI-01-E - Must be submitted for all buildings.	☐ Field Inspector
✓		NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
	✓	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 3 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retail copies and verify forms are completed and signed.)

YES	NO	Form/Title	
✓		NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
✓		NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
	✓	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACES** ☑ **UNCONDITIONED SPACES**

F. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST
☐ The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
☑ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines.
☐ Also include track lighting in schedule, and submit the track lighting compliance form (LTG-5C when line-voltage track lighting is used.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

BID SET
Date: May 17, 2022

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 4 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACES** ☐ **UNCONDITIONED SPACES**

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule			Installed Watts				Location	Field Inspector	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this (C3 x C5)	Primary Function area in which these luminaires are installed	Pass	Fail
A/AE	16" DIA. PENDANT LIGHT	98	☑	☐	6	588	OFFICE/MAIN ENTRY	☐	☐
C	4' SURFACE MTD. LED FIXTURE	50	☑	☐	2	100	OFFICE	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
		INSTALLED TOTAL WATTS PAGE TOTAL:				688	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 4 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
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C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule			Installed Watts				Location	Field Inspector	
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this (C3 x C5)	Primary Function area in which these luminaires are installed	Pass	Fail
B/BE	PENDANT DOME LED LT.	38	☐	☐	28	1064	DRESSING ROOM	☐	☐
C	4' SURFACE LED	50	☐	☐	14	700	.	☐	☐
D	4' SURFACE LED	25	☐	☐	2	50	STORAGE, TOILETS	☐	☐
F	6" DIA RECESS LED	27	☐	☐	6	162	SHOWER, TOILETS	☐	☐
J/JE	4' SURFACE LED	36	☐	☐	11	396	STORAGE	☐	☐
K	CEILING MOUNTED LED	11	☐	☐	6	66	STORAGE	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
		INSTALLED TOTAL WATTS PAGE TOTAL:				2438	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-01-E
Indoor Lighting — (Page 5 of 6)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certifate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY L. FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/HERS Certification Identification (If applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY L. FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 1 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

The NRCC-LTI-02-E shall be used to document all mandatory and prescriptive lighting controls that are applicable to the project.

Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
✓		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
✓		Lighting shall be controlled by a lighting control a system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
	✓	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
	✓	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.3. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
✓		All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
✓		All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
✓		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.0(a)4.
✓		The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
✓		All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
✓		Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
	✓	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
✓		Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 2 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ **CONDITIONED SPACES** ☐ **UNCONDITIONED SPACES**

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule		Standards Complying With [1] (✓all that apply, or enter "E" if Exempted)							PAF Credit Calculations [2]				✓ If Acceptance Test Required	Field Inspector	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.1(b)	§130.1(c)	§130.1(d)	§130.1(e)	§130.1(f)2	§130.1(f)3	Counted Lighting	Watts	PAF	Credit (K x L)		Pass	Fail
OFFICES, ENTRY LOBBY	OCCUPANCY SENSOR	3	✓	✓	✓	✓										
		Control Credit PAGE TOTAL (Sum of Column M):														
		IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):														

1. S130.1(a) = Manual area controls; s130.0(b) = Multi Level; s130.1(c) = Auto Shut-Off; s130.0(d) = Mandatory daylight; s130.1(e) Demand Responsive; s140.6(d) = Additional lighting controls installed to earn a PAF; s140.6(d) = Prescriptive Secondary Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 2 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
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MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule		Standards Complying With [1] (✓all that apply, or enter "E" if Exempted)							PAF Credit Calculations [2]				✓ If Acceptance Test Required	Field Inspector	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.1(b)	§130.1(c)	§130.1(d)	§130.1(e)	§130.1(f)2	§130.1(f)3	Counted Lighting	Watts	PAF	Credit (K x L)		Pass	Fail
DRESSING ROOMS	OCCUPANCY SENSOR	4	✓	✓	✓	✓	✓									
STORAGE, TOILETS	OCCUPANCY SENSOR	12	✓	✓	✓	✓	✓									
EQUIP. ROOMS	OCCUPANCY SENSOR	11	✓	✓	✓	✓	✓									
		Control Credit PAGE TOTAL (Sum of Column M):														
		IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):														

1. S130.1(a) = Manual area controls; s130.0(b) = Multi Level; s130.1(c) = Auto Shut-Off; s130.0(d) = Mandatory daylight; s130.1(e) Demand Responsive; s140.6(d) = Additional lighting controls installed to earn a PAF; s140.6(d) = Prescriptive Secondary Daylight Controls.
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CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — August 2015

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. _
RP-300123

JIMMY L. FONG — No. E14126 — REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.
CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	LIC. NO. E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: TITLE 24 FORMS - INDOOR
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E106
SHEET 68 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM
FILE: S:\ACAD\JF2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E106.DWG

STATE OF CALIFORNIA
INDOOR LIGHTING - LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certifate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY L. FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/HERS Certification Identification (If applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY L. FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

ALLOWED LIGHTING POWER

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☑ If using Area Category Method, Tailored Method, or a combination of Area Category and tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		753
3. Tailored Method Allowed Watts. Documented in section B of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		753

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A TYPE OF BUILDING (From §140.6 Table 140.6-B)	B WATTS PER (ft^2)	X	C COMPLETE BLDG. AREA	=	D ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C2 plus C-3)	Watts
Total From section C-2	753
Total From section C-3	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)	753

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

ALLOWED LIGHTING POWER

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A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

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	(a)	(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		3284
3. Tailored Method Allowed Watts. Documented in section B of NRCC-LTI-04-E		
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		3284

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A TYPE OF BUILDING (From §140.6 Table 140.6-B)	B WATTS PER (ft^2)	X	C COMPLETE BLDG. AREA	=	D ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C2 plus C-3)	Watts
Total From section C-2	3284
Total From section C-3	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)	3284

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this page is only for:
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C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B or NRCC-LTI-01-E
☑ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A AREA CATEGORY (From §140.6 Table 140.6-C)		B WATTS PER (ft^2)	X	C AREA(ft^2)	=	D ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
OFFICE	OFFICE ± 250 SF	1.0		85		85
OFFICE/MAIN ENTRY	OFFICE > 250 SF	0.75		891		668
		TOTALS		976		
Enter sum total Area Category allowed watts into section C-1 of NRC-LTI-03-E (this compliance form)						753 WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

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A AREA CATEGORY (From §140.6 Table 140.6-C)		B WATTS PER (ft^2)	X	C AREA(ft^2)	=	D ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
FIIRST FLOOR	DRESSING ROOMS	0.8		1918		1534
FIRST FLOOR	STORAGE, TOILETS & SUPPORT AREAS	0.6		1244		746
BASEMENT	EQUIPMENT/ELEC. ROOM	0.7		1435		1004
		TOTALS		4597		
Enter sum total Area Category allowed watts into section C-1 of NRC-LTI-03-E (this compliance form)						3284 WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-03-E (Revised 05/15) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

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BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 12-31-2023 STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E. CITY ENGINEER

ARCHITECTURAL DIVISION	LIC. NO. E14126	DATE:
ENGINEER: JIMMY FONG		03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		03/10/2022
CHECKED BY: P.M.		03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TITLE 24 FORMS - INDOOR

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E107
SHEET 69 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:53 PM FILE: S:\ACAD\JP2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E107.DWG

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

A. General Information

Project Address:	Total Illuminated Hardscape Area
10654 IRMA AVE., TUJUNGA, CA. 91042	11,740 SQ. FT.

Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration

Outdoor Lighting Zone (OLZ) ☐ OLZ-1 ☐ OLZ-2 ☑ OLZ-3 ☐ OLZ-4

I have confirmed with the AHJ which OLZ applies to this site. For default lighting zone designation, see Title 24 Part6, §10-114.

B. LIGHTING COMPLIANCE DOCUMENTS (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

☑	NRCC-LTO-01-E	Certificate of Compliance
☑	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate
☑	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance

C. Summary of Allowed Outdoor Lighting Power

			Watts
1.	Sum Total ALLOWED Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1	=	2,361
	Complies ONLY if Installed < Allowed		↕
2.	Sum Total INSTALLED Outdoor lighting Wattage from NRCC-LTO-01-E, page 3		843

D. Declaration of Required Installation Certificates
Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

☑ NRCI-LTO-01-E - Must be submitted for all buildings	☐ Field Inspector
☑ NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

☑ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls.	☐ Field Inspector

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

F. Schedule of luminaires exempt from the outdoor lighting power requirements in §140.7

Name or Symbol	Description of exempt luminaire in accordance with the exemptions

G. Schedule of luminaires exempt from the cutoff requirements in §130.2(b)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions
G/GE	LED CEILING MOUNTED LUMINAIRE
K1	LED WALL MOUNTED LUMINAIRE

H. Schedule of luminaires exempt from the outdoor lighting control requirements in §130.2(c)

Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 08/15)

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT	Date Prepared: 12/20/19

I. OUTDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Luminaire Schedule		Installed Watts				Location	Cutoff	Field Inspector	
A	B	C	D	E	F	G	H	I	
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How wattage was determined: CEC Default from NA8	How wattage was determined: According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	BUG Rating	IWd	IFd
G/GE	CEILING MOUNTED LED LT.	24	☑	☐	13	312	WALKWAY		☐	☐
K1	WALL MOUNTED LED LT.	11	☑	☐	1	11	WALKWAY		☐	☐
M	MUSCO POLE MTD LED	130	☑	☐	4	520	POOL DECK		☐	☐
			☐	☐					☐	☐
			☐	☐					☐	☐
			☐	☐		

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

General Information

Project Address:	Climate Zone:	Conditioned Floor Area:
10654 IRMA AVE., TUJUNGA, CA. 91042	9	976 SF
		Unconditioned Floor Area: 4597 SF

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel ☐ Schools ☐ Relocatable Public Schools
Phase of Construction: ☐ New Construction ☐ Addition ☑ Alteration

In the table below identify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (e.g. 130.5(a) for service electrical metering)
E103	SINGLE LINE DIAGRAMS		130.5a

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

A. Service Electrical Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(a).

☑ For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). *Fill out Column 1 thru 6 of table below.*

☐ For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2Pi. *Fill out Column 1 thru 6 of table below.*

☐ EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. *Fill out Column 1, 2 and 6 of table below with the compliance information.*

Fill out a separate line for each electrical service that is connected to the building. If additional table space is needed for electrical service information, submit additional page with the information.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)				Exception to 130.5(a)	Field Inspector
01	02	03	04	05	06	07	08
Electrical Service Designation/Location/Description	kVA	Instantaneous (at the time) kW	Historical peak (kW)	Tracking kWh for a specific defined period	kWh per rate period	Utility metering system	Check that the metering complies
1-PHASE SERVICE/BASEMENT/ MS-1	20.23	☑	☑	☐	☐	☐	☐
3-PHASE SERVICE/STORAGE/ MS-2	44.86	☑	☑	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

B. Separation of Electrical Circuits for Electrical Energy Monitoring

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

☒ The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 130.5(b). The electrical power distribution systems is designed so that measurement devices can monitor the electrical energy usage of load types according to TABLE 130.5-B.

☐ Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with the compliance information.

General information	Electrical Power Distribution System information and Method of compliance	Electrical Service Rating	Enforcement Agency
01	02	03	04
Electrical Service Designation/Location/Description	Describe the electrical power distribution system installed and the compliance method used.	kVA	Check that the system complies
MS1-1/BASEMENT/ PANEL P	LIGHTING LOADS AND EQUIPMENT LOADS SEPARATED BY SPLIT BUSSED.	10.38	☐
MS1-2/STORAGE/ PANEL BL	LIGHTING LOADS AND RECEPTACLE LOADS SEPARATED BY SPLIT BUSSED.	9.94	☐
BL-38,40/FIRST AID/ PANEL AC	MECHANICAL A/C LOADS	7.74	☐

Field Inspector Notes:

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

C. Voltage Drop

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).

	Enforcement Agency Check that the system complies
☑ The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.	☐
☐ Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.	☐

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles

Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.

	Field Inspector Cehck that the system complies
☑ The control is capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an override control that allows the controlled receptacle to remain ON for no more than 2 hours when an override is initiated and an automatic holiday "shut-OFF" feature that turns OFF all loads for at least 24 hours and then resumes the normally scheduled operation. Countdown timer switches are not be used to comply with the automatic time switch control requirements. The controls meet the requirement of Section 130.5(d)1.	☐
☑ There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☑ There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☑ Permanent and durable marking for controlled receptacles or circuits to differentiate them from uncontrolled receptacles or circuits is provided. The markings meet the requirement of Section 130.5(d)3.	☐
☐ For hotel and motel guest rooms, there are controlled receptacles for at least one-half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no longer than 30 minutes after the guest room has been vacated. The receptacles meet the requirement of Section 130.5(d)4.	☐
☑ Receptacles that are only for the following purposes are excepted from Section 130.5(d): -Receptacles specifically for refrigerators and water dispensers in kitchen areas. -Receptacles located a minimum of six ft above the floor that are specifically for clocks. -Receptacles for network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms. -Receptacles on circuits rated more than 20 amperes. -Receptacles connected to an uninterruptible power supply (UPS) that are intended to be in continuous use, 24 hours per day/365 days per year, and are marked to differentiate them from other uncontrolled receptacles or circuits.	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

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CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 1)

Project Name: VERDUGO HILL POOL BUILDING REFURBISHMENT — Date Prepared: 12/20/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: JIMMY LEI FONG	Documentation Author Signature:
Company: PACIFIC ENGINEERS GROUP	Signature Date: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: JIMMY LEI FONG	Responsible Designer Signature:
Company: PACIFIC ENGINEERS GROUP	Date Signed: 12/20/19
Address: 3611 CAHUENGA BLVD W, FIRST FLOOR	License: E14126
City/State/Zip: LOS ANGELES, CA 90068	Phone: 323-536-9058

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

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Date: May 17, 2022

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Los Angeles, CA 90068
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REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E109.DWG

BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.
BUILDING NO. -
INDEX NO. -
RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
ELECTRICAL
STRUCTURAL
STATE OF CALIFORNIA

BUREAU OF PUBLIC WORKS
CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION LIC. NO. E14126

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

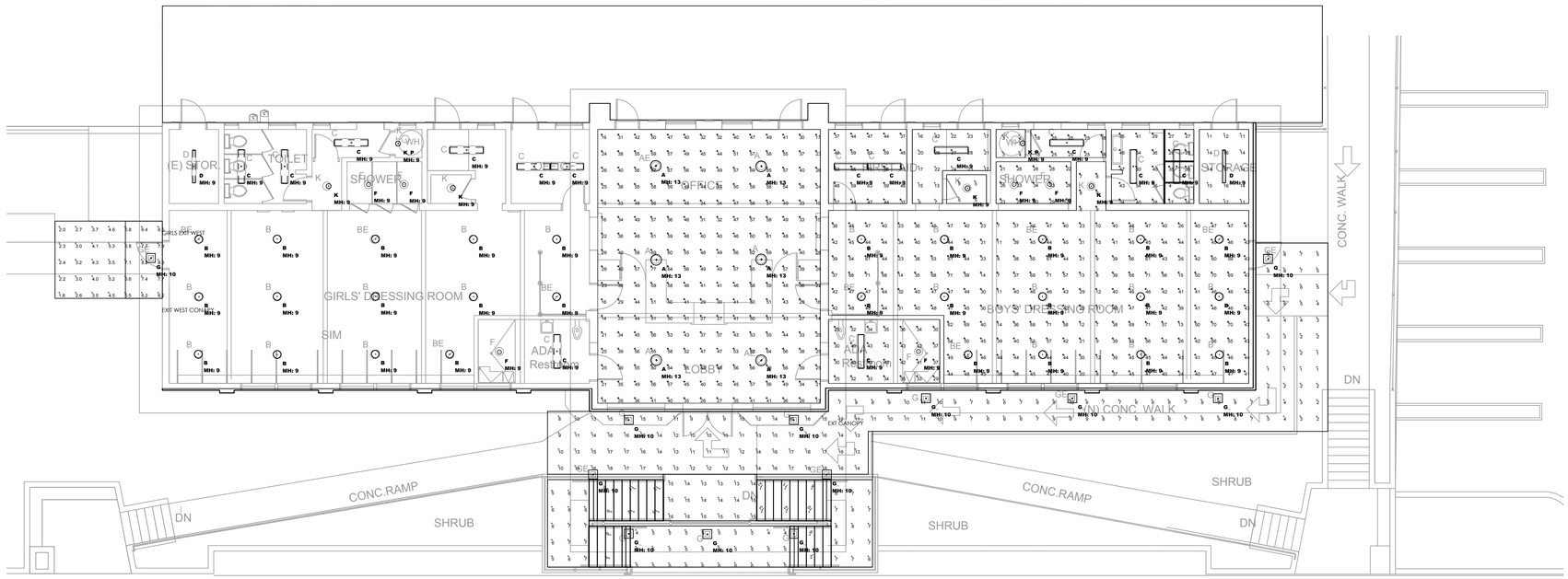
VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: TITLE 24 FORMS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E109
SHEET 71 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM



VERDUGO HILLS POOL - PHOTOMETRIC STUDY

FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N

Jobname
VerdugoHillsPool_2017-08.AGI
Report For: PACIFIC ENGINEERS GROUP
Prudential Rep: CRISSY COSCI
Report by: Charlie Evangelista / Applications Engineer
and Christian Almonte / Applications Engineer
Mounting Ht.: See Drawing
See Luminaire Schedule for Light Loss Factor - Unless otherwise specified by customer
Reflectance: 80/50/20 & OUTDOORS- Unless otherwise specified by customer
Date:8/17/2017

------Disclaimer------
Luminaire data is obtained according to IES procedures
under controlled laboratory conditions. Field results
may differ from computer predictions due to many
uncontrollable factors including, but not limited to
Line Voltage Variations, Lamp Performance, Ballast input watts,
LED Drivers input watts, Temperature Variations and Jobsite Conditions.

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	LLF	Description
	6	A	SINGLE	1.110	CONTECK LTG // CGL12100-40K-MVD2-A16-FC-P_prorate8500lm
	28	B	SINGLE	0.485	Contech: CGL1254-40K-MVD2-CW (LLF derated from 60W ies file)
	14	C	SINGLE	0.850	Luminaire LED // VPF84-50W-4000K-CP
	2	D	SINGLE	0.850	COLUMBIA LIGHTING // LCL4-40LW-E-U
	6	F	SINGLE	0.850	PRESCOLITE // LF6LEDG4-w-6LFLED7G440K
	12	G_	SINGLE	0.850	Hubbell Outdoor // NRG4-30LU-4K-035
	4	K	SINGLE	0.850	Hubbell Outdoor // VBGL1-GUARD-CLG-11w-250mA-120-4100K
	2	K_P	SINGLE	0.850	Hubbell Outdoor // VWGL1-GUARD-PENDANT-11w-250mA-120-4100K

Calculation Summary					
Label	CalcType	Units	Avg	Max	Min
1st AID_Workplane	Illuminance	Fc	51.24	71	37
ADA RR_Workplane	Illuminance	Fc	35.75	43	25
BOTTOM STAIR LDNG_Planar	Illuminance	Fc	5.10	6	4
BOYS DRESSING RM_Workplane	Illuminance	Fc	40.99	71	7
EXT CONC WALK_Floor	Illuminance	Fc	9.48	18	1
ExteriorStairBottom_1_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairBottom_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairTop_1_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_1_Side_21	Illuminance	Fc	12.50	13	12
ExteriorStairTop_1_Side_9	Illuminance	Fc	9.00	10	8
ExteriorStairTop_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_Side_21	Illuminance	Fc	13.00	13	13
ExteriorStairTop_Side_9	Illuminance	Fc	8.50	9	8
GIRLS EXIT WEST_GIRLS EXIT W	Illuminance	Fc	4.98	8.3	1.8
INTERM STAIR LDNG_1_Planar	Illuminance	Fc	7.13	8	6
INTERM STAIR LDNG_Planar	Illuminance	Fc	6.13	7	5
OFFICE - LOBBY_Workplane	Illuminance	Fc	44.17	87	13
RESTRM_Workplane	Illuminance	Fc	33.72	60	4
ROOM_Floor	Illuminance	Fc	5.00	5	5
SHWR_Floor	Illuminance	Fc	27.47	34	21
STOR_Floor	Illuminance	Fc	13.47	17	11
TOP STAIR LNDG_Planar	Illuminance	Fc	14.44	16	13
VEST_Floor	Illuminance	Fc	22.20	25	18
VEST_Floor_1	Illuminance	Fc	19.42	28	7
WH_Floor	Illuminance	Fc	3.50	4	3

GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

BID SET
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APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

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HORIZONTAL CONTROL:

SHEET TITLE: PHOTOMETRIC STUDY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E110

SHEET 72 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM FILE: S:\ACAD\P2016\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E110.DWG

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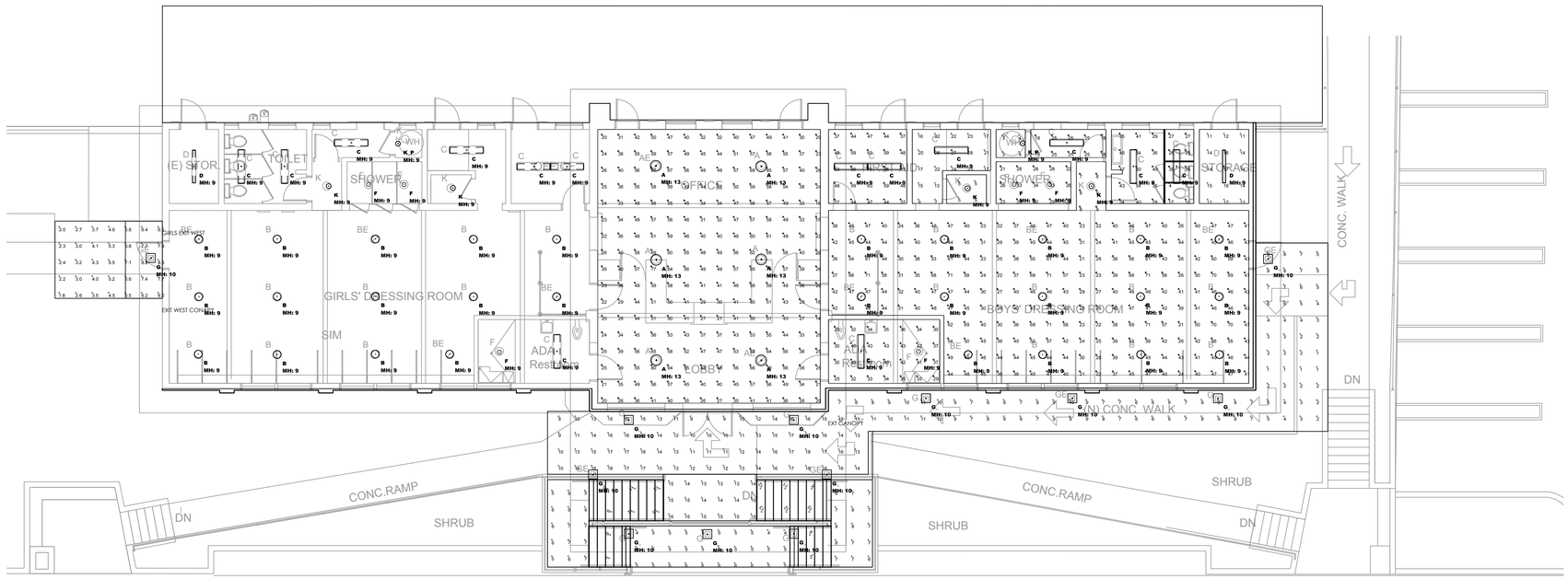

VERDUGO HILLS POOL - PHOTOMETRIC STUDY

FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

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VerdugoHillsPool_2017-08.AGI
Report For: PACIFIC ENGINEERS GROUP
Prudential Rep: CRISSY COSCI
Report by: Charlie Evangelista / Applications Engineer
and Christian Almonte / Applications Engineer
Mounting Ht.: See Drawing
See Luminaire Schedule for Light Loss Factor - Unless otherwise specified by customer
Reflectance: 80/50/20 & OUTDOORS- Unless otherwise specified by customer
Date:8/17/2017

------Disclaimer------
Luminaire data is obtained according to IES procedures
under controlled laboratory conditions. Field results
may differ from computer predictions due to many
uncontrollable factors including, but not limited to
Line Voltage Variations, Lamp Performance, Ballast input watts,
LED Drivers input watts, Temperature Variations and Jobsite Conditions.

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	LLF	Description
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	28	B	SINGLE	0.485	Contech: CGL1254-40K-MVD2-CW (LLF derated from 60W ies file)
	14	C	SINGLE	0.850	Luminaire LED // VPF84-50W-4000K-CP
	2	D	SINGLE	0.850	COLUMBIA LIGHTING // LCL4-40LW-E-U
	6	F	SINGLE	0.850	PRESCOLITE // LF6LEDG4-w-6LFLED7G440K
	12	G_	SINGLE	0.850	Hubbell Outdoor // NRG4-30LU-4K-035
	4	K	SINGLE	0.850	Hubbell Outdoor // VBGL1-GUARD-CLG-11w-250mA-120-4100K
	2	K_P	SINGLE	0.850	Hubbell Outdoor // VWGL1-GUARD-PENDANT-11w-250mA-120-4100K

Calculation Summary					
Label	CalcType	Units	Avg	Max	Min
1st AID_Workplane	Illuminance	Fc	51.24	71	37
ADA RR_Workplane	Illuminance	Fc	35.75	43	25
BOTTOM STAIR LDNG_Planar	Illuminance	Fc	5.10	6	4
BOYS DRESSING RM_Workplane	Illuminance	Fc	40.99	71	21
EXT CONC WALK_Floor	Illuminance	Fc	9.48	18	1
ExteriorStairBottom_1_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairBottom_Side_6	Illuminance	Fc	6.50	7	6
ExteriorStairTop_1_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_1_Side_21	Illuminance	Fc	12.50	13	12
ExteriorStairTop_1_Side_9	Illuminance	Fc	9.00	10	8
ExteriorStairTop_Side_15	Illuminance	Fc	11.50	12	11
ExteriorStairTop_Side_21	Illuminance	Fc	13.00	13	13
ExteriorStairTop_Side_9	Illuminance	Fc	8.50	9	8
GIRLS EXIT WEST_GIRLS EXIT W	Illuminance	Fc	4.98	8.3	1.8
INTERM STAIR LDNG_1_Planar	Illuminance	Fc	7.13	8	6
INTERM STAIR LDNG_Planar	Illuminance	Fc	6.13	7	5
OFFICE - LOBBY_Workplane	Illuminance	Fc	44.17	87	20
RESTRM_Workplane	Illuminance	Fc	33.72	60	4
ROOM_Floor	Illuminance	Fc	5.00	5	5
SHWR_Floor	Illuminance	Fc	27.47	34	21
STOR_Floor	Illuminance	Fc	13.47	17	11
TOP STAIR LNDG_Planar	Illuminance	Fc	14.44	16	13
VEST_Floor	Illuminance	Fc	22.20	25	18
VEST_Floor_1	Illuminance	Fc	19.42	28	7
WH_Floor	Illuminance	Fc	3.50	4	3

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GRAPHIC SCALE: 1/8" = 1'- 0"
0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

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CITY OF LOS ANGELES
ENGINEERING

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION LIC. NO. E14126

		DATE:
ENGINEER:	JIMMY FONG	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: PHOTOMETRIC STUDY

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E111

SHEET 73 OF SHEETS 96

PLOTTED: 3/10/2022 3:00 PM

REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:54 PM FILE: S:\ACAD\P2016\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_E111.DWG

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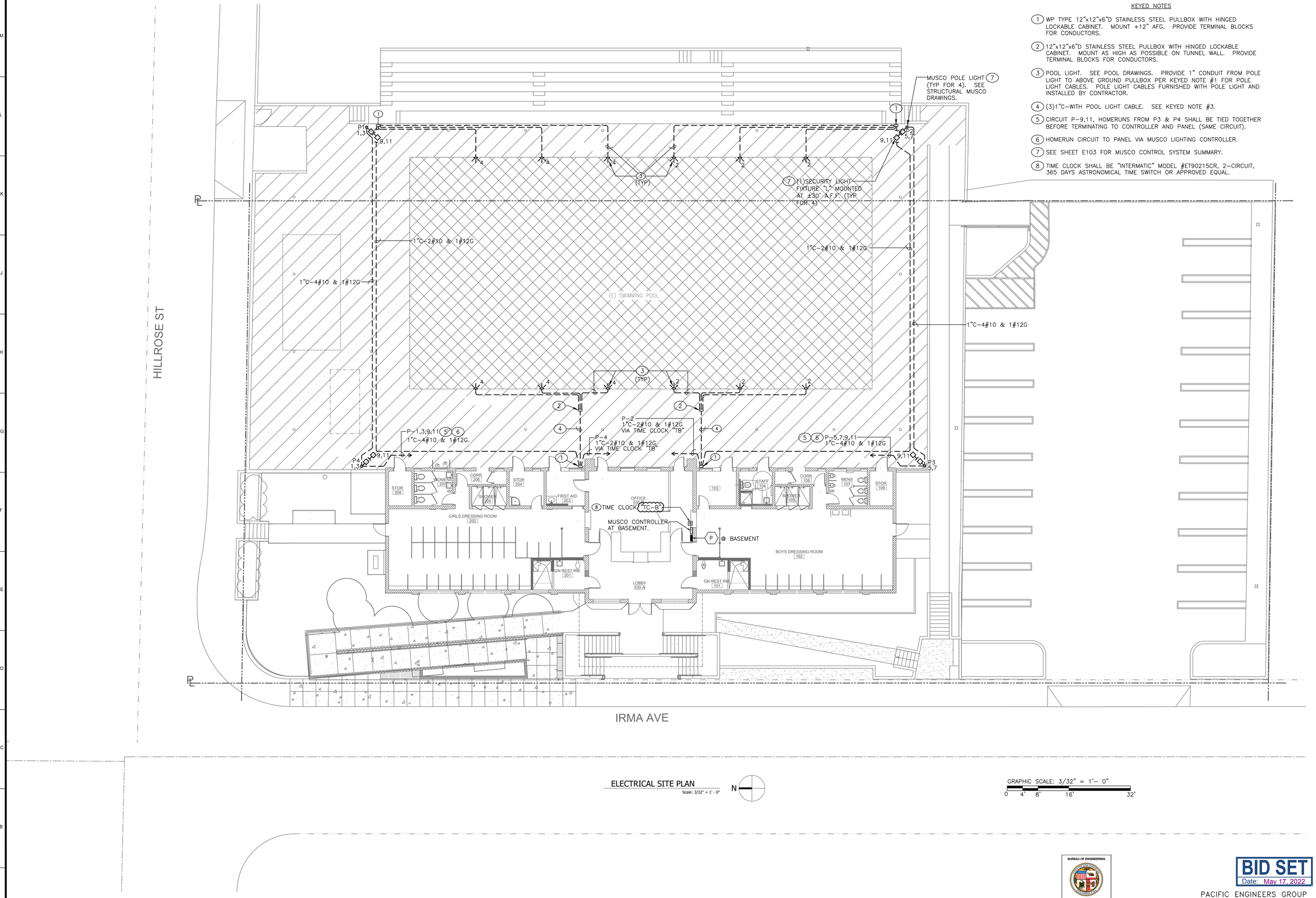

KEYED NOTES

1. WP TYPE 12"x12"x6"D STAINLESS STEEL PULLBOX WITH HINGED LOCKABLE CABINET. MOUNT +12" AFG. PROVIDE TERMINAL BLOCKS FOR CONDUCTORS.
2. 12"x12"x6"D STAINLESS STEEL PULLBOX WITH HINGED LOCKABLE CABINET. MOUNT AS HIGH AS POSSIBLE ON TUNNEL WALL. PROVIDE TERMINAL BLOCKS FOR CONDUCTORS.
3. POOL LIGHT. SEE POOL DRAWINGS. PROVIDE 1" CONDUIT FROM POLE LIGHT TO ABOVE GROUND PULLBOX PER KEYED NOTE #1 FOR POLE LIGHT CABLES. POLE LIGHT CABLES FURNISHED WITH POLE LIGHT AND INSTALLED BY CONTRACTOR.
4. (3)1"C-WITH POOL LIGHT CABLE. SEE KEYED NOTE #3.
5. CIRCUIT P-9,11, HOMERUNS FROM P3 & P4 SHALL BE TIED TOGETHER BEFORE TERMINATING TO CONTROLLER AND PANEL (SAME CIRCUIT).
6. HOMERUN CIRCUIT TO PANEL VIA MUSCO LIGHTING CONTROLLER.
7. SEE SHEET E103 FOR MUSCO CONTROL SYSTEM SUMMARY.
8. TIME CLOCK SHALL BE "INTERMATIC" MODEL #ET90215CR, 2-CIRCUIT, 365 DAYS ASTRONOMICAL TIME SWITCH OR APPROVED EQUAL.

ELECTRICAL SITE PLAN
Scale: 3/32" = 1' - 0"

GRAPHIC SCALE: 3/32" = 1'- 0"
0 4' 8' 16' 32'

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BID SET
Date: May 17, 2022

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CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 STATE OF CALIFORNIA

TED ALLEN, P.E. CITY ENGINEER
ARCHITECTURAL DIVISION

		DATE:
ENGINEER:	JIMMY FONG LIC. NO. E14126	03/10/2022
DESIGNED BY:	P.M.	03/10/2022
DRAWN BY:	H.Y.	03/10/2022
CHECKED BY:	P.M.	03/10/2022
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT	03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: ELECTRICAL SITE PLAN

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. E112
SHEET 74 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

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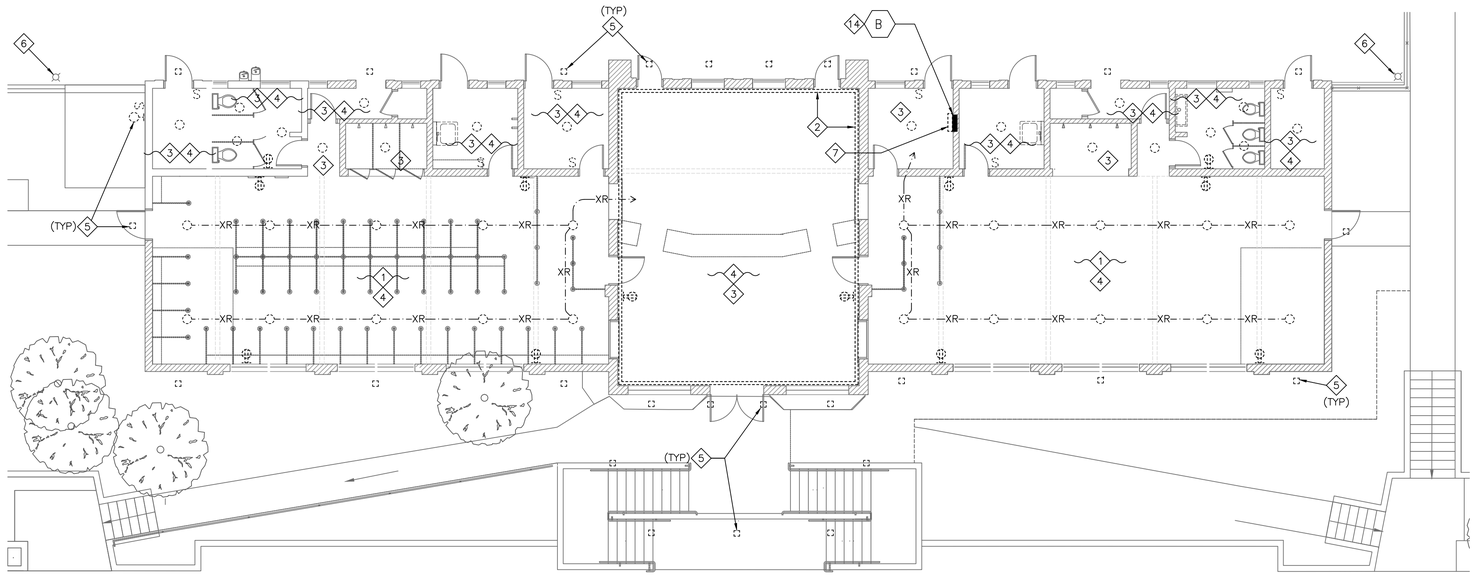
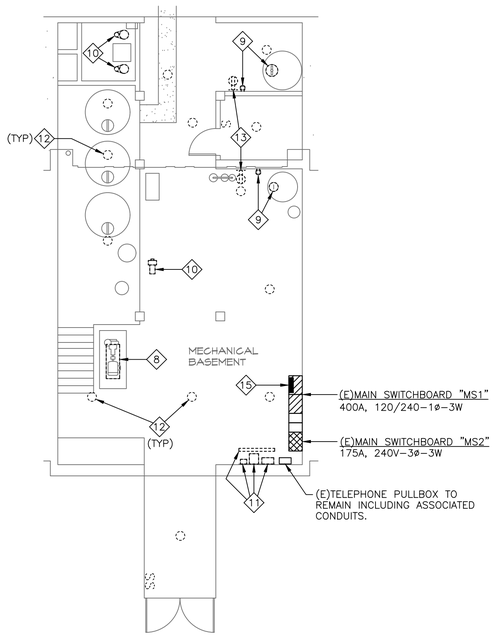


FIRST FLOOR DEMOLITION PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT DEMOLITION PLAN

Scale: 1/8" = 1' - 0"

N

DEMOLITION KEYED NOTES

1. DISCONNECT AND REMOVE (E) PENDANT LIGHTS IN THIS ROOM INCLUDING SWITCHES AND ASSOCIATED CONDUIT AND WIRES.
2. DISCONNECT AND REMOVE (E) WALL MOUNTED UPLIGHT COVE LIGHTS IN THIS ROOM INCLUDING SWITCHES AND WIRES BACK TO PANEL.
3. DISCONNECT AND REMOVE (E) LIGHTS IN THIS ROOM INCLUDING CONTROLLING SWITCHES AND WIRING UP TO PANEL.
4. DISCONNECT AND REMOVE (E) RECEPTACLE OUTLETS IN THIS ROOM INCLUDING WIRING BACK TO PANEL.
5. DISCONNECT AND REMOVE (E) RECESS MOUNTED EXTERIOR LIGHTS INCLUDING CONDUITS AND CABLES TO (E) PANEL. PATCH (E)CEILING TO MATCH CEILING SURFACE.
6. DISCONNECT AND REMOVE (E) POLE LIGHT INCLUDING ASSOCIATED CONDUITS AND WIRES UP TO (E) PANEL.
7. EXISTING 6"x6"x24" LONG GUTTER TO REMAIN INCLUDING ASSOCIATED CONDUITS AND TO BE RE–USED FOR NEW WORK.
8. DEMOLISHED (E) ELECTRICAL INSTALLATION ASSOCIATED TO (E) POOL CIRC. PUMP UP TO (E) SWITCHBOARD.
9. DEMOLISHED (E) ELECTRICAL INSTALLATION ASSOCIATED TO (E) ACID PUMP AND/OR CHLORINE PUMP UP TO (E) SERVING PANEL.
10. (E) SUMP PUMPS FOR BACKWASH PIT AND/OR DRAIN PUMP TO REMAIN INCLUDING CONTROLLER. DEMOLISH (E)FEEDER UP TO SERVING PANEL AND SHALL BE REPLACED WITH NEW. SEE POWER PLAN. PROTECT THESE PUMPS INCLUDING CONTROLLER DURING THE ENTIRE PHASE OF CONSTRUCTION.
11. DEMOLISH PULLBOXES, GUTTERS, DISCONNECT SWITCHES, MOTOR STARTERS AND CIRCUIT BREAKERS ON THIS AREA U.O.N.
12. DEMOLISH CEILING MOUNTED LIGHT INCLUDING SWITCHES AND SURFACE MOUNTED CONDUITS AND WIRES. REMOVE WIRES IN (E) CONDUIT IF CONDUIT IS EMBEDDED IN CEILING.
13. DEMOLISH RECEPTACLE INCLUDING WIRING UP TO SERVING PANEL.
14. REMOVE (E)CIRCUIT BREAKERS, BUSSBARS, LUGS AND PANEL COVER LEAVING ONLY THE RECESS CAN AND RETROFIT THIS PANEL WITH NEW INTERIOR DEVICES/EQUIPMENT. SEE POWER PLAN.
15. DEMOLISHED (E) PANEL MOUNTED ON SWITCHBOARD INCLUDING ASSOCIATED WIRING AND PROVIDE BLANK COVER.

BID SET
Date: May 17, 2022

GRAPHIC SCALE: 1/8" = 1'– 0"

0 4' 8' 16' 32'

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BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
3/10/2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E. CITY ENGINEER DATE: 03/10/2022
ARCHITECTURAL DIVISION LIC. NO. E14126 03/10/2022
ENGINEER: JIMMY FONG 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y.
CHECKED BY: P.M. 03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR DEMOLITION PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E113

SHEET 75 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

REVISION DATES (DESIGN STAGE ONLY)

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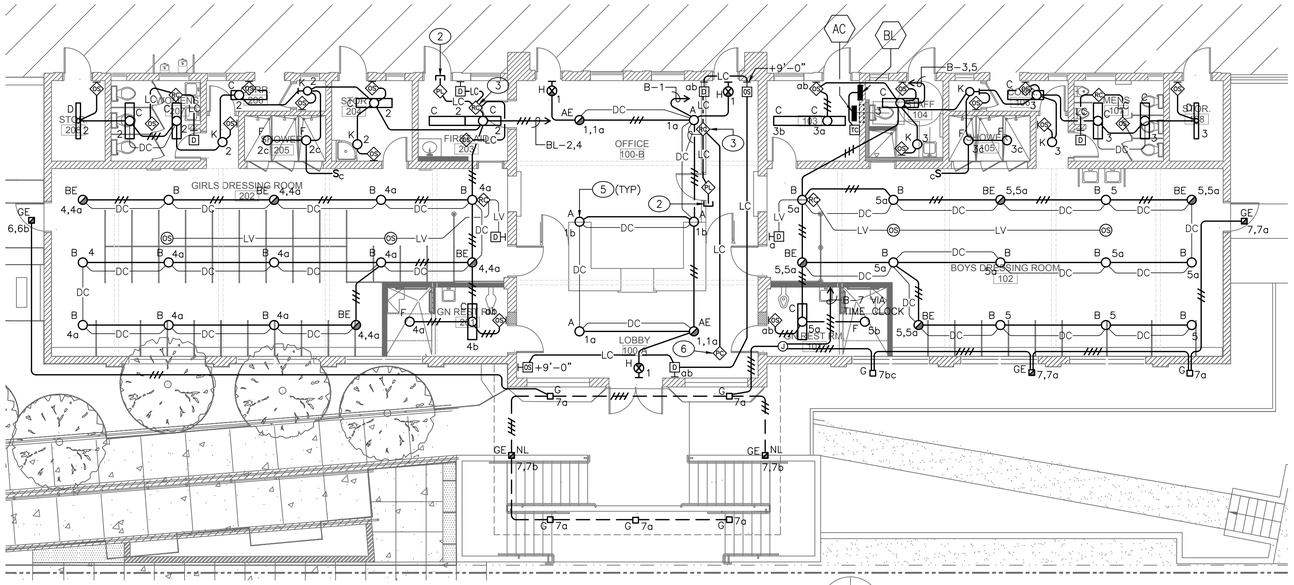
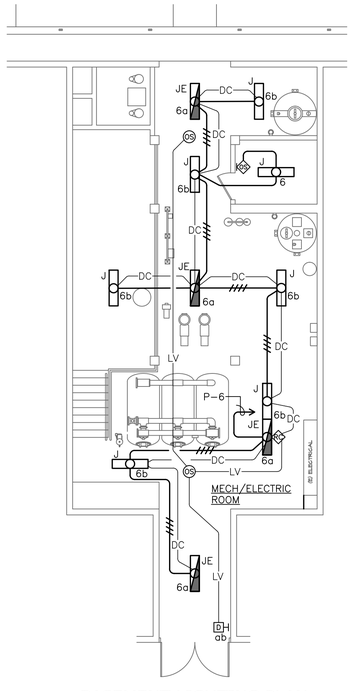
REVISION DATE: 3/10/2022 2:55 PM FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E113.DWG



FIRST FLOOR LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT LIGHTING PLAN

Scale: 1/8" = 1' - 0"

N

KEYED NOTES

1. MOUNT SENSOR ON THE BOTTOM OF THE BEAM.
2. CONNECT TO PLUG LOAD RECEPTACLE. SEE POWER PLAN. SEE DETAIL #3/E102.
3. LIGHTING CONTROLLER. SEE DETAILS 2,3/E102.
4. MOUNT FIXTURE AT +9' AFF.
5. MOUNT FIXTURE AT +13' AFF.
6. PENDANT MOUNT PHOTO SENSOR AT +13' AFF.

GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

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BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
STATE OF CALIFORNIA
3/10/2022

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE: 03/10/2022
	ARCHITECTURAL DIVISION	03/10/2022
ENGINEER: JIMMY FONG	LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.		03/10/2022
DRAWN BY: H.Y.		
CHECKED BY: P.M.		03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR LIGHTING PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E114

SHEET 76 OF SHEETS 96

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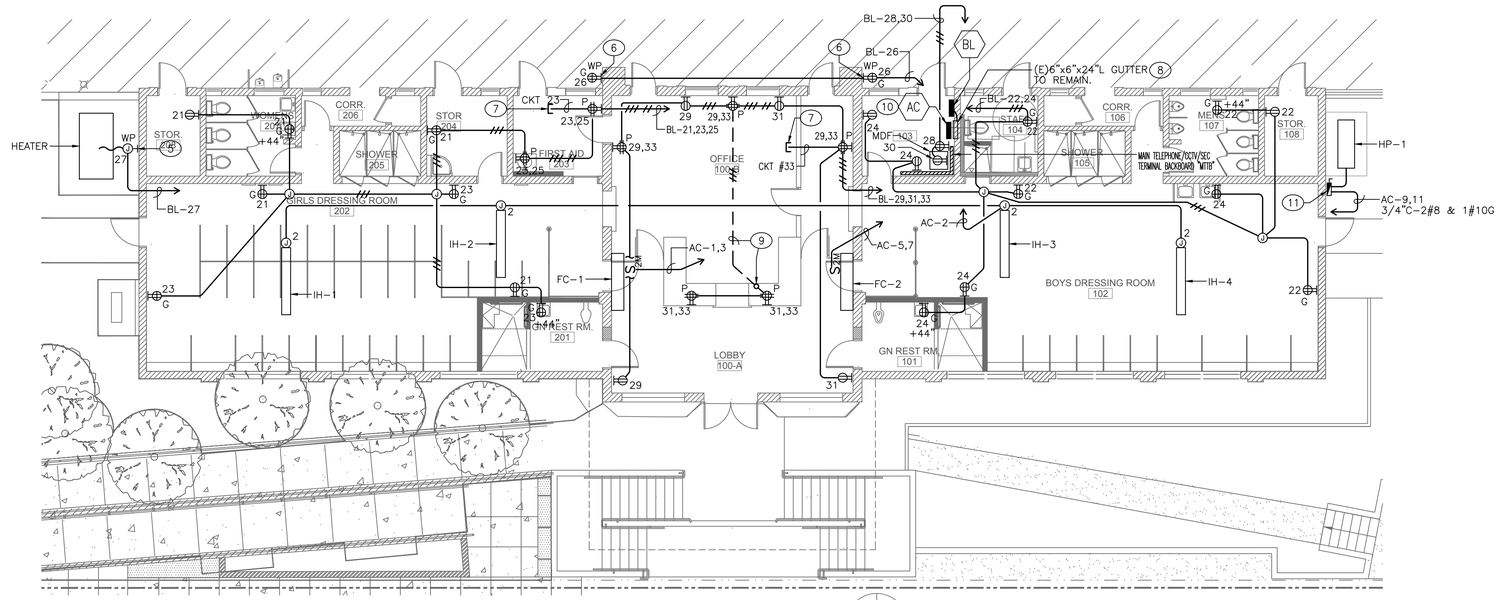
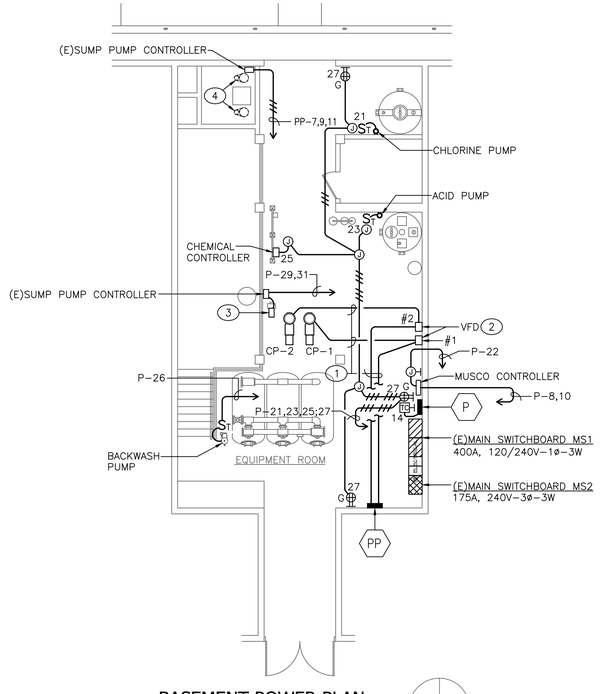
REVISION DATE: 3/10/2022 2:55 PM: FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E114.DWG



FIRST FLOOR POWER PLAN

Scale: 1/8" = 1' - 0"



BASEMENT POWER PLAN

Scale: 1/8" = 1' - 0"

KEYED NOTES

1. SEE SINGLE LINE DIAGRAM ON SHEET E103 FOR SIZE.
2. FURNISHED AND INSTALLED BY POOL CONTRACTOR.
3. (E) SUMP DRAIN PUMP TO REMAIN INCLUDING CONTROLLER. PROVIDE NEW POWER AS SHOWN.
4. (E) DUPLEX SUMP PUMP TO REMAIN INCLUDING CONTROLLER. PROVIDE NEW POWER AS SHOWN.
5. EXTEND WIRING TO CIRCULATING PUMP AND TIME CLOCK. SEE POOL DRAWINGS FOR EXACT LOCATION.
6. MOUNT RECEPTACLE IN A 6"x6"x4"D WP CABINET WITH HINGED LOCKABLE ENCLOSURE.
7. CONNECT TO PLUG LOAD CONTROLLER. SEE LIGHTING PLAN FOR LOCATION.
8. UTILIZE (E)CONDUITS BETWEEN GUTTER AND PANEL "AC" FOR NEW WIRES. EXTEND 2"C FEEDER FROM (E) GUTTER TO NEW PANEL "BL".
9. CORE DRILL (E)FLOOR AND STUB DOWN CONDUIT TO BASEMENT CEILING AND RUN CONDUIT ON BASEMENT CEILING AND STUB-UP BACK TO WALL MOUNTED RECEPTACLE AS SHOWN.
10. RETROFIT PANEL TO HAVE NEW BUSS BARS, LUGS, CIRCUIT BREAKERS AND PANEL COVERS. SEE PANEL SCHEDULE.
11. WP, 60AS-3P, 250VAC HEAVY DUTY DISCONNECT SWITCH WITH 45A DUAL ELEMENT FUSES.

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GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

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Date: May 17, 2022

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BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 03/10/2022 CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.	CITY ENGINEER	DATE: 03/10/2022
	ARCHITECTURAL DIVISION	03/10/2022
	LIC. NO. E14126	03/10/2022
ENGINEER: JIMMY FONG		03/10/2022
DESIGNED BY: P.M.		
DRAWN BY: H.Y.		
CHECKED BY: P.M.		03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR POWER PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E115

SHEET 77 OF SHEETS 96

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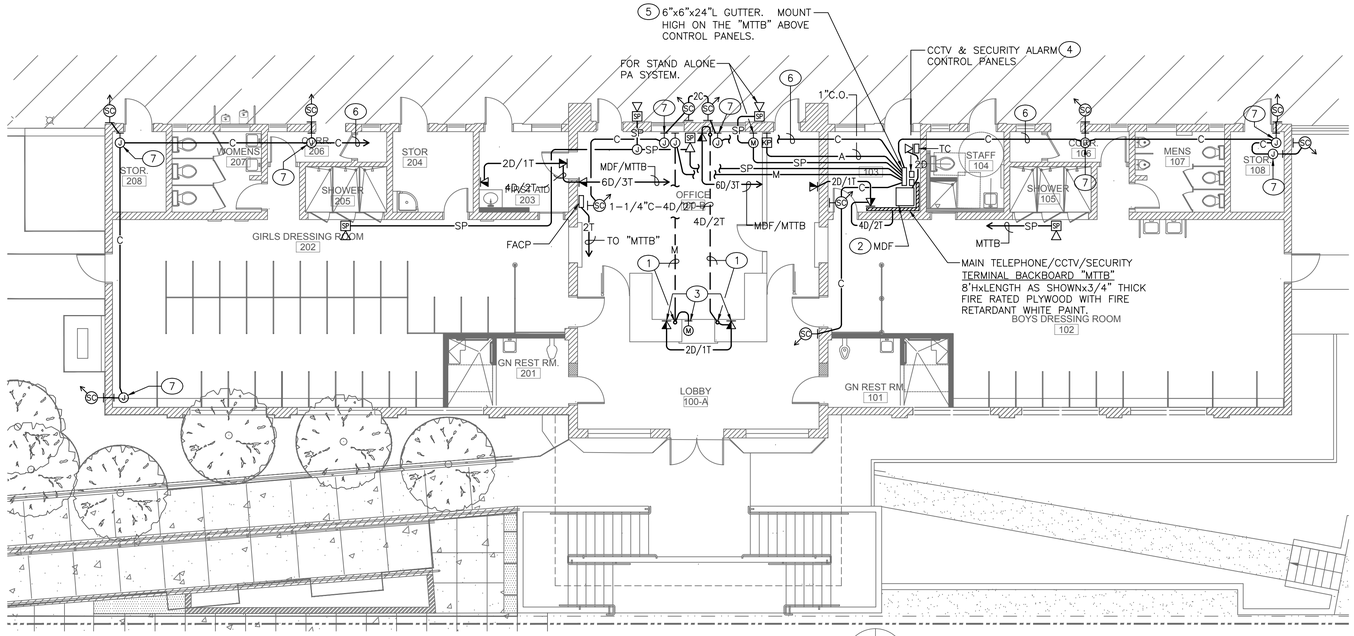
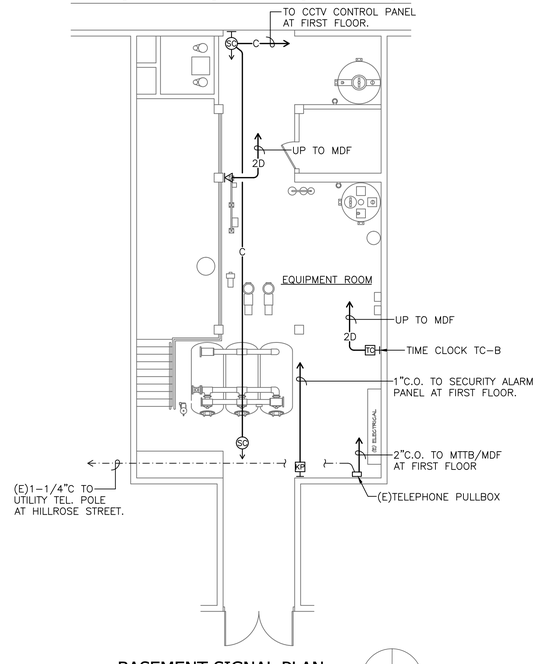
REVISION DATE: 3/10/2022 2:56 PM FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK__E115.DWG



FIRST FLOOR SIGNAL PLAN

Scale: 1/8" = 1' - 0"

N



BASEMENT SIGNAL PLAN

Scale: 1/8" = 1' - 0"

N

KEYED NOTES

1. CORE DRILL (E) FLOOR AND STUB DOWN CONDUIT TO BASEMENT CEILING AND RUN CONDUIT ON BASEMENT CEILING AND STUB-UP ON EAST WALL AS SHOWN AND HOMERUN TO MDF/MTTB.
2. 24"x24"x48"H CABINET. MDF SHALL BE SELECTED BY OWNER AND FURNISHED AND INSTALLED BY CONTRACTOR. MOUNT 12" BELOW CEILING.
3. MOUNT OUTLETS INSIDE CABINET. COORDINATE EXACT LOCATION AT SITE.
4. CONTROL PANELS ARE OFOI EQUIPMENT.
5. TERMINATE HOMERUN CONDUITS FOR CCTV CAMERA AND INTRUSION ALARM KEYPAD TO WIRE GUTTER. EXTEND CONDUITS TO OFOI CONTROL PANEL EQUIPMENT.
6. TO CCTV CONTROL PANEL VIA WIRE GUTTER.
7. PROVIDE J-BOX IN THE INTERIOR SIDE & PROVIDE STUB-OUT 1"C TO EXTERIOR FORM CCTV CAMERA. SEAL ALL CONDUIT PENETRATION. MOUNT CABLE AT +10'-0" AFF.

ALL LOW VOLTAGE CONDUIT SHALL BE 1"C MINIMUM (EMT, RGS) AND 1-1/4"C.O. MINIMUM IF FLEX CONDUIT.

BUREAU OF ENGINEERING OFFICIAL RECORD

GRAPHIC SCALE: 1/8" = 1'- 0"

0 4' 8' 16' 32'

BID SET
Date: May 17, 2022

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NO.	REVISIONS:	DATE:	BY:

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INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL 3/10/2022 STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.	CITY ENGINEER	DATE: 03/10/2022
ARCHITECTURAL DIVISION		03/10/2022
ENGINEER: JIMMY FONG	LIC. NO. E14126	03/10/2022
DESIGNED BY: P.M.		
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APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: BASEMENT AND FIRST FLOOR SIGNAL PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. E116

SHEET 78 OF SHEETS 96

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REVISION DATES (DESIGN STAGE ONLY)

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SYMBOLS LIST

JH	JUNCTION BOX: MOUNT +18" UNLESS NOTED OTHERWISE.
J	JUNCTION BOX: MOUNTED ABOVE ACCESSIBLE CEILING.
DH	DUPLEX RECEPTACLE: 125V., 15 AMP., NEMA 5-15R. UNLESS OTHERWISE NOTED. +18"U.O.N.
A-1,3,5	HOMERUN TO PANEL "A", CIRCUITS 1, 3, 5.
	CONDUIT: IN OR BELOW FLOOR OR BELOW GRADE.
	CONDUIT: EXPOSED IN UNFINISHED AREAS; CONCEALED ABOVE CEILING OR IN WALL IN FINISHED AREAS.
	3/4"C, 2#12 & 1#12 GND — 3/4"C, 3#12 & 1#12 GND
1"C,3#6	OTHER CONDUIT AND WIRE SIZE AS NOTED ON DRAWINGS.
	FIRE ALARM CONTROL PANEL.
	LIGHTING PANEL.
A	PANEL DESIGNATION, LETTER IDENTIFIES THE PANEL.
S-1 FH	MANUAL PULL STATION. +48" A.F.F. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
cd V-1	FIRE ALARM STROBE. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80" A.F.F. MIN, +96" A.F.F. MAXIMUM. "V-1" DENOTES VISUAL FA CIRCUIT NUMBER.
A-1 V-1 H cd	FIRE ALARM HORN/STROBE. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80 A.F.F. MIN, +96" A.F.F. MAXIMUM. "V-1" DENOTES VISUAL FA CIRCUIT NUMBER.
WP H	FIRE ALARM EXTERIOR HORN. SYSTEM SENSOR OR APPROVED EQUAL. CANDELA AS NOTED. +80 A.F.F. MIN, +96" A.F.F. MAXIMUM. "A-1" DENOTES AUDIBLE FA CIRCUIT NUMBER.
S-1 SD	SMOKE DETECTOR. NOTIFIER PHOTOELECTRIC TYPE. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
S-1 HD	HEAT DETECTOR. "S-1" INDICATES LOOP IDENTIFICATION NUMBER.
	FIRE ALARM CONTROL PANEL. "FACP" – NOTIFIER NFS-320.

A.F.F.	ABOVE FINISHED FLOOR.	N.C.	NORMALLY CLOSED.
N.O.	NORMALLY OPEN.	C/B	CIRCUIT BREAKER.
EOL	END OF LINE RESISTOR REQUIRED AT DEVICE.	A.F.G.	ABOVE FINISH GRADE.
MTTB	MAIN TELEPHONE TERMINAL BACKBOARD.	FA	FIRE ALARM.
C.O.	CONDUIT ONLY WITH PULL WIRE.	FACP	FIRE ALARM CONTROL PANEL.
W.P.	WEATHERPROOF.	TEL	TELEPHONE.
U.O.N.	UNLESS OTHERWISE NOTED	PLFA	POWER LIMITED FIRE ALARM.

FIRE ALARM CABLE AND WIRING

- 3/4" CONDUIT WITH 2#12.
- 3/4" CONDUIT WITH 4#12.
- 3/4" CONDUIT WITH 6#12.
- 3/4" CONDUIT WITH 8#12.
- F4 — 1"C, F CABLE PLUS 4#12 THWN.
- F6 — 1"C, F CABLE PLUS 6#12 THWN.
- F2 — 1"C, F CABLE PLUS 2#12 THWN.
- F — 3/4" CONDUIT (1)F CABLE.
- 2F4 — 1" CONDUIT WITH (2)F CABLE & 4#12.
- 2F8 — 1" CONDUIT WITH (2)F CABLE & 8#12.
- 2F — 3/4" CONDUIT (2)F CABLE.

TELEPHONE CABLE AND WIRING

- 2T — 1" CONDUIT WITH (2) "T" CABLES.

CABLE TYPE

"T" CABLE – 4 PAIR #24 UTP CATEGORY 6 CABLE.

"F" CABLE – WEST PENN D990, 1 PAIR #18 UNSHIELDED.

CODES & STANDARDS FOR FIRE ALARM SYSTEM REQUIREMENTS

- Health & Safety Code Section 13145
- California Code of Regulations (CCR), Title 19
- CCR, Title 24, Part 2: 2016 California Building Code (CBC)
- CCR, Title 24, Part 3: 2016 California Electrical Code (CEC)
- CCR, Title 24, Part 4: 2016 California Mechanical Code (CMC)
- CCR, Title 24, Part 9: 2016 California Fire Code (CFC)

National Fire Protection Association (NFPA) 72, 2016 edition, as amended in Chapter 80 of the 2013 CFC

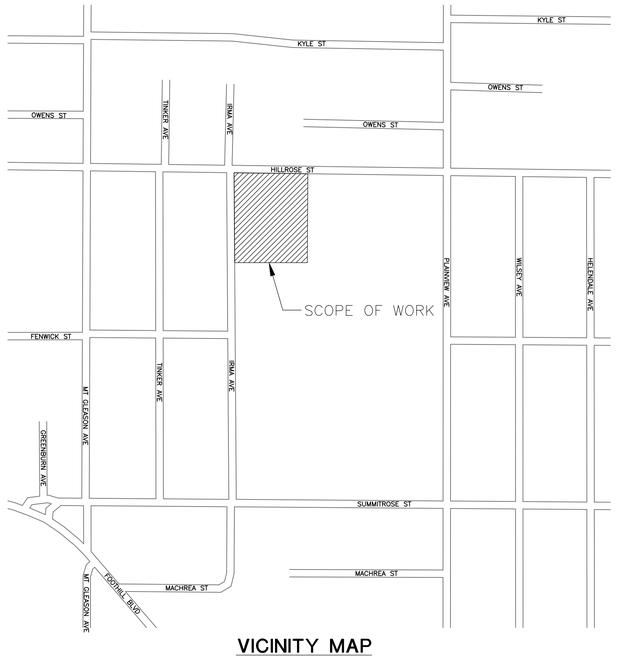
GENERAL FIRE ALARM NOTES

1. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF THE CALIFORNIA ELECTRICAL CODE, CURRENT CALIFORNIA TITLE 24 REQUIREMENTS, CALIFORNIA FIRE CODE, NFPA 72 STANDARDS, AMERICAN WITH DISABILITY ACT (ADA) REQUIREMENTS.
2. SPECIFIC COMPONENTS ON CATALOG CUT SHEETS MUST BE HIGHLIGHTED OR IDENTIFIED.
3. PANELS MUST NOT BE MOUNTED HIGHER THAN 6 FEET AND SYSTEM STATUS DISPLAYS ARE TO BE AT EYE LEVEL (+60" A.F.F.). NO EQUIPMENT OR RACEWAY MAY BE LOCATED UNDER A CABINET CONTAINING BATTERIES.
4. CONTRACTOR SHALL INSTALL AND FURNISH A COMPLETE MANUAL FIRE ALARM SYSTEM, INCLUDING BUT NO LIMITED TO WIRING, CONDUITS AND DEVICES REQUIRED FOR SATISFACTORY OPERATION OF SYSTEM.
5. FIRE ALARM WIRING FOR INITIATING DEVICES; I.E. PULL STATION SMOKE DETECTORS, MONITOR AND CONTROL MODULES ETC. SHALL BE LOOPED IN AND OUT FROM ANY DEVICES. T-TAPPING IS NOT ALLOWED.
6. ALL EXPOSED CONDUITS AND BOXES SHALL BE PAINTED TO MATCH THE SURFACES WHERE INSTALLED AND LABELED "FA CIRCUITS."
7. QUANTITY OF WIRES SHOWN IN ALL CONDUITS IS FOR GENERAL GUIDELINE. SUPPLIER OF FIRE ALARM SYSTEM SHALL PREPARE CONSTRUCTION DRAWINGS SHOWING ALL NECESSARY WIRES AND SIZES OF ALL CONDUITS SHOWN. PROVIDE SPARE WIRES BETWEEN BUILDINGS.
8. DRAWINGS DO NOT SHOW ALL THE NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE INTERMEDIATE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED BUILDING WALLS.
9. ALL JUNCTION BOXES AND DEVICES INDICATED ON BUILDING EXTERIORS SHALL BE WEATHERPROOF TYPE.
10. FIRE ALARM WIRES SHALL BE COPPER TYPE THWN/THHN.
11. WHEN ALL FIRE ALARM DEVICES ARE INSTALLED AND PROGRAMMING IS COMPLETE, PROVIDE A FIRE ALARM DEVICE MAP NEXT TO FACP TO INDICATE TO PERSONNEL THE LOCATIONS OF THE NEW DEVICES.
12. JUNCTION BOXES SHALL NOT CONTAIN SPLICES. CONDUCTORS SHALL BE PULLED THROUGH. TERMINATIONS SHALL BE PERFORMED.
13. "LABEL DESCRIPTIONS" INDICATING DEVICE TYPES AND LOCATIONS THAT ARE DISPLAYED ON THE FIRE ALARM LCD. DISPLAY SHOULD BE CLEAR EASILY UNDERSTOOD BY THE OFFICE STAFF. DESCRIPTIONS SHOULD BE BASED ON THE STAFF'S UNDERSTANDING OF THE SITE AND NOT ON INFORMATION TAKEN FROM PRINTS.
14. THE FIRE ALARM SYSTEM IS A "MANUAL" FIRE ALARM WITH ADDED SMOKE DETECTORS FOR PROTECTION OF THE PROPERTY.
15. THE EQUIPMENT SUPPLYING PLFA CIRCUIT SHALL BE DURABLY MARKED WHERE PLAINLY VISIBLE TO INDICATE EACH CIRCUIT THAT IS A POWER-LIMITED FIRE ALARM CIRCUIT (LAEC 760.42).
16. ALL FIRE ALARM DEVICES AND THE FIRE ALARM PANEL SHALL BE LISTED BY A RECOGNIZED TESTING LABORATORY FOR THE INTENDED USE (LAED 93.0204).
17. ALL ELECTRIC LIGHT , POWER, CLASS 1, AND MEDIUM POWER NETWORK-POWER BROADBAND COMMUNICATION CIRCUIT CONDUCTORS SHALL BE SEPARATED FROM PLFA CIRCUITS BY AT LEAST 2 INCHES BY A FIXED NONCONDUCTOR, BY A RACEWAY, OR BY CABLES THAT ARE METAL-SHEATHED, METAL-CLAD, NONMETALLIC-SHEATHED, TYPE UF, OR A COMBINATION OF SUCH CABLING. (LAEC 760.55)
18. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION.
19. WIRING SHALL NOT BE LOOPED THROUGH DEVICES, WIRES MUST BE CUT FOR IN AND OUT.
20. POINT AND COMMON ANNUNCIATOR AND T-TAPPING ARE PROHIBITED.
21. ALL WIRING, INITIATING DEVICES, AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION (F/A PANEL TO SUPERVISE THE ANNUNCIATOR PANEL ALL CIRCUITS AND INITIATING DEVICES).
22. WIRING SHALL NOT BE LOOPED THROUGH DEVICES; WIRE MUST BE CUT FOR IN AND OUT.
23. POINT AND COMMON ANNUNCIATION PROHIBITED. NON-ADDRESSABLE CIRCUITS T-TAPPING IS PROHIBITED.
24. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED TO MANUFACTURERS SPECIFICATIONS.
25. AUDIBILITY OF ALARM AND VOICE COMMUNICATION SHALL BE NOT LESS THAN 15 DBA ABOVE AMBIENT SOUND, BUT NOT LESS THAN 75 DBA, THROUGHOUT AREA OF ALARM.
26. AREAS HAVING MORE THAN 2 STROBES IN THE FIELD OF VIEW SHALL BE SYNCHRONIZED (2010 NFPA 72, 18.5.4.3.2.(4)).
27. SMOKE DETECTORS AND HEAT DETECTOR LOCATIONS ARE BASED ON SMOOTH CEILING WITH MAXIMUM HEIGHT.
28. STROBE LOCATION IS BASED ON 10 FOOT CEILING HEIGHT AND ARE INSTALLED ACCORDING TO NFPA 72 REQUIREMENTS UNLESS OTHERWISE NOTED.
29. WALL-MOUNTED STROBES SHALL HAVE THEIR BOTTOMS NOT LESS THAN 80 INCHES ABOVE FINISHED FLOOR AND NO GREATER THAN 96 INCHES ABOVE FINISHED FLOOR.
30. STROBES IN SLEEPING AREAS SHALL BE LOCATED WITHIN 16 FEET OF PILLOW AND HAVE MINIMUM INTENSITY OF 110cd. FOR STROBES LOCATED LESS THAN 24 INCHES FROM CEILING, MINIMUM INTENSITY SHALL BE 177cd.
31. MANUAL PULL STATIONS SHALL BE MOUNTED NO HIGHER THAN 48" TO TOP OF OUTLET BOX. (2010 CBC ADA C 1136A.2 AND 1142A.2).
32. FIRE ALARM SIGNAL SHALL MEET ANSI S3.41, AUDIBLE EMERGENCY EVACUATION SIGNAL (TEMPORAL PATTER).
33. ALL DWELLING UNITS AND SLEEPING UNITS SHALL BE PROVIDED WITH CAPABILITY TO SUPPORT VISIBLE ALARM NOTIFICATION APPLIANCES IN ACCORDANCE WITH NFPA 72. (CFC 907.6.2.3.4).
34. AUDIBLE APPLIANCES PROVIDED FOR THE SLEEPING AREAS TO AWAKEN OCCUPANTS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH THE FOLLOWING:
    i. THE ALARM SIGNAL SHALL BE SQUARE WAVE OR PROVIDE EQUIVALENT AWAKENING ABILITY.
    ii. THE WAVE SHALL HAVE FUNDAMENTAL FREQUENCY OF 520 Hz ± 10 PERCENT.

GENERAL NOTES

1. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OF LABOR OR MATERIAL FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH PRESENT PRACTICE OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.
2. WORK INCLUDES ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, DELIVERY AND INSTALLATION OF ELECTRICAL SYSTEM, COMPLETE, AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN.
3. CONSTRUCT PROJECT IN ACCORDANCE WITH FOLLOWING CODES: REGULATIONS OF STATE AND LOCAL FIRE MARSHAL; NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION, EDITION IN FORCE; LOCAL CODES AND ORDINANCES; TITLE 19, 21 AND 24 CALIFORNIA ADMINISTRATIVE CODE.
4. PERMITS, FEES AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED BY ANY CONSTITUTED AUTHORITY HAVING JURISDICTION INCLUDING UTILITIES. ARRANGE AND PAY FOR ALL REQUIRED INSPECTIONS OR EXAMINATIONS AND DELIVER CERTIFICATES OF INSPECTION TO ARCHITECT.
5. SUBMIT A LIST OF MATERIALS AND EQUIPMENT MANUFACTURERS THAT CONTRACTOR INTENDS TO USE. SUBMIT SHOP DRAWINGS FOR: FIRE ALARM PANELS, DEVICES, CONDUITS, PULLBOXES AND CABLES.
6. THE TERM "PROVIDE" USED ON DRAWINGS SHALL BE CONSIDERED TO MEAN "FURNISH AND INSTALL".
7. BEFORE PROCEEDING WITH WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND SIZES AND ASSUME ALL RESPONSIBILITY FOR FITTING OF MATERIALS AND EQUIPMENT TO OTHER PARTS OF EQUIPMENT AND TO STRUCTURE. WHERE APPARATUS AND EQUIPMENT HAVE BEEN INDICATED ON DRAWINGS, DIMENSIONS HAVE BEEN TAKEN FROM TYPICAL EQUIPMENT OF CLASS INDICATED. CAREFULLY CHECK DRAWINGS AND SEE THAT EQUIPMENT WILL FIT INTO SPACES PROVIDED.
8. LOCATIONS OF CONDUITS, OUTLETS, APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED.
9. BE CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINEAL RUNS OF WIRING OR CONDUIT. WIRING DIAGRAMS DO NOT NECESSARILY SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT.
10. EXTRA WORK OR COSTS TO THIS CONTRACTOR DUE TO OTHER CONTRACTORS OR TRADES SHALL BE ADJUSTED BETWEEN THIS CONTRACTOR AND OFFENDING CONTRACTOR AT NO EXTRA COST TO OWNER. NOTIFY ARCHITECT BEFORE SUCH EXTRA WORK IS DONE.
11. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.
12. WHERE CONDUITS PASS THROUGH SLEEVES IN INTERIOR WALLS, FLOORS, OR CEILINGS, COMPLETELY FILL SPACE BETWEEN EACH CONDUIT AND ITS SLEEVE TO PROVIDE AN AIRTIGHT SEAL.
13. USE GLASS FIBER MATERIAL, "DUXSEAL" COMPOUND, FOR ACOUSTIC SEALS.
14. ALL EQUIPMENT SHALL BE BRACED AND/OR ANCHORED TO RESIST A HORIZONTAL FORCE PER TITLE 24, PART 2 SECTION 2312 FOR ZONE 4.
15. PROVIDE CAST OUTLET BOXES IN EXTERIOR LOCATIONS AND WET LOCATIONS.
16. WHERE BOXES ARE INSTALLED IN FIRE RATED CEILING OR WALLS, BE RESPONSIBLE FOR PRESERVING INTEGRITY OF FIRE RATING AS REQUIRED.
17. IN FIRE-RATED WALL, USE 4" SQUARE DEEP BOXES. DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES OF BOXES FOR ANY 100 SQUARE FEET OF WALL OR PARTITIONS. SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITION BY A MINIMUM HORIZONTAL DISTANCE OF 24 INCHES.
18. PROVIDE COPPER CONDUCTORS ONLY.
19. PROVIDE TYPE "THHN" OR "THWN" WIRES ONLY.
20. MOUNT RECEPTACLES, TELEPHONES AND J-BOXES LOCATED IN WALL AT +18" FROM FLOOR LINE TO BOTTOM LINE OF OUTLET UNLESS OTHERWISE NOTED ON PLAN.
21. PROVIDE "U.L. APPROVED" OR "U.L. LISTED" ELECTRICAL EQUIPMENT ONLY.
22. USE RIGID GALVANIZED STEEL CONDUIT FOR ALL SIZES WHERE DIRECTLY EXPOSED TO WEATHER; WHERE SUBJECT TO ABNORMAL CONDITIONS OF HEAT, COLD, MOISTURE, HUMIDITY, FUMES AND HAZARDOUS ELEMENTS; WHERE INSTALLED EXPOSED BELOW 7-1/2 FEET, IN AREAS WHERE SUBJECT TO MECHANICAL INJURY INCLUDING MECHANICAL AND EQUIPMENT ROOMS; AND IN CONCRETE SLABS ON GRADE.
23. EMT CONDUIT WITH COMPRESSION TYPE FITTINGS MAY BE USED FOR ALL SIZES UP TO 1-1/2 INCHES MAXIMUM TRADE SIZE IN DRY LOCATIONS AS IN STUD PARTITIONS AND FURRED CEILING SPACES. CONDUITS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET TO PANEL EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED OR INDICATED. EMT SHALL NOT BE RUN EXPOSED, IN CONCRETE, RUNS MORE THAN 100 FEET FOR POWER FEEDERS.
24. ALL UNDERGROUND CONDUITS SHALL BE ENTIRELY ENCASED IN CONCRETE 3" THICK ON ALL SIDES WITH MULTIPLE CONDUITS SPACED NOT LESS THAN 1-1/2" APART. MINIMUM DEPTH OF NOT LESS THAN 27" BELOW FINISHED GRADE TO THE TOP OF CONCRETE ENVELOPE.
25. USE PVC (POLYVINYL CHLORIDE) SCHEDULE 40 CONDUIT BELOW GRADE ONLY. RUN AT MINIMUM OF 6" BELOW BOTTOM OF FLOOR SLAB OR 24" BELOW GRADE OUTSIDE OF BUILDING LINES UNLESS OTHERWISE NOTED. USE PVC COATED RIGID STEEL ELBOWS AND RISERS THROUGH SLAB.
26. SEAL ALL PVC CONDUITS AT BOTH ENDS WITH "PERMACEL" INCLUDING THOSE TERMINATING IN STEEL RISERS. MAKE GAS TIGHT.
27. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
28. PROVIDE A #12 PULL WIRE IN ALL CONDUITS INDICATED AS CONDUIT ONLY (C.O.) RATED 250 POUND TENSILE STRENGTH.
29. WIRING DEVICE PLATES: COLOR-FINISH AS SELECTED BY ARCHITECT OR OWNER.
30. PROVIDE ALL NECESSARY J-BOXES AND PULL BOXES OF PROPER SIZES AS REQUIRED.
31. PROVIDE WEATHERPROOF TYPE ELECTRICAL EQUIPMENT FOR EXTERIOR LOCATIONS.
32. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE GENERAL ARRANGEMENT OF WORK. BE RESPONSIBLE FOR CHECKING AND COORDINATING WITH OTHER TRADES AND VERIFYING SPACE IN WHICH WORK WILL BE INSTALLED.
33. SEAL ALL SPACE AROUND CONDUIT PENETRATION THROUGH FIRE-RATED WALL WITH A UL LISTED FIRE BARRIER COMPOUND. "3M" CAULKING OR EQUAL.
34. OPERATING MANUALS AND INSTRUCTIONS: THE CONTRACTOR SHALL FURNISH TO THE CITY FOUR BOUND COPIES OF OPERATING AND MAINTENANCE MANUALS FOR ALL ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL EXPLAIN IN DETAIL ALL MANUALS FOR THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT TO THE DEPARTMENT OF PUBLIC WORKS PERSONNEL BEFORE COMPLETION AND ACCEPTANCE OF THE PROJECT.
35. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
36. AS PART OF CLOSEOUT DOCUMENT CONTRACTOR SHALL PROVIDE ONE SET OF AS-BUILTS DRAWINGS AT THE COMPLETION OF THE JOB. SHOW EXACT LOCATION AND MOUNTING OF EQUIPMENT INCLUDING DIMENSIONS.
37. CONDUITS ENTERING AND/OR LEAVING POLE FOOTING SHALL BE RIGID PVC COATED STEEL WITH PLASTIC BUSHING. MAKE TRANSITION FROM PVC TO METALLIC AT A MINIMUM DISTANCE OF 3'-0" FROM FOOTING.
38. UNDERGROUND CONDUIT RUNS INSTALLED WITH SCHEDULE 40 PVC SHALL HAVE A MINIMUM 3" TOP COVER TO CONCRETE OVER ITS ENTIRE LENGTH (EXCEPT UNDER CONCRETE SIDEWALKS) AND SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE PREVAILING CODE BUT NOT LESS THAN SHOWN ON THE PLAN. CONCRETE COVER SHALL BE MINIMUM OF 100-E-100 SLURRY MIX.
39. ALL CONDUITS BENDS INSTALLED UNDERGROUND SHALL BE THE LONG RADIUS TYPE WITH RADII NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER TON THE CONDUIT AND WITH NOT MORE THAN THREE 90° BENDS IN ANY RUN. EXCEPTION: FOR POWER AND LIGHT CONDUIT ABOVE GROUND, FACTORY ELLS ARE PERMITTED.
40. CONDUITS IN UNDERGROUND PULL BOXES SHALL BE SEALED WITH "LHD1" OR "LHD5" DUCT SEAL AS MANUFACTURED BY DOTTIE CO. OR APPROVED EQUAL.
41. PLACE 6" WIDE, 4 MIL PLASTIC YELLOW MARKER TAPE AT 12 INCHES BELOW FINISH GRADE ALONG AND ABOVE BURIED CONDUITS. LABEL TAPE "CAUTION: ELECTRIC LINE BELOW" OR SIMILAR WORDING.
42. RECORD DRAWINGS: IMMEDIATELY AFTER WORK IS INSTALLED, CAREFULLY DRAW ON PRINTS IN RED INK ALL WORK WHICH IS INSTALLED AT VARIANCE WITH THE WORK AS INDICATED ON THE DRAWINGS. INDICATE BY MEASURED DIMENSION TO BUILDING CORNERS OR OTHER PERMANENT MONUMENTS THE EXACT LOCATION OF ALL CHANGES.

BUREAU OF ENGINEERING
OFFICIAL RECORD



VICINITY MAP

N.T.S.

SCOPE OF WORK

INSTALLATION OF MANUAL FIRE ALARM SYSTEM FOR THE MODERNIZATION OF THE BATHHOUSE BUILDING.

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
03/10/2022
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER	TED ALLEN, P.E.	DATE:	03/10/2022
ARCHITECTURAL DIVISION			03/10/2022
ENGINEER:	JIMMY FONG	LIC. NO.	E14126
DESIGNED BY:	P.M.		
DRAWN BY:	H.Y.		
CHECKED BY:	P.M.		
APPROVED BY:	STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT		03/11/2022

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: SYMBOL LIST AND NOTES

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. FA101

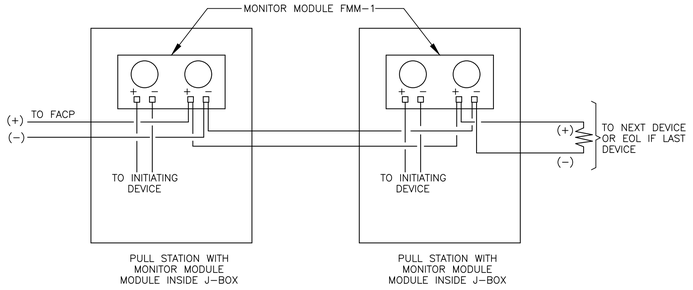
SHEET 79 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

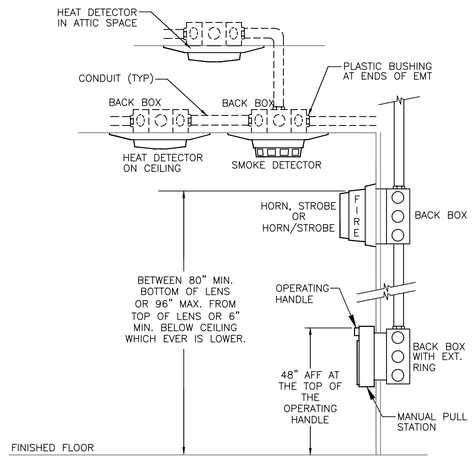
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:56 PM
FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_FA101.DWG

REVISION DATES (DESIGN STAGE ONLY)



7 / FA102 ADDRESSABLE PULL STATION
N.T.S.



6 / FA102 PULL STATION, HORN & STROBE HEIGHT REQUIREMENTS
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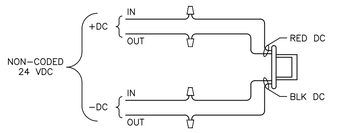
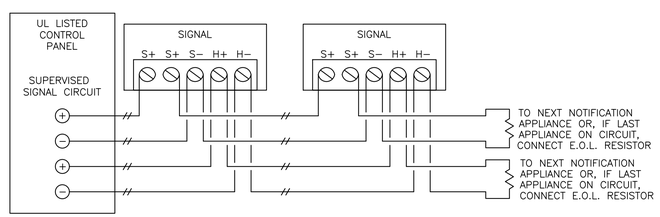


NOTE:
NOTIFICATION APPLIANCE IS RATED PER INDIVIDUAL NAMEPLATE.

VISUAL WIRING DIAGRAM

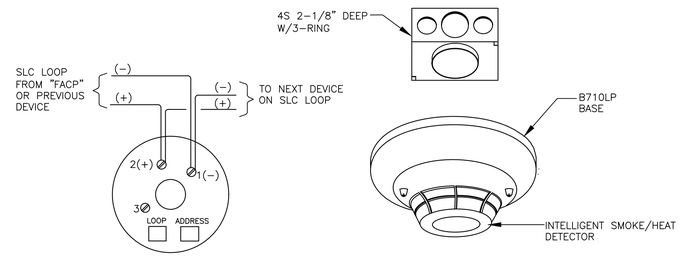
5 / FA102 STROBE LIGHT
N.T.S.



TEMPORAL CODE 3 FOR ALL AUDIBLE DEVICES OBTAINED FROM FIRE ALARM CONTROL PANEL.

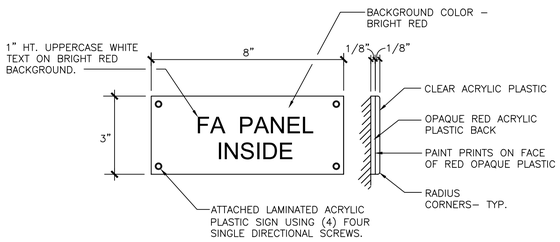
VISUAL/HORN WIRING DIAGRAM

4 / FA102 DUAL INPUT HORN/STROBE
N.T.S.

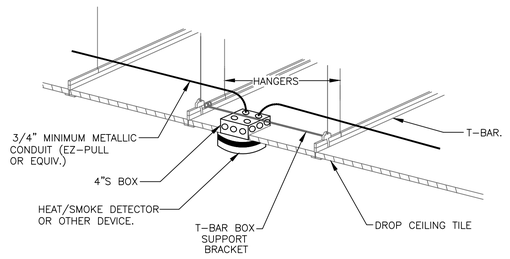


3 / FA102 LOW PROFILE SMOKE/HEAT DETECTOR
N.T.S.

QUANTITY	SYMBOLS	DEVICE NAME	NOTIFIER CAT. NO. (U.O.N.)	CSFM NO.
1		FIRE ALARM CONTROL PANEL	NFS-320	7165-0028:243
1	UDACT	UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER	UDACT	7165-0028:243
6	FH	INTERIOR MANUAL PULL STATION	NBG-12LX	7150-0028:199
2	WP H	EXTERIOR HORN WITH WP BACK BOX	SYSTEM SENSOR HWK	7135-1653:0189
4	(cd) H	HORN - STROBE (cd)	SYSTEM SENSOR P4W	7125-1653:0188
11	(cd) L	WALL MOUNTED STROBE	SYSTEM SENSOR SW	7125-1653:0186
37	SD	SMOKE DETECTOR	FAPT-851(A)	7272-0028:0206
		SMOKE DETECTOR BASE	B210LP(A)	7300-0028:0173
N/A	F	1 PAIR UNSHIELED	WEST PENN NO. D990	7161-0859:0101



2 / FA102 FA CONTROL PANEL SIGNAGE
N.T.S.



TYPICAL SMOKE/HEAT DETECTOR, CEILING MOUNT HORN/STROBE INSTALLATION DETAIL
1 / FA102 N.T.S.

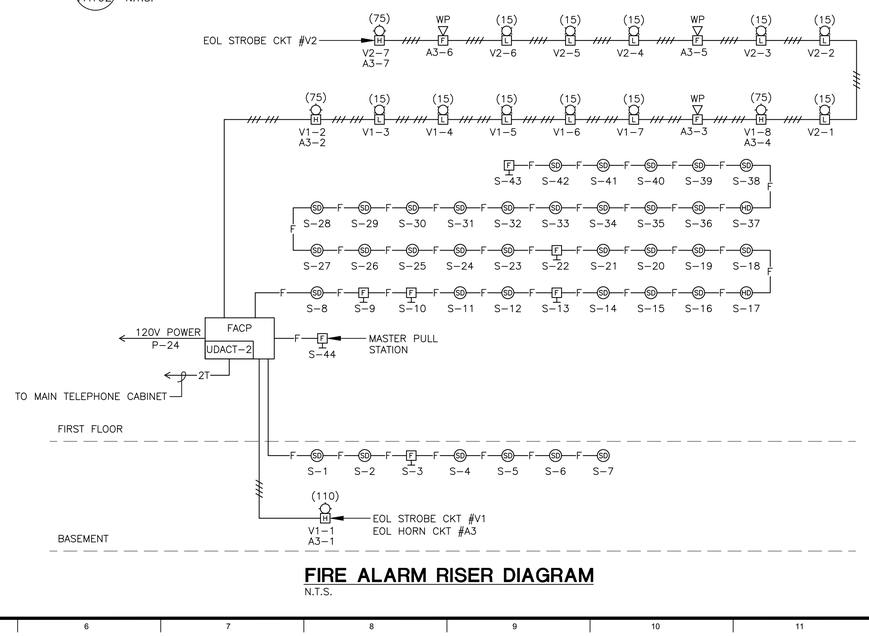
FIRE ALARM SIGNAL CIRCUIT SCHEDULE AND VOLTAGE DROP CALCULATIONS												
CKT. NO.	WALL QUAN. INT. HORN 0.069	WALL QUAN. STROBE 15 cd 0.066	WALL QUAN. STROBE 30 cd 0.094	WALL QUAN. STROBE 75 cd 0.158	WALL QUAN. STROBE 110cd 0.202	QUAN EXT. HORN 0.069	TOTAL AMPS	WIRE SIZE	DISTANCE (IN FEET)	TO FACP	TO POWER EXTENDER	PERCENT VOLTAGE DROP
V1		5		2	1		0.85	#12	280	X		3.83
V2		6		1			0.55	#12	440	X		3.89
A3	4					3	0.48	#12	230	X		1.78

I = TOTAL CURRENT FLOW IN ALARM CONDITION
L = 2 TIMES LENGTH OF CIRCUIT FROM SUPPLY TO LAST DEVICE (IN FEET)
1.93 = DC RESISTANCE OF #12 COPPER CONDUCTOR PER 1000 FT

%VOLTAGE DROP = $\frac{2 \times L \times 1.93 \times I}{1000 \times \text{SYSTEM VDC}} \times \frac{100}{24}$

BATTERY SIZING CALCULATIONS - FACP NFS-320					
		STANDBY CURRENT		ALARM CURRENT	
DEVICE NAME (NOTIFIER)	QTY	UNIT	TOTAL	UNIT	TOTAL
BE 320 BASIC EQUIPMENT	1	0.17	0.17	0.25	0.25
LIB-200-LOOP INTERFACE BOARD	1	0.049	0.049	0.01	0.01
AVPS-24 AUXILIARY POWER SUPPLY	1	0.009	0.009	0.009	0.009
LCD2-80 REMOTE ANNUNCIATOR	1	0.05	0.05	0.1	0.1
PHOTOELECTRIC SMOKE DETECTOR	35	0.00021	0.00735	0.0065	0.2275
HEAT DETECTOR	2	0.00021	0.00042	0.0065	0.013
DIGITAL COMMUNICATOR - UDACT	1	0.035	0.035	0.085	0.085
MANUAL PULL STATION	6	0.0004	0.0024	0.0006	0.0036
INTERIOR HORN	4	0.021	0.084	0.069	0.276
EXTERIOR HORN	3	0	0	0.069	0.207
15cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	11	0	0	0.066	0.726
75cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	3	0	0	0.158	0.474
110cd ALARM STROBE LIGHT 24 VDC - WALL MTD.	1	0	0	0.202	0.202
		SUB TOTAL	0.41	SUB TOTAL	2.5831
		HOURS	24.00	HOURS	0.083
		AH STANDBY	9.77	AH ALARM	0.2143973

TOTAL	9.99 A.H.
BATTERY WITH 25% DERATING INCLUDED	12.48 A.H.
BATTERY	25.00 A.H.
SPARE	12.52 A.H.



FIRE ALARM RISER DIAGRAM
N.T.S.

FIRE ALARM SEQUENCE OF OPERATION				
DEVICE / ACTION	MANUAL PULL STATION	SMOKE DETECTOR	HEAT DETECTOR	AC POWER FAILURE
SOUND ALARM THROUGHOUT BUILDING	X	X	X	
ACTIVATE RELAY FOR MONITORING	X	X	X	X
ANNUNCIATE AT PANEL & ANNUNCIATOR	X	X	X	X SUPERVISORY
SOUND TROUBLE BUZZER	ON WIRING FAULT	ON WIRING FAULT	ON WIRING FAULT	X
NOTIFY CENTRAL STATION	X ALARM	X ALARM	X ALARM	X SUPERVISORY

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
FAX (818) 763-9180

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY ENGINEER: TED ALLEN, P.E.
ARCHITECTURAL DIVISION
ENGINEER: JIMMY FONG LIC. NO. E14126 DATE: 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y. 03/10/2022
CHECKED BY: P.M. 03/10/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT 03/11/2022
VERTICAL CONTROL:
HORIZONTAL CONTROL:
SHEET TITLE: FIRE ALARM DETAILS AND CALCULATIONS
PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT
ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

REVISIONS: NO. | DATE | BY | SERIAL NO.
BUILDING NO. -
INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER JIMMY L. FONG No. E14126 CIVIL STATE OF CALIFORNIA 12/31/2023

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. FA102
SHEET 80 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

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REVISION DATES (DESIGN STAGE ONLY)

TEMPLATE SHEET REVISION DATE: 06/2006
REVISION DATE: 3/10/2022 2:56 PM
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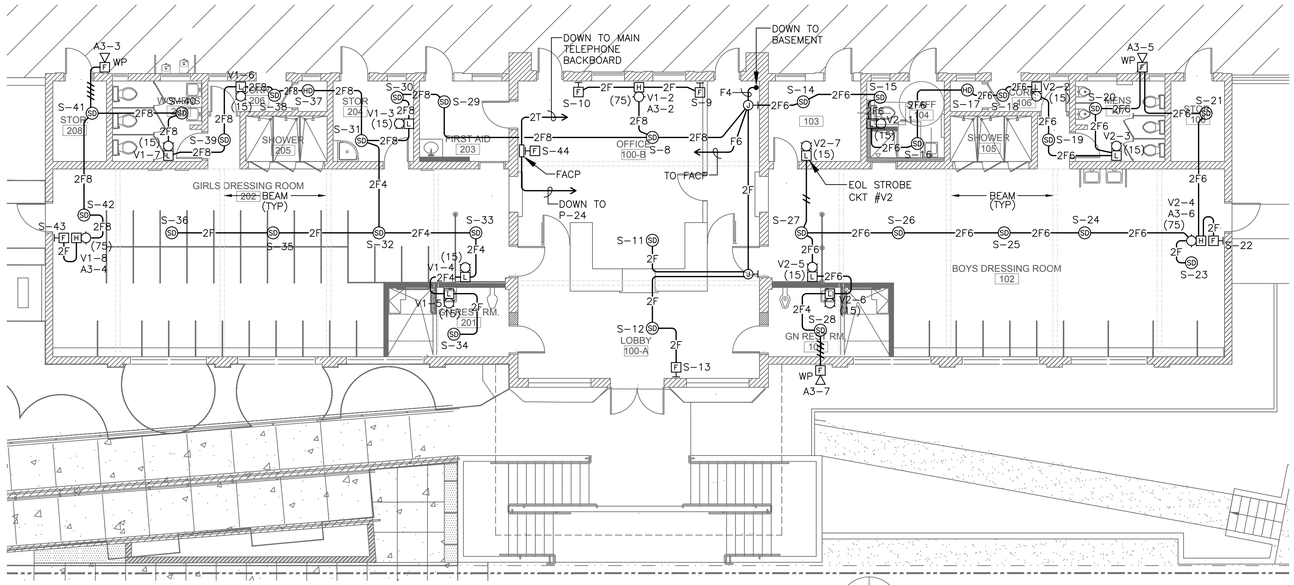
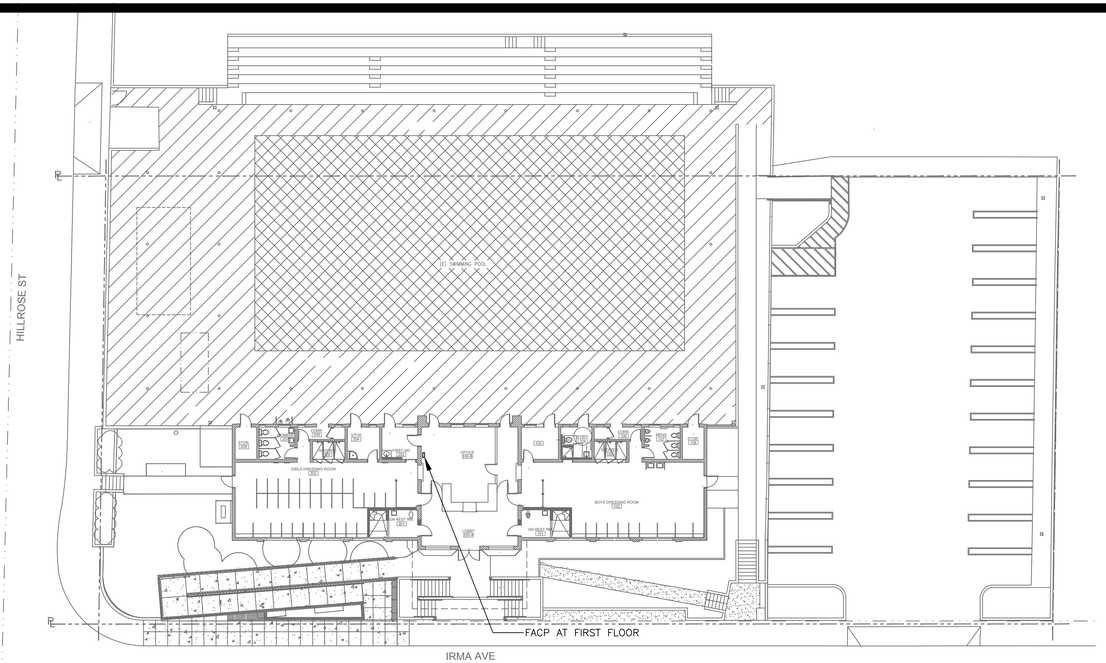


FIRST FLOOR FIRE ALARM PLAN

Scale: 1/8" = 1' - 0"

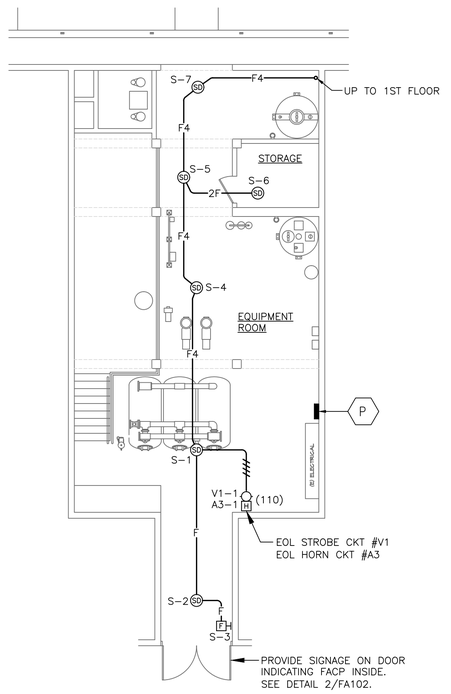
N



FIRE ALARM SITE PLAN

Scale: 1" = 20'-0"

N



BASEMENT FIRE ALARM PLAN

Scale: 1/8" = 1' - 0"

N

BID SET
Date: May 17, 2022

PACIFIC ENGINEERS GROUP
Consulting Electrical Engineers
3611 Cahuenga Blvd W, First Floor
Los Angeles, CA 90068
(323) 536-9058 Y15-094
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BUREAU OF ENGINEERING
ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

SERIAL NO.

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
JIMMY L. FONG
No. E14126
CIVIL
03/10/2022
STATE OF CALIFORNIA

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

TED ALLEN, P.E. CITY ENGINEER DATE: 03/10/2022
ARCHITECTURAL DIVISION 03/10/2022
ENGINEER: JIMMY FONG LIC. NO. E14126 03/10/2022
DESIGNED BY: P.M. 03/10/2022
DRAWN BY: H.Y.
CHECKED BY: P.M. 03/11/2022
APPROVED BY: STEVEN FIERCE, A.I.A., PRINCIPAL ARCHITECT

VERTICAL CONTROL:
HORIZONTAL CONTROL:

SHEET TITLE: FIRE ALARM SITE PLAN, BASEMENT AND FIRST FLOOR FIRE ALARM PLANS

PROJECT: VERDUGO HILL POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVE. TUJUNGA, CA. 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. FA103

SHEET 81 OF SHEETS 96

PLOTTED: 3/10/2022 3:01 PM

REVISION DATES (DESIGN STAGE ONLY)

REVISION DATE: 3/10/2022 2:57 PM FILE: S:\ACAD\JF\2015\Y15-094 VERDUGO POOL_CURRENT FIRE ALARM PLAN CHECK_FA103.DWG

TEMPLATE SHEET REVISION DATE: 06/2006

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GENERAL NOTES:

APPLICABLE BUILDING CODE

1. All construction and workmanship shall conform to the following codes.
2. 2016 Los Angeles City Building Code (LABC).
3. This pole and foundation standard has been designed for lateral loads on the completed structure as follows:
4. Wind – ASCE 7–10; Vult = 110 mph (Exposure C); Vasd = 85 mph (Exposure C); Risk Category = II.
5. Maximum total effective area (EPA) for luminaires per pole class:
   - LSS50B – 5.2 SQ.FT.
6. Seismic: S_s = 2.678, S_1 = 0.964, S_{DS} = 1.785, S_{D1} = 0.964, Risk Category = II; I = 1.0; Site Class = D; R = 1.5; Seismic Category = E; C_s = 0.514 Strength Level typical; Seismic Force Resisting System = Non–Building Structures, not similar to Buildings; Analysis Procedure = Equivalent Lateral Force Procedure.
7. Maximum weight per luminaire = 35.0 pounds.

GENERAL CONSTRUCTION

8. These notes shall be used in conjunction with the plans and any discrepancies shall be brought to the attention of the Engineer.
9. Contractor must check all dimensions, clearances and job conditions before starting work. Engineer shall be notified immediately of any discrepancies or possible deficiencies.
10. The drawings and specifications represent the finished structure. All bracing, temporary supports, shoring, etc., is the sole responsibility of the Contractor. Observation visits to the job site by the Engineer do not include inspection of construction procedures. The Contractor is soley responsible for all construction methods and for safety conditions at the worksite. These visits shall not be construed as continuous and detailed inspections.
11. Design, material, equipment, and products other than those described below or indicated on the drawings may be considered for use, provided prior approval is obtained from the City of Los Angeles.
12. Installation shall comply with all applicable L.A. city zoning ordinances and its provisions.
13. All changes in approved plans shall be made by addenda or change orders approved by City of Los Angeles.
14. All tests and inspections shall be performed by an independent lab approved by City of Los Angeles.
15. Plans shall be accompanied by a fully dimensioned plot plan showing all buildings and proposed pole locations.

LIGHT POLE FOUNDATIONS

(FOUNDATIONS MUST COMPLY WITH PRE–INSPECTION REPORT AS APPLICABLE)

16. Reference Geotechnical Report prepared by Los Angeles Department of Public Works, Bureau of Engineering Division, dated October 11, 2017; file No. 17–137.
17. Not used.
18. Not used.
19. Allowable design soil capacities must be verified by Geotechnical Engineer.
20. If soft or questionable soil conditions are encountered during excavations, contact the Department for instructions before proceeding with the work.
21. Soil formations that will require special design considerations or excavation procedures may exist. Pole foundations will need to be analyzed according to the soil conditions that exist.
22. The Contractor must familiarize himself with the complete soil investigation (if any) and borings and contact the Geotechnical Engineer (as necessary) to understand the soil conditions and the possibility of ground water pumping and excavation stabilization of bracing during then pier base installation and placement of concrete backfill.
23. All precast bases and concrete backfill must bear on and against firm undisturbed soil, as determined by a Geotechnical Engineer.
24. All excavations must be free of debris and loose soil prior to foundation installation, and placement of concrete backfill. Casing may be required if caving occurs. In such case, approval by a Geotechnical Engineer is required. Put plywood collar around hole to prevent falling dirt from filling hole.
25. All excavations must be dry or concrete shall be placed by the tremie method in accordance with ACI standard 336. Concrete placed by the tremie method shall have a minimum ultimate strength of 1,000 psi greater than required under "concrete backfill" below, and a maximum slump of 8 inches.
26. Excavations shall be covered, fenced securely or provided with equivalent protection for hazards.

CONCRETE BACKFILL

27. Concrete backfill shall attain a minimum compressive strength of 3000 psi at 28 days. Concrete shall attain a minimum compressive strength of 2,000 psi prior to steel pole installation.
28. Concrete: Classed 560–C–3250 designed for Fc = 3000 psi., continuous inspection is required.
29. Slump shall not exceed 5 inches.
30. Use type II/V–Portland Cement or as recommended by the Geotechnical Engineer.
31. Concrete that will be exposed to sulfate–containing solutions or soils shall comply with the maximum water–cementitious ratios and minimum compressive strengths specified in ACI 318, Section 4.3.
32. Portland Cement ASTM C–150–07.
33. Aggregate ASTM C–33, use 1" maximum size.
34. Place concrete immediately after completion of excavation and inspection by the Geotechnical Engineer and the L.A. City approved Inspector. No excavations shall be left unprotected or open overnight.
35. Concrete shall be placed in one continuous operation (no construction joint) with special equipment to prevent concrete from striking the sides of the excavation. Maximum freefall shall not exceed 5 ft.
36. Vibrate concrete full length.
37. All concrete reinforcing steel shall conform to ASTM A615, Grade 60

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Patents issued and pending.

STEEL POLE

38. Steel pole sections conform to the 2016 LABC Chapter 22, and AISC 360–10.
39. All steel conforms ASTM specifications, as referenced on these drawings.
40. Minimum elongation in 2 inch gauge length = 18%, and the minimum elongation in 8 inch gauge length = 20%.
41. The fabricator shall provide mill tests or test data by a Los Angeles city approved testing agency showing conformance of the foregoing:
42. LONGITUDINAL WELDS:
    All longtitudinal seam welding shall be done prior to cold welding.
    Weld type: Automatic high frequency resistance, automatic submerged arc or hybrid laser beam/gas metal arc welding procedure.
    Joint: Butt
    Penetration: 60% except 100% at female end of slip joint, detail H/ET–12–1(M).
    Test: 60% pen. – Visual per AWS D1.1 article 8.15
    100% pen. – Visual per AWS D1.1 article 8.15
    Certified data on seam welding from shaft manufacturer shall include:
    1. Inspection frequency and procedures; I.E.; Visual, US, Radiographic, etc.
    2. Seam welding procedures; I.E.; percent penetration and method ERW, SAW, etc.
    3. Method and length of 100 percent penetration weld at female end of slip joint.
    Welding operator: AWS certified welding operator (CWO) and shall be done by City of L.A. B&S licensed fabricator.
    Welding inspector: AWS certified welding inspector (CWI) and approved by City of L.A. B&S deputy inspector in welding.
43. CIRCUMFERENTIAL WELDS
    Circumferential welds are not allowed. Shafts shall be fabricated from continuous rolled plates or coil.
44. All weldment conforms with AWS D1.1 specification for G.M.A.W. fillet utilizing E70S–X filler metal or S.A.W. fillet utilizing F7XX–EXX or F8XX–EXX filler metal. G.M.A.W. procedure conforms to AWS A5.18. S.A.W. procedure conforms to AWS 5.23
45. MANUFACTURERS SHAFT MARKINGS:
    The manufacturer shall inscribe a common I.D. number on each shaft comprising a particular factory pole assembly. (See also manufacturers gauge marks below).
    FIELD ASSEMBLY AND MANUFACTURERS GAUGE MARKS
    The pole manufacturer shall provide and the contractor shall follow the recommended pole assembly instruction general, the pole shall be assembled on the ground and the entire structure lifted into position on the previously installed foundation. Shafts shall be connected by slip splices only, welded splices shall not be used. The manufacturer shall shop assemble the entire pole and inscribe gauge marks across each slip joint to guide the field assembly. The contractor shall assemble the pole in the presence of the Special Inspector who shall verify that each slip splice attains a minimum overlap of1.5 x larger shaft diameter.
46. GALVANIZING:
    Pole assembly, all hardware and accessories (except for non–ferrous items) shall be hot dip galvanized per ASTM A123. All fabrication shall be done before galvanizing. Minimum weight of galvanizing shall be 2.00 oz/sq. ft. Shafts shall be galvanized by single dipping only. Double dipping is not allowed.
47. SUBMITTAL:
    Manufacturing shall furnish the department with a galvanizing weight report showing conformance foregoing by the the thickness gauge. Method of measurement per ASTM E376.
48. All miscellaneous structural steel items conform to the Steel Construction Manual, 13th Edition, American Institute of Steel Construction.

PRECAST BASE

49. Precast pole base conforms to 2016 LABC, Chapter 19 and to Building Code Requirements for Reinforced Concrete, ACI 318–14.

SUBMITTALS

50. Prior to any pole fabrication, the contractor shall submit and obtain the department's approval of:
    1. All pole shaft certifications.
    2. All remaining certifications prior to shipping any poles to job site.

    The contractor shall furnish written certifications showing compliance with ASTM and the foregoing specification.

    CROSSARMS: ASTM A500, GR.B Min F_Y = 70 KSI
    CAP: ASTM A48 class 30, zinc die cast (alloy no. 3).

    FIXTURE MOUNTING SECTIONS: ASTM A513, F_Y = 38 KSI

    POLE SHAFTS: The manufacturer shall furnish certified mill reports and mechanical test results showing compliance with ASTM A595A or ASTM A572, Gr 55 or Gr 65. Each pole shaft and its mechanical and chemical data shall be traceable to its steel mill plate heat.
    PRESTRESS STRANDS: ASTM A416, GR 270 (Low relaxation).

TESTING AND INSPECTION

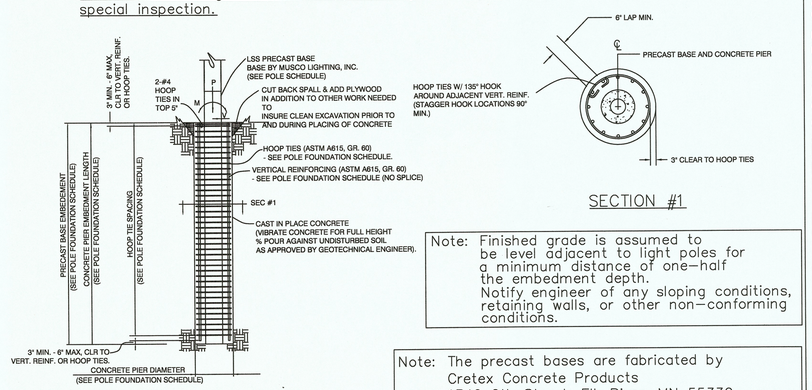
51. Testing and inspections in accordance with 2016 LABC.
52. Prior to pouring of concrete, the Geotechnical Engineer shall inspect and approve the footing excavations.
53. All compacted fill shall be placed under the supervision and approval of the Geotechnical Engineer.

BUREAU OF ENGINEERING
OFFICIAL RECORD

STATEMENT OF SPECIAL INSPECTIONS*

ITEM	CONTINUOUS /PERIODIC	SCOPE
1. PIER FOUNDATIONS	CONTINUOUS	INSPECT INSTALLATION OF DRILLED PIER FOUNDATIONS. VERIFY DIAMETER, EMBEDMENT DEPTHS AS SCHEDULED, DEPTHS OF FILL, AND BEARING STRATA
2. CONCRETE MIX DESIGN	PERIODIC	REVIEW CONCRETE BATCH TICKETS AND VERIFY COMPLIANCE WITH APPROVED MIX DESIGN.
3. CONCRETE PLACEMENT	CONTINUOUS	INSPECT PLACEMENT OF CONCRETE FOR PROPER APPLICATION TECHNIQUES. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.
4. SAMPLING AND TESTING OF CONCRETE	CONTINUOUS	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE OF CONCRETE.
5. CRETEX PRECAST/ PRESTRESSED CONCRETE BASES	(PCI CERTIFIED)	FABRICATOR EXEMPT.** REFERENCE ICC ESR–3765
6. STRUCTURAL STEEL	(L.A. CITY APPROVED)	FABRICATOR EXEMPT.** REVIEW CERTIFIED MILL TESTS REPORTS AND IDENTIFICATION MARKINGS.

* The Special Inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation requiring special inspection.
**Special inspections shall not be required when the work is done on the premises of a fabricator registered and approved by the City to perform such work without special inspection.



SECTION #1

Note: Finished grade is assumed to be level adjacent to light poles for a minimum distance of one–half the embedment depth. Notify engineer of any sloping conditions, retaining walls, or other non–conforming conditions.

Note: The precast bases are fabricated by
Cretex Concrete Products
1340 6th Street, Elk River, MN 55330
Phone: 763–545–7473, Fax: 763–545–8399
License No. 1754

(A) FOUNDATION DETAIL
N.T.S.

POLE FOUNDATION SCHEDULE

POLE TYPE–# OF FIXTURES (MAX) (LSS=LIGHT STRUCTURE SYSTEM)	ASD LEVEL FORCES (MAX)*			C.I.P. DEEP FOUNDATION				PRECAST BASE
	MOMENT (M) FT–LBS	SHEAR (V) LBS	VERTICAL (P) LBS**	DIAMETER INCHES	EMBEDMENT FEET (SEE NOTE BELOW)	VERTICAL REINFORCING (ASTM A615, GR 60)	HOOP TIE SIZE & SPACING (ASTM A615, GR 60)	EMBEDMENT FEET
LSS50B–4	25,360	871	1,037	36"	10'–0"	8–#8	#4 @ 6" O.C. TOP 9'–0" & #4 @ 12" O.C. BELOW	10'–0"

*GROUNDLINE FORCES FOR ALL POLES INCLUDE A MOUNTING BRACKET FOR ONE ATTACHMENT AT 30'-0" AGL. - REF DETAIL N/ET-13-1(M).

**GROUNDLINE FORCES DO NOT INCLUDE THE WEIGHT OF THE PRECAST BASE.
NOTE:
FINAL EMBEDMENT TO BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OF RECORD

BID SET
Date: May 17, 2022

CONSULTANT
KNA STRUCTURAL ENGINEERS
9931 Muirlands Boulevard, Irvine, CA 92618
Tel (949) 462-3200 • Fax (949) 462-3201
www.KNAstructural.com
KNA JOB NO.: 363.218

REGISTERED PROFESSIONAL ENGINEER — No. 4506 Exp. 6–30–19 — STRUCTURAL — STATE OF CALIFORNIA

INDEX OF SHEETS

ET-1(M) GENERAL NOTES AND FOUNDATION DETAILS
ET-3(M) 50B-4 POLE / FOUNDATION STANDARD
ET-12-1(M), ET-12-2(M) / POLE DETAILS
ET-13-1(M) / AUX. MOUNTING DETAILS

APPROVAL STAMPING AREA

CLA–ET–1(M)_J

CITY OF LOS ANGELES, DEPARTMENT OF RECREATION AND PARKS, 221 N. FIGUEROA ST. 1ST FLOOR, LOS ANGELES, CA 90012 RP-300123

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DELTA	REVISIONS	BY	DATE

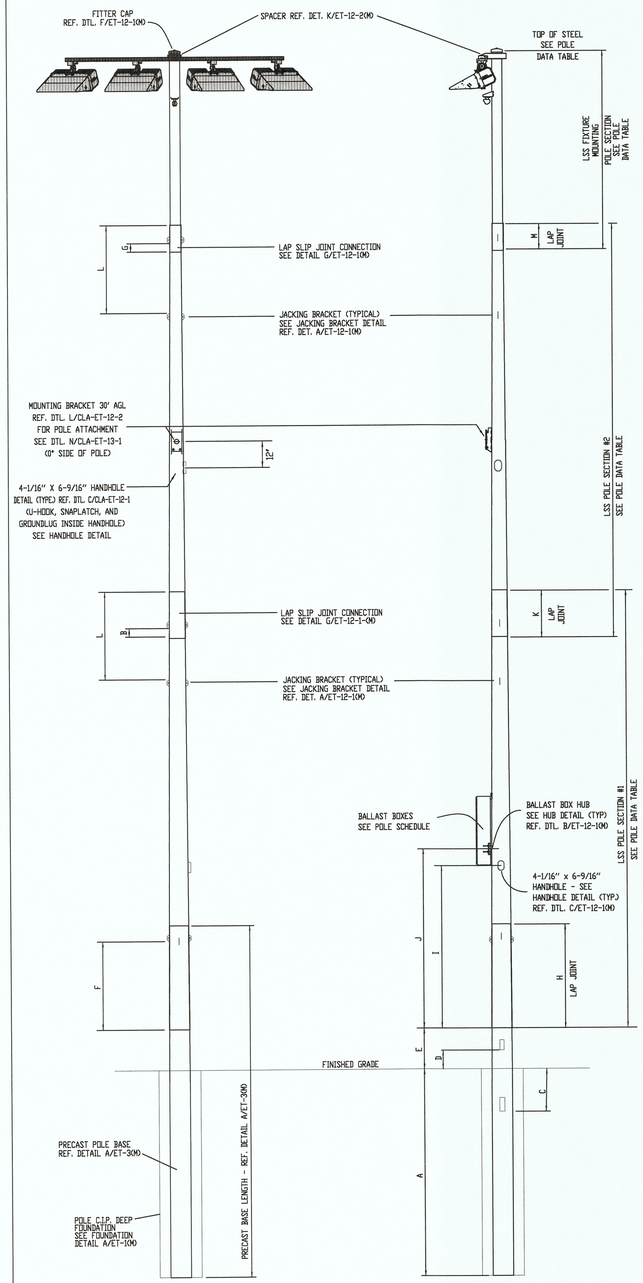
DESIGN/DATE
DRAWN/DATE
CHECK/DATE

GENERAL MANAGER
DIRECTOR OF PLANNING & DEVELOPMENT
CONTRACT ADMINISTRATOR

SHEET TITLE: GENERAL NOTES AND FOUNDATION DETAILS
PROJECT: VERDUGO HILLS RECREATION CITY POOL
FACILITY ADDRESS: 10654 IRMA AVE, TUJUNGA, CA

PROJECT NO. 185614
FILE NO.
SHEET NO. ET-1(M)

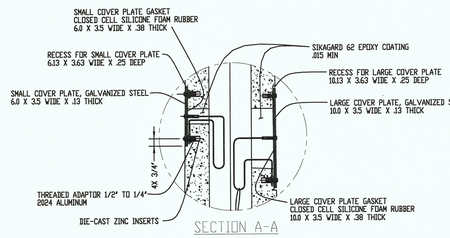
P:\Jobs\363\CAD\Arvango Hills Recreation City Pool Deets Tujunga, CA\CLA-ET-1(M)_K.dwg, 11/7/2017 8:50:25 AM



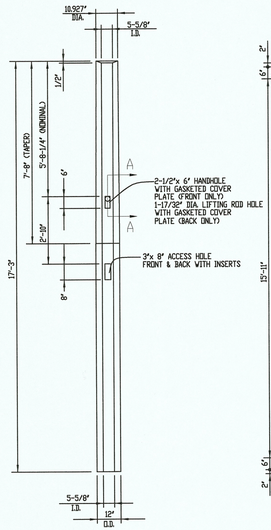
LSS50B POLE FRONT VIEW
N.T.S.

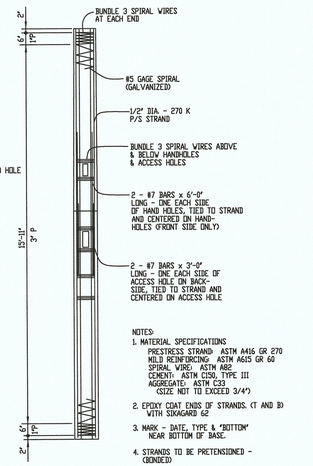
LSS50B POLE SIDE VIEW
N.T.S.

NOTATION	DIMENSION LSS50B
A	10'-0"
B	1'-6"
C	2'-0" NOM.
D	1'-0" NOM.
F	4'-4" NOM.
G	6"
H	5'-1 1/4" NOM. 4'-8" MIN.
I	7'-7 1/2" NOM.
J	8'-9 1/2" NOM.
K	2'-3" NOM. 1'-1 3/4" MIN.
L	4'-7" NOM.
M	1'-6 1/8" NOM. 9 3/8" MIN.



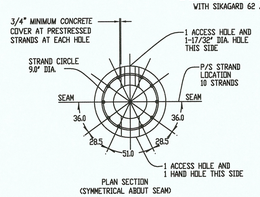
SECTION A-A





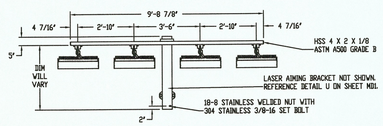
NOTES:
1. MATERIAL SPECIFICATIONS
PRESTRESS STRAND ASTM A416 GR 270
MILD REINFORCING ASTM A615 GR 60
SPIRAL WIRE: ASTM A82
CEMENT: ASTM C150, TYPE III
AGGREGATE: ASTM C33
(SIZE NOT TO EXCEED 3/4")
2. EPOXY COAT ENDS OF STRANDS. (T AND B)
WITH SIKAGARD 62
3. MARK - DATE, TYPE & "BOTTOM"
NEAR BOTTOM OF BASE.
4. STRANDS TO BE PRETENSIONED -
(DEBONDED)
5. "P" = PITCH OF SPIRALS
6. EPOXY COAT INSIDE SURFACES OF ACCESS HOLES
WITH SIKAGARD 62 .015 MIN.

SPECIFICATIONS	
BASE LENGTH	17'-3"
DESIGN MOMENT CAPACITY	61 FT-K
SHIPPING WEIGHT	1840 LBS
PRODUCTION WEIGHT	1690 LBS
VOLUME OF CONCRETE	0.42 CU YD
28 DAY CONC. STRENGTH	9,500 PSI
NUMBER OF STRANDS	10
INITIAL PULL PER STRAND	26.5 KIPS
TIP WALL THICKNESS	2-11/16"
BUTT WALL THICKNESS	3-3/16"
PRESTRESS LOSS/STRAND	4.8 KIPS
FINAL STRAND FORCE	21.7 KIPS
RELEASE STRENGTH	5,500 PSI

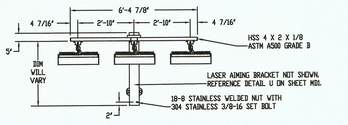


PLAN SECTION
(SYMMETRICAL ABOUT SEAM)

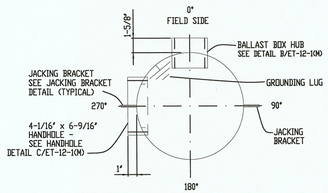
A TYPE 2B PRECAST BASE DETAIL
N.T.S.



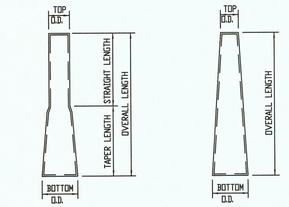
B 4 FIXTURE CONFIGURATION
N.T.S. DSA-4C-WEDGE1_A



C 3 FIXTURE CONFIGURATION
N.T.S. DSA-3C-WEDGE1_A



POLE ORIENTATION
N.T.S.



FIXTURE MOUNTING POLE SECTION

TOP/MIDDLE/BOTTOM POLE SECTION

1. CONTAINS COMBINED EPA OF LIGHT FIXTURES, CROSS ARM AND MISCELLANEOUS FIXTURE MOUNTING APPARATUS.

FIXTURE WEIGHT 43.3 LBS. THIS INCLUDES THE WEIGHT OF FIXTURE, CROSS ARM & MISC. MOUNTING APPARATUS. ELECTRICAL DRIVER BOX WEIGHT 10 LBS. PER FIXTURE SERVICED

POLE SCHEDULE

SITE LOCATION	POLE MARK	REFERENCE LOCATION	POLE TYPE	FIXTURE CONFIGURATION	TOTAL EPA[1]	BALLAST BOX REQUIREMENTS
SEE SITE PLAN (BY OTHERS)	P1, P4	SEE POLE ORIENTATION PLAN	LSS50B	4 - SEE DETAIL B/ET-300	6.76 SQ FT. MAX	SEE DETAIL P/ET-12-200
	P2, P3	SEE POLE ORIENTATION PLAN		3 - SEE DETAIL C/ET-300	5.07 SQ FT. MAX	SEE DETAIL P/ET-12-200

POLE DATA TABLE

POLE TYPE	PIECE MARK	MAX NUMBER of X-Arms	POLE SECTION	TOP O.D. (INCHES)	BTM. O.D. (INCHES)	OVERALL LENGTH	STRAIGHT LENGTH	TAPER LENGTH	THICKNESS (INCHES)	TOP OF STEEL	ASTM REFERENCE
LSS50B	LS-2009	1	FIXTURE MOUNTING	6.000"	6.505"	5'-3"	3'-5"	1'-10"	.120	50'-7/8" NOM. 51'-8" EXP.	A513 (Fy=38ksi)
	MP-1TT-2		#2	6.054"	9.440"	24'-2 1/4"	------	24'-2 1/4"	.120	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-1BT		#1	8.886"	12.000"	22'-2 7/8"	------	22'-2 7/8"	.179	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-2B		PRECAST BASE	FOR PRECAST MEMBER PROPERTIES SEE PRECAST BASE DETAIL A/ET-400							

Standard-LSS50B_011811_132748

APPROVAL STAMPING AREA

BID SET
Date: May 17, 2022

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9931 Muirlands Boulevard, Irvine, CA 92618
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KNA JOB NO.: 363.218

REGISTERED PROFESSIONAL ENGINEER
No. 4506
Exp. 6-30-19
STRUCTURAL
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
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RP-300123

REVISIONS	BY	DATE
DELTA		

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CITY OF LOS ANGELES, DEPARTMENT OF RECREATION AND PARKS, 221 N. FIGUEROA ST. 1ST FLOOR, LOS ANGELES, CA 90012

GENERAL MANAGER
DIRECTOR OF PLANNING & DEVELOPMENT
CONTRACT ADMINISTRATOR

DESIGN/DATE
DRAWN/DATE
CHECK/DATE

SHEET TITLE: 50B-4 POLE / FOUNDATION STANDARD
PROJECT: VERDUGO HILLS RECREATION CITY POOL
FACILITY ADDRESS: 10654 IRMA AVE, TUJUNGA, CA

PROJECT NO. 185614
FILE NO.
SHEET NO. ET-3(M)

CLA-ET-3(M)_J

SHEET 83 OF SHEET 96

P:\Jobs\2021\2-Verdugo Hills Recreation City Pool (Irma)\Figs_CAD\CLA-ET-3(M)_J.dwg, 11/7/2017 8:50:31 AM

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY
GENERAL NOTES FOR STRUCTURAL OBSERVATION

1. Structural Observation is required for the structural system in accordance with the Information Bulletin No. P/BC 2011-024. Structural Observation in the visual observation at the construction site of the elements and connections of the structural system at significant construction stages, and the complete structure for general conformance to the approved plans and specifications . Structural Observation does not waive the responsibility for the inspections required of the building inspector or the deputy inspector.

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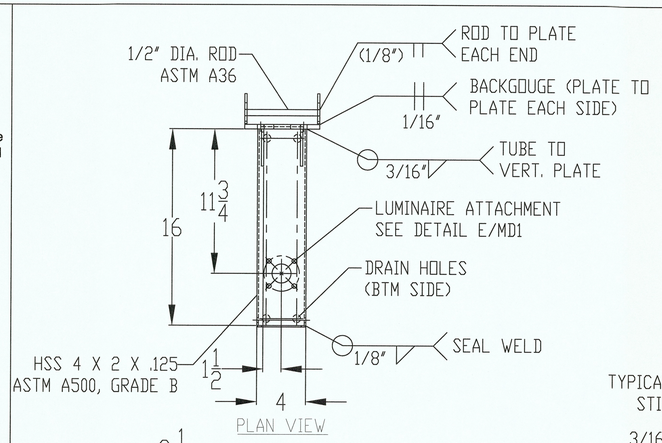
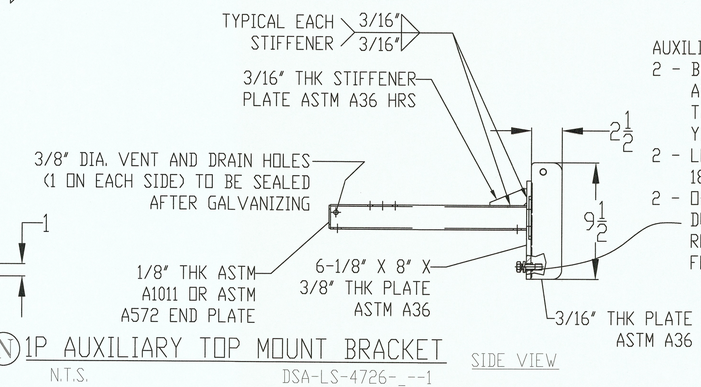
CLA-ET-13-1(M)_C





N 1P AUXILIARY TOP MOUNT BRACKET
N.T.S.
DSA-LS-4726-_--1

AUXILIARY BRACKET TO POLE CONNECTION
2 - BOLT 1/4", HEX HEAD CAPTIVE
ASTM F593, STAINLESS STEEL
TENSILE: 95 KSI MIN.
YIELD: 60 KSI MIN.
2 - LOCK WASHER 1/2"
18-8 STAINLESS STEEL
2 - O-RING #205, BUNA-N
DUROMETER: SHORE A 70
REFERENCE DETAIL L/ET-12-2(M)
FOR MATING HARDWARE

ATTACHMENT DEAD LOAD
100 LBS MAX.
ATTACHEMNT PROJECTED AREA
2.8 sqft MAXIMUM
MOUNTING HEIGHT ABOVE GRADE
25' MAXIMUM
NOTE: ATTACHMENT LOADING IS BASED UPON MAXIMUM POLE EPA. ATTACHMENT LOADING MAY BE INCREASED WHERE BASED UPON ACTUAL POLE EPA.

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BID SET
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DESIGN/DATE
DRAWN/DATE
CHECK/DATE

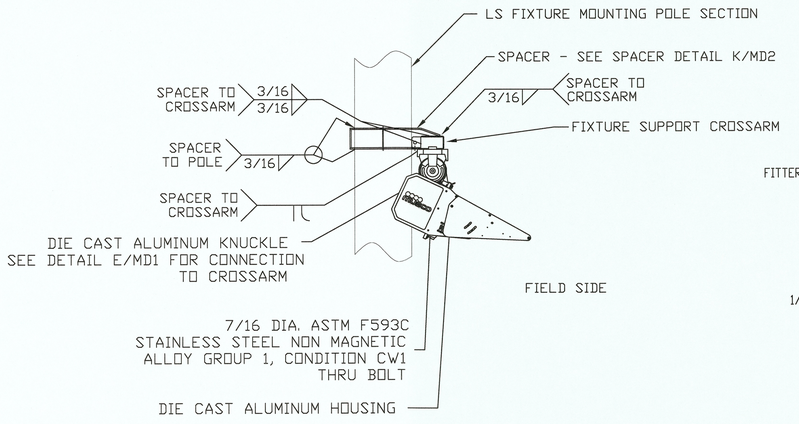
GENERAL MANAGER
DIRECTOR OF PLANNING & DEVELOPMENT
CONTRACT ADMINISTRATOR

SHEET TITLE: OPTIONAL AUXILIARY MOUNTS
PROJECT: VERDUGO HILLS RECREATION CITY POOL
FACILITY ADDRESS: 10654 IRMA AVE, TUJUNGA, CA

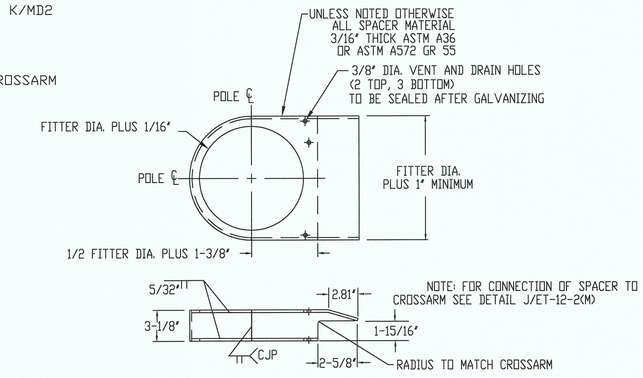
PROJECT NO. 185614
FILE NO.
SHEET NO. ET-13-1(M)

SHEET 84 OF SHEET 96

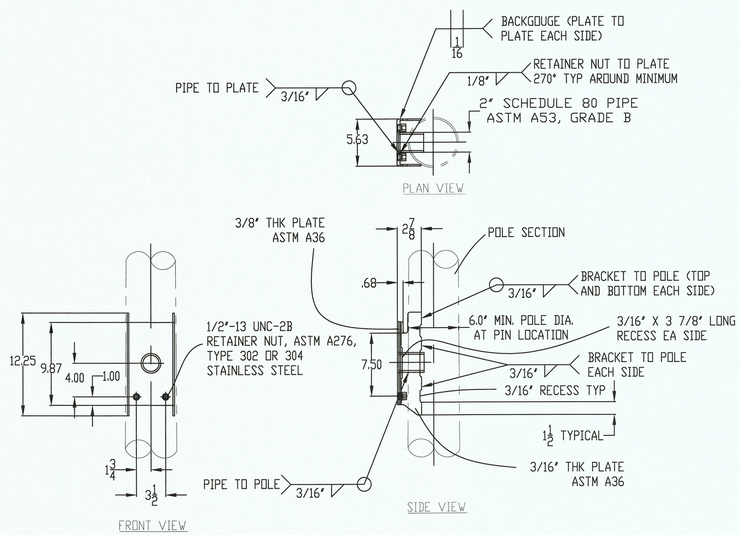
P:\Jobs\363218 Verdugo Hills Recreation City Pool Deck-Tujunga, CA\CLA-ET-13-1(M)_D.dwg, 11/7/2017 8:13:37 AM



J LIGHT FIXTURE (TYPICAL)
N.T.S. DSA-WEDGE3-WELDON_A



K SPACER DETAIL
N.T.S. DSA-SPACERWELDON_H



L BRACKET DETAIL
N.T.S. DSA-Brk-Dtl-L_A

6PX
P BALLAST BOX CONNECTION DETAIL
N.T.S. STRU-6PX_D

BID SET
Date: May 17, 2022

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OFFICIAL RECORD

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REGISTERED PROFESSIONAL ENGINEER No. 4506 Exp. 6-30-19 STRUCTURAL STATE OF CALIFORNIA

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CLA-ET-12-2(M)_D

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DESIGN/DATE				
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CHECK/DATE				

GENERAL MANAGER
DIRECTOR OF PLANNING & DEVELOPMENT
CONTRACT ADMINISTRATOR

SHEET TITLE POLE DETAILS
PROJECT VERDUGO HILLS RECREATION CITY POOL
FACILITY ADDRESS 10654 IRMA AVE, TUJUNGA, CA

PROJECT NO. 185614
FILE NO.
SHEET NO. ET-12-2(M)

SHEET 85 OF SHEET 96

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DEPARTMENT OF BUILDING AND SAFETY
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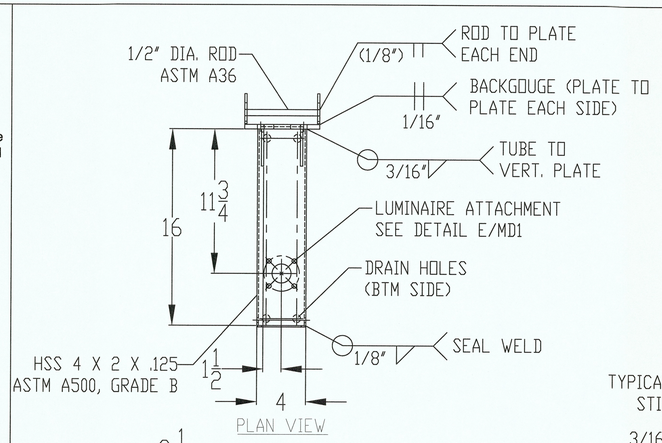
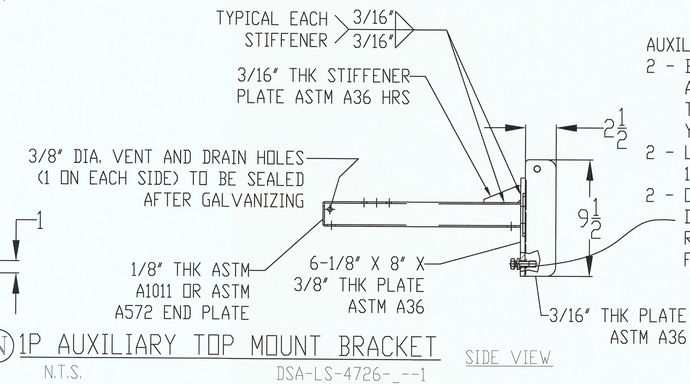


(N) 1P AUXILIARY TOP MOUNT BRACKET
N.T.S.



DSA-LS-4726-_--1

ATTACHMENT DEAD LOAD
100 LBS MAX.
ATTACHEMNT PROJECTED AREA
2.8 sqft MAXIMUM
MOUNTING HEIGHT ABOVE GRADE
25' MAXIMUM
NOTE: ATTACHMENT LOADING IS BASED UPON MAXIMUM POLE EPA. ATTACHMENT LOADING MAY BE INCREASED WHERE BASED UPON ACTUAL POLE EPA.

AUXILIARY BRACKET TO POLE CONNECTION
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2 - LOCK WASHER 1/2" 18-8 STAINLESS STEEL
2 - O-RING #205, BUNA-N DUROMETER: SHORE A 70
REFERENCE DETAIL L/ET-12-2(M) FOR MATING HARDWARE

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GENERAL MANAGER
DIRECTOR OF PLANNING & DEVELOPMENT
CONTRACT ADMINISTRATOR

SHEET TITLE: OPTIONAL AUXILIARY MOUNTS
PROJECT: VERDUGO HILLS RECREATION CITY POOL
FACILITY ADDRESS: 10654 IRMA AVE, TUJUNGA, CA

PROJECT NO. 185614
FILE NO.
SHEET NO. ET-13-1(M)

SHEET 86 OF SHEET 96

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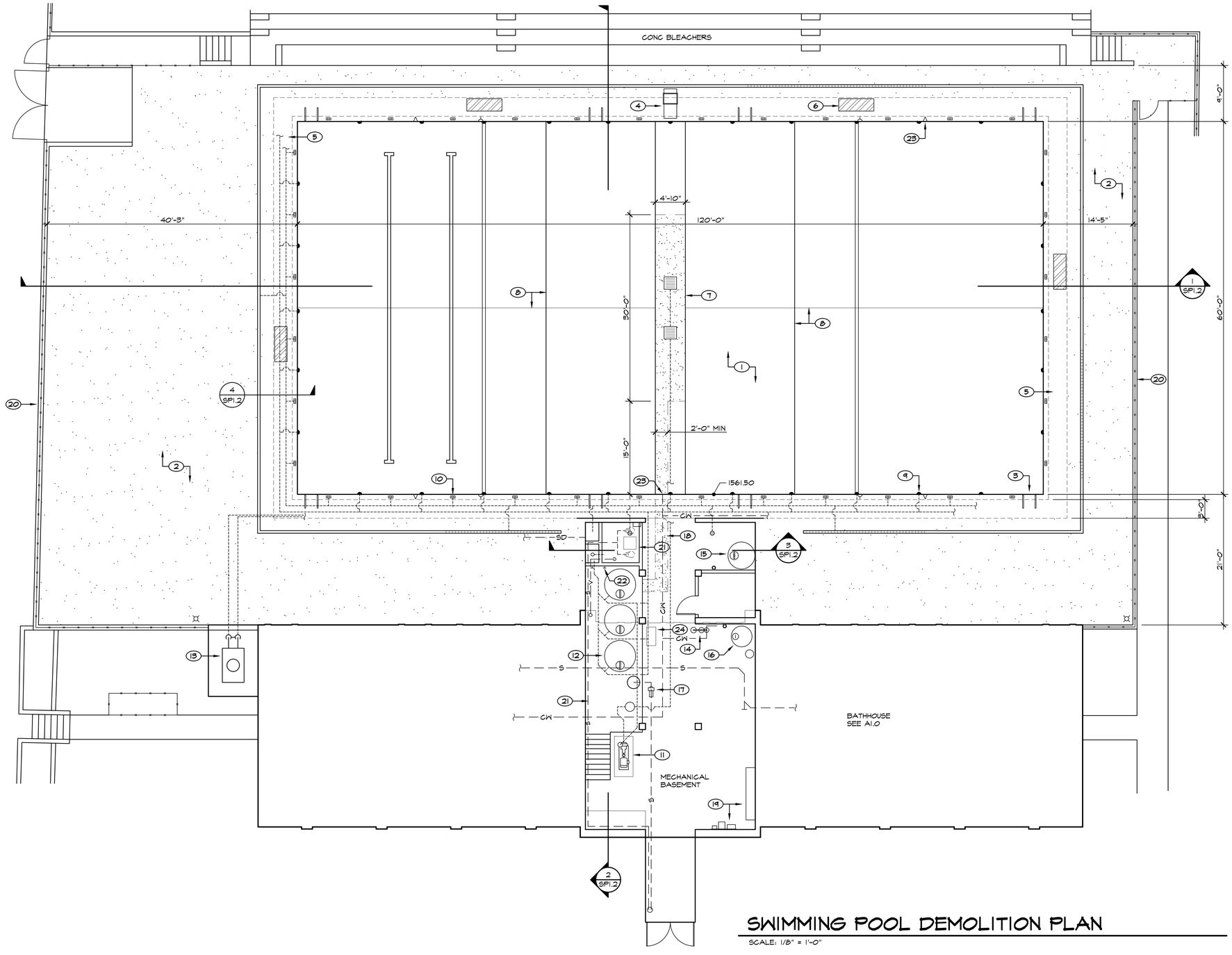

SWIMMING POOL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

NORTH

SYMBOLS

SYMBOL	DESCRIPTION
	GRAB RAILS (TYP 8 PR)
⊕	DISABLED LIFT SOCKET
◁	ROPE ANCHOR (TYP 4)
	WALL INLET (TYP 32)
	GUTTER DRAIN (TYP 36)
	CONC AREA TO BE DEMOLISHED
	MAIN DRAIN GRATE (TYP 2)
S	POOL PIPING
— — —	UTILITY PIPING
	TRENCH DRAIN

GENERAL NOTES

1. VERIFY (E) CONDITIONS PRIOR TO STARTING WORK & NOTIFY ARCHITECT OF ANY DISCREPANCIES.
2. PROTECT (E) ITEMS WHICH ARE NOT INDICATED TO BE REMOVED.
3. REMOVE POOL PAINT FINISHES COMPLETE TO EXPOSE CONC SHELL.
4. CUT OUT ANY RUSTED REBAR ON SURFACE OF EXPOSED CONC POOL SHELL & PATCH W/ NON-SHRINK GROUT.
5. REMOVE ALL POOL PIPING, DECK DRAIN PIPING & SUPPORTS IN TUNNEL AROUND POOL.
6. SEE BLDG PLUMBING DWGS FOR UTILITY PIPE DEMOLITION REQUIREMENTS.

KEYED NOTES

1. REMOVE POOL PAINT FINISHES
2. REMOVE CONC DECK SLAB, TRENCH DRAIN, AREA DRAINS & PIPING
3. REMOVE GRAB RAILS (TYP 8 PR)
4. REMOVE LIFEGUARD CHAIR (TYP 2)
5. PROTECT PIPE TUNNEL AROUND POOL
6. REMOVE TUNNEL ACCESS PLATE (TYP 4)
7. SAW CUT & REMOVE POOL FLOOR SLAB & MAIN DRAINS
8. PROTECT POOL EXPANSION JOINTS & REMOVE SEALANT, SEE 5/SP1.2
9. PROTECT INLET FITTING & PIPE (TYP 32), SEE 4/SP1.2
10. PROTECT GUTTER DRAIN GRATE & PIPE (TYP 22), SEE 4/SP1.2
11. REMOVE CIRCULATION PUMP, CONC PAD, PIPING & STRAINER
12. REMOVE STL SAND FILTER & PIPING (TYP 3)
13. REMOVE HEATER & PIPING TO BASEMENT
14. PROTECT EYEWASH & SHOWER
15. REMOVE CHLORINE PUMP & STORAGE TANK
16. REMOVE ACID PUMP, STORAGE TANK & FUME TANK
17. PROTECT FLOOR SUMP DRAIN PUMP & PIPING
18. SAW CUT & REMOVE BASEMENT FLOOR SLAB FOR MAIN DRAIN
19. ELECTRICAL PANELS, SEE
20. PROTECT CL FENCE & CURB
21. PROTECT BACKWASH PIT, DUPLEX SUMP PUMPS & PIPING
22. REMOVE ABANDONED PIPE PENETRATIONS @ PITS (TYP 5)
23. REMOVE ABANDONED VACUUM FITTINGS & FILL PIPES (TYP 6)
24. REMOVE ABANDONED CONC PUMP PAD

BID SET
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JONES & MADHAVAN ARCHITECTURE ENGINEERING
100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
THOUSAND OAKS, CALIFORNIA 91360
TEL 805.777.8449 + FAX 805.777.8489

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DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

LICENSED ARCHITECT
NACHIAPPA M. MADHAVAN
C-25855
REN. 11-30-21
STATE OF CALIFORNIA

CITY ENGINEER	TED ALLEN, P.E.
DATE:	ARCHITECTURAL DIVISION
12/21/20	ARCHITECT: NACHIAPPA M. MADHAVAN, AIA LIC. NO.: C-25855
12/21/20	DESIGNED BY: NM
12/21/20	DRAWN BY: JMAE
12/21/20	CHECKED BY: DJ
	APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

CITY OF LOS ANGELES
CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: POOL DEMOLITION PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

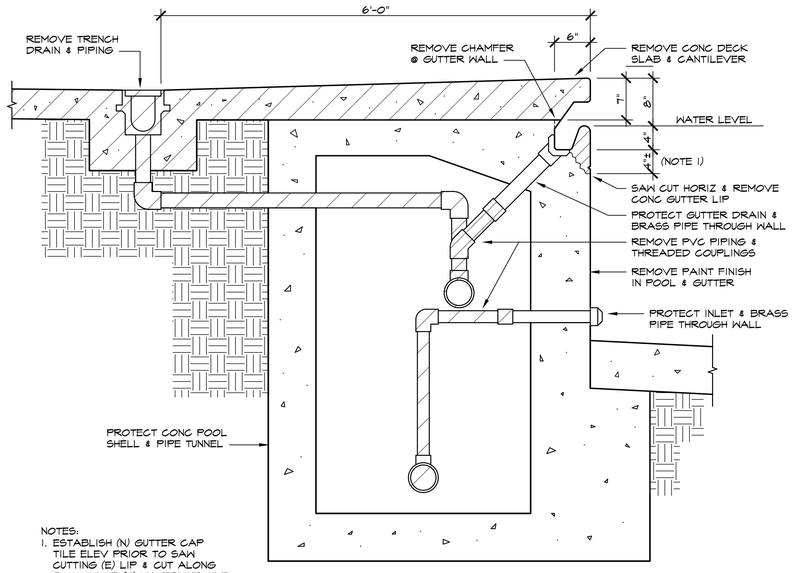
PLAN FILE NO. -

DRAWING NO. SP1.1

SHEET 87 OF SHEETS 96

PLOTTED: 12/21/2020

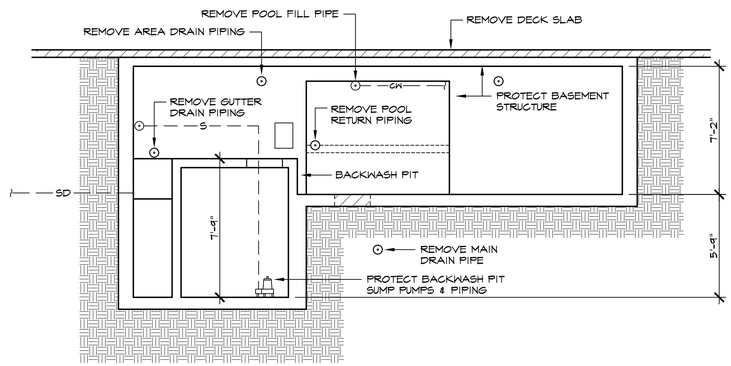
REVISION DATES (DESIGN STAGE ONLY)



NOTES:
1. ESTABLISH (N) GUTTER CAP TILE ELEV PRIOR TO SAW CUTTING (E) LIP & CUT ALONG BOTTOM OF (N) WATERLINE TILE.

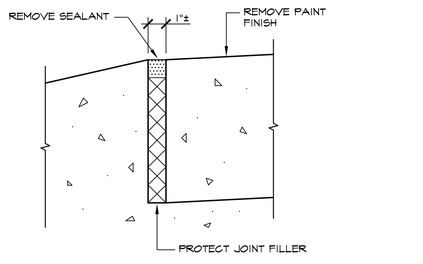
WALL SECTION 4

SCALE: 1" = 1'-0"



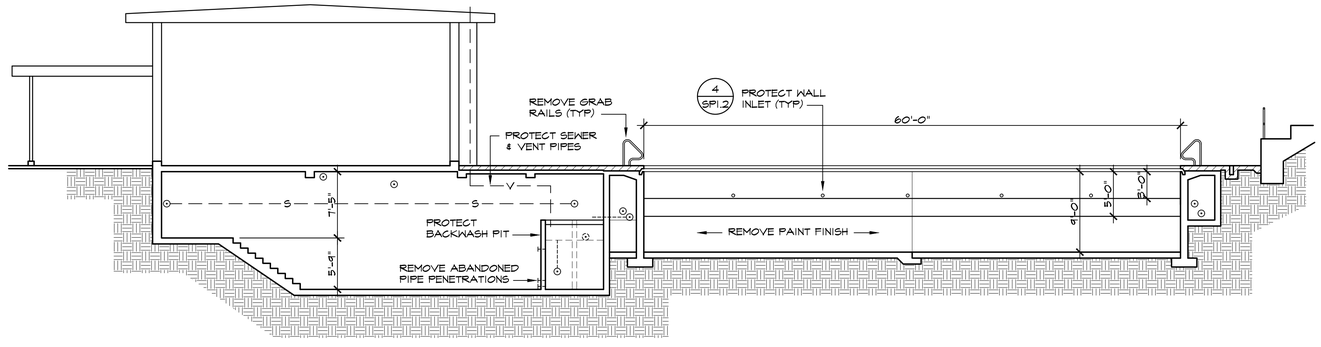
BASEMENT DEMOLITION SECTION 3

SCALE: 1/4" = 1'-0"



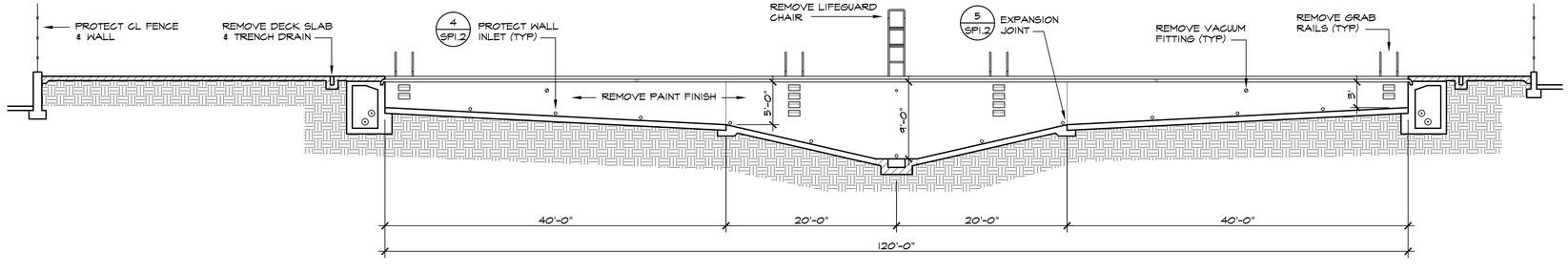
EXPANSION JOINT 5

SCALE: 3" = 1'-0"



POOL DEMOLITION SECTION 2

SCALE: 1/8" = 1'-0"



POOL DEMOLITION SECTION 1

SCALE: 1/8" = 1'-0"

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REVISION DATES: (DESIGN STAGE ONLY)

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING OFFICIAL RECORD

JONES & MADHAVAN ARCHITECTURE ENGINEERING
100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
THOUSAND OAKS, CALIFORNIA 91360
TEL 805.777.8449 + FAX 805.777.8489

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

LICENSED ARCHITECT NACHAPPA M. MADHAVAN C-25855 REN 11-30-21 STATE OF CALIFORNIA

CITY ENGINEER	TED ALLEN, P.E.	DATE: 12/21/20
ARCHITECTURAL DIVISION		
ARCHITECT:	NACHAPPA M. MADHAVAN, AIA	LIC. NO.: C-25855
DESIGNED BY:	NM	12/21/20
DRAWN BY:	JMAE	12/21/20
CHECKED BY:	DJ	12/21/20
APPROVED BY:	STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: POOL DEMOLITION SECTIONS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

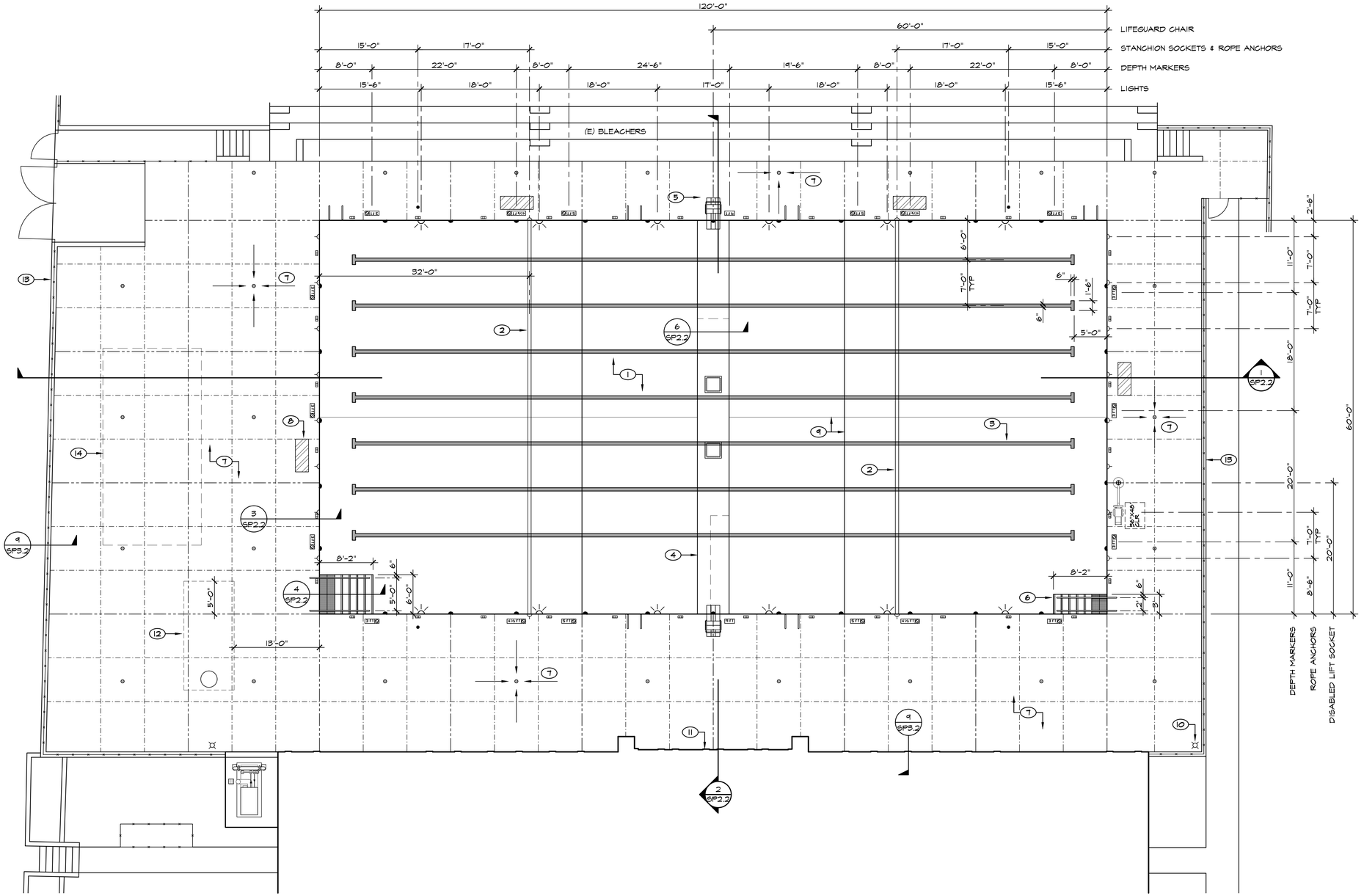
WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. SP1.2

SHEET 88 OF SHEETS 96

PLOTTED: 12/21/2020



SWIMMING POOL PLAN

SCALE: 1/8" = 1'-0"

NORTH

SYMBOLS

SYMBOL	DESCRIPTION	REFERENCE
	DEPTH MARKER (TYP 20)	1/SP3.1
	ROPE ANCHOR (TYP 20)	3/SP3.1
	GRAB RAILS (TYP 6 PR)	4/SP3.1
	DISABLED LIFT SOCKET	6/SP3.1
	STANCHION SOCKET (TYP 4)	7/SP3.1
	POOL LIGHT (TYP 12)	8/SP3.1
	(E) WALL INLET (TYP 32)	1/SP4.3
	(E) GUTTER DRAIN (TYP 36)	2/SP4.3
	MAIN DRAIN GRATE (TYP 2)	3/SP4.3
	PAINTED LANE MARKER & TURN TARGETS (TYP 7)	10/SP3.1
	CONTROL JOINT	7/SP3.2
	CONSTRUCTION JOINT	8/SP3.2
	DECK DRAIN (TYP 26)	4/SP4.3

POOL DATA

1. SURFACE AREA = 7,200 SQ FT
2. VOLUME = 275,000 GALLONS
3. TURNOVER RATE = 450 GPM (4.8 HOURS)
4. FILTER AREA = 81 SQ FT (11.7 GPM/SQ FT)
5. MAIN DRAIN CAPACITY = 1,432 GPM MAX
6. SURGE CAPACITY = 7,200 GALLONS
7. BATHER LOAD = 360 PEOPLE
8. LIGHTING LEVEL = 0.8 WATTS PER SQ FT

GENERAL NOTES

1. DIMENSIONS ARE TYP FOR OPPOSITE SIDES OF POOL UNO.
2. SET GUTTER CAP TILE LEVEL WITHIN A TOLERANCE OF ± 0.05" AROUND PERIMETER OF POOL.
3. SLOPE EA SECTION OF (N) DECK SLAB BETWEEN CONSTRUCTION JOINTS 1% MIN & 2% MAX TO DRAINS.
4. SPACE DECK JOINTS EQUALLY @ 6'-8" OC BETWEEN CORNERS OF POOL AS INDICATED.
5. DECK SHALL HAVE SLIP-RESISTANT MEDIUM BROOM FINISH. POUR DECK IN ALTERNATING SECTIONS BETWEEN CONSTRUCTION JOINTS, ALLOWING FIRST SECTIONS TO CURE 24 HOURS.
6. ALL ANCHORS & DECK REINF SHALL BE BONDED TO (E) POOL SHELL REINF W/ #8 SOLID COPPER WIRE. EXPOSE (E) POOL REINF ON EA SIDE FOR BONDING.
7. CENTER GRAB RAILS ON (E) RECESSED STEPS.
8. MIN CONC DESIGN STRENGTH SHALL BE 4,000 PSI @ 28 DAYS, HARDROCK (145 PCF).
9. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.

KEYED NOTES

1. WHITE PAINTED POOL SHELL FINISH
2. 6" WIDE ROYAL BLUE PAINTED 4'-6" SLOPE BREAK BAND
3. 6" WIDE BLACK PAINTED LANE MARKER & TURN TARGETS (TYP 7), SEE 10/SP3.1
4. (N) CONC FLOOR SLAB @ MAIN DRAIN TRENCH, SEE 3/SP4.3
5. LIFEGUARD CHAIR (TYP 2), SEE 1/SP3.2
6. CONC STAIR & HANDRAILS (TYP 2), SEE 4/SP2.2
7. 6" THICK COLORED CONC DECK SLAB, SEE GENERAL NOTE 3
8. PIPE TUNNEL ACCESS COVER (TYP 4), SEE 9/SP3.1
9. POOL EXPANSION JOINT, SEE 11/SP3.1
10. LIGHT POLE, SEE ELECTRICAL DWGS
11. MOUNT POOL SAFETY SIGNS ON WALL INCLUDING POOL CAPACITY, DIARRHEA, ARTIFICIAL RESPIRATION & EMERGENCY PHONE NUMBER
12. SURGE CHAMBER, SEE 1/SP4.4
13. (E) CL FENCE & GATES
14. SHADE STRUCTURE, SEE ARCHITECTURAL DWGS

BID SET
Date: May 17, 2022

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OFFICIAL RECORD

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REVISION PAPER (DESIGN STAGE ONLY)

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CITY OF LOS ANGELES

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: SWIMMING POOL PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

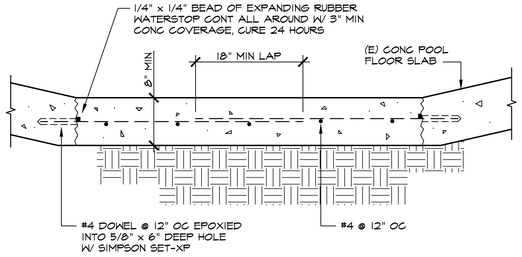
WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. SP2.1

SHEET 89 OF SHEETS 96

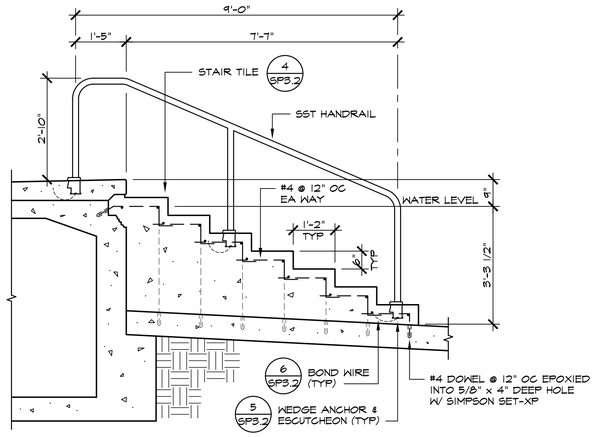
PLOTTED:12/21/2020



NOTE:
ROUGHEN SAW CUT EDGE TO 1/4" MIN AMPLITUDE

POOL FLOOR TRENCH 6

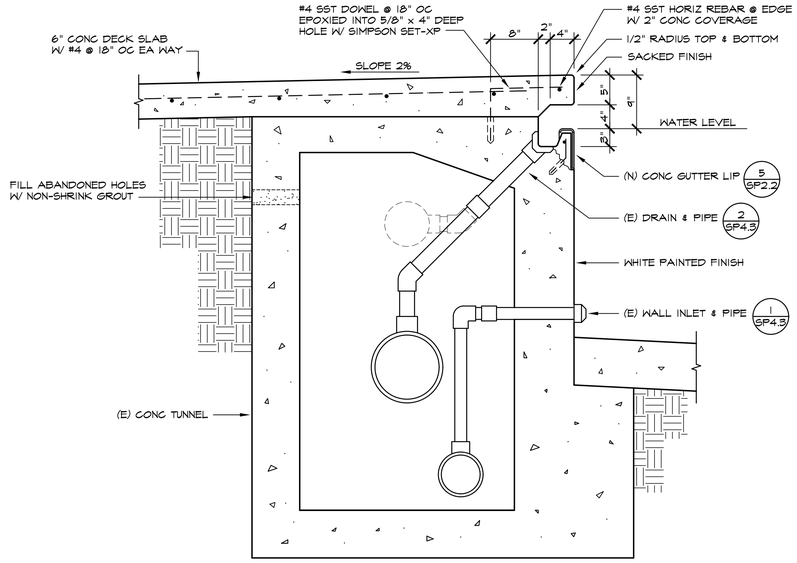
SCALE: 1" = 1'-0"



NOTE:
INSTALL EPOXY DOWELS @ 12" OC TO FLOOR ON EAST SIDE & TO WALL ON WEST SIDE.

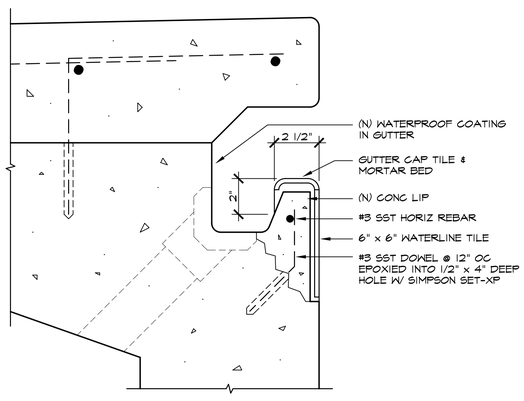
STAIR SECTION 4

SCALE: 1/2" = 1'-0"



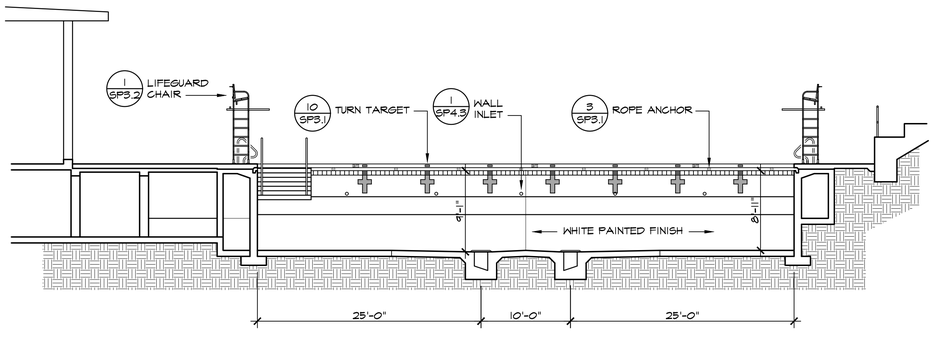
WALL SECTION 3

SCALE: 1" = 1'-0"



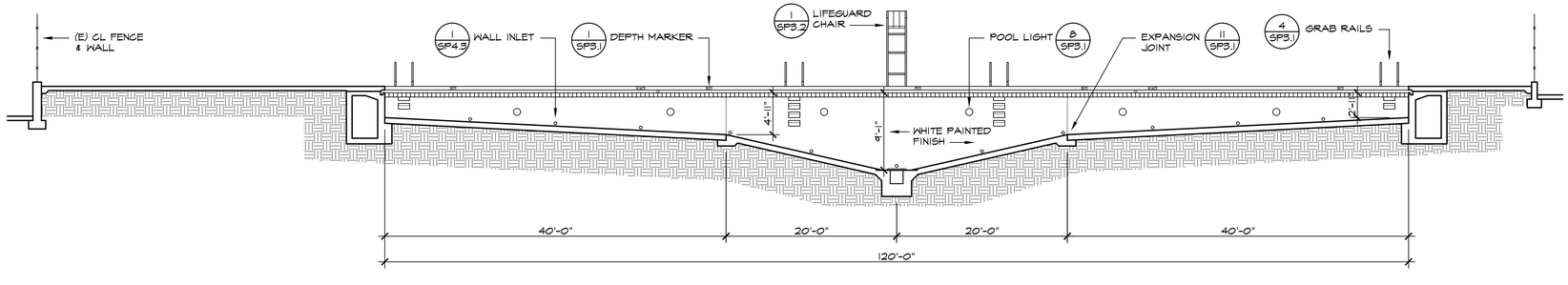
GUTTER LIP 5

SCALE: 3" = 1'-0"



SWIMMING POOL SECTION 2

SCALE: 1/8" = 1'-0"



SWIMMING POOL SECTION 1

SCALE: 1/8" = 1'-0"

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C-25855
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GENERAL MANAGER: MICHAEL A. SHULL

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PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F
PLAN FILE NO. -
DRAWING NO. SP2.2
SHEET 90 OF SHEETS 96

PLOTTED: 12/21/2020

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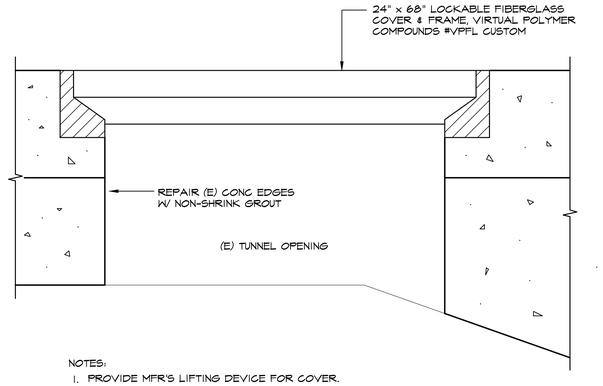
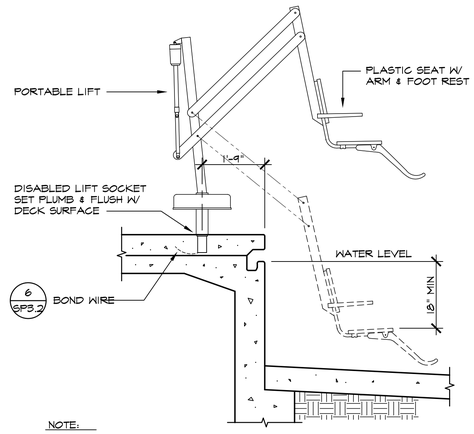


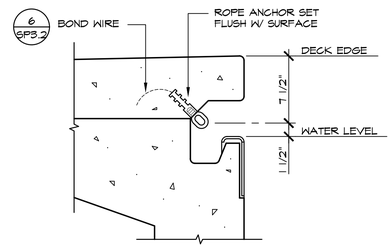
NOTES:
1. PROVIDE MFR'S LIFTING DEVICE FOR COVER.

TUNNEL ACCESS COVER 9
SCALE: 3" = 1'-0"

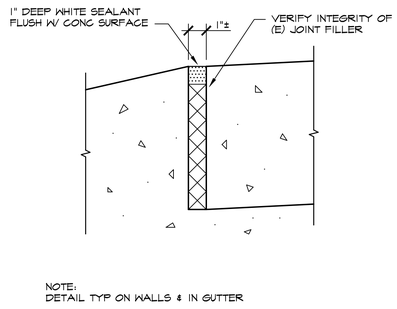


NOTE:
DISABLED ACCESS LIFT SHALL ASSIST PERSONS WITH DISABILITIES IN GAINING ENTRY INTO THE POOL AND IN EXITING FROM THE POOL AND SHALL CONFORM WITH THE PROVISIONS OF THE 2016 CALIFORNIA BUILDING CODE, SECTION 11B-1009.2.

DISABLED LIFT 6
SCALE: 1/2" = 1'-0"

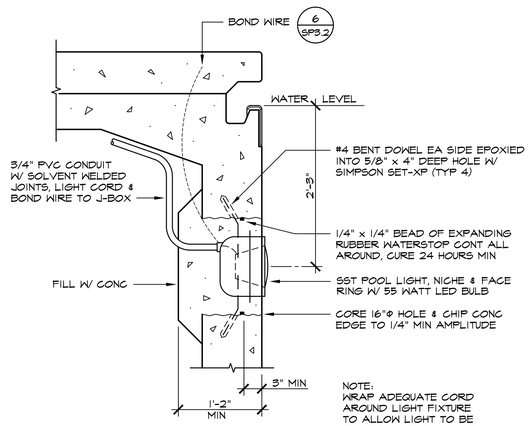


ROPE ANCHOR 3
SCALE: 1 1/2" = 1'-0"



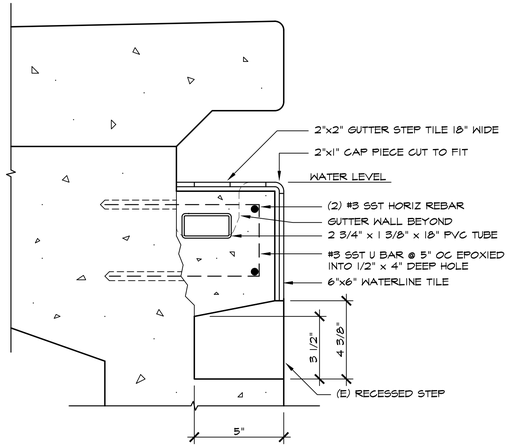
NOTE:
DETAIL TYP ON WALLS & IN GUTTER

EXPANSION JOINT 11
SCALE: 3" = 1'-0"

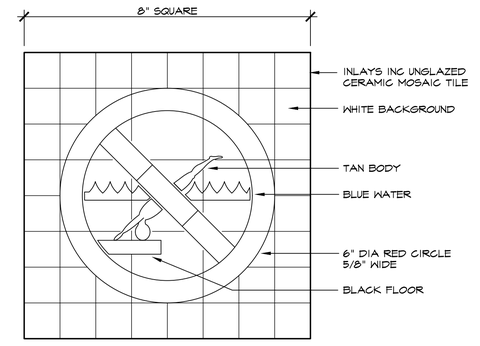


NOTE:
WRAP ADEQUATE CORD AROUND LIGHT FIXTURE TO ALLOW LIGHT TO BE PLACED 2' BACK ON DECK.

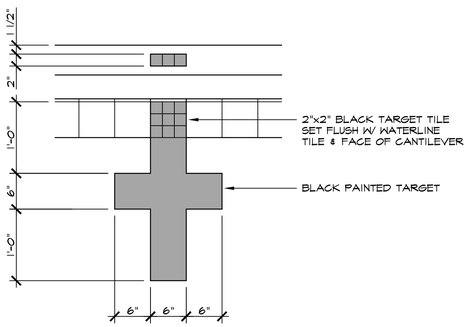
POOL LIGHT 8
SCALE: 1" = 1'-0"



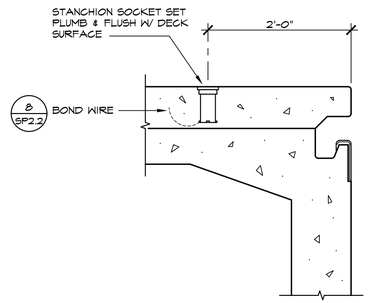
GUTTER STEP 5
SCALE: 3" = 1'-0"



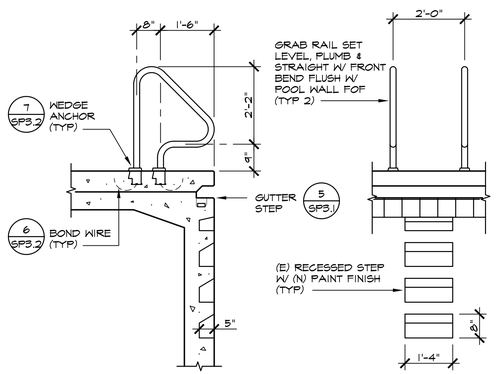
NO DIVING GRAPHIC 2
SCALE: HALF SIZE



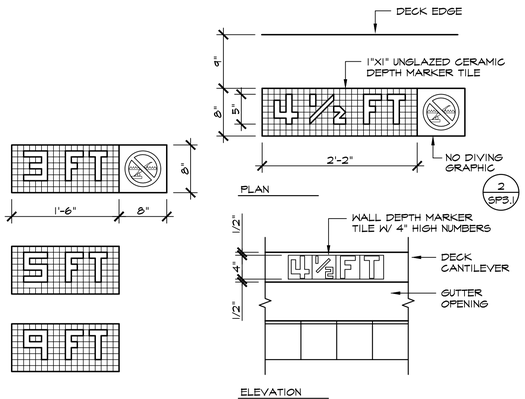
TARGET 10
SCALE: 1" = 1'-0"



STANCHION SOCKET 7
SCALE: 1" = 1'-0"



GRAB RAILS 4
SCALE: 1/2" = 1'-0"



NOTE:
PROVIDE WALL DEPTH MARKER CENTERED @ EA DECK DEPTH MARKER LOCATION.

DEPTH MARKERS 1
SCALE: 1" = 1'-0"

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ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

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SHEET 91 OF SHEETS 96

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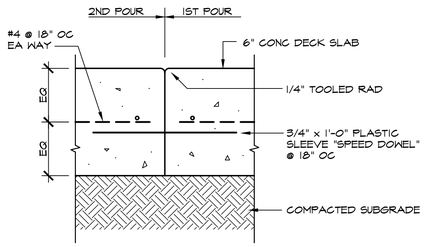
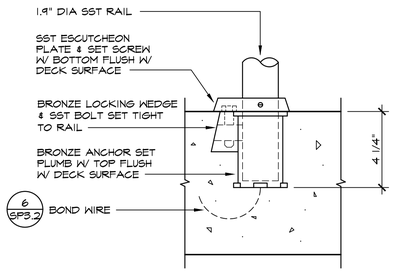


CONSTRUCTION JOINT 8

SCALE: 3" = 1'-0"



WEDGE ANCHOR 5

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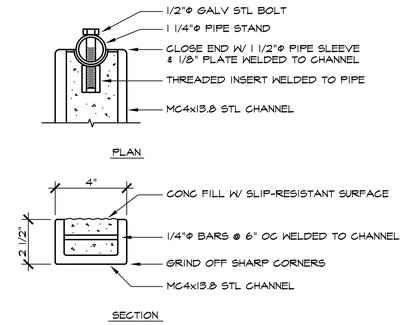
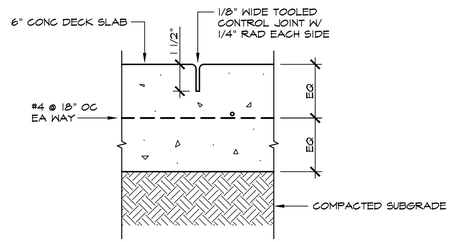


NOTE:
STEP ASSEMBLY SHALL HAVE HOT DIP GALVANIZED FINISH.

STEP DETAIL 3

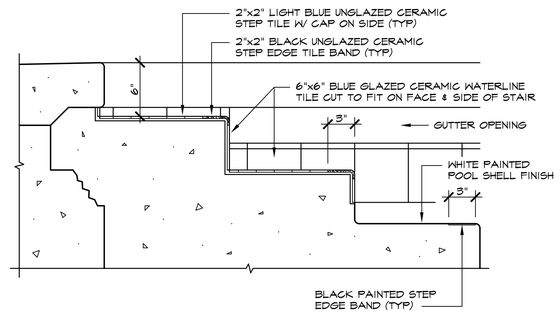
SCALE: 3" = 1'-0"



NOTES:
1. USE BON TOOL OR KRAFT DEEP & THIN TYPE GROOVER.

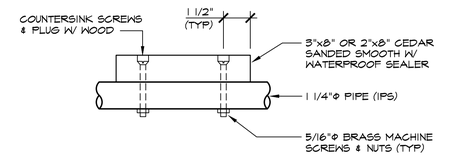
CONTROL JOINT 7

SCALE: 3" = 1'-0"



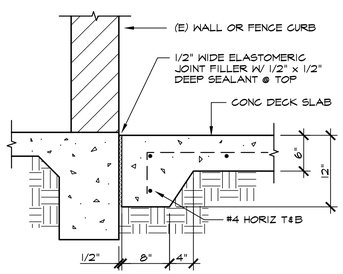
STAIR TILE 4

SCALE: 1 1/2" = 1'-0"



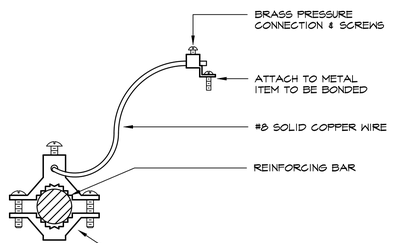
WOOD TO PIPE CONN 2

SCALE: 3" = 1'-0"



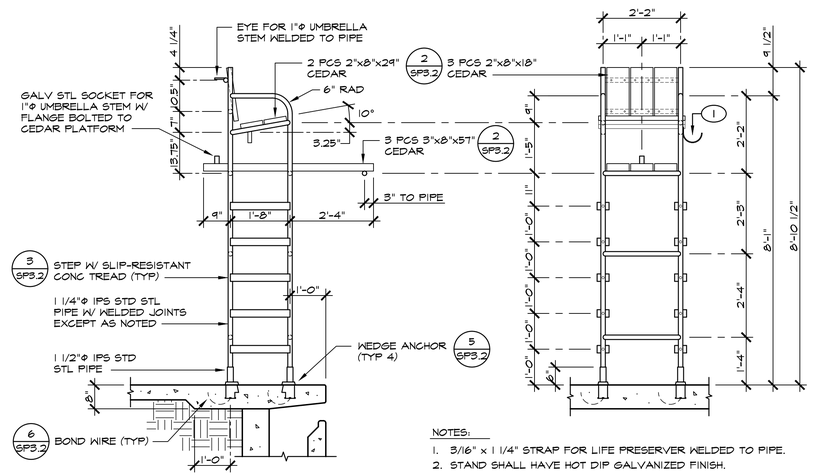
PERIMETER DECK EDGE 9

SCALE: 1" = 1'-0"



BOND WIRE 6

SCALE: NONE



NOTES:
1. 3/16" x 1 1/4" STRAP FOR LIFE PRESERVER WELDED TO PIPE.
2. STAND SHALL HAVE HOT DIP GALVANIZED FINISH.

LIFEGUARD CHAIR 1

SCALE: 1/2" = 1'-0"

BID SET
Date: May 17, 2022

BUREAU OF ENGINEERING
OFFICIAL RECORD

JONES & MADHAVAN ARCHITECTURE ENGINEERING
100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
THOUSAND OAKS, CALIFORNIA 91360
TEL 805.777.8449 • FAX 805.777.8489

DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

LICENSED ARCHITECT
NACHAPPA M. MADHAVAN
C-25855
REN. 11-30-21
STATE OF CALIFORNIA

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

TED ALLEN, P.E.
CITY ENGINEER

	DATE:
ARCHITECTURAL DIVISION	
ARCHITECT: NACHAPPA M. MADHAVAN, AIA LIC. NO.: C-25855	12/21/20
DESIGNED BY: NM	12/21/20
DRAWN BY: JMAE	12/21/20
CHECKED BY: DJ	12/21/20
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT	

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: SWIMMING POOL DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. SP3.2

SHEET 92 OF SHEETS 96

PLOTTED: 12/21/2020

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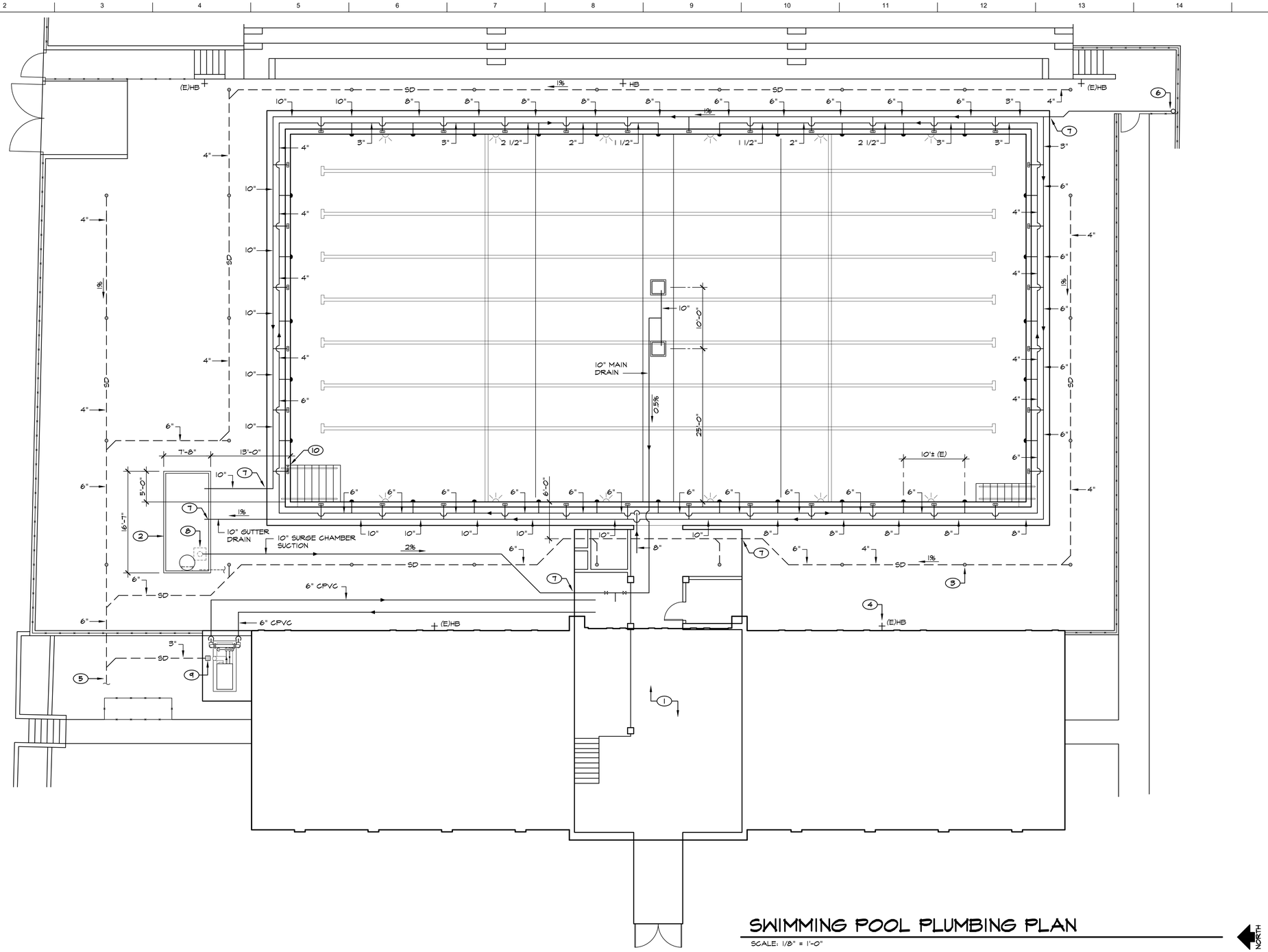

SWIMMING POOL PLUMBING PLAN

SCALE: 1/8" = 1'-0"

NORTH

SYMBOLS

SYMBOL	DESCRIPTION	REFERENCE
	WALL INLET (TYP 32)	1/SP4.3
	GUTTER DRAIN (TYP 36)	2/SP4.3
	MAIN DRAIN GRATE (TYP 2)	3/SP4.3
	DECK DRAIN (TYP 26)	4/SP4.3

DECK | POOL

GENERAL NOTES

1. ALL POOL PIPING SHALL BE SCH 80 PVC W/ SOLVENT WELDED JOINTS UNO.
2. LOCATE BURIED PIPINGS IN TRENCHES W/ SAND BEDDING PER DETAIL 7/SP4.3
3. HYDROSTATICALLY PRESSURE TEST ALL BURIED PIPING @ 80 PSI PRIOR TO BACKFILLING & MAINTAIN PRESSURE THROUGHOUT CONSTRUCTION.
4. BOND HEATER & CIRCULATION PUMPS TO POOL SHELL REINFORCING, SEE 6/SP3.2
5. SLOPE GUTTER DRAIN PIPING 1% MIN TO SURGE CHAMBER.
6. DECK DRAIN PIPING SHALL BE SCH 40 PVC DWV W/ SOLVENT WELDED JOINTS & WYE FITTINGS.

KEYED NOTES

1. POOL EQUIPMENT ROOM, SEE SP4.2
2. PRECAST CONC SURGE CHAMBER, SEE 1/SP4.4
3. DECK DRAIN, SEE 4/SP4.3
4. (E) HOSE BIBB W/ VACUUM BREAKER (TYP)
5. CONNECT TO STORM DRAIN, SEE BLDG PLUMBING
6. 3" VENT PIPE UP TO TOP OF FENCE W/ STRAPS TO POST
7. CORE WALL FOR PIPE PENETRATION (TYP), SEE 6/SP4.3
8. SURGE CHAMBER SUCTION PLATE, SEE 8/SP4.3
9. CATCH BASIN, SEE 11/SP4.3
10. MODIFY GUTTER GRATE @ STAIR, SEE 12/SP4.3

BUREAU OF ENGINEERING
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BID SET
Date: May 17, 2022

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DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
CITY OF LOS ANGELES

ENGINEERING

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO.
-

INDEX NO.
RP-300123

REGISTERED PROFESSIONAL ENGINEER
DOUG R. TED ALLEN
No. M25446
EXP. 9-30-22
MECHANICAL
STATE OF CALIFORNIA

CITY OF LOS ANGELES

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: SWIMMING POOL PLUMBING PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE
TUJUNGA, CA 91042

CITY ENGINEER	DATE:	
LIC. NO.: C-25855	12/21/20	
	12/21/20	
	12/21/20	
	12/21/20	

ARCHITECT: NACHIAPPA M. MADHAVAN, AIA
DESIGNED BY: DJ
DRAWN BY: JMAE
CHECKED BY: NM
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

TED ALLEN, P.E.
ARCHITECTURAL DIVISION

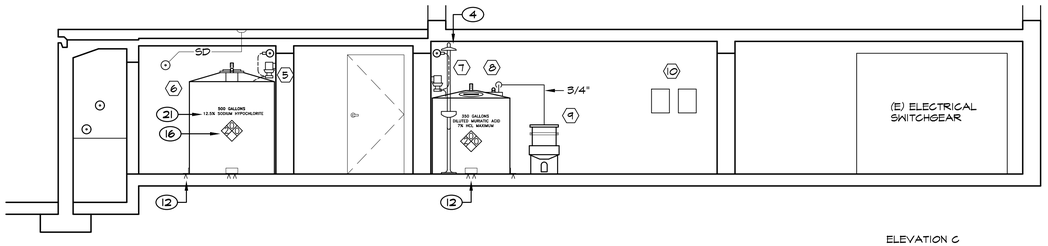
WORK ORDER NO.
E170164F

PLAN FILE NO.
-

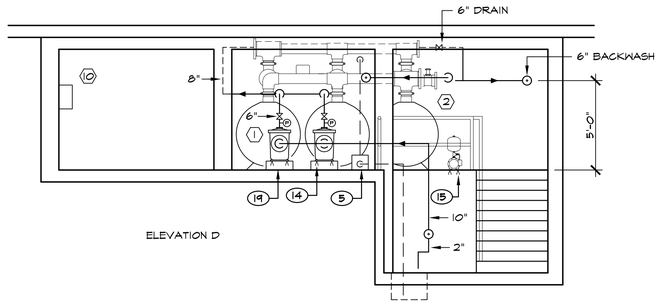
DRAWING NO.
SP4.1

SHEET 93 OF SHEETS 96

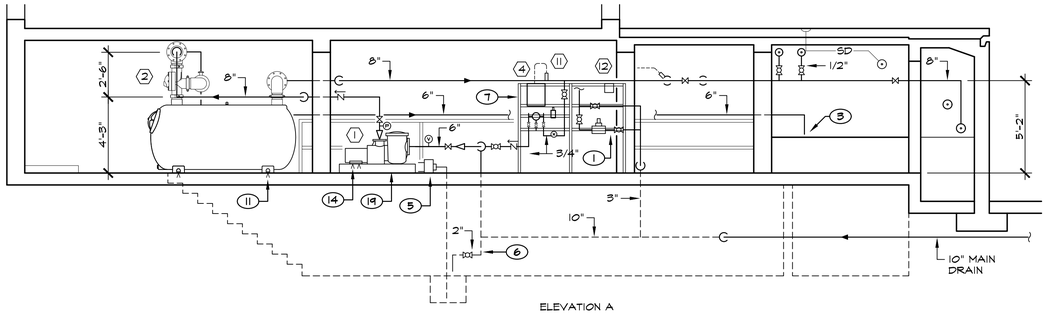
PLOTTED:12/21/2020



ELEVATION C



ELEVATION D



ELEVATION A

EQUIPMENT ROOM ELEVATIONS 2

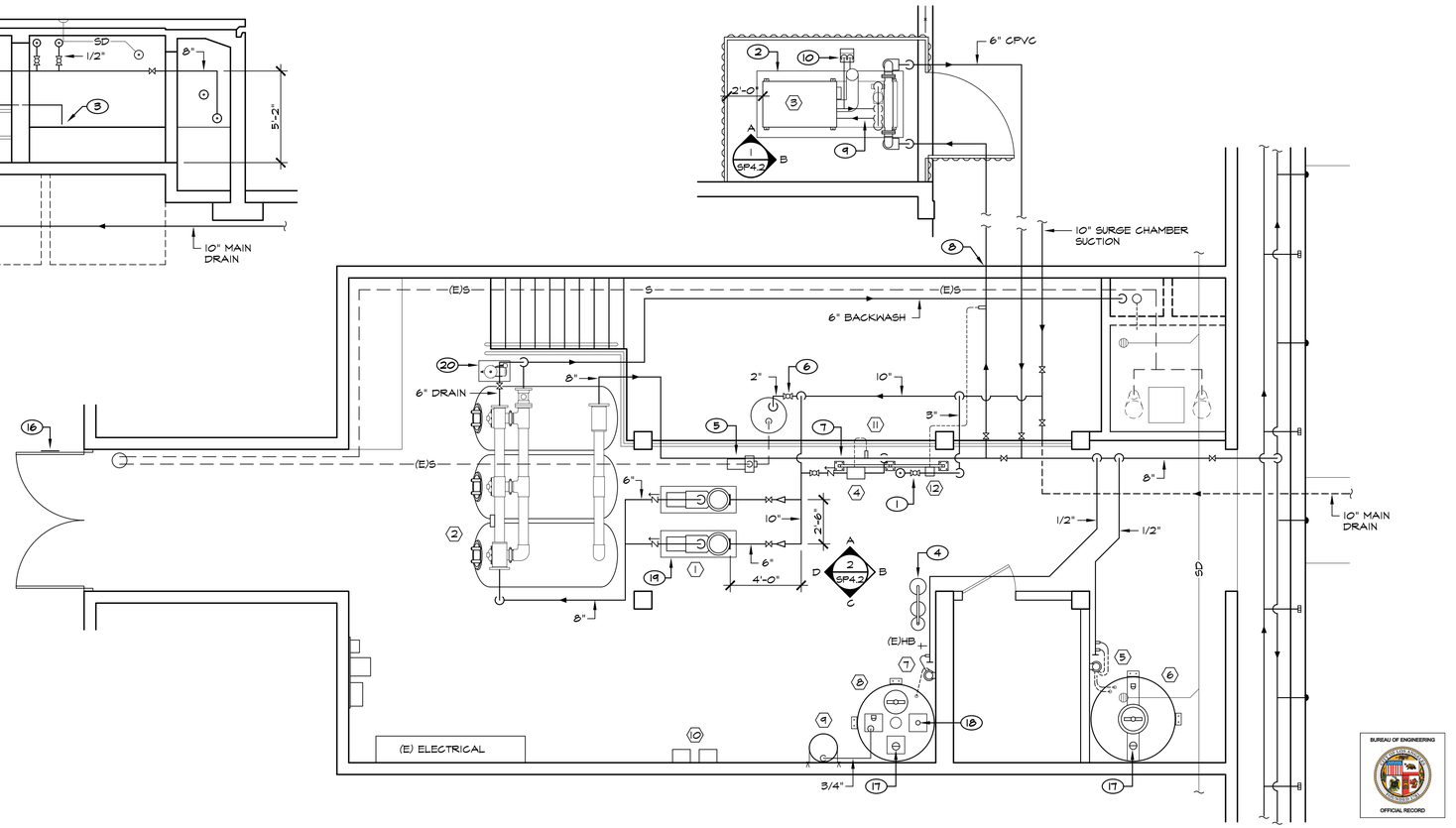
SCALE: 1/4" = 1'-0"

ELEVATION B

ELEVATION A

HEATER ELEVATIONS 1

SCALE: 1/4" = 1'-0"



EQUIPMENT ROOM PLAN

SCALE: 1/4" = 1'-0"

NORTH

SYMBOLS

- M – BUTTERFLY VALVE
- N – CHECK VALVE
- M – BALL VALVE
- T – THERMOMETER
- P – PRESSURE GAUGE
- V – VACUUM GAUGE
- R – FLANGED REDUCER (ECCENTRIC @ PUMP SUCTION)
- Y – Y-STRAINER
- RISER DOWN
- RISER UP
- TEE DOWN
- DIRECTION OF FLOW
- COPPER UNION COUPLING

EQUIPMENT SCHEDULE

1. CIRCULATION PUMP - 15 HP, 240V, 3Φ W/ 475 GPM @ 90', PENTAIR #EQK-1500 (TYP 2)
2. FILTER SYSTEM - 81 SQ FT W/ 1/2 HP BACKWASH PUMP, STARK #553-96-08
3. HEATER - 1,999,000 BTU W/ 120V, 1Φ PUMPS & OUTDOOR VENT SUPPORT, RAYPAK XTHERM INDIRECT #2005A
4. CHEMICAL CONTROLLER & SENSOR CELL - 120V, 1Φ, CHEMTROL #PC7000
5. CHLORINE PUMP - 120 GPD, 120V, 1Φ, STENNER #170DM4
6. CHLORINE STORAGE TANK - 500 GALLON DOUBLE WALL, CHEM-TAINER #TC597IDC
7. ACID PUMP - 85 GPD, 120V, 1Φ, STENNER #85M5
8. ACID STORAGE TANK - 350 GALLON DOUBLE WALL, CHEM-TAINER #TC5256DC
9. ACID FUME TANK - 15 GALLON W/ CONE BOTTOM, CHEM-TAINER #TC1530AP, SEE 6/SP4.4
10. VARIABLE FREQUENCY DRIVE - 240V, 15 HP, TECO WESTINGHOUSE #MA7200 (TYP 2)
11. FLOW SENSOR - 8" TO CHEMICAL CONTROLLER, SIGNET #2536
12. HEATER BYPASS FLOW METER - 6" DIGITAL METER & SENSOR, SIGNET #8150 & 515

GENERAL NOTES

1. ALL POOL PIPING SHALL BE SCH 80 PVC W/ SOLVENT WELDED JOINTS UNO.
2. ALL PIPING SHALL BE RESTRAINED PER SMACNA SEISMIC GUIDELINES W/ LATERAL SEISMIC BRACING. PROVIDE PIPE HANGERS & SUPPORTS @ 8' MAX INTERVALS, SEE 9/SP4.3
3. BOND POOL HEATER & CIRCULATION PUMPS TO POOL SHELL REINFORCING.
4. PROVIDE 15 DIA MIN OF STRAIGHT PIPE BEFORE FLOW SENSOR & 5 DIA AFTER.
5. HEATER SHALL BE INTERLOCKED W/ CIRCULATION PUMPS TO ONLY FIRE WHEN PUMPS ARE RUNNING.
6. PROVIDE SHUT-OFF VALVE, SERVICE UNION & DRIP LEG ON GAS LINE @ HEATER.
7. CHEMICAL CONTROLLER SHALL CONTROL CHLORINE & ACID PUMPS W/ FLOW SWITCH TO DISABLE FEED PUMPS UPON LOSS OF FLOW. UNIT SHALL MONITOR & CONTROL PPM, ORP, PH, TEMPERATURE, FLOW, CONDUCTIVITY/TDS, WATER LEVEL, FILTER INFLUENT & EFFLUENT PRESSURES & HEATER W/ REMOTE COMPUTER OPERATION & VOICE COMMUNICATION.
8. CIRCULATION PUMP VFD SHALL MAINTAIN CONSTANT FLOW RATE OF 475 GPM FOR EACH PUMP BASED ON 4-20 MILLIAMP SIGNAL FROM CHEMICAL CONTROLLER FLOW METER & PUMPS SHALL BE ELECTRICALLY INTERLOCKED TO OPERATE TOGETHER PER HEALTH DEPT REQUIREMENTS.
9. LOCK HEATER BYPASS VALVE GEAR OPERATOR W/ PADLOCK AFTER SYSTEM START-UP & ADJUSTING VALVE FOR REQ'D 480 GPM FLOW RATE.
10. RESTRICT POOL RETURN VALVE TO APPLY BACK PRESSURE ON MECHANICAL SYSTEMS.
11. INSTALL PIPE FLOW ARROWS, PIPE LABELS, VALVE TAGS & VALVE CHART.

KEYED NOTES

1. POOL FILL SYSTEM MANIFOLD, SEE 2/SP4.4
2. 6" x 3'-9" x 8'-3" CONC EQUIP PAD @ HEATER, SEE 10/SP4.3
3. AIR GAP @ (E) BACKWASH PIT
4. (E) EYEWASH & SHOWER
5. (E) SUMP PUMP
6. 2" WINTERIZING DRAIN LINE & BALL VALVE
7. UNISTRUT PARTITION FOR MOUNTING EQUIPMENT, SEE 5/SP4.4
8. CORE WALL FOR PIPE PENETRATION (TYP), SEE 6/SP4.3
9. 2 1/2" COPPER BOILER LOOP W/ CIRCULATION PUMP & EXPANSION TANK
10. RUN 3/4" COPPER PRESSURE RELIEF VALVE DISCHARGE LINE & 3/4" PVC CONDENSATE DRAIN LINE TO CATCH BASIN
11. ANCHOR EA FILTER TANK LEG W/ 1/2"Φ SST EXPANSION ANCHOR
12. ANCHOR CHEMICAL TANK W/ 3"x3"x1/4" SST ANGLE 6" LONG W/ (2) 1/2"Φ SST EXPANSION ANCHORS (TYP)
13. ANCHOR HEATER W/ MFR'S BRACKETS @ EA CORNER & 3/8"Φ SST EXPANSION ANCHORS
14. ANCHOR CIRCULATION PUMP W/ (4) 3/8"Φ SST EXPANSION ANCHORS
15. ANCHOR BACKWASH BOOST PUMP W/ (2) 1/4"Φ SST EXPANSION ANCHORS
16. CHEMICAL HAZARD SIGN ON DOOR & TANKS, SEE 4/SP4.4
17. 2" LEVEL GAUGE & BULKHEAD FITTING
18. 3/4" VACUUM BREAKER & BULKHEAD FITTING
19. 6" x 18" x 51" CONC EQUIP PAD @ CIRCULATION PUMPS, SEE 10/SP4.3
20. 6" x 14" x 21" CONC EQUIP PAD @ BACKWASH PUMP, SEE 10/SP4.3
21. PLASTIC LABEL W/ 1 1/2" HIGH LETTERS ON TANK

BID SET
Date: May 17, 2022

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100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
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TEL 805.777.8449 • FAX 805.777.8489

BUREAU OF ENGINEERING
CITY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO. -

INDEX NO. RP-300123

REGISTERED PROFESSIONAL ENGINEER
DOUG R. JONES
No. M25446
EXP. 9-30-22
MECHANICAL
STATE OF CALIFORNIA

BUREAU OF ENGINEERING
OFFICIAL RECORD

CITY OF LOS ANGELES

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: EQUIPMENT ROOM PLAN

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

CITY ENGINEER	
DATE:	12/21/20
ARCHITECTURAL DIVISION	
ARCHITECT: NACHIAPPA M. MADHAVAN, AIA LIC. NO.: C-25855	12/21/20
DESIGNED BY: DJ	12/21/20
DRAWN BY: JMAE	
CHECKED BY: NM	
APPROVED BY: STEVEN FIERGE, AIA, PRINCIPAL ARCHITECT	

WORK ORDER NO. E170164F

PLAN FILE NO. -

DRAWING NO. SP4.2

SHEET 94 OF SHEETS 96

PLOTTED:12/21/2020

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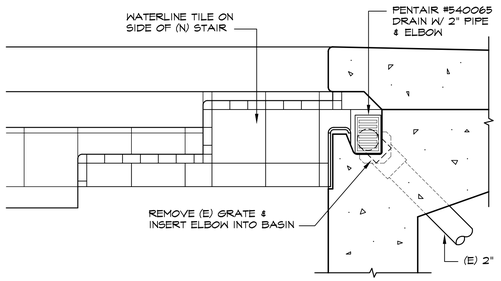
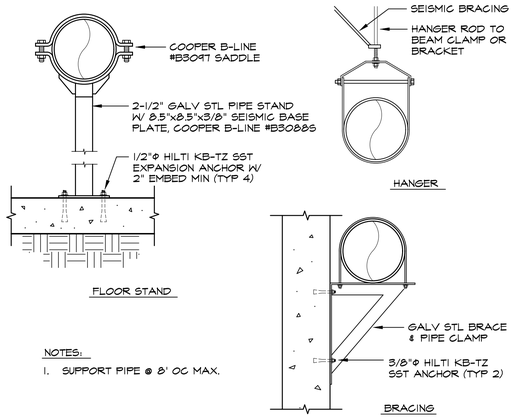


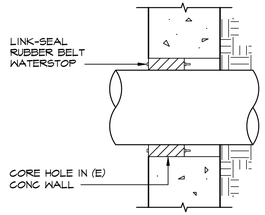
GUTTER DRAIN @ STAIR (12)

SCALE: 1 1/2" = 1'-0"



PIPE SUPPORT (9)

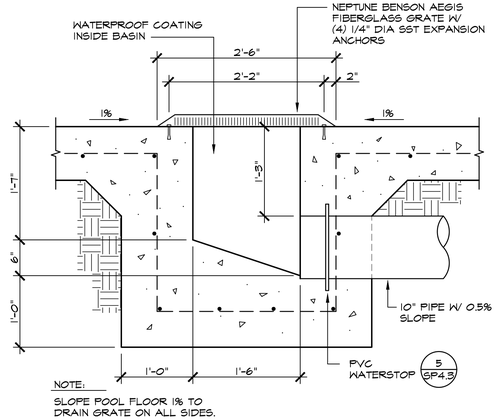
SCALE: 1" = 1'-0"



PVC PIPE SIZE	CORE ID
1/2"	2.0"
1"	3.0"
1-1/2"	3.5"
2"	4.0"
2-1/2"	4.0"
3"	5.0"
4"	6.0"
6"	10.0"
8"	12.0"
10"	14.0"
12"	16.0"

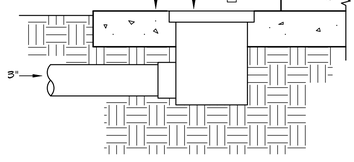
PIPE PENETRATION (6)

SCALE: 1" = 1'-0"



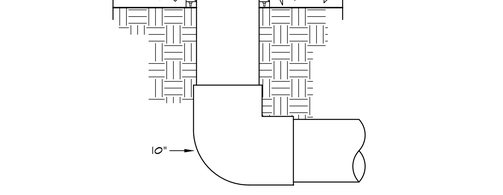
MAIN DRAIN (3)

SCALE: 1" = 1'-0"



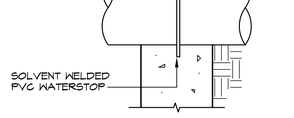
CATCH BASIN (11)

SCALE: 1 1/2" = 1'-0"



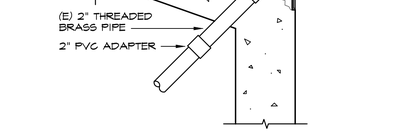
SUCTION PLATE (8)

SCALE: 1" = 1'-0"



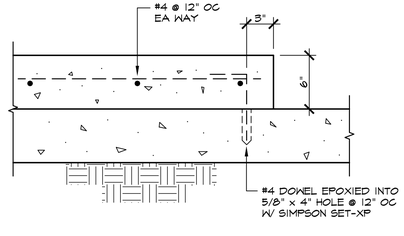
PVC WATERSTOP (5)

SCALE: 1" = 1'-0"



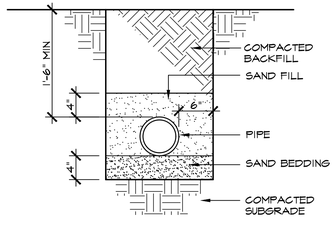
GUTTER DRAIN (2)

SCALE: 1" = 1'-0"



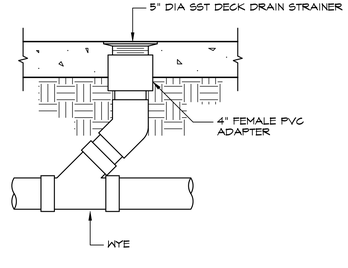
EQUIPMENT PAD (10)

SCALE: 1 1/2" = 1'-0"



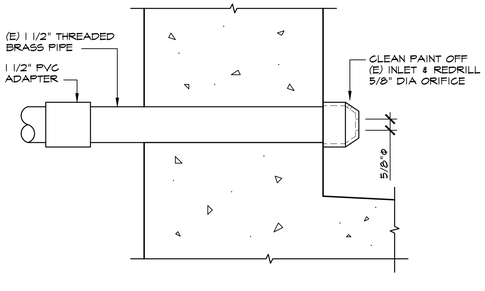
PIPE TRENCH (7)

SCALE: 1" = 1'-0"



DECK DRAIN (4)

SCALE: 1 1/2" = 1'-0"



WALL INLET (1)

SCALE: 3" = 1'-0"

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REVISION DATES: (DESIGN STAGE ONLY)

JONES & MADHAVAN ARCHITECTURE ENGINEERING
100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
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BUREAU OF ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER DOUG R. JONES No. M25446 EXP. 9-30-22 MECHANICAL STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

TED ALLEN, P.E.
ARCHITECTURAL DIVISION

CITY ENGINEER
DATE: 12/21/20
LIC. NO.: C-25855 12/21/20
12/21/20
12/21/20

ARCHITECT: NACHIAPPA M. MADHAVAN, AIA
DESIGNED BY: DJ
DRAWN BY: JMAE
CHECKED BY: NM
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT

CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: POOL PLUMBING DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO. E170164F

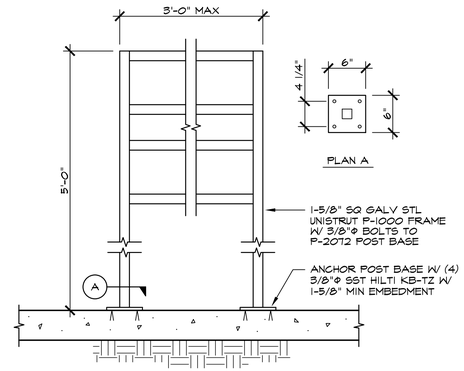
PLAN FILE NO. -

DRAWING NO. SP4.3

SHEET 95 OF SHEETS 96

BID SET
Date: May 17, 2022

PLOTTED: 12/21/2020

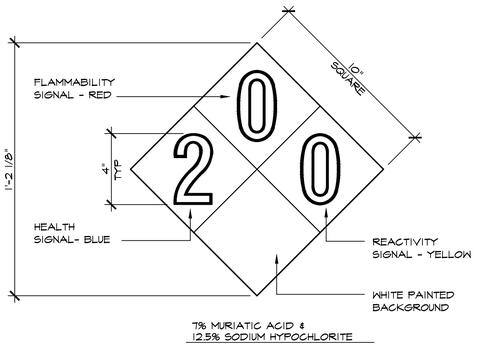


NOTES:

1. PROVIDE ADDITIONAL FRAME MEMBERS AS REQ'D FOR MOUNTING EQUIP.

UNISTRUT SUPPORT (5)

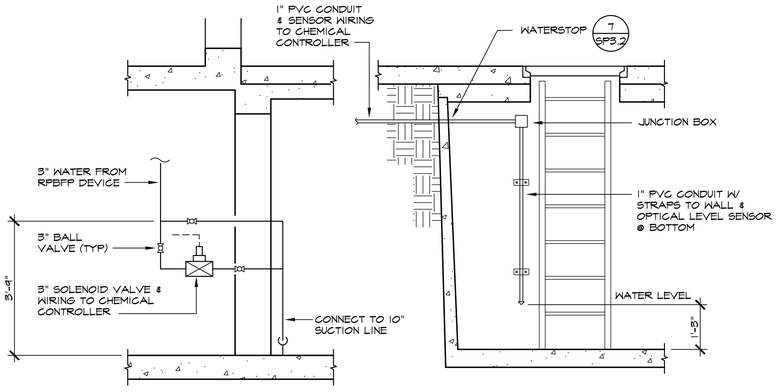
SCALE: 1" = 1'-0"



NOTE:
MOUNT ALUMINUM SIGN 60" AFF ON DOOR & MOUNT SELF-ADHESIVE VINYL SIGNS ON CHEMICAL STORAGE TANKS.

CHEMICAL HAZARD SIGN (4)

SCALE: 3" = 1'-0"

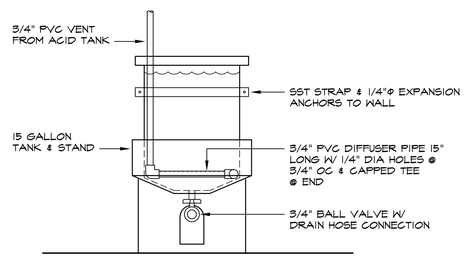


NOTES:

1. ALL ANCHORS & HARDWARE IN SURGE CHAMBER SHALL BE SST.

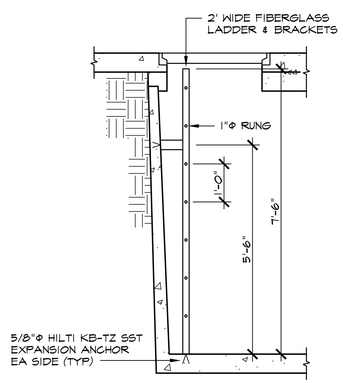
FILL SYSTEM (2)

SCALE: 1/2" = 1'-0"



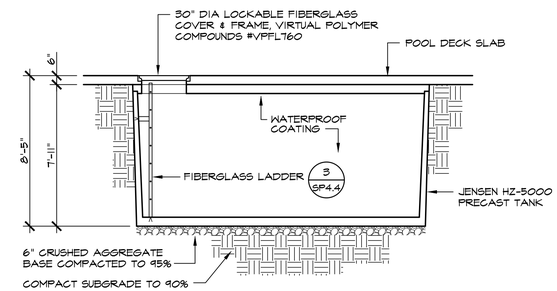
ACID FUME TANK (6)

SCALE: 1" = 1'-0"



LADDER (3)

SCALE: 1/2" = 1'-0"



NOTES:

1. EXCAVATE & COMPACT BASE FOR TANK INSTALLATION.
2. PROVIDE SHORING AS REQUIRED.
3. INSTALL XYPEX WATERPROOF COATING ON ALL INTERIOR SURFACES.

SURGE CHAMBER (1)

SCALE: 1/4" = 1'-0"

BUREAU OF ENGINEERING
OFFICIAL RECORD

BID SET
Date: May 17, 2022

JONES & MADHAVAN ARCHITECTURE ENGINEERING
100 EAST THOUSAND OAKS BOULEVARD, SUITE 211
THOUSAND OAKS, CALIFORNIA 91360
TEL 805.777.8449 • FAX 805.777.8489

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISION DESCRIPTION	DATE	BY

BUILDING NO.
-

INDEX NO.
RP-300123

REGISTERED PROFESSIONAL ENGINEER
DOUG R. TED
No. M25446
EXP. 9-30-22
MECHANICAL
STATE OF CALIFORNIA

TED ALLEN, P.E.
ARCHITECTURAL DIVISION
CITY ENGINEER
DATE: 12/21/20

ARCHITECT: NACHIAPPA M. MADHAVAN, AIA LIC. NO.: C-25855 — DATE: 12/21/20
DESIGNED BY: DJ — DATE: 12/21/20
DRAWN BY: JMAE — DATE: 12/21/20
CHECKED BY: NM — DATE: 12/21/20
APPROVED BY: STEVEN FIERCE, AIA, PRINCIPAL ARCHITECT — DATE:

CITY OF LOS ANGELES
CLIENT: DEPARTMENT OF RECREATION AND PARKS
GENERAL MANAGER: MICHAEL A. SHULL

SHEET TITLE: POOL PLUMBING DETAILS

PROJECT: VERDUGO HILLS POOL & BUILDING REFURBISHMENT

ADDRESS: 10654 IRMA AVENUE TUJUNGA, CA 91042

WORK ORDER NO.
E170164F

PLAN FILE NO.
-

DRAWING NO.
SP4.4

SHEET 96 OF SHEETS 96

PLOTTED: 12/21/2020

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISION MATRIX
(DESIGN STAGE ONLY)

PROJECT MANUAL

FOR CONSTRUCTION OF

DEPARTMENT OF RECREATION AND PARKS
VERDUGO HILLS POOL AND BATHHOUSE REFURBISHMENT

BID SET

PREPARED FOR:

CITY OF LOS ANGELES
DEPARTMENT OF RECREATION AND PARKS
221 NORTH FIGUEROA STREET SUITE 1510
LOS ANGELES, CA 90012

WORK ORDER NO: E170164F

PREPARED BY:

IBI GROUP ARCHITECTURAL PLANNING and
BUREAU OF ENGINEERING - ARCHITECTURAL DIVISION
DEPARTMENT OF PUBLIC WORK
CITY OF LOS ANGELES

May 17, 2022

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- Addendum Supplemental Geotechnical Report dated 12-09-2018
- Asbestos, Lead, and Universal Waste Survey Report dated 06.31.2021

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I. GENERAL CONDITIONS

VERDUGO HILLS POOL
AND BATHHOUSE REFURBISHMENT
PROJECT

PREPARED BY:

IBI GROUP ARCHITECTURAL PLANNING and
BUREAU OF ENGINEERING - ARCHITECTURAL DIVISION
DEPARTMENT OF PUBLIC WORK
CITY OF LOS ANGELES

May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

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GENERAL

1. DEFINITIONS

The following terms as used in the Contract shall be defined and interpreted as follows:

ADDENDA

Written documents issued during the bidding period which modify, supersede, or supplement the original Contract Documents.

AGREEMENT

See "CONTRACT."

AS SHOWN, AS INDICATED, AND AS SPECIFIED

These words are understood to be followed by the words "in the Contract Documents."

BENEFICIAL USE

Use of a building, system, structure, or facility by the CITY.

BID

The offer of the Bidder submitted on the prescribed forms setting forth the price(s) for the Work.

BIDDING PERIOD

The time period allocated to the Bidder to enable preparation of a Bid or Proposal.

BIDDER

The person or persons, partnership, firm or corporation submitting a Bid or proposal for the Work defined in the Contract Documents.

BID GUARANTY

The cash, certified check or Bidders Surety Bond accompanying the Bid as a guaranty that the Bidder will enter into a contract with the RECREATION AND PARK COMMISSION for the performance of the Work.

BOARD OF RECREATION AND PARK COMMISSIONERS

The Board of Recreation and Park Commissioners, of the City of Los Angeles.

BOND

Bid bond, performance and payment bond or other instrument of security.

CHANGE ORDER

A written order to the CONTRACTOR signed by the GENERAL MANAGER directing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or time which is issued after the effective date of the Contract and effects less modification than is effected by a Supplemental Agreement. A Change Order may or may not also be signed by the CONTRACTOR.

CITY

The CITY of Los Angeles, a municipal corporation.

CLAIM

A written demand or assertion by one of the parties seeking, as a matter of right, an interpretation of the Contract Documents, payment of money, extension of time or other relief. The party asserting the claim must set forth the facts and circumstances for which the other party is responsible.

CODE

Codes of the State of California as well as any other Federal or local law, statute, ordinance, rule or regulation.

CONTRACT

A binding agreement between the CITY and the CONTRACTOR for the Work described in the Contract Documents.

CONTRACT COMPLETION DATE

The date the CITY accepts the entire Work as being in compliance with the Contract Documents, and authorizes the final payment in accordance with the requirements set forth in Article 25, FINAL PAYMENT of the General Requirements.

CONTRACT DOCUMENTS

The following documents constitute a part of and comprise the Contract Documents: Agreement, Notice Inviting Bids or Proposals, Instruction to Bidders, Contractor's Bid or Proposal, Special and Supplementary Conditions, General Requirements, Geotechnical Baseline Report (if provided for the in the General Requirements), Federal and State Requirements, Standard and Reference Specifications, Standard Plans, Plans and Specifications, Soil Reports and Subsurface Investigation Reports, Summary of First Notice Replies, Addenda and Notice to Bidders issued prior to the opening of bids, Plan Clarifications, Request for Information, Supplemental Agreements and Change Orders issued after Contract award.

CONTRACTOR DEFAULT

See TERMINATION OF CONTRACT BY CITY (CONTRACTOR DEFAULT) Article of these General Conditions.

CONTRACT PRICE

The total amount of money for which the Contract is awarded.

CONTRACT UNIT PRICE

The amount stated in the Bid for a single unit of an item of Work.

CONTRACTOR

The person or persons, partnership, firm or corporation who enters into the Contract as stipulated in the Agreement awarded by the CITY. Prime Contractor and Contractor shall mean the same.

CONTRACTOR'S REPRESENTATIVE

The representative of the CONTRACTOR at the site who shall supervise and direct the construction and who is authorized to receive and fulfill instructions from the PROJECT MANAGER or INSPECTOR.

DAYS

Unless otherwise specifically stated, the term "days" will be understood to mean consecutive calendar days.

EASEMENT

Permission to access or utilize property not owned by the CITY.

EQUAL

See "OR EQUAL".

GENERAL CONDITIONS

Instructions to the CONTRACTOR setting forth its responsibilities and the CITY'S responsibilities for proper execution of the Work indicated herein.

GENERAL MANAGER

GENERAL MANAGER of the Department of Recreation and Parks, or an authorized representative.

GENERAL REQUIREMENTS

Instructions to the CONTRACTOR setting forth its responsibilities and the CITY'S responsibilities for proper execution of the administration and technical aspects of the project indicated herein.

GEOTECHNICAL DESIGN SUMMARY REPORT /GEOTECHNICAL BASELINE REPORT (GBR)

The report that sets forth the geotechnical interpretations regarding anticipated conditions for the design and construction of the project. This report establishes a geotechnical baseline that provides the basis for identification of changed site/ground conditions.

GEOTECHNICAL SITE ASSESSMENT

SEE AGEOTECHNICAL DESIGN SUMMARY REPORT.@

HOLIDAY

Those holidays and dates observed by the CITY. A list of such holiday dates is available from the RECREATION AND PARK COMMISSION Office.

IMMEDIATELY NOTIFY

The obligation to cause verbal notification of some condition or event as soon as possible upon discovery or knowledge of the condition or event and in all instances, no more than two (2) hours.

INSPECTOR

The Inspector of Public Works, the Director of the Bureau of Contract Administration, or an authorized representative(s) located at the Public Works Building, 1149 S. Broadway, 3rd Floor, Los Angeles, CA, 90015.

JOBSITE

The area upon or in which the CONTRACTOR'S operations are carried on and such other areas adjacent thereto as may be designated as such by the Contract Documents.

LAW

Any Federal, State or local law, statute, ordinance, rule, regulation or code.

LIQUIDATED DAMAGES

The amount the CONTRACTOR shall pay to the CITY, as determined by rates and amounts as fixed and agreed in the Contract Documents, due to the CONTRACTOR'S failure to complete the Work or submit the schedule within the time specified, or for non-compliance with other specified requirements.

MODIFICATIONS

Includes Change Orders and Supplemental Agreements. A modification may only be issued after the effective date of the Contract.

NON-CONFORMING WORK

Non-conforming Work is Work which does not conform in all respects to all requirements in the Contract Documents, including damaged Work and damaged materials, without respect to the causes or nature of such lack of conformity.

NOTICE OF AWARD

The written notice by the CITY to the successful Bidder stating that upon compliance by the successful Bidder of required conditions, the City will execute the Contract.

NOTICE TO BIDDERS

A notice included in the bidding documents that informs prospective bidders of the bidding procedures and the opportunity to submit a bid.

NOTICE TO CONTRACTOR

The written notice by the CITY to the CONTRACTOR which officially advises on direction and provides information pertinent to the Contract.

NOTICE TO PROCEED

The written notice by the CITY to the successful Bidder stating that the Work or portions of the Work may commence.

NOTICE TO WITHHOLD

The written notice by the CITY to the CONTRACTOR advising that certain payments shall be withheld due to unacceptable execution of the Work by the CONTRACTOR.

OR EQUAL

The product, equipment, or material which is proposed by the CONTRACTOR for use in the Work which in the sole judgment of the PROJECT MANAGER is equal to, better than and as suitable as the product or material specified in the Contract Documents as to function, performance, reliability, quality, and general configuration.

PARTIAL ACCEPTANCE

Any portion of the Work which has been completed in accordance with the plans and specifications and has been accepted in writing by the PROJECT MANAGER and the INSPECTOR on the "Statement of Partial Completion" form.

PLANS OR DRAWINGS

The drawings, profiles, cross sections, working drawings, and supplemental drawings, or reproductions thereof, issued or approved by the PROJECT MANAGER, which show the location, character, dimensions or details of the Work.

PROJECT

The Work and/or construction operations executed through the performance of this Contract.

PROJECT MANAGER

The authorized representative of the GENERAL MANAGER.

PROTEST

See definition of Claim.

REFERENCE SPECIFICATIONS

Those bulletins, standards, rules, methods of analysis or test, codes, and specifications of other agencies, PROJECT MANAGER societies, or industrial associations referred to in the Contract Documents. These refer to the latest edition, including amendments in effect and published at the time of advertising the project, adopted by the RECREATION AND PARK COMMISSION, if applicable, unless specifically referred to by edition, volume, or date.

RIGHTS OF ENTRY

Written permission from an owner of a facility or property to access the facility or property for a specific purpose.

RIGHT OF WAY

Rights of way, easements, or rights of entry for the Work will be provided by the CITY. The CONTRACTOR shall make arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of additional work areas and facilities temporarily required in addition to those provided by the CITY. The

CONTRACTOR shall indemnify and hold the CITY harmless from all claims for damages caused by such actions.

SPECIAL PROVISIONS

Any provision which supplements or modifies the Specifications.

SPECIFICATIONS

The Contract Documents and revisions to it which were prepared to specifically describe the commercial, legal, technical and nontechnical requirements of the project. Specifications include but are not limited to Terms, Provisions, General Conditions, General Requirements, Special Provisions, Technical Specifications, Equipment Schedules, and all revisions made to the specifications in Addenda, Notice To Bidders, and Change Orders or Modifications, signed by the GENERAL MANAGER.

STANDARD PLANS

Details of standard structures, devices or instructions referred to on the plans or in the specifications by title or number issued by the CITY.

STANDARD SPECIFICATIONS

Documents, Materials and items specified in Article 5 of these General Conditions.

STARTUP

That stage of performance testing as defined in the specifications which use the actual process fluid, material, or medium for a specified number of days of continuous operation without major interruptions and prior to acceptance by the CITY.

SUBCONTRACTOR

A "Subcontractor" is a contractor who is licensed pursuant to California Business and Professions Code, Section 7000 *et.seq.* and who contracts directly with the prime CONTRACTOR. The Subcontractor performs some part of the Work of the Contract. A Subcontractor does not have any direct contract with the CITY related to the project.

SUB-SUBCONTRACTOR

A "Sub-subcontractor" is a Subcontractor, within the definition of that term, who has a contract with a Subcontractor and has no Contract with the City related to the project.

SUPERVISOR

The designated individual who is responsible for the proper execution or installation of some portion or portions of the Work. The SUPERVISOR reports directly or indirectly to the CONTRACTOR'S REPRESENTATIVE.

SUPPLEMENTAL AGREEMENT

A written amendment of the Contract Documents which modifies the Contract in price or scope by a percentage which is more than can be accomplished by a Change Order and signed by the CITY and the CONTRACTOR.

SUPPLIER

An individual, organization, or firm who is not required for the purposes of the Work to be licensed pursuant to California Business and Professions Code as a CONTRACTOR, Subcontractor, or Sub-subcontractor, within the meanings of those terms as defined herein above, who provides equipment and/or materials for the Work, to the CONTRACTOR, a Subcontractor, or a Sub-subcontractor, including that fabricated to a special design, but who does not perform labor at the site except for labor or labor supervision required by some manufacturers as part of their equipment installation for warranty or other purposes. The term "supplier" also includes fabricator, manufacturer, or vendor.

SURETY

Any individual, firm or corporation, bound with and for the CONTRACTOR for the acceptable performance, execution and completion of the Work, and for the satisfaction of all obligations incurred.

TERMS

Unless otherwise stated, the words "directed, required, permitted, ordered, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory," or words of like meaning, refer to actions, statements, judgments, conclusions, and decisions within the responsibility of the PROJECT MANAGER or the INSPECTOR.

UNAVOIDABLE DELAY

Delay arising from causes beyond the control and without the fault or negligence of the CONTRACTOR and its Subcontractors at all tiers.

UTILITY

Tracks, overhead or underground wires, cables, pipeline, conduits, ducts, or structures, sewers, or storm drains owned, operated, or maintained in or across a public right of way, private easement, or jobsite.

VOLUME I

Are the items in the bid package entitled “CITY OF LOS ANGELES, CALIFORNIA, DEPARTMENT OF RECREATION AND PARKS INSTRUCTION TO BIDDERS, PROPOSAL, AFFIDAVIT AND BOND FOR…” inclusive.

VOLUME II

Are the items in the bid package entitled “CONTENTS GENERAL CONDITIONS”, “CONTENTS GENERAL REQUIREMENTS”, and any specifications and attachments inclusive.

WORK

Includes all material, labor, utility services, tools, expendable equipment, and all appliances, machinery, transportation, appurtenances and specified services necessary to perform and complete the Contract; and such additional items not specifically indicated or described that can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure. As used herein, "provide" shall be understood to mean "furnish and install, complete in place."

WORKSITE

See "JOBSITE."

WORKDAY

Any day within the period between the start of the Contract time and the date provided in the Contract for completion or the date established in the Statement of Completion by the CITY acknowledging that all Work under the contract is complete, whichever occurs last, other than:

- Saturday,
- Sunday,
- any day designated as a holiday by the CITY, and,
- any other day designated as a holiday in a Master Labor Agreement entered into by the CONTRACTOR or on behalf of the CONTRACTOR as an eligible member of a Contractor's Association,
- any day the CONTRACTOR is prevented from working for cause as established by UNAVOIDABLE DELAY of these General Conditions; and,

- any day the Contractor is prevented from working during the first five (5) hours of the workday with at least sixty percent (60%) of the normal Work force from cause as established by an Unavoidable Delays of these General Conditions.

CONTRACT DOCUMENTS

2. SCOPE

A. The work to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies and manufactured articles, and for furnishing all transportation, services, including fuel, power and water, and essential communications, and the performance of all labor, Work, or operations required for the fulfillment of the Contract, in strict accordance with the specifications, schedules, and drawings, all of which are made a part hereof, and including such detail sketches as may be furnished by the PROJECT MANAGER from time to time during the construction in explanation of said drawings. The items shall be complete and all Work, material, and services not expressly called for in the Specifications, or not shown on the drawings, which may be necessary for complete and proper construction to carry out the Contract in good faith shall be performed, furnished, and installed by the CONTRACTOR at no increase in cost to the CITY.

B. The Work required by the Contract shall be completed within **Four Hundred Fifteen (415)** calendar days of the date specified by the General Manager in the notice to proceed with the work. The Contract completion time shall consist of **Three Hundred Sixty-Six (366)** calendar days for construction, and **Forty-Nine (49)** calendar days for maintenance.

3. AUTHORITY OF THE RECREATION AND PARK COMMISSION, PROJECT MANAGER, AND INSPECTOR

The GENERAL MANAGER, RECREATION AND PARKS has the final authority in all matters affecting the Work The CONTRACTOR shall promptly comply with instructions from the PROJECT MANAGER or the INSPECTOR.

On all questions relating to quantities, the acceptability of material, equipment, or Work, the execution, progress or sequence of Work, and the meaning of specifications or drawings, the decision of the PROJECT MANAGER is final and binding, and shall be precedent to any payment under the Contract, unless otherwise ordered by the BOARD OF RECREATION AND PARKS.

The PROJECT MANAGER is authorized to require performance of the Work consistent with the meaning of the plans and specifications and to approve necessary additive changes in Plans up to a maximum as authorized by the Recreation and Park Commission. The PROJECT MANAGER may initiate changes in Plans or scope of Work, regardless of cost, for submission to the RECREATION AND PARK COMMISSION for its approval.

The INSPECTOR is authorized to enforce compliance with Plans and Specifications, to determine the acceptability of materials and workmanship, administer requirements with respect to subcontracts, and to prepare and process progress payment estimates. In the event of a dispute between the CONTRACTOR and the INSPECTOR, the latter is authorized to reject materials or suspend the Work until any questions at issue can be referred to and decided by the RECREATION AND PARK COMMISSION or, in design matters, by the PROJECT MANAGER.

The INSPECTOR may sample and test all materials to be incorporated into the Work. The INSPECTOR may delegate this authority to sample materials and perform tests to the Department of General Services, Standards Division, or other approved agencies, the CONTRACTOR will pay for testing.

4. INTENT OF CONTRACT DOCUMENTS

The Contract Documents are complementary, and what is called for by one part shall be as binding as if called for by all. The intent of the Documents is to include all Work consistent therewith and reasonably inferable there from as being necessary for completion of the Contract. Materials or Work described in words that indicate the proper execution and a well known technical or trade designation shall be held to refer to such recognized standards.

It is understood and agreed that the written terms and provisions of the Contract Documents represent the entire and integrated agreement between the parties hereto and supersede all prior negotiations, representations, or agreements, either written or oral. The Contract Documents shall not be construed to create any contractual relationship of any kind between the PROJECT MANAGER or the INSPECTOR and the CONTRACTOR.

5. STANDARD SPECIFICATIONS

The applicable portions of the Standard Specifications for Public Works Construction (SSPWC) shall become part of these Contract Documents, and unless otherwise specified, all Work and materials shall conform to the Standard Specifications as modified by the corresponding issue of Standard Plan No. S-610 as amended or revised and adopted by the RECREATION AND PARK COMMISSION in effect on the date of advertising for bids.

6. INTERPRETATION OF PLANS AND SPECIFICATIONS

Every part of the Contract, as shown on the Plans and described in the Specifications, must be completed and finished. No deviations are to be made from the Plans or Specifications without previous written authorization from the PROJECT MANAGER.

In general, the Plans will show dimensions, positions and type of construction, and the Specifications will define materials, quantities, and if indicated, required methods of construction. Any Work called for on the Plans and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both. Work not particularly detailed, marked, or specified shall be the same as similar parts that are detailed, marked, or specified.

The Plans have been drawn to the indicated scales except where otherwise noted. Dimensions indicated by figures or numerals shall govern in all cases whether drawn to scale or not. Larger scale drawings shall take precedence over smaller scale drawings. Drawings shall not be scaled for dimensions.

The general character of the detailed Work is shown on the Contract drawings, but minor modifications may be made in larger scale drawings. The PROJECT MANAGER will furnish additional details, when needed, to more fully explain the Work, and the same shall be considered part of the Contract.

Where on any drawings, a portion of the Work is drawn out or detailed and the remainder is indicated in outline, the drawn out or detailed parts shall apply also to all other like portions of the Work. Where ornament or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the Work, unless otherwise indicated.

References made to other specifications and codes refer to the edition including amendments in effect and published at the time of advertising the project or issuing the permit, unless specifically referred to by edition, volume, or date as noted in the Contract Documents.

The CONTRACTOR shall furnish and install all equipment and materials required to complete installations whether or not the quantities are specifically shown, called out, or reflected in the Contract Drawings.

7. PRECEDENCE OF CONTRACT DOCUMENTS

In resolving inconsistencies or ambiguities among two (2) or more components of the Contract Documents, the highest precedence shall be given to Permits from the other agencies as may be required by law and decreasing order as follows:

1. Permits from other agencies as may be required by law
2. Agreement
3. Special Provisions
4. General Conditions
5. Specifications - Division 01: General Requirements
6. Specifications - Divisions 02 - 17
7. Geotechnical Site Assessment
8. Drawings
9. Standard Plans
10. Standard Specifications
11. Reference Specifications

12. Reference Drawings

Supplemental Agreements, Change Orders, PROJECT MANAGER'S written interpretations and clarifications, Notice to Bidders and Addenda, in the precedence listed, will take precedence over all other Contract Document components referenced therein. Figure dimensions on Drawings will take precedence over scaled dimensions.

Detailed Drawings, including Process and Instrumentation Drawings (P & ID's), will take precedence over general Drawings.

8. ACCURACY OF PLANS AND SPECIFICATIONS

Omissions from the Plans and Specifications shall not relieve the CONTRACTOR from the responsibility of furnishing, making, or installing all items required by law or usually furnished, made, or installed in a project of the scope and character indicated by the Plans and Specifications. If the CONTRACTOR is of the opinion that it will incur costs above and beyond what would reasonably be anticipated in meeting the above requirements, it shall inform the PROJECT MANAGER in writing within twenty (20) calendar days after discovering the omission and before starting the Work.

The Plans show conditions as they are supposed or believed by the PROJECT MANAGER to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation or warranty, expressed or implied, by the CITY or its officers, that such conditions are actually existent, nor shall the CITY, or any of its officers, be liable for any loss sustained by the CONTRACTOR as a result of any variance between conditions as shown on the Plans, and the actual conditions revealed during progress of the Work or otherwise, except as indicated in Article 53, Differing Site Conditions of these General Conditions.

9. EXAMINATION OF COVERED WORK

If any Work is covered without inspection, approval or consent of the INSPECTOR, and examination is required by the INSPECTOR, it shall be uncovered at the CONTRACTOR'S sole expense.

Examination of covered Work may be ordered by the PROJECT MANAGER and if so ordered, the Work shall be uncovered by the CONTRACTOR. If such Work is found to be in accordance with the Contract Documents, the CITY will issue a Change Order authorizing payment for the cost of examination and replacement. If such Work is found to be not in conformance with the Contract Documents, the CONTRACTOR shall correct the non-conforming Work and the cost of examination and correction of the non-conforming Work shall be borne solely by the CONTRACTOR.

10. UNNOTICED DEFECTS

Any non-conformity in the Work that is discovered before Contract Completion, or before final payment has been made, or during the guarantee period, shall be removed and replaced by the CONTRACTOR with Work which conforms to the provisions of the Contract Documents. Failure on the part of the PROJECT MANAGER or the INSPECTOR to condemn or reject non-conforming Work shall not constitute acceptance or implied acceptance of such Work.

11. BUILDING CODES AND REGULATIONS

The CONTRACTOR shall perform the Work in accordance with the requirements of the Los Angeles City Building Code and all other regulations, laws, and ordinances, even though such requirements are not specifically mentioned in the Specifications or shown on the drawings.

It is not the responsibility of the CONTRACTOR to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the CONTRACTOR observes that any of the Contract Documents are at variance therewith in any respect, it shall promptly notify the PROJECT MANAGER in writing, and any necessary changes shall be accomplished by issuance of a Change Order.

If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the PROJECT MANAGER, it shall assume full responsibility therefore and shall bear all costs attributable thereto.

12. LENGTH OF WORKDAY AND WORK WEEK

Eight (8) hours of labor shall constitute a calendar day's work for employees of the CONTRACTOR under this Contract. Said employees shall be paid not less than the prevailing wage rate for the first eight (8) hours work of each day.

A working day shall be Monday through Friday, and work shall be between 7:00 a.m. and 4:00 p.m., unless otherwise approved by the PROJECT MANAGER or the RECREATION AND PARK COMMISSION or revised by CITY Ordinance.

When work in excess of eight (8) hours per day, or forty (40) hours during any one (1) week is performed, wages for all hours over eight (8) hours in any day or over forty (40) hours during any one (1) week shall be paid at the prevailing wage rate, as provided in the California Code and the CITY's code requirements.

13. PAYMENT OF EMPLOYEES

The CONTRACTOR and each Subcontractor shall pay each employee engaged in Work on the project under this Contract in compliance with the Federal and State wage provisions indicated on the appropriate page of the Proposal (General Instruction and Information for Bidders), and LENGTH OF WORKDAY AND WORK WEEK of these General Conditions.

The certified payroll and the Statement of Compliance shall be submitted to the INSPECTOR by the CONTRACTOR and all Subcontractors performing Work on the project, regardless of dollar amount or type of contract.

If there is a difference between the Federal and State minimum wage rates for similar classifications of labor, the CONTRACTOR and its Subcontractors shall pay not less than the higher wage rate.

When the CONTRACTOR intends to use a craft or classification not shown on the general prevailing wage determinations, it will be required to pay the wage rate of that craft or classification most closely related to it as shown in the general prevailing wage determinations. In case of disagreement between the CONTRACTOR and the CITY, the INSPECTOR shall make the final determination as to the prevailing wages for the Work.

14. CONVICT-MADE MATERIALS

No materials manufactured or produced in a penal or correctional institution shall be incorporated in the project under this Contract.

15. SALES; BUSINESS OR USE TAX

Purchases of materials and equipment which will be incorporated or installed permanently in the Contract Work, or which will be used in the operation of the CONTRACTOR or Subcontractors, and not incorporated in the Contract Work, are not exempt from City of Los Angeles and California State Sales or Use Taxes as applicable. The CITY shall consider any required business taxes to be included in the overhead costs of the CONTRACTOR.

16. NONDISCRIMINATION IN EMPLOYMENT

The CONTRACTOR shall comply with all of the provisions of the Los Angeles Administrative Code, Mandatory Provision Pertaining to Nondiscrimination in Employment.

The CONTRACTOR shall submit Monthly Ethnic Composition of Work Force Reports to the INSPECTOR indicating the number of employees in the various work categories and ethnic groups and gender on forms furnished by the CITY. Failure to furnish the reports shall constitute grounds for the CITY to withhold the progress payment.

Nondiscrimination Clause: "The CONTRACTOR shall not discriminate during the performance of this Contract against any employee or applicant for employment because of employee's or applicant's race, religion, national origin, ancestry, sex, age, sexual orientation or physical handicap." The CONTRACTOR shall include in all subcontracts awarded under this Contract the same Nondiscrimination Clause.

If conflicts exist between these provisions and the Federal Rules and Regulations governing the same, the more stringent requirements shall prevail.

17. APPRENTICE UTILIZATION

Any Contract awarded hereunder will require the CONTRACTOR to comply with the provisions of the California Labor Code relating to apprentice employment and training; and will require the CONTRACTOR to assume full responsibility for compliance with said section with respect to all Apprenticing Occupations involved in the Project. (Compliance with said Apprentice Utilization provisions of the Labor Code is not required for Public Works Contracts involving less than $30,000 or less than twenty (20) Working days in duration).

18. LAWS AND REGULATIONS

The CONTRACTOR shall observe and comply with all Federal, State, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the Work, the materials used in the Work, or the conduct of the Work. If any discrepancy or inconsistency should be discovered in this Contract in relation to any such law, ordinance, code, order, or regulation, the CONTRACTOR shall report the same in writing to the PROJECT MANAGER. The CONTRACTOR shall indemnify and save harmless the CITY, and its officers, agents, and employees, against all claims or liability arising from violation of any such law, ordinance, code, order, or regulation, whether by itself or by its employees or subcontractors as stated in these Contract Documents. Any particular law or regulation specified or referred to elsewhere in these specifications shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of Federal, State, and local laws and regulations.

19. PERMITS AND CONSTRUCTION EASEMENTS

The CONTRACTOR shall anticipate, obtain and pay for all permits, excluding the General Building Permit, necessary for performance of the Work.

The CONTRACTOR shall obtain and pay all costs incurred and submit to the PROJECT MANAGER copies of all permits required for the construction and installation of all Work called for on this project. All costs shall be included in the CONTRACTOR'S bid. The permit list to be obtained by the CONTRACTOR shall include, but not be limited to the following:

1. Night Work, hauling, overload, grading, excavation, demolition, foundation, and associated building permits.
2. Electrical permits.
3. Mechanical permits.
4. Plumbing permits.
5. South Coast Air Quality Management District permits.
6. Fire sprinkler permit.
7. All Federal, State, County and CITY issued permits.

Rights of ways, easements, or rights of entry for the Work will be provided by the CITY. The CONTRACTOR shall make arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of Work areas and facilities temporarily required which are necessary in addition to those provided by the CITY. The CONTRACTOR shall indemnify and hold the CITY harmless for all claims for damages caused by such actions.

20. PARTIES EXCLUDED FROM THE WORK

Lists of individuals, firms and organizations which have been debarred, suspended or have voluntarily excluded themselves from Federal Procurement and Non Procurement Program is maintained by US General Services Administration. A copy can be obtained from Superintendent of Documents, US Government Printing Office, Washington, DC 20402, Tel: (202) 783-3238.

The CITY will not conduct business with an individual, firm or organization, and the CONTRACTOR shall not employ or otherwise utilize any Subcontractor, supplier or equipment vendor at any tier which is on the U.S. General Services Administration "List of Parties Excluded from Federal Procurement and Non Procurement Programs". The CONTRACTOR shall not utilize or otherwise employ any subcontractors or suppliers on the CITY's list of nonresponsible bidders maintained by the General Services Division of the Bureau of Contract Administration.

21. BUSINESS TAX REGISTRATION CERTIFICATES

The CONTRACTOR represents that it has, or will obtain upon award, the Business Tax Registration Certificate(s) required by the Los Angeles City Business Tax Ordinance. The CONTRACTOR shall maintain, or obtain as necessary, all such Certificates required of it under said Ordinance and shall not cause or allow any such Certificate to be revoked or suspended.

The CITY requires all firms that have business activity within the City of Los Angeles to pay CITY business taxes.

Payments for goods or services will be withheld unless proof of tax compliance is provided to the CITY. All firms and individuals that do business with the CITY will be required to provide a Business Tax Registration Certificate number or an exemption number as proof of compliance with Los Angeles City business tax requirements in order to receive payment for goods or services.

The Tax and Permit Division of the City Clerk's Office has the sole authority to determine whether a firm is covered by business tax requirements.

22. FINANCIAL LIABILITY

The CITY's liability under this Contract shall not exceed the CITY's appropriation to fund the Contract at the time of Contract award. However, if the CITY shall appropriate funds for any successive years, the CITY'S maximum liability shall not exceed the extent of such appropriation, subject to the terms and conditions of this Contract.

THE CONTRACTOR'S RESPONSIBILITIES

23. CONTRACTOR'S OBLIGATIONS

Only competent workers shall be employed on the Work. Any worker, at the journey level or above, employed on the Work shall have a current license or certificate as required for the type of Work being performed, issued by the Department of Building and Safety of the City of Los Angeles and any such other organization as required.

Any person or subcontractor employed who is found by the PROJECT MANAGER AND/OR INSPECTOR to be incompetent, disorderly or otherwise objectionable, or who fails or refuses to perform Work properly, acceptably and as directed shall be immediately removed from the Work by the CONTRACTOR and not be reemployed on the Work.

The CONTRACTOR, at its sole cost and expense, shall perform all labor and services and furnish all the materials, tools, and appliances, except as hereinafter otherwise definitely provided, necessary or proper for performing and completing the Work required, in the manner and within the time stipulated in these specifications. The CONTRACTOR shall furnish, erect, maintain, and remove the construction plant and such temporary works as may be required. If, at any time before the commencement or during the progress of the Work or any part of it, the CONTRACTOR'S methods or appliances appear to the PROJECT MANAGER or the INSPECTOR to be unsafe, inefficient, or inadequate for securing the safety of the workers, the quality of the Work required, or the rate of progress stipulated, the PROJECT MANAGER or the INSPECTOR may order the CONTRACTOR to increase their safety and efficiency or to improve their character, and the CONTRACTOR shall comply with such orders at its own expense. Neither the making of such demands by the PROJECT MANAGER nor the failure to make such demands shall relieve the CONTRACTOR of its obligation to secure the safe conduct of the Work, the quality of Work required, nor the rate of progress stipulated in the Contract. The CONTRACTOR shall be fully responsible for the safety, efficiency, and adequacy of its plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation. All of the labor and materials shall be performed and furnished strictly pursuant to and in conformity with the Contract Documents, the lines and grades and other directions of the PROJECT MANAGER or the INSPECTOR as given from time to time during the progress of the Work under the terms of the Contract, and in accordance with working drawings to be furnished from time to time as provided herein. The CONTRACTOR shall complete the entire Work to the satisfaction of the PROJECT MANAGER and INSPECTOR and in accordance with the Specifications and drawings herein mentioned, at the prices fixed in the Contract.

Where articles or materials are especially manufactured or fabricated for delivery under these specifications, the CONTRACTOR shall at all times employ such workforce, plant, materials, and tools as will be sufficient to complete the performance of the Contract and every part thereof within the time limits stipulated herein. If the

CONTRACTOR fails to employ sufficient workforce, plant, materials, tools, or to maintain adequate progress, the PROJECT MANAGER may require an increase in progress at any point or points or a modification of plans and procedure in such a manner as to accelerate the Work. Failure to adequately staff the project shall be just cause for the CITY to terminate the Contract.

24. CONTRACTOR'S REPRESENTATIVE AT THE SITE

A technically qualified and English-speaking project representative shall be designated in writing as the CONTRACTOR'S representative at the job site, who shall supervise the Work and shall provide competent supervision of the Work until its completion. The CONTRACTOR'S project representative shall be assigned full time and exclusively to this project. Alternate representatives with qualifications equal to or better than the previous representative may be designated. The CONTRACTOR'S representatives shall have at least five (5) years of verifiable experience as the person primarily responsible for supervision of the Work on projects of the same or similar size and nature as this project. Within five (5) days after the Notice of Award the CONTRACTOR shall provide a statement to the PROJECT MANAGER with the following:

1. Identification and resume, showing the qualifications and experience of the CONTRACTOR'S representative and the alternate appointed to act in the place of the CONTRACTOR'S representative.
2. References of not less than two (2) previous projects on which the CONTRACTOR'S representative and the alternate had supervisory responsibility on a project of a similar nature and at least one-half or more of the cost of this project. Such references shall include names, addresses, and telephone numbers of owner representatives who worked on the project as well as project information such as project type, size, location and duration.

The PROJECT MANAGER reserves the right to disapprove any candidate named as the CONTRACTOR'S representative or alternate who fails to meet the provisions set forth herein. The PROJECT MANAGER reserve the right to remove, without any right to work on the project, either the CONTRACTOR'S representative or alternate, who in the sole opinion of the PROJECT MANAGER has demonstrated incompetence, lack of ability, or other unsuitability to perform supervision of the Work.

If the CONTRACTOR'S representative or alternate leave the employ of the CONTRACTOR, the CONTRACTOR will be required to replace the individual(s) and fulfill the requirements of this Article within fifteen (15) calendar days. In no event shall any Work proceed in the absence of an approved representative.

The CONTRACTOR'S representative or alternate shall have full authority to act on behalf of the CONTRACTOR, including, but not limited to final approval of Change Orders and Supplemental Agreements. All directions given by the PROJECT MANAGER to said representative or alternate shall be considered as having been given to the CONTRACTOR. Such instructions given by the PROJECT MANAGER to the CONTRACTOR'S representative or alternate will be confirmed in writing. All instructions and directions given by the PROJECT MANAGER or the INSPECTOR will be limited to matters properly falling within the PROJECT MANAGER'S or the INSPECTOR'S authority as specified in AUTHORITY OF THE RECREATION AND PARK COMMISSION, PROJECT MANAGER AND INSPECTOR of these General Conditions.

The CONTRACTOR'S representative or alternate shall be present at the site of the Work at all times while Work under the Contract is in progress. Failure to observe this requirement shall constitute suspension of the Work by the CONTRACTOR, until such time as said representative or alternate is again present at the site, and no payment will be allowed for any Work performed in the absence of said representative or alternate. Work performed in violation of these provisions shall be removed and reconstructed, re-fabricated, or reinstalled under the required supervision. No extensions of time will be granted, nor will additional payment be allowed for any costs to the CONTRACTOR for slowdown, delays, idled equipment, or any other costs incurred by the CONTRACTOR as the direct or indirect result of such suspension.

Whenever the Work is defined as being suspended under the provisions of this Article, any such suspension in excess of ten (10) calendar days shall constitute just cause for the CITY to terminate the Contract under the provisions of TERMINATION OF CONTRACT BY CITY (CONTRACTOR DEFAULT) of these General Conditions.

25. FAMILIARITY WITH PLANS AND SPECIFICATIONS

It shall be the responsibility of the CONTRACTOR to be thoroughly familiar with all details of the Project, including the Work of CONTRACTOR'S forces and all Subcontractors. The CONTRACTOR shall call the following to the attention of both the PROJECT MANAGER and the INSPECTOR in writing within twenty-four (24) hours of discovery, before any Work is performed:

1. Errors and omissions in the Plans and Specifications;
2. Work on the Plans or in the Specifications which, if so constructed, would result in a conflict or interference with other Work or the Work of other trades, including the location of fixtures and equipment;
3. Existing improvements visible at the job site, for which no existing disposition is made on the Plans or in the Specifications but which could reasonably be assumed to interfere with the satisfactory completion of the improvements contemplated by the Plans and Specifications.

Failure to notify shall constitute a waiver by the CONTRACTOR of any claim for delay or other damages occasioned by such defect. If the CONTRACTOR proceeds with the Work without instructions from the PROJECT MANAGER, the incorrect Work shall be removed and corrections made to comply with the PROJECT MANAGER'S instructions, at no cost to the CITY. The requirements of this Article are applicable to typographical errors in the Specifications and notational errors on the Plans where ambiguity or inadequate description exists.

26. JOB CONDITIONS

The CONTRACTOR shall visit the job site as soon as practicable after award of the Contract and ascertain all conditions affecting necessary procedure and sequencing of Work operations in the execution of the Work, including condition of available roads and streets, or clearances, restrictions and other limitations affecting transportation and ingress and egress to the job site. The CONTRACTOR shall determine the nature and types of Work to be performed and shall be responsible for all Work to be accomplished.

The CONTRACTOR shall enter the job site as noted in Article 4, SITE SECURITY of the General Requirements. The CONTRACTOR will be restricted to the immediate Work areas on the job site and shall in no case go beyond the Work limits noted on the drawings or as otherwise directed by the PROJECT MANAGER. The job site shall be enclosed with a temporary chain link fence and gates which shall be removed upon completion of the Work. The CONTRACTOR shall confine all operations of the contracted Work to the boundaries of the job site(s) and shall not interfere with CITY personnel and CITY operations or the Work of other contractors working on or near the site.

CONTRACTOR'S employee access to the job site by private vehicles is prohibited.

No vehicle is allowed in the facility or on the job site except delivery trucks and CONTRACTOR'S identified vehicles and equipment. It shall be the CONTRACTOR'S sole responsibility to arrange and pay for offsite employee parking and transportation, if necessary, so as not to affect the availability of public parking on the grounds of the facility or park site. The CONTRACTOR shall fully cooperate with all authorities on the job site and other contractors not related to the Work of this Contract who might be at the job site and shall comply with all regulations in force at the job site.

27. RESPONSIBILITY FOR SITE

The CONTRACTOR shall be in full charge of and be responsible for the job site and the construction Work of this Contract, subject to the directions of the PROJECT MANAGER or the INSPECTOR. Article 33, INTERFACE/COORDINATION REQUIREMENTS of the General Requirements describes interfaces with other contractors working on the job site. No other operations of any nature shall be performed except as specifically authorized in the Contract Documents or as authorized by the PROJECT MANAGER.

The CONTRACTOR shall exercise care not to damage improvements and adjacent land. The CONTRACTOR shall correct any damage caused within seventy-two (72) hours by restoring the land and improvements damaged to their original condition and shall indemnify and hold the CITY harmless for any such damage as specified in INDEMNIFICATION of these General Conditions.

28. WORKMANSHIP AND MATERIALS

All materials, parts and equipment furnished by the CONTRACTOR for the Work shall be new, high grade and free from defects. Materials and Work quality shall be subject to the INSPECTOR'S approval.

29. INJURY AND ILLNESS PREVENTION - SAFETY MEASURES

Safety is the responsibility of the CONTRACTOR. The CONTRACTOR shall observe and comply with the safety provisions of all applicable laws, building and construction codes, safety and health regulations of the California Code of Regulations, and with applicable CITY Safety Policies.

If a Work procedure or condition exists that is a violation of said safety standards, the PROJECT MANAGER or INSPECTOR may order the CONTRACTOR to comply with said safety provisions, and the CONTRACTOR shall comply with such orders at its own expense. If the CONTRACTOR fails to act promptly, the PROJECT MANAGER or INSPECTOR is authorized to suspend the Work. Failure of the PROJECT MANAGER or the INSPECTOR to make such demands shall not relieve the CONTRACTOR of its obligations to secure the safe conduct of the Work.

In the event of an emergency constituting an immediate hazard to the health or safety of the public or CITY employees, property, or licensee, the CITY may undertake, at the CONTRACTOR'S sole expense, without prior notice, all Work necessary to correct such hazardous conditions when it was caused by Work of the CONTRACTOR not being in accordance with the requirements of this Contract.

First aid facilities and supplies shall be kept and maintained by the CONTRACTOR at the site of the Work. The CONTRACTOR shall cause all persons within the construction area to wear protective helmets. In addition, all employees of the CONTRACTOR and its Subcontractors shall be provided with, and required to use, personal protective and life saving equipment set forth in California Construction Safety Orders and the OSHA Safety and Health Standards for Construction.

30. PROTECTION OF PERSONS AND PROPERTY AND RESTORATION OF EXISTING IMPROVEMENTS

The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey monuments or reference points without authorization from the PROJECT MANAGER. No pavement breaking or excavation shall be started until all survey monuments or other reference points that will be disturbed by the construction operations have been properly referenced by the PROJECT MANAGER. It shall be the CONTRACTOR'S responsibility to notify the PROJECT MANAGER and the INSPECTOR of the time and location that Work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey monuments or reference points disturbed, without authorization by the PROJECT MANAGER, shall be accurately restored by the CITY at the CONTRACTOR'S sole expense after all street or roadway resurfacing has been completed.

All paved areas including asphaltic concrete beams cut or damaged as a result of construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavement shall conform to the requirements of the affected pavement owner. All pavement which is subject to partial removal shall be neatly saw cut in straight lines.

In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

Where sidewalks have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks, properly protected, promptly after backfilling and shall maintain them in satisfactory condition until the final restoration thereof has been made.

All utilities encountered along the line of the Work shall be maintained continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the PROJECT MANAGER are made. Utilities shall include, but not be limited to, all above or below-ground conduit, pipes, ducts, cables, and appurtenances associated with oil, gas, water, steam, irrigation, process, sewer, storm drain, wastewater, air, electrical, power, instrumentation, communication, telephone, cable, TV, and lighting systems, whether or not owned by the CITY.

The CONTRACTOR shall protect all existing utilities and improvements not designated for removal. Necessary potholing shall be accomplished at the CONTRACTOR'S expense. The CONTRACTOR shall determine the exact locations and depths of all utilities indicated on the drawings. The CONTRACTOR shall make exploratory excavations of all utilities. All such exploratory excavations shall be performed as soon as practicable after award of the Contract and in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR'S Work. When such exploratory excavations show the utility location as indicated on the drawings to be in error, the CONTRACTOR shall so notify the INSPECTOR and the PROJECT MANAGER. The CONTRACTOR should not rely upon plan designation of location of underground utilities. The number of exploratory excavations and extent of potholing required shall be that number which is sufficient to determine the alignment and grade of the utility. No costs shall be allowed for such Work except those included in the CONTRACTOR'S proposal.

Prior to any excavation in the vicinity of any existing underground facilities, the CONTRACTOR shall notify the INSPECTOR and the PROJECT MANAGER, and the respective authorities representing the owners or agencies responsible for such facilities, not less than three (3) working days, nor more than five (5) working days, of their intention to begin excavation. The CONTRACTOR shall make arrangements for and provide access such that a representative of said owners or agencies may be present during such Work.

Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is shown on the drawings, the CONTRACTOR shall at its own expense, remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement to a place and in a manner as directed by the PROJECT MANAGER, and the owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal. When utilities that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the PROJECT MANAGER not less than fifteen (15) days in advance for necessary measures to be taken to prevent interruption of service.

The CONTRACTOR shall notify the PROJECT MANAGER thirty (30) calendar days in advance of any proposed connection, and shall notify the PROJECT MANAGER and the INSPECTOR twenty-four (24) hours prior to the actual connection, to any existing utility.

Any utility or improvement which is damaged by the CONTRACTOR shall be immediately repaired at the CONTRACTOR'S expense, to a condition equal to, or better than, the condition it was in prior to such damage or temporary relocation. If the CONTRACTOR fails or refuses to promptly repair the utility or improvement, the CITY may perform the necessary Work at the CONTRACTOR'S expense and no time extension shall be allowed to the CONTRACTOR. The CONTRACTOR is not relieved of provisions of this Article even in the event such damage occurs after backfilling or is not discovered until after completion of backfilling.

All repairs to a damaged improvement shall be inspected and approved by the INSPECTOR and an authorized representative of the improvement owner before being concealed by backfill or other Work. In case of damage, which in the opinion of the PROJECT MANAGER or the INSPECTOR, threatens the safety of persons or property, the CONTRACTOR shall immediately make all repairs necessary for removal of the hazard. Should the CONTRACTOR fail to promptly take all necessary action, the CITY has the option to remove any hazard resulting

from damages caused by the CONTRACTOR at the CONTRACTOR'S expense without waiving any other rights the CITY may have, and no time extension will be allowed to the CONTRACTOR.

In the event that the CONTRACTOR damages any existing utilities that are not shown on the drawings or the locations of which are not made known to the CONTRACTOR prior to excavation, the CONTRACTOR shall immediately notify the INSPECTOR and take all measures necessary to prevent further damage. The CONTRACTOR shall then immediately make a written report to the PROJECT MANAGER and shall make repairs as directed by the PROJECT MANAGER. Payment for this extra Work will be made pursuant to the provisions contained in Article 27, PAYMENT FOR CHANGES AND EXTRA WORK of the General Requirements.

Notwithstanding that an existing utility or substructure is not shown on the original Plans and Specifications, if the existence and location thereof was made known to the CONTRACTOR prior to excavation, the utility or

substructure constitutes an existing known condition, and the CONTRACTOR is responsible for protecting the utility or substructure.

Damage to a utility known to the CONTRACTOR shall be repaired at the CONTRACTOR'S expense.

31. NON-CONFORMING WORK

Except as set forth in this Article, all non-conforming Work and materials, in place or not, shall be removed immediately from the site or corrected to conform to all requirements of the Contract Documents, by the CONTRACTOR, at the sole expense of the CONTRACTOR.

If the CONTRACTOR fails to remove, replace or correct any non-conforming Work or materials within seventy two (72) hours of discovery, the PROJECT MANAGER may cause such Work or materials to be removed and replaced. Such removal and replacement shall be at the sole expense of the CONTRACTOR and all such cost shall be deducted from any amounts that are due or may become due to the CONTRACTOR.

Failure of the INSPECTOR or the PROJECT MANAGER to notify the CONTRACTOR of any non-conforming Work shall not constitute acceptance of any non-conforming Work. The CONTRACTOR'S obligation to remove, replace or correct any non-conforming Work, whenever discovered, shall continue to the end of the guaranty-warranty period provided for in Article 16, GUARANTY-WARRANTY of the General Requirements. The CITY reserves and retains all rights and remedies at law against the CONTRACTOR and their Surety for correction of any and all latent defects discovered after the guaranty-warranty period.

The Contract Documents may be modified for the purpose of allowing non-conforming Work to become acceptable in lieu of the CONTRACTOR'S obligation to remove and replace all such non-conforming Work. Such modification shall be effective only upon the written agreement of the CONTRACTOR and the PROJECT MANAGER. Such written agreement shall be issued as a Change Order, which shall include all of the following provisions.

1. A statement that the Work as constructed is non-conforming Work.
2. The specifications by which the non-conforming Work will be made to conform to the requirements of the Contract Documents.
3. A statement that all modifications to the non-conforming Work shall be at the sole expense of the CONTRACTOR.
4. A statement that the CONTRACTOR waives and releases any and all claims against the CITY, including time and impacts, in any way whatsoever related to the non-conforming Work, the modification of such non-conforming Work, and the time to negotiate such a modification.
5. The amount representing the value of the Work specified in the Contract Documents less the value of the Work as constructed, as a credit to the CITY, which shall be deducted from the amount of the Contract.

No Work shall proceed which shall make the non-conforming Work more costly to correct nor to modify such non-conforming Work until the PROJECT MANAGER and the CONTRACTOR execute such a Change Order. The PROJECT MANAGER may grant permission, in response to a written request from the CONTRACTOR, to proceed with the Work before finalization of such a Change Order, if they find the request to be in the best interest of the CITY.

Any delays or impacts arising on the Work as a result of construction or delivery of non-conforming Work or materials shall be at the CONTRACTOR'S sole expense, regardless of whether the Work ultimately becomes the subject of a Change Order, and no time extension shall be allowed to the CONTRACTOR.

Acceptance by the INSPECTOR of such previous non-conforming Work, after execution of the Change Order, does not act to waive or otherwise negate the CONTRACTOR'S obligations to guarantee such Work as set forth in Article 16, GUARANTY-WARRANTY of the General Requirements.

Failure of the CONTRACTOR to comply with the requirements of this Article shall constitute default of the Contract by the CONTRACTOR and the CITY may terminate the Contract as provided for in TERMINATION OF CONTRACT BY CITY (CONTRACTOR DEFAULT).

32. SUBCONTRACTORS AND SUB-SUBCONTRACTORS (Revised as of 2/12/2016)

The Contractor shall perform on the site and with its own organization not less than thirty (30%) of the total Contract Price, unless a different percentage is designated on Schedule "A" SUBCONTRACTORS AND SUPPLIERS in the Instructions to Bidders, page 16. Any items designated "specialty items" in the Bid Proposal may be performed by subcontract and the amount of all such "specialty items" may be deducted from the Contract Price before computing the amount of Work required to be performed by the Contractor with its own organization. The dollar value included in the percentage performed by the Contractor shall include the value of labor, materials and equipment to be incorporated or used in the Work and directly purchased by the Contractor and shall not include the value of Work, including labor, materials and equipment, incorporated or used in the Work, performed or provided by Subcontractors.

Bidders must list all Subcontractors in the Bid, regardless of the dollar amount of the work to be performed, if the Bidder wishes to have the Subcontract amount credited toward meeting the MBE/WBE/SBE/EBE/DVBE/OBE levels of participation of the Project. Subcontractors added to the project following acceptance of the Bid and award of the Project will not be credited toward meeting the MBE/WBE/SBE/EBE/DVBE/OBE levels of participation for this Project.

Listed vendors and/or Suppliers will be limited to 60% of their listed dollar value toward achieving the anticipated MBE/WBE/SBE/EBE/DVBE/OBE levels of participation for this Project, unless the vendor and/or Supplier manufactures or substantially alters the materials/supplies.

The designated percentage of the total Contract Price the Contractor is to perform may not be reduced below that level by the addition of Subcontractor's added after Award of the Project.

The Inspector, acting on behalf of the Board of Recreation and Park Commissioners, will be responsible for approval of all Subcontractors, whether Bid-listed or not, and all Sub-subcontractors employed on the Project.

The Contractor must list in the original bid each Subcontractor who will perform Work or render services in an amount in excess of one-half of 1 percent of the Contractor's total Bid or $10,000.00, whichever is greater.

Subletting or Subcontracting of any portion of the Work in excess of one-half of 1 percent of the Contractor's original total Bid or $10,000.00, whichever is greater, for which no Subcontractor was designated in the original Bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the Inspector setting forth the facts constituting the emergency or necessity.

If the Contractor fails to specify a Subcontractor, or if the Contractor specifies more than one Subcontractor for the same portion of Work to be performed under the Contract in excess of one-half of 1 percent of the Contractor's total original Bid or $10,000.00, whichever is greater, the Contractor agrees that it is fully qualified to perform that portion of Work itself, and that it shall perform that portion itself.

The Contractor shall set forth in its Bid the following: The name, location of the place of business, telephone number, California State Contractor's License Number and dollar amount of each Subcontractor who will perform Work, labor, service, supply specifically fabricated materials or equipment in an amount in excess of one-half of 1 percent of the Contractor's total Bid, or $10,000.00, whichever is greater.

The Contractor shall list only one Subcontractor for each portion of Work as defined by the Contractor in its Bid.

Acceptance by the Board of Recreation and Park Commissioners of its Bid is dependent upon each Bid listed Subcontractor, and all subsequently approved additional Subcontractors, performing the dollar value of Work listed or approved. Any reduction, increase, or other change to any Subcontract amount without prior approval by Board of Recreation and Park Commissioners is considered an Unauthorized Subcontractor Substitution and is subject to a penalty of ten (10) percent of the Subcontract amount, whether Bid-listed or not. A Subcontract dollar value

increased or reduced as the result of a Change Order issued by the Engineer to add or delete from the original scope of Work shall not be subject to a penalty for an Unauthorized Subcontract Substitution.

Acceptance by the Board of Recreation and Park Commissioners of its Bid shall not entitle Subcontractors to recognition for any direct or contractual relationship with the City, nor shall it constitute approval of the use of any materials other than those specified.

The Contractor shall be responsible for all acts of all Subcontractors at all tiers. The Contractor shall coordinate all work performed by subcontractors in the interest of the City.

All Subcontractors who will be working on the Project shall be approved in writing by the Inspector prior to beginning Work, regardless of the dollar amount of Work to be performed, and whether or not they were listed in the original Bid.

Requests for approval of all Subcontractors, or request for substitution of a Subcontractor, shall be made in writing to the Inspector located at the Public Works Building, 1149 S. Broadway, 3rd Floor, Los Angeles, CA, 90015, and said request shall contain the following information for each Subcontractor:

1) Project Name
2) Project Work Order Number
3) Subcontractor's Name
4) Subcontractor's Address
5) Subcontractor's Phone Number
6) Subcontractor's Status (WBE, MBE, SBE, EBE, DVBE, OBE)
7) Subcontractor's State of California Contractor License Number
8) Subcontractor's City Business Tax Registration Certificate Number (BTRC)
9) Dollar amount of Subcontract work to be performed
10) Description of Subcontract work to be performed

Failure to provide any of the information listed will result in denial of approval until such time as the information is provided.

Failure to obtain approval of the Inspector prior to each Subcontractor performing Work on the Project may result in suspension of Work by that Subcontractor, removal of Work performed by unapproved Subcontractors, assessment of penalties, and possible sanctions against the Contractor.

Additional Subcontractors may be added after the time of original Bid. The value of Work to be performed by additional Subcontractors may not be greater than one-half of 1 percent of the Contractor's original total Bid or ten thousand dollars ($10,000.00), whichever is greater, unless the Subcontractor will be performing Work added by Change Order causing changes or deviations from the original Contract.

The Contractor shall provide the dollar amount of Work to be performed in all requests for additional Subcontractors. Failure to specify a dollar amount of Work to be performed will result in denial of additional Subcontractors until such time as the amount is provided.

Failure of the Contractor to request and obtain approval for a reduction in either a Bid-listed Subcontract amount or the Subcontract amount of a Subcontract added after the original Bid shall result in a penalty of ten percent of the Subcontract amount.

A Contractor whose Bid is accepted may not:

1) Substitute any person as Subcontractor in place of a Subcontractor listed in the original Bid, except that the Inspector, acting on behalf of the Board of Recreation and Park Commissioners, may consent to the substitution of another Subcontractor for one of the following situations:

A) When the Subcontractor listed in the original Bid or proposal after having had a reasonable opportunity to do so fails or refuses to execute a written contract, when that written contract, based upon the general terms, conditions, plans and specifications for the project involved or the terms of that Subcontractor's written bid, is presented to the subcontractor by the Contractor.

B) When the listed Subcontractor becomes bankrupt or insolvent.

C) When the listed Subcontractor fails or refuses to perform its subcontract.

D) When the listed Subcontractor fails or refuses to meet the bond requirements of the Contractor as set forth herein.

E) When the Contractor demonstrates to the Inspector's satisfaction that the name of the Subcontractor was listed as a result of an inadvertent clerical error.

F) When the listed Subcontractor is not licensed pursuant to the State of California Contractor's License Law.

G) When the listed Subcontractor refuses to obtain a City of Los Angeles Business Tax Receipt Certificate (BTRC).

H) When the Inspector concurs with the Contractor that the Work being performed by the listed Subcontractor is unsatisfactory and not in substantial accordance with the Contract Documents, or the listed Subcontractor is delaying or disrupting the progress of the work.

I) When the listed Subcontractor fails to submit an Affirmative Action Plan acceptable to the Inspector.

J) When the Board of Recreation and Park Commissioners determines that a listed Subcontractor is not a responsible contractor.

2) Permit a Subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original Subcontractor listed in the original Bid, without the consent of the Inspector.

3) Other than in the performance of Change Orders causing changes or deviations from the original Contract, sublet or Subcontract any portion of the Work in excess of one half of 1 percent of the Contractor's total Bid as to which its original Bid did not designate a Subcontractor.

4) Reduce the dollar amount of a Bid-listed Subcontract without the written approval of the Inspector.

A request for substitution of any Subcontractor, whether Bid-listed or not, must be made in writing to the Inspector and must include letter(s) of explanation as to the reason for the requested substitution.

It is considered a substitution if anyone other than the Bid-listed and/or approved Subcontractor(s), including the Contractor, performs any portion of the Work designated to be performed by said Subcontractor.

Failure to obtain approval for a Subcontractor substitution may result in rejection of the affected Work, penalties assessed for failure to obtain approval, and possible sanctions by the City.

All substitutions of Subcontractors, whether MBE/WBE/SBE/EBE/DVBE/OBE or not, shall be approved in writing by the Board of Recreation and Park Commissioners prior to any Work being performed by the substituting Subcontractor.

The Contractor shall conduct a Business Inclusion Program Outreach prior to approval of any requested Subcontractor substitution, regardless of the status (MBE/WBE/SBE/EBE/DVBE/OBE) of the contractor being substituted for. For MBE/WBE/SBE/EBE/DVBE/OBE Subcontractor substitution requests, the Contractor shall comply with the Business Inclusion Program Outreach requirements of Pages 15-15R of the Instructions to Bidders (Volume I). The Business Inclusion Program Outreach for any requested Subcontractor substitution must be reviewed and approved by the Special Research and Investigation Section of the General Services Division of the Bureau of Contract Administration, whether the Subcontractor was Bid listed or approved after the Award of the Project.

There shall be no decrease in dollar value of Work to be performed by Subcontractors approved as a substitute for a Bid-listed Subcontractor without a change in scope of the Work to be performed by the originally Bid-listed Subcontractor. Written evidence of a change of scope must be provided by the Engineer prior to approval of a change in dollar value of a Bid-listed Subcontractor.

Prior to approval of the Contractor's request for substitution, the Inspector shall give notice in writing to the Subcontractor affected by the Contractor's request to substitute and of the reasons for the request. The notice shall be served by certified or registered mail to the last known address of the Subcontractor. The listed Subcontractor who has been so notified shall have five (5) Workdays within which to submit written objections to the substitution. Failure to file these written objections within five (5) Workdays of notification shall constitute the listed Subcontractor's consent to the substitution. Notification by the Inspector may be made by phone in lieu of written notification via certified or registered mail if agreed to by the listed Subcontractor and followed by written request. Upon notification by phone, the listed Subcontractor may file written objections within five (5) days of notification.

If written objections are filed, the Inspector shall give notice of at least five (5) Workdays to the listed Subcontractor of a hearing on the Contractor's request for substitution.

The Contractor, as a condition to assert a claim of Inadvertent Clerical Error in the listing of a Subcontractor, shall within two Workdays after the time of the original Bid opening by the Board of Recreation and Park Commissioners give written notice to the Inspector and the Board of Recreation and Park Commissioners and copies of such notice to both the Subcontractor he claims to have listed in error and the intended Subcontractor who had bid to the Contractor prior to Bid opening.

Written notice of an Inadvertent Clerical Error shall be forwarded within two (2) days after the time of the original Bid opening by every Contractor claiming such an error. Failure to submit such notice within the time prescribed shall make any such subsequent claim of Inadvertent Clerical Error invalid.

Any listed Subcontractor who has been notified by the Contractor of an Inadvertent Clerical Error shall be allowed six (6) Workdays from the time of the Bid opening to submit to the Inspector and to the Contractor written objection to the Contractor's claim of Inadvertent Clerical Error. Failure of such listed Subcontractor to file such written notice within the six (6) Workdays shall constitute agreement that an advertent clerical error was made.

The Inspector shall, in the absence of compelling reasons to the contrary, consent to the requested substitution based on an Inadvertent Clerical Error if:

1) The Contractor, the Subcontractor listed in error, and the intended Subcontractor each submit an affidavit to the Inspector along any additional information as the parties may wish to submit that an Inadvertent Clerical Error was in fact made, provided that the affidavits from each of the three parties are filed within eight (8) Workdays from the time of the original Bid opening, or

2) If such affidavits are filed by both the Contractor and the intended Subcontractor within eight days of the original Bid opening but the Subcontractor whom the Contractor claims to have listed in error does not submit within six (6) Workdays, to the Inspector and to the Contractor, written objection to the Contractor's claim of Inadvertent Clerical Error as provided in this article.

If such affidavits are filed by both the Contractor and the intended Subcontractor but the listed Subcontractor has, within six (6) Workdays from the time of the original Bid opening, submitted to the Inspector and to the Contractor written objection to the Contractor's claim of Inadvertent Clerical Error, the Inspector shall investigate the claims of all parties and schedule a public hearing before the Board of Recreation and Park Commissioners to determine the validity of such claims. Any determination shall be based on the facts contained in the declarations submitted under penalty of perjury by all three parties and supported by testimony given to the Board of Recreation and Park Commissioners. The Board of Recreation and Park Commissioners may, on its motion or that of any other party, admit testimony of other Contractors, any Bid registries or depositories, or any other party in possession of facts, which may have a bearing on the decision of the Board of Recreation and Park Commissioners. The findings of the Board of Recreation and Park Commissioners shall be final.

33. RESPONSIBILITY OF CONTRACTOR TO ACT IN EMERGENCY

In case of an emergency that threatens loss of or damage to property or injury to persons, the CONTRACTOR shall act, without instructions from the CITY, as the situation may warrant. The CONTRACTOR shall immediately inform the PROJECT MANAGER and the INSPECTOR of the emergency action taken. Any claim shall be submitted to the PROJECT MANAGER. If practical the amount of compensation, if any, shall be determined by agreement prior to the issuance of a Change Order. However, if the emergency is created or aggravated by the CONTRACTOR, it shall be liable for the resulting damages. If the CONTRACTOR fails to take the necessary action as required by such an emergency the CITY may assign another CONTRACTOR or use its own forces to perform the emergency Work at the CONTRACTOR'S sole expense.

34. ASSIGNMENT

The CONTRACTOR shall not assign, transfer, convey or otherwise dispose of this Contract or any of the proceeds there under unless written consent of the CITY has been obtained. No right under this Contract or claim for any proceeds due or to become due hereunder shall be asserted against the CITY, or persons acting for the CITY, by reason of any so-called assignment, transfer or conveyance of this Contract or any part thereof unless such assignment, transfer or conveyance has been authorized by the written consent of the CITY. The instrument of assignment, transfer or conveyance shall contain a clause subordinating the claim of the assignee, transfer or conveyor to all prior liens for services rendered or materials supplied for the execution of the Work.

35. INDEPENDENT CONTRACTOR

The CONTRACTOR represents that it is fully experienced and properly qualified to perform the class of Work required for the CONTRACT and that it is properly licensed, equipped, organized and financed to perform the Work. The CONTRACTOR shall be an independent contractor. The CONTRACTOR is not an agent of the CITY in the performance of the CONTRACT, and shall maintain complete control over its employees and its Subcontractors and Suppliers of any tier. Nothing contained in the CONTRACT or any Subcontract awarded by the CONTRACTOR shall create any relationship between any Subcontractor and the CITY. The CONTRACTOR shall perform the Work in accordance with its own methods, in compliance with the terms of the CONTRACT.

INDEMNIFICATION AND INSURANCE REQUIREMENTS

36. INDEMNIFICATION

Except for the active negligence or willful misconduct of the CITY, the CONTRACTOR undertakes and agrees to defend, indemnify and hold harmless, through legal counsel acceptable to the CITY, the CITY, and any and all of the CITY'S Boards, Officers, Agents, Employees, Assigns, and Successors in Interest from and against all suits and causes of action, claims, losses, demands and expenses, including, but not limited to, attorney's fees and cost

of litigation, damage or liability of any nature whatsoever, arising out of or related to the performance or nonperformance by CONTRACTOR or its Subcontractors, Sub-Subcontractors, or Suppliers, of any tier, of any portion of the construction of the Project, including but not limited to CONTRACTOR'S negligent acts, errors, omissions, breach of contract, breach of warranty (express or implied), or willful misconduct.

It is agreed that such defense and indemnity shall extend to the CITY'S PROJECT MANAGER, Architect/Engineer or other Design Consultant providing services under written agreement with the CITY covering any portion of the Project. Provided, however, that the Design Consultant shall be solely responsible for the enforcement of any request made by said Consultant for indemnification or defense by the CONTRACTOR. It is further provided that the CITY shall have no liability whatsoever for any failure of the CONTRACTOR to comply with any request from the Consultant for indemnity or defense.

It is further agreed that the defense and indemnity obligations of the CONTRACTOR under this Article shall not extend to the liability of the Design Consultant or its agents, employees or subconsultants, arising as a result of such indemnitee's own active negligence, errors or omissions or from (1) the preparation or approval of maps, Plans, opinions, reports, surveys, change orders, designs or Specifications, or (2) the giving of or failure to give directions or instructions by the indemnitee provided that such giving or failure to give is the primary cause of the dame or injury.

37. INSURANCE

A. GENERAL

During the term of this Contract and without limiting the CONTRACTOR's indemnification of the CITY, the CONTRACTOR shall provide and maintain at its own expense, insurance having the limits customarily carried and actually arranged by the CONTRACTOR but not less than the amounts and types listed on the Insurance Requirements Form in Volume 1 of these Contract Documents, covering its operations hereunder subject to the following conditions as they may variously apply:

1. ADDITIONAL INSURED/ADDITIONAL INTEREST/LOSS PAYEE

The CITY, it's Recreation and Park Commissions, Officers, Agents, Employees and Design Consultant shall be included as:

a. Additional Insureds in all required General Liability and property insurance and Additional Interests in all required Automobile Liability insurance.

b. Named Insureds in all required Owners and Contractors Protective Liability insurance policies.

c. Loss Payee As Its Interest May Appear in all required property, fidelity or Surety coverages.

d. Listing of other entities as additional insures may be required for specific projects due to their funding source (such as, Prop A funded projects require that Los Angeles County be listed as an additional insured).

The CITY and other interests listed above need not be named on Workers' Compensation/Employer's Liability, Professional Errors and Omissions and Second-party Legal Liability coverages (such as Garage Keepers' Legal).

2. INSURANCE APPROVAL

All insurance required hereunder shall conform to the CITY requirements established by Charter, ordinance or policy. Evidence of insurance shall be submitted to the Department's Risk Control Coordinator and approved by the City Attorney prior to commencement of any Work or tenancy under this Contract in accordance with the Los Angeles Administrative Code.

3. ALTERNATIVE PROGRAMS

Alternative Risk Financing mechanisms such as Risk Retention Groups, Risk Purchasing Groups, off-shore carriers and captive insurance programs are subject to review of their financial statements by the CITY before an approval can be granted by the City Attorney.

4. ADMITTED CARRIER/LICENSED CALIFORNIA BROKER

Insurance shall be obtained from brokers or carriers authorized to transact insurance business in California. Surplus lines insurance from carriers who are not admitted in California must be submitted through a California-licensed broker or agent.

Surplus lines coverage must also contain a Service of Suite provision whereby the underwriters will submit as necessary to any court of competent jurisdiction in California and agree that all matters arising there under will be determined in accordance with the law and practice of such court. It must further give the name and address of the underwriter's agent for service of process located within California or must nominate the California Insurance Commissioner as such agent.

5. PRIORITY OF COVERAGE

The CONTRACTOR's insurance shall not call on the CITY's program for contributions.

6. CANCELLATION/REDUCTION IN COVERAGE NOTICE

With respect to the interest of the CITY, if an insurance company elects to cancel insurance before the stated expiration date, or declines to renew in the case of a continuous policy, or materially reduces the coverage period by changing the retroactive date (if any), or the extended discovery period (if any), or reduces the stated limits other than by impairment of an aggregate limit, or materially reduces the scope of coverage which affects the CITY's interest, the company will provide the CITY at least thirty (30) calendar days prior written of such election. Notice will be made by receipted delivery addressed as follows: CITY ATTORNEY, INSURANCE AND BONDS, 1240 City Hall East, 200 NORTH MAIN STREET, LOS ANGELES, CA 90012-4168. It is understood, however, that such notice to the CITY shall not affect the company's right to give a lesser notice to the Named Insured in the event of nonpayment of premium. (L.A. Admin. Code Section 11.54).

7. ACCEPTABLE EVIDENCE

The appropriate CITY Special Endorsement forms, contained in Volume 1 of these Contract Documents, are the preferred form of evidence of insurance. Alternatively, the CONTRACTOR may submit two (2) certified copies of the policy or other evidence acceptable to the City Attorney containing language which complies with subparagraphs 1) through 6) above.

With respect to Professional Liability insurance, either a signed copy of the Policy Declarations Page or a letter from the CONTRACTOR's insurance broker certifying coverage, together with a thirty (30) day cancellation notice endorsement in favor of the CITY as specified in subparagraph 6) will satisfy this requirement.

8. SEPARATION OF INSUREDS

Except with respect to the insurance company's limits of liability, each liability insurance policy shall apply separately to each insured against whom a claim or suit is brought. The inclusion of any person or organization as an insured shall not affect any right which such person or organization would have as a claimant if not so included.

9. RENEWAL

Once the insurance has been approved by the CITY, evidence of renewal of an expiring policy may be submitted on a manually signed renewal endorsement or certificate form. If the policy or carrier has changed, however, new evidence as specified in paragraphs 1) through 8) above, must be submitted.

B. AGGREGATE LIMITS/REDUCTION IN COVERAGE

If any of the required insurance coverages contain aggregate limits, or apply to other operations or tenancy of the CONTRACTOR not related to this Contract, the CONTRACTOR shall give the CITY prompt, written notice of any incident, occurrence, claim, settlement or judgement against such insurance which in the CONTRACTOR's best judgement may diminish the protection such insurance affords the CITY. Further, the CONTRACTOR shall immediately take all reasonable and available steps to restore such aggregate limits or shall provide other insurance protection for such aggregate limits. The CITY may, at its option, specify a minimum acceptable aggregate for each line of coverage required.

The CONTRACTOR shall not make any substantial reductions in scope of coverage (e.g., elimination of contractual liability or reduction of discovery period) which may affect the CITY's protection without the CITY's prior written consent.

C. SELF-INSURANCE AND SELF-INSURED RETENTIONS

Self-insurance programs and self-insured retention in insurance policies are subject to separate approval by the CITY upon review of evidence of the CONTRACTOR's financial capacity to respond. Additionally, such programs or retention must provide the CITY with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance.

D. MODIFICATION OF COVERAGE

The CITY reserves the right at any time during the term of this Contract to change the amounts and types of insurance required hereunder by giving the CONTRACTOR ninety (90) calendar days advance written notice of such change. If such change should result in substantial additional cost to the CONTRACTOR, the CITY agrees to negotiate additional compensation.

E. FAILURE TO PROCURE INSURANCE

The required coverage and limits are subject to availability on the open market at reasonable cost as determined by the CITY. Non-availability or non-affordability must be documented by a letter from the CONTRACTOR'S insurance broker or agent indicating a good faith effort to procure the required insurance and showing, as a minimum, the names of the insurance carriers and the declinations or quotations received from each.

Within the foregoing constraints, the CONTRACTOR'S failure to procure or maintain required insurance or a self-insurance program during the entire term of this Contract shall constitute a material breach of this Contract under which the CITY may immediately suspend or terminate this Contract or, at its discretion, procure or renew such insurance to protect the CITY'S interests and pay any and all premiums in connection therewith, and recover all monies so paid from the CONTRACTOR.

F. UNDERLYING INSURANCE

The CONTRACTOR shall be responsible for requiring indemnification and insurance as it deems appropriate from its consultants, agents and Subcontractors, if any, to protect the CONTRACTOR's and the CITY'S interests, and for ensuring that such persons comply with any applicable insurance statutes. The CONTRACTOR is encouraged to seek professional advice in this regard.

G. WORKERS' COMPENSATION

By signing this Contract, the CONTRACTOR hereby certifies that it is aware of the provisions of Section 3700 *et seq.*, of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and that it will comply with such provisions at all such times as they may apply during the performance of the Work pursuant to this Contract.

A waiver of subrogation in favor of the CITY will be required when Work is performed on CITY premises under hazardous conditions.

H. ALL RISK BUILDER'S RISK/INSTALLATION FLOATER

During the course of construction, the CONTRACTOR shall secure and maintain an All Risk Builder's Risk Insurance policy covering loss, damage or destruction of property, including materials in transit and stored on and off site, in an amount equal to the value of the construction and materials on hand.

An Installation Risk or "Floater" Policy, written to cover only specific types of equipment during construction, may be provided to cover damage to Work or high valued equipment or materials.

Coverage shall remain in force until the Work is completed and accepted by the CITY. Acceptable evidence of coverage shall be in the form of an endorsement to the policy which names the CITY as an additional named insured and as Loss Payee As Its Interest May Appear.

I. TYPICAL COVERAGES REQUIRED

The coverages required in A above shall be at least as broad as:

1. General Liability: Insurance Services Office Commercial General Liability coverage (Occurrence Form CG 00 01).
2. Automobile Liability: Insurance Services Office Form Number CA 00 01 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).
3. Professional Liability: If applicable, errors and omissions liability appropriate to the consultant's profession, with a discovery period of not less than twelve (12) months after completion of Work or termination of Contract.

J. TYPICAL LIMITS OF LIABILITY

Unless otherwise specified in Form Gen. 146/IR, the CONTRACTOR shall maintain limits no less than:

1. General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability or other form with a general aggregate limit is used, either the general aggregate shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: $1,000,000 per accident for bodily injury and property damage, combined or equivalent in split limits.
3. Employer's Liability: $1,000,000 per accident for bodily injury or disease.
4. Professional Liability: $1,000,000 per occurrence.

K. CONTRACT BONDS

Before the execution of the Contract by the RECREATION AND PARK COMMISSION, the bidder shall file with the RECREATION AND PARK COMMISSION Surety bonds satisfactory to the RECREATION AND PARK COMMISSION in the amounts and for purposes noted below. Bonds shall be duly executed by a responsible corporate Surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California. Bonds shall be issued by a Surety who is listed in the latest revision of U.S. Department of Treasury Circular 570, is authorized to issue bonds in California, and whose bonding limitation shown in said circular is sufficient to provide bonds in the amount required by the Contract. The Bidder shall pay all bond premiums, costs, and incidentals. On Contracts estimated by the PROJECT MANAGER to be less than $2 million, bonds may be obtained from an insurance company with a Certificate of Authority from the California Insurance Commissioner authorizing the company to write Surety insurance within the State of California.

Each bond shall be signed by both the Bidder and the Surety, and the signature of the authorized agent of the Surety shall be notarized.

The Bidder shall provide two good and sufficient surety bonds. The "Payment Bond" (Material and Labor Bond) shall be for not less than one hundred percent (100%) of the Contract price, to satisfy claims of material suppliers and of mechanics and laborers employed by it on the Work. The bond shall be maintained by the CONTRACTOR in full force and effect until the Work is accepted by the RECREATION

AND PARK COMMISSION, and until all claims for materials and labor are paid, and shall otherwise comply with the California Civil Code.

The "Performance Bond" shall be for one hundred percent (100%) of the Contract price to guaranty faithful performance of all Work, within the time period prescribed, in a manner satisfactory to the RECREATION AND PARK COMMISSION, and that all materials and Workmanship will be free from original or developed defects, and comply with requirements and guaranty specified in Article 16, GUARANTY-WARRANTY of the General Requirements.

Should any Surety at any time be unsatisfactory to the RECREATION AND PARK COMMISSION, notice will be given the CONTRACTOR to that effect. No further payments shall be deemed due or will be made under the contract until a new Surety shall qualify and be accepted by the RECREATION AND PARK COMMISSION.

Changes in the Work, or extensions of time, made pursuant to the Contract, shall in no way release the CONTRACTOR or Surety from its obligations. Notice of such changes or extensions shall be waived by the Surety. In addition to the bonds detailed above, the CONTRACTOR shall provide a guarantee bond as detailed in Article 16, GUARANTY-WARRANTY of the General Requirements.

38. SERVICE OF NOTICE

The delivering of any notice, instruction, claim or protest, or other written communication, personally to the CONTRACTOR or the CONTRACTOR'S representative or to the PROJECT MANAGER, or to the City Clerk of the CITY shall constitute service therefore upon the CONTRACTOR, the PROJECT MANAGER, or the CITY, respectively.

The depositing of a post-paid (Registered Mail) wrapper directed to the official address of the CONTRACTOR, the PROJECT MANAGER, or the CITY in any post office, of any notice, instruction, claim or protest, or written communication, shall be deemed sufficient service thereof upon the CONTRACTOR, the PROJECT MANAGER, or the CITY, respectively, and the date of said service shall be the day following the date of postmark.

The official address of the CONTRACTOR shall be the address given in the accepted bid or such other address as the CONTRACTOR may subsequently designate in writing either to the PROJECT MANAGER or to the CITY. The official name and address of the PROJECT MANAGER and the CITY will be supplied to the CONTRACTOR after the award.

39. AGENT TO ACCEPT SERVICE

The CONTRACTOR shall maintain within Los Angeles County a duly authorized agent as identified in the Article entitled SERVICE OF NOTICE to accept service of legal process on its behalf, and shall keep the CITY advised of such agent's name and address during the duration of the CONTRACT and for three (3) years after the Final Payment, or as long as the CONTRACTOR has warranty obligations under Article 16, GUARANTY-WARRANTY of General Requirements, whichever period terminates later. In the event that no such duly authorized agent is on file with the CITY, the CONTRACTOR agrees that the Secretary of State of the State of California shall be the Contractor's agent for service of legal process.

PROGRESS OF WORK

40. TEMPORARY SUSPENSION OF WORK

If the Work of the Contract is suspended or delayed, the CONTRACTOR shall so notify the PROJECT MANAGER in writing within twenty-four (24) hours after the start thereof. If the CONTRACTOR is entitled to reimbursement for such suspension or delay, as specified hereinafter, the CONTRACTOR shall submit a completely detailed statement of the costs thereof, to the PROJECT MANAGER, within twenty (20) calendar days after the termination thereof. Failure to submit such statement of costs or notification within the time specified shall be deemed a waiver of any claims for delay or damages or both by the CONTRACTOR.

If the Work of the Contract is suspended or delayed through no fault of the CITY, all expenses and losses shall be borne by the CONTRACTOR.

If the Work of the Contract is suspended or delayed by an act of the CITY, or by failure of the CITY to furnish required information, and the CONTRACTOR thereby incurs expenses or sustains losses which could not have been avoided by the judicious handling of forces and equipment, and if by a diligent prosecution of the Work the CONTRACTOR could not have completed the Work before such suspension, the CONTRACTOR will be paid such amount as the RECREATION AND PARK COMMISSION may find to be a fair and reasonable compensation for such part of the CONTRACTOR'S actual loss. In no case shall any compensation be made to cover any loss other than actual cash paid for wages, rental of equipment, and materials used in protection of the Work, all of which must be supported by satisfactory written evidence. Such wages shall not include the wages or salary of any individual not necessary for protection of the Work. The CONTRACTOR shall not be entitled to any mark-up for overhead or profit on damages or for extended duration.

The CONTRACTOR shall maintain complete and accurate daily records of all costs due to delay, clearly distinguishing them from the costs of other portions of the Work, and shall submit a detailed written report of such costs to the PROJECT MANAGER within twenty (20) calendar days of incurring the delay. Failure to comply shall result in waiver by the CONTRACTOR to any claims for additional payment and schedule change. In addition, the CONTRACTOR shall submit evidence of any cause of delay specified herein if it has not already done so.

As soon as practicable, following receipt of such report and evidence, if required, the PROJECT MANAGER will determine the nature and extent of such costs and will, if the PROJECT MANAGER finds that payment is due, issue a Change Order therefore, subject to the provisions in Article 27, PAYMENT FOR CHANGES AND EXTRA WORK of the General Requirements. If the PROJECT MANAGER determines that payment is not due, the CONTRACTOR will be so advised in writing. Should the CONTRACTOR disagree with such finding, CONTRACTOR may submit a notice of protest to the PROJECT MANAGER as provided in CLAIMS AND PROTESTS in these General Conditions. The CONTRACTOR shall provide the PROJECT MANAGER with access to its daily cost records or certified copies thereof as requested. All such records shall be retained by the CONTRACTOR and open to inspection and audit by the CITY and the PROJECT MANAGER'S authorized representatives. Except for the additional compensation provided herein before, the CONTRACTOR shall have no claim for damage or compensation for any delay or hindrance whether or not contemplated by the Contract.

41. UNAVOIDABLE DELAY

Should the CONTRACTOR be obstructed or delayed or completion of the Work from causes beyond its control and without its fault or negligence, and solely due to acts of God, acts of government in its sovereign capacity, riots, insurrections, wars, fires, floods, earthquakes, tidal waves, epidemics, quarantine restrictions, industry-wide strikes, freight embargoes, or unusually severe weather, it shall be entitled to a noncompensable extension of time.

The CONTRACTOR shall only be entitled to a noncompensable extension of time for Unavoidable delay in the Work which negatively impacts the critical path of the approved project schedule, and causes the Work of the project to extend beyond the approved Contract Completion date.

The CONTRACTOR shall be entitled to a noncompensable time extension only if it notifies the PROJECT MANAGER immediately at the time the CONTRACTOR is prevented from proceeding with the Work and follows with written notification of the causes of the delay within five (5) calendar days from the beginning of any delay. Also, the CONTRACTOR shall notify the PROJECT MANAGER immediately at the end of the delay and follow up with written notification of the cessation of delay within five (5) calendar days from the end of the delay.

Any claim for a time extension shall be made in writing within twenty (20) calendar days after the conclusion of the delay. The PROJECT MANAGER shall ascertain the facts and the extent of the delay and extend the time for completing the Work if, in his/her judgement, the findings of fact justify such an extension. The PROJECT MANAGER'S decision shall be final and conclusive, subject only to appeal as provided by CLAIMS AND PROTESTS of these General Conditions.

42. ARCHAEOLOGICAL AND PALEONTOLOGICAL DISCOVERIES

If discovery is made of items of archaeological or paleontological interest, the CONTRACTOR shall immediately cease excavation in the area of discovery and shall not continue until ordered by the PROJECT MANAGER.

When resumed, excavation operations within the area of discovery shall be as directed by the PROJECT MANAGER.

Discoveries which may be encountered may include, but not be limited to, dwelling sites, stone implements or other artifacts, animal bones, human bones and fossils. The CONTRACTOR shall be entitled to an extension of time and compensation in accordance with the provision of TEMPORARY SUSPENSION OF WORK of these General Conditions.

43. OTHER CONTRACTS

The CITY may perform other Work related to the Project at the site by the CITY'S own forces, have other Work performed by utility owners or let other direct contracts therefore which shall contain General Conditions similar to these. If such other Work to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other Work; and, if the CONTRACTOR believes that such performance will involve additional expense to the CONTRACTOR or requires additional time and the parties are unable to agree as the extent thereof, the CONTRACTOR may make a claim therefore as provided under CLAIMS AND PROTESTS of these General Conditions.

The CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or the CITY, if the CITY is performing the additional Work with the CITY'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such Work, and shall properly connect and coordinate the Work with theirs. The CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other Work. The CONTRACTOR shall not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of the PROJECT MANAGER and the others whose Work will be affected. The duties and responsibilities of the CONTRACTOR under this Article are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of the CONTRACTOR in said direct contracts between the CITY and such utility owners and other contractors.

If any part of the CONTRACTOR'S Work depends upon proper execution or results of the Work of any such other contractor or utility owner or the CITY, the CONTRACTOR shall inspect and promptly report to the PROJECT MANAGER in writing any delays, defects or deficiencies in such Work that renders it unavailable or unsuitable for such proper execution and results. The CONTRACTOR'S failure to do so will constitute an acceptance of the other Work as fit and proper for integration with the CONTRACTOR'S Work except for latent or nonapparent defects and deficiencies in the other Work.

44. TERMINATION OF CONTRACT BY CITY (CONTRACTOR NOT AT FAULT)

The CONTRACT may be terminated, in whole or in part, at any time, by the CITY, at its sole discretion, without cause and for the CITY'S convenience. Such termination will be accomplished by delivery of a notice of Termination to the CONTRACTOR, specifying the extent to which performance of the Work under the CONTRACT or portion of the CONTRACT shall be terminated and the date upon which such termination shall become effective.

After receipt of a Notice of Termination, except as otherwise directed by the CITY the CONTRACTOR shall:

1. Stop Work under the CONTRACT on the date and to the extent specified in the Notice of Termination.
2. Notify the CITY in writing of all outstanding orders, Subcontracts and contracts entered into by CONTRACTOR for performance of the Work, including the (i) name and address of the vendor, supplier or Subcontractor; (ii) a copy of the complete contract, order or Subcontract; (iii) an accounting of the Work performed and compensation earned by the vendor, supplier or Subcontractor, and (iv) such other information as the CITY may request to assist it in determining whether to terminate or accept assignment of the order, Subcontract or contract.
3. Upon written notice by CITY, terminate all Subcontracts, orders and contracts, of any tier, related to the performance of the Work that the CITY determines shall be terminated and not assigned.

4. Place no further orders or Subcontracts for Goods or services, except as may be necessary for completion of that portion of the Work that has not been terminated.

5. Settle outstanding liabilities and claims arising out of such termination of orders and Subcontracts, with the Acceptance of the CITY if required (which Acceptance shall be final for the purposes of this Article). Assign to the CITY in the manner, at the times, and to the extent directed by the CITY all of the rights, titles, and interests of the CONTRACTOR under such orders, contracts and Subcontracts so terminated.

6. Transfer title and deliver to the CITY in the manner, at the times and to the extent directed by it, the:

    a. Fabricated or unfabricated parts, Work in process, completed Work, supplies, and other Goods procured as a part of, or acquired in connection with the performance of the Work terminated; and

    b. Completed or partially completed plans, drawings, information and other items that would have been required (per the Technical Specifications) to be furnished to the CITY if the Contract had been completed.

7. Use its best efforts to sell the property of the types referred to above in the manner, at the times, to the extent, and at the price(s) directed or authorized by the CITY, providing that the:

    a. CONTRACTOR is not required to extend credit to any purchaser;

    b. CONTRACTOR may acquire any such property under the prescribed conditions; and/or proceeds of any such transfer or disposition are applied or otherwise credited to reduce payments made by the CITY to the CONTRACTOR under the CONTRACT.

8. Take any action that may be necessary, or that the CITY may direct, for the protection and preservation of the property related to the CONTRACT that is in the possession of the CONTRACTOR and in which the CITY has or may acquire an interest.

9. Complete performance of that portion of the Work that has not been terminated by the Notice of Termination, as applicable and in accordance with the CONTRACT.

After receipt of a Notice of Termination for the CITY's convenience, the CONTRACTOR shall submit its termination claim to the CITY requesting payment of such sums as are permitted under the terms of this Article, in the form and with the certification(s) prescribed by the CITY for Claims and Protests. Such Claim shall be submitted promptly but in no event later than six months from the effective date of termination, unless one or more extensions are granted in writing by the CITY upon written request by the CONTRACTOR during such six month period or authorized extension thereof. However, the CITY may receive and act upon any termination claim at any time after the six month period or any extension thereof, if it determines that the facts justify such action. Upon failure of the CONTRACTOR to submit its termination claim within the time specified, the CITY will determine the amount due the Contractor, if any, on the basis of information available, and will pay the CONTRACTOR the amount so determined. Such determination shall be final and binding and payment shall be in full settlement for the Work performed under the CONTRACT.

Subject to the provisions of this Article, the CONTRACTOR and the CITY may agree upon the total or partial amount to be paid to the CONTRACTOR by reason of the total of or partial termination pursuant to this Article. The agreed upon amount shall under no circumstances include any sum for lost profits on the terminated portion of the Work or for consequential damages, of any kind. If agreement is reached, the CONTRACT will be amended by Modification accordingly and the CONTRACTOR will be paid the agreed upon amount.

In the event of failure of the CONTRACTOR and the CITY to agree on the total amount to be paid the CONTRACTOR by reason of the termination of Work pursuant to this Article, the CITY will pay the CONTRACTOR the amounts determined by the City as follows, exclusive of any amounts agreed upon in accordance with the preceding Paragraph:

The CONTRACTOR'S actual cost for the Work properly performed by the CONTRACTOR as of the date of termination, including a 5% allowance for profit on such costs; plus, the reasonable cost of preserving and

protecting property; plus other reasonable costs incidental to the termination of the Work under the CONTRACT, including expense incurred to determine the amounts due; provided however, that the maximum payable or paid for any portion of the completed Work shall not exceed the values listed in the corresponding bid item of Schedule of Values.

The total sum to be payable or paid to the CONTRACTOR, exclusive of the settlement amounts described in the Paragraph immediately above, shall not exceed the total CONTRACT Price less the:

1. Payments made previously by CITY for the Work; plus
2. A prorated portion of the total CONTRACT Price for the terminated portion of the Work as determined by the PROJECT MANAGER.

Except for normal spoilage and to the extent that the CITY will have otherwise expressly assumed the risk of loss, the fair value (as determined by the CITY) of property that is destroyed, lost, stolen, or damaged (so as to become undeliverable to the CITY or other buyer as described above) shall be excluded from the amounts paid to the CONTRACTOR.

In arriving at the amount due the CONTRACTOR under this Article, a deduction shall be made for the following:

1. Any claim that the CITY may have against the CONTRACTOR in connection with the CONTRACT; and
2. The agreed upon price for and/or proceeds from the sale of Goods or other items acquired or sold by the CONTRACTOR that have not been otherwise recovered by or credited to the CITY.

Under such terms and conditions as it may prescribe and at its sole discretion, the CITY may make partial payments against costs incurred by the CONTRACTOR in connection with terminated portion of the CONTRACT whenever the CITY decides that the aggregate of such payments is within the amount to which the CONTRACTOR is entitled hereunder. If the total of such payments is in excess of the amount finally agreed upon or determined to be due under this Article, such excess shall be payable by the CONTRACTOR or to the CITY upon demand together with interest at a rate equal to that set forth in California Code of Civil Procedure, Section 685.010.

Under no circumstances shall the CONTRACTOR be entitled to anticipatory or unearned profits or consequential damages as a result of a termination of partial termination under this Article, or for any other termination by the CITY. The payment to the Contractor determined in accordance with this Article shall constitute the exclusive remedy of the CONTRACTOR for termination hereunder.

Anything contained in the CONTRACT to the contrary notwithstanding, a termination under this Article shall not waive any right or claim to damages that the CITY may have; the CITY may pursue any clause of action that it may have by law or under the CONTRACT; and shall not relieve CONTRACTOR of its warranty obligations with respect to any Work performed prior to such termination.

If the termination hereunder is only for a part of the Work, the Contract Price shall be reduced by the amount of the Contract Price applicable to the portion of the Work, which is terminated, including overhead and profit, on the basis of one or more of the following:

1. Unit prices stated in the CONTRACT or agreed upon by the CITY and the CONTRACTOR.
2. A lump sum determined by the PROJECT MANAGER, based on the estimate costs including overhead and profit of the terminated portions of the Work.

45. TERMINATION OF CONTRACT BY CITY (CONTRACTOR DEFAULT)

In the event of conduct by the CONTRACTOR which is determined by the PROJECT MANAGER or the to constitute default, the CITY may either suspend the Work under the provisions of TEMPORARY SUSPENSION OF WORK of these General Conditions or, upon ten (10) calendar days' written notice to the CONTRACTOR, terminate the Contract as provided herein. Default by the CONTRACTOR shall occur whenever it shall declare bankruptcy; become insolvent or assign its assets for the benefit of its creditors; fail to provide materials, equipment, or workmanship meeting the requirements of the Specifications; disregard or violate provisions of the

Contract Documents or the PROJECT MANAGER's instructions; fail to prosecute the Work according to the approved progress schedule; or fail to provide a qualified representative, competent workers or Subcontractors. Upon request, the RECREATION AND PARK COMMISSION will provide the CONTRACTOR a hearing by the RECREATION AND PARK COMMISSION to contest the recommendation of the PROJECT MANAGER as to default by the CONTRACTOR.

In the event the Contract is terminated pursuant to this Article, the CITY may take possession of the Work and of all materials, tools, equipment, and property of the CONTRACTOR, which have been provided in connection with the Work, and may complete the Work by whatever method or means the CITY may select. The unpaid balance of the Contract cost for completing the Contract Work shall be used to complete the Work in accordance with the Contract Documents. If cost of completing the Work exceeds the unpaid balance, the CONTRACTOR shall pay the excess amount to the CITY. If such cost is less than the unpaid balance, the CONTRACTOR shall not have claim to the difference except to such extent as may be necessary, in the opinion of the PROJECT MANAGER, to reimburse the CONTRACTOR or the CONTRACTOR'S sureties for any unpaid expense properly incurred for materials, tools, equipment, property, and labor devoted to the prosecution of the Work, or which the CITY shall have received the benefit. In computing such expenses, as it relates to equipment and property, the salvage value at completion of Work shall be deducted from the salvage value at the time the contract was terminated, and the difference shall be considered as an expense. If after termination for failure of the CONTRACTOR to fulfill contractual obligations (CONTRACTOR Default), it is determined by a Court of competent jurisdiction that the CONTRACTOR had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the CITY. In such an event, adjustment of the Contract price shall be made as provided in TERMINATION OF CONTRACT BY CITY (CONTRACTOR NOT AT FAULT) of these General Conditions.

46. PRE-FINAL INSPECTION

Approximately two weeks before completion of the Work, the contractor will schedule a Pre-final Inspection to be attended by the Bureau of Contract Administration Inspector, the Project Manager, the Contractor and invited parties associated with the Project. At this time, a list of items requiring correction or completion before the Final Inspection will be compiled. In addition, at this time the Contractor shall arrange for the delivery of manufacturers' data, manuals, and operating instructions and keys to the appropriate Department of Recreation and Parks personnel.

47. FINAL INSPECTION

Approximately seven (7) days prior to completion of the Work, the Contractor shall first notify the Bureau of Contract Administration Inspector and then the Project Manager that he desires a Final Inspection of the Project. During this inspection, which will be arranged as soon as possible, the Inspector, the Project Manager, the Contractor and other parties concerned with contractual requirements will compile a Final Inspection Correction List, incorporating all items of work and corrections required to complete the Project. This list must be completed within thirty (30) days of Final Inspection, or a new Final Inspection will be held and a new Final Inspection Correction List compiled.

48. PARTIAL ACCEPTANCE

The CITY shall have the right to utilize or place into service any item of equipment or other usable portion of the Work prior to completion of the entire project. Whenever the CITY plans to exercise said right, the CONTRACTOR will be notified in writing by the CITY, identifying the specific portion or portions of the Work to be so utilized or otherwise placed into service. Following inspection by the Bureau of Contract Administration's Final Inspector and establishment of a Final Inspection Correction List, a Statement of Partial Completion will be issued.

It shall be understood by the CONTRACTOR that until a Statement of Partial Completion is issued, all responsibility for care and maintenance of all items or portions of the Work to be placed in use shall be borne by the CONTRACTOR. Upon issuance of a Statement of Partial Completion, the CITY will accept responsibility for the protection and maintenance of all such items or portions of the Work described in the written notice, and it is further understood that the manufacturer's warranties of any affected equipment will commence not later than the date for commencement of the warranties indicated on the Statement of Partial Completion. However, the CONTRACTOR shall retain full responsibility for satisfactory operation of the total project and the CONTRACTOR'S guarantee period shall commence only after the final acceptance of the Contract by the

RECREATION AND PARK COMMISSION. Such guarantee of total systems operation shall include that portion or portions previously placed into beneficial use by the CITY.

The issuance of a Statement of Partial Completion for any part of the Work shall not relieve the CONTRACTOR of its obligation to promptly remedy any omissions and latent or unnoticed defects in the Work covered by the Statement of Partial Completion. The CITY shall have the right to restrict the CONTRACTOR'S use of the occupied portion of the Work but shall allow the CONTRACTOR reasonable access to complete or correct items required by the Contract Documents.

The CITY may, if the Work is progressing satisfactorily, release part of the retention on portions of the Work for which a Statement of Partial Completion has been issued, provided that the following conditions have been met:

1. Partial final inspection corrections have been completed to the satisfaction of the INSPECTOR;
2. The CONTRACTOR submits a written request for release of retention which includes a verifiable valuation of the identified portions of the Work covered by the Statement of Partial Completion;
3. Impacted Subcontractors, major suppliers and the CONTRACTOR's Surety all agree in writing to release of retention;
4. If any minor corrections remain which do not directly affect operations or maintenance then twice the values of the remaining cleanup items shall be retained on each request for release; and
5. The CONTRACTOR signs a Change Order which specifically states the value of the retention being released.

The PROJECT MANAGER shall issue a no-change-in-contract-cost Change Order reflecting the Work for which a Statement of Partial Completion has been issued and the amount of the retention to be released. This Change Order shall authorize reduction of the retention on the next payment.

49. FINAL ACCEPTANCE

When all Work has been completed on the entire project, the CONTRACTOR shall notify the INSPECTOR and the PROJECT MANAGER in writing and request a final inspection by the INSPECTOR. The inspection conducted by the Final Inspector will include the CONTRACTOR and major Subcontractors' representatives. The CONTRACTOR shall promptly and diligently correct all items on the Final Inspection Correction List. The correction list Work will be reinspected until all Work is complete. If deemed necessary by the PROJECT MANAGER, a deductive Change Order may be issued for twice the value of final correction list items remaining to be corrected to attain completion, and permit the acceptance of the Contract by the RECREATION AND PARK COMMISSION.

Final payment to the CONTRACTOR is made following action by the RECREATION AND PARK COMMISSION that formally adopts the recommendation of the PROJECT MANAGER to accept the Contract. Said action by the RECREATION AND PARK COMMISSION establishes the following:

1. The start date of the CONTRACTOR'S material and workmanship warranty/guarantee for the total project.
2. The start date of any equipment or material warranties for which the "warranty clock" had not started.

50. LIQUIDATED DAMAGES

Time is of the essence in completing the Work required by the Contract. If the CONTRACTOR fails or refuses to complete the Work or any part thereof within the time fixed by the terms of the Contract, or any approved extension thereof, the actual damage to the CITY due to the delay will be difficult or impossible to determine. In lieu thereof, the CONTRACTOR shall pay to the CITY, as fixed and agreed, liquidated damages for each calendar day of delay in completion, the sum of **$2,400.00 per day**. The CONTRACTOR shall be liable for the amount thereof. The CITY reserves the right, however, to terminate the CONTRACTOR's completing the Work, charging against the CONTRACTOR and its sureties any excess cost occasioned the CITY thereby, together with liquidated damages accruing until such time as the CITY may reasonably complete the Work.

Permitting the CONTRACTOR to continue and complete the Work, or any portion thereof, after the time fixed herein for completion, or after the expiration of any extensions of said time, shall in no way operate as a waiver on the part of the CITY of any of its rights under the Contract.

51. COMPENSATION FOR DELAY, DISRUPTION, AND UNANTICIPATED OVERHEAD

Notwithstanding anything to the contrary in the Contract Documents, CONTRACTOR agrees the provisions of this Article, set forth CONTRACTOR'S sole and exclusive rights to compensation for costs, expenses or damages, of any kind, arising from or relating to (i) delay, disruption, hindrance, interference, schedule compression, and the impact, ripple or cumulative effect thereof; or (ii) additional supervision, administration, excess, extended or extraordinary overhead, loss of productivity, or similar costs, expenses or damages incurred as a result of or related to extras, changes, additions or deletions in the Work, errors, omissions, conflicts or ambiguities in the Contract Documents, suspensions of the Work, acts or omissions of CITY or its representatives, agents, contractors or consultants, Differing Site Conditions, or other unforeseen circumstances, of any kind.

CONTRACTOR shall not be entitled to, and hereby conclusively waives, any right to recovery of compensation, costs, expenses or damages for delays, disruptions, hindrances or interferences (including without limitation interruption of schedules, extended, excess or extraordinary field and indirect overhead costs, loss of productivity and the impact, ripple or cumulative effect on other Work) that are the result of Unavoidable Delays or which are caused by the acts or omissions of CONTRACTOR or of its SUBCONTRACTORS, of any tier.

CONTRACTOR'S rights to recovery of compensation, costs, expenses and damages for delay, disruption, hindrance and interference (including without limitation interruption of schedules, extended, excess and extraordinary field and indirect overhead costs, loss of productivity and the impact, ripple or cumulative effect on other Work) that are the result of extras, changes, additions or deletions in the Work for which CONTRACTOR is entitled to an adjustment of the Contract Price as set forth in CHANGES AND EXTRA WORK of these General Conditions and shall constitute the sole, exclusive and complete compensation that the CITY is obligated to pay CONTRACTOR for all such costs, expenses and damages incurred by CONTRACTOR and its SUBCONTRACTORS, of every tier.

Time extension in calendar days will be granted only if delays are caused by unforeseen events beyond the control of both the CONTRACTOR and the City. Such delays will entitle the CONTRACTOR to an extension of time as provided herein, but the CONTRACTOR shall not be entitled to damages or additional payment due to such delays. War, government regulations, labor disputes, strikes (when not brought solely against the CONTRACTOR, its subcontractors or material suppliers), fires, floods, adverse weather necessitating cessation of work, other similar action of the elements, inability to obtain materials, equipment or labor, required "extra work", or other specific reasons as may be further described in the specifications may constitute such a delay.

No extension of time will be granted for a delay caused by the inability to obtain materials unless the CONTRACTOR furnishes to the Project Manager documentary proof of the inability to obtain such materials in a timely manner in accordance with the sequence of the CONTRACTOR'S operations and the approved construction schedule.

The amount of time given to the CONTRACTOR is limited to the amount of time the Project is directly impacted by the above described delays. Direct impact means no other project work can proceed.

The CONTRACTOR may be compensated for delays caused solely by the failure of the City to furnish necessary rights-of-way, failure to deliver materials shown in the CONTRACTOR Documents to be furnished by the City, or for the suspension of the work by the City for its own convenience or benefit. If compensable delays could not have been avoided by the judicious handling of forces, equipment or plant, there shall be paid to the CONTRACTOR such amount as the General Manager may find to be fair and reasonable compensation for such part of the CONTRACTOR'S actual loss as was unavoidable.

If the CONTRACTOR desires payment for a delay as specified above or an extension of time, it shall, within thirty (30) days after the beginning of the delay, file with the General Manager a written request and report as to the cause and extent of the delay. The request of payment or extension must be made at least fifteen (15) days before the specified completion date, so as to allow for appropriate investigation. Failure by the CONTRACTOR to

file these items within the times specified will be considered grounds for refusal by the City to consider such a request.

Any and all extensions of time granted under the Provisions of these Specifications shall not release the sureties on the bonds accompanying the Contract for the work required herein. The bonds shall remain in full force and effect until the discharge of the Contract.

CHANGES TO THE CONTRACT

52. CHANGES AND EXTRA WORK

The PROJECT MANAGER may, at any time, with or without notice to the Sureties, by written order designated or indicated to be a Change Order, order performance of extra work or make any change, addition or deletion in the Work, including but not limited to changes in the Specifications including Plans and Designs; in the time, method or manner of performance of the Work; in the CITY furnished facilities, equipment, materials, services, or site; or directing acceleration in the performance of the Work.

Upon receipt of such Change Order, the CONTRACTOR shall promptly proceed with the Work covered thereby, which shall be performed in accordance with the provisions of the Contract Documents except as otherwise specifically provided.

In the event that CONTRACTOR receives any written order or direction by the CITY, PROJECT MANAGER that is not so designated or indicated to be a Change Order, but which CONTRACTOR believes to constitute an extra, change, addition or deletion in the Work, then CONTRACTOR shall, prior to performance of any Work related thereto, give written confirmation notice to the PROJECT MANAGER confirming CONTRACTOR'S belief that such order or direction is believed to be a Change Order within one (1) working day of CONTRACTOR'S receipt of such order or direction.

CONTRACTOR conclusively waives any right to additional compensation, costs, expenses, damages or extension of time associated with an extra, change, addition or deletion to the Work that is performed by CONTRACTOR without either (i) a written order signed by the CITY, PROJECT MANAGER designated or indicated to be a Change Order and any change, addition or deletion, or (ii) a written confirmation notice issued by CONTRACTOR in accordance with the provisions of this Article.

Should a change be required and it is not feasible to delay construction of that portion of the Work until such time as a regular Change Order can be issued, and the estimated increase in Contract cost does not exceed the amount which can be authorized by the PROJECT MANAGER, an Emergency Change Authorization, in writing, will be issued in the field by the PROJECT MANAGER, and the CONTRACTOR shall then proceed with the Work without delay. Such Emergency Change Authorization shall be followed by a subsequent regular Change Order.

Except as provided in this Article, no order, Statement, or conduct of the PROJECT MANAGER shall be treated as a change under this Article or shall entitle the CONTRACTOR to an adjustment in the Contract Price or Contract Completion Date.

If any change under this Article causes an increase or decrease in the CONTRACTOR'S cost or the time required to perform any part of the Work under this Contract, whether or not said costs or time are specified by any order, the PROJECT MANAGER will make an adjustment to the Contract Price and modify the Contract in writing. Except for claims based on defective Specifications, no claim for any change under this Article shall be allowed for any costs incurred more than twenty (20) calendar days before the CONTRACTOR gives written notice as required. Except as otherwise provided in the Contract Documents, in the case of defective specifications for which the PROJECT MANAGER is responsible, the adjustment shall include any increased cost the CONTRACTOR reasonably incurred in attempting to comply with those defective specifications.

If the CONTRACTOR intends to assert a claim for an adjustment in the Contract Price under this Article, it must, within twenty (20) calendar days after receipt of a written Change Order or the furnishing of a written confirmation notice as hereinbefore specified, submit a written statement to the PROJECT MANAGER setting forth the general nature and monetary extent of such claim and all factual grounds therefor. The CONTRACTOR may include the statement of claim in the written notice as hereinbefore specified. Failure to comply with the twenty (20) calendar day notice requirement shall be deemed a waiver of claims by the CONTRACTOR.

No adjustment shall be made under this Article for any suspension, delay, interruption, change or any other cause, to the extent that an adjustment is provided for or excluded under any other provision of the Contract.

Recovery of compensation, costs, expenses or damages resulting from delay, disruption, hindrance, or interference in the performance of the Work (including without limitation interruption of schedules, extended, excess or extraordinary field overhead and indirect overhead costs, loss of productivity and the impact, ripple or cumulative effect on other Work), shall not be permitted, and all rights thereto are conclusively waived by CONTRACTOR, except to the extent allowed by COMPENSATION FOR DELAY, DISRUPTION AND UNANTICIPATE OVERHEAD of these General Conditions.

No claim by the CONTRACTOR shall be allowed if the claim is made after final payment under this Contract.

53. DIFFERING SITE CONDITIONS

The following provisions shall apply only in the event that there is not a Geotechnical Baseline Report for the Project. If a Geotechnical Baseline Report is so identified, then the provisions of this Article shall not apply and the CONTRACTOR'S rights arising from Differing Site Conditions shall be governed solely by the provisions of the General Requirements pertaining to the CONTRACTOR'S rights in the event of Differing Site Conditions.

Upon discovery and before further disturbance of any unforeseen conditions, the CONTRACTOR shall immediately notify the INSPECTOR and the PROJECT MANAGER, followed by a written notice to the PROJECT MANAGER within twenty-four (24) hours of subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents; or unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the Work of the character provided for in this Contract; or materially differing from that represented in the Contract Documents which the CONTRACTOR believes may be hazardous waste, as defined in the California Health and Safety Code, that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law.

The PROJECT MANAGER shall promptly investigate the conditions. If the PROJECT MANAGER finds that conditions materially differ and will cause an increase or decrease in the CONTRACTOR'S cost or the time required to perform any part of the Work under this contract, whether or not changed as a result of such conditions, the PROJECT MANAGER shall, make an adjustment in the Contract Price by Modification to the Contract in writing.

If the CONTRACTOR intends to seek an adjustment to the Contract Price or Contract Completion Date based upon this Article, it must, within twenty (20) calendar days after it first discovered or should have discovered in the exercise diligence and extreme care the existence of Differing Site Conditions, submit a written statement setting forth a detailed cost breakdown in the form required by Article 27, PAYMENT FOR CHANGES AND EXTRA WORK of the General Requirements, setting forth the basis of CONTRACTOR'S calculation of the costs saved or, detailed information demonstrating the effect on the CONTRACTOR'S schedule of performance in the same manner as required by the Contract Documents for obtaining approval of extensions of time, identification of the Escrow Bid Documents that formed the basis of the CONTRACTOR'S bid estimate to perform the Work affected by such conditions, and a complete and detailed explanation of the factual basis for the request.

Failure by CONTRACTOR to strictly comply with the requirements of this Article concerning the timing and content of any notice of Differing Site Conditions or of any request for adjustment in Contract Price or Contract Completion Date based on Differing Site Conditions shall be deemed waiver of any claim by the CONTRACTOR for increase in the Contract Price or extension of the Contract Completion Date by reason of such conditions.

CONTRACTOR'S right to compensation for (i) delay, disruption, hindrance, interference, schedule compression, and the impact, ripple or cumulative effect thereof; or (ii) additional supervision, administration, excess, extended or extraordinary overhead, loss of productivity, or similar costs, expenses or damages incurred as a result of or related to any Claim based on Differing Site Conditions shall be limited to such sums as are allowable under COMPENSATION FOR DELAY, DISRUPTION, AND UNANTICIPATED OVERHEAD of these General Conditions.

No claim by the CONTRACTOR for an adjustment hereunder be allowed if asserted after final payment under this Contract.

LEGAL REQUIREMENTS

54. CLAIMS AND PROTESTS

A Claim or Protest that involves an extra, change, addition or deletion to the Work as set forth in CHANGES AND EXTRA WORK of these General Conditions shall arise upon issuance of a final decision of the PROJECT MANAGER denying, in whole or in part, a request for adjustment in the Contract Price or Contract Completion Date; provided however, that failure to comply with the requirements of CHANGES AND EXTRA WORK of these General Conditions shall be conclusively deemed to constitute grounds to deny such Claim or Protest.

A Claim or Protest that does not involve an extra, change, addition or deletion to the may be asserted only if the CONTRACTOR shall immediately and prior to performing the Work affected thereby give written notice to the PROJECT MANAGER of such circumstances and of CONTRACTOR'S intention to file a Claim or Protest based thereon. Unless otherwise directed by the PROJECT MANAGER the CONTRACTOR shall proceed without delay to perform the Work and to conform to any order, instruction, or decision of the PROJECT MANAGER with respect thereto.

The CONTRACTOR shall, within twenty (20) calendar days after it first knew, or in the exercise of diligence and extreme care should have known, of the circumstances giving rise to the Claim or Protest, file a written Claim or Protest with the PROJECT MANAGER, stating in detail all objections, grounds and reasons therefore. The CONTRACTOR shall, upon instruction by the PROJECT MANAGER provide, within ten (10) days or such other time as agreed to between the PROJECT MANAGER, the INSPECTOR, and the CONTRACTOR, any and all documents, records or other materials identified by the PROJECT MANAGER as necessary for the resolution of the CONTRACTOR's Claim or Protest.

Claims or Protests seeking time extensions shall be accompanied by such documentation as is required by Article 18, CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS of the General Requirements. Claims or Protests seeking recovery of compensation or adjustments to the CONTRACT PRICE, whether or not based on extras, changes, additions or deletions to the Work, shall be in the form of Change Order Cost Quotations prepared in accordance with and subject to all of the requirements of Article 27, PAYMENT FOR CHANGES AND EXTRA WORK of the General Requirements, including without limitation the prohibition on use of total cost and modified total cost methodologies.

CONTRACTOR waives all rights to assert any claims or seek any relief in the form of extensions of time or recovery of additional compensation, costs, expenses, damages from the CITY that are not presented as a Claim or Protest in the manner specified and within the time stated herein. CONTRACTOR further hereby agrees that in the interest of avoiding the additional expense and potential inequity of piecemeal resolution of Claims or Protests, all decisions by PROJECT MANAGER shall be final and binding not only as to all matters asserted in the Claim or Protest, but also as to all matters (including without limitation all rights to extensions of time and recovery of extra compensation, costs, expenses and damages) not asserted in the Claim or Protest that were known to CONTRACTOR, or that could have been reasonably discovered by CONTRACTOR in the exercise of diligence and extreme care, at the time of submission of the Claim or Protest and that are in any way related to the subject matter of the Claim or Protest. All orders, instructions and decisions of the PROJECT MANAGER will be limited to matters properly falling within their respective authority as specified in AUTHORITY OF THE RECREATION AND PARK COMMISSION, PROJECT MANAGER AND INSPECTOR of these General Conditions.

The CONTRACTOR will be informed of the PROJECT MANAGER's decision within thirty (30) days after the CONTRACTOR last submits data pertinent to the protest previously mentioned. In the case of a Claim or Protest that involves an extra, change, addition or deletion to the Work as set forth in CHANGES AND EXTRA WORK of these General Conditions, if the Contractor accepts the decision of the PROJECT MANAGER, then the CONTRACTOR and CITY shall enter into a Change Order adjusting the Contract Price and Contract Completion Date in accordance with such decision. In the case of a Claim or Protest does not involve an extra, change, addition or deletion to the Work as set forth in CHANGES AND EXTRA WORK of these General Conditions and the CONTRACTOR accepts the decision of the PROJECT MANAGER, then the CONTRACTOR and CITY shall enter into a Modification of the Contract setting forth the terms of the decision and, if appropriate, its effect on the Contract Price or Contract Completion Date. If the CONTRACTOR does not accept the decision of the PROJECT

MANAGER, then further appeal of the PROJECT MANAGER's or the decision must be made to the RECREATION AND PARK COMMISSION in writing within twenty (20) calendar days after receipt of the PROJECT MANAGER's decision. The RECREATION AND PARK COMMISSION shall afford the CONTRACTOR an opportunity to be heard and to offer evidence in support of its appeal. All determinations of the RECREATION AND PARK COMMISSION with respect to Claims or Protests shall be final and binding.

In all matters concerning the validity, interpretation, performance, effect or otherwise of the Contract, the Federal regulations (if and to the extent expressly incorporated by reference in the Contract Documents), the laws of the State of California, and the Charter of the City of Los Angeles shall govern and be applicable. Pending final disposition of a protest, the CONTRACTOR shall proceed diligently with the performance of the Contract and in accordance with the previously mentioned decision.

Any Claim or Protest, including without limitation any Claim or Protest filed on behalf of or having its source in a claim by Subcontractor, Sub-Subcontractor, or Supplier, at any tier, which the CONTRACTOR chooses to make to the CITY, shall be accompanied by the certification language set forth below signed by a responsible managing officer of the CONTRACTOR'S organization, who has the authority to sign Subcontracts or Purchase Orders on behalf of the CONTRACTOR, and who has personally investigated and confirmed the truth and accuracy of the matters set forth in such certification. Submission of certification in accordance herewith is a condition precedent to the CITY's consideration of or decision on the Claim or Protest and to the filing and maintenance of any legal action or proceeding to enforce or recover monies under such Claim or Protest. Failure to submit such a certification along with the Claim or Protest, shall result in the Claim or Protest being returned to the CONTRACTOR without any decision and shall waive the CONTRACTOR's right to pursue the Claim or Protest either on its own behalf or on behalf of such Subcontractor or Supplier.

I hereby certify under penalty of perjury that I am a managing officer of (CONTRACTOR'S name) and that I have reviewed this Claim or Protest presented herewith on CONTRACTOR'S behalf and/or on behalf of (Subcontractor's/Supplier's name(s)) and that the following statements are true and correct:

1. The facts alleged in or that form the basis for the Claim or Protest are true and accurate; and,
2. CONTRACTOR does not know of any facts or circumstances, not alleged in the Claim or Protest, that by reason of their not being alleged render any fact or statement alleged in the Claim or Protest materially misleading; and,
3. CONTRACTOR has, with respect to any request for money or damages alleged in or that forms the basis for the Claim or Protest, reviewed the job cost records (including those maintained by CONTRACTOR and by any Subcontractor or Supplier, of any tier, that is asserting all or any portion of the Claim or Protest) and confirmed with mathematical certainty that the losses or damages suffered by CONTRACTOR and /or such Subcontractor or Supplier were in fact suffered in the amounts and for the reasons alleged in the Claim or Protest; and,
4. CONTRACTOR has, with respect to any request for extension of time or claim of delay, disruption, hindrance or interference alleged in or that forms the basis for the Claim or Protest, reviewed the job schedules (including those maintained by CONTRACTOR and by any Subcontractor or Supplier, of any tier, that is asserting all or any portion of the Claim or Protest) and confirmed on an event-by-event basis that the delays or disruption suffered by CONTRACTOR and /or such Subcontractor or Supplier were in fact experienced for the durations, in the manner, and with the consequent effects on the time and/or sequence of performance of the Work, as alleged in the Claim or Protest; and,
5. CONTRACTOR has not received payment from CITY for, nor has CONTRACTOR previously released CITY from, any portion of the Claim or Protest.

Signature: _____

Name:

Title: _____

Company: _____

Date: _____

No Claim or Protest by the CONTRACTOR shall be allowed if made after final payment under this Contract.

55. COMMENCEMENT OF STATUTE OF LIMITATIONS

Unless otherwise provided in this Contract, all claims, counterclaims, disputes and other matters in question between the CITY and the CONTRACTOR arising out of or relating to this Contract or the breach of it will be decided by a Court of competent jurisdiction. It is understood that this Contract is executed and to be performed within the City and County of Los Angeles.

Any applicable statute of limitations shall commence to run and any alleged cause of action by the CONTRACTOR against the CITY arising out of or related to the Project shall be deemed to have accrued in any and all events no later than 30 days after CONTRACTOR'S submittal of its last application for progress payment.

56. GOVERNING LAW

The terms and conditions of this Contract shall be construed and interpreted under, and all respective rights and duties shall be governed by, the laws of the State of California. Wherever applicable each provision of these Contract Documents shall be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of these Contract Documents shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of these Contract Documents.

57. VENUE

This Contract will be executed and performed within the City and County of Los Angeles, California.

58. NO WAIVER OF RIGHTS

Neither the inspection by the CITY, nor any order by the CITY for payment of money, nor any payment for or acceptance of the whole or any part of the Work by the CITY, nor any extension of time, nor any possession taken by the CITY, shall operate as a waiver of any provision of this Contract, or any power herein reserved to the CITY, or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach.

59. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the CONTRACTOR of final payment shall release the CITY, the PROJECT MANAGER, the INSPECTOR, their officers, agents, representatives, or employees, as representatives of the CITY, from all claims and all liability to the CONTRACTOR for all things done or furnished in connection with the Work and every act of the CITY relating to or arising out of the Work.

60. PATENTS AND COPYRIGHTS

The CONTRACTOR shall include in its bid the patent fees or royalties on any patented article or process which may be furnished or used in the Work. The CONTRACTOR shall indemnify and hold the CITY harmless from any legal action that may be brought for infringement of patents. The CONTRACTOR'S attention is directed to "Notice of Patents, Data, and Copyright Regulations" of the Federal Labor Standards.

The CONTRACTOR shall bear all costs arising from the use of patented goods and /or processes used on and/or incorporated into the Work. When use of these goods and/or processes are judged to be an infringement and their use is banned, the Contractor, at its own expense, shall, with concurrence of the PROJECT MANAGER, do one of the following:

1. Secure for the CITY the right to continue using goods and/or processes by suspension of the injunction or by procuring a license(s);

2. replace said goods and/or processes with non-infringing goods and /or processes;

3. modify said goods and/or processes so that they become non-infringing; or

4. remove said goods and/or processes and refund the sum paid therefore without prejudice to any other rights of the CITY.

The preceding Subarticle shall not apply to any goods manufactured to the detailed design of the CITY contained in the Contract Documents.

61. PUBLIC RECORDS ACT

All records, documents, plans, specifications and all other information relating to the conduct of the CITY's business, including information submitted by the CONTRACTOR, shall become the exclusive property of the CITY and except as provided by law shall be deemed public records. Said information shall be subject to the provisions of the California Public Records Act (Government Code Sections 6250 *et seq.*).

Under no circumstances, will the CITY be responsible or liable to the CONTRACTOR, submitter or any other party for the disclosure of any records or information submitted to the CITY, regardless of whether such records or information are labeled "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY" (or words to similar effect) and regardless of, whether the disclosure is required by law or a court order or occurs through inadvertence, mistake, or negligence on the part of the CITY or its officers, employees, and/or contractors.

The CITY will not advise as to the nature or content of documents entitled to protection from disclosure under the California Public Records Act", including interpretations of the Act or the definition of "Trade Secret". The submitting party shall be solely responsible for all determinations made under the Act, and where appropriate for clearly and prominently marking each and every page or sheet of information with "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY". Each submitting party is advised to contact its own legal counsel concerning the California Public Records Act and its applicability to the submitting party's own circumstances.

In the event of litigation concerning the disclosure of any information submitted by the submitting party, the CITY's sole involvement will be as a stake holder, retaining the information until otherwise ordered by a court. The submitting party, at its sole expense and risk, shall be responsible for any and all fees and costs for prosecuting or defending any action concerning the information, and shall indemnify and hold the CITY harmless from all costs and expenses including attorneys' fees, in connection with such action.

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II. GENERAL REQUIREMENTS

VERDUGO HILLS POOL
AND BATHHOUSE REFURBISHMENT
PROJECT

PREPARED BY:

IBI GROUP ARCHITECTURAL PLANNING and
BUREAU OF ENGINEERING - ARCHITECTURAL DIVISION
DEPARTMENT OF PUBLIC WORK
CITY OF LOS ANGELES

May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

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GENERAL

1. ABBREVIATIONS AND REFERENCE STANDARDS

A. ABBREVIATIONS

Wherever the following abbreviations are used they shall have the meanings indicated:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AGMA	American Gear Manufacturers' Association
AI	The Asphalt Institute
AISC	American Institute of Steel Construction
AISI	American Iron & Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
CBM	Certified Ballast Manufacturers
CRS	Concrete Reinforcement and Steel Institute
EPA	Environmental Protection Agency
ETL	Department of Building & Safety Electrical Test Laboratory
FCI	Fluid Control Institute, Inc.
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
LABC	City of Los Angeles Building Code
NAAMM	National Architectural Association of Metal Manufacturers
NEC	National Electrical Code
NECA	National Electrical Contractors Association

NEMA	National Electrical Manufacturers Association
NOAA	National Oceanic and Atmospheric Administration (Dept. of Commerce)
OSHA	Occupational Safety and Health Administration (Dept. of Labor)
PCA	Portland Cement Association
RCSC	Research Council on Structural Connections of the Engineering Foundation
SAMA	Scientific Apparatus Manufacturer's Association
SSPWC	Standard Specifications for Public Works Construction
SWRCB	State Water Resources Control Board
UBC	Uniform Building Code, International Conference of Building Officials
UL	Underwriters Laboratories, Inc.
USGS	United States Geological Survey
WATCH	Work Area Traffic Control Handbook
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

B. REFERENCE STANDARDS

1. APPLICABLE PUBLICATIONS - Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.

2. SPECIALISTS' ASSIGNMENTS - In certain instances, specification text requires (or implies) that specific Work is to be assigned to specialists or expert entities, which must be engaged for the performance of that Work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of Work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of Contract requirements remains with the CONTRACTOR.

3. CODES AND SAFETY STANDARDS - Without limiting the generality of other requirements of the Specifications, Work specified herein shall conform to or exceed the applicable requirements of the following Codes and Safety Standards.

   a. Applicable Codes:

      - City of Los Angeles Building Code
      - City of Los Angeles Mechanical Code
      - City of Los Angeles Plumbing Code
      - City of Los Angeles Fire Code
      - City of Los Angeles Electrical Code

   b. References herein to "Building Code" shall mean City of Los Angeles Building Code. Similarly references to "Mechanical Code," "Plumbing Code," "Fire Code," and "Electric Code" shall mean City of Los Angeles Mechanical Code, City of Los Angeles Plumbing Code, City of Los Angeles Fire Code and City of Los Angeles Electric Code respectively.

   c. Applicable Safety Standards:

      - OSHA Regulations for Construction
      - OSHA Standards
      - Cal-OSHA

   d. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

   e. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

f. References herein to "Cal-OSHA" shall mean State of California, Department of Industrial Relations, as amended to date, and all changes and amendments thereto which are effective as of the date of construction.

g. The latest edition of the codes as approved and adopted for use by the CITY as of the date of award shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.

4. STANDARD SPECIFICATIONS - References in the Contract Documents to "Standard Specifications" shall mean the Standard Specifications for Public Works Construction (SSPWC), including all current supplements, addenda, and revisions thereof, except that the provisions therein for measurement and payment shall not apply.

5. STANDARD PLANS - References herein to "Standard Plans" shall mean the Standard Plans issued by the City of Los Angeles which drawings are hereby incorporated in and made a part of these Contract Documents, and copies of which are available for a fee.

6. CONFLICT BETWEEN CODES, SAFETY STANDARDS, REFERENCE STANDARDS, DRAWINGS AND OTHER CONTRACT DOCUMENTS - In case of conflict between codes, reference standards, drawings and other Contract Documents, the most stringent requirements shall govern. Conflicts shall be brought to the attention of the PROJECT MANAGER for clarification and directions prior to ordering or providing any materials or labor. The CONTRACTOR shall bid for the most stringent requirements.

CONTRACT DOCUMENTS

2. ISSUANCE OF PLANS AND SPECIFICATIONS

A. Unless otherwise provided in the Contract Documents, the PROJECT MANAGER will furnish to the CONTRACTOR TEN (10) sets each of the Plans, Specifications and, Geotechnical Report without charge. Additional sets desired by the CONTRACTOR or Subcontractors will be furnished upon request, but at the CONTRACTOR's expense.

B. Drawings, Specifications, Special Provisions, and copies thereof are the property of the CITY. They are not to be used on other work. Necessary bid documents will be available to prospective bidders. Bidders will be issued plans and specifications for a fee. This fee is stated in the "Notice Inviting Bids" of the Contract Documents.

C. Standard Plans for the CITY, which are noted on the drawings, are available for a fee. Also see the City of Los Angeles, Bureau of Engineering Web pages for Standard Plans at http://eng.lacity.org/techdocs/stdplans.

3. DIVISIONS OF SPECIFICATIONS

The specifications are arranged into the Construction Specifications Institute (CSI) sixteen (16) Division format with an additional Division 17 for Instrumentation and Controls (if applicable).

A. The organization of the Specifications into divisions, sections, parts, and paragraphs shall not control or limit the CONTRACTOR in dividing the Work among Subcontractors of any tier. The CONTRACTOR shall be solely responsible for all subcontract arrangements of Work regardless of the organization of the specifications.

B. Titles of Specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

THE CONTRACTOR'S RESPONSIBILITIES

4. SITE SECURITY

A. In addition to the responsibilities specified in other Articles of these Requirements, and the General Conditions, the CONTRACTOR shall be responsible for the security of all its construction equipment, materials, tools, facilities, and vehicles (personal, private, or contractual) while performing the Work of this Contract. This requirement shall be effective twenty-four (24) hours per day for the duration of the Contract. CONTRACTOR shall familiarize themselves with the location of the job site and scan the premises by means necessary to protect the property, including but not limited to, provision of fencing, guards, security system or other means as necessary.

5. ENVIRONMENTAL CONTROL AND MITIGATION

A. CONTROL

1. Fugitive Dust and Smoke Control:

Comply with the requirements of Title 8, California Code of Regulations, concerning handling of asbestos dust.

a. Criteria for Fugitive Dust - Detailed descriptions and explanations of specific impact mitigation measures are contained in South Coast Air Quality Management District (SCAQMD) Rules and Regulations (Rule 403, Limitation on Fugitive Dust Emissions). Key features of mitigation options described are as follows:

i. Do not cause or allow emissions of fugitive dust from any transport, handling, construction or storage activity to remain visible in atmosphere beyond property line of the emission source.

ii. Take precautions to minimize fugitive dust emissions from operations involving demolition, excavation, grading, clearing of land and disposal of solid waste. Utilizes at least one Reasonably Available Control Measure (RACM) for each potential source of fugitive dust. Do not cause or allow particulate matter to exceed 50 mg/m^3 when determined as difference between upwind and downwind samples collected on high volume particulate matter samplers or other EPA approved equivalent method for PM-10 monitoring at the property line for a five hour period during the time of active operations.

iii. Take precautions to prevent visible particulate matter from being deposited upon public roadways as a direct result of their operations. Precautions include, removal of particulate matter from equipment before movement to paved streets or prompt removal of material from paved streets onto which such material has been deposited.

b. As a minimum - Use the following procedures and techniques:

i. Cover loads of materials, debris and soil transported from construction sites. Trim or remove loose material from loads before leaving Project.

ii. Daily or more frequently, if necessary, water down and sweep adjacent streets and sidewalks that have construction vehicles carrying debris and excavated materials.

iii. Establish regular cycles and locations for cleaning trucks that haul soil from site.

iv. Water down construction sites whenever required to suppress dust, particularly during handling of excavation soil or debris or during demolition.

v. If conveyors are used, cover all transfer points along conveyor system moving soil. Minimize drop height to the stockpile. Provide a sprinkler system that will apply water to soil before it drops to stockpile.

vi. Any adapted measures developed by SCAQMD on Best Available Control Measures (BACM) for Fugitive Dust and Rule 403 will be incorporated into the site operations for Fugitive Dust Control.

vii. Burning of wastes is prohibited. Remove scrap and waste material and dispose of in accordance with laws, codes, regulations, ordinances and permits.

viii. Use construction equipment designed and equipped to prevent or control air pollution in conformance with most restrictive regulations of EPA, State and local authorities. Maintain evidence of such design and equipment and make available for inspection by Authority or its designee.

ix. Establish and maintain records of routine maintenance program for internal combustion engine powered vehicles and equipment used on Project. Keep records available for inspection by Authority or its designee.

x. Comply with the requirements of Title 8, California Code of Regulations, concerning handling of asbestos dust.

xi. Implement Fugitive Dust Measures listed in tables 1 and 2 of SCAQMD Rule 403 and perform record keeping in accordance with Sections (e)(1) of said rule. Make records available to Authority or its designee for inspection.

2. Rubbish Control

a. Through all phases of construction, including suspension of Work and until final acceptance of the Project, keep the site of the Work and other areas used by it in a neat and clean condition, and free from an accumulation of rubbish and debris. Dispose of rubbish and waste materials of any nature occurring at the worksite and establish regular intervals of collection and disposal of such materials and waste. Keep CONTRACTOR haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Take care to prevent spillage on haul routes. Remove such spillage immediately and clean the area. Confine equipment and material storage to areas approved by the PROJECT MANAGER. Dispose of rubbish and surplus materials off the construction site, at the CONTRACTOR's expense, in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and the requirements of the OSHA Safety and Health Standards for Construction. Include cleanup cost in the CONTRACTOR's Bid.

3. Sanitation

a. Fixed or portable chemical toilets shall be provided for the use of the CONTRACTOR's employees. These accommodations shall be maintained in a neat and sanitary condition. Toilets at construction job sites shall conform to the requirements of Title 8, California Code of Regulations.

b. Wastewater conveyance and disposal shall not be interrupted. Should the CONTRACTOR disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill. Establish a regular schedule for collection of sanitary and organic waste. Dispose of wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations away from the site in a manner satisfactory to the INSPECTOR and in accordance with laws and regulations pertaining thereto. Dispose of such wastes at the CONTRACTOR's expense.

4. Chemicals

The following paragraph does not relieve the CONTRACTOR from its responsibility for obtaining prior approval from the PROJECT MANAGER for chemical usage when otherwise required.

a. Provide four (4) copies of the MSDS to the PROJECT MANAGER for all chemicals used during Project construction or furnished for Project operation, prior to bringing them on site, whether soil conditioning agents, lubricants, defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, soil conditioning agents, lubricants, reactant, or of other classification, which shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

5. Odor Control

a. The CONTRACTOR shall furnish all labor, materials, and equipment required and shall carry out effective measures wherever and as often as necessary to prevent the discharge of a nuisance odor from its operation into the atmosphere in such quantity as will violate the regulations of any legally constituted authority. During construction, the CONTRACTOR shall notify the PROJECT MANAGER and the INSPECTOR at least forty-eight (48) hours in advance when potential odor-causing activities are scheduled for construction.

6. Noise and Vibration - Comply with requirements of CITY noise ordinances and mitigation specified below.

a. Lighting – Shield worksite lighting to prevent disturbance to adjacent properties.

B. MITIGATION

1. General

a. The CONTRACTOR shall mitigate the adverse environmental impacts associated with the Work of the Contract. The CONTRACTOR shall indemnify and hold harmless the CITY from any and all fines, penalties or damages incurred by the CITY for violation of any environmental mitigation measures or permit caused by the CONTRACTOR's failure to comply with environmental mitigation measures of this Article. The measures that the CONTRACTOR shall take to mitigate environmental impacts include, but are not limited to the following:

b. The CONTRACTOR, a minimum of thirty (30) days prior to beginning Work on each new major activity, shall submit a written plan to the PROJECT MANAGER, detailing how the environmental impacts for the activity shall be mitigated. The plan shall include, at a minimum:

i. Anticipated site conditions;

ii. Equipment to be utilized;

iii. Means and methods of construction;

iv. Impacts likely to occur;

v. Mitigation methods to be employed.

2. Storm Water Pollution Control

a. Comply with the State General Construction Activity Storm Water Permit.

b. Minimum Water Quality Protection Requirements – The Contractor is required to meet the

following minimum standards of good housekeeping:

i. Eroded sediments and other pollutants must be retained on site and may not be transported from the site via sheet flow, swales, area drains, natural drainage, or wind.

ii. Stockpiles of earth and other construction-related materials must be protected from being transported from the site by wind or water.

iii. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of in a proper manner. Spills may not be washed into the drainage system.

iv. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete wastes on-site until they can be appropriately disposed of or recycled.

v. Trash and construction-related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.

vi. Sediments and other materials may not be tracked from the site by vehicle traffic. The construction entrance roadways must e stabilized so as to inhibit sediments from being deposited into the public ways. Accidental depositions must be swept immediately and my not be washed down by rain or by any other means.

c. Wet Weather Erosion Control Plan (WWECP) – Pursuant to Section 61.02 of the LAMC, whenever it appears that the construction site will have grading between October 1 and April 15, the Contractor shall submit a WWECP to the Project Manager for approval within 30 days after award of contract or get approval 30 days prior to the beginning of the rainy season, whichever is longer. Note: Guidance on preparing the WWECP can be found in the Development Best Management Practices Handbook – Part A, Construction Activities adopted by the Board of Public Works on August 2, 1999, as authorized by Section 64.72 of the Los Angeles Municipal Code. This handbook can be obtained at cost at the public/permit counters of the Bureau of Engineering.

d. The Contractor shall file a “Notice of Intent” (NOI) with the State Water Resources Control Board to comply with the California General Construction Activity Stormwater Permit (NPDES No. CAS000002) and prepare and implement a Stormwater Pollution Prevention Plan (SWPP). Whenever the CONTRACTOR is required to get any type of permit from the Department of Building and Safety (DBAS), the CONTRACTOR shall show a Waste Discharge Identification Number (WDID) to the DBAS as proof of submittal of the NOI. If the CONTRACTOR does not need any type of permit from the DBAS, the CONTRACTOR shall show the WDID to the PROJECT MANAGER.

3. Noise and Vibration

a. General

i. The Work specified in this Article consists of eliminating excessive noise and vibration generated by construction activities, complying with applicable noise regulations and specifications requirements, monitoring and reporting noise and vibration measurements.

ii. Use equipment with effective noise-suppression devices and employ other noise

control measures such as enclosures and noise barriers necessary to meet the noise limits specified and to protect the public. Schedule and conduct operations in a manor that will minimize, to the greatest extent feasible, the disturbance to the public in areas adjacent to the construction activities and to occupants of buildings in the vicinity of the construction activities.

iii. Noncompliance Corrective Action – If, at any time prior to or during the construction, complaints are received from the public, the PROJECT MANAGER shall direct the CONTRACTOR to undertake immediate corrective action through equipment modification, additional noise abatement equipment or a change in operating procedures.

b. Construction Vibration

i. Ground-borne vibrations from equipment may have the potential of causing an impact to the existing structure. The CONTRACTOR shall mitigate and/or repair any damage caused by vibration.

6. MOBILIZATION

A. GENERAL

Mobilization shall include, but not be limited to, the following items, all as required for the proper performance and completion of the work:

1. Obtaining all permits, insurance, and bonds.
2. Moving onto the job-site all CONTRACTOR's plant and equipment as required.
3. Erecting temporary buildings and other construction facilities.
4. Installing temporary construction power and wiring.
5. Establishing fire protection system for its temporary facilities.
6. Developing construction water supply.
7. Providing field office trailers for the CONTRACTOR AND INSPECTOR, complete with all specified furnishings and utility services, including telephones.
8. Providing connections to onsite sanitary facilities as specified.
9. Providing for potable water facilities as specified. This includes a means by which all on site contractor, subcontractor or supplier personnel can wash their hands with soap.
10. Arranging for and erection of CONTRACTOR's work and storage yards and sheds.
11. Submittal of all required Subcontractor insurance certificates and bonds.
12. Posting all CAL-OSHA required notices and establishment of safety programs.
13. Have the CONTRACTOR's representative at the job site full time.
14. Furnishing of Construction Schedule, Bid Breakdown and Submittal Schedules.

B. TEMPORARY CONSTRUCTION UTILITIES AND WORKSITE FACILITIES

The Contractor shall provide the following worksite facilities, as indicated below:

Yes (1) The Contractor shall provide adequate sanitary conveniences for use of persons employed on the work. These conveniences shall be properly secluded from public observation and maintained in a neat and sanitary condition in the manner and places required by the Project Manager. The use of these conveniences shall be strictly enforced, and they shall be maintained at all times until completion of the work, when they shall be removed from the premised and the area left clean and free from any nuisance. They shall also comply with all

applicable laws, ordinances and regulations pertaining to the public health and sanitation of dwelling and camps.

Wastewater shall not be interrupted. Should the Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

Yes (2) The Contractor shall provide the power and light needed for construction until permanent meter installation is completed. The Contractor shall make all necessary arrangements with the City Department of Water and Power; assume all costs; and make and remove all connections to power facilities as necessary for required tests.

Yes (3) The Contractor shall provide the water needed for construction until permanent meter installation is completed. The Contractor shall make all necessary arrangements with the City Department of Water and Power; assume all costs; and make and remove all connections to water facilities as necessary for required tests.

Yes (4) The Contractor shall provide the gas needed for construction until permanent meter installation is completed. The Contractor shall make all necessary arrangements with the Gas Company; assume all costs; and make and remove all connections to gas facilities as necessary for required tests.

Yes (5) The Contractor shall provide a temporary shed on the site for the safe storage of his material and equipment. The floor shall be weathertight with a wood floor above grade. The shed shall be removed upon completion of the work or by order of the General Manager.

Yes (6) The Contractor shall provide an office for the Inspector for the entire period of construction or until the General Manager orders its removal. The office, to be located as the General Manager directs, shall be weathertight and have not less than 100 square feet floor area; screened windows that open in opposite walls; a door with latch set and hasp for padlocking; a built in counter of sufficient size for a full set of job blue prints with a drawer for filing 9" x 12" folders; a stool and a plan rack for drawings; an electric heater, a 12" electric fan and electric lights.

Yes (7) The Contractor shall provide a job telephone for the use of City personnel only. The Contractor shall make all necessary arrangements with the telephone company; assume all costs and pay for all calls. The telephone is to be located so that it is easily accessible from the job office and provided with an outside extension bell.

Yes (8) The Contractor shall maintain temporary drainage to keep excavations, pits and trenches free of water accumulation, by pumping if necessary. The Contractor shall protect against damage caused by water backing up in sewers and drains.

Yes (9) The Contractor shall exercise every reasonable precautions to protect channels, storm drains and bodies of water from pollution; and shall conduct and schedule construction operations so as to minimize or avoid muddying and silting of said channels, drains and waters. Water pollution control work shall consist of constructing any facilities which may be required to prevent, control and abate water pollution.

The Project Manager, authorized representative of the General Manager, in charge of this project is:

Alex Ngo at (213) 825-4821

All correspondence should be addressed to the Project Manager at [Note new address as of 03/29/12]:

Department of Public Works, Bureau of Engineering
Recreation and Cultural Facilities Program
1149 S. Broadway, Suite 830,
Los Angeles, California 90015

7. REMOVAL, CLEANUP, AND DEMOBILIZATION

A. Upon completion of the contracted Work, remove all CONTRACTOR tools, materials and other articles from the CITY's property. Should the CONTRACTOR fail to take prompt action to this end, the CITY at its option and without waiver of such other rights as it may have, on thirty (30) calendar days notice, may

treat them as abandoned property. Sweep floors broom clean, clean exterior and interior surfaces and windows and remove rubbish and debris resulting from the contracted Work and maintain the job site in a clean, orderly and safe condition at all times until completion of the physical Work and written Notice of Partial Acceptance. Failure to comply with this requirement shall be grounds for the CITY to assess clean-up costs in the amount of 5% of the mobilization cost.

8. RECORD DRAWINGS

A. Record Drawings are full size drawings (Plans) which are marked up during construction to delineate the actual in-place constructed conditions. Record Drawings shall be provided by the CONTRACTOR for this Project. Requirements for Record Drawings as specified elsewhere shall supplement the requirements specified herein.

B. Record Drawings shall include all changes in the plans including those issued as Change Orders, Plan Clarifications, Addenda, Notice to Bidders, responses to Requests for Information, Jobsite Memos, and any additional details needed for the construction of the Project but not shown on the plans. Substructures encountered while excavating that are left in place shall be located by survey, to the satisfaction of the PROJECT MANAGER, shown, and identified on the Record Drawings. Substructures, including but not limited to concrete structures, electrical conduit and duct banks, drains and sanitary sewer pipelines, process piping, water lines, etc, whose installed location differs from that shown on the original plans shall be precisely located by survey to the satisfaction of the PROJECT MANAGER and recorded on the as-built drawings before backfilling.

C. Mark Record Drawings with red ink or chemical fluid on one (1) set of full size prints to produce a record of the complete installation. Prepare additional drawings that may be required to indicate record conditions on 24" x 36" paper. Additions to Contract Drawings shall employ and use drafting standards, which are consistent with the drafting standards, used in the Contract Drawings.

D. Keep Record Drawings on the job and update during construction and make available for the PROJECT MANAGER'S inspection and copying at all times. The PROJECT MANAGER will review the Record Drawings before submittal of monthly payment requests. If in the opinion of the PROJECT MANAGER, the Record Drawings are not current, approval of the monthly payment may be withheld until the drawings are made current. Submit a signed certification with each monthly payment request stating that the Record Drawings are current and accurate as of the date of the payment request.

E. Where the plans are diagrammatic or lacking precise details, produce dimensioned full size sheets as the Record Drawings. For installations outside of structures, the locations shall be given by coordinates and elevations. Where substructures are encased in concrete, the outside dimensions of the encasement shall also be given.

F. In the case of those drawings which depict the detail requirements for equipment to be assembled and wired in the factory, the Record Drawings shall be updated by indicating those portions which are superseded by final Shop Drawings and by including appropriate reference information describing the Shop Drawings by manufacturer, drawing and revision numbers.

G. At the completion of the Work and after final inspection, copy the Record Drawing (as installed) data, using red ink, onto a new set of high quality prints provided by the CITY. Certify to the completeness and accuracy of the "as installed" information indicated on the prints with its signature. Then deliver as a submittal to the PROJECT MANAGER for review and approval both the field developed prints and the final signed prints as a condition precedent to the CITY'S release of any retained funds.

9. EXCAVATION SHORING, FORMS, AND FALSEWORK

A. Whenever Work under the Contract involves trench excavation five (5) feet or more in depth, or any kind of shoring, design and prepare plans for the required shoring, bracing, and sloping. In addition to the Division 2 specified requirements, submit plans and calculations to the PROJECT MANAGER in advance of excavation to ensure workers' protection from the hazard of caving ground during the excavation. If such plan varies from the shoring system standards established by the Cal-OSHA Construction Safety

Orders, the plan shall be prepared by a California registered civil or structural PROJECT MANAGER employed by the CONTRACTOR, and include all costs therefore in the price named in the Contract for completion of the Work as set forth in the Contract Documents. Nothing in this Article shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this Article shall be construed to impose liability on the CITY, PROJECT MANAGER, INSPECTOR, or any of their officers, agents, representatives, or employees.

B. Secure approval, in advance, from authorities concerned for the use of any bridges proposed by it for public use. Temporary bridges shall be clearly posted as to load limit, with signs and posting conforming to current requirements set forth in the Traffic Manual published by the California Department of Transportation, covering "signs". This manual shall also apply to the street closures, barricades, detours, lights, and other safety devices required.

C. Comply fully with the requirements of the Cal-OSHA Construction Safety Orders, regarding the design of forms, false work, and shoring for concrete placement, and the inspection of same before placement of concrete. Where the Construction Safety Orders requires the services of a civil PROJECT MANAGER registered in the State of California to approve design calculations and Working Drawings of the false work or shoring system, to inspect such system prior to placement of concrete, employ a registered civil PROJECT MANAGER for these purposes, and all costs therefore shall be included in the price named in the Contract for completion of the Work as set forth in the Contract Documents.

D. No Work under this Article shall start until the PROJECT MANAGER has accepted the plans and the CONTRACTOR has obtained permits required and furnished a copy to the PROJECT MANAGER.

10. SUBMITTALS

A. Furnish a schedule and list of required submittals to the PROJECT MANAGER, in accordance to CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS of these General Requirements, including required submittals by Subcontractors.

B. Wherever called for in these specifications or on the plans, or where required by the PROJECT MANAGER, furnish to the PROJECT MANAGER for review 10 copies of each submittal. The term "submittal" as used herein shall be understood to include detail design calculations, design drawings, Shop Drawings, Working Drawings fabrication and installation drawings, erection drawings, lists, graphs, operating instructions, catalog sheets, data sheets, samples, and similar items. Unless otherwise required, Submit said submittals to the PROJECT MANAGER at a time sufficiently early (see paragraph F. below) to allow review of same by the PROJECT MANAGER and to accommodate the rate of construction progress required under the Contract without delaying the Contract Work and with due regard for the possibility of resubmittals. Submittals shall be in English.

C. Design or Shop Drawings or other submittal shall be accompanied by the standard "CONTRACTOR's SUBMITTAL TRANSMITTAL" form. A submittal not accompanied by such a form, or where all applicable items on the form are not completed, or are incorrectly completed, may be returned, at the PROJECT MANAGER'S discretion, for resubmittal.

D. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates a review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the PROJECT MANAGER.

E. Shop Drawings shall show in detail the size, sections, and dimensions of all the member(s); the arrangement and construction of all connections and joints; all holes, straps, and other fittings required for attaching Work; and other pertinent details. When required, PROJECT ENGINEERING computations

shall be submitted. Be responsible for delivering reviewed copies of Shop Drawings to all others whose Work is dependent thereon. Maintain at the site of the Project, a complete file of approved Shop Drawings and manufacturers' data for this Project, at all times.

F. Except as may otherwise be provided herein, the PROJECT MANAGER will make a reasonable attempt to return prints of each submittal to the CONTRACTOR, with its comments noted thereon, within 30 calendar days following their receipt by the PROJECT MANAGER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the PROJECT MANAGER by the second submission of a submittal item. The CITY reserves the right to withhold moneys due the CONTRACTOR to cover additional costs of the PROJECT MANAGER's review beyond the third submittal. Submittal will be returned to the CONTRACTOR with one of three (3) markings:

G. If three (3) copies of a submittal are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN/PROCEED," formal revision and resubmission of said submittal will not be required.

H. If three (3) copies of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED/PROCEED CONDITIONALLY," formal revision and resubmission of said submittal will not be required.

I. If one (1) copy of a submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT/DO NOT PROCEED," revise said submittal and resubmit TEN (10) copies of said revised submittal to the PROJECT MANAGER.

J. Work for which Shop Drawings are required shall be performed in accordance with the reviewed and approved copies. Fabrication of an item shall not commence before the PROJECT MANAGER has reviewed the pertinent submittal and returned the copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN/PROCEED," or "MAKE CORRECTIONS NOTED/PROCEED CONDITIONALLY." Revisions indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for claims for extra Work.

K. CONTRACTOR submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission to the PROJECT MANAGER. Each submittal shall be dated, signed, and certified by the CONTRACTOR as being correct and in strict conformance with the Contract Documents. No consideration for review by the PROJECT MANAGER of any CONTRACTOR submittal will be made for any items that have not been so certified by the CONTRACTOR. Non-certified submittals will be returned to the CONTRACTOR without action taken by the PROJECT MANAGER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

L. The PROJECT MANAGER's review of CONTRACTOR submittal shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions and conformance to the specifications. Assume all responsibility and risk for any misfits due to any errors in the submittal. Any fabrication or other Work performed in advance of the receipt of accepted submittals shall be entirely at the CONTRACTOR's risk and expense. Be responsible for the dimensions and the design of adequate connections and details.

11. SUBSTITUTIONS AND "OR EQUAL" SUBMITTAL

A. Make "Or Equal" submittals within thirty (30) calendar days after issuance of Notice-to-Proceed. A request or submittal received after the specified period will be considered as NOT EQUAL to that so specified and will be processed as a substitution described hereinafter.

B. Clearly identify manufacturers' data submitted to the PROJECT MANAGER for review and acceptance each proposed substitute with the corresponding Contract Drawing detail and Specification section. If the PROJECT MANAGER decides to accept for use in the Project a material, process or article which is not the equal of that specified, make substitution in the manner described in Article 52 CHANGES AND

EXTRA WORK of the General Conditions, with a credit to the CITY for the difference in value.

C. The PROJECT MANAGER will determine whether the material offered is equivalent to that specified. Any revision to structures, piping, mechanical, electrical, instrumentation, or any other Work made necessary by such substitution must be approved by the PROJECT MANAGER, and the entire cost both direct and indirect of these revisions shall be borne by the CONTRACTOR.

D. Materials, processes, or articles may be requested as a substitution by the CONTRACTOR, in lieu of that specified, under the following conditions:

1. Submit in writing and in the manner described in SUBMITTAL of these General Requirements.

2. Submit thirty (30) calendar days before starting the Work, as established by the PROJECT MANAGER, so as not to cause any delay in completion of the Project. No other request will be considered after expiration of the period specified, except that in exceptional cases where it is determined to be in the best interest of the CITY, as approved by the PROJECT MANAGER.

3. Agree to pay for all PROJECT ENGINEERING and design services, if required, to make changes and adjustments in material and Work of trades directly or indirectly affected by the substitute, to the satisfaction of the PROJECT MANAGER, at no cost to the CITY.

4. All requests for substitution shall be made through the CONTRACTOR. Submissions by the CONTRACTOR shall imply the CONTRACTOR's approval of such substitution.

5. No requests for substitutions will be considered during the bidding period.

6. Furnish adequate data with each request for approval of a substitute to enable the PROJECT MANAGER to evaluate the proposed substitution.

MATERIALS, EQUIPMENT, AND APPLIANCES

12. SURVEYING

A. DEFINITIONS

1. CONTRACTOR's Surveyor - Shall be a registered (licensed) Land Surveyor or Registered Civil Engineer authorized to practice land surveying by the State of California in compliance with Business and Professions Code Section 8700, *et. Seq*. cited as the Land Surveyor's Act.

2. Construction Stakes - Durable markers that will maintain elevations, station, and offset for the duration of use as reference markers for construction.

3. Surveying - Described in Section 8726 of the Land Surveyor's Act.

4. Survey Manual - City of Los Angeles, Bureau of PROJECT ENGINEERING Manual, Part J – Survey.

B. SURVEY SERVICES

1. The CONTRACTOR's Surveyor shall comply with State Law and the latest edition of the Standard Specifications for Public Works Construction, "Green Book", and its supplement.

a. The contractor shall employ the Contractor's Surveyor.

b. All work shall utilize CCS 83, Zone 5, and NAVD 88 control systems.

c. CONTRACTOR's Surveyor to utilize horizontal & vertical control provided by PROJECT MANAGER and referenced on drawings.

d. Work shall conform to the lines, elevations, and grades shown on the plans.

e. CONTRACTOR's Surveyor shall notify the PROJECT MANAGER, in writing, of all material discrepancies between existing survey control and the current Work. Any material discrepancies shall be resolved prior to start of construction.

f. During progress of construction, CONTRACTOR's Surveyor to provide surveying services as necessary, or as requested by PROJECT MANAGER or INSPECTOR, to assure construction complies with Contract Documents.

g. CONTRACTOR's Surveyor shall fulfill duties of "PROJECT MANAGER" described in Standard Specifications for Public Works Section 2.9, Surveying, except that the City forces shall be notified 7 days prior to the CONTRACTOR disturbing any street centerline control monuments so they can be preserved by City forces.

2. Safety - CONTRACTOR's Surveyor shall conform to recommended safety standards for all Work, as set forth in the latest edition of Work Area Traffic Control Handbook (WATCH) adopted by the City of Los Angeles Board of Public Works. Compliance with the Confined Space Regulations in the California Code or Regulations, Title 8, Section 5157 of the Cal/OSHA Safety Orders is mandatory.

C. CONSTRUCTION SURVEYS:

1. Conform to Survey Manual Part J, Section J 600 of Bureau of PROJECT MANAGER.

2. CONTRACTOR's Surveyor - Provide all reference stakes and form checks necessary for construction and inspection of improvements. Document construction staking in survey field notes as described in Part C.4 in this Article. Staking may include, but is not limited to - removals, joins, rough grade, slope, utilities, storm drain, sewer, curb, walk, paving, wall, tunnels, building stakes and other staking necessary for construction and inspection.

3. Form Checks - CONTRACTOR's Surveyor to check forms where durable points may be disturbed, removed, or is impractical to be used to verify the design location. Record measured location in survey field notes as described in Part C.4 in this Article. Notify PROJECT MANAGER of all variations from plan locations.

4. Staking Interval and Offset Lines - Staking intervals shall be in accordance with Survey Manual, Figure J 615.225A. CONTRACTOR's Surveyor to set stake lines at an offset distance from the improvement to ensure proper grade, station and alignment.

5. Utility Stakes - CONTRACTOR's Surveyor shall provide stakes for utilities, public or private, which require location or relocation unless PROJECT MANAGER states otherwise.

13. SITE INVESTIGATION

A. Before beginning the Work, inspect related and appurtenant Work and report in writing to the PROJECT MANAGER conditions which will prevent proper completion of the Work. Except as provided for in Article 53, DIFFERING SITE CONDITIONS, of the General Conditions, failure to report any such conditions shall constitute acceptance of all site conditions, and required removal, repair, or replacement caused by unsuitable conditions shall be performed by the CONTRACTOR at its sole cost and expense without any adjustment in the Contract Price or extension of the Contract Completion Date.

14. INSPECTION OF THE WORK

A. Whenever the CONTRACTOR intends to carry on the Work of this Contract on a Saturday, Sunday, or holiday, or more than two eight (8) hours a day shifts on Monday through Friday, or any variation in the time of the workday as set forth in the GENERAL CONDITIONS, length of the workday and work week, notification shall be given to the INSPECTOR and the PROJECT MANAGER of such intention at least forty-eight (48) hours in advance so that inspection may be arranged. No Work shall be allowed during

these times without the approval of the INSPECTOR and no demolition will be permitted on Saturdays, Sundays, or holidays without the prior approval of the Board. All CITY inspection required by the CONTRACTOR on holidays, weekends and overtime for the sole convenience of the CONTRACTOR shall be accomplished at the sole expense of the CONTRACTOR by issuance of a deductive Change Order.

B. Conduct the Work under the general observation of the PROJECT MANAGER and be subject to inspection by the INSPECTOR to ensure compliance with the requirements of the Contract Documents. Such inspection may include mill, Plant, shop or field inspection, as required. The INSPECTOR shall be permitted access to all parts of the Work, including Plants where materials or equipment are manufactured or fabricated. Materials and articles furnished by the CONTRACTOR shall be subject to inspection, and no materials or articles shall be used in the Work until they have been inspected and accepted by the INSPECTOR.

C. Do not backfill, bury, cast concrete, hide or otherwise cover Work until it has been inspected by the INSPECTOR, and other Agencies from which a permit is required. Whenever the CONTRACTOR is ready to backfill, bury, cast in concrete, hide, or otherwise cover any Work under the Contract, notify the INSPECTOR not less than forty-eight (48) hours in advance to request inspection before beginning such Work of covering. Failure of the CONTRACTOR to notify the INSPECTOR at least forty-eight (48) hours in advance of such inspections will be cause for the INSPECTOR to require a sufficient delay in the progress of Work to allow time for such inspections and any remedial or corrective Work required, and costs of such delays, including its effect upon other portions of the Work, shall be borne by the CONTRACTOR. Work so covered in the absence of inspection shall be subject to uncovering at the sole expense of the CONTRACTOR. Where uninspected Work cannot be uncovered, such as in concrete cast over reinforcing steel, such Work shall be subject to demolition, removal, and reconstruction under proper inspection, and no additional payment will be allowed therefore.

D. The presence of the PROJECT MANAGER or the INSPECTOR, shall not relieve the CONTRACTOR of the responsibility for the proper execution of the Work in accordance with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR, and said duty shall not be avoided by any act or omission on the part of the PROJECT MANAGER or the INSPECTOR. If the CONTRACTOR fails to replace any defective or damaged Work or material after reasonable notice, the INSPECTOR may cause such Work or materials to be replaced. The replacement shall be deducted from the amount to be paid to the CONTRACTOR, otherwise the CONTRACTOR shall pay the CITY if there remains insufficient or no amount to be paid by the CITY to the CONTRACTOR.

E. The INSPECTOR will have the right, at all times and places, to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of these specifications, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the site. If the INSPECTOR, through an oversight or otherwise, has not rejected materials or Work which is defective or which is contrary to the specifications, such material, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected by the INSPECTOR upon discovery. Promptly remove rejected articles or materials from the site of the Work after notification of rejection. Costs of removal and replacement of rejected articles or materials as specified herein shall be borne by the CONTRACTOR.

F. At the completion of Work, after completion of all corrections, a final inspection will be made by the INSPECTOR, the PROJECT MANAGER, and the CONTRACTOR, as applicable. The INSPECTOR will provide a Final Inspection Correction List itemizing all Work necessary to complete the Project satisfactorily.

15. SAMPLING, TESTING AND FABRICATION INSPECTION

A. GENERAL

1. Materials and fabricated articles furnished by the CONTRACTOR may be subject to inspection and testing and no materials or fabricated articles shall be incorporated into the Work until they have been accepted by the INSPECTOR. The CONTRACTOR shall ensure that all items requiring shop inspection are inspected at their source as required by the CONTRACT.

2. Fabrication may be subject to inspection by the INSPECTOR, to ensure strict compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop or field inspection, as required. The PROJECT MANAGER or INSPECTOR shall be permitted access to all parts of the Work, including Plants where materials or equipment are manufactured or fabricated. When a third party inspector is approved, meetings may be scheduled with the PROJECT MANAGER or INSPECTOR at the manufacturing facility to review the progress of the Work and the inspection activities.

3. Fabricate items using Shop Drawings that have been submitted to the PROJECT MANAGER and approved in accordance with SUBMITTALS of the GENERAL REQUIREMENTS. Provide shop inspection on materials and/or equipment so designated on the CONTRACTOR's approved Shop Drawings.

4. Material which is subject to or requires shop inspection and arrives at the job site without inspection by the INSPECTOR will be rejected by the INSPECTOR and shall be removed from the job site by the CONTRACTOR at the CONTRACTOR's sole expense.

B. SAMPLES AND TEST SPECIMENS

1. CONTRACTOR shall obtain, perform and pay for all testing. Testing shall be performed at a certified laboratory approved by the PROJECT MANAGER.

2. Samples and test specimens required under these specifications shall be furnished, prepared for testing, and delivered, to the approved testing laboratory at no cost to the CITY.

3. In addition to any other inspection or quality assurance provisions that may be specified, the PROJECT MANAGER or the INSPECTOR shall have the right to independently select, test, and analyze, at the expense of the CITY, additional test specimens of any or all of the materials to be used. Whenever any portion of the Work fails to meet the requirements of the specifications as shown by the results of independent testing or investigation all costs of such independent inspection and investigation, and all costs of removal, correction, and reconstruction or repair of any such Work shall be borne solely by the CONTRACTOR.

4. When the manufacturer, fabricator, supplier, or subcontractor provides the results of tests from samples taken at the mill, factory, or warehouse, the PROJECT MANAGER or INSPECTOR will accept the test reports provided the following conditions are met:

   a. The Testing Agency was approved by the PROJECT MANAGER or INSPECTOR prior to performing the tests, and that all necessary certifications were valid at the time the tests were performed.

   b. The tests were performed in conformity with the specifications for the specified materials or items.

   c. The reports are made in the form of an affidavit specified hereinafter.

5. Whenever the approved independent testing laboratory or inspector takes samples of materials other than at the site, the deliveries to the site of materials represented by such samples shall be identified as specified for the specific material. The results of such tests shall be reported to the INSPECTOR in the form of affidavits attested to by the testing agency. Such affidavits shall furnish the following information with respect to the material sampled:

   a. Manufacturer's name and brand.

   b. Place of sampling.

c. Sufficient information to identify the lot, group, bin, or silo from which the samples were taken.

d. Amount of material in the lot sampled.

e. Statement that the material has passed the requirements.

f. Notarized signature and title of the person making the affidavit and the date of execution of the affidavit.

6. THIRD PARTY INSPECTION REQUIREMENTS

a. The proposed third party inspection and/or testing company must gain approval by the PROJECT MANAGER after award. Obtain this approval before producing any material or manufacturing any product or equipment. The approved inspection and/or testing agency shall not sublet or assign its Work to any other agency.

b. Comply with requirements as identified in the CONTRACT.

c. The Work and activities of the third party inspection and/or testing agency shall be monitored by the INSPECTOR during meetings to ensure compliance with the Contract Documents.

7. THIRD PARTY TESTING AND INSPECTION LABORATORY APPROVAL PROCEDURES

a. The PROJECT MANAGER will approve third party inspection and/or testing agencies/laboratories.

b. Requests for approval of a third party inspection agency and/or test laboratory shall be in writing from the CONTRACTOR to the PROJECT MANAGER.

c. The letter requesting approval of a third party test laboratory and/or private inspection agency shall contain all of the following information:

i. Complete title of Project.

ii. Project Work order number.

iii. Name of proposed testing laboratory or inspection agency.

iv. Address and telephone number of proposed testing laboratory/inspection agency.

v. Contact person at proposed testing laboratory/inspection agency.

d. The PROJECT MANAGER will notify the CONTRACTOR by letter if the testing laboratory/inspection agency has been approved.

16. GUARANTY/WARRANTY

A. The CONTRACTOR shall and does hereby warrant and guaranty that Work executed under this Contract will be free from defects of materials and workmanship for a period of one (1) year from the date of final acceptance of the Project by the Recreation and Park Commission, except certain specific items of Work, materials and equipment requiring a guaranty or warranty for a greater period of time as hereinafter specified. In the event, that portions of the Work are sufficiently complete to allow use or occupancy by the CITY in the manner and for the purposes intended prior to final completion and acceptance of the Project, the guarantee period for those portions will commence on the date shown on the Statement of Partial Completion.

B. The CONTRACTOR hereby agrees to indemnify and save harmless the CITY, and their officers, agents and employees against and from all claims and liability arising from damage and injury due to said defects. The CONTRACTOR shall repair or replace, at no cost to the CITY, any and all such defective Work and all other Work damaged thereby, which becomes defective during the term of the above-

mentioned guaranties and warranties.

C. Within thirty (30) calendar days prior to completion of all Work the CONTRACTOR shall submit to the PROJECT MANAGER original copies of all manufacturers guaranties covering all supplied and installed equipment and, where applicable, systems.

D. In addition to the requirements of Contract Bonds, of the General Conditions, it shall be understood that the Surety for the faithful performance bond, submitted in conformance with the terms of the Contract for this Project, is liable on its bond for all obligations of the CONTRACTOR including guaranty provisions.

E. The CONTRACTOR shall, within twenty-four (24) hours of notice from the PROJECT MANAGER of any Work not in accordance with the requirements of the Contract, or any defects in the Work, commence and prosecute with due diligence all work necessary to fulfill the terms of this Article and to complete the Work within a period of time as approved by the PROJECT MANAGER. In the event of failure by the CONTRACTOR and/or its surety to respond to the notice or to complete the Work required by this Article within the time specified, the CITY shall proceed to have such Work done at the CONTRACTOR's expense. The CONTRACTOR or its Surety shall promptly reimburse the CITY all direct and indirect cost associated with performing this Work.

17. STORAGE OF MATERIALS AND EQUIPMENT

A. Store and protect materials and equipment in accordance with the manufacturer's instructions, with seals and labels intact and legible. Exercise measures necessary to ensure preservation of the quality, quantity, and fitness of the materials or equipment and perform the manufacturers recommended maintenance of the material or equipment. Absorb any and all cost incurred to store, protect, and maintain the materials and equipment without modification to the Contract Amount.

B. Do not store construction materials in streets, roads, or highways for more than 5 days after unloading. Materials or equipment not installed or used in construction within 5 days after unloading shall be stored elsewhere by the Contractor at its expense unless authorized additional storage time.

C. Do not store construction equipment at the worksite before its actual use on the Work, nor after use for more than 5 days after it is no longer needed.

D. Excavated material, except that which is to be used as backfill in the adjacent trench within three days shall not be stored in public streets unless otherwise permitted. Remove excess material after placing backfill from the site immediately.

PROGRESS OF THE WORK

18. CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK

A. After notification of award and prior to start of any work, the Contractor shall submit its Schedule of Values to the Project Manager for review and approval. Upon approval of the Schedule of Values, and prior to start of any contract work, other than mobilization, the Contractor shall submit its Baseline Schedule to the Project Manager for acceptance. The Baseline Schedule shall be based on the approved Schedule of Values. The approved Schedule of Values work items shall be the basis for the construction elements for the accepted Baseline Schedule and the Monthly Billing items. As a minimum the Baseline Schedule shall indicate the work plan of all specifications sections. The Baseline Schedule shall include, but is not limited to: all items noted on I.2.a. through I.2.f. and I.2.h. through I.2.o. The Baseline Schedule shall recognize the protection, removal, or relocation of utilities and how they affect construction. The Baseline Schedule shall also reflect completion of all work under the Contract within the specified time and in accordance with the Specifications.

Unless otherwise provided, the Contract time shall commence as indicated in the Notice-to-Proceed letter. The Work shall start within 10 days thereafter, and be diligently prosecuted to completion within the time provided in the Specifications or as modified through change order.

Upon acceptance of the Baseline Schedule by the Project Manager, the Contractor shall maintain a copy of the accepted schedule in the jobsite office, recording thereon progress of the work at the end of each

calendar week.

B. Methodology: The Baseline Schedule and all Updated Progress/Recovery Construction Schedules (UPRS) shall be in the form of a Critical Path Method schedule showing chronological relationship of all activities of the project. The principles and definitions of the terms used herein shall be as set forth in the Associated General Contractor's publication "As-Planned CPM Schedule - Handbook", latest edition. To the extent there are any conflicts between the Associated General Contractor's publication and the Specifications, the Specifications shall govern. The Contractor shall utilize Primavera Sure-Trak 3.0 or Microsoft Project 2000 as the computer program for formatting the Baseline Schedule, and subsequent updated schedules.

C. The Contractor shall have the right to complete the job in advance of the scheduled completion date and within the allowable days allotted for the project. In the event that the Contractor elects to finish the project in advance, a Change Order shall be issued to reflect reduced duration and revised completion date. The Contractor shall not be entitled to any additional compensation for early project completion.

D. A schedule showing the Work completed in less than the Contract Time, which has been accepted by Owner and amended by Change Order, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the Work and Contract Substantial Completion. Project Float is a resource available to both City and Contractor. No compensation shall be due to the Contractor for use of this float time by either party.

E. Float Ownership: Neither City nor Contractor owns float. The Project owns the float. As such, liability for delay of any Substantial Completion date rests with the party whose actions, last in time, actually cause delay to a Substantial Completion date.

F. The Contractor shall forward to the General Manager, along with the monthly Request for Payment, the Updated Schedule, referred to in Section B of this Article, indicating the progress of any part of the work not up to Baseline Schedule, stating the existing status, cause of delay, impact of change orders and approximate time of completion.

G. If the Contractor should fall behind the progress schedule by more than one month, the Contractor must provide the General Manager with an Updated Progress/Recovery Schedule (UPRS). Failure to comply with the full requirements of this Article shall be cause for withholding all future progress payments until full compliance. Failure to provide more than 2 consecutive Updated Schedules or UPRS shall constitute grounds for cancellation of the project.

H. The Department reserves the right to request a two-week "look ahead" schedules if the Department determines that the submitted UPRS does not reflect the as-built condition, manpower utilization or sequential progress necessary to fulfill the intent of the UPRS.

I. Network Details:

1. The Schedule shall include time-scaled network diagram, based on working days, as well as tabulations. It shall be constructed to show the order in which the Contractor proposed to carry out the Work, to indicate restrictions of access and to show availability of work areas, and availability and use of manpower, materials and equipment. The Contractor shall utilize the Schedule in planning, scheduling, coordinating, and performing the Work under the Contract (including activities of Subcontractors, equipment venders, and Suppliers). Provide the Project Manager with written confirmation of the concurrence of listed trade Subcontractors and Suppliers with the Schedule. Major trade Subcontractors and Suppliers shall approve the Schedule before they are submitted.

2. The Schedule shall provide the Project Manager and Inspector with a tool to monitor and follow the progress of all phases of the Work. The Schedule submitted to the Project Manager shall comply with all limits imposed by the scope of Work, and with all constraints, restraints or sequences included in the Contact. The degree of detail shall include factors to the satisfaction of the Project Manager, including, but not limited to:

a. Physical breakdown of the Project including estimated starting and completion dates of activities.

b. Float Time.

c. Contract milestones and completion dates, building occupancy date, constraints, restraints, sequences of Work shown in the Contract, the maintenance period and the final completion date. Durations shall be in calendar day.

d. Type of Work to be performed, and the sequences.

e. Purchases, submittals, submittal reviews, manufacturing, tests, delivery, and installation activities for all major materials and equipment.

f. Deliveries of City furnished equipment and/or materials in accordance with the dates or schedule windows of such items set forth in the Contractor furnished by the Project Manager, or items to be salvaged and delivered to the City.

g. Preparation, submittal and approval of Shop Drawings and material samples showing a thirty (30) day minimum time specified for the Project Manager's review of normal or routine submittals. A forty (40) day review time for all major submittals and the same time frame shall be allowed for at least one (1) re-submittal on all major submittals.

h. Impact of Change Orders issued to the Contract.

i. Approvals required by regulatory agencies or other third parties.

j. Plans for all subcontract Work.

k. Access to and availability of Work areas including all anticipated shutdowns.

l. Identification of linkage between preceding, concurrent and follow-on Sub- contractors and utilities that are shown on the Plans or called out in the Specifications.

m. Actual tests, submission of test reports, and approval of test results.

n. Training and classes required under the Contract.

o. Pre-Final and Final Inspection punch lists and final cleanup, allow time for preparation of the punch lists.

p. Clearly identify any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift Work, specified overtime, or Work at times other than regular days or hours.

3. Durations of the labor, equipment, and materials required to perform each activity shall be based on a normal work day unless otherwise approved by the Project Manager.

4. Critical or near critical paths resulting from the use of manpower or equipment restraints shall be kept to a minimum. Near critical paths shall be defined as those paths having fifteen (15) working days or less of total float as shown on the accepted Baseline Schedule.

5. Time scale shall show a continuous flow of information from left to right. The critical path shall be clearly and graphically identified on the schedule.

J. SCHEDULE REPORTS

1. The Schedule submitted to the Project Manager shall include the time scaled network diagram. Network diagrams shall be based on early start and early finish dates of activities shown and any related calculations generated by the scheduling program which describes the events and activities depicted.

K. APPROVAL OF BASELINE SCHEDULE

1. Acceptance Process:

2. The Project Manager will accept or reject, in writing, the Contractor's submission within fourteen (14) days after receipt of required information. The Construction Schedule, once accepted, becomes the Baseline Schedule which shall be used for monitoring and evaluating all facets of Contract performance, including, but not limited to: payment progress, changes, and delays.

3. Revise the Schedule, periodically per B, F, G, and H of this Article.

L. REVISIONS TO ACCEPTED BASELINE SCHEDULE

1. No change to the accepted Baseline Schedule shall be made without the prior written approval of the Project Manager.

M. UPDATES TO ACCEPTED BASELINE SCHEDULE AND PROGRESS PAYMENTS

1. Updated Schedules or UPRS:

a. See Section F of this Article.

b. The Update Report shall show the activities or portions of activities completed during the reporting period and their total value as the basis for the Contractor's monthly request for payment. Payments made pursuant to Partial Payments of these General Requirements will be based on the total value of such activities completed or partially completed after verification by the Inspector. The report shall state the percentage of the Work actually complete as of the report date.

N. RESPONSIBILITY FOR COMPLETION

1. Whenever it becomes apparent from the Updated Schedule or UPRS that phasing, milestone, constraint, restraint, or Contract completion dates will not be met, the Contractor shall execute some or all of the following remedial actions:

a. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of Work.

b. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog or Work. Contractor shall be responsible for all additional costs associated in having the Inspector present at the job site for all periods in excess of the basic work day.

c. Reschedule the Work in conformance with the Specification requirements.

2. Before implementing any of the above actions, the Contractor shall notify and obtain written approval from the Project Manager.

3. Under no circumstances will the addition of equipment or construction forces, increasing the working hours or any other method, manner, or procedure to return to the contractually required completion date be considered justification for a Change Order or be treated as acceleration where the need for a UPRS has been caused by the Contractor and/or its Subcontractors or Suppliers, at any tier.

4. The Project Manager may elect to withhold progress payments until the Contractor's progress indicates that the milestone date(s) and/or the Contract completion date will be met.

19. WORK BY CITY OR OTHERS

A. Be responsible for ascertaining the nature and extent of any simultaneous, collateral and essential work by others. The CITY, its employees and contractors, and others, shall have the right to operate within or adjacent to the worksite to perform such Work.

B. The CITY, the CONTRACTOR, and each of such employees, contractors and others, shall coordinate their operations and cooperate to hold interference to a minimum.

C. Include in its Bid all costs involved as a result of coordinating its Work with others. The CONTRACTOR shall not be entitled to additional compensation from the CITY for damages resulting from such simultaneous, collateral and essential Work. The CONTRACTOR's coordinating efforts shall include redeployment of his Work forces to other parts of the Work.

PAYMENT FOR WORK

20. PARTIAL PAYMENTS (Revised as of 02/12/16)

A. Unless otherwise prescribed by law, three (3) working days prior to the last work day of each month, or other such date mutually agreed upon by the CONTRACTOR and the INSPECTOR, the CONTRACTOR shall prepare and submit to the INSPECTOR, an estimate of the cumulative amount and value of acceptable Work performed by the CONTRACTOR at the jobsite up to that date. Said amount shall also include the value of all acceptable materials and equipment for the Contract that have been delivered and suitably stored but not yet used in the Work, subject to the requirements of PAYMENTS FOR MATERIALS OR EQUIPMENT DELIVERED AND STORED ON THE JOBSITE and PAYMENT FOR MATERIALS OR EQUIPMENT STORED OFF THE JOBSITE of these General Requirements.

B. Payments for undelivered, specifically manufactured equipment to be incorporated into the Work, excluding "off the shelf " or catalog items, will be made when all of the following conditions exist:

1. The equipment must be specifically designated in the Technical Specifications for partial payment prior to delivery.
2. The equipment to be specifically manufactured for the Project could neither be readily utilized on nor diverted to another job, and,
3. A fabrication period of more than six (6) months is anticipated,

C. Upon verification and approval by the INSPECTOR, such estimate shall be processed by the INSPECTOR in accordance with the provisions of the California Public Contracts Code.

D. The CITY may retain a portion of the amount otherwise due to the CONTRACTOR, as follows:

1. Retention of **five percent (5%)** will be held on the original Contract value on each approved payment claim until the amount paid of the original Contract equals fifty percent (50%). The CITY may then, at its sole discretion discontinue further retention on the original Contract value for all subsequently approved payment claims.
2. At any time during the course of the Contract, the CITY may, at its sole discretion, reinstate the **five percent (5%)** retention.
3. Additional deductions will be made from each monthly payment request for amounts due the CITY as follows:
    a. Equipment or materials furnished by the CITY.
    b. Services rendered to the CONTRACTOR by the CITY.
    c. Amounts due the CITY for liquidated damages or penalties under the terms of the Contract.
    d. Amounts required to be deducted by federal, state, or local governmental authority or other provisions of these Contract Documents.

E. From the balance thus determined will be deducted the amount of all previous payments, and the remainder shall constitute the monthly payment due the CONTRACTOR. Within thirty (30) calendar days after receipt of the INSPECTOR's recommendation by the Department of the monthly payment due the CONTRACTOR and subject to the deductions provided, herein, the CITY will pay the amount found due.

F. On lump-sum items the INSPECTOR's estimate of the monthly payment due the CONTRACTOR will not be required to be made by strict measurement, and an approximate estimate will suffice.

G. The monthly payments may be withheld or reduced, for the following reasons:

1. If the CONTRACTOR is not diligently or efficiently complying with the express intent of the Contract.
2. If there are unresolved Notices of Non-Compliance.
3. If Technical Manuals are not submitted.
4. If Record Drawings are not kept up-to-date.
5. If progress photographs are not submitted, and
6. If construction schedules are not submitted in accordance with these General Requirements.
7. The CONTRACTOR shall promptly submit the following in response to requests by the INSPECTOR:
8. Information and records necessary to determine the cost of the Work for purposes of estimating monthly payment.
9. Itemized statements, in a form satisfactory to the INSPECTOR, of the actual cost of all acceptable materials delivered by the CONTRACTOR to the site.

H. The making of any payment to the CONTRACTOR shall not relieve the CONTRACTOR from contractual obligations. These payments shall not be construed as the transfer of ownership of any equipment or materials to the CITY.

I. Responsibility of ownership shall remain with the CONTRACTOR who shall be obligated to store, protect, repair, replace, rebuild or otherwise restore any fully or partially completed Work or structure for which payment has been made. The CONTRACTOR shall replace any materials or equipment required to be provided under the Contract that may be damaged, lost, stolen, or otherwise degraded in any way prior to acceptance of the Work under the Contract.

J. At its own expense, the CONTRACTOR has the option, to substitute for any money being withheld by the CITY, securities equivalent to the amount being withheld. Securities eligible for such substitution are bank or savings and loans certificates of deposit or such securities eligible for investment pursuant to California Government Code. Any such security or securities so substituted for monies withheld, shall be owned by the CONTRACTOR who shall receive earned interest.

K. Such security shall, at the request and expense of the CONTRACTOR, be deposited with CITY or with a State or Federally Chartered Bank as the escrow agent who shall pay such monies to the CONTRACTOR upon notification by the CITY that payment can be made. Such notification will be given at the expiration of sixty (60) calendar days from the date of acceptance of the Work by the Board, or as prescribed by law, provided, however, that there will be a continued retention of necessary securities to cover such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.

L. Any escrow agreement entered into pursuant to this provision shall contain as a minimum, the following provisions - the amount of securities to be deposited; the terms and conditions of conversion to cash in case of the default of the CONTRACTOR; and the termination of the escrow upon completion of the Contract and the other requirements as herein above provided.

21. PAYMENT FOR MOBILIZATION

A. General Mobilization

1. Payment for general mobilization shall be limited to those items of Work described in MOBILIZATION, of these General Requirements.
2. The CONTRACTOR shall submit to the PROJECT MANAGER for approval a breakdown of the amount established for mobilization. The payment for each item of mobilization will be made when

that item of mobilization has been completed and as specified below:

3. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is five percent (5%) or more of the original Contract amount, the total amount earned for mobilization may be up to fifty percent (50%) of the Contract item price for mobilization or five percent (5%) of the original Contract amount, whichever is less will be included in the said estimate for payment.

4. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is ten percent (10%) or more of the original Contract amount, the total amount earned for mobilization may be up to seventy-five (75%) of the Contract item price for mobilization or seven point five percent (7.5%) of the original Contract amount, whichever is less will be included in the said estimate for payment.

5. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is twenty percent (20%) or more of the original Contract amount, the total amount earned for mobilization may be up to ninety-five percent (95%) of the Contract item price for mobilization or nine point five percent (9.5%) of the original Contract amount, whichever is less will be included in the said estimate for payment.

6. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization, is fifty percent (50%) or more of the original Contract amount, the total amount earned for mobilization may be up to one hundred percent (100%) of the Contract item price for mobilization or ten percent (10%) of the original Contract amount, whichever is less will be included in the said estimate for payment.

7. After acceptance of the Contract by the BOARD, the amount, if any, of the Contract item price for mobilization in excess of ten percent (10%) of the original Contract amount will be included for payment in the final monthly payment.

8. The Contract lump sum price paid for mobilization shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the Work involved in mobilization as specified herein.

9. The adjustment provisions in PAYMENT FOR CHANGES AND EXTRA WORK of these General Requirements, and the retention of funds provisions of PARTIAL PAYMENTS of these General Requirements shall not apply to the Contract lump sum item for Mobilization.

10. When other Contract items are adjusted as provided in PAYMENT FOR CHANGES AND EXTRA WORK of these General Requirements, if the costs applicable to such item of Work include mobilization costs, such mobilization costs will be deemed to have been recovered by the CONTRACTOR by the payments made for mobilization and will be excluded from consideration in determining compensation under said Article.

11. When the Contract does not include a Contract pay item for mobilization as specified above, full compensation for any necessary mobilization required shall be considered as included in the prices paid for the various Contract items of Work involved and no additional compensation will be allowed.

22. PAY ITEM DEFINITIONS

This Article describes methods of measurement and payment for lump sum and unit priced items listed on the Schedule of Work and Prices, contained in the Contract Proposal.

A. The Contractor shall not take advantage of any apparent error or omission on the Drawings or Specifications, and the PROJECT MANAGER shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.

B. All portions of the Work are either in an applicable allowance, lump sum, or unit price item listed on the schedule of Work and Prices. Work for which there is not a separate item will be considered incidental to

the contract and no additional compensation shall be allowed.

C. ALLOWANCES

1. Fixed allowances may have been allocated to the Schedule of Work and Prices for certain items of work. Requirements for each Allowance Item are specified below or a reference is given to the General Requirements article that describes the work. Allowance item work is to be performed only as directed by the PROJECT MANAGER. Unless otherwise noted, Allowances will be paid on a time and materials basis in accordance with Section C, PARTIAL PAYMENTS of these General Requirements.

2. If allowance items are not executed or are only partially executed or the allowance for any item is not expended or partially expended, then a deductive change order shall be issued for the amount that is not expended. If, however, these items are over expended then an appropriate change order shall be executed in accordance with, PAYMENT FOR CHANGES AND EXTRA WORK, of these General Requirements.

D. LUMP SUM ITEMS:

1. Payment of the lump sum items established in the contractor's Bid under the various line items in the Bid Form shall be full compensation for all labor, materials, and equipment required to furnish, install, construct, and test the Work covered under the lump sum bid item.

2. Payment for the lump sum items established in the Contractor's Bid shall also fully compensate the Contractor for any other work which is not specified or shown, but which is necessary to complete the Work.

3. Payments for Lump Sum Work other than Mobilization will be based upon physical progress for each activity in accordance with the breakdown of the Lump Sum prices agreed to in the Schedule of Values.

E. UNIT PRICE ITEMS:

1. Payment for all work shall be in accordance with the unit price bid items in the schedule of Work and Prices and shall be full compensation for all labor, materials, and equipment required to furnish, install, construct and test the Work covered under the unit price bid item. Work for which there is not a price schedule item will be considered incidental to the Work and no additional compensation shall be allowed.

2. Payment will be made only for the actual quantities of work performed in compliance with the Drawings and Specifications. The Contractor will receive reimbursement equal to the approved quantity times applicable unit price.

23. SCHEDULE OF VALUES

A. The Schedule of Values will be used as a basis for determining progress payments on a lump sum Contract or any designated lump sum bid item. The Schedule of Values shall be a schedule of cost loaded construction activities equal, in total, to the lump sum bid and shall be in such form and sufficient detail to correctly represent a reasonable apportionment of the lump sum. Prior to submitting an invoice for payment, the CONTRACTOR shall have submitted a detailed Schedule of Values and obtained approval from the PROJECT MANAGER.

B. Each lump sum bid item on the Schedule of Work and Prices as set forth in the Bid must be broken down separately. The breakdown of each lump sum bid item must cover the cost of construction required by the plans and specifications for that item. The sum of the values for the construction activities, within a bid item must equal the total amount bid for that item.

C. Each activity in the Schedule of Values shall delineate one construction activity. For example, the placement of concrete between construction joints, the construction of an electrical duct bank or pipeline between points A & B. The costing for each activity should include all costs for the labor and materials or

equipment required to complete the activity. For example, concrete construction activities should include all costs for the forming, placing of reinforcement, placing concrete and curing. The cost for pipeline construction activities should include materials, equipment and installation including pipeline supports or thrust blocks. The excavation and backfill for a pipeline or structure may be separate activities. No non-construction activity shall be cost loaded.

24. NOTICE TO WITHHOLD AND/OR STOP NOTICE

A. When a "Notice to Withhold" or "Stop Notice" is served upon the CITY, or the BOARD, pursuant to the lien statutes of the State of California, to withhold sufficient funds from payments to the CONTRACTOR in support of a claim resulting from default by the CONTRACTOR in payment for labor or materials used in prosecution of the Contract, the CITY shall withhold from payment due the CONTRACTOR an amount of money equal to the amount of the claim stated in the "Notice to Withhold" or "Stop Notice," and an additional amount equal to twenty-five percent (25%) of the amount of said claim, to defray the costs of litigation in the event of court action on the claim, for a total withholding of one and one quarter times the stated amount of the claim. At the discretion of the CITY, the CITY may allow the CONTRACTOR to file with the CITY the bond referred to in the Civil Code of the State of California after which said monies will not be withheld on account of such "Notice to Withhold" or "Stop Notice."

B. In the event the Contract is terminated for CONTRACTOR default, any funds due the CONTRACTOR and retained by the CITY in accordance with PARTIAL PAYMENTS of these General Requirements, shall become the property of the CITY to the extent necessary to repay to the CITY any excess in the Contract price above the cost of the Work completed at the time of termination. After issuance of notice to discontinue Work, no further payments will be made to the CONTRACTOR for the Work covered by the notice until completion of Work and final settlement has been made.

25. FINAL PAYMENT

A. Final payment to the CONTRACTOR is made following action by the BOARD that formally adopts the recommendation of the PROJECT MANAGER to accept the Contract.

B. After acceptance of the Work by the BOARD and not more than sixty (60) calendar days after filing Notice of Completion, the CITY will make final payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract, including the following items:

1. Liquidated damages, as applicable;
2. Lien claims or Stop Notices filed on behalf of suppliers, Subcontractors, and labor performed in connection with the Project; except, that upon submittal of a Stop Notice Release Bond issued by an approved Surety Company executed in favor of the CONTRACTOR, the CITY will release such portion of the retainage funds to said CONTRACTOR that is being held solely to cover Stop Notice Claims.
3. No claim of the CONTRACTOR under this Article shall be allowed unless the CONTRACTOR has given the required written notice. Nor shall a claim by the CONTRACTOR for an equitable adjustment hereunder be allowed if asserted after final payment under this Contract.

26. CHANGE ORDER REQUESTS

A. The CONTRACTOR's quotations for preliminary change orders for extras, changes, additions, or deletions to the Work as described in Article 52 CHANGES AND EXTRA WORK of the General Conditions shall be submitted to the PROJECT MANAGER, in writing, on the Change Order Cost Quotation Form provided by the PROJECT MANAGER, and in conformance with the requirements of PAYMENT FOR CHANGES AND EXTRA WORK of these General Requirements. Examples of these forms are bound at the end of these General Requirements. The quotation shall be firm for a period of not less than sixty (60) calendar days from the date of receipt of the quotation by the PROJECT MANAGER. Submit its written cost quotation and Time Impact Analysis not later than two (2) weeks after being requested to provide such quotation, unless the PROJECT MANAGER allows more time. Delays in

submitting quotations beyond the two (2) weeks set forth herein, which cause a delay in the issuance of a Change Order or a delay to the completion date of the Project, shall not be cause for a claim or a time extension under the Contract.

B. The PROJECT MANAGER's request for quotation on a preliminary change shall not be considered authorization to proceed with the changed Work prior to the issuance of a formal Change Order, unless directed otherwise in writing by the PROJECT MANAGER, nor shall such request constitute justification for a delay to the existing Work or a time extension under the Contract.

27. PAYMENT FOR CHANGES AND EXTRA WORK

Payment to the CONTRACTOR, or credit to the CITY, for any extra, change addition or deletion to the Work under the Contract, or settlement of any claim under the Contract, covered by any Change Order, shall be determined by the methods set forth herein. The PROJECT MANAGER may change the plans and specifications, character of the Work, or quantity of Work provided the total arithmetic dollar value of all such changes, both additive and deductive, does not exceed twenty-five percent (25%) of the Contract price. Should it become necessary to exceed this limitation, the change shall be by written Supplemental Agreement between the CONTRACTOR and the CITY, which shall be executed by a Change Order.

A. LUMP SUM

A total sum for the changed Work may be mutually determined by the PROJECT MANAGER and the CONTRACTOR. The CONTRACTOR shall furnish a breakdown of the costs satisfactory to the PROJECT MANAGER, of the proposed lump sum, in complete accordance with C through J of this Article. Such lump sum costs shall be full and final compensation as described in D of this Article. All cost proposals for lump sum Change Orders shall be presented in accordance with C through J of this Article.

B. COST REIMBURSEMENT (TIME AND MATERIALS) WORK

The costs of all changed Work submitted under the cost reimbursement (time and materials) method shall be formulated in accordance with the provisions of C through J of this Article.

Additionally, if the method or amount of payment cannot be agreed upon prior to the beginning of the Work, the PROJECT MANAGER may issue a unilateral Change Order in the amount determined reasonable by the PROJECT MANAGER for the changed Work and direct the CONTRACTOR to proceed with the changed Work or the PROJECT MANAGER may direct in writing that the Work be done on a cost reimbursement (time and materials) basis, and the CONTRACTOR shall provide all labor, equipment, and materials necessary to complete the Work in a satisfactory manner and within a reasonable period of time. For Work performed, payment shall be made for the documented actual cost, in accordance with the following provisions.

1. Labor, up to and including general foremen, who are directly assigned to the changed Work. Employees identified as superintendents shall not be charged as labor on changed Work, but shall be covered under overhead costs. These costs shall include actual documented payroll costs including wages, payroll taxes as established by law (i.e., FICA, Federal and State Unemployment Taxes), fringe benefits as established by negotiated labor agreements, and any insurance costs (such as Worker's Compensation and General Liability Insurance but shall not include Automobile Liability Insurance, OCIP coverage, or any other insurance costs which are provided for in B.6 below which are currently assessed against labor costs. A detailed breakdown of the subcomponents of labor costs, by all crafts shall be submitted to the PROJECT MANAGER, by the CONTRACTOR and all SUBCONTRACTORS, for approval, as part of the documentation of labor costs, within forty-five (45) days after issuance of the Notice to Proceed. No other subcomponents of labor costs shall be considered, unless approved in writing by the PROJECT MANAGER.

2. Materials - The cost of materials used in performing the changed Work will be the cost, including sales tax, to the purchaser, whether CONTRACTOR, Subcontractor or other forces, from the supplier thereof, except as the following are applicable:

a. Cash or trade discounts available to the purchaser shall be credited to the CITY notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.

b. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost will be deemed to be the price paid to the actual supplier as determined by the PROJECT MANAGER. Markup, except for actual costs incurred in the handling of such materials, will not be allowed.

c. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on Contract items or the current wholesale price for such materials delivered to the job site, whichever price is lower.

d. If, in the opinion of the PROJECT MANAGER, the cost of materials is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such materials, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned, delivered to the job site less cash or trade discount. The CITY reserves the right to furnish materials for the Work and no claim shall be made by the CONTRACTOR for costs and profit on such materials.

e. For the purposes of this Article, a "Supplier" is defined as any person or persons, firm or business, who supplies materials, of construction and/or permanent equipment, but who does not perform any portion of the Work of the Contract on site, for the CONTRACTOR, except that labor or labor supervision which may be required by some manufacturers as part of their equipment installation for warranty or other purposes.

3. EQUIPMENT COSTS, including ownership, lease or rental costs, as well as operating costs, for individual equipment units whose replacement value is in excess of $1,000. Transportation and set up costs shall be included, but only if the equipment is imported to the worksite solely to perform Work on the changed Work included in the Change Order and the CONTRACTOR can demonstrate that the changed Work cannot or could not be performed economically with equipment already at the site. Equipment costs shall be determined in accordance with the requirements set forth in H of this Article.

4. SUBCONTRACTOR COSTS, provided that such costs are direct costs to the CONTRACTOR for performing the changed Work as set forth in E of this Article.

5. BOND COSTS on the incremental change in the value of the Contract shall be determined and paid for as set forth in I.1 of this Article.

6. INSURANCE COSTS (other than labor insurance or OCIP coverage) shall be determined and paid for as set forth in I.2 of this Article.

C. GENERAL

1. It is the intent of the CITY to settle all Change Orders full and final at the time the Change Order is issued. Therefore, the following paragraph will be incorporated, in writing, on all Change Orders.

> "The compensation (time and cost) set forth in a Change Order comprises the total compensation due the CONTRACTOR, all Subcontractors, and all Suppliers, for the Work or change defined in the Change Order, including impact on unchanged Work. By signing the Change Order, the CONTRACTOR acknowledges and agrees on its behalf and on the behalf of all Subcontractors, and all Suppliers, that the stipulated compensation includes payment for all Work contained in the Change Order, plus all payment for the interruption of schedules, extended field overhead costs, delay, and all impact, ripple effect or cumulative impact on all other Work under this Contract. The signing of the Change Order indicates that the Change Order constitutes full mutual accord and satisfaction for the change, and that the time and/or cost under

the Change Order constitutes the total adjustment to price or time or performance owed the CONTRACTOR, all Subcontractors, and all Suppliers as a result of the change. The CONTRACTOR, on behalf of himself, all Subcontractors, and all Suppliers, agrees to waive all rights, without exception or reservation of any kind whatsoever, to file any further claim related to this Change Order. No further claim or request for adjustment of any type, excepting only bond and insurance cost as set forth in these General Requirements of the Contract Documents for any reasonably foreseeable cause shall arise out of or as a result of this Change Order or the impact of this Change Order on the remainder of the Work under this Contract."

2. Costs which shall not be paid in Change Orders under this Contract include, but are not limited to, interest costs of any type; claim preparation or filing costs; legal expenses; the costs of preparing or reviewing proposed Change Orders or Change Order proposals; lost revenue; lost profits; lost income or earnings; rescheduling costs; costs of idled equipment when such equipment is not at the site or has not yet been employed on the Work; lost earnings or interest on unpaid retainage; claims consulting costs; and the costs of corporate officer or staff visiting the site; any compensation due to the fluctuation of foreign currency conversion or exchange rates; loss of other business; changes in taxes or increased tax rates of any kind or any costs identified as unallowable under the provisions of the Federal Acquisition Regulations.

3. Extensions of time shall be based solely upon the effect of delays to the Work as a whole. Extensions of time shall not be granted for delays to the Work, unless the CONTRACTOR can clearly demonstrate, through analysis of the current updated schedule, that the delay to the Work as a whole arose or will arise from causes other than normal weather, beyond the control and without fault or negligence of the CONTRACTOR, or any Subcontractor, at any tier, and that such delays did or will, in fact, delay the progress of the Work as a whole. The CONTRACTOR shall not be entitled to a time extension unless it submits a Time Impact Analysis which is a calculation of the extent of the delay to the end date of the Work and which shows that the Work has been or will be extended beyond the current Contract completion date. A Time Impact Analysis is an estimating procedure which utilizes the networking techniques (fragnets) and a written analysis of the facts associated with the alleged delay to demonstrate the effect of the alleged delay on the critical path of the schedule. A "fragnet" is defined as a sequence of new activities and/or activity revisions that are proposed to be added to the existing current updated schedule to demonstrate (mathematically and graphically) the influence of the alleged delay on the end date of the Work and shall be the sole method for incorporating delays and impacts into the schedule. The objective of a Time Impact Analysis is to pinpoint, isolate, and quantify all time impact associated with a specific issue and determine its time relationship to past or current delays. Time extensions shall not be allowed for delays to parts of the Work that are not on the critical path of the currently approved monthly updated Project Schedule. Time extensions shall not be granted, nor delay damages of any kind whatsoever paid to the CONTRACTOR, until all available float, slack, or contingency time on the Project is used and the end date of the Work is moved beyond the current, adjusted Contract completion date.

4. The CONTRACTOR'S Cost Breakdowns submitted under the lump sum method described in paragraph A and its Change Order Quotations submitted under the cost reimbursement (time and materials) method described in paragraph B (including without limitation requests for cost reimbursement for delay, disruption, hindrance and interference associated with extras, changes, additions or deletions) shall be itemized in a manner that, with mathematical certainty and without reliance upon probabilities or inferences, segregates the direct, actual reimbursable costs associated with each individual extra, change, addition, deletion and (on an event-by-event basis) each individual delay or disruption event. Such Change Order Cost Quotations shall not be based, in whole or in part, upon any methodology (such as "total cost" or "modified total cost" methodologies) that purports to calculate the CONTRACTOR'S additional costs of performance of the extra, change, addition or deletion (including without limitation the additional costs of delay, disruption or other impact) based on the difference between CONTRACTOR'S total actual Project

or line item costs (with or without fee) and its original bid estimate for the Project or any original bid estimate line item. In connection with the foregoing, CONTRACTOR represents and warrants that it has the ability to generate and maintain complete and accurate cost accounting records that will reflect:

a. The actual costs incurred or saved for each individual item of extra work, change, addition, deletion (including without limitation any costs of associated delay, disruption, interference, hindrance and the cumulative impact of each extra, change, addition, deletion on other parts of the Work); and,

b. On an event-by-event basis, the effect of each delay or disruption that forms the basis of each request for extension of time, regardless of their scope, number, complexity, cumulative effect, or time of issuance or occurrence.

5. Except as provided in Article 51, COMPENSATION FOR DELAY, DISRUPTION, UNANTICIPATED OVERHEAD of the General Conditions, CONTRACTOR shall have no right to recovery of any compensation, costs, expenses or damages resulting from delay, disruption, interference, or hindrance in the performance of the Work (including without limitation interruption of schedules, excess or extraordinary extended field and indirect overhead costs, loss of productivity and the impact, ripple or cumulative effect on other Work).

6. CONTRACTOR waives any claim or rights and remedies based on abandonment, quantum merit, rescission or other similar legal theory by reason of any of the following circumstances, which the CONTRACTOR acknowledges and agrees are within the reasonable contemplation of the parties:

a. Extras, changes, additions and deletions to the Work after execution of the CONTRACT and issued from time to time throughout the period of construction, regardless of their scope, number, cumulative value, or complexity, to correct errors, omissions, conflicts, and ambiguities in the Contract Documents, or to implement discretionary changes the scope of Work requested by the CITY;

b. The issuance and performance of extras, changes, additions and deletions in a manner that is not in sequence with the as-built or as-planned progress of the Work;

c. Changes due to Differing Site Conditions;

d. Suspensions of the Work or parts thereof, or limitations on access to portions or all of the Work, for the convenience of CITY or in the interests of the Project;

e. Delay or disruption to the Work due to failure of the CITY, PROJECT MANAGER or INSPECTOR to timely perform any contractual obligation.

D. OVERHEAD COSTS

To the costs under Paragraphs C.1., C.2., and C.3., above, an added fixed fee to provide compensation for all overhead costs shall be allowed as established in Paragraph E.1 below. This overhead rate is not applicable to the costs under Paragraphs C.4. through C.6. above.

The overhead rates determined in Paragraphs 1 and 2 below shall be applied to all additive and deductive Change Orders, of this Article.

1. GENERAL AND ADMINISTRATIVE OVERHEAD RATE:

a. An allowance of eight percent (8%) for overhead costs will be allowed to the CONTRACTOR, only when CONTRACTOR uses its own organization to perform a part of the Work under the Change Order based upon the value of labor, material and construction equipment required to accomplish said part of the change Paragraphs C.1., C.2., and C.3.

b. An allowance of twelve percent (12%) for overhead costs will be allowed to the Subcontractors (at any tier), only when Subcontractors use their own organization to perform a part of the Work under the Change Order, based upon the value of labor,

material, and construction equipment required to accomplish said part of the change Paragraphs C.1., C.2.,and C.3.

c. Overhead percentages shall be considered to include all insurance costs other than specifically mentioned in this Article, all field and office supervisors and assistants, all onsite project administration, security costs, the cost of small tools and consumables, incidental job burdens, and all general home office expenses and no separate allowance will be made therefore. Assistants to field and office supervisors include all clerical, stenographic, and general office help. Incidental job burdens include, but are not necessarily limited to, office equipment and supplies, temporary toilets, telephone and conformance to OSHA requirements. Items such as, but not necessarily limited to, review and coordination, estimating, PROJECT MANAGER, scheduling, and expediting relative to Change Orders, and updating and furnishing Record Drawings to incorporate changes, are associated with field and office supervision and are considered to be included in the CONTRACTOR's overhead percentage set forth herein.

d. For those Change Orders with both additive and deductive costs, the overhead rate shall be determined by the net amount of the additive and deductive work.

E. SUBCONTRACTOR COSTS

1. Where Work under the Change Order is performed in whole or in part by a Subcontractor, at any tier, the cost of the Change Order shall include the cost to the Subcontractor. Subcontractor's costs shall be presented in strict accordance with A., B., and C., above, and D. through J. as applicable.

2. An additional fixed fee of six percent (6%) based upon the sum of the costs of all Subcontractors, at any tier, involved in the Work of the Change Order, shall be allowed to the CONTRACTOR for profit and General and Administrative Overhead Costs. An additional fixed fee of six percent (6%) shall be allowed to first tier Subcontractors for profit and General and Administrative Overhead costs for any Work involved in the Change Order that is performed by Sub-subcontractors. No additional fixed fee shall be allowed for Change Order Work performed by Subcontractors to Sub-subcontractors, at any tier.

F. PROFIT

To the costs of C.1., C.2., and C.3., above, plus applicable overhead costs from D.1.a. or D.2.b., if a SUBCONTRACTOR at any tier above, an added fixed fee for Profit shall be allowed as established herein.

1. An allowance of ten percent (10%) for Profit for the party performing the Work under the Change Order, shall be included on all Change Orders that are negotiated full and final in advance of any changed Work being performed.

2. An allowance of five percent (5%) for Profit for the party performing the Work under the Change Order shall be included on all Change Orders where any portion of the Work is performed before the Change Order is executed full and final by both the PROJECT MANAGER and the CONTRACTOR.

3. No added fixed fee for Profit shall be allowed for any cost other than those costs under C.1., C.2., and C.3., of this Article, if Subcontractor at any tier above. No fixed fee for profit shall be allowed on the costs of C.4., C.5., C.6., or F of this Article.

4. On Change Orders with both additive and deductive cost components, the profit allowance on net additive Change Orders shall be based on the Change Order amount after overhead rates have been added. The profit allowance shall be as set forth in Paragraphs 1 and 2 above as applicable. No profit allowance shall be included for net deductive Change Orders.

G. CITY FURNISHED MATERIALS AND EQUIPMENT

The CITY reserves the right to furnish such materials and equipment as it deems expedient, and the CONTRACTOR shall have no claim for profit or overhead on the cost of such materials and equipment.

H. EQUIPMENT COSTS

Full rental costs for rental or leased equipment shall not exceed the rates as set forth in the Rental Rate Blue Book (the Blue Book) published by Dataquest, Inc., Palo Alto, California, as adjusted to the regional area of the Work under this Contract. Owned equipment costs shall not exceed the rates listed in the Cost Reference Guide (the CRG) for Construction Equipment, published by Dataquest, Inc., Palo Alto, California. The most recent published edition in effect at the commencement of actual equipment use shall be used.

1. RENTED OR LEASED EQUIPMENT

a. For equipment rented or leased (including lease with purchase option) in arm's length transactions from outside vendors, the CONTRACTOR shall be paid the actual invoiced, rented or leased rates provided that the invoiced lease or rental rates do not exceed the rates set forth in the Blue Book. Arm's length rental or lease transactions are those in which the firm involved in rental or lease of such equipment is not associated with, owned by, have common management, directorship, facilities, or stockholders with the firm renting the equipment. Submittal by a CONTRACTOR of a rental or leased invoice from the lessor will be prima facie proof of compliance with the above. However, such invoices are not conclusive proof; if questioned, the burden of proof remains with the CONTRACTOR. In no event shall the leased equipment rate billed to the CITY be at rates exceeding those prescribed in the following table:

Actual Usage (Change Order & Contract Work Combined	Blue Book Payment Category
Less than 8 hours	Hourly Rate
8 or more hours but less than 7 days	Daily Rate
7 or more days but less than 30 days	Weekly Rate
30 calendar days or more	Monthly Rate

b. When in Use:

Actual equipment use time documented by the INSPECTOR or PROJECT MANAGER shall be the basis that the equipment was utilized on the changed Work and paid for under the Change Order. In addition to the lease or rental rate, equipment operating costs shall not exceed the estimated hourly operating rate as set forth in the Blue Book. The hours of operation shall be based upon actual equipment usage on the changed Work as recorded by the INSPECTOR or PROJECT MANAGER. For multiple shift Work sequences, the allowable equipment rate shall not exceed fifty percent (50%) of the base rate, for second or third shifts.

c. When Idle:

Idle equipment is equipment on site and necessary to perform the Work under the change but not in actual use due solely to the impact of the changed Work. Equipment operating costs due to idle time, documented by the INSPECTOR or PROJECT MANAGER, shall be paid at the rate determined in Paragraph I above. Idle time shall include a reasonable time allowance to and from the Project site.

2. OWNED AND OTHER EQUIPMENT

a. Equipment rates for owned equipment or equipment provided in other than arm's length transactions will not exceed the total hourly costs as set forth in the Cost Reference Guide.

Adjustments to the listed rates provided for under the section of the Cost Reference entitled "Cost and Production Formulas" shall not be allowed. Except as noted herein below, this equipment hourly rate plus the estimated operating cost per hour from the Cost Reference Guide will be paid for each hour the equipment actually performs Work on the changed Work. Daily records listing the equipment units and their respective operators, identification code, and actual usage on the Work under the Change Order, as certified at the end of each Work day (or work shift if the Work is being performed in multiple work shift sequence) by the INSPECTOR or PROJECT MANAGER shall be the record upon which actual equipment use shall be based. For multiple shift Work sequences, the allowable equipment rate shall not exceed the hourly depreciation and operating costs listed in the Cost Reference Guide, for second or third shifts. It is agreed that this rate shall represent payment in full for all the CONTRACTOR's direct costs.

b. When Idle:

Equipment necessary to be on the site to complete the Work, but not in actual use due solely to the impact of the changed Work, shall not exceed fifty percent (50%) of the hourly rates identified in the "Ownership" column under the heading "Hourly Operating and Overhaul Expenses" set forth in the Cost Reference Guide, provided that its presence and necessity on the site has been documented by the INSPECTOR or PROJECT MANAGER, and further provided that the equipment was idled solely by actions of the CITY. Idle equipment time will only be paid as a function of delays specifically directed or caused by the CITY's actions. In no event shall the idle time claimed in a day for a particular piece of equipment exceed the normal Work schedule established for the Project - usually eight (8) hours per day or forty (40) hours per week, and excluding Saturdays, Sundays, and holidays. For multiple shift Work sequence, the allowable idle equipment rate shall not exceed fifty percent (50%) of the hourly depreciation costs listed in the Cost Reference Guide, for second or third shifts. It is agreed that this rate shall represent payment in full for all the CONTRACTOR's direct costs.

3. EQUIPMENT HAULAGE AND SET UP COSTS

a. Documented and actual equipment haulage and set up costs shall be paid for, if applicable as set forth in C of this Article.

4. OTHER EQUIPMENT COST GUIDES

a. In the event that a piece of equipment used on a Change Order is not listed in the Blue Book or the CRG, costs may be derived from the Associated General CONTRACTOR's of America Equipment Ownership Guide, the Associated Equipment Dealers Guide, or the Equipment Rate Guide published by the U.S. Army Corps of PROJECT MANAGERs as adjusted appropriately for the type of Work and use and the regional area of the Work under this Contract.

I. BONDS AND INSURANCE COSTS

1. Bond premium adjustment, consequent upon the Change Orders issued by the PROJECT MANAGER, shall be paid at the time of completion of the Work and will not be included in individual Change Orders. Additional bond costs on the incremental value of all Change Orders issued under the Contract shall be paid for through issuance of a separate Change Order upon receipt, by the PROJECT MANAGER, or a fully paid invoice from the CONTRACTOR's and Subcontractor's sureties. No allowances for overhead or profit shall be included in such separate Change Order.

2. Insurance costs, other than insurance assessed on labor costs, consequent upon the Change Orders issued by the PROJECT MANAGER, shall be paid for by the PROJECT MANAGER at the time of completion of the Work and will not be included in individual Change Orders. Additional insurance costs on the incremental value of all Change Orders issued under the Contract shall be

paid through issuance of a separate Change Order upon receipt of a fully paid invoice from the CONTRACTOR's and Subcontractor's insurance carriers. On Contracts where the duration exceeds 365 calendar days from Notice to Proceed, the CONTRACTOR and its Subcontractors will be allowed to submit such fully paid invoices at the end of every year after issuance of the Notice to Proceed, and again at the end of the Project.

J. RECORDS

1. The CONTRACTOR's records shall make clear the distinction between the direct costs of Work paid for under the Change Order and the costs of the base scope Work under the Contract. Furnish the INSPECTOR with daily report sheets in duplicate of each day's cost reimbursement Work no later than the working day following execution of said Work. The daily report sheets shall itemize the materials and equipment used in the Work. The daily report sheets shall provide for identification and classification of workers; the hourly rates of pay and hours worked; and the size, type, identification number, and hours operated for each piece of equipment. The Daily Report sheets shall itemize the materials used in the Work.

2. Substantiate material charges by copies of vendor's invoices. Submit such invoices with the daily report sheets or, if not available at that time, submit with subsequent daily report sheets. Sign daily report sheets by the CONTRACTOR or his authorized agent and the INSPECTOR at the time of submittal.

3. On a weekly basis submit to the PROJECT MANAGER an approximate accounting of the Contract expended on the cost reimbursement Work to date and an estimate of the Impact to the time of performance of Work.

28. PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA

A. If the PROJECT MANAGER determines that any price, including profit or fee, negotiated in connection with any Change Order under this contract, or any cost reimbursable under this Contract, was increased because:

1. The CONTRACTOR furnished cost or pricing data which was not accurate, complete, and current as certified in the CONTRACTOR's Certificate of Current cost or Pricing Data;

2. A Subcontractor or prospective Subcontractor furnished cost or pricing data was submitted in support of a subcontract cost estimate furnished by the CONTRACTOR but which was not accurate, complete, and current as of the date certified in the CONTRACTOR's Certificate of Current Cost or Pricing Data.

3. The CONTRACTOR or a Subcontractor or prospective Subcontractor, at any tier, furnished any data not within paragraph 1 or 2 above, which was not accurate as submitted;

then price shall be reduced accordingly and the Contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the Contract price due to defective subcontract data of a perspective Subcontractor, when the subcontract was not subsequently awarded to such Subcontractor, will be limited to the amount (plus applicable overhead and profit allowances) by which the actual subcontract or actual cost to the CONTRACTOR if there was no Subcontract, was less than the prospective subcontract cost estimate submitted by the CONTRACTOR; provided that the actual subcontract price was not affected by defective cost or pricing data.

B. The following certification from the CONTRACTOR is required to be provided on all Change Order quotations or requests for adjustment in excess of $10,000.

1. CERTIFICATION OF CURRENT COST AND PRICING DATA.

2. This is to certify that, to the best of my knowledge and belief, cost or pricing data submitted in writing, or specifically identified in writing if actual submission of the data is impracticable, to the

CITY in support of [CONTRACTOR is to insert appropriate identification such as Change Order quotation, proposal quotation, price adjustment, etc.] are accurate, complete, and current as of [CONTRACTOR to insert date].

CONTRACT NO.: _____

PROPOSED CHANGE ORDER NO.: _____

FIRM: _____

NAME: _____

TITLE: _____

DATE: _____

SIGNATURE: _____

29. PAYMENT FOR MATERIALS OR EQUIPMENT DELIVERED AND STORED ON THE JOB

A. Partial payment for materials or equipment delivered to the worksite and stored shall be subject to the following conditions:

1. Payment will not be made for any materials or equipment unless each individual piece of the material or equipment becomes a permanent part of the Work and has a value of more than $5,000.
2. The material or equipment is required by the specifications, and is specifically manufactured for the Project and could not readily be utilized or diverted to another job.
3. The CONTRACTOR shall provide secure storage facilities as required in STORAGE OF MATERIALS AND EQUIPMENT of these General Requirements.
4. No payment will be made for living or perishable Plant material, or for degradable materials such as rock, sand, cement, or for reinforcing steel, miscellaneous piping, off the shelf and catalog items, and similar items of construction, until they are incorporated into the Work.
5. The payment for the materials or equipment shall not exceed ninety-five percent (95%) of the invoice cost. The amount paid shall not exceed the total amount of the bid item less an amount estimated for installation.
6. Include cost loaded activities for the materials and equipment, for which payment will be requested, in the Schedule of Values. The CONTRACTOR shall provide all documentation necessary to establish the cost of the materials or equipment.
7. Suppliers, fabricators, or manufacturers who intend to furnish materials or equipment to the CITY must file a notice with the CITY in accordance with the State of California lien laws.
8. Each supplier, fabricator or manufacturer shall file a list, with the INSPECTOR, indicating the materials or equipment to be furnished to the Project. They shall also provide a notarized declaration from their company indicating the employees authorized to sign an unconditional release for the company. The persons signing the declaration and the unconditional release shall be identified by name and title.
9. Each request for payment shall include a notarized Unconditional Release, which conforms to the California Civil Code. The release shall be signed by an authorized employee identified in the corporate declaration. The request shall include the suppliers invoice for the materials or equipment.

10. Absorb costs incurred to meet the requirements of this Article without modification to the Contract amount.

30. PAYMENT FOR MATERIALS OR EQUIPMENT STORED OFF THE JOBSITE

A. Partial payment for materials or equipment stored off the jobsite shall be subject to the following conditions:

1. Payment will not be made for any materials or equipment unless each individual piece of the material or equipment becomes a permanent part of the Work and has a value of more than $5,000, unless otherwise approved by the city.

2. The materials or equipment is required by the specifications, and is specifically manufactured for the Project and could not readily be utilized or diverted to another job.

3. No payment will be made for living or perishable Plant material, or for degradable materials such as rock, sand, cement, or for reinforcing steel, miscellaneous piping, off the shelf and catalog items, or similar items, until they are incorporated into the Work.

4. Payment for the materials or equipment stored shall not exceed sixty percent (60%) of the invoice cost of the materials or equipment. Percent of the invoice paid shall be at the discretion of the CITY. The amount paid shall not exceed the total amount of the bid item less an amount estimated for installation.

5. Include cost loaded activities for the materials and equipment, for which payment will be requested, in the Schedule of Values. Provide documentation necessary to establish the cost of the materials or equipment.

6. Suppliers, fabricators, or manufacturers who intend to furnish materials or equipment to the CITY must file a notice with the CITY in accordance with the State of California lien laws.

7. Each supplier, fabricator or manufacturer shall file a list, with the INSPECTOR, indicating the materials or equipment to be furnished to the Project. They shall also provide a notarized declaration from their company indicating the employees authorized to sign an unconditional release for the company. The persons signing the declaration and the unconditional release shall be identified by name and title.

8. Each request for payment shall include a notarized Unconditional Release, which conforms to the California Civil Code. The release shall be signed by an authorized employee identified in the corporate declaration. The request shall include the suppliers invoice for the materials or equipment.

9. Store the materials and equipment as required in STORAGE OF MATERIALS AND EQUIPMENT of these General Requirements, in a bonded warehouse or facility approved by the INSPECTOR. The storage site shall be located within 50 miles of the geographic limits of the CITY. The materials and equipment shall be physically segregated from all other materials or equipment within the facility and shall be identified as being the "PROPERTY OF THE CITY OF LOS ANGELES". Exercise measures necessary to ensure preservation of the quality, quantity, and fitness of such materials or equipment and perform the manufacturers recommended maintenance of the materials or equipment. Inspect the materials and equipment, and submit a monthly written report to the INSPECTOR listing the equipment stored, results of their inspection, and the maintenance performed.

10. Grant the INSPECTOR and the PROJECT MANAGER access to the storage facility at any time and assist the INSPECTOR and the PROJECT MANAGER in conducting a full view, piece by piece, inventory of all such material or equipment.

11. Provide additional insurance necessary to insure the materials or equipment against loss of damage. The insurance provided shall be provided as stated in Article 37, INSURANCE of the General Conditions. The insurance shall cover the material or equipment, while stored at the

approved site, while in transit to the project site, while being off-loaded at the site and until the material or equipment is incorporated into the Work and the Contract is accepted by the BOARD.

12. Be responsible for damage to, defects therein, misfabrication thereof, or loss of the materials or equipment.

13. Be responsible for any resulting Project delays or consequential damages as if the CONTRACTOR were the owner of the material or equipment until it is incorporated in the Work and accepted by the CITY.

14. Absorb any and all cost incurred to meet the requirements of this Article without modification in the Contract amount.

15. Present the storage arrangements in writing and sign a Security Agreement, which shall be submitted to the INSPECTOR for approval by the CITY ATTORNEY. This agreement shall set forth the terms of ownership, storage and insurance necessary to insure the material or equipment against damage or loss.

31. PAYMENT FOR PERMITS

See PAYMENT FOR MOBILIZATION of these General Requirements.

32. AUDIT AND ACCESS TO RECORDS

A. Maintain books, records, documents and other evidence directly pertinent to performance of Work under this Contract in accordance with generally accepted accounting principles and practices consistently applied. Also maintain the financial information and data used by the CONTRACTOR in the preparation or support of cost submissions required for this Contract, or any Modifications or claims, and a copy of the cost summary submitted to the CITY. The CITY authorized representatives shall have access, at all times during normal business hours, to such books, records, documents and other evidence for the purpose of inspection, audit and copying. Provide proper facilities for such access and inspection.

B. Agree to make A through G of this Article applicable to this Contract and Modifications or claims affecting the Contract price. Agree to include A through G of this Article in all his contracts and all tier Subcontracts in excess of $5,000, and to make A through G of this Article applicable to Modifications and claims related to Project performance.

C. Audits conducted under this Article shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit agency.

D. Agree to the disclosure of information and reports resulting from access to records under A and B of this Article, to the CITY and affected agencies.

E. Records under A and B of this Article shall be maintained and made available during performance of Work under this Contract until final payment, or until settlement of all disputes, claims, or litigation, whichever occurs later. In addition, those records which relate to any portion of this Contract, to any Modification, to any dispute, to litigation, to the settlement of claims arising out of such performance, or to costs or items to which an audit exception has been taken, shall be maintained and made available until final payment or until final resolution of such dispute, litigation, claim or exception, whichever occurs later.

F. This right of access Article applies to financial records pertaining to this Contract and all Contract Modifications. In addition this right of access applies to all records pertaining to all contracts, contract modifications, and contract amendments:

1. To the extent the records pertain directly to Contract performance;

2. If there is any indication that fraud, gross abuse or corrupt practices may be involved; or

3. If the Contract is terminated for default or for convenience.

G. Access to records is not limited to the required retention periods. The authorized representatives designated in A of this Article shall have access to records at any reasonable time for as long as the

records are maintained.

H. Provided that CITY has made demand for access or audit pursuant to this Article, CONTRACTOR's compliance with provisions A through G of this Article shall be a condition precedent to maintenance of any legal action or proceeding by the CONTRACTOR against the CITY and to CONTRACTOR's right to Progress or Final Payment. Without limitation to the foregoing or to any other provisions for withholding set forth in the Contract Documents, CITY shall have the right, in its sole discretion and in addition to any right of withholding of retention, to further withhold from any payment to CONTRACTOR a sum of up to ten percent (10%) of the total amount set forth in CONTRACTOR's current, unpaid Application(s) for Payment, until CONTRACTOR has complied with any outstanding and unsatisfied request by CITY for audits under this Article. Upon CONTRACTOR's compliance with this Article, any monies withheld pursuant to this Paragraph solely due to CONTRACTOR's failure to permit an audit requested by CITY shall be released to CONTRACTOR.

I. CONTRACTOR hereby consents and agrees that any failure by CONTRACTOR to provide access to records as provided in A through G of this Article shall be specifically enforceable by issuance of a preliminary and/or permanent mandatory injunction by a court of competent jurisdiction based on affidavits submitted to such court, without the necessity of oral testimony, to compel CONTRACTOR to permit access and inspection of the records or to require delivery of the records to CITY for inspection.

MISCELLANEOUS

33. INTERFACE/COORDINATION REQUIREMENTS

A. Vehicular and pedestrian traffic adjacent to the laydown area and/or within the jobsite must be maintained. If an existing street in the CONTRACTOR's work area is to be demolished or obstructed, the CONTRACTOR shall be responsible for providing access through or around the effected area, including signs, barricades, and lights, as approved by the PROJECT MANAGER and any local agencies having jurisdiction over any public access areas. The CONTRACTOR shall follow WATCH standards and City of Los Angeles Department of Transportation Worksite Traffic Control Plans for all traffic, including a minimum traffic lane dimensions for vehicles and pedestrians.

B. The CONTRACTOR shall not park any vehicles, including concrete, hauling and delivery trucks, in any street at any time unless approved by the PROJECT MANAGER. Access must be maintained at all times for emergencies, sampling, equipment operations, maintenance and like items.

C. Before altering any vehicular or pedestrian access, the CONTRACTOR shall notify the PROJECT MANAGER thirty (30) days in advance on forms provided by the PROJECT MANAGER. The CONTRACTOR shall then request the alteration on forms provided by the PROJECT MANAGER. Requests shall include reasons for the alteration, times, boundary limits, special safety measures, proposed traffic rerouting with widths of such route, and a map detailing the above. Such requests shall be submitted to the PROJECT MANAGER not less than fifteen (15) days before the requested date of the access alteration. If any of the information changes, an additional fifteen (15) days may be required after the changes are brought to the attention of the PROJECT MANAGER. Approval when granted, will always be conditional. Final approval of the request, including date and time, will be given three (3) days in advance. The CITY retains the right to ticket and impound vehicles blocking traffic.

34. PROGRESS PHOTOGRAPHS

A. As directed by the PROJECT MANAGER, take a minimum of 4 views of each Project worksite location, at 14 days intervals during the entire period of Contract Work. Take the first photographs before start of construction operations at the jobsite. Take the final photographs when all Contract Work has been completed and accepted by the CITY regardless of time intervals since previous photographs were taken. View locations shall be as directed by the PROJECT MANAGER.

B. Provide 4, 8-inch by 10-inch color prints of each photograph on double weight glossy paper with each monthly progress report. Clearly label each print with the name of the job, view location, date of exposure and CONTRACTOR's name. Photographs and prints shall be of professional quality.

C. Submittal of progress photographs shall be a condition precedent to the making of the monthly payments.

35. COMMUNITY RELATIONS

A. The contractor shall cooperate with the City in conducting a public relations program for the project. The program will provide information to address concerns and complaints and to promote a positive project image. Contractor cooperation shall include the following:

1. The Project Manager shall attend public meetings, when requested by the PROJECT MANAGER.
2. Provide safe access for on-site community meetings and tours, on average twice per month per work site. Tours will be conducted by the PROJECT MANAGER and will be coordinated with the Contractor to limit interference with the work.
3. Do not provide any information directly to the public or news media without approval of the PROJECT MANAGER.

36. PROJECT CLOSEOUT

A. CLOSEOUT TIMETABLE

The CONTRACTOR shall establish dates for equipment testing and acceptance periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the CITY, the PROJECT MANAGER, and their authorized representatives sufficient time to schedule attendance at such activities.

B. FINAL SUBMITTALS

1. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the PROJECT MANAGER.
   a. Written guarantees, where required.
   b. Technical manuals and instructions.
   c. Maintenance stock items; spare parts; special tools.
   d. Completed record drawings.
   e. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
   f. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

C. FINAL CLEANUP

The CONTRACTOR shall perform all tasks specified in REMOVAL, CLEANUP, AND DEMOBILIZATION of these General Requirements.

D. MAINTENANCE AND GUARANTEE

1. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the PROJECT MANAGER. If the CONTRACTOR fails to make such repairs or replacements promptly, the PROJECT MANAGER reserves the right to do the work and the CONTRACTOR and his surety shall be liable to the CITY for the cost thereof.
2. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work.

E. BOND

1. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Article 31 and Article 37 (Paragraph K) of the General Conditions, Article 24 of these General Requirements, Paragraph D of this Article.

ATTACHMENTS

ATTACHMENT TO GENERAL REQUIREMENTS ARTICLE 27

CHANGE ORDER COST QUOTATION FORM **DATE __/__/20__**

Estimate Summary for Prime CONTRACTOR Total Costs

W.O. _____ C.O. _____ CONTRACT #_____

ESTIMATOR_____P.E._____

		LABOR PER General Requirements 27		
		Journeyman **Supervision**		
		_____ MH **_____ MH**	**$**	
	2)	**MATERIALS (and Other Taxables)**		
		Including Sales Tax	**$**	
	3)	**EQUIPMENT(Rented, Leased, and/or OWNED)**		
		Blue Book and/or CRG, including Sales Tax if applicable	**$**	
SUBTOTAL	**(A)**	**_____ 1) + 2) + 3)**		**$**
	4)	**G and A OH per General Requirements 27**		
		Show calculations on separate sheet	**$**	
SUBTOTAL	**(B)**	**_____ (A) + 4)**		**$**
	5)	**PROFIT_____% x Line (B)**		
		Per General Requirements 27	**$**	
SUBTOTAL	**(C)**	**_____ (B) + 5)**		**$**
	6)	**SUBCONTRACTS (All Subcontractors)**	**$**	
	7)	**FIXED FEE FOR ALL SUBS 6%**		
		Per General Requirements 27	**$**	
SUBTOTAL	**(D)**	**_____ (C + 6) + 7)**		**$**
	8)	**FIELD OFFICE OVERHEAD:**		
		$ _____ X _____ DAYS		
		Exclude if not required	**$**	
	9)	**SCHEDULING COSTS ($200 Max.)**		
		Exclude if not required	**$**	
SUBTOTAL	**(E)**	**_____ (D) + 8) + 9)**		**$**
	10)	**IMPACT COST, per General Requirements 27**		
		Show calculations on separate sheet	**$**	
GRAND TOTAL		**_____ (E) +10)**		**$**

CHANGE ORDER COST QUOTATION FORM

Estimate Summary for Prime CONTRACTOR Total Costs **DATE __/__/20__**

W.O._____ C.O. _____ CONTRACT #_____

ESTIMATOR _____ P.E._____

		LABOR PER General Requirements 27 **Journeyman Supervision** **_____ MH _____ MH**	**$**	
	2)	**MATERIALS (and Other Taxables)** **Including Sales Tax**	**$**	
	3)	**EQUIPMENT(Rented, Leased, and/or OWNED)** **Blue Book and/or CRG, including Sales Tax if applicable**	**$**	
SUBTOTAL	**(A)**	**_____ 1) + 2) + 3)**		**$**
	4)	**G and A OH per General Requirements 27** **Show calculations on separate sheet**	**$**	
SUBTOTAL	**(B)**	**_____ (A) + 4)**		**$**
	5)	**PROFIT _____% x Line (B)** **Per General Requirements 27**	**$**	
SUBTOTAL	**(C)**	**_____ (B) + 5)**		**$**
	6)	**SUBCONTRACTS (ALL SUB-SUBS)**	**$**	
	7)	**FIXED FEE FOR ALL SUB-SUBS 6%** **Per General Requirements 27**	**$**	
SUBTOTAL	**(D)**	**_____ (C + 6) + 7)**		**$**
	8)	**FIELD OFFICE OVERHEAD:** **$ _____ X _____ DAYS** **Exclude if not required**	**$**	
SUBTOTAL	**(E)**	**_____ (D) + 8)**		**$**
		IMPACT COST, per General Requirements 27 **Show calculations on separate sheet**	**$**	
GRAND TOTAL		**FOR SUBCONTRACTOR (E) + 9)** **To Line 6) of Prime CONTRACTOR'S Summary**		**$**

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III. SUPPLEMENTARY GENERAL REQUIREMENTS

VERDUGO HILLS POOL AND
BATHHOUSE REFURBISHMENT
PROJECT

PREPARED BY:

BUREAU OF ENGINEERING - ARCHITECTURAL DIVISION
DEPARTMENT OF PUBLIC WORK
CITY OF LOS ANGELES

ENGINEERING
CITY OF LOS ANGELES

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SUPPLEMENTARY GENERAL REQUIREMENTS

1.0 GENERAL SCOPE OF WORK:

A. Work in this Contract: All labor, material, and equipment necessary for construction of **the Verdugo Hills Pool and Bathhouse Refurbishment** as noted on the Contract Drawings and in these Specifications (Project Manual) and all other Contract Documents including but not limited to the GENERAL CONDITIONS, and GENERAL REQUIREMENTS, Supplementary General Requirements, Technical Specifications, Geotechnical Engineering Reports, Permits and Guidelines.

B. Demolition of existing pool, pool deck, Bathhouse building, utilities and other improvement elements as shown on Plan Sheets D1.0, C400, L201, L405, A1.0, SP1.1.

C. Demolition, removal or modification of erosion control as shown on Plan Sheet L405 will be necessary to construct this project and must be included in contract price.

D. The Project Site will be excavated and re-compacted per the Geotechnical Report to permit construction of the ADA pedestrian ramp construction. This is to be included in the contract price.

1.1 CONTRACT DRAWINGS: In addition to provisions noted in the GENERAL CONDITIONS and the GENERAL REQUIREMENTS.

1.2 The following are in addition to GENERAL CONDITIONS and GENERAL REQUIREMENTS:

- These Supplementary General Requirements
- All Soils Report Approval Letters from the Department of Building and Safety for this project.
- All Soils Report Correction Letters from the Department of Building and Safety for this project.
- All Geotechnical and Supplementary Geotechnical Engineering Reports, Geotechnical Engineering Division for this project.
- Asbestos and Lead Survey Report for this project.
- Protection of Trees During Construction Guidelines (12-page Tree Care Manual)
- Project Specifications. See specifications set.
- Construction Document Sheets. See plans set.

1.3 **PRIME CONTRACTOR'S MINIMUM QUALIFICATIONS and EXPERIENCE:** The prime contractor that will actually construct the project must have adequate qualifications and experience in constructing public recreation facilities. In order for a bid to be considered eligible for this project, the prime contractor must have completed at least three (3) public recreation facilities of $5 million or greater each for government agencies in the past six (6) years. The facilities must be new construction and currently in operation. The bidder must complete and submit with the bid the "Prime Contractor's Minimum Qualifications – Experience with Public Recreation Facilities Construction" forms (pages GR-S3 through GR-S4), attached herewith. **Failure to submit the completed said forms with the bid or failure to meet the minimum qualifications of the Prime Contractor will result in the bid being non-responsive**.

1.4 **POOL CONTRACTOR'S MINIMUM QUALIFICATIONS and EXPERIENCE:** The specific contractor that will actually construct the lap pool and spray pad activity pool must have adequate qualifications and experience in constructing public swimming pools comparable to this project. In order for a bid to be considered eligible for this project, the pool contractor must have a C-53 license and must have completed in the last six (6) years at least five (5) public use pools for government agencies each with:

- A size of at least 50 meters in length and water surface area in excess of 6,000 square feet, **or** a size of at least 25 yards in length and water surface area in excess of 6,000 square feet
- Cast-in-place concrete construction or shotcrete construction
- Tile finish with painted finished or plastered finished concrete shell.
- Perimeter overflow gutter in conjunction with a self-modulating surge and balance tank system

The pools must be all new construction including the pool shell and must be currently in operation for at least one year. Only cast-in-place concrete or shotcrete-built pools will be considered in assessing the required experience of the POOL CONTRACTOR. The bidder must complete and submit with the bid the "Pool Contractor's Minimum Qualifications – Experience with Public Swimming Pool Construction" forms (pages GR-S5 through GR-S6), attached

herewith. **Failure to submit the completed said forms with the bid or failure to meet the minimum qualifications of the Pool Contractor will result in the bid being non-responsive**.

1.5 **QUALIFIED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DEVELOPER (QSD) and QUALIFIED SWPPP PRACTITIONER (QSP):** All qualifying bidding contractors shall have under their employment or contract the QSD that will be responsible for preparing, amending, and certifying the SWPPP for this project, and the QSP that will be responsible for performing the monitoring of the storm water and non-storm water visual observations, sampling, and analysis of the Best Management Practices (BMPs) required by the State of California Water Resources Control Board General Permit and the Section 01571 of the specifications. This form (page GR-S7) must provide valid names and certification numbers for the QSD and QSP at the time of bid to meet the minimum qualification for this project; however, submission of the form (page GR-S7) does not in and of itself constitute qualification. **Failure to submit the completed said form with the bid will result in the bid being non-responsive**.

1.6 The following supplements modify the **"GENERAL REQUIREMENTS"**

1. ADD Section **01116 "ELECTRONIC DOCUMENT CONTROL"** (ATTACHMENT 'A')

2. ADD Section **01212 "FIXED CASH ALLOWANCE ITEMS"** (ATTACHMENT 'A')

3. ADD Section **01353 "OPPORTUNITY TO PARTNER"** (ATTACHMENT 'A')

4. REPLACE **Article 18** of the General Requirements**, "CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK,"** with attached **Section 01321, "CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS"** (ATTACHMENT 'A')

5. REPLACE **Article 10 of the General Requirements, " SUBMITTALS"** with attached **Section 01330, "SHOP DRAWINGS/SUBMITTALS"** (ATTACHMENT 'A')

6. ADD **Section 01520 "CONSTRUCTION FACILITIES"** (ATTACHMENT 'A') that will be used to substitute **Article 6 Mobilization**, Section B. Temporary Construction Utilities and Worksite Facilities, Note 6 in reference to field office trailers.

7. MODIFY the following items under **"MOBILIZATION"**

    a. ADD the following Note 15 under Item A. General: At least ten (10) days before the start of construction, the CONTRACTOR is required to notify, in writing, abutting property occupants of the proposed construction start date. A copy of said written notification shall be provided to the INSPECTOR.

8. ADD **Section 01571 "STORMWATER POLLUTION CONTROL MEASURES FOR CONSTRUCTION ACTIVITIES"** (Attachment 'A') for project involves construction activity on more than one acre of disturbed soil.

Supplementary General Requirements Continue on Next Page

PRIME CONTRACTOR'S MINIMUM QUALIFICATIONS -- EXPERIENCE with PUBLIC RECREATION FACILITIES CONSTRUCTION

FAILURE TO SUBMIT THIS FORM WITH THE BID OR FAILURE TO MEET THE MINIMUM QUALIFICATIONS OF THE PRIME CONTRACTOR OR FAILURE TO SUBMIT THIS FORM WITH THE BID WILL RESULT IN THE BID BEING NON-RESPONSIVE

The intent of this form is to solicit information to confirm if the prime contractor meets the minimum qualifications for the **Verdugo Hills Pool and Bathhouse Refurbishment project** (Project). The prime contractor that will actually construct the Project must have adequate qualifications and experience in constructing public recreation facilities. In order for a bid to be considered eligible for this project, the prime contractor must have completed at least three (3) public recreation facilities of $5 million or greater each for government agencies in the past six (6) years. The facilities must be new construction and are currently in operation. The bidder must complete and submit with the bid the "Prime Contractor's Minimum Qualifications – Experience with Public Recreation Facilities Construction" forms (pages GR-S3 through GR-S4), attached herewith. The forms (pages GR-S3 through GR-S4) will help to determine if the GENERAL CONTRACTOR meets the minimum qualification for this project; however, submission of the forms (pages GR-S3 through GR-S4) does not in and of itself constitute qualification.

The Bidder must submit information below on projects that the PRIME CONTRACTOR has completed.

PROJECT NO. 1

A. Project Information

1. Project Name and Addres_____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 2

A. Project Information

1. Project Name and Addres_____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 3

A. Project Information

1. Project Name and Addres_____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 4 (if applicable)

A. Project Information

1. Project Name and Addres_____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 5 (if applicable)

A. Project Information

1. Project Name and Addres_____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

POOL CONTRACTOR'S MINIMUM QUALIFICATIONS AND EXPERIENCE WITH PUBLIC SWIMMING POOLS CONSTRUCTION

FAILURE SUBMIT THIS FORM WITH THE BID OR FAILURE TO MEET THE MINIMUM QUALIFICATIONS OF THE POOL CONTRACTOR WILL RESULT IN THE BID BEING NON-RESPONSIVE

The intent of this form is to solicit information to confirm if the Pool Contractor meets the minimum qualifications as a pool builder for the **Verdugo Hills Pool and Bathhouse Refurbishment project**. The POOL CONTRACTOR that will actually construct the swimming pool must have completed in the last six (6) years at least five (5) public use recreation pools for government agencies with full perimeter deep trough gutter, surge tank, individual water surface area in excess of 6,000 square feet, and a depth of 12 feet or more. The pools must be all new construction including the pool shell and must be currently in operation for at least one year. These forms (pages GR-S5 through GR-S6) will help to determine if the POOL CONTRACTOR meets the minimum qualification for this project; however, submission of the forms (pages GR-S5 through GR-S6) does not in and of itself constitute qualification.

- A size of at least 50 meters in length and water surface area in excess of 6,000 square feet, **or** a size of at least 25 yards in length and water surface area in excess of 6,000 square feet
- Cast-in-place concrete construction or shotcrete construction
- Tile finish with painted finished or plastered finished concrete shell.
- Perimeter overflow gutter in conjunction with a self-modulating surge and balance tank system

Submit the following information on projects that the POOL CONTRACTOR has completed.

PROJECT NO. 1

A. Project Information

1. **Project Name and Address** _____
2. **Project Description** _____
   (Meeting minimum _____
   qualifications above) _____
3. **Construction Cost** _____
4. **Year Completed** _____

B. Contact Information

1. **Owner / Reference Name** _____
2. **Telephone** _____

PROJECT NO. 2

A. Project Information

1. **Project Name and Address** _____
2. **Project Description** _____
   (Meeting minimum _____
   qualifications above) _____
3. **Construction Cost** _____
4. **Year Completed** _____

B. Contact Information

1. **Owner / Reference Name** _____
2. **Telephone** _____

PROJECT NO. 3

A. Project Information

1. Project Name and Address _____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 4

A. Project Information

1. Project Name and Address _____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

PROJECT NO. 5

A. Project Information

1. Project Name and Address _____

2. Project Description _____
(Meeting minimum _____
qualifications above) _____

3. Construction Cost _____

4. Year Completed _____

B. Contact Information

1. Owner / Reference Name _____

2. Telephone _____

QUALIFIED SWPPP DEVELOPER
AND
QUALIFIELD SWPPP PRACTITIONER

FAILURE TO LIST A QUALIFIED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DEVELOPER (QSD) AND A QUALIFIED SWPPP PRACTIONER (QSP) OR FAILURE TO SUBMIT THIS FORM WITH THE BID WILL RESULT IN THE BID BEING NON-RESPONSIVE

The intent of this form is to solicit information to confirm the name and certification number of (A) the QSD that will be responsible for preparing, amending, and certifying the SWPPP for this project, and the name and certification number of (B) the QSP that will be responsible for performing the monitoring of the storm water and non-storm water visual observations, sampling, and analysis of the Best Management Practices (BMPs) required by the State of California Water Resources Control Board General Permit and the Section 01571 of the specifications. This form (page GR-S7) must provide valid names and certification numbers for the QSD and QSP at the time of bid to meet the minimum qualification for this project; however, submission of the form (pages GR-S7) does not in and of itself constitute qualification.

ITEM NO. 1

A. QUALIFIED SWPPP DEVELOPER

1. **Name of Qualified SWPPP Developer** _____
2. **Certification Number** _____
3. **Address** _____
4. **Telephone** _____

ITEM NO. 2

B. QUALIFIED SWPPP PRACTITIONER

1. **Name of Qualified SWPPP Practitioner** _____
2. **Certification Number** _____
3. **Address** _____
4. **Telephone** _____

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ATTACHMENT ‘A’

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SECTION 01116
ELECTRONIC DOCUMENT CONTROL

1.1 USE OF ELECTRONIC DOCUMENT CONTROL SYSTEM

A. The CONTRACTOR shall use the City's cloud-based electronic document control system to submit and receive all construction related documentation on this project. The system used is "e2020" and all costs associated with the use of the software have been paid for by the City. The website address to be used will be provided by the ENGINEER after award of the contract. The CITY will provide training to the CONTRACTOR on the use of the system. As coordinated with other sections of these project specifications, the information to be generated, transmitted and tracked by the e2020 document control system shall include, but not be limited to the following:

1. Correspondence (including Engineer's Communication).

2. Plan Clarifications.

3. Requests for Information (RFI's).

4. Submittals & Shop Drawings.

5. Change Orders.

6. Allowance Orders.

7. Progress Photos.

8. Project Schedules.

9. Meeting Minutes.

10. Permits.

11. Partnering (Issue Resolution Ladder, Charter).

12, Claims Resolution.

13. Building Information Modeling Coordination.

B. When hard copies of drawings or product samples are required to be submitted that cannot be submitted through e2020, the CONTRACTOR shall:

1. Upload a transmittal sheet for the submittal in e2020,

2. Submit six (6) full-size hard copies,

3. Submit one half-sized hard copy (not exceeding 11x17 inches),

4. Transmit electronic files to the ENGINEER in Adobe Acrobat (.PDF) format.

C. The CONTRACTOR shall be responsible for the installation of its own computer system and scanner. In addition, the CONTRACTOR shall be responsible for the procurement of an Internet Service Provider (ISP) with a high-speed broadband internet connection for its own use, as well as the ENGINEER's/INSPECTOR's use at the site offices to access the document control system.

D. At the request of the ENGINEER, the CONTRACTOR must provide a hard copy of approved submittals to the INSPECTOR, at no additional cost to the CITY.

(END OF SECTION)

SECTION 01212
FIXED CASH ALLOWANCE ITEMS

1.1 THE REQUIREMENT

A. A fixed cash allowance has been allocated to each of the following items of the Bid Breakdown (see Bid Proposal). Requirements for each Fixed Cash Allowance Item are specified in the GENERAL REQUIREMENTS (GR) section referenced below.

Overhead and Profit, at the rates listed below, shall be added to the actual invoiced amount.

Bid Item No.	Description	Overhead and Profit
1.	MOBILIZATION per GENERAL REQUIREMENT, Article 21 **$150,000**	0%
2.	ALLOWANCE FOR PERMIT per the GENERAL CONDITION Article 19 and GENERAL REQUIREMENTS Article 31. **$ 50,000**	0%

B. If these items are not executed, or are only partially executed, or the allowance for any item is not expended or partially expended, then a deductive Change Order shall be issued for the amount that is not expended. If, however, these items are over expended (with ENGINEER'S prior approval), then an appropriate Change Order shall be executed in accordance with the provisions of the GENERAL REQUIREMENTS Section 01254 –- CHANGE ORDERS, except for Overhead and Profit wherein the above listed rates shall apply.

C. The ENGINEER’S AND INSPECTOR’S field office supply allowance is to be used at the ENGINEER’S and/or INSPECTOR’S discretion to purchase office supplies and/or office equipment, perform repairs to field offices or equipment owned or leased by the City, pay field office utility bills, purchase reference documents, etc. The items covered by this allowance are in addition to those required to be furnished by the CONTRACTOR under GR Section 01721-Mobilization. The CONTRACTOR shall be reimbursed the actual invoice amount plus the markup allowed by Section A, above.

(END OF SECTION)

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SECTION 01321
CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS

1. THE REQUIREMENT

A. Progress of the Work

1. It is expressly understood and agreed that the time of beginning, the rate of progress, and the time of completion of the Work are of the essence of this Contract. The Work shall be executed with such progress as required to prevent any delay to other CONTRACTORS that may be working on other contracts at the site, the Contract milestones, and the general completion of the Contract.

B. CONTRACTOR'S Construction Scheduler

1. The CONTRACTOR shall continuously employ or retain the services of a Construction Scheduler. The Construction Scheduler shall have at least three (3) years of verifiable experience as the person primarily responsible for preparing and maintaining detailed project schedules on projects of the same or similar size and nature as this project. The Construction Scheduler is required to attend all meetings pertaining to scheduling and progress of the Work. If the Construction Scheduler leaves employment of the CONTRACTOR, the CONTRACTOR must fulfill the requirements of B.2 a and b within thirty (30) days.

2. Within five (5) calendar days after the Notice of Award the CONTRACTOR shall provide a statement to the ENGINEER with the following:

a. Identification, qualifications, and experience of the CONTRACTOR'S Construction Scheduler and all other members of the CONTRACTOR'S scheduling staff.

b. References of not less than two (2) previous projects on which the CONTRACTOR'S Construction Scheduler has utilized CPM scheduling.

(As used in this Section, "days" mean consecutive calendar days unless otherwise noted.)

3. The PROJECT MANAGER and the INSPECTOR reserve the right to disapprove any scheduling candidate or scheduling system proposed for the project. The ENGINEER and the INSPECTOR reserve the right to remove, without rights to work on the project, any member of the CONTRACTOR'S scheduling staff, that is, in the ENGINEER'S or INSPECTOR'S opinion, incompetent in scheduling.

C. General

1. Schedule Methodology

The scheduling method to be used shall be a Critical Path Method schedule in the form of an activity on node Precedence Diagram Network

(PDN) with capabilities of identifying the critical path. The principles and definitions of the terms used herein shall be as set forth in the Associated General CONTRACTOR'S publication "CPM in Construction", latest edition. To the extent there are any conflicts between the Associated General CONTRACTOR'S publication and the Specifications, the Specifications shall govern.

2. Work Breakdown Structure

a. The CONTRACTOR shall submit to the ENGINEER for approval, at the Preconstruction Scheduling Conference, the following:

(1) A Work breakdown structure.

(2) The associated alphanumeric coding structure to implement the Work breakdown structure.

(3) The activity identification system for labeling all Work activities.

3. The first code field shall designate the bid item. The second code field shall identify the type of activity. (Types of activities shall be defined as "submittal", "review/approval", "procurement/fabrication", "delivery", and "construction/installation" or "Change Order".) The third code field shall identify which Specification section the activity shall be paid under. The fourth code field shall identify who is responsible to perform the activity (i.e., CONTRACTOR, Subcontractor(s), Supplier, etc.). The fifth code field shall identify the area being worked in or the facility, if appropriate. The sixth code field shall identify the construction phase or project element (if phasing of Work or project elements are identified in the Contract.) All Change Orders and Notices of Non-Compliance shall be included as separate code fields.

4. Scheduling System

The CONTRACTOR shall use Primavera P6 (latest edition) and a hardware system commensurate with the size of the program. This shall be referred to as the Scheduling System. The Scheduling System shall be capable of handling, processing, printing, and plotting data to satisfy all requirements of this Section.

D. Preconstruction Scheduling Conference

1. The ENGINEER will schedule and conduct a Preconstruction Scheduling Conference with the CONTRACTOR'S Project Manager and Construction Scheduler within seven (7) calendar days after Notice of Award, to commence development of the required Schedule. At this meeting, the requirements of this Section, as they apply to the Contract, will be reviewed with the CONTRACTOR. The CONTRACTOR shall be prepared to review and discuss its methodology for developing the Schedule, its proposed sequence of operations, and cost, manpower, and equipment loading methodology.

The Contractor shall include the effects of adverse weather in the Schedule in terms of working days (wds). The number of wds, Monday through Friday, excluding any day designated as a holiday by the City or

in a Master Labor Agreement binding the Contractor, of normal adverse weather per month is as follows: January-3 wds, February-2 wds, March-3 wds, April-1 wd, October-1 wd, November-2 wds, December-2 wds. Unusually severe weather (see GC 00401 – Unavoidable Delay) is defined as the number of working days over what is normal adverse weather, as defined in the previous sentence. For partial months, the aforementioned numbers shall be prorated and rounded to the nearest whole number. There shall be no extension of time for adverse weather unless the Contractor is prevented from working during the first five (5) hours of a workday with at least sixty percent (60%) of the normal work force on more days per month than listed above. Even if there is unusually severe weather, a non-compensable extension of time will not be granted unless the other conditions required by GC 00401 are met, including negative impact to the critical path and delay beyond the current Contract Completion Date.

E. CONTRACTOR'S Construction Schedule

1. Fifteen (15) calendar days after the Preconstruction Scheduling Conference, the CONTRACTOR shall provide to the ENGINEER an update on the progress in the development of the Contractor's Construction Schedule (the Schedule). The CONTRACTOR shall submit to the ENGINEER the Schedule within thirty (30) calendar days after the Preconstruction Scheduling Conference.

2. The Schedule shall show the sequence and interdependence of activities required for complete performance of the Work, beginning with the date of the Notice to Proceed and concluding with the Contract Completion Date based on the completion time (calendar days) allowed in the Contract.

3. Pursuant to the float sharing requirements of the Contract, the use of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity times, or imposed dates shall be cause for rejection of the Schedule and any revisions or updates. The use of float time disclosed or implied by the use of alternative float suppression techniques shall be shared as directed by the ENGINEER .

4. If the CONTRACTOR submits a Baseline Schedule showing completion of the Work more than thirty (30) calendar days in advance of the Contract Completion Date, the CONTRACTOR agrees that the ENGINEER may, at no cost to the CITY, decrease the Contract duration by issuance of a Change Order which will change the appropriate Milestone Date(s) and the Contract Completion Date to the completion date reflected on the Schedule. Any approved Schedule, revision, or update having an early completion date shall show the time between the early completion date and the current Contract Completion Date as "project float".

5. The ENGINEER will review and make comments on the Schedule. Meetings will be held between the ENGINEER , the CONTRACTOR, and all Subcontractors and Suppliers whom the CONTRACTOR may desire to invite or whom the ENGINEER may request be present.

6. Comments made by the ENGINEER on the Schedule, during review, will not relieve the CONTRACTOR from compliance with requirements of the

Contract Documents. To the extent that there are any conflicts between the approved Schedule and the requirements of the Contract Documents, the Contract Documents shall govern.

7. If requested by the ENGINEER at any time during the project, the CONTRACTOR shall provide highly detailed, a short-term schedule for specific crucial items (work-around, start-up, etc.).

F. Network Details

1. The Schedule shall include time-scaled network diagrams, based on calendar days, as well as computer tabulations. It shall be constructed to show the order in which the CONTRACTOR proposes to carry out the Work, to indicate restrictions of access and to show availability of Work areas, and availability and use of manpower, materials and equipment. The CONTRACTOR shall utilize the Schedule in planning, scheduling, coordinating, and performing the Work under the Contract (including all activities of Subcontractors, equipment vendors, and Suppliers). The CONTRACTOR will provide the ENGINEER with written confirmation of the concurrence of all major trade Subcontractors and Suppliers with the Schedule. (The term "major Subcontractors and Suppliers" as used in this Section, shall include any Subcontractor or Supplier with five (5) percent or more of the value of the Contract.) The logic shall be determined by which activity must be completed before a successor can start; maximum concurrent work; and manpower or equipment constraints which prevent concurrent work.

2. The Schedule shall provide the ENGINEERwith a tool to monitor and follow the progress of all phases of the Work. The Schedule submitted to the ENGINEER shall comply with all limits imposed by the scope of Work, with all contractually specified intermediate milestone and completion dates, and with all constraints, restraints or sequences included in the Contract. The degree of detail shall include factors to the satisfaction of the ENGINEER , including, but not limited to:

a. Physical breakdown of the project.

b. Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of Work shown in the Contract, the planned substantial completion date, and the final completion date.

c. Type of Work to be performed, the sequences, and the labor trades involved.

d. All purchases, submittals, submittal reviews, manufacturing, tests, delivery, and installation activities for all major materials and equipment, and a separate list of all major material items or items of equipment for which the CONTRACTOR intends to seek payment prior to installation.

e. Deliveries of CITY furnished equipment and/or materials in accordance with the dates or schedule windows of such items set forth in the Contract or furnished by the ENGINEER, or items to be salvaged and delivered to the CITY.

f. Preparation, submittal and approval of Shop and/or Working Drawings and material samples showing a **[thirty (30) (for WW)][Twenty-one (21) (for MF)** day minimum time specified for the ENGINEER 'S review of normal or routine submittals and a forty five (45) day review time for all major submittals, so identified in the technical specifications, and the same time frame shall be allowed for at least one (1) resubmittal on all major submittals so identified in the Contract Documents.

g. Approvals required by regulatory agencies or other third parties **[notifications to utility companies, and request of services]**.

h. Plans for all subcontract Work, **[concrete placement sequence, structural steel, plumbing, heat, ventilation, air conditioning, electrical, etc.]**.

i. Assignment of responsibility for performing specific activities,**[notifications to utility companies and request of services]**.

j. Access to and availability of Work areas including all anticipated plant shutdowns, if applicable.

k. Identification of interfaces and dependencies with preceding, concurrent and follow-on CONTRACTORS and utilities as shown on the Plans or called out in the Specifications.

l. Resource loading for cost, manpower, material, and equipment.

m. Actual tests by the CONTRACTOR and the CITY, submission of test reports, and approval of test results.

n. All start up, testing, training, and assistance required under the Contract.

o. Planning for phased or total takeover by the CITY.

p. Punchlist and final cleanup.

q. Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as two shifts, six (6) day weeks, specified overtime, or work at times other than regular days or hours, shall be clearly identified in the Schedule.

3. The activities included in the Schedule shall be analyzed in detail to determine activity durations in units of project working days. Durations shall be based on the labor, equipment, and materials required to perform each activity on a normal Workday basis. No on-site activity shall have a duration over fifteen (15) working days except non-construction activities such as submittals, submittal reviews, procurement and delivery of materials or equipment, and concrete curing. Only on-site construction activities will be shown in their resource loaded state to reflect cost, manpower, materials and equipment except for those activities specifically identified under 1.1F.2d of this Section. The

manpower and equipment, by item designation, shall be shown for each construction activity for the network on a tabular listing, and in information furnished in accordance with O and P of this Section.

4. Critical or near critical paths resulting from the use of manpower or equipment restraints shall be kept to a minimum. Near critical paths shall be defined as those paths having fifteen (15) working days or less of total float at the time of initial submission. Restraints related to resource loading must be identified as “For resource loading only”.

5. The estimated cost to perform each work activity shall be noted for each activity in the network on a tabular listing. The sum of the costs assigned to all activities shall equal the Contract value. No activity costs shall be assigned to submittals or submittal reviews. The accepted cost loaded Project Schedule shall constitute the Schedule of Values in accordance with the SCHEDULE OF VALUES / CONTRACT PRICE BREAKDOWN of these GENERAL REQUIREMENTS, from which monthly progress payments will be made in accordance with the provisions of PARTIAL PAYMENTS in these GENERAL REQUIREMENTS. Acceptance of the Cost Loaded Schedule by the CITY does not relieve the CONTRACTOR’S responsibility to submit any cost information or data as requested by the ENGINEER for verification of cost.

6. The network diagram shall be prepared on (E) size sheets (28 inches by 40 inches), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks shall be subject to the approval of the ENGINEER .

7. All networks shall be drafted time scaled to show a continuous flow of information from left to right. The primary path(s) of criticality shall be clearly and graphically identified on the network(s).

G. Schedule Reports

1. The Schedule submitted to the ENGINEER shall include the time scaled network diagram. Network diagrams shall be based on early start and early finish dates of activities shown. The network diagrams submitted to the ENGINEER shall also be accompanied by a computer-generated mathematical analysis for each activity included in the Schedule. Such mathematical analysis shall be submitted to the ENGINEER and shall include at a minimum, the following:

   a. A list of all activities sorted by Activity I.D. Number with predecessor and successor activity numbers and descriptions;

   b. Activity number and description.

   c. Activity code(s).

   d. Schedule and actual/remaining duration for each activity.

   e. Earliest start date (by calendar date).

   f. Earliest finish date (by calendar date).

g. Actual start date (by calendar date).

h. Actual finish date (by calendar date).

i. Latest start date (by calendar date).

j. Latest finish date (by calendar date).

k. Float in work days.

l. Monetary value and cost-to-date of each activity.

m. Percentage of activity complete and remaining duration for incomplete activities.

n. Cumulative value of Work completed based on the CONTRACTOR'S reported portion of activities complete and accepted.

o. Imposed constraints.

2. The following printed computer outputs shall be required as part of the Schedule submittal and each revision or update thereafter as a condition precedent to receipt of progress payments:

a. Activity listing sorted by I.D. number showing predecessor and successor activities in numerical order, with original and remaining duration, early start, early completion, late start, late completion and total float.

b. A sublisting of materials and equipment sorted by Specification Section number. The sublisting of materials and equipment shall include the following activities: preparation of Shop Drawings, submittal to the ENGINEER , review by the ENGINEER, and fabrication, testing, and/or delivery of material and equipment which shall be interfaced with the earliest start date that the material or equipment is to be installed on the project.

c. Activity sort(s) by organizational responsibility, including submittals to the ENGINEER for all major items or material and equipment, the number of shifts, crew sizes of each craft and construction equipment to accomplish the activity;

3. Outputs 1 and 2, above, shall show all activities, including restraints, for the duration of the project.

H. Approval Of The Baseline Schedule

1. The Schedule network diagram and computer tabulations, the Cash Flow Projection, and the Manpower and Equipment Requirements Forecast shall be submitted to the ENGINEER for approval on e2020:

a. The Network Diagram and Master Bar Chart Summary Schedule.

b. Computer tabulations, Predecessor/Successor Report.

c. Manpower Requirements.

d. Cash Flow Projection.

e. All required reports specified in F and G of this Section.

f. Three (3) CD's with appropriate job title, data date, and date of submittal shall be labeled on them

g. Written confirmation of concurrence of all major trade Subcontractors and Suppliers.

2. Approval Process:

a. The ENGINEER shall approve or disapprove, in writing, the CONTRACTOR'S submission within twenty one (21) calendar days after receipt of all required information. The Schedule, once approved, becomes the Baseline Schedule which shall be used for monitoring and evaluating all facets of Contract performance including, but not limited to, progress, changes, and delays.

b. The CONTRACTOR, the CONTRACTOR'S Construction Scheduler, and those major trade Subcontractors and Suppliers, as required by the ENGINEER, shall be required to participate in all meetings necessary to reach mutual agreement and approval of the Baseline Schedule, the Manpower Requirements Forecast, and the Cash Flow Projection.

c. The CONTRACTOR shall revise the Baseline Schedule, as required by the ENGINEER, to reflect project construction. If any of the required submissions are returned to the CONTRACTOR for corrections or revisions, they shall be resubmitted along with a new CD and a hard copy listing of each change (Claim Digger report) for approval within seven (7) calendar days after receipt. Resubmittals shall be as required in H.1 and H.2 of this Section. Review and response by the ENGINEER shall be given within seven (7) calendar days after receipt of each new submission.

d. Should the Baseline Schedule, submitted for approval, show variances from the requirements of the Contract, the CONTRACTOR shall make specific mention of such variations in the letter of transmittal, in order that, if accepted, proper adjustments to the Baseline Schedule can be made. Otherwise, the CONTRACTOR will not be relieved of the responsibility for executing the Work in strict accordance with the requirements of the Contract Documents.

e. <u>Submittal and approval of the Baseline Schedule, the Manpower Requirements Forecast, the Cash Flow Projection, major trade Subcontractor and Supplier confirmation in writing, or CD(s), within the time prescribed, or revisions thereof within the required time, is a condition precedent to the issuance and payment of progress payments.</u>

f. Failure of the CONTRACTOR to submit the Baseline Schedule, or any required resubmittals, in a timely, accurate manner and in accordance with the requirements of this Section will result in costs to the CITY which are difficult if not impossible to determine; therefore, the CONTRACTOR shall pay the CITY liquidated damages in the amount of **[$]** per calendar day, for every work day the schedule submittal, revision, or resubmittal is late. This amount shall be subtracted from any monies due and shall be forfeited by the CONTRACTOR.

I. Revisions To Approved Baseline Schedule

1. The CONTRACTOR shall execute the Work in accordance with the approved Baseline Schedule. Out of sequence construction, defined as a change in the Baseline Schedule, requires prior approval of the ENGINEER as defined below.

2. Upon approval of a Time Impact Analysis the change shall be reflected in the next schedule submittal by the CONTRACTOR.

3. No change (except for resubmittals) to the approved Baseline Schedule shall be made without the prior written approval of the ENGINEER. If the CONTRACTOR desires to make a change to the approved Baseline Schedule, the CONTRACTOR shall request permission from the ENGINEER in writing, stating the reasons for the change as well as the specifics, such as revisions to activities, logic, durations, etc. The ENGINEER will provide a response within five (5) calendar days. Actual status and/or forecast dates for revised submittals shall be added without prior acceptance by the ENGINEER. They are still subject to review by the ENGINEER.

4. If the ENGINEER considers a change to the Baseline Schedule to be of a major nature, the ENGINEER may require the CONTRACTOR to revise and submit for acceptance all of the affected portion(s) of the Baseline Schedule including an analysis to show the effect on the entire project. The proposed revision and analysis shall be submitted to the ENGINEER within fifteen (15) calendar days after the ENGINEER notifies the CONTRACTOR the revision is of a major nature. A change will be considered to be of a major nature if the time estimated for an activity or sequence of activities is varied from the original plan to the degree that there is reasonable doubt that the Contract completion date will be met, or if the change impacts the Work of other CONTRACTORS at the Jobsite. Changes to activities having adequate float shall be considered as minor changes, except that an accumulation of minor changes may be considered a major change when such changes affect the Contract completion date. (Activities having adequate float are activities which are not critical after the change is made.).

5. Only upon approval of a change by the ENGINEER shall it be reflected in the next Schedule update submitted by the CONTRACTOR.

J. Updates To Approved Baseline Schedule And Progress Payments

1. Monthly Updates:

a. All updated or revised Schedules shall be submitted in the same detail as the original submittal, unless modified in writing by the ENGINEER. Written confirmation of the major trade Subcontractors and Suppliers shall be required quarterly.

b. The initial Schedule update shall be submitted within fourteen (14) calendar days after approval of the Baseline Schedule. The Schedule update shall be cost loaded. Subsequent Schedule updates shall be submitted at the beginning of each month thereafter for the duration of the Contract. The data date shall be the first working day of the month unless otherwise directed by the ENGINEER. The Schedule and computer tabulations shall be reviewed by the CONTRACTOR'S Construction Scheduler at a joint update meeting with the ENGINEER and the INSPECTOR.

2. Monthly Schedule Updates:

a. The CONTRACTOR shall submit the Monthly Schedule Update to the ENGINEER each month, on a date assigned by the ENGINEER. The proposed Monthly Schedule Update prepared by the CONTRACTOR shall include all information available as of the cutoff date established by the ENGINEER. A detailed list of all proposed schedule changes (logic, duration, status, additions, and deletions) shall be submitted with the update (Claim Digger report). Prior to the monthly update review meeting, the CONTRACTOR shall obtain from his Subcontractors, Suppliers, and staff the necessary information as required to reflect progress to date. A proposed Monthly Schedule Update containing the information set forth below shall be available for review at the meeting.

(1) For activities started and/or completed during the previous period: Actual start and actual completion dates, and number of shifts used to accomplish the activity.

(2) For activities begun but not yet complete to date: Remaining duration of the Work, estimated percent complete, and estimated completion date. The schedule shall be calculated using remaining durations and progress override.

(3) For activities not yet started: Estimated start dates, revised duration's, and estimated completion dates, as necessary.

(4) For authorized Change Orders, including Emergency Change Orders, Time and Material Change Orders, and Unilateral Change Orders: Revised and original activities, number of shifts, crew sizes by craft, construction equipment required, cost, and durations, and status of all outstanding Notices of Non-Compliance, where required.

(5) The monthly update of the Network Diagram shall be for the whole project. The previous month's activities shall be reported as they actually took place and designated as complete, if actually completed, on the network diagram update.

(6) The electronic file of the submitted Network Diagrams and the related reports shall constitute a clear record of progress of the Work from Notice to Proceed to final completion.

(7) The monthly submittal to the ENGINEER shall be accompanied by the Schedule Narrative Report. The Schedule Narrative Report shall describe the physical progress during the report period, Plans for continuing the Work during the forthcoming report period, actions planned to correct any negative float predictions, and an explanation of potential delays and/or problems and their estimated impact on performance and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay and/or cost increases shall be included for consideration by the ENGINEER The report shall follow the outline set forth below:

CONTRACTOR'S Schedule Narrative Report Outline:

a) CONTRACTOR'S Transmittal Letter.

b) Description of problem areas.

c) Current and anticipated delays:
   1) -Cause of the delay.
   2) -Corrective action and schedule adjustments to correct the delay.
   3) -Impact of the delay on other activities, milestones, and completion dates.

d) Changes in construction sequences.

e) Pending items and status thereof:
   1) -Permits.
   2) -Change Orders.
   3) -Time extensions.
   4) -Non-Compliance Notices.

f) Contract Completion Date(s) status:
   1) Ahead of schedule and number of working days.
   2) Behind schedule and number of working days.

g) Other project or scheduling concerns including any plant shutdowns, duration of each shutdown, and analysis of any Work to be performed during the shutdown period.

h) Include reviewed and updated Network Diagram and Reports.

i) Include revised Cost Loading and Cash Flow Information of this Section.

j) Include substantial revisions to manpower and equipment requirements

(8) The CONTRACTOR shall provide to the ENGINEER, the Network Diagram, the Predecessor/Successor Report sorted by activity number, the list of all changes made to the previously approved Schedule, and the Schedule Narrative Report. The data required to provide all other scheduling reports called for in of this Section shall be provided on e2020.

3. The CONTRACTOR'S Construction Scheduler and representatives from major Subcontractors and Suppliers (as requested by the ENGINEER shall attend the monthly update meetings with the above data prepared in advance for each meeting to provide, as of the end of the updating period, a complete and accurate report of the current procurement schedule (in accordance with the requirements of CONSTRUCTION STATUS REPORTS of the GENERAL REQUIREMENTS), construction progress, and a depiction of how the CONTRACTOR plans to continue the Work of the project to meet all Contract Completion Dates. All network changes and status dates agreed to during each update meeting shall be considered as acceptable by all parties unless written notice of exception is given by an objecting party within five (5) calendar days after the update meeting. For major network changes that cannot be agreed to during an update meeting, the CONTRACTOR shall submit, in writing, such revisions for the ENGINEER'S approval prior to inserting such changes into the network. Submissions may be in the form of marked-up networks, fragnets, or schedule abstracts provided they are submitted with a letter of transmittal. The submission and approval procedures for this information shall follow the same timetable described in H.2 of this Section.

4. Predicated on the results of the ENGINEER'S review of Monthly Schedule Update submittals and accompanying reports, the CONTRACTOR may be required to revise the Monthly Schedule Update. Conditions under which a revision will be made are as follows:

a. When a delay in the completion of any Work item or sequence of Work items results in an indicated extension of the project completion or interim milestone dates detailed herein by thirty (30) calendar days.

b. When delays in submittals or deliveries or Work stoppages are encountered which make replanning, rescheduling, or resequencing of the Work necessary.

c. When the schedule does not represent the actual execution and progress of the project.

5. Required revisions of the Monthly Schedule Update are due within five (5) calendar days of notice by the ENGINEER that a revision is required. All revisions and additions to the Schedule are subject to the review of the ENGINEER. No changes (except resubmittal cycles) are to be implemented in the Schedule by the CONTRACTOR without the prior approval of the ENGINEER. When the Monthly Schedule Update or its required revision is approved by the ENGINEER, it then becomes the Current Schedule Update. The Current Schedule Update will be used for the period from which it is approved until its successor is submitted and approved.

6. The Schedule Narrative Report, the updated Project Schedule (networks, and computer computations), the Cash Flow Projection, the updated network diagram, and one (1) copy of the updated CD reflecting the status of the project agreed to at the updating meeting, shall be submitted to the ENGINEER within five (5) calendar days after each updating meeting.

7. The update report shall show the activities or portions of activities completed during the reporting period and their total value as the basis for the CONTRACTOR'S request for partial payment. Payments made pursuant to PARTIAL PAYMENTS of these GENERAL REQUIREMENTS will be based on the total value of such activities completed or partially completed after verification by the INSPECTOR. The report shall state the percentage of the Work actually complete as of the report date. If the project is behind schedule, progress along other paths with negative float shall also be reported.

8. Failure of the CONTRACTOR to submit the Monthly Schedule Updates in a timely, accurate manner and in accordance with the requirements of this Section will result in costs to the CITY which are difficult, if not impossible to determine; therefore, the CONTRACTOR shall pay the CITY liquidated damages in the amount of **[$]** per calendar day for every work day the submittal is late or not in full compliance with the requirements of this Section. This amount shall be deducted from any monies due, and forfeited by the CONTRACTOR. In addition to the liquidated damages, if the CONTRACTOR fails to submit any of the Monthly Schedule Update deliverables, or to meet any of the other updating requirements, progress payments will be withheld until such time as the required update information is submitted.

K. Weekly Progress Reports

1. Once each week, on a day established by the ENGINEER, the CONTRACTOR shall submit:

   a. A progress schedule listing the activities completed and in progress for the previous week and the activities scheduled for the succeeding two (2) weeks. The activity designations shall be consistent with the activity designations in the Current Schedule Update. A bar chart shall be used to display the information in pictorial form. The appropriate schedule activity number shall be listed for each bar.

L. Cost Loading and Cash Flow

1. With the initial Baseline Schedule submittal, each Monthly Schedule Update, and each revision, the CONTRACTOR shall also submit a schedule of cost loading and cash flow to the ENGINEER. There shall be a strict correlation between the sum of individual activity costs and the total values indicated for bid items. That is, each individual activity within the Schedule shall employ a code, which in summary, attaches its cost, if any, to the appropriate bid items. The sum of activity costs within a specific code shall equal the cost of its corresponding bid items and approved Change Orders.

2. Expected payment requests for each month shall be included with proposed updates. The cash flow shall show the net payment requests for each month. The cumulative payment requests to date shall also be shown after deducting retainage and any other monies withheld. The cash flow shall be shown in tabular format and in graphic format.

3. The CONTRACTOR, at the Preconstruction Scheduling Conference, shall explain in detail the procedure to be used to develop the Schedule activity cost loading and cash flow. This procedure is subject to the review and approval of the ENGINEER and the INSPECTOR. Receipt and approval of the Schedule Cost Loading and Cash Flow Summary is a condition precedent to the making of any payments under the Contract. Therefore, failure to submit an acceptable schedule cost loading and cash flow summary shall be cause for withholding any progress payments due or that may become due under this Contract, until such time as an acceptable cost loading and cash flow summary is received.

4. In accordance with the updating procedures, when an activity is deemed substantially complete by the ENGINEER, then such activity will no longer be treated as an activity affecting the critical path or successor activities on the project. The cost of correction of any punchlist items associated with substantially completed activities will be covered by amounts deemed by the ENGINEER and the INSPECTOR to be adequate to cover such costs.

M. Responsibility For Completion

1. Whenever it becomes apparent from the current Monthly Shedule Update that phasing, milestone, constraint, restraint, or Contract Completion Date will not be met, the CONTRACTOR shall submit a plan to recover the delay using some or all of the following remedial actions;

   a. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of work and meet the current Contract Completion Date.

   b. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination thereof to eliminate the backlog of Work.

   c. Reschedule the Work in conformance with the Specification requirements.

2. Prior to implementing any of the above actions, the CONTRACTOR shall notify the ENGINEER and obtain approval from the ENGINEER. If such actions are approved, the Schedule revisions shall be incorporated by the CONTRACTOR into the Network Diagram before the next Monthly Schedule Update is due.

3. Under no circumstances will the addition of equipment or construction forces, increasing the Working hours or any other method, manner, or procedure to return to the contractually required Contract Completion Date be considered justification for a Change Order or be treated as acceleration where the need for a recovery schedule has been caused by the CONTRACTOR and/or its Subcontractors or Suppliers, at any tier.

4. The ENGINEER may elect to withhold progress payments until the CONTRACTOR'S progress indicates that the milestone date(s) and/or the Contract Completion Date will be met.

N. Schedule Time Extensions

1. When Change Orders or delays are experienced by the CONTRACTOR and a time extension is requested, the CONTRACTOR shall submit to the ENGINEER, a written Time Impact Analysis illustrating the influence of all changes or all delays on the current Contract Completion Date. The Time Impact Analysis shall be based on an As-Built Schedule Analysis approach. The As-Built Schedule that will be created will incorporate all Actual Start and Finish dates, actual durations of activities, and actual sequences of construction. This Time Impact Analysis shall incorporate all delays (including CITY, CONTRACTOR, and Third Party delays without exception) in the time frame they occurred with actual logic ties. The As-Built Schedule data shall be obtained from the most recent accepted Baseline Schedule or Monthly Schedule Update as of the time the Preliminary Change Order, Emergency Change Order, Unilateral Change Order, or Allowance Order was issued to the CONTRACTOR. The As-Built Schedule shall be created as an early start schedule. The As-Built Schedule shall use the original activity durations for all incomplete work and the actual logic driving all activities. All requests for time extensions shall be based upon an analysis of this As-Built Schedule. The critical path will be established and all CITY caused delays on the critical path will be identified. The time extension will be based solely upon the cumulative duration of all CITY and Third Party caused delays (as set forth in UNAVOIDABLE DELAY of the GENERAL CONDITIONS) which are on the critical path. Any time extensions to the project Interim Milestone Dates shall be non-compensable time extensions only.

2. Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities at the time of actual delay, or at the time the Preliminary Change Order, the Emergency Change Order, the Unilateral Change Order, or the Allowance Order was issued to the CONTRACTOR. Float or slack time is not for the exclusive use or benefit of the ENGINEER or the CONTRACTOR but is an expiring resource available to all parties as needed to meet Contract milestones and the Contract Completion Date. Time extensions shall not be granted nor delay damages paid until;

a. A delay occurs which is beyond the control and without the fault or negligence of the CONTRACTOR and its Subcontractors or Suppliers, at any tier; and

b. Which extends actual performance of the Work beyond the applicable current Contract Completion Date and the most recent date predicted for completion of the project on the approved Monthly Schedule Update, current as of the time of the delay or as of the time of issuance of the Preliminary Change Order, the Emergency Change Order, the Unilateral Change Order, or the Allowance Order was issued to the CONTRACTOR.

3. Each Time Impact Analysis shall be submitted in triplicate, within fifteen (15) calendar days after a delay occurs, or issuance of the Preliminary Change Order, Emergency Change Order, Time and Materials Change Order, or Unilateral Change Order. If the CONTRACTOR does not submit a Time Impact Analysis for a specific Change Order or delay within the specified period of time, the CONTRACTOR shall be deemed to have irrevocably waived any rights to additional time and cost.

4. Since float time within the Schedule is jointly owned, it is acknowledged and agreed by the CONTRACTOR that CITY caused delays on the project may be offset by CITY caused time savings (including, but not limited to: critical path submittals returned in less time than allowed for in the Contract, approval of substitution requests which result in a savings of time along the critical path for the CONTRACTOR, etc.). In such an event the CONTRACTOR shall not be entitled to receive an extension of time or delay damages until all CITY caused time savings are exceeded and the Contract Completion Date is also exceeded.

5. Approval or rejection of each Time Impact Analysis by the ENGINEER shall be made within fifteen (15) calendar days after receipt of each Time Impact Analysis, unless subsequent meetings and negotiations are necessary. Upon approval, a copy of a Time Impact Analysis signed by the ENGINEER shall be returned to the CONTRACTOR for incorporation into the next Monthly Schedule Update.

6. Upon mutual agreement by both parties, fragnets illustrating the influence of Change Orders and delays shall be incorporated into the Schedule during the first update after agreement is reached.

7. In the event the CONTRACTOR does not agree with the decision of the ENGINEER regarding the impact of a change or delay, it shall be resolved in accordance with CLAIMS AND PROTESTS of the GENERAL CONDITIONS.

O. Manpower

The CONTRACTOR shall submit with the initial Baseline Schedule a histogram depicting total project manpower for its own forces and for each of its Subcontractors for each month. The histogram shall be based upon and shall be in substantive agreement with the number of shifts and crew sizes in the Schedule and shall be updated monthly and submitted with the Monthly progress report. The update shall show actual manpower for each month during the construction period to date and required manpower for both base scope and Change Order Work each

month, necessary to complete all remaining activities to insure timely project completion.

P. Construction Equipment

1. The CONTRACTOR shall submit with the initial Baseline Schedule a tabular report listing each major piece of construction equipment for itself and each of its Subcontractors for each month. This major equipment is the equipment that is or will be used at the Worksite. Each major piece of the CONTRACTOR'S and the Subcontractor's equipment shall be separately described, identified, and numbered in the report. The tabular report shall be based upon and in substantive agreement with the number of shifts and crew sizes by craft in the Schedule and shall be updated monthly and submitted with the monthly progress report. The update shall show actual construction equipment for each month during the construction period to date and the required construction equipment for each month necessary to complete all remaining activities including the Change Order Work, on the early finish date.

Q. Submittal Of "As-Built" Schedule

2. As a condition precedent to any release of retention, the last update to the Schedule submitted shall be identified by the CONTRACTOR as the "As-Built Schedule". The "As-Built Schedule" shall reflect the exact manner in which the project was actually constructed (including start and completion dates, activities, sequences, and logic) and shall be signed and certified by the CONTRACTOR'S Project Manager and Construction Scheduler as being a true reflection of the way in which the project was actually constructed.

(END OF SECTION)

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SECTION 01330
SHOP DRAWINGS / SUBMITTALS

1 THE REQUIREMENT
2

A. GENERAL

1. Shop Drawings and submittals shall be provided, at the CONTRACTOR'S expense, when required by the Plans of Specifications, or requested by the ENGINEER. Shop drawings and submittals shall be submitted in accordance with General Requirements Section - 01116 Electronic Document Control. The CONTRACTOR shall furnish a schedule and list of all required shop drawings and submittals to the PROJECT MANAGER, in accordance to CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS of these GENERAL REQUIREMENTS, including required shop drawings and submittals by all Subcontractors. Submittals and Shop Drawings, including administrative submittals, may be required by any of the contract documents, including, but not limited to, the General Conditions, General Requirements, Standard Specifications for Public Works Construction ("Green Book") or the Caltrans Standard Specifications as determined by the ENGINEER.

2. CONTRACTOR'S shop drawings and submittals, including administrative submittals, required for performance of Contract Work, shall include, but are not limited to, the following:

a. Schedule of Values for Lump Sum items

b. Construction Schedule / Submittal Schedule and Notification to ENGINEER of completion of each milestone or percentage increment of the Work as required.

c. Daily Construction Reports

d. Shop Drawings and Structural Calculations.

e. Manufacturer's Data and Specifications.

f. Samples

g. Temporary Shoring Plans

h. Certificate of Compliance

i. Construction Photographs

j. Substitutions Request

k. Record Drawings and Record Project Manual

l. Operation & Maintenance Manuals

m. Stock Materials, Spare parts, tools

n. Material Testing Results

o. Daily Statements of cost-plus percentage Change Order

p. Copies of Notice-To-Correction or Notice of Non-Compliance from governing authorities.

q. Maintenance Logs and Maintenance Schedule.

r. Mix Designs (Asphalt Concrete, Portland Cement Concrete, grout, etc.)

s. Notices of Materials to be Used (if Caltrans forms are required)

t. Storm Water Pollution Prevention Plan (SWPPP)

u. Solid Waste Resource Management Forms

v. Required Written Warranties/Guarantees.

w. Work Erection Sequences

Administrative Submittals include, but are not limited to the following:

a. List of Subcontractors and proof of qualifications

b. Third Party Testing Agency (as required)

1. Materials shall not be furnished or fabricated, nor any Work done for which Shop Drawings or submittals are required, before those Shop Drawings or submittals have been reviewed, as provided in this Section. Neither review nor approval of Shop Drawings or submittals by the ENGINEER shall relieve the CONTRACTORS from responsibility for errors, omissions, or deviations from the Contract Documents, unless such deviations were specifically called to the attention of the ENGINEER in submittal. The CONTRACTOR shall be responsible for the correctness of the submittals and Shop Drawings, including shop fits, field connections, and results obtained by use of such drawings.

2. The CONTRACTOR shall allow a minimum of thirty (30) working days for each review of Shop Drawings and submittals for temporary bridges. For all other Shop Drawings and submittals, the CONTRACTOR shall allow a minimum of twenty (20) working days for each review, unless otherwise mutually agreed to by the CONTRACTOR and the ENGINEER. Review periods are not cumulative. The aforementioned time frames begin anew upon each submission of Shop Drawings and/or submittal whether it is the initial submission or a resubmission after review by the ENGINEER. Each set of Shop Drawings or submittals shall be uploaded in e2020 in accordance with Specification Section 01116 of the General Requirements.

3. In each Section of the Project Manual or for each Bid Item as appropriate, all required lists of material, product or equipment; manufacturer's data; and etc., shall be appropriately grouped and

submitted to the CITY for review as one submittal. Piece meal submittals will not be acceptable. Any submittal with outstanding product data, manufacturer's specification or any required information shall deem to be incomplete and subject for rejection without any review. Subsequent submittal shall be considered as second submission. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER or Consultant by the second submission of a submittal item. The CITY reserves the right to withhold moneys due to the CONTRACTOR to cover additional costs of the ENGINEER or Consultant's review beyond the second submittal. On the third submittal by CONTRACTOR, the CONTRACTOR will be charged $120 per hour of CITY'S or Consultant's review time and no additional Contract time shall be allowed.

6 CONTRACTOR shall appropriately package and label each submittal for transmittal and handling from CONTRACTOR to Consultant or PROJECT MANAGER using a preprinted standard transmittal form verifying that the CONTRACTOR has met the following CITY requirements:

- Conformance in all respect to the Contract Document requirements.
- Has reviewed and coordinated all aspects of each submitted item relative to manufacturer's product data, Specifications, etc.
- Has verified with site conditions and all dimensions.
- That all questions and/or comments prepared by the Consultant or PROJECT MANAGER have been reviewed and answered.
- CONTRACTOR is not relieved from responsibilities for errors, omissions and any deviation in the required submittals as revealed resulting from the CITY'S or Consultant's review of such submittals.
- CONTRACTOR shall add and sign the following paragraph on all submittals:

  "It is hereby certified that the equipment, material, color samples, details shown and marked in this submittal is that proposed to be incorporated into the project; is in compliance with the Contract Drawings and Project Manual and can be installed in the allocated space,"

- Failure to add the above written statement for compliance will result in return of submittals or shop drawings without review, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

7. Submittals and Shop Drawings will be returned to the CONTRACTOR with one of three (3) markings:

a. If copies of a submittal or shop drawing are returned to the contractor marked "NO EXCEPTIONS TAKEN/PROCEED," formal revision and resubmission of said submittal will not be required.

b. If copies of a submittal or shop drawing are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED/PROCEED CONDITIONALLY" formal revision and resubmission of said submittal will not be required.

c. If a submittal or shop drawing is returned to the CONTRACTOR marked "REJECTED-RESUBMIT/DO NOT PROCEED", the CONTRACTOR shall revise said submittal and shall resubmit all six copies of said revised submittal to the ENGINEER.

Revisions indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for claims for extra work. The

CONTRACTOR is advised that the CITY may delegate submittal review to third parties such as Consultants or Caltrans. The PROJECT MANAGER may require the CONTRACTOR to address the comments from third parties.

B. SHOP DRAWINGS

1. Shop Drawings shall be prepared in accordance with current modern engineering practice and shall be of a size and scale to clearly show all necessary details. Shop Drawings shall show in detail the size, sections, and dimensions of all the member(s); the arrangement and construction of all connections and joints; all holes, straps, and other fittings required for attaching work and other pertinent details. When required, engineering computations shall be submitted. The CONTRACTOR shall be responsible for delivering reviewed copies of shop Drawings to all others whose work is dependent thereon. The CONTRACTOR shall maintain at the site of the Project, at all times, a complete file of approved Shop Drawings and manufacturers' data for this Project.

2. Each Shop Drawing shall be submitted in accordance with GENERAL REQIREMENTS Section 01116 – ELECTRONIC DOCUMENT CONTROL.

3. Layout diagrams or schedules are required for pipelines utilizing pipe materials conforming to the indicated subsections. The diagrams or schedules shall be submitted for reference only, except curve layouts are required for approval.

4. The diagram shall be of a size and scale to show clearly all necessary details. Pipeline layouts, for reference only, may be submitted in tabulated form in increasing order of alignment stationing.

5. All Shop Drawings shall be provided with dimensions and measurements verified at the site as stated hereinbefore. If the CONTRACTOR decides to submit the dimensions and measurements at a later time, the CONTRACTOR must state the reason, for the ENGINEER approval, why the dimensions and measurements cannot be taken. If approval is granted, the CONTRACTOR shall re-submit the approved submittal with

the final dimensions and measurements after the Works are completed. The CONTRACTOR is not relieved from the responsibilities of error and omission, or any problem that may arise during the fabrication or installation.

6. Shop Drawings are required in the following subsections:

Item	Section Number	Title	Subject
1	01573	Excavation Shoring, Forms, and Falsework	Trench Shoring
2	207-2.5	Joints	Reinforced Concrete Pipe
3	207-8.4	Joints	Vitrified Clay Pipe
4	207-10.2.1	General	Fabricated Steel Pipe
5	300-3.2	Cofferdams	Structure Excavation & Backfill
6	303-1.6.1	General	Falsework
7	303-1.7.1	General	Placing Reinforcement
8	303-3.1	General	Prestressed Concrete Construction
9	304-1.1.1	Shop Drawings	Structural Steel
10	304-1.1.2	Falsework Plans	Structural Steel
11	304-2.1	General	Metal Hand Railings
12	306-2.1	General	Jacking Operations
13	306-3.1	General	Tunneling Operations
14	306-3.4	Tunnel Supports	Tunneling Operations
15	306-6	Remodeling Existing Sewer Facilities	Polyethylene Liner Installation
16	306-8	Microtunneling	Microtunneling Operations
17	306-4.3	Controller Cabinet Wiring Diagrams	Traffic Signal Construction
18	306-1.2.2	Pipe Laying	Pipeline Shop Drawings

7. Shop Drawings listed above as Items, 5, 6, 8, 9, 10, 12, 13, 14 and 16 shall be prepared by a Civil or Structural Engineer registered by the State of California.

C. SUBMITTALA

1. Submittals shall consist of the appropriate combination of catalog sheets, material lists, manufacturer's brochures, technical bulletins, specifications, diagrams, or product samples, necessary to describe a system, product, or items. Submittals for systems shall be uploaded in e2020 for review by the ENGINEER.

2. Submittals are required for irrigation systems, street lighting systems, and traffic signals, and may be required for any product, manufactured item, or system.

(END OF SECTION)

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SECTION 01353
OPPORTUNITY TO PARTNER

1.1 THE REQUIREMENT

A. The successful bidder will have the opportunity to enter into a cooperative partnership agreement with the CITY for the contract. Participation in Partnering is highly encouraged. Partnering will create a framework for conflict resolution, improved communications, reduced litigation, and cost containment. During the partnering session, all parties will participate in developing an Issue Resolution Ladder, which will help establish and communicate the chain of command in each organization (See Attachment 01353–A1). Each level of the organization is expected to work cooperatively to resolve issues. However, if issues cannot be resolved in a timely manner or are beyond the authority granted that level, each party understands that the issue must be elevated to the next level.

B. The objective of this Partnering agreement would be effective completion of the Work on time and to achieve a standard of quality that would be a source of pride to both the CITY and the CONTRACTOR. Partnering is intended only to establish an environment of cooperation between the parties and will not affect the terms of this contract.

C. An initial partnering session of **8 hours** is recommended to initiate the partnership agreement. All subsequent partnering sessions (of 4 hours each) shall be held quarterly unless it is deem unnecessary by the Engineer. The cost of this training, excluding staff labor charges, will be paid from a fixed cash allowance that has been allocated as the bid item Opportunity to Partner in the SCHEDULE OF WORK AND PRICES. No Overhead and Profit shall be added to the cost of the training. If the total cost of the partnering training differs from the amount set forth in the SCHEDULE OF WORK AND PRICES, the Contract Price shall be adjusted by a Change Order for the difference between the total actual cost and the amount included in the Bid, as an additional amount due the CONTRACTOR or a credit to the CITY, as appropriate.

D. The third party partnering moderator shall be chosen jointly by the Engineer and the Contractor. The City or Contractor may suggest the use of certain moderator, however each party shall have the right to agree or deny the use of the suggested moderator.

(SEE ATTACHMENT)

ATTACHMENT TO SECTION 01353

Attachments to General Requirements Section 01353 consists of one (1) document, as follows:

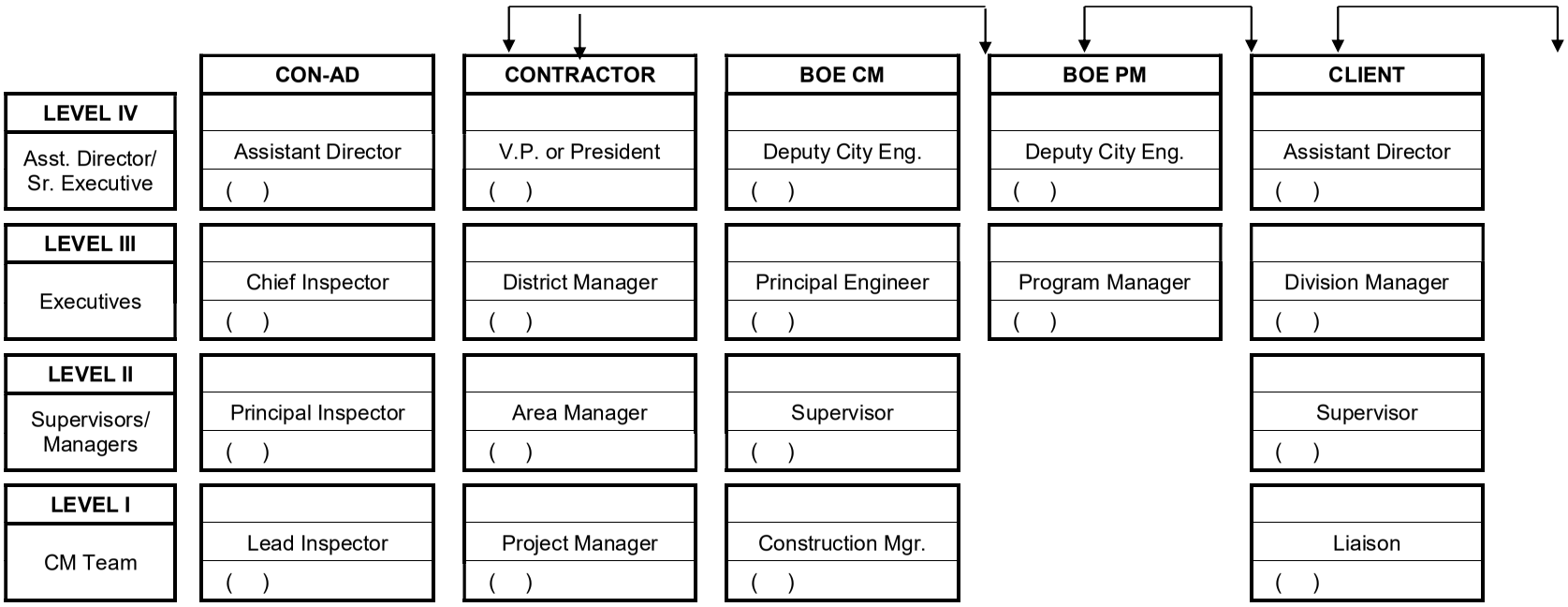
ATTACHMENT NUMBER	TITLE OF ATTACHMENT	NUMBER OF PAGES IN THIS ATTACHMENT
01353-A1	Issue Resolution Ladder – Line Management Form	1

City of Los Angeles, Department of Public Works
Bureaus of Engineering and Contract Administration

Contractor: **{name}**

Project Title: **{title}**

Issue Resolution Ladder – Line Management



ATTACHMENT TO SECTION 01353

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SECTION 01520
CONSTRUCTION FACILITIES

1.1 THE REQUIREMENT

A. General

1. All facilities provided for CITY personnel shall be at suitable locations approved by the ENGINEER. Such facilities must be in a room, building, or trailer provided for this purpose with acceptable means of locking.

   accordance with the requirements herein described, shall be provided at any offsite or project site. plant facility furnishing Portland cement, concrete or asphalt paving material. A Modified Class "B" Field Office shall be provided for CITY Construction Management Staff as specified below in Paragraph 5. Any other facilities for CITY personnel shall be provided only when required by the Specifications.

2. A Class "A" Field office, in accordance with the requirements herein, shall be provided at any offsite plant facility furnishing pipe subject to CITY inspection during manufacture. A Field Laboratory, in accordance with the requirements herein described, shall be provided at any offsite or project site. plant facility furnishing Portland cement, concrete or asphalt paving material. A Modified Class "B" Field Office shall be provided for CITY Construction Management Staff as specified below in Paragraph 5. Any other facilities for CITY personnel shall be provided only when required by the Specifications.

3. Offices and laboratories at plants may be used concurrently by inspection personnel of other agencies provided such use does not seriously conflict with CITY personnel. The Modified Class "B" Field Office provided for City Construction Management Staff shall not be a shared facility.

4. All facilities shall conform to the applicable codes, ordinances, and regulations of the local jurisdiction, and of the State of California, and shall conform to current practice. The interior shall be paneled or suitably lined to provide a facility of good appearance.

5. The CONTRACTOR shall provide a Modified Class _"B"_ Field Office, in accordance with the requirements herein, at a location acceptable to the ENGINEER and the INSPECTOR. for use by CITY Construction Management staff

6. The CONTRACTOR shall provide janitorial and other maintenance services in all types of facilities provided. Such services shall include the supply of the appropriate paper products and dispensers. Trash receptacles shall be provided an emptied by the CONTRACTOR at weekly intervals or sooner as required. The trash shall be removed from the Project site.

7. All costs to furnish, maintain, service, and remove the specified facilities at the Project site shall be included in the price bid for such facilities. If no bid items are provided in the proposal, costs shall be included in other items for which bids are entered.

8. The first Progress Payment will not be approved until all facilities are in place and fully comply with the Specifications.

A. Field Office Facilities

1. Class "A" Field Office

a. This office shall have a minimum floor space of 400 ft2, at least two doors, and window area of not less than 66 ft2). All doors and windows shall be provided with screens.

b. Furniture shall be provided as follows: two (2) plan tables, two (2) standard 1.5M (5 feet) long double-pedestal desks with a drawer suitable for holding files, two (2) chairs, one (1) drafting stool, and two (2) plan racks.

c. Electric power shall be provided to include a minimum of four (4) duplex convenience outlets. The office shall be illuminated at the tables and desk. An outdoor lighting fixture with a 300-watt bulb shall be installed

d. Heating and air conditioning of sufficient capacity shall be provided at no expense to the CITY. The CONTRACTOR shall provide drinking water within the office and integral sanitary facilities directly adjoining. Sanitary facilities shall include a toilet and wash basin with hot and cold running water.

e. Extended area, non-coin-operated telephone service shall be provided within the office area. The installation shall include sufficient extension cord to serve the plan table and desk.

2. Modified Class "B" Field Office for CITY Construction Management Staff

a. This office shall be the same as class "A" with integrated sanitary facilities. The office shall include the following:

b. Three cell phones (including all airtime and other charges) for use by City personnel during the construction period. Each cell phone is to be new and to include a desktop battery charger and an auto battery charger. Cell phones will be returned to the Contractor after substantial completion of the project and punch list completion.

c. A black-and-white photocopier capable of 11"x17" copies and scanning, including maintenance and repair service. iii. The drinking water shall include hot and cold water, plus coffee service equipment.

d. A fax machine (plain paper)

e. A second desk, a folding table, and four chairs in addition to the furniture listed above.

f. Security satisfactory to the ENGINEER to include bars over the window(s) and a deadbolt door or padlock securing the door.

g. One new laptop computer, one new tablet with a keyboard with access to e2020, and one printer with an Intel Pentium IV processor or approved equal, with internet access at the trailer, or other approved highspeed Internet access.

h. One digital camera with minimum 5.0 mega pixels and 5x optical zoom capability. Rechargeable batteries and memory card, 1 gigabyte minimum memory, which can be used with the camera, shall also be included.

i. The CITY will not provide a location for the Modified Class "B" Field Office for CITY Construction Management staff. The CONTRACTOR is responsible for securing adequate space adjacent to the project site for the City's Modified Class "B" Field Office for CITY Construction Management staff. If the Contractor maintains a yard adjacent to the site, the City's Modified Class "B" Field Office for CITY Construction Management staff shall be provided within the CONTRACTOR's yard, and all security installed for the CONTRACTOR's field office (if any) shall be duplicated for the CITY's Field Office.

B. Removal of Facilities

1. Field offices, laboratories, and bathhouse facilities at the Project site shall be removed upon completion of the Work. Buildings and equipment furnished by the CONTRACTOR at the Project site under the provisions of this Section are the property of the CONTRACTOR.

C. Basis of Payment

1 All costs incurred in furnishing, maintaining, servicing, and removing field offices, laboratories, or bathhouse facilities required at the Project site shall be included in the Bid item for furnishing such facilities. If such facilities are required by the Plans or Specifications and no bid item is provided in the proposal, the costs shall be included in other items for which bids are entered or in MOBILIZATION if a bid item is provided for laboratories at plants shall be borne by the planet owners. Payment for office facilities will be made as follows: twenty-five percent (25%) when completely installed, seventy-five (75%) prorated over the remainder of the Contract duration.

(END OF SECTION)

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SECTION 01571
STORMWATER POLLUTION CONTROL
MEASURES FOR CONSTRUCTION ACTIVITIES

1.1 THE REQUIREMENT

A. General

1. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution.

2. Conduct and schedule operations to minimize or avoid muddying and silting channels, drains, and waters.

3. As required, obtain permits for erosion and water pollution control from the appropriate jurisdictional agency before starting Work. All costs for work required for compliance with this Section shall be included within the Bid Prices.

.

4. Provide any necessary water pollution control devices to prevent, control, and abate water pollution, and implement good housekeeping pollution control measures to reduce the discharge of pollutants from work sites to the maximum extent practicable. These water pollution control devices include drains, gutters, slope protection blankets and retention basins and shall be constructed concurrently with other Work at the earliest practicable time.

5. Exercise care in preserving vegetation and protecting property, to avoid disturbing areas beyond the limits of the Work. Promptly repair any damage caused by Contractor operations.

6. Comply with the specific requirements based on acreage of disturbed soil.

7. Penalties: Failure to comply with this Section may result in significant fines and possible imprisonment. The RWQCB or other prosecuting authority may assess fines of up to $32,500 per day for each violation. Should the City be fined or penalized as a result of the Contractor failing to comply with this Section, the Contractor shall reimburse the City for any and all fines, penalties and related costs.

8. Notification and Report: If pollution occurs in the work area for any reason or when the Contractor becomes aware of any violation of this Section, correct the problem and immediately notify the Inspector. In addition, submit a written report to the Engineer within seven (7) calendar days describing the incident and the corrective actions taken. If either the Inspector or Engineer is first to observe pollution or a violation, the Contractor shall also explain in the written report why the Work was inadequately monitored.

9. The provisions of this Section describe minimum compliance and do not preclude other more stringent stormwater pollution control measures that may be required in the Contract.

B. Definition

1. Construction Activity: Includes clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. Construction activity does not include routine maintenance such as, maintenance of original line

and grade, hydraulic capacity, or original purpose of the facility. If construction activity is part of a larger common plan of development, the amount of disturbed soil is the total land area of disturbed soil that results under the common plan.

C. Projects Having Less Than One Acre of Disturbed Soil

Projects with construction activity that will result in less than one acre of disturbed soil, the Contractor shall comply with the following minimum water quality protection requirements:

1. Retain eroded sediments and other pollutants on-site and do not allow transportation from the site by sheet flow, swales, area drains, natural drainage, or wind. Control slope and channel erosion by implementing an effective combination of best management practices (BMPs). Such BMPs include scheduling grading during non-rainy seasons, planting and maintaining vegetation on slopes and covering erosion-susceptible slopes.

2. Protect stockpiles of earth and other construction-related materials from being transported from the site by wind or water.

3. Properly store and handle fuels, oils, solvents, and other toxic materials to not contaminate the soil or surface waters, enter the groundwater, or be placed where they may enter a live stream, channel, drain, or other water conveyance facility. Protect all approved toxic storage containers from weather. Clean spills immediately and properly dispose of cleanup materials. Spills shall not be washed into live streams, channels, drains, or other water conveyance facilities.

4. Do not wash excess or waste concrete into the public way or any drainage system. Retain concrete wastes on-site until they can be appropriately disposed of or recycled.

5. Deposit trash and construction-related solid wastes in covered receptacles to prevent contamination of rainwater and dispersal by wind.

6. Do not allow sediments and other materials to be tracked from the site by vehicle traffic. Stabilize construction entrance roadways to inhibit sediments from being deposited onto public ways. Immediately sweep up accidental depositions. Do not allow depositions to be washed away by rain or by any other means.

7. Contain non-stormwater runoff from equipment or vehicle washing and any other activity at the work site.

8. At completion of the Work, clear the worksite of debris and restore to a condition at least equal to or better than prior to construction.

9. When construction activity with grading is likely to occur during the rainy season (October 1 through April 15), prepare a Wet Weather Erosion Control Plan (WWECP) per LAMC Section 61.02. The WWECP must be submitted to the Engineer for approval within thirty (30) calendar days after Notice to Proceed.

   Guidance on preparing the WWECP can be found in “Development Best Management Practices Handbook - Part A, Construction Activities”, adopted by the Board and as authorized by LAMC Section 64.72. The handbook can be viewed at or obtained at cost at Bureau of Engineering public counters.

10. When working in live streams, these are additional water pollution control requirements.

11. Erect barriers sufficient to prevent muddying or polluting streams.

12. Prior to removing materials from a flowing stream, use a stream bypass or other equivalent means to keep the flow in the stream free of the mud or silt from the removal operations.

13. Avoid transporting materials across live streams. If not possible, the transportation operation must be designed to prevent materials from falling into the stream and cannot muddy the stream.

14. Equipment may not be operated in a live stream or channel unless the Contractor can demonstrate to the Engineer's satisfaction that no other practical alternatives exist. The equipment must be designed to prevent materials from falling into the stream and cannot muddy the stream.

15. Do not allow fresh portland cement or fresh portland cement concrete to enter the water flowing in streams, channels or drains.

16. Do not allow material derived from the Work to be deposited in a live stream, channel or drain.

D. Projects Having One Acre or More of Disturbed Soil

Projects (including Linear Underground Projects) with construction activity that will result in one acre or more of disturbed soil, or less than one acre but part of a larger common plan of development, the Contractor shall comply with the requirements included in Section 1.1.C above, and the following requirements:

1. The Contractor shall comply with General Permit 2009-0009-DWQ for Discharges of Storm Water Associated with Construction Activities (General Permit). A copy of the General Permit may be downloaded from the California State Water Resources Control Board (SWRCB) website using the following link: http://www.waterboards.ca.gov/waterissues/programs/stormwater/construction.shtml.

2. The Contractor shall provide a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) to prepare all Permit Registration Documents (PRDs), as defined in the General Permit. All PRDs must be uploaded to the SWRCB's General Permit web application called the Storm Water Multiple Application Report Tracking System (SMARTS) prior to commencement of construction activities. The SMARTS website link is: http://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp. The PRDs include the Notice of Intent, Risk Assessment, Post-Construction Calculations, Site Map, SWPPP, and the first annual fee. The annual fee for this project is estimated to be **[$XX.00] [NTS: Project Manager shall calculate the estimated permit fee using the fee schedule on the SWRCB website which is based on the total disturbed area (in acres)]**. The Contractor must submit the prepared SWPPP to the City for review and approval prior to uploading it to the SMARTS system. Upon City approval, the SWPPP shall be uploaded by the Contractor and certified by the City's Legally Responsible Person (LRP). At that time, the actual fee invoice will be provided by the City to the Contractor and the Contractor will submit payment to the State for the first annual fee. The Contractor is also responsible for all subsequent annual fees for this project.

3. This project has been determined to be a Risk Level **[1, 2, or 3] [NTS: Project Manager shall complete the Risk Level analysis as per the General Permit and insert the proper risk level]**. The Contractor shall comply with all visual monitoring,

effluent water quality sampling, reporting, and record keeping requirements associated with this Risk Level, in accordance with the General Permit. For projects with Risk Level 2 or Risk Level 3, the Contractor must prepare and implement a Rain Event Action Plan, as described in the General Permit.

4. The Contractor shall provide a Qualified SWPPP Practitioner (QSP) to implement all SWPPP requirements at the project site and monitor the effectiveness of the SWPPP, in accordance with the General Permit.

5. The Contractor shall prepare the Annual Report required by the General Permit and submit it to the City for review and approval by August 1st of each year. The City's LRP will certify the Annual Report.

6. The Contractor shall provide and submit all reports and data necessary to complete the Notice of Termination at the Completion of the Work, in accordance with the General Permit.

(END OF SECTION)

IV. TECHNICAL SPECIFICATIONS

VERDUGO HILLS POOL
AND BATHHOUSE REFURBISHMENT
PROJECT

PREPARED BY:

IBI GROUP ARCHITECTURAL PLANNING and
BUREAU OF ENGINEERING - ARCHITECTURAL DIVISION
DEPARTMENT OF PUBLIC WORK
CITY OF LOS ANGELES

May 17, 2022

ENGINEERING
CITY OF LOS ANGELES

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SECTION 02010

SITE CLEARING; DEMOLITION

1.00 – GENERAL

1.01 – DESCRIPTION: All clearing of the site and demolition indicated on the drawings and in these specifications.

1.02 – RELATED WORK SPECIFIED ELSEWHERE:

(a) General Requirements; In Division 1A.

(b) Earthwork; In Division 2, EARTHWORK Section.

1.03 – CODES AND REGULATIONS: Perform all work in strict accordance with all applicable Federal, State and City of Los Angeles Codes and Regulations. Particular care shall be taken to meet all safety standards and requirements. If, in the opinion of City Engineer or any agency having jurisdiction, additional measurements are needed, the Contractor shall furnish such materials and devices as directed and shall install them, at no extra cost to the City.

1.04 – WASTE MATERIALS: Trees, shrubs, branches, roots, broken concrete and materials resulting from site clearing and demolition operations, waste materials, rubbish and debris shall be promptly removed from the job site; and handled per universal waste disposal procedures. accumulation not permitted.

1.05 – REPAIR OF DAMAGE:

(a) Any damage to remaining portions of building, site improvements, street work improvements and/or to private property as caused by Contractor's operation outside the scope of required site clearing and/or demolition; at the Contractor's expense.

(b) Methods: Contractor shall repair or replace existing remaining work with new materials as necessary to restore damaged areas or surfaces to a condition equal to and matching that existing prior to start of work of this Contract; to the full satisfaction and approval of the City Engineer.

1.06 – VERIFICATION OF CONDITIONS:

(a) Contractor shall verify demolition work noted on the plans and familiarize himself with demolition required by or incidental to new work prior to bidding project. Contractor shall have no claim for time extensions or monetary compensation due to such conditions.

(b) Contractor shall verify existing finish materials and familiarize himself with existing job conditions and new work prior to bidding project. Any damage to existing finishes caused by Contractor’s operation shall be repaired or replaced at Contractor’s expense .Contractor shall have no claim for time extensions or monetary compensation due to such conditions.

(c) Contractor shall verify existing utility lines and conduit and verify location and condition

prior to submittal of bid. Any removal, reinstallation, and relocation required by new work shall be part of this Contract. Contractor shall have no claim for time extensions or monetary compensation due to such incident.

1.07 – MISCELLANEOUS GENERAL REQUIREMENTS:

(a) Erect and maintain all construction fences and planking, bridges, shoring, lights, barricades, warning signs, and guards as necessary for protection of streets, sidewalks, adjoining properties and the public.

(b) Protect all sidewalks, drives, street, buildings on adjacent properties and other items which are to remain undisturbed, both on and off the site of the work and in adjacent streets as prescribed by the City of Los Angeles City Department of Building and Safety.

(c) Remove all protections when the work is complete or when so authorized by the City Engineer.

(d) Water or sprinkle dusty ground surfaces during site clearing operations at such frequencies as will hold down dust during all work hours.

(e) Notify all companies owning conduit, wires or pipes running to the property; arrange for any required removal and relocation of power poles and their guy wires, and utility lines running to and on the property; cap pipes, conduits and sewers, where required, in accordance with instructions of said Owners and City Engineer.

2.00 – EXECUTION

2.01 – SITE CLEARING:

(a) Remove all growths on the job-site within the area of new work.

(b) Grubbing: Remove large roots to a depth of at least 2 feet below finish grade or to a depth where settlement will not occur as caused by decomposition of roots.

(c) Remove all rubbish and debris resulting from site clearing as soon as possible; do not allow to accumulate.

2.02 – DEMOLITION:

(a) Required:

1. Complete demolition and/or removal of all items indicated on the drawings and as specified.

2. Removal of all debris and rubbish existing on the job site and/or resulting from demolition operations on and off the premises.

3. Removal of fixtures, equipment, and appurtenances noted on plans.

4. Complete removal of underground piping or conduit as well as other obstructions

interfering with new construction.

(b) Methods:

1. As devised by the Contractor for the required work, with suitable equipment.

2. In accordance with Los Angeles City Building Code, and all other applicable laws and ordinances.

3. Procedure to be orderly and careful, with due consideration for occupants of adjacent properties and the public.

4. Provide bracing and shoring as necessary to avoid accidents or collapse of structure.

5. Where concrete walks, slabs, or sidewalks are required to be removed and adjoining work is to remain, straight-line saw-cut the work to a minimum depth of one inch to ensure straight line removal.

6. Abandoned pipe or conduit shall be removed to a point not less than 5-feet beyond the construction limits of the Contract work and shall be capped.

2.03 – SALVAGEABLE MATERIALS:

(a) All salvageable materials indicated on the drawings or specified shall be carefully protected or removed as specified, cleaned and protected from damage and neatly stored on the site for reinstallation by the Contractor or for pick-up by the City; as directed by the City Engineer.

(b) All materials not indicated to remain on the premises or be reused in the project or classed as salvageable materials shall become the property of the Contractor and shall be promptly removed from the job site.

2.04 – STORAGE OF MATERIALS AT SITE: Not permitted beyond brief accumulation awaiting pick-up by removal trucks; materials and equipment removed from the buildings not to be stored at the site but to be hauled away promptly; any delay in removing materials and equipment from the site shall be subject to approval of the City Engineer.

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SECTION 02200

EARTHWORK

1.00 – GENERAL

1.01 – DESCRIPTION: All excavation, grading, and fill indicated on the drawings or in these specifications; including:

(a) Miscellaneous and trench excavation and shoring for the various trades.

(b) General exterior grading, cutting, and filling, including grading for concrete slabs and site improvements.

1.02 – RELATED WORK SPECIFIED ELSEWHERE:

(a) Trenching, excavation, and backfilling for irrigation lines and structures; in Division 2, IRRIGATION SYSTEM Section.

(b) Topsoil; in Division 2, LANDSCAPING Section.

(c) Trenching, excavation, and backfilling for utility and electrical lines and related minor structures; in Division 15, PLUMBING Section and Division 16, ELECTRICAL Section.

1.03 – SOILS INFORMATION:

(a) Information on the drawings or in the soils investigation reports does not constitute a guarantee of uniformity of soil conditions over the construction site, or that other materials, proportions of materials, or conditions may not be encountered.

(b) Pool deck and Security Lighting and supplemental Pedestrian Access Ramp soils reports No. 17-137, dated October 17, 2017, and December 6, 2018, prepared by Bureau of Engineering Geotechnical Engineering Division., is included herein and is hereby made a part of these Specifications. “Recommendations” shall be considered as requirements and shall be completed as part of this project.

1.04 – MISCELLANEOUS GENERAL REQUIREMENTS:

(a) Filling, Backfilling, and Compaction: Inspected by, and performed to meet, the approval of the Soils Engineer.

(b) Test and Inspections: Costs of all tests and inspections at materials sources, and costs of retests of rejected work, shall be borne by the Contractor. Arranging for and scheduling of tests and inspections shall be responsibilities of the Contractor.

(c) Layout of the Work: The Contractor shall be responsible for the accuracy of all layout work, and shall retain and pay for the services of a licensed surveyor, to set the lines and grades for all construction.

(d) Protection:

1. All excavations shall be protected and guarded against danger to life, limb and property as prescribed by the Los Angeles City Department of Building and Safety.

2. Excavations and earth banks shall be shored, cribbed or lagged as necessary to prevent caving, erosion or gullying of sides.

3. Water shall be diverted or pumped out of all excavations until concrete is placed, forms removed, and backfilling is completed.

1.05 – PERMITS: Grading plan check and permit to be obtained and paid for by Contractor, who shall furnish all necessary earthwork calculations and any other required drawings at his own expense.

1.06 – STANDARD SPECIFICATIONS: As referenced herein, Standard Specifications shall mean "Standard Specifications for Public Works Construction," latest edition as currently amended.

2.00 – PRODUCTS

2.01 – FILL MATERIALS: Contractor to furnish imported earth materials as necessary; if the amount of suitable earth materials obtained from excavations is not sufficient for proper construction of required fill; subject to approval by the Inspector prior to use.

(a) Imported fill materials shall be obtained from a source approved by the City Engineer, and shall be free of foreign materials or vegetable growths, sod, expansive soils and all debris.

(b) Fill materials for use in landscaped areas shall not be saline or contain anything that would prevent normal plant growth.

2.02 – BACKFILL MATERIAL: Use clean earth material previously removed from excavation or imported fill material as specified above, free from large clods and stones; subject to approval of Inspector prior to use.

3.00 – EXECUTION

3.01 – SITE PREPARATION:

(a) Remove fill from the site, prepare sub-grade, and place compacted fill, all in accordance with the herein before referenced Soils Report.

(b) Prior to placement of any fill, the sub-grade shall be approved by the Soils Engineer.

3.02 – EXCAVATION:

(a) For New Concrete Foundations: To exact foundation limits as indicated on drawings, or width not less than 18" from face of walls and sufficient for necessary forms, cribbing,

bracing and inspection.

(b) Trenches for Pipe and Conduit: As specified in Divisions 15 and 16.

(c) Inspection Required: After excavation and before placing concrete and before backfilling, the exposed soils shall be carefully inspected by the Soil Engineer to verify removal of additional unsuitable soil.

3.03 – FILL:

(a) Fill to be constructed in accordance with Section 300-4 of "Standard Specifications," except that fill in planting areas may be compacted until firm and solid, without the requirement for 90% compaction.

(b) Prepare soil beneath floor slabs in accordance with hereinbefore-referenced Soil Report.

(c) Fill in planting areas and tree wells to be saturated prior to construction of adjacent improvements to minimize settlement as follows:

1. Trees Wells: Excavate a sum approximately 3 feet square by 3 feet deep and flood each sump for about 3 days.

2. Planting Areas: Cultivate and soak the soil for a minimum of two days using a common lawn soaker.

(d) Fill to be required for filling holes and trenches existing on the site or resulting from Contractor's operations.

(e) Inspection Required: Prior to placement of fill materials.

3.04 – CRUSHED AGGREGATE BASE:

(a) Placing shall be in accordance with Section 301-2 of “Standard Specifications.”

(b) Placed beneath sidewalks, yard pavement, concrete driveway aprons, and interior concrete floor slabs.

(c) Prior to placement, the upper 12” of subgrade soil, whether fill or natural soil, shall be compacted to 95% relative compaction in accordance with Section 301-1 of “Standard Specifications.”

3.05 – BACKFILL:

(a) Debris, trash and form materials to be removed from excavations prior to backfilling.

(b) To be placed in layers not exceeding 6" thickness, moistened to optimum moisture content and tamped until required 90% relative compaction is obtained.

(c) Compacted to relative compaction specified for compaction of fill.

(d) Finished to suitable elevations to provide for anticipated settlement and shrinkage.

3.06 – GRUBBING: Roots under footings to be removed entirely; elsewhere to 2 feet below subgrade or new finished earth surface.

3.07 – GRADING:

(a) Rough: Cut and fill to be left sufficiently high to require cutting by fine grading.

(b) Fine: To elevations required to ensure finished elevations indicate on drawings or specified.

(c) Subgrade Preparation: Required for all areas, other than filled or backfilled areas, over which slabs, walks or pavement will be placed; in accordance with Section 301 of "Standard Specifications for Public Works Construction", latest edition.

(d) Inspection Required: Prior to placing concrete or other material.

SECTION 03300

CONCRETE

1.00 – GENERAL

1.01 – DESCRIPTION: All concrete work indicated on the drawings and in these specifications; including:

(a) Forms: For all concrete as necessary.

(b) Type of Concrete: as indicated on the structural drawings, per Los Angeles City Building Code, Chapter 19.

(c) Reinforcement: Steel bars and wire mesh.

(d) Grout.

(e) Moisture barrier.

1.02 – RELATED WORK SPECIFIED ELSEWHERE:

(a) Excavation, grading, and fill; in Division 2, EARTHWORK Section.

(b) Anchor bolts and anchor bolt setting plans; in Division 5, MISCELLANEOUS METALS Section.

(d) Steel pipe pads, in Division 5, STRUCTURAL STEEL and MISCELLANEOUS METALS Sections.

(e) Caulking; in Division 7, CAULKING AND SEALANTS Section.

(f) Screed and metal lath for cement base; in Division 9, LATHING AND PLASTERING Section.

(g) Furnishing and placing all sleeves, inserts, hangers, and other fastenings for mechanical and electrical work; in Divisions 15 and 16.

1.03 – QUALITY ASSURANCE:

(a) Certificate Required for Cement Materials: Prior to use, acceptable written evidence that cement passed the several ASTM tests for required composition and quality for particular type.

(b) Certificate Required for Reinforcement: Prior to use, acceptable written evidence that reinforcement has passed the respective ASTM tests for the particular material.

(c) Certificate Required for Aggregates: From the aggregate dealer, prior to use and delivery to the job-site, stating the natural geographic source of fine and course

aggregates.

(d) Tests for Cement and Aggregates: As required by the City Engineer at the expense of the City.

(e) Concrete Mix Design Certification: To be submitted by the testing agency for each mix design and each test to the City Engineer for approval.

(f) Tests for Concrete:

1. Contractor will take samples of mixed concrete at each pour, as directed by the Inspector, for slump and compression tests, ASTM C-143 and ASTM C-31.

2. Prerogative of City to take samples and make any tests deemed desirable of any concrete or concrete materials, without expense to the Contractor.

3. Compression Tests: By private laboratory, selected by and paid for by the Contractor: ASTM C-39.

1.04 – INSPECTIONS: For reinforcement and forms, by the City Engineer and Deputy Inspector as required by Department of Building and Safety, selected and paid for by the Contractor, after placement of reinforcement and prior to pour of concrete .

2.00 – PRODUCTS

2.01 – CONCRETE MATERIALS:

(a) General: In accordance with requirements of Los Angeles City Building Code, Division 19.

(b) Cement:

1. Type: Portland cement, ASTM C-150, Type I or II.

2. Alkali Content: Total amount of sodium or potassium oxide shall not exceed 0.6 percent.

(c) Aggregate:

1. Standard Weight Aggregates, fine and coarse, ASTM C-33 coming from San Gabriel Valley sources.

2. Maximum Size: 1” in walls, 3/4” in slabs, 1-1/2” in footings where reinforcement will permit.

a. General: Not larger than 3/4 of the clear space between reinforcing forms. Size limitation to conform to Los Angeles City Building Code, Section 1903.3.

b. Pea Gravel: 3/8" maximum for cement fill.

3. Fine Aggregate: May be standard-weight sand from San Gabriel Valley sources; white silica sand for white concrete.

4. Tests: As required by the City Engineer at the expense of the Contractor.

(d) Miscellaneous Materials:

1. Water: From a supply distributed for domestic purposes.

2. Admixtures: Permitted only upon written approval of the City Engineer.

3. Curing Compound: ASTM C-309-81, Type 1, free from wax or oil, compatible with subsequently applied finishes and bond of cementitious materials to concrete.

4. Curing Paper: ASTM C-171, Sisalkraft No. SK-30, by Sisalkraft Division, St. Regis Paper Co., or 6 or 4 mil. polyethylene, or approved equal.

5. Expansion Joint Fiber Filler: ASTM, D-1751-83, Federal Specification HH-F-341E; thickness as indicated on drawings, not less than 1/2".

6. Caulking for Expansion and Control Joints: As specified in Division 7, CAULKING AND SEALANTS Section.

7. Anti-Bonding Agent: "Thompson's Water Seal" as manufactured by E.A. Thompson Company, Inc., San Francisco, California.

8. Non-Shrink Grout: No. 713 "Master Flow" as manufactured by Master Builders Company, Los Angeles, California, "Embeco" pre-mixed grout, or approved equal.

9. Moisture Barrier: 6-mil thick polyethylene sheeting, "Vis-Queen" or "Ger-Pac". Pressure sensitive tape: Federal Specification PPP-T-606, Class I.

10. Plastic Control Joint: "T" shaped plastic strip 1/16” thick by at least 1” deep with suitable anchor to prevent vertical movement and with minimum 3/4” wide pulltop stiffener.

11. Floor Curing, Hardening, and Sealing Compound (For All Exposed Interior Concrete Floors): "Terratite A/C", manufactured by Nelson Technical Coating Co., El Monte, California.

12. Integral Color for Concrete: As manufactured by Frank D. Davis Co., Los Angeles, California; color as indicated on the drawings.

13. Divider Strips: White metal alloy, 1/8” thick, with provision for keying to concrete.

2.02 – REINFORCEMENT:

(a) Bars: Billet steel, ASTM A-615-40, for #5 and smaller; ASTM A-615-60, for #6 and larger.

(b) Wire: Cold-drawn steel, ASTM A-82.

(c) Wire Mesh: Electric-welded steel wire fabric, ASTM A-185, sizes as noted on the drawings.

(d) Tie Wire: Annealed; not less than 16 gauge.

(e) Reinforcement Supports and Accessories: Conform to Concrete Reinforcing Steel Institute recommendations. Use concrete cube-type supports for slabs on grade or stirrups with sand pads. Galvanized or plastic-tipped adjacent to surfaces subsequently exposed to view or moisture in completed structure.

2.03 – FORM MATERIALS:

(a) Lumber: "Standard" grade or better Douglas Fir boards and framing, or other suitable species, as approved; S1S1E or S4S unless other wise specified.

(b) Plywood: Douglas fir plywood, B-B plyform, as classified by the American Plywood Association, Class I exterior, PS 1-66.

3.00 – EXECUTION

3.01 – FORM WORK:

(a) General:

1. True to line and grade, indicated on the drawings,

2. Mortar tight.

3. Sufficiently braced, staked and tied and adequately nailed to prevent displacement or deflection.

4. Constructed in manner suitable for easy removal without damaging concrete surfaces.

(b) Form Removal: Forms to remain undisturbed for at least 24 hours after concrete has been placed.

3.02 – MOISTURE BARRIER:

(a) Required: Under all floor slabs.

(b) Material: As hereinbefore specified under MISCELLANEOUS MATERIALS sub-section.

(c) Place moisture barrier materials on prepared subgrade in the widest practicable seamless widths, lapped 12” with top lap placed in direction of concrete spreading.

(d) Extend barrier material minimum 4-inches up wall or vertical surfaces; seal top edges with pressure- sensitive tape.

(e) Carefully cut, fit and seal barrier material to all pipes and other projections through the barrier material.

(f) Seal laps and joints, including all accidental puncture and/or ruptures in the barrier material using pressure sensitized tape and small sheet of barrier material taped in place where necessary.

(g) Sand Cover: Spread sand evenly on top of moisture barrier material to thickness indicated on the drawings, 2” minimum; exercise care in not damaging barrier material and make ready to receive subsequent materials.

3.03 – REINFORCEMENT--PLACING AND PROTECTION:

(a) Placing: Los Angeles City Building Code, Division 19, and A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete" (ACI 318).

(b) Protection: Reinforcement shall be protected by thickness of concrete as indicated on the drawings or set in accordance with Los Angeles City Building Code.

3.04 – EMBEDDED PIPING AND ROUGH HARDWARE:

(a) Piping, boxes, bolts, anchors, strap anchors, rough hardware and other inserts, except as otherwise provided in other Divisions; all such items furnished in this or other Divisions shall be set in forms or placed where required to be embedded in concrete.

(b) Conduit and pipes to be so located that the required strength or structure will not be reduced.

(c) Placement of conduit shall conform to Section 1906 of Los Angeles City Building Code.

3.05 – CONCRETE:

(a) General:

1. Minimum Ultimate Compressive Strength at 28 Days: 2000 pounds per square inch and as indicated on the drawings.

2. Water Content: The minimum necessary for proper placing of concrete and for specified slump and finish; not to exceed those allowed in Table No. 19-A of the Los Angeles City Building Code, including any moisture in the aggregates or on the surface of the aggregate particles.

3. Proportions: Los Angeles City Building Code, or by alternate method approved by the Los Angeles City Department of Building and Safety.

(b) Slump: 4" for slabs, footings, and other horizontal members; 5" for walls, column and other vertical members.

(c) Grout: Unless otherwise specified, 1 part cement to 2-1/2 parts sand by volume with only sufficient water for mixture to flow under its own weight.

(d) Dry Pack: Unless otherwise directed, 1 part cement to 2 parts sand by volume, with only sufficient water for proper packing use; white portland cement to be substituted for part of the gray cement as necessary to match color of surrounding concrete.

3.06 – READY-MIXED CONCRETE:

(a) General: Ready-mixed concrete, completely transit-mixed in truck mixers, permitted in lieu of concrete mixed at site.

(b) Materials and Quality: To conform to preceding specifications for respective grades of concrete.

(c) Mixing and Delivery: ASTM C-94, for truck delivery and mixing.

(d) Ready-mixed Concrete shall be manufactured by a manufacturer licensed by the Board of Building and Safety Commissioners of the City of Los Angeles in accordance with City of Los Angeles Building Code.

3.07 – MIXING AND PLACING CONCRETE:

(a) General: In accordance with Los Angeles City Building Code.

(b) Vibration and Tamping: As necessary for the thorough compaction of the concrete; completely fill forms and encase reinforcement and inserts; by mechanical and hand equipment as suitable and as approved.

(c) Compaction of Slab Concrete:

1. By tamping, screeding, and floating.

2. Tamping to compact the concrete throughout slab depth; with iron tampers unless otherwise approved.

3. Screeding to bring the concrete surfaces to required grades; with straightedge screeds and scrapers as necessary.

4. Floating to compact the surfaces evenly; with power float unless otherwise authorized; any excess surface water to be removed before floating; no mortar to be used for leveling the surfaces.

(d) Joints in Slabs on Grade:

1. Building slabs on grade to be limited to approximately 900 square feet with

construction joints located as shown on the drawings. Larger pours may be made with use of metal crack control joints as approved by the City Engineer.

2. Construction joint may be used in lieu of control joint.

3. Fill joints flush with Traffic Grade Caulking, specified in Division 7.

4. Plastic Control Joints: After preliminary troweling of concrete slab, part concrete slab, part concrete to a depth of 2” with a straightedge and insert plastic control joint strip so that stiffener (pull-top) is flush with top surface of concrete. Remove pull-top stiffener and then float finish slab to fill all voids adjacent to the strip. Trowel finish edges of joint to a radius of 1/8” using a slit jointer tool.

3.08 – STOPPAGES:

(a) General: Construction joints in accordance with Los Angeles City Building Code; all joints subject to approval of the City Engineer before placing of concrete, and as follows:

(b) Construction Joints:

1. Location and details as indicated on the drawings, specified or as approved by the City Engineer.

2. Sandblast or water wash while fresh all construction joints with coarse silica sand, sufficiently to clean and roughen the entire surface of the joint, exposing clean coarse aggregate solidly embedded in mortar matrix. Forms and reinforcing shall likewise be cleaned away by means of compressed air.

3. Offset keyways shall be used at all construction joints in floor slabs as exterior or construction joints and at all vertical construction joints in walls. See Structural Drawings for details.

4. Where possible, continuous wood screed strips shall be placed at the outer face of all horizontal construction joints in walls to form a true level line. Screeds shall be removed and the reglet thoroughly cleaned out after the concrete has set and before the next pour is made. This joint shall be made in such a manner as to eliminate "overhangs" or "lips".

3.09 – FINISHING OF CONCRETE SURFACES:

(a) Smooth Steel-Trowel Finish: For all interior floor slabs that will receive resilient floor covering; to produce a smooth surface free from defects and blemishes; at least two separate troweling operations in which long-handled Fresno trowels not permitted; use of mechanical trowel of approved type permissible only in first troweling; hand troweling required after initial operation; no dry cement or cement-sand mixture to be sprinkled on surfaces to absorb moisture or stiffen the concrete; no water to be used in troweling operations.

(b) Floor Slabs (Except Exposed Interior Concrete Floors and Slabs to Receive Ceramic

Tile Flooring):

1. Type of Finish: Monolithic smooth steel trowel finish.

2. Edging: All exposed edges of slabs at expansion and construction joints to be rounded with 1/4" edging tool.

(c) Exposed Interior Concrete Floors: Monolithic, hand rotary-trowel finish to produce a surface with light rotary trowel markings, not to be burnished.

(d) Sidewalks: Smooth, medium-broom finish.

(e) Slabs for Ceramic and Quarry Tile flooring: Concrete surface brushed with wire broom to remove laitance and to roughen the surface.

(f) Bases for Steel Columns and Equipment: Smooth steel trowel finish; edges rounded with 1/4” edging tool.

(g) Smooth Architectural Finish: Applied to all exposed interior and exterior concrete, structural and architectural, that is to be painted or left exposed.

1. Fins and ridges shall be removed with carborundum brick, excessive rubbing not permitted.

2. Minor air-bubble pitting and holes approximately 1/4” diameter and judged by the City Engineer as normal and not excessive for best architectural concrete formed as specified, acceptable without pit filling treatment.

3. Any surface with pitting or holes judged by the City Engineer as objectionably large or excessive for the required concrete finish shall receive pit filling treatment specified hereinafter, over the entire surface.

4. Pit Filling Treatment:

a. Performed as soon as concrete has hardened sufficiently to preclude damage from the specified scraping and rubbing operation.

b. To consist of a brushing of grout applied uniformly on a wetted surface, completely filling all pits and holes.

c. Grout mixed 1 part portland cement and 1-1/2 parts sand, with sufficient water for consistency of thick paint.

d. Scour the grouted surface vigorously with a wood float immediately after application of grout, and allow to set until hardened sufficiently for removal of excess grout on surface; keep surface damp with a fin fog spray during hardening in hot dry weather.

e. Scrape off all excess grout remaining on surface with the edge of a steel trowel after hardening, without removing grout from pits and holes.

f. Permit surface to dry thoroughly, and rub vigorously with burlap to remove all remaining dried grout.

g. Allow sufficient time for grout to dry after the trowel-scraping to assure clean wiping with burlap, but no grout to be left on overnight.

h. Entire treatment to leave surfaces smooth, clean, and free of cement or grout, with all previous pits and holes solidly filled, flush and smooth.

5. Surfaces to be thoroughly cleaned after the walls of the building are entirely completed.

6. Finished surfaces smooth and even, free from defects, dusting, form-joint projections, or other characteristics detracting from highest architectural concrete finish, subject to approval of City Engineer.

3.10 – SLAB SURFACES--TESTING: To be tested with a 10 ft., straight edge to detect high and low spots; 1/8" in 10 feet permitted; deviations eliminated, surfaces to be approved by City Engineer and any necessary corrections shall be made as directed.

3.11 – EXPANSION JOINTS:

(a) Composition: Fiber filler to height 2/3 joint dimension below top; sealer to fill joints over filler; thickness as indicated on the drawings.

(b) Fiber Filler: Set in place before adjoining concrete is placed; held upright by suitable means as necessary; adjacent concrete placed against filler.

(c) Sealer: Apply elastomeric sealer over fiber filler of complete joint in accordance with manufacturer's instructions, after concrete is cured and dry; joints cleaned prior to filling.

3.12 – CURING:

(a) General: In accordance with Los Angeles City Building Code, Division 19.

(b) Membrane Curing Compound: Applied in accordance with manufacturer's directions as soon as possible after finishing of concrete, without marring the concrete.

(c) Curing Paper: To be laid as recommended by manufacturer, with lapped and sealed joints.

(d Formed Concrete: Kept continuously wet by frequent spraying with clean water.

3.13 – DRYPACKING:

(a) Required: Where indicated on the drawings and as required.

(b) Material: Base and bearing plates set in full bed of non-shrink grout; elsewhere as noted or specified.

3.14 – DEFECTIVE MATERIALS AND CONCRETE:

(a) Defective materials and concrete shall be promptly removed from the job-site.

(b) Any concrete improperly formed or which has sand streaks, or with voids or rock pockets, or which is otherwise defective, shall be removed and replaced with new concrete suitable to the City Engineer unless suitable correction of defects is authorized by the City Engineer.

(c) Removal, replacement, corrections, and strengthening from strains, abrasions and any other damage as necessary.

3.15 – PROTECTION: Finished concrete surfaces protected from stains, abrasions and any other damage as necessary.

SECTION 04200

CONCRETE BLOCK MASONRY

1.00 – GENERAL

1.01 – DESCRIPTION: All labor, materials and equipment necessary for concrete block masonry work indicated on the drawings and in these specifications.

1.02 – RELATED WORK SPECIFIED ELSEWHERE:

(a) Concrete work; in Division 3, CONCRETE Section.

(b) Bolts, anchors, and other metal; in Division 5 MISCELLANEOUS METALS Section.

(c) Painting; in Division 9, PAINTING Section.

(d) Expansion joints; in Division 7, CAULKING AND SEALANTS Section.

1.03 – QUALITY ASSURANCE:

(a) Tests as required by the Los Angeles City Building Code, Division 21, whenever the Inspector detects evidence of materials or work failing to meet the specified requirements. All such tests shall be performed as instructed by the Inspector and made at the Contractor's expense.

(b) The City reserves the right to take samples and make test of materials prior to or during construction without expense to the Contractor.

1.04 – SUBMITTALS:

(a) General: Submit samples to City Engineer for approval before start of masonry work.

(b) Samples: 2 full-size samples of each type of block proposed for use.

1.05 – SAMPLE PANEL: Construct 4-foot high by 4-foot long mock-up sample area of brick repair, block masonry and tile repair to specification requirements located at the job-site as directed and for approval by the City Engineer / Project Architect.

1.06 – PRODUCT DELIVERY, STORAGE AND HANDLING: Store units on platforms that allow air circulation under units. Protect against wetting. Damaged or stained units will be rejected.

1.07 – DEFECTIVE MATERIALS OR MASONRY WORK:

(a) Before Placing: To be removed from the job site.

(b) After Placing: To be removed and replaced in manner acceptable to the City Engineer and Deputy Inspector selected and paid for by the Contractor.

2.00 – PRODUCTS

2.01 – MATCH AND REPAIR OF TILES AND MASONRY UNITS:

(a) Carefully repair any /and / all broken, cracked or severely chipped masonry bricks, blocks, clay or ceramic tiles from building exterior and interior of building and surrounding landscape area. Match new material to be installed to existing adjacent materials in style, size, color, and material quality. Adhere strictly to Secretary of Interior Rehabilitation Standards and Guidelines for Historic buildings for all related work. All new materials shall be selected and submitted for approval by the Project Architect prior to any demolition or removal of existing materials.

2.02 – MISCELLANEOUS RELATED MATERIALS:

(a) Reinforcing Steel: ASTM A-615, Grade 40 complying with Los Angeles Building Code, Division 21.

(b) Portland Cement: ASTM C-150, Type I or Type II, low alkali, with total amount of sodium or potassium oxide in the cement not to exceed 0.6% when the aggregates contain opalescent silica or are reactive to alkalies; complying with Los Angeles City Building Code. Portland cement for colored mortar shall be Riverside White, Trinity White, or equal.

(c) Lime and Lime Putty: Los Angeles City Building Code.

(d) Sand for Mortar: Los Angeles City Building Code.

(e) Pea Gravel for Grout: Not more than 5% passing the No. 8 sieve, 100% passing the 3/8" sieve. Los Angeles City Building Code.

(f) Mortar Color: Pure metallic pigment as manufactured by Frank D. Davis Company, or approved equal; color to match and blend that of existing and adjacent mortar and grout.

(g) Masonry Cleaner: Sure Klean Burnished Custom Masonry Cleaner, or approved equal.

2.03 – MORTAR AND GROUT:

(a) Cement-Lime Mortar: Los Angeles City Building Code Division 21; Type "S" as set forth in Table 21-A; with proper amount of water for a plastic workable mix.

(b) Grout: Los Angeles City Building Code, Division 21. Use pea gravel in grout space where the least cell dimension is 4" or more.

(c) Mixing: By machine for at least 2 minutes.

(d) Time of Use: Within 30 minutes after leaving mixer; any mixture not so used to be discarded; retempering not permitted.

3.00 – EXECUTION

3.01 – GENERAL:

(a) Workmanship:

1. Before starting to lay masonry units, the top of concrete footings shall be roughened and cleaned of foreign matter and laitance by sandblasting as directed by the Inspector.

2. All block work to be constructed in accordance with best standards of concrete masonry unit workmanship.

3. Exposed surfaces kept clean and free of mortar droppings at all times.

(b) Construction:

1. True and plumb, in every plane surfaces, with level courses and straight uniform joints.

2. Masonry units laid symmetrically.

3. Any masonry indicated on drawings without definite indications of joints, to be constructed with uniform and symmetrical joints as necessary for the specified masonry units and mortar joints.

4. Masonry units cut or trimmed as necessary and as approved by the Inspector, for suitable construction in narrow widths of wall, pilasters, returns and reveals; no unit to be cut to a length less than 1/2 the full size of the unit; all cutting and trimming to be neat, true and even.

5. Masonry to be anchored to abutting construction with approved ties into concrete or as otherwise indicated on drawings.

6. Anchors, bolts, piping, sleeves, rough hardware and other inserts specified in other Division and required to be embedded in masonry shall be set into masonry as masonry units are laid.

7. Coring: Whenever it becomes necessary to provide holes in completed masonry walls for passage of pipe or conduit, make such holes with a coring machine.

3.02 – CONCRETE UNIT MASONRY:

(a) Type: Reinforced hollow unit masonry, as hereinbefore specified in MATERIALS Section.

(b) General Requirements: Los Angeles City Building Code.

(c) Bond: Running bond, with end joints at centers of blocks in next lower course, except as otherwise indicated on drawings.

(d) Joints:

1. Bed Joints: Not less than 3/8” and not more than 1/2” wide, to provide 8” vertical module of courses (block plus joint), except as otherwise noted or required.

2. Head Joint: To match bed joints.

3. Exterior Joints: Tooled, slightly concave.

4. Interior Joints: Tooled, slightly concave.

(e) Mortar: Cement-Lime Type "S" as hereinbefore specified; color as indicated on the drawings.

(f) Block Laying: Los Angeles City Building Code Division 21, and as hereinbefore specified in Article 3.01 (b).

(g) Reinforcement: As indicated on drawings.

(h) Chases and Recesses: To be cut upon approval of the City Engineer, or as detailed on the drawings.

(i) Grout all cells solid.

3.03 – CLEANING AND POINTING:

(a) During Construction: Remove mortar and grout droppings from concrete block surfaces immediately with fiber brushes, rags, and burlap squares supplied by manufacturer, and water to prevent adhesion. All surfaces to be washed clean.

(b) Completed Block Masonry: After pointing of joints, thoroughly clean surfaces of soil and spotting prior to acceptance by the City Engineer

(c) Final Cleaning: If the new concrete block masonry surfaces remain stained or defaced by mortar, grout, heavy efflorescence, or any other foreign matter to a

degree not acceptable to the City Engineer, such foreign matter or mortar or grout shall be removed by detergent masonry cleaner in strict accordance with manufacturer's recommendations, and as directed and approved by the City Engineer. Dilute approved masonry cleaner one part to 15 parts clean water, following manufacturer's recommendations; do not apply with pressure spray above 50 psi. Do not use Muriatic Acid solution

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SECTION 05400

COLD-FORMED METAL FRAMING

PART ONE - GENERAL

1.1 SUMMARY

A. Contractor shall construct all interior and exterior wall framing as indicated on the drawings and herein specified as needed for a complete and proper installation, including but not limited to the following:

1. Metal studs.
2. Stud backing.
3. Wall and Ceiling Furring channels.
4. Shaft wall assembly.
5. Roof framing.
7. Curtain wall.

B. **Related Sections:**

1. Documents affecting work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS DIVISION 1 - GENERAL REQUIREMENTS and other Sections of the Project Manual.
2. Concrete Work in Division 3.
3. Structural Steel in Section 05120.
4. Metal Decking in Section 05300.
5. Miscellaneous Metal Work in Section 05500.
6. Rough Carpentry in Section 06100.
7. Finish Carpentry and Architectural Woodwork in Section 06200.
8. Custom Casework in Section 06410.
9. Insulation in Section 07211.
10. Metal Doors and Frame in Section 08810.
11. Access Panel and Door in Section 08305.

12. Windows in Section 08510.

13. Lath and Plaster in Section 09200.

14. Gypsum Board System in Section 09260.

15. Fire Extinguishers and Cabinets in Section 10520.

16. Plumbing and Mechanical in Division 15.

17. Electrical in Division 16.

1.2 QUALITY ASSURANCE

A. **Component Design**: Calculate structural properties of studs and furring channels, etc. in accordance with American Iron and Steel Institute (AISI) "Specifications for Design of Cold-Formed Steel Structural Members@; Sections 1611.5, 2219A and 2504 of the Los Angeles City Building Code and applicable amendments.

B. **Material**: All metal framing, floor or ceiling attachment fastener shall be preapproved by Los Angeles City Department of Building and Safety and shall have a current Los Angeles City Department and Safety Research Report Number.

C. **Welding:** Use qualified welders and comply with American Welding Society (AWS) D1.3 "Structural Welding Code - Sheet Steel".

D. **Qualifications of Personnel:** Use adequate number of skilled Contractor's employees thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and the methods needed for the proper execution of the Work of this Section.

E. **Codes and Regulations**:

1. Comply with, but not necessarily limited to, AISI, AWS, ASTM and the Los Angeles City Building Codes and applicable Amendments. If conflicts exist between these requirements and standards, the most stringent requirements shall prevail.

2. Applicable ASTM Standards:

   a. ASTM A570 - SPECIFICATION FOR STEEL SHEET AND STRIP, CARBON, HOT-ROLLED STRUCTURAL QUALITY.

   b. ASTM A611 - SPECIFICATION FOR STEEL, SHEET, CARBON, COLD-ROLLED, STRUCTURAL QUALITY.

   c. ASTM A653 - SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVAZINED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS.

d. ASTM C645 - SPECIFICATION FOR NONSTRUCTURAL STEEL FRAMING MEMBERS.

e. ASTM C754 - SPECIFICATION FOR INSTALLATION OF STEEL FRAMING MEMBERS TO RECEIVE SCREW ATTACHED GYPSUM PANEL PRODUCTS.

f. ASTM C954 - SPECIFICATION FOR STEEL DRILL SCREWS FOR THE APPLICATION OF GYPSUM PANEL PRODUCTS OR METAL PLASTER BASES TO STEEL STUDS FROM 0.033 INCH (0.84 MM) TO 0.112 INCH (2.84 MM) IN THICKNESS.

g. ASTM C955 - SPECIFICATION FOR LOAD BEARING (TRANSVERSE AND AXIAL) STEEL STUDS, RUNNERS (TRACKS), AND BRACING OR BRIDGING FOR SCREW APPLICATION OF GYPSUM PANEL PRODUCTS AND METAL PLASTER BASES.

h. ASTM C1002 - SPECIFICATION FOR STEEL SCREWS FOR THE APPLICATION OF GYPSUM PANEL PRODUCTS OR METAL PLASTER BASES.

1.3 SUBMITTALS

A. **General**: Submit the following, complying with Provisions in the ARTICLE 10 - SUBMITTALS in DIVISION 1 - GENERAL REQUIREMENTS of the Project Manual.

1. Product data and manufacturer's recommended installation procedures for each of the framing components and accessories, including structural calculations.

2. Coordinate and submit horizontal and vertical Fastener Schedule of gypsum wallboard on the framing members for each wall type.

3. Shop drawings from framing members indicating stud sizes and gages, locations and spacing, fire ratings, top and bottom tracks, track to stud connection; exterior, interior and curtain walls and structural supports such as concrete and metal deck, steel beams; horizontal stiffener, bridging details, details of bracing installation, backing or support for other attachments required for proper installation, roof framing and support, roof or ceiling opening and support, etc. Indicate welds by AWS symbols, show size, type and length of welds. Provide setting drawing templates and directions for installing fasteners and other required anchors. Identify details by references to applicable Drawing Sheet and Detail Number on the drawings.

   Unless specified otherwise, after Project Manager’s review, Contractor shall incorporate all comments and correction prior to submitting to the governing

agencies for approvals. Contractor shall deliver 10 copies of the approved plans and permit to Project Manager for record and distribution.

4. Manufacturer's Mill Certificate certifying that products meet or exceed specified requirements.

5. Welder's Certificate: Submit manufacturer's certificates certifying welders employed on the work verifying AWS qualifications within the previous 12 months.

1.4 COORDINATION

Contractor shall coordinate work of this Section with work of other trades so as not to delay completion of the Contracted work.

1.5 PRODUCT HANDLING

A. **Delivery:** Deliver materials and cold-framing components and accessories to the job-site properly marked to identify location(s) for which they are to be installed. Markings shall correspond to markings shown on the reviewed Shop Drawings. Deliver anchor bolts and anchorage devices which are to be embedded in cast-in-place concrete in ample time so as not to delay work.

B. **Storage:** Store materials in a manner to permit easy access for inspections and identification and to prevent damage, distortion, erosion and deterioration. Store framing components and accessories where directed by the Project Manager and keep steel members off the ground using approved platforms or other supports.

PART TWO - PRODUCTS

2.1 MANUFACTURERS

A. **Manufacturers:** Subject to compliance with requirements, manufacturers offering framing products that may be incorporated in the work include, but are not limited to the following:

1. Dietrich Industries, Inc. (500 Grant Street, Suite 2226, Pittsburgh, PA 15219; (412) 281-2805; www.dietrichindustries.com.

2. United States Gypsum Company (125 S. Franklin Street, Chicago, Illinois, 60606; (312) 606-4000 or (800) 874-4968.

3. Superior Steel Studs, Inc. (4122 Burgundy Way, Flowery Branch, GA 30542; (770) 967-6639.

2.2 METAL FRAMING

A. **System Components**: Manufacturer's standard load-bearing and non-bearing steel studs, joists and furring channels of types, sizes, shape and gages as noted or

indicated on the drawings. Wall framing system shall be designed for deflection and equipped with deflection clip**.** Complete with manufacturer's standard lintels, clip angles, shoes, reinforcements, fasteners and accessories needed for a complete metal framing system.

1. Load bearing studs and non-bearing studs shall be spaced 16 inches on center except where otherwise. Type, size, gauge and grade shall be as indicated on the drawings.

2. Studs to receive waterproof backing (behind lath) and ceramic tile in wet areas such as exterior, shower rooms and stalls, and drying rooms.

3. Wall and soffit furring channels shall be 3/4-inch hot-rolled or cold rolled channels weighing not less than 300 lb. per 1,000 lineal feet with protective coating of rust inhibitive paint. Space channels 16 inches on-center except where otherwise indicated on the drawings.

B. <u>Material and Finishes Standards</u>: (As Applicable)

1. For load bearing stud and runner track, of 16- and heavier gauges, fabricate galvanized metal framing components of structural quality steel sheet, 50,000 psi yield strength as indicated on the drawings, in accordance with ASTM A653, A570, A611 and C955.

2. For non-load bearing steel stud, track and furring channel, fabricate galvanized metal framing components of structural quality steel sheet with minimum yield point of 43,000 psi in accordance with ASTM A653, A570, A611, and C955.

3. Provide galvanized finish to metal framing components complying with ASTM A653.

4. Fasteners: Provide nuts, bolts, washers, screws; fasteners with corrosion-resistant plated finish shall be used for attaching all sheathing, metal lath, brick ties and other exterior materials. Screws shall be designed specifically for the attachment of metal to metal or gypsum to metal with self topping point and rust inhibiting coating, and shall comply with ASTM C646.

5. Electrodes for Welding: Comply with AWS Code Publication using AWS A5.1 or A5.5 E70XX electrodes and as recommended by the metal framing manufacturer.

6. Galvanizing Repair Material: "Dri-Galv" or "Galvicon" or equal approved 90% zinc rich cold process repair material.

7. Ceiling Hanger Wires: Cold drawn galvanized steel wire, No. 8 gage.

8. Ceiling Mesh, Paper Backet Welded Wire Fabric, Wall Corner Beads, Metal Trim and Screeds: As specified in Section 09200 - LATH AND PLASTER of the Project Manual.

9. Access Panels: As indicated in Contract Drawings and Section 09200 - LATH AND PLASTER**.**

10. Other Materials: Provided slide clip, clip angle, web stiffeners, bridging angles, and corollary materials as needed for proper installation of metal framing components and accessories.

2.3 FABRICATION

A. **General:** Framing components may be preassembled into panels prior to erection conforming to A.I.S.I. Code of Standard Practice and best trade practices, Contract Drawings and reviewed Shop Drawings with components attached in a manner to prevent racking. Fabricate components and/or panels plumb, square, true to line and braced against racking with welded joints. Perform lifting of framing components and/or panels in a manner to prevent damage or distortion.

B. **Fastenings:** Attach similar framing components screw fastening. Attach dissimilar components by screw fastening, as standard by the metal framing manufacturer. Powder actuated fasteners shall not be used without the permission of the Project Manager.

C. **Wire Tying of Framing:** Not permitted.

D. **Fabrication Tolerances:** Fabricate units or components to a maximum allowable tolerance variations from plumb, level and true to line of 1/8-inch in 10-feet. Any unit or component that fails to meet the requirements shall be rejected and removed from job site immediately.

PART THREE - EXECUTION

3.1 COORDINATION AND SITE PREPARATION

A. **General:** Prior to installation, inspect work of other trades. Verify that all such work is completed and accurate to the point where installation of metal framing may properly commence as hereinafter specified.

B. Ceiling and floor decking receiving the tracks, bracing or other attachments shall be sound, level and clean of all deteriorated material to provide and maintain level bearing surface for the metal framing. Contractor shall repair or patch all surfaces prior to installing metal framing.

3.2 INSTALLATION:

A. 1. **General:** Install metal framing systems as indicated on the drawings, specified, and in accordance with manufacturer's written instructions and recommendations, and as per reviewed shop drawings and as per applicable requirements of the governing codes.

2. Locate access panel where indicated on the drawings and secure to the support framing.

3. No wall stud or track shall be attached to suspended ceiling or soffit. Toggle bolts or hollow, wall anchors are not permitted. All wall stud and track shall be attached to structural elements or support above suspended ceiling or soffit.

B. **Runner Tracks:** Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks with approved steel fasteners and spaced not to exceed 16-inches. Provide fasteners at corners and at ends of tracks.

C. **Installation of Wall Studs:** Secure studs to bottom runner tracks by screw fastening at both inside and outside flanges. Secure studs to top runner tracks by using deflection (deep leg) track system. For deflection (deep leg) track system, allow required clearance between top stud and the deep leg track. Do not fasten stud to deep leg track with any fastener.

1. Set studs straight and plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.

2. Where stud system abuts structural columns or walls, anchor ends of stiffeners to the supporting structure.

3. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support if not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported. Contractor shall obtain all necessary inspection for all blocking, backing and support locations prior to covering the metal framing system.

4. Frame wall openings larger than 2-feet square with double stud at each of header and jamb of frame except where more than two are either shown or indicated in manufacturer's instructions. Install runner tracks and jack or cripple studs above and below wall openings. Anchor tracks to jamb studs with stud shoes, and space jack studs same as full-height studs of wall. Secure stud system wall opening frame in the manner indicated.

5. Install horizontal stiffeners in stud system, spaced (vertical distance) at not more than 48-inches O.C. Bolt at each intersection.

6. When two piece studs are used, splice by lapping not less than 8-inches with minimum 2 fasteners in each stud flange. Splices in axially loaded studs shall not be permitted.

D. **Installation of Joists:**

1. Install level, straight, and plumb, complete with bracing and reinforcing as indicated on drawings. Provide not less than 1-1/2-inch end bearing.

2. Reinforce ends with end clips, steel hangers, steel angle clips, steel stud section, or as otherwise recommended by joist manufacturer.

3. Where required, reinforce joists at interior supports with single short length of joist section located directly over interior support, snap-on shoe, 30 percent side-piece lapped reinforcement, or other method recommended by joist manufacturer.

4. Secure joists to interior support systems to prevent lateral movement of bottom flange.

F. Installation of Wall Furring:

1. Required for fire protection piping, concealment of ducts, pipes, conduit, structural steel reinforcing, and other mechanical work and for forming architectural features as indicated on the Contract Drawings. Except as otherwise indicated on the drawings, vertical wall furring to be 3/4-inch channels at 16-inches on center. Vertical wall channels installed in deflection tract channels anchored to concrete with 3/16-inch x 1/4-inch drive bolts at track ends at interval of 2'-0" feet; attached to ceiling by wiring upper ends to continuous horizontal channel attached to ceiling. Vertical furring to be braced with continuous horizontal 3/4 inch channels spaced at 2'-0" intervals. Each horizontal brace to be tied to each vertical channel and at end to be attached to abutting construction.

2. Attach screwable resilient furring channels to metal decking with self-tapping sheet metal screws at 4-inches on-center. Space channels as noted on the drawings.

G. Installation of Ceiling

1. **Installation of Ceiling Furring Channels:** Secure 3/4-inch channel to carrying channels with double wrap and twist or tie wire at each intersection. Spacings of furring channels not to exceed 16-inches on center. Make level or slope as indicated on the drawings.

2. **Carrying Channel for Suspended Ceiling:** Support on hanger wires fastened to structure above by hanging metal fastener. Properly attach to hanger wires. Each end of each carrying channel to be attached to abutting construction as indicated on the drawings.

3. At any openings that interrupt the ceiling, install additional cross reinforcing to maintain structural integrity of framing.

4. Light fixtures, air vents, equipments and other heavy concentrated loads shall be independently supported or separately supported from ceiling

framing.

H. **Installation of Air Duct or Shaft:** Install air duct or shaft in stud system with designed slopes as indicated on drawings. Furnish access door to air duct or shaft at locations required by code or as indicated.

I. **Control Joints:**

1. Control joints in drywall surface: Frame both sides of control joints with separate studs inaccordance with the detail indicated on Contract Drawing or recommended by manufacturer. Wall and ceiling surfaces should be isolated with Control joints where:

    a. Partition, furring or column fire proofing abuts a structural element (except floor) or dissimilar wall or ceiling.

    b. Ceiling or soffit abuts a structural element, dissimilar wall or partition or other vertical penetration.

    c. Construction changes within plane of partition or ceiling.

    d. Partition or furring run exceeds 30 feet.

    e. Ceiling dimensions 30 feet in either direction without relief.

    f. Exterior soffits exceed 30 feet in either directions.

    g. Wings of AL@, AU@ and AT@ - shaped ceiling areas are joined.

    h. Expansion or control joints occur in the exterior wall.

2. Control joints in Curtain Wall Surface: Frame both sides of joint with separate studs in accordance with the details indicated on the drawings or recommended by manufacturer. Curtain wall surfaces should be isolated with control joints where:

    a. Curtain wall abuts a structural element (except floor) or dissimilar wall or ceiling.

    b. Construction changes within the plane of the wall.

    c. Stucco surfaces exceed 10 feet in either direction.

    d. The area within stucco sections exceeds 100 sq. ft.

    e. As required for veneer construction; below ledger angle supports.

    f. Basic construction contains a control joint.

    g. Interior partition run exceeds 30 feet.

h. Exterior soffits exceed 30 feet in either direction.

3. Framing at control joints that extend through the wall should have minimum 1/ 2 inches cold rolled channel alignment stabilizers spaced maximum 5 feet vertically. The channels should be placed through holes in the stud web and be securely attached to the first stud either side of control joint.

J. **Erection Tolerances**: Bolt wall and ceiling panels (at both horizontal and vertical junctures) in accordance with approved Fasteners Schedules to produce flush, even, true-to-line joints.

1. Maximum variation in plane and true position between prefabricated assemblies shall not exceed 1/16-inch.

2. Install wall panels to elevation as indicated on contract drawings. Do not exceed drywall or wall panel elevations without permission from the Project Manager.

3. Contractor shall correct any imperfect work before proceeding with gypsum wall or lathing work or whenever discovered.

4. Finished surfaces of wall and ceiling to be uniform in true planes with door and window, panel and fixtures outlet boxes and other features as indicated.

L. **Field Painting**: Touch-up damaged shop-applied protective coatings. Use compatible primer for prime-coated surfaces; use galvanizing repair system for galvanized surfaces by methods provided in Article 410 of the AWS Specifications. Costs of repairs to be borne by the Contractor.

(END OF SECTION)

SECTION 05500

MISCELLANEOUS METALS

1.00 – GENERAL

1.01 – DESCRIPTION: All miscellaneous metal work indicated on the drawings or in these specifications, including but not limited to the following:

(a) Framing anchors and joist hangers.

(b) Metal Decorative ventilation screen.

(c) Building letters.

(d) Rods, bolts, dowels, nuts, washers, anchors, hangers, brackets, plates, angles, channels, connections, and other miscellaneous iron.

1.02 – RELATED WORK SPECIFIED ELSEWHERE:

(a) Structural steel; in Division 5, STRUCTURAL STEEL Section.

(b) Metal doors and frames, in Division 8, METAL DOORS AND FRAMES Section.

(c) Sheet metal work; in Division 7, SHEET METAL Section..

(d) Pipe hangers, clamps and similar devices for support of Mechanical and/or Electrical materials; in Division 15 and 16.

(e) Caulking and sealants; in Division 7, CAULKING AND SEALANTS Section.

(f) Roof framing; in Division 6, CARPENTRY; MILLWORK Section.

(g) Concrete work; in Division 3, CONCRETE Section.

(h) Painting; in Division 9, PAINTING Section.

1.03 – SHOP DRAWINGS: Required; in accordance with the requirements of Division 1 and 1A.

1.04 – MISCELLANEOUS GENERAL ITEMS:

(a) Workmanship: Best standard trade practice, installations square, plumb, true to line, properly aligned and accurately fitted, with proper joints and adequate fastenings.

(b) Built-In Items: All items to be built into construction work shall be delivered in time so as not to delay construction operations.

2.00 – PRODUCTS

2.01 – MISCELLANEOUS METALS:

(a) General: All materials shall conform to the following standards and where not specifically mentioned shall be of new, best commercial grade, free from defects and imperfections. Where two or more identical items are required, they shall be of the same manufacture.

(b) Iron and Steel (General): Los Angeles City Building Code, Division 22.

(c) Structural Steel: ASTM A-36.

(d) Sheet Metal: Pure iron, Copper-molybdenum iron, or open hearth copper-bearing steel; galvanized where indicated on the drawings or specified; in accordance with provisions in Division 7, SHEET METAL Section.

(e) Steel Plate, Shapes and Bars: Mild or structural grade, applicable ASTM specifications.

(f) Cast Iron: ASTM A-48, class as required or specified.

(g) Aluminum: Casting, Aluminum Ally 214, Sheet Aluminum Alloy 6061-T4; extrusions Alloy 6063 temper to suit.

(h) Cast Steel: ASTM A-27.

(i) Structural Steel Tubing: Cold-formed, ASTM A-500 Grade B, or ASTM A-501 (hot formed).

(j) Stainless Steel: Alloy 18-18, Type 316, No. 4 finish both sides.

(k) Steel Pipe: ASTM A-120, or ASTM A-53, Grade B where noted on plans; galvanized unless noted otherwise.

(l) Non-Structural Steel Tubing: Electric-resistance welded, conforming to ASTM A-513, 14 gauge minimum.

2.02 – MISCELLANEOUS RELATED MATERIALS:

(a) Arc-Welding Electrodes: E6O or E70, ASTM A-233.

(b) Paint Primer (for Uncoated Ferrous Metal): Rust-inhibitive bare metal primer conforming to Federal Specification TT-P-86a, Type I. Or as specified.

(c) Fasteners: Same materials and finish of work to be fastened together, screws to be counter-sunk oval head type, unless otherwise indicated on the drawings.

(d) Galvanizing (Hot-Dip): ASTM A-123 or as applicable, after fabrication.

(e) Galvanizing Repair Material: Z.R.C. Cold Galvanizing Compound, as

manufactured by Z.R.C. Products Co., Quincy, Massachusetts, or approved equal.

(f) Bolts and Nuts: Low-carbon type, ASTM A-307, Grade B.

(g) Mechanical Anchors: For securing miscellaneous metal items to concrete, to be self-drilling concrete anchors, not less than 3/8□ size; Phillips Redhead, or as otherwise indicated on the drawings.

(h) Non-Shrink Grout: "Por-Rok" as manufactured by Hallemite Manufacturing Co., Cleveland, Ohio; No. 713 "Master Flow" as manufactured by Master Builders Co., Los Angeles; or Embeco Pre-mixed grout, or approved equal.

(i) Dry Pack: A cement-sand mix of 1 part Portland cement to 2-1/2 parts sand by volume with necessary water added to provide for solid compaction.

(j) Miscellaneous: All items of miscellaneous metal indicated on drawings, including clip angles, ties, straps, anchors, bolts, angles, rods and other appurtenances required by details or necessary for proper installation.

3.00 – EXECUTION

3.01 – CONNECTIONS, FABRICATION AND ERECTION:

(a) General: Los Angeles City Building Code.

(b) Bolting: Bolts drawn tight and threads set or welded to secure nuts.

(c) Assembly: All items shall be assembled with parts in true alignment and accurately fitted, joints well made, adequately fastened, burrs and sharp edges ground smooth.

(d) All fastenings shall be concealed where practicable and exposed joints shall be hairline.

(e) Non-ferrous metal items shall comply with the best practice of the trade. All sections shall be formed true to detail and free from defects impairing appearance, strength and durability.

(f) Field Galvanizing:

1. Required: For protective coating of damaged galvanized surfaces resulting from welding or other construction operations in the shop or at the job-site.

2. Method: By Z.R.C. Cold Galvanizing method, in accordance with manufacturer's directions.

(g) Shop Painting:

1. Required: On all uncoated ferrous metal; galvanized ferrous metal not to be shop coated.

2. Paint: Specified paint primer.

3. Painting: Full prime coating, completely covering the metal surfaces; at least 1 coat on all surfaces which will be accessible after fabricating and erection; at least 2 coats on all surfaces which will be inaccessible after fabrication and erection.

3.02 – Bok DECORATIVE METAL SCREEN:

(a) See Manufacturer's Specifications 057513 and compare to Architectural drawings and submit sample for Project Architects approval

3.03 – BUILDING LETTERS:

(a) Numerals and Letters:

1. "Deep Ribbon" letter style; as manufactured by Matthews International Corp., Bryan, Texas, or equal; size as indicated on the drawings.

2. Individual, for separate attachment to walls.

3. Cast aluminum; faces polished, satin finish; backs and edges sandblasted; alumilited; with anchor studs for required attachment and with aluminum spacers.

4. Attached to masonry walls with anchor studs set with quick-setting, waterproof cement in drilled holes.

(b) Shop Drawings: Indicating details of fabrication and attachment of numerals and letters. Also provide full-size layout to show spacing and alignment.

(c) Samples: One fabricated letter "R" shall be submitted for approval when shop drawings are submitted.

(d) Installation: As indicated on drawings and in accordance with approved shop drawings.

(e) Numerals: As indicated on the drawings.

3.04 – FRAMING ANCHORS AND JOIST HANGERS:

(a) Type: "Strong Tie" connectors, framing anchors, and joist angers by Simpson Company, or approved equal; fabricate anchors as detailed.

(b) Approvals: To be approved by Los Angeles City Department of Building and Safety prior to use.

(c) Installation: As indicated on the drawings; securely nailed or bolted to joists and rafters as indicated on the drawings and recommended by the anchor and hanger manufacturer.

3.05 – MISCELLANEOUS: All items of miscellaneous metal indicated on the drawings including clip angles, ties, straps, anchors, bolts angles, rods and other appurtenances required by details or necessary for proper installation

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SECTION 05700
ORNAMENTAL METAL

SECTION 05700 - ORNAMENTAL METAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Ornamental grilles and frames.
2. Ornamental-metal-clad, hollow-metal doors and frames.

B. Related Sections include the following:

1. Division 5 Section "Metal Fabrications" for non-ornamental metal fabrications.
2. Division 5 Section "Formed-Metal Fabrications" for ornamental metal items made from sheet metal.
3. Division 5 Section "Ornamental Railings" for ornamental metal railings.
4. Division 8 Section "Custom Steel Doors and Frames" for flush hollow-metal doors and frames receiving metal cladding.
5. Division 14 Sections for elevator signal equipment components installed in combination hall push-button stations.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated, including finishing materials.

B. Shop Drawings: For ornamental metal. Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each ornamental metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.

1. Provide templates for anchors and bolts specified for installation under other Sections.

C. Patterns, Models, or Plaster Castings: Made from proposed patterns for each design of custom casting required.

D. Samples for Initial Selection: For products involving selection of color, texture, or design.

E. Samples for Verification: For each type of exposed finish required.

1. Sections of linear shapes.
2. Full-size Samples of castings and forgings.

a. For custom castings, submit finished Samples of similar previous work to show ability to reproduce detail, cast-metal color, and quality of finish.

F. Mill Certificates: Signed by manufacturers of stainless-steel products certifying that products furnished comply with requirements.

G. Welding certificates.

H. Qualification Data: For Installer.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Arrange for installation of ornamental metal specified in this Section by the same firm that fabricated it.

B. Fabricator Qualifications: A firm experienced in producing ornamental metal similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Organic-Coating Applicator Qualifications: A firm experienced in successfully applying organic coatings of type indicated to aluminum extrusions and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

D. Anodic Finisher Qualifications: A firm experienced in successfully applying anodic finishes of type indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

E. Powder-Coating Applicator Qualifications: A firm experienced in successfully applying powder coatings of type indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

F. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."
2. AWS D1.2, "Structural Welding Code--Aluminum."

3. AWS D1.3, "Structural Welding Code--Sheet Steel."
4. AWS D1.6, "Structural Welding Code--Stainless Steel."

G. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store ornamental metal inside a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

B. Deliver and store cast-metal products in wooden crates surrounded by sufficient packing material to ensure that products will not be cracked or otherwise damaged.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with ornamental metal by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
2. If practical, provide allowance for trimming and fitting at site.

1.7 COORDINATION

A. Coordinate installation of anchorages for ornamental metal items. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ornamental Mechanical Grilles:

    a. Architectural Grille; Div. of Giumenta Corporation.
    b. Harrington & King Perforating Co.
    c. Reggio Registers Co., Inc.
    d. Register & Grille Manufacturing Co., Inc.

2. Metal-Clad Doors:

    a. Dawson Metal Co., Inc.
    b. InKan Limited.
    c. Krieger Steel Products Co.

3. Ornamental Castings and Forgings:

    a. Allen Architectural Metals.
    b. Alloy Casting Co., Inc.
    c. Architectural Iron Company, Inc.
    d. Blum, Julius & Co., Inc.
    e. Braun, J. G. Company; a division of the Wagner Companies.
    f. Classic Iron Supply/Craft.
    g. Colonial Castings, Inc.
    h. Cullar/La Cuesta.
    i. Dempsey, Inc.
    j. Historical Arts & Casting, Inc.
    k. Indital USA.
    l. Lawler Foundry Corporation.
    m. Morrow, Frank Company.
    n. Olin Wrought Iron.
    o. OMC Industries, Inc.
    p. Robinson Iron.
    q. Tennessee Fabricating Co.
    r. Texas Metal Industries, Inc.
    s. TT Triebenbacher - Bavarian Iron Works Co.
    t. Universal Manufacturing Co., Inc.

4. Stainless-Steel Wire Rope and Fittings:

   a. Cable Connection (The).
   b. Esmet, Inc.
   c. Feeney Wire Rope & Rigging.
   d. Hayn Enterprises, LLC.
   e. Johnson, C. Sherman, Co., Inc.
   f. Loos & Co., Inc.; Cableware Division.
   g. Ronstan International Inc.
   h. SAVA Industries.
   i. Seco South, Inc.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

2.3 ALUMINUM

A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.

B. Extruded Bars and Shapes: ASTM B 221 (ASTM B 221M), Alloy 6063-T5/T52.

C. Extruded Structural Pipe and Round Tubing: ASTM B 429, Alloy 6063-T6.

2.4 STAINLESS STEEL

A. Tubing: ASTM A 554, Grade MT 304.

B. Pipe: ASTM A 312/A 312M, Grade TP 304.

C. Castings: ASTM A 743/A 743M, Grade CF 8 or CF 20.

D. Sheet, Strip, Plate, and Flat Bar: ASTM A 666, Type 304.

E. Bars and Shapes: ASTM A 276, Type 304.

F. Wire Rope: 1-by-19 wire rope made from wire complying with ASTM A 492, Type 316.

2.5 MANUFACTURED UNITS

2.6 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:
   1. Aluminum Items: Type 304 stainless-steel fasteners.
   2. Stainless-Steel Items: Type 304 stainless-steel fasteners.
   3. Uncoated Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed, Type 304 stainless-steel fasteners where exposed.
   4. Galvanized Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
   5. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Fasteners for Anchoring to Other Construction: Unless otherwise indicated, select fasteners of type, grade, and class required to produce connections suitable for anchoring indicated items to other types of construction indicated.

C. Provide concealed fasteners for interconnecting components and for attaching ornamental metal items to other work, unless otherwise indicated.

   1. Provide square or hex socket flat-head machine screws for exposed fasteners, unless otherwise indicated.

D. Anchors: Provide cast-in-place anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

E. Stainless-Steel Wire-Rope Fittings: Connectors of types indicated, fabricated from stainless steel, and with capability to sustain, without failure, a load equal to minimum breaking strength of wire rope with which they are used.

2.7 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

   1. For aluminum, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Brazing Rods: For copper alloys, provide type and alloy as recommended by producer of metal to be brazed and as required for color match, strength, and compatibility in fabricated items.

C. Lacquer for Copper Alloys: Clear, air-drying, acrylic lacquer specially developed for coating copper-alloy products.

1. Product: Subject to compliance with requirements, provide "Incralac" developed by International Copper Research Corporation.

D. Shop Primers: Provide primers that comply with Division 9 painting Sections.

E. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.

1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Products: Subject to compliance with requirements, provide one of the following:

a. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.
b. Carboline Company; Carbozinc 621.
c. ICI Devoe Coatings; Catha-Coat 313.
d. International Coatings Limited; Interzinc 315 Epoxy Zinc-Rich Primer.
e. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.
f. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.
g. Tnemec Company, Inc.; Tneme-Zinc 90-97.

F. Shop Primer for Galvanized Steel: Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5.

G. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

H. High-Performance Coating for Steel, Intermediate Coat: High-build urethane or epoxy coating recommended by manufacturer for application over specified zinc-rich primer under specified polyurethane enamel.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Benjamin Moore & Co.; M73/M75 Aliphatic Acrylic Urethane Semi-Gloss.
b. Carboline Company; Carboguard890 2-Component Epoxy.
c. ICI Devoe Coatings; Devthane378 Aliphatic Urethane Semi-Gloss Enamel.
d. International Coatings Limited; Interthane 870.

e. PPG Architectural Finishes, Inc.; Aquapon 97-130 Epoxy.
f. Sherwin-Williams Company (The); Macropoxy HS High Solids Epoxy.
g. Tnemec Company, Inc.; Series 27 Hi-Build Epoxy.

I. High-Performance Coating for Steel, Topcoat: High-build, semigloss ploy urethane enamel.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Benjamin Moore & Co.; M73/M75 Aliphatic Acrylic Urethane Semi-Gloss.
b. Carboline Company; Carbothane 133 HB Aliphatic Polyurethane.
c. ICI Devoe Coatings; Devthane378 Aliphatic Urethane Semi-Gloss Enamel.
d. International Coatings Limited; Interthane870.
e. PPG Architectural Finishes, Inc.; Aquapon 95-612 Semi-Gloss Polyurethane.
f. Sherwin-Williams Company (The); Corothane II Satin B65-200 Series.
g. Tnemec Company, Inc.; Series 1075 Endura-Shield.

J. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.8 FABRICATION, GENERAL

A. Assemble items in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

B. Make up wire-rope assemblies in the shop to field-measured dimensions with fittings machine swaged. Minimize amount of turnbuckle take-up used for dimensional adjustment so maximum amount is available for tensioning wire ropes. Tag wire-rope assemblies and fittings to identify installation locations and orientations for coordinated installation.

C. Form ornamental metal to required shapes and sizes, true to line and level with true curves and accurate angles and surfaces. Finish exposed surfaces to smooth, sharp, well-defined lines and arris.

D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Form simple and compound curves in bars and extruded shapes by bending members in jigs to produce uniform curvature for each configuration required; maintain cross

section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces.

F. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

G. Mill joints to a tight, hairline fit. Cope or miter corner joints. Fabricate connections that will be exposed to weather in a manner to exclude water.

H. Provide weep holes where water may accumulate.

I. Provide necessary rebates, lugs, and brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items, unless otherwise indicated.

J. Comply with AWS for recommended practices in shop welding and brazing. Weld and braze behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed joints of flux, and dress exposed and contact surfaces.

K. Provide castings that are sound and free of warp, cracks, blowholes, or other defects that impair strength or appearance. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks. Seven articles below are examples only. Delete or revise to suit Project and insert others.

2.9 FABRICATING ORNAMENTAL GRILLES AND FRAMES

A. Fabricate ornamental grilles from perforated aluminum sheet or plate of thickness, size, and pattern indicated. Form perforations by punching, cutting, or drilling to produce openings of sizes and shapes indicated. Roll, press, and grind perforated metal to flatten and to remove burrs and deformations.

1. Form perforations to match existing grilles.
2. Drawings indicate perforated metal patterns required and are based on products of one manufacturer. Perforated metal patterns produced by other manufacturers may be considered, provided deviations are minor and do not change design concept as judged solely by Architect.

B. Drill and countersink grilles for mounting screws at 2 inches (50 mm) from corners and at 10 inches (250 mm) or less o.c. Provide units with oval-head self-tapping machine screws made from metal matching grilles.

C. Fabricate grille frames from extruded aluminum of profiles, and to sizes and shapes indicated. Miter frame members at corners and connect with concealed splice plates welded to back of frames.

1. Secure grilles in frames with 0.5-inch- (12-mm-) long welds along perimeter of grilles at 4 inches (100 mm) o.c.
2. Provide frame profiles to match existing frames.
3. Drawings indicate frame profiles required and are based on products of one manufacturer. Similar frame profiles produced by other manufacturers may be considered, provided deviations are minor and do not change design concept as judged solely by Architect.

D. Drill and countersink frames for mounting screws at 4 inches (100 mm) from corners and at 16 inches (400 mm) or less o.c. Provide units with oval-head self-tapping machine screws made from metal matching frames.

2.10 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.11 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
1. As selected by Architect from full range of industry colors and color densities.

2.12 STAINLESS-STEEL FINISHES

A. Remove tool and die marks and stretch lines or blend into finish.

B. Unless otherwise indicated, grind and polish surfaces to produce uniform finish indicated, free of cross scratches.

1. Run grain of directionally textured finishes with long dimension of each piece.

C. Directional Satin Finish: No. 4 finish.

2.13 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M.

1. Hot-dip galvanize steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.

B. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. Preparation for Shop Priming: After galvanizing, thoroughly clean ornamental metal of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate pretreatment.

D. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed ornamental metal:

1. Exteriors (SSPC Zone 1B): SSPC-SP 6, "Commercial Blast Cleaning."
2. Interiors (SSPC Zone 1A): SSPC-SP 7, "Brush-off Blast Cleaning."

E. Factory-Primed Finish: Apply air-dried primer immediately after cleaning and pretreatment, to provide a minimum dry film thickness of 2 mils (0.05 mm) per applied coat, to surfaces that will be exposed after assembly and installation, and to concealed, nongalvanized surfaces.

F. Painted Finish: Comply with Division 9 painting Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of ornamental metal.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Provide anchorage devices and fasteners where needed to secure ornamental metal to in-place construction.

B. Perform cutting, drilling, and fitting required to install ornamental metal. Set products accurately in location, alignment, and elevation; measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

C. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of ornamental metal, restore finishes to eliminate evidence of such corrective work.

D. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

E. Install concealed gaskets, joint fillers, insulation, and flashings as work progresses.

F. Restore protective coverings that have been damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at same location.

   1. Retain protective coverings intact; remove coverings simultaneously from similarly finished items to preclude nonuniform oxidation and discoloration.

G. Field Welding: Comply with applicable AWS specification for procedures of manual shielded metal arc welding, for appearance and quality of welds, and for methods used in correcting welding work. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Grind exposed welded joints smooth and restore finish to match finish of adjacent surfaces.

H. Field Brazing: Comply with applicable AWS specification for procedures, appearance and quality of brazing, and methods used in correcting brazing work. Braze connections that are not to be left as exposed joints but cannot be shop brazed because of shipping size limitations. Grind exposed brazed joints smooth and restore finish to match finish of adjacent surfaces.

I. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

3.3 INSTALLING ORNAMENTAL GRILLES

A. Mount ornamental grilles at heights and in positions indicated, adjusting ductwork to be centered on grilles if any.

1. Secure to framing and blocking with specified fasteners.
2. On marble, brick, and other solid surfaces, secure with wood screws in lead plugs.

3.4 INSTALLING ORNAMENTAL-METAL-CLAD, HOLLOW-METAL DOORS AND FRAMES

A. Install doors and frames to comply with requirements specified in Division 8 Section "Custom Steel Doors and Frames."

3.5 CLEANING

A. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

B. Clean copper alloys according to metal finisher's written instructions in a manner that leaves an undamaged and uniform finish matching approved Sample.

C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material.

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.6 PROTECTION

A. Protect finishes of ornamental metal from damage during construction period with temporary protective coverings approved by ornamental metal fabricator. Remove protective covering at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05700

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SECTION 06100
ROUGH CARPENTRY

PART ONE - GENERAL

1.1 SUMMARY

A. Section Includes: Rough carpentry work.

B. Sustainable Goal 1: Project requirements are that 50% of the wood-based products used in the building be certified in accordance with the Forest Stewardship Council Guidelines (see section 01026 – Well Managed Forest Products for more information).

C. Sustainable Goal 2: All composite wood products shall meet the project requirements for adhesives and sealants that meet or exceed the VOC (Volatile Organic Compounds) limits of South Coast Air Quality Management District (SCAQMD) Rule #1168.

D. Related Documents: The Conditions of the Contract and Division 1 apply to this section as fully as if repeated.

1.2 REFERENCES

A. The editions of the specifications and standards referenced herein, published by the following organizations, apply to the work only to the extent specified by the reference. Refer to Section 01091 for information concerning availability and use of references.

1. American Wood Preservers Bureau (AWPB)
2. American Plywood Association (APA)
3. U.S. Department of Commerce (USDC)
4. U.S. Department of Commerce Product Standard (PS)
5. West Coast Lumber Inspection Bureau (WCLIB)
6. Western Wood Products Association (WWPA)
7. Redwood Inspection Service (RIS)

1.3 SUBMITTALS

A. Product Data: Submit copies of the framing anchor manufacturer's current ICBO Evaluation Report.

B. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installing and finishing of treated materials.

1. Preservative Treatments: For each type specified, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and conformance with applicable standards.

2. For water borne treatment include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.

3. Fire-Retardant Treatment: Include certification by treating plant that treatment material complies with specified standard and other requirements.

C. See Section 01027 for submittal requirements related to the Sustainable Goals listed above.

1.4 SUBSTITUTIONS

A. The City encourages and requires (to the extent practicable), the use of recycled wood, plastics and sustainably managed forest products. Accordingly, with the approval of the City Engineer, the Contractor may propose materials that are more environmentally sensitive than those indicated on the drawings or specified

B. See section 01027 for substitution requirements for environmental products.

1.5 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies.

1. Rough carpentry shall conform to the Los Angeles City Building Code (LABC), Chapter 23.

2. Framing anchors shall be furnished and installed in accordance with the manufacturer's current ICBO Evaluation Report.

B. Grade Marks:

1. Identify lumber by the official grade mark of WCLIB, WWPA or RIS.

2. Identify plywood by the official grade mark of APA.

3. Identify pressure preservative treated lumber and plywood with the official grade mark of AWPB.

4. Identify fire retardant treated lumber with appropriate classification marking of Underwrites Laboratories, Inc., U.S. Testing, Timber Products Inspection or other testing and inspecting agency acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site in an undamaged condition.

B. Storage lumber and plywood at the site under cover or otherwise protected against exposure to weather, raise above the ground and out of the contact with other damp or wet surfaces. Stack lumber and plywood and provide for air circulation within and

around the stacks and under temporary coverings. For pressure treated lumber and plywood, provide spacers between courses to permit air circulation.

1.7 PROJECT CONDITIONS

A. Cooperate with other trades in coordinating their work with the work of this section. Provide wood grounds, blocking and nailers where indicated or as required for integration of work of other trades into the structure.

1.8 GUARANTY-WARRANTY

A. In accordance with Section 01611, the Contractor shall and does hereby warrant and guaranty that all work executed under this Contract be free from defects of materials and workmanship for a period of one year from the date of final acceptance of the project by the Board of Public Works, except certain specific items of work, materials and equipment requiring a guaranty or warranty for a greater period of time is specified.

PART TWO – PRODUCTS

2.1 LUMBER

A. Lumber Standards: Manufacture lumber to comply with PS 20-70 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies specified herein.

B. Moisture Content at Time of Placing:

1. Untreated Lumber: Maximum 19 percent.

2. Treated Lumber: Maximum 19 percent after pressure treatment.

C. Sizing and Surfacing: Sizes indicated are nominal; provide actual sizes in accordance with PS 20-70. Provide dressed lumber, S4S, except as otherwise indicated.

D. Dimension Lumber: Provide lumber of the grades and species listed below for the various purposes, graded in accordance with WCLIB "Standard Grading Rules No. 16", 1984 Edition, WWPA "Western Lumber Grading Rules 88", or RIS "Standard Specifications for Grades of California Redwood Lumber," 1984 Edition.

1. Cants, Roof Nailers, and Roof Curbs: Standard or better grade Light Framing; No. 2 or better grade Structural Light Framing; or Stud grade of any commercial softwood species, pressure preservative treated.

2. Sill Plates: No.1 Grade, or better, pressure preservative treated Douglas fir or Larch.

3. Blocking, Nailers and Bracing: Standard or better grade Light Framing; No. 2 or better Structural Light Framing; or Stud grade of any commercial softwood species.

4. Studs and Top Plates: No. 1 Grade Douglas fir or Larch.

5. Joists, Headers, Ledgers, and Stair Stringers: No. 1 or better grade Joists and Planks of Douglas fir or Larch.

6. Rafters: No. 1 grade Structural Light Framing of Douglas fir or Larch.

7. Beams, Girders, and Stringers: No. 1 Grade Beams and Stringers of Douglas fir or Larch.

8. Columns and Posts: No. 1 Grade Posts and Timbers of Douglas fir or Larch.

9. Exposed Framing Lumber: Exposed framing lumber refers to dimension lumber which is not concealed by other work and is indicated to receive a stained or natural finish. Provide exposed framing of same species as specified for structural framing. Provide Appearance grade framing or hand select materials from No. 1 grade to provide appearance equal to appearance grade. Select each piece for freedom from warping, twisting or bowing.

10. Hayward Building Systems of CA is a certified distributor of FSC certified lumber products.

2.2 PLYWOOD

A. Plywood shall conform to U.S. Product Standard P.S. 1-74. Plywood shall be grade-marked by the American Plywood Association (APA), Pittsburgh Testing Laboratories (PTL) or Timber Engineering Company (TECO). Plywood shall be exterior grade, Structural I.

1. Plywood by Roy O. Martin Co. of Louisiana, and Hayward Building Systems of CA., or equal FSC certified products.

2. Urea-formaldehyde resins shall not be used.

2.3 ORIENTED STRAND BOARD (OSB)

A. OSB Standards: Manufacture OSB to comply with U.S. Product Standard PS 2-95 for Construction and Industrial OSB.

1. OSB by Roy Ol. Martin Co. of Louisiana, and Hayward Building Systems of CA. Are FSC certified products.

2. Urea-formaldehyde resins shall not be used.

2.4 PRESSURE TREATMENT

A. Preservative Treatment: Where lumber or plywood is indicated or specified herein to receive pressure preservative treatment, treat materials in accordance with AWPB LP-

2. Complete fabrication of treated items before treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment.

B. Fire-Retardant Treatment: Where fire-retardant treated wood is indicated, pressure impregnate lumber and plywood with fire-retardant chemicals to meet the requirements of AWPA C20 and C27, respectively.

2.5 MISCELLANEOUS MATERIALS

A. Building Paper: Fully waterproof Kraft paper conforming to Fed. Spec. UU-B-790A (1), Type I, Grade B (moderate water vapor resistance).

B. Rough Hardware:

1. Furnish items of rough hardware, connections, bolts, required to complete the work. Where carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide nails, bolts, nuts, washers and other fasteners with a hot-dipped zinc coating in accordance with ASTM A 153-82.

2. Nails: Common wire. Nails connected to pressure treated material (plywood sill nailing, stud nailing) shall be hot-dipped galvanized. Use ring or spiral shank nails for floor sheathing. Special nailing requirements shall be as indicated.

3. Bolts: Standard mild steel, square or hexagonal head machine bolts with matching nuts and cut washers, or carriage bolts with square or hexagonal nuts and cuts washers as indicted. Where exposed to view, use only hexagonal head fasteners and matching nuts, and limit projection of bolt beyond face of nut to 1/2 inch.

4. Lag Bolts and Screws: Sizes indicated.

C. Powder Driven Fasteners: Provide fastener system complete with all necessary washers, nuts and other appurtenances. Acceptable products, or equal:

1. Hilti Fastening Systems, Inc.
2. Powder Power Tool Corp.; Drive-It
3. Ramset Fastening Systems

D. Framing Connectors: Provide galvanized steel joist hangers and other framing accessories having the minimum design and load capacities indicated. Load capacities shall be those shown in the manufacturer's current ICBO Evaluation Report. Acceptable manufacturers, or equal:

1. Simpson Strong-Tie Company Inc.

2. K.C. Metal Products; Superspeed Connectors
3. Silver Metal Products, Inc.

4. USP Lumber Connectors

2.6 MISCELLANEOUS ITEMS

A. Rough carpentry work and miscellaneous items and their related components are not necessarily individually described. The most important features and those requiring detail description are mentioned. Furnish rough carpentry work and miscellaneous items not mentioned or described and install in accordance with the intent of the drawings and specifications and as required to complete the work.

PART THREE - EXECUTION

3.1 EXAMINATION

A. Before commencing work, check concrete and masonry walls, steel and glue-laminated beams, and other construction supporting rough carpentry work to ensure that they are set to the lines and levels indicated within the specified tolerances. Do not proceed until discrepancies have been corrected or adjusted.

3.2 INSTALLATION

A. Install wood framing making proper provisions for work of other trades. Do framing of wood required to accommodate plumbing, heating and ventilating, electrical, and other trades. Fit neatly around exposed items, such as outlet boxes, conduit, pipes, and ducts.

B. Wood Grounds, Nailers, Blocking and Sleepers:

1. Provide wherever indicated and where required for screeding or attachment of other work. Form to shapes as indicated and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build such items into masonry during erection of masonry. Where possible, anchor to formwork before concrete placement.

3. Provide permanent grounds of dressed, preservative treated, key bevelled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

C. Openings: Provide openings for mechanical and electrical equipment, ducts, other equipment. Where one or more joists are cut, the joists supporting the trimmers shall be doubled and well spiked. Where continuation of 3 or more joists is interrupted, reinforce the abutting headers and joists with approved type of joists hangers.

1. Frame openings in walls required for installation of cabinets and other wall

hung items, including telephone and electrical terminals, stair handrails, shelves, toilet partitions, fixtures, and equipment.

D. Except as detailed, avoid cutting, drilling or notching wood members that may weaken the member. Lay out framing so that structural members will be subject to a minimum of cutting for openings, pipes, vents, ducts.

3.3 LUMBER FASTENINGS

A. Nailing and bolting of wood members shall conform to the minimum requirements of the LABC, Chapter 23, and as specified herein and as indicated.

B. Bolting: Bolts shall be standard stock machine bolts as specified. Drill holes in wood member 1/16 inch larger than nominal bolt diameter. Exposed bolts shall be all hexagonal head with matching nuts. Re-tighten bolted connections before final acceptance or, in the case of bolted connections in concealed locations, immediately before the area is sealed off.

C. Lag Bolts (or Lag Screws): Provide prebored lead holes for all lag bolts. Drill lead hole for the shank to a depth equal to the length of the unthreaded portion in the main member, using a drill of the same diameter whose diameter is 60 percent of the nominal lag bolt diameter. Insert lag bolt into lead hole by turning with a wrench, and not by driving with a hammer. Use soap, beeswax or other lubricant to facilitate insertion.

D. Nailing: Connections shall be as indicated in, LABC Table 23-II-B-1 where not otherwise indicated. Nails shall be untreated steel for interior work and concealed framing, and galvanized for all exposed work on exterior. Unless connectors are detailed or steel connectors indicated, nails shall not be driven closer together than 1/2 of their length nor closer to the edge of a member than 1/4 their length. When wood tends to split with size of nail used, predrill holes for nails. Penetration of nails or spikes into pieces shall be not less than one-half the length of the nail or spike.

E. Washers: Provide all bolts and lag screws bearing on wood with cut washers except where malleable iron or plate washers are indicated on the structural drawings.

F. Metal Framing Connectors: Install connectors in accordance with the manufacturer's current ICBO Evaluation Report. Fill all holes in each connector with proper size nails intended for this use.

3.4 ROUGH HARDWARE

A. Furnish and install all stock items of rough hardware as indicated or required, including clips, anchors, hangers, bolts, ties, and plates for connecting wood framing members to wood, concrete, or steel, except as specified to be provided under other Sections.

3.5 BUILDING PAPER

A. Install building paper horizontally over all plywood sheathing on exterior walls and elsewhere as indicated. Lap 2 inches to weather, with 4 inch side laps. Secure sufficiently with galvanized nails to hold in place without sagging until finish is applied. Building paper behind cement plaster, where required, is specified in Section 09207.

B. Install building paper on all plywood subfloors over first layer of plywood. Sweep floors clean before laying building paper. Lay building paper over plywood lapping all sides and ends 6 inches and secure with stapes sufficiently to hold paper securely and smoothly in place until underlayment plywood is stapled in place. There shall be no tears or holes in building paper, and suitable protection shall be provided until underpayment plywood is stapled in place. There shall be no tears or holes in building paper, and suitable protection shall be provided until underpayment plywood is in place.

C. Install waterproof building paper around all openings in wood framed exterior walls and elsewhere as indicated, properly flashed with felt.

(END OF SECTION)

SECTION 06400
ARCHITECTURAL WOODWORK

PART ONE – GENERAL

1.1 SUMMARY

A. Fabrication and installation of sustainable architectural casework including shelving, end panels, drawers, doors, countertops, wall cabinets, hardware and cabinet accessory equipment indicated on the Contract Drawings and hereinafter specified.

B. LEED Goal 1: Project requirements are that 50% of the wood-based products used in the building be certified in accordance with the Forest Stewardship Council Guidelines (see section 01026 – Well Managed Forest Products for more information).

C. LEED Goal 2: All composite wood products shall meet the project requirements for adhesives and sealants that meet or exceed the VOC (Volatile Organic Compounds) limits of South Coast Air Quality Management District (SCAQMD) Rule #1168.

D. LEED Goal 3: The project requirements are to maximize use of locally manufactured products (within 500miles).

E. LEED Goal 4: The project requirements are to use rapidly renewable materials for 5% of the total building materials.

F. LEED Goal 5: The project requirements are to use a minimum of 25% of the building materials that contain in aggregate a minimum weighted average of 20% post-consumer and /or 40% of post-industrial recycled content.

1.2 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS and Sections in DIVISION 1 GENERAL REQUIREMENTS of these Specifications.

B. Sealants and Caulking in Section 07920.

C. Mechanical and Electrical Work to be incorporated into the Casework in Divisions 15 and 16 respectively.

1.3 SUBMITTALS

A. All submittals shall conform to the provisions of the SUBMITTALS Section 01330 of DIVISION 1 - GENERAL REQUIREMENTS.

B. See Section 01022 – Environmental Procedures for submittal requirements related to the LEED Goals above.

C. Shop Drawings: Submit shop drawings of all sustainable casework indicating materials and hardware, details of construction, dimensions, methods of fastening and erection details. Shop Drawings shall bear a W.I.C. certified compliance label indicating that Drawings fully meet the requirement of the W.I.C. grade specified. Shop Drawings shall indicate all grounds, backing, blocking, sleepers and other items required for the installation of casework, which are to be provided and installed as part of the structure.

D. Manufactured Product Information: Submit manufacturers cut sheets and installation requirements.

E. Samples: Submit 2" x 3" plastic laminate chips bearing the manufacturer's name, color, pattern or texture designations.

F. Manufacturer's Recommended Installation Procedures: Such submitted procedures approved by the City Engineer will become the basis for City Engineer's inspection and acceptance or rejection of actual installation procedures used on the work of this Section.

1.4 QUALITY ASSURANCE

A. Workmanship: All work of this Section to be constructed, assembled and installed by skilled workers who are skilled in finish carpentry in compliance with W.I.C. construction types and grades hereinafter specified and detailed on the Contract Documents. All such work to be accurately fabricated, assembled, joined and expertly finished in accordance with measurements taken on the job-site.

B. Defective Work: All casework, shelving and countertops not true to line, not in satisfactory operating condition, improperly installed, damaged or marred will not be accepted. Remedy, remove or replace defective work as directed by the City Engineer subject to his approval at no cost to the City.

C. Standards: All applicable Sections of the "Manual of Millwork" and current supplements published by the Woodwork Institute of California (W.I.C.) for the construction types and grades hereinafter specified or shown on the Contract Drawings. All modifications to such standards shown on the Contract Drawings and approved Shop Drawings or specified shall govern.

D. Qualifications of Manufacturer: Product shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the City.

E. Qualifications of Installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

F. Certification: Before delivery to the job-site, Manufacturer shall issue a W.I.C. Certified Compliance Certificate indicating that casework to be furnished for this project will fully meet all specified requirements of W.I.C. grades.

1. All laminated plastic countertops shall bear the W.I.C. Certified Compliance Label indicating the tops meet the requirements of the W.I.C. grade specified.

G. Inspection: To assure quality as specified, the City Engineer may inspect Work in the process of the manufacturer or the finished casework prior to delivery and installation to assure quality of Work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery: Cabinets, countertops, and materials shall be delivered to the job-site in undamaged condition in crates or suitable packaging bearing the manufacturer’s label and model number. All cabinets and countertops delivered to the job-site for installation shall be properly identified as to where they are to be located within the structure.

B. Storage: All cabinets and countertops shall be stored where directed by the City Engineer, in fully covered, well ventilated area(s) and protected from extreme changes in temperature and humidity before installation.

C. Protection: Use all means necessary to protect Work of this Section before, during and after installation and protect the installed Work and materials of other trades.

D. Replacements: In the event of damage, Contractor or Manufacturer shall immediately make necessary repairs or replacement to the approval of the City Engineer at no added cost to the City.

1.6 GENERAL REQUIREMENTS Verification of Job Conditions:

A. Prior to fabrication, take necessary field measurements to assure proper dimensions for the Work of this Section and report to the City Engineer any discrepancies between the Contract Drawings and the Specifications and/or job conditions and await further instructions from the City Engineer.

B. Coordination and Cooperation: Required of Work operations of this Section with other trades, including mechanical and electrical work to be incorporated into cabinets and installation without delaying work progress.

C. Warranty: Comply with provisions of Section 28 of the GENERAL CONDITIONS of these Specifications which shall include a 12-month warranty period which covers parts and labor; effective date of the warranty being the date of acceptance by the City.

D. Guarantee: Provide a written guarantee which in addition to the warranty requirements of the Contract Documents, shall include the removal and replacement of all cabinet doors that develop a warp or wind of 1/8" or more.

1.7 GUARANTY-WARRANTY

A. In accordance with Section 01611, the Contractor shall and does hereby warrant and guaranty that all work executed under this Contract be free from defects of materials and workmanship for a period of one year from the date of final acceptance of the project by the Board of Public Works, except certain specific items of work, materials and equipment requiring a guaranty or warranty for a greater period of time is specified.

PART TWO - PRODUCTS

2.1 MATERIALS

A. General: In compliance with Sections of the WIC Manual applicable to the construction types and grades and modifications hereinafter specified and noted on the Contract Drawings.

B. Materials for Concealed Portions of Cabinets: Operational per Section 14 of the WIC Manual, except wheatboard shall be used in lieu of plywood or particleboard. of one of the following manufacturers (or equal):

1. Phoenix Biocomposites, "boifiber wheat" (800) 324-8187

2. Ecoproducts, "Wheat Sheet"

3. Primeboard, Inc., "Primeboard" (701) 642-1152

D. When the wheatboard is to be left natural, or not otherwise finished, it shall be coated with a catalyzed polyurethane finish.

E. Laminated Plastic Clad Cabinets, Shelves, Doors and Countertops: High pressure thermo setting plastic laminate conforming to N.E.M.A., LD 3 - Latest Edition and Section 15 of the WIC Manual.

1. Colors and Patterns: As selected by the City Engineer from manufacturer's standard color and pattern palette or as noted on the Contract Drawings.

2. Laminate Thicknesses: For surfaces other than countertops minimum 0.028-inch; for cabinet liners minimum thickness as noted in WIC Manual; for shelves, countertops and splashes minimum 0.050-inch.

3. Core Material: Provide wheatboard, architectural grade, complying with ANSI A208.2-1994, with respect to strength and moisture absorption requirements, and which shall meet LEED goal #2 as listed above, and shall be manufactured without added formaldehyde. Wheatboard shall be recycled or rapidly renewable material content, or both.

4. Glue: Type II Adhesive, water-resistant, rigid type of caseinalkaline or polyurethane formula conforming to PS 51-71. Per LEED goal #2 above, adhesive shall meet or exceed VOC limits of SCAQMD Rule No. 1168.

5. Edge Banding: "T" type extruded tenite-butyrate, 1/16" minimum thickness with serrated leg 3/8" length.

6. Total Thickness of Cabinets and Countertop Components: 3/4-inch or 1-inch or as otherwise detailed on the Drawings and as noted in the W.I.C. Manual.

G. Casework Hardware: Provide and install all rough and finish hardware as necessary for complete installation, but not limited to the following:

1. Concealed hinges by Amerock 180 degrees, No. CM-1727-14 or equal.

2. Cabinet Door Pulls by Stanley No. 4477 or approved equal.

3. Cabinet Door Locks, pin tumbler type by National Lock or approved equal.

4. Magnetic Catches by Stanley Epco #592 or Lawrence SC1364-AL or approved equal.

5. Shelf Standards and Brackets, K & V #255x256 or Stanley No. 798x799, steel zinc plated or approved equal.

6. Miscellaneous hardware including, but not limited to the following: Spikes, bolts, screws, lags, shields, straps, angles, cleats and other related items for fabrication and installation.

7. Drawer Guides; KV1300, KV1330, Krona-Flex 1336, HDI 2800, Grant 336 or equal for all drawers except file drawers which shall have KV1460, Grant 329, Accuride 3008, 3009, 4025, 4037; Waterloo 2950, HDI 2910, full extension drawer guides or approved equal.

PART THREE - EXECUTION

3.1 GENERAL FABRICATION

A. General:

1. Work of this Section shall be fabricated in strict accordance with designs on the Contract Drawings and approved Shop Drawings, conforming to construction requirements for W.I.C. Premium grade flush overlay construction.

2. Cabinet units and countertops shall be shop fabricated as complete sections of adequate size to permit easy handling, access to installation areas for assembly or required for setting in place and installing of closing pieces or components.

3. Make holes or cutouts necessary for incorporation of mechanical and/or electrical work into the cabinet units and countertop as detailed or specified.

B. Plastic Covered Cabinets:

1. Shop fabricate as complete units of adequate size to permit easy handling, access to installation areas for assembly or required setting in place and installing of countertops and closing pieces.

2. Cabinet interiors to be covered with colored melamine liner material. Melamine liner shall conform to NEMA LD3 requirements.

3. Shelves to be 3/4" thick wheatboard or equal for spans up to 35-inches and for spans up to 45-inches shall be 1-inch thick and covered with laminated plastic on both sides and exposed edges plastic on both sides and exposed edges plastic edgebanded.

4. Cabinet hardware hereinbefore specified in this Section shall be installed by the Cabinet manufacturer in accordance with approved Shop Drawings and shall be adjustable to 1" center. Hinges to be routed into door edges. Doors over 40" high to receive 3 hinges secured in place with Type "A" Phillips head sheet metal screws.

5. Drawers: Sides, back and sub-fronts shall be of dovetail construction made of 1/2" thick wheatboard. Drawer bottom shall be 3/8" thick tempered hardboard, plowed into sides, front and back, glue-blocked and nailed. Fronts shall be 3/4" thick plastic laminate construction, fully edgebanded with plastic "T" banding or plastic laminate. Bonding joints shall occur at center of bottom edge of panel.

6. Doors: Overlay type with flush exposed surfaces, fully edgebanded with plastic "T" banding or plastic laminate. Joints in banding shall occur at center of bottom edge. Doors of base and/or wall cabinet units within any group of adjacent units shall be in alignment.

7. Wall Cabinets: Exposed bottom of such cabinets shall have laminate finish or finish of wood cabinets.

C. Laminated Plastic Covered Countertops: Colors per Finish Schedule.

1. Fabricate to type and sizes indicated on the Contract Drawings with 4- or 6-inch high back and side splashes as measured from the exposed counter surface and no drip leading edge. Rolled edges shall rise 1/8-inch above the counter surface.

2. Core material for counters and back splash shall be 3/4-inch wheatboard.

3. Make holes and/or cutouts as necessary for mechanical and/or electrical work to be incorporated into the countertop as detailed or specified. Provide 3" grommets at every 4' of counter surface Verify all grommet locations with owner or Architect prior to perforation.

4. Make joints with screw clip fasteners on not less than 8-inch centers. A water resisting mastic or glue shall be applied in the joints. Joints shall not occur at sink cutouts.

5. Metal sink moldings shall be stainless steel "Hudee", "Kintrim T-Type" or "Chromedge Sink-Lok" complete with bolts and lugs or as otherwise detailed on the Contract Drawings.

6. Cover countertop and splashes with solid core colored laminated plastic as selected by the City Engineer.

7. Side and back splashes shall rest on the top, be set in mastic and be secured to the top with screws on 8-inch centers. Edges of splashes shall be self-edged and scribed to the walls.

8. Application of plastic laminate to countertop shall be in accordance with published specifications and recommended practices of the plastic laminate manufacturer.

9. Mastic: Metal trim shall have a thorough application of an approved mastic in voids between metal, Wheatboard and sink. Counter cut-out edges shall be waterproofed to prevent delamination of Wheatboard. Metal trim shall be applied over the finished plastic surfaces without kerfing, routing, or "letting-in" of moldings or trim.

3.2 INSTALLATION

A. General: All in strict accordance with the approved Shop Drawings, Contract Drawings and referenced W.I.C. Standards. Cabinets and countertops shall be installed by the manufacturer or by an experienced person under the supervision of the manufacturer.

B. Preparations: All grounds, backing, blocking, furring and other anchorages required for cabinet and countertop installation which become an integral part of a floor, wall or partition shall be in place ready to receive the cabinets and countertops. Start of installation of Work of this Section shall imply Contractor's (manufacturer's acceptance of job conditions).

C. Inspection: Manufacturer or Installer of cabinets and countertops shall examine the areas and conditions under which Work of this Section will be installed.

1. Correct conditions detrimental to timely and proper installation of cabinets and countertops.

2. Do not proceed until detrimental conditions have been corrected at no added cost to the City.

3. Start of installation of cabinets and countertop shall imply Contractor's acceptance of job conditions.

D. Cabinet Installation:

1. All cabinet units delivered to the job-site shall bear the W.I.C. grade stamp verifying compliance with the specified W.I.C. Type II construction grade B.

2. Cabinets: Set all base and wall cabinets level and plumb and secure to walls. All screws shall have finish washers.

3. End Panels and Fillers: Furnish to match exposed surfaces and accurately scribe to walls and neatly and securely fit to cabinets.

4. Matching Lacquered Wood Molds: Fasten to cabinets when required for scribing purposes and at top of cabinets as indicated.

5. Completion: Upon completion of the installation, cabinets including drawers and shelves shall be cleaned. Doors and drawers shall operate easily and freely.

6. Install all hardware items in accordance with approved Shop Drawings.

7. Scribe plastic laminated cabinets directly to wall. Do not use scribe moldings or fillers.

E. Laminated Plastic Countertop Installation:

1. Secure countertop to base cabinets in level and aligned position with minimum four No. 10 x 1-1/4" round head wood screws per base cabinet. Provide additional screws at the front and back of each cabinet on both sides of countertop joints.

2. Countertop Joints: Make flush and hairline by cutting back each joint edge to 85 degrees and secure together using adequate number of "trite joint" fasteners or approved equal at 3-inch centers.

3. Join countertop surfaces to adjacent vertical wall or other surfaces and fabricate edges to conform to manufacturer's recommendations or as otherwise detailed.

4. Where no back or side splashes are on countertops accurately scribe countertop edges to wall surfaces and caulk.

3.3 COMPLIANCE

A. Performance of Work: The City reserves the right to request and pay for an inspection by a W.I.C. representative to determine that Work of this Section has been performed in accordance with the specified standards.

B. Non-Conforming Work: If the W.I.C. representative determines that Work of this Section does not comply, Contractor shall immediately remove non-conforming items and replace it with complying items at no added cost to the City and reimburse the City for the cost of the inspection(s).

3.4 CLEAN-UP

A. Comply with applicable provisions of Section 01710 - CLEANING of DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

B. Visually inspect each installed cabinet unit, including shelves, drawers and countertops and thoroughly clean all surfaces using cleaning materials recommended by the manufacturer of the finish being cleaned and carefully adjust all operating components for optimum operation of drawers and doors.

C. Remove all excess materials, equipment, rubbish and debris from the job-site. All areas in the structure used by the Contractor to be left in a clean, acceptable and safe condition.

(END OF SECTION)

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SECTION 07600

FLASHING AND SHEET METAL

PART ONE - GENERAL

1.1 DESCRIPTION

A. Provide and install all flashings and sheet metal work indicated on the Contract Drawing and hereinafter specified, not specifically described in other Sections these Specifications, but required to prevent penetration of water through the exterior shell of the building.

B. Related Sections**:**

1. Documents affecting work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS and Sections in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

2. Miscellaneous metal fabrications in Section 05500.

3. Waterproofing in Section 07290.

4. Single-ply roofing in Section 07551.

5. Caulking and sealants in Section 07920.

6. Louvers for metal doors in Section 08110.

7. Field painting in Section 09900.

8. Sheet metal Work for Plumbing in DIVISION 15.

9. Sheet metal Work for Heating, Ventilating and Air Conditioning, including range hood, in DIVISION 15.

10. Sheet metal work for Electrical Work in DIVISION 16.

1.2 QUALITY ASSURANCE

A. **Standards:** In accordance with best trade practice, Architectural Sheet Metal Manual, latest edition by the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA).

B. **Manufacturer's Qualifications:** Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the City Engineer.

C. **Installer Qualifications:** Use adequate numbers of skilled installers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section or as required in the .

D. Standard commercial items may be used for flashing, trim, reglets, and similar purposed provided such items meet or exceed the quality standards specified.

E. Current recommendations of the National Roofing Contractor's Association (NRCA) Roofing and Waterproofing Manual latest edition.

1.3 SUBMITTALS

A. **General:** Comply with applicable provisions in ARTICLE 10 - SUBMITTALS in DIVISION 1-GENERAL REQUIREMENTS of these Specifications for review, approval or verification.

B. **Manufacturer's Data:**

1. Complete materials list of all items proposed to be furnished and installed under this Contract.

2. Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

3. Shop drawings in sufficient detail to show fabrications, installation, anchorage, and interface of the work of this Section with the work of adjacent trades:

4. Manufacturer's recommended installation procedures when approved by the City Engineer will become the basis for inspecting and acceptance or rejection of actual installation procedures used on the work.

C. **Samples:** To be provided to the City Engineer for approval of surface finish or texture and shape as indicated on the construction documents.

1.4 COORDINATION

Coordinate work of this Section with that of roofing and waterproofing and dampproofing trades so that all sheet metal work and related items will provide waterproof connections.

1.5 SHOP INSPECTION

Required: On all shop fabricated items if called for on the reviewed shop drawings, at no cost to the Contractor or his Subcontractor.

1.6 SHOP PAINTING

A. **Required:** On all uncoated ferrous metal. Galvanized work or stainless steel need not be shop painted.

1. Full prime coating completely covering the metal surfaces using specified paint primer.

2. On all surfaces accessible after fabrication and erection apply at least one coat.

3. Apply at least two coats on all surfaces inaccessible after fabrication and

erection.

1.7 PROTECTION (PRODUCT HANDLING)

Adequately guard against damaging sheet metal work by walking on or placing of other materials thereon during construction operations. After completion of work of this Section, replace damaged work and remove stains and debris. Replace or repair work of other trades damaged during this Section's work operations to the full satisfaction of the Inspector at no added cost to the City. Patched or defective work will not be accepted. Follow manufacturers guidelines paying careful attention to the zinc products.

1.8 WARRANTY

A. Provide two year warranty covering materials and installation of sheet metal and that the system shall be watertight and weatherproof in accordance with provisions of ARTICLE 16 in the GENERAL REQUIREMENTS of these Specifications.

B. Manufacturer's recommended installation procedures which, when approved by the City Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART TWO - PRODUCTS

2.1 MATERIALS AND GAGES

Where sheet metal is required, and no material or gage is indicated on the Contract Drawings or in any other related Section of the written specifications, provide the highest quality and gage commensurate with the referenced standards.

2.11 ZINC

Provide sheet metal flashing as noted on the construction documents and as noted in related Sections.

2.2 GALVANIZED IRON

A. **General:** Provide sheet metal as noted on the construction documents or in absence of notes thereof of sheet iron of a standard brand of open-hearth copper-bearing steel, copper-molybdenum iron, or pure iron sheets.

B. **Zinc Coating:**

1. Where galvanizing is required, provide zinc coating by hot-dip galvanize on all surfaces.

2. Weight: Provide not less than 1-1/4 oz. per sq. ft., not more than 1 2 oz. per sq. ft. to surface required to be galvanized.

3. Comply with ASTM A526-90, G90 Commercial hot-dip galvanizing.

C. **Gauges:** As indicated on the drawings and in these Specifications, understood to be U.S. Standard Gauge, minimum No. 20 unless otherwise indicated or noted.

2.3 STAINLESS STEEL: 18-8 alloy Type 302 or 304 (where required to be welded) with No. 4

finish, except for wall coverings to have No. 26 finish.

2.4 LEAD: Pure sheet lead weighing 4 pounds per square foot. Federal Specification QQ-L-201, Grade B or ASTM 749, Type 51121.

2.5 ALUMINUM: ASTM B209, Alloy 3003-414, unless otherwise noted on the Contract Drawings or specified herein, gages as indicated or noted on the Drawings.

2.6 RELATED MATERIALS

A. Solder: Where solder is required, comply with ASTM B32, composed of not less than 40% block tin, with manufacturer's name, class and grade thereon. Federal Specification QQ-S-571.

B. Flux: Muriatic acid killed with zinc or an approved brand of soldering paste. After soldering, was off remaining acid flux with a solution of soap and 5 to 10 percent washing soda. Use a special flux for stainless steel.

C. Tin: Best grade, pure and new block tin for tinning irons, seams and other items.

D. Flashing Cement: Neoprene, ASTM D412, trowel grade having 500 pound psi tensile strength and 250 percent elongation.

E. Fastenings: Bolt, screws and/or nails as required for best workmanship.

2.7 NAILS, RIVETS, AND FASTENERS

A. Use only soft iron rivets having rust-resistive coating, galvanized nails, and cadmium plated screws and washers in connection with galvanized iron and steel.

B. Use same metal fasteners as metal being installed.

C. Use annular type nails for securing sheet metal to wood.

D. Secure stainless steel items with stainless steel fasteners.

E. Use soft iron rivets with rust-resistive coating with ferrous metals.

F. Use aluminum, galvanized or cadmium plated fasteners for best appearance and holding power capacity for securing aluminum items.

2.8 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the City Engineer.

B. Paint Primer: (for uncoated ferrous metals) Rust-Oleum Corp. "X-60 Base Metal Red Primer" or equal.

C. Roofer's Cement: Federal Specification SS-C-153, Type I, black. ASTM D-2822, Asphaltic.

D. Adhesive: As recommended by the manufacturer.

PART THREE - EXECUTION

3.1 SURFACE CONDITIONS

General: Examine the areas and conditions under which work of this Section will be performed. Surfaces to receive sheet metal shall be smooth, sound, clean and dry. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until detrimental conditions are corrected.

3.2 WORKMANSHIP

A. General:

1. Form sheet metal accurately and to the dimensions and shapes required, finishing molded and broken surfaces with true, sharp, and straight lines and angles and, where intercepting other members, coping to an accurate fit and soldering securely.

2. Coordinate work of this Section with work of other Sections. Verify placement of wood blocking, nailers, inserts, nailing strips, cants, etc.

B. Fabrication: Form, fabricate, and install sheet metal so as to adequately provide for expansion and contraction in the finished work.

1. Accurately form items to required shape and size. Molded or braked members to have true, straight, and sharp lines and angles. Cope members to accurately fit and be securely soldered at intersections.

2. Turn back all exposed edges 2-inch unless otherwise noted on the drawings or specifically permitted by the City Engineer.

3. Adequately provide for expansion and contraction in the completed work.

4. Take care of preserve coatings; avoid scaring or breaking of coating.

5. Accurately install work as hereinafter specified and as indicated on the Contract Drawings.

C. Weatherproofing:

1. Finish watertight and weathertight where so required.

2. Make lock seam work flat and true to line, sweating full of solder.

3. Make lock seams and lap seams, when soldered, at least 2" wide.

4. Where lap seams are not soldered, lap according to pitch, but in no case less than 3".

5. Make flat and lap seams in the direction of water flow.

D. Joints:

1. Join parts with rivets or sheet metal screws where necessary for strength and stiffness.

2. Provide suitable watertight expansion joints for runs of more than 40'-0", except where closer spacing is indicated on the Drawings or required for proper installation.

E. Nailing:

1. Whenever possible, secure metal by means of clips or cleats, without nailing through the exterior metal.

2. In general, space nails, rivets, and screws not more than 8" apart and, where exposed to the weather, use lead washers.

3. For nailing into wood, use barbed roofing nails 1-1/4" long by 11 gage.

4. For nailing into concrete, use drilled plugholdes and plugs.

3.3 EMBEDMENT

Embed metal in connection with roofs in a solid bed of sealant, using materials and methods described in Section 07920 Caulking and Sealing of these Specifications or other materials and methods approved in advance by the City Engineer.

3.4 SOLDERING

A. General:

1. Thoroughly clean and tin the joint materials prior to soldering.

2. Perform soldering slowly, with a well heated copper, in order to heat the seams thoroughly and to completely fill them with solder.

3. Perform soldering with a heavy soldering copper of blunt design, properly tinned for use or as required by specific material being worked on and conforming with industry standards.

4. Make exposed soldering on finished surfaces neat, full flowing, and smooth.

5. After soldering operations, thoroughly acid flux with a soda solution.

3.5 TESTS

Upon request of the City Engineer, demonstrate by hose or standing water that the flashing and sheet metal are completely watertight.

3.6 DISSIMILAR MATERIALS PROTECTION

Separate aluminum or copper or zinc from contact with cementitious materials and other metals (except stainless steel and/or zinc) with a heavy coat of bituminous paint, liquid neoprene, or chromate gasketing or priming.

3.7 REPAIR OF DAMAGED GALVANIZED SURFACES

A. Clean and pretreat with a phosperic or vinyl resin primer.

1. Metal Surfaces to be Painted. Apply coat of zinc dust-zinc oxide primer, Federal Specification TT-P-641d.

2. Metal Surfaces to be left unpainted: Coat with a 90 percent zinc content paint; PRC cold galvanizing process, "Galvicon" or "Drygalv".

3.8 ROOFING SHEET METAL WORK (As applicable)

A. **General:** All surfaces to which sheet metal is applied or attached to be free from defects of any kind and brushed clean; set flush or remove any projections, nails, fins, etc., as required for neat, secure, and waterproof installation.

B. **Reglets and Counterflashings:**

1. Materials: 24-gauge galvanized sheet iron or steel of gage noted on the Contract Drawings.

2. Products: Metal spring-lock flashings by Metco Metal Products Co., Los Angeles, California, or Lane-Aire Permanent Flashings by Lane-Aire Mfg. Co., Los Angeles, California, or "Spring Lock" Reglet and Counterflashing System by Fry Reglet Corp., Los Angeles, California.

3. Installation: As per manufacturer's approved shop drawings and printed instructions.

4. Shop Drawings: Required.

C. **Flashings for Overflow Drains Passing Through Roof:**

1. Material: 20-gauge galvanized sheet steel.

2. Fabrication and Installation: Overflow drain to extend (per plumbing code) inches above roof surface. Flashings to be sized to properly fit around overflow drain pipe and be sealed watertight. Flashing flange to extend at least 6-inches in all directions and be embedded in roofing bitumen over the roof insulation under the roofing felts.

D. **Copings:**

1. Materials: 0.7 mm minimum flashing thickness.

2. Fabrication: To indicate size and profile.

3. Installation: Secure in place, level straight and aligned. Use zinc anchors for concealed fastenings wherever possible. Where exposed fastenings are necessary, use screws with lead washers.

E. **Overflow Scupper:**

1. Material: 20-gauge galvanized sheet iron.

2. Fabrication and Installation: As indicated on the drawings, install from backside, of parapet wall, with interior flanges not less than 4 inches wide. Extend bottom flange to interleave with roofing felts and embed in asphalt. Turn top flange back against wall. Seal all exposed flanges at wall with specified caulking.

G. Flashings for Electrical Conduit and Antenna Passing Through Roof:

1. Materials: 20-gauge galvanized sheet metal.

2. Fabrication and Installation: Extend sleeve minimum 6-inches above roof surface of size to properly fit the conduit or antenna and sealed watertight. Extend 4-inch roof flanges in all directions and embed in roofing bitumen.

H. Equipment Platform Covers:

1. Material: Minimum 20-gage galvanized sheet steel, except as otherwise noted on the drawings.

2. Fabrication and Installation: Single sheet to cover platform, with turned down aprons (with drip edges) secured in place with concealed clip anchors, with corners mitered and soldered and made watertight, and with smooth top surfaces without defects. Painting specified in Section 09900.

3.9 METAL LOUVERS

A. Required: Within wall openings and as shown and detailed on the drawings.

B. Referenced Standards:

1. ASTM A526 - Steel sheet, zinc-coated (galvanized) by Hot-Dip Process, Commercial Quality.

2. AMCA 500 (Air Movement Control Association) Test method for louvers.

C. Performance Requirements: Louvers to withstand the effects of wind and normal thermal movement without damaging louver components, fasteners and anchors.

D. Submittals, Quality Assurance and Product Handling: Conform to provisions hereinbefore specified in this Section.

E. Field Measurements: Verify sizes of openings prior to fabrication and indicate measurements on the Shop Drawings.

F. Coordination: Required so as not to delay contracted work operations.

G. Materials:

1. Galvanized steel sheet.

2. Fasteners: Same basic metal and alloy of the louvers required for exterior installation.

3. Insect Screens: 2-inch No. 23 gauge galvanized steel wire screen cloth.

H. Fabrication:

1. Conform to the design, size and materials indicated on the drawings.

2. Factory assemble louvers to minimize assembly at the job-site.

3. Louver blades to be equally spaced and at 45 degrees angle.

4. Fabricate frames to fit tightly within wall openings.

5. Provide sill extensions of same material as louvers where indicated for providing drainage to exterior and prevent water penetration to interior.

6. Secure screens to the interior side of louver assembly with stainless steel machine screws at each corner and at intermediate locations as may be located on the approved shop drawings.

7. Provide manufacturer's standard A Fluorocarbon 2-coat thermal cored system finish, composed of specially formulated inhibitive primer and a fluorocarbon color top-coat containing not less than 70% polyvinyldene resin by weight. Color and sheen as selected by the City Engineer.

I. Installation:

1. Located and install louver units within wall openings in plumb, level and in proper alignment with adjacent work.

2. Conceal anchorages and make connections weathertight.

3. Protect louver assemblies from damage of any kind during construction operations of the building as devised by the louver manufacturer and remove such protections at time of substantial completion of Contracted Work.

4. Restoration required for louvers damaged during installation operations and other Contracted Work as approved by the City Engineer at no added cost to the City.

3.10 ROOF SCUTTLE:

A. Type: Laine-Air Model No. 3844, Inryco/Milcor Model "R", equivalent model by Wasco Products, Inc., or equal.

B. Construction: 14 gauge galvanized iron, all-welded construction and of size indicated on the drawings.

1. Cover to have minimum 1" thick fiberglass insulation board and metal liner.

2. Curb 8"minimum high with 3-1/2" minimum flanges, integral cap flashing, and 1" thick rigid fiberglass insulation on the exterior surfaces.

3. Provide cover with a lock release handle on exterior with padlocking provisions on in side; with heavy pintle hinges and compression spring

operation, hold-open arms, and grip handle.

4. Roof scuttle assembly to have factory-applied prime coat.

C. **Installation:** Securely nailed in position on wood curb, as indicated on the drawings and in accordance with manufacturer's recommendations and approved shop drawings.

MISCELLANEOUS

A. Provide all sheet metal work not specifically described or indicated on the drawings.

NOTE: Specifier to specify the following as applicable, in detail:

1. Kitchen Hood
2. Roof hatch.
3. Metal louver for wood doors
4. Wall louvers
5. Gravity vents
6. Stainless steel countertop, sinks, splashes and wall coverings.
7. Splash pans
8. Downspouts
9. Gutters

3.11 TESTS

Upon Request of the City Engineer: Demonstrate by hose or standing water that flashings and sheet metal work are completely watertight and weathertight.

3.12 CLEANING AND PROTECTION

A. **General**: Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. **Protection**: Advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Completion.

(END OF SECTION)

SECTION 07920
CAULKING AND SEALANTS

PART ONE - GENERAL

1.1 SUMMARY

A. Throughout the Contracted Work furnish all tools, equipment, materials, and supplies and perform all labor to provide a positive barrier against passage of air or moisture from the exterior.

1. Caulk and Seal around entire exposed perimeters of all penetrations and openings through walls and for slabs on grade where any item is installed in the opening or through the penetrations.

2. Caulk and seal the sheet metal flashings and other items penetrating through the roof.

B. **Related Sections:**

1. Documents affecting work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS and Sections in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

2. Masonry Work in Division 4.

3. Waterstops and expansion joint fillers for structural joints in Sections of Division 7 - THERMAL AND MOISTURE PROTECTION.

4. Above Grade Waterproofing Sealer Treatment in Section 07210.

5. Flashing and Sheet Metal Work in Section 07600.

6. Mosaic Tile, Ceramic Tile and Quarry Tile in Section 09300.

7. Metal Doors and Frames in Section 08100.

8. Aluminum Windows in Sections 08520.

9. Steel Windows in Section 08510.

10. Firestopping in Section 07270.

11. Waterproofing in Section 07290.

1.2 QUALITY ASSURANCE

A. **Reference Standards:**

1. All materials specified herein shall conform to the requirements of the publications hereinafter listed, to the extent that the requirements therein specified are not in conflict with the provisions of this Section.

2. References to "ANSI Standards" shall mean the American National Standards Institute Publication A116.1-1967 "Two Component Elastomeric Sealing Components for the Building Trade".

B. **Qualifications of Manufacturers:** Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Project Manager. Manufacturer shall have been on business of manufacturing the specified types of Sealants for not less than 10 years.

C. **Qualification of Installers:**

1. Installers shall be thoroughly trained and experienced in the necessary skills and be thoroughly familiar with the specified requirements and shall have a minimum of 5 years experience installing caulking and sealants.

2. Installers shall be completely familiar with the joint details shown on the Contract Drawings and installation requirement hereinafter specified in this Section.

1.3 SUBMITTALS

A. **Manufacturer's Data:** Comply with provisions in the SUBMITTALS, Article 10 in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

1. Submit within 45 days after execution of the Contract:

   a. A complete materials list showing all items specified to be furnished and installed under this Section.

   b. Sufficient data to demonstrate that all materials meet or exceed the specified requirements.

   c. Specification, installation instructions and general recommendations from manufacturer showing procedures under which it is proposed that materials will be installed.

   d. Upon approval by the Project Manager, the proposed installation procedures will become the basis for inspection and acceptance or rejection of actual installation procedures used on the work.

B. **Samples**: Submit separate samples for each type of caulking or sealant material, together with manufacturer's data, all as necessary to fully demonstrate functional and service ability characteristics that comply with the specified requirements. Obtain approval prior to delivery of materials to the job-site for material substitutions. Samples of the sealant in concrete construction expansion joints shall be applied between 1-inch thick concrete blocks to the full size and shape of sealant in the joints indicated. Conform to the provisions of MATERIALS, SAMPLING AND TESTING of Section 31 in the GENERAL CONDITIONS of these Specifications.

1.4 GUARANTEE

A. **Guarantee:** The guarantee period specified in Section 28 of the GENERAL CONDITIONS of these Specifications shall hereby be extended to two (2) years. Contractor shall provide the Project Manager with a written guarantee against any inherent or developed defects in material or in installation and file five (5) copies of same with the Project Manager as a prerequisite for final acceptance of the work.

B. Warranty shall further state that installed sealants are warranted against the following:

1. Water leakage through sealed joints.

2. Adhesive or co-adhesive failure of sealant.

3. Staining of adjacent surfaces caused by migration of sealant or primer.

4. Chalking or visible color changes of the cured sealant.

1.5 DEFECTIVE WORK

A. Work will be adjudged defective by the Project Manager if leakage results from failure of sealant or caulking to bond to adjacent work or if it hardens, cracks, shrinks, or runs or stains adjacent work.

B. Remove defective work, clean joints and install new caulking and/or sealant materials as approved by the Project Manager at no added cost to the City.

1.6 PRODUCT HANDLING

A. **Delivery and Storage:** Deliver all materials of this Section to the job-site in their original unopened or unbroken containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturer concerning shelf life, temperature humidity, ensuring the fitness of the material when installed. Do not retain on the job-site any material which has exceeded the manufacturer's recommended shelf life.

B. **Protection:** Use all means necessary to protect the materials of this Section before, during and after installation and to protect work and materials of other trades.

C. **Replacements:** In the event of damage, immediately make all repairs and replacements necessary to the approval of the Project Manager, at no added cost to the City.

PART TWO - PRODUCTS

2.1 GENERAL

Materials shall conform to the referenced standards specified hereinafter, to the extent that they do not conflict with requirements of this Section.

2.2 SEALANTS

A. **Type of Sealants**:

1. Asphalt Sealant shall conform to Federal Specifications SS-S-1614 (1), EDOCO Technical Product No. 3060 or Burke's No. 400 Sealing Compound.

2. Elastomeric Joint Sealant: Federal Specification TT-S-00227E (3) for 2-part rubber base sealant or Federal Specification TT-S-230A for 1-part synthetic rubber base sealant.

    a. Use "Class A" sealant for non-traffic bearing horizontal surfaces.

    b. Use "Class B" sealant for vertical surfaces.

B. **Sealant Colors:**

1. Colors for each sealant installation will be selected by the Project Manager from standards colors normally available from the manufacturer. Should such standard

color is not available from the approved manufacturer except at additional charge, provide all such colors at no additional cost to the City.

2. In concealed installations and in partially or full exposed installations, where so approved by the Project Manager, use standard gray or black sealant.

2.3 CAULKING MATERIALS

A. **Caulking Compound:** W.R. Grace & Co. "Hornflex Standard Gun Grade" or "Thiokol" approved polysulfide sealant for all other joints including miscellaneous vertical joints, exterior door, window and louver frames, etc.

B. **Caulking Stop:** Polyurethane for open joints of size 1-1/2 times the joint width opening and depth no more than 3/8 inch for sealant bite.

C. **Oakum:** Untarred, picked (loose), fine hemp fibers.

***2.4 BACKUP MATERIALS FOR SEALANTS**

A. **Primers and Bond Breakers:** As recommended by the sealant manufacturer in their published instructions.

B. **Backer Rods and Other Backing Materials:** Type as recommended by the Sealant manufacturer.

1. Closed-cell resilient urethane or polyvinyl chloride foam;

2. Closed-cell polyethylene foam;

3. Closed-cell sponge of vinyl or rubber;

4. Polychoroprene tubes or beads;

5. Polyisobuthlene extrusion;

6. Oil-less dry jute.

C. **Filler for Use with Asphalt Sealant:** Asphalt impregnated, as per ASTM D 1715.

D. **Filler of Use with Elastomeric Sealer:** Plain type as per ASTM D 1752 Type II or Type III.

E. **Surface Covers:** (Where Simple bond-prevention is necessary).

1. Polyethelene Tape, pressure-sensitive adhesive, required only to hold tape to the construction material.

2. Aluminum foil conforming to MIL-SPEC-MIL-A-148E

3. Heavy wax paper conforming to Fed. Spec. UU-P-270

F. **Other Materials:** All other materials, not specifically described but required for complete and proper caulking and installation of sealants, shall be first quality of their respective kinds as selected by the Contractor subject to the approval of the Project Manager.

PART THREE - EXECUTION

3.1 INSPECTION AND INSTRUCTIONS

A. **Manufacturer's Inspection:** Just prior to start of application of each type sealant, provide initial instructions at start of work in order to verify if physical conditions are proper in order to properly instruct applicators and that supervision provided is by qualified personnel handling such materials.

B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until detrimental conditions have been corrected.

C. Contractor to notify the manufacturer at least 72 hours prior to time inspection is required.

D. Failure or refusal of manufacturer to provide inspection and supervision shall constitute grounds for non-acceptability of materials manufactured, even though specified hereinafter in this Section.

E. Applicator shall report to the Contractor any detrimental conditions impairing the proper installation of such materials. Contractor shall correct all such detrimental conditions to the full satisfaction of the Project Manager at no added cost to the City.

3.2 WORKMANSHIP

A. **Application:** In strict accordance with ASTM C-962 and ASTM C-1193 and manufacturer's instructions and supervised by the manufacturer's approved applicator. Manufacturer to provide field assistance to insure proper mixing of sealants, cleaning of surfaces, and application of materials.

B. **Cleaning:** Immediately remove caulking and/or sealant materials from adjacent surfaces not specified to receive sealant, and/or caulking materials. Leave work in a condition satisfactory to the City Engineer or the Consultant.

C. **Protection:** Carefully protect adjoining surfaces from staining. Carefully provide necessary strippable masking where required to limit extent of caulking and sealant material application.

3.3 PREPARATION (As Applicable)

A. **Joint Cleaning:** Joints shall be free of foreign materials full depth of joint. Joint surfaces to be clean, dry and free from grease, oil, wax or other foreign matter, which would tend to destroy or impair adhesion. Clean surfaces in accordance with manufacturer's instructions.

B. **Priming:** Joint surfaces to be primed in accordance with sealant manufacturer's instructions.

C. **Steel Surfaces:**

1. Steel surfaces in contact with sealant shall be sandblasted or scraped or wire-brushed to remove mill scale.

2. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

3. Remove protective coatings on steel by sandblasting or by a solvent that leaves no residue.

D. **Aluminum Surfaces:**

1. Surfaces in contact with sealant shall be cleaned of temporary protective coatings, dirt, oil and grease.

2. When masking tape is used as a protective cover, remove tape just prior to application of sealant.

3. Use only such solvents to remove protective coatings as recommended for that purpose by the aluminum manufacturer, and which are non-staining.

E. Concrete and Ceramic Tile Surfaces:

1. All contact surfaces shall be dry, sound, well brushed and wiped free from dust.

2. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

3. Treated surfaces shall have the surface treatment removed by sandblasting or wire brushing.

4. Remove all laitance and mortar from the joint cavity.

5. Where backstop is required, insert an approved backup material into the joint cavity to required depth.

3.4 INSTALLATION OF BACKUP MATERIAL

Use only the backup materials recommended by the Sealant manufacturer and approved by the Project Manager for the particular installation, compressing the backup material 25% to 50% to secure a positive and secure fit. When using backup of tube or rod stock, avoid lengthwise stretching of material. Do not twist or braid hose or rod backup stock.

1. Sealant bite 1/8" to 2" but never more than 2 to 1/4 of joint width.

2. Use foam backup rod or bond breaker tape to minimize joint configuration.

3.5 PRIMING

Use only the primer recommended by the Sealant Manufacturer and approved by the Project Manager for the particular installation. Apply primer in strict accordance with manufacturer's recommendations as approved by the Project Manager.

3.6 SCHEDULE

A. Elastomeric Caulking Joint Compound: Use in expansion and contraction joints where limited movement is anticipated and areas where general caulking is required.

B. Multi-Part Sealant: Use in expansion and construction joints and all joints in all concrete walking surfaces where indicated or noted on the Contract Drawings and/or specified in the Specifications.

3.7 INSTALLATION SEALANTS

A. General: Prior to start of installation in each joint, verify the joint type according to Contract Drawing Details and that the required proportion of width to depth of joint has been secured.

B. Equipment: Apply sealants under pressure with hand or power actuated gun or other appropriate means. Guns shall have nozzle of proper size and shall provide sufficient pressure to completely fill joints as designed.

C. Application:

1. Caulking performed under other Sections of these Specifications shall comply with all

of the following requirements unless specific changes are specified in those other Specification Sections.

2. Fill all joints where no backing exists partially with filler material (that is compatible with specified caulking or sealant material).

   a. Metal to Metal Joints: Minimum joint width of 1/4-inch.

   b. All Other Joints: Maximum 3/4-inch, unless otherwise detailed.

   c. Minimum joint depth shall be 1/4-inch, for metal joints; 2-inch for concrete, masonry, and plaster work joints.

3. Apply sealants under sufficient pressure to completely fill all voids.

4. Apply non-sagging type sealants in vertical joints.

5. Apply self-leveling type sealants in horizontal joints.

6. Apply non-tracking sealants, having a shore hardness range of 40 to 55, to concrete, masonry or tile expansion joints, subject to foot or vehicular traffic.

7. Finish all exposed joints smooth, flush with surfaces, or recessed as shown.

8. Provide strippable masking for factory applied sealing materials to prevent dirt contamination until parts are assembled.

9. Tool all joints to the profile shown on the Contract Drawing Details.

10. Caulk and seal open joints left between openings and both sides of frames on the exterior of building and all other joints between building units or materials where Contract Drawings call for caulking and/or sealants, interior and exterior or where necessary to completely seal off joints against passage of water, air or dust.

D. Cleaning Up:

1. Remove masking tape immediately after joints have been tooled.

2. Clean adjacent surfaces free from sealants as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

3. Remove excess caulking and sealants from adjacent surfaces of joints, leaving the work in a neat and clean condition.

E. Concrete Expansion and/or Contraction Joints: Construct such joints as indicated on the Contract Drawings and specified in DIVISION 3 - CONCRETE.

(END OF SECTION)

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SECTION 08110
METAL DOORS AND FRAMES

PART ONE - GENERAL

1.1 DESCRIPTION

A. Provide all labor, materials, and equipment necessary for metal doors and frames where shown on the contract drawings and specified herein.

B. **Related Work:**

1. Work of this Section shall comply with the Contract Documents including, but not necessarily limited to, General Conditions and the General Requirements.

2. Finish Hardware in Section 08710.

3. Glass and Glazing in Section 08800.

4. Lath and Plaster in Section 09200.

5. Painting in Section 09900.

6. Plumbing and Mechanical in DIVISION 15.

1.2 QUALITY ASSURANCE

A. **Qualifications of Manufacturer:** Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Project Manager or Inspector and a Los Angeles City Building and Safety licensed fabricator.

B. **Qualifications of Installer:** Use adequate numbers of skilled installers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

C. **Single Source:** All work of this Section shall be produced by a single manufacturer unless otherwise approved by the Project Manager or Inspector.

D. **Shop Inspection:** Required in accordance with General Conditions.

1.3 SUBMITTAL

A. **Manufacturer's Data:** Submit to the Project Manager or Inspector after execution of Contract, in accordance with provisions in the SUBMITTALS, Article 10 in DIVISION 1-GENERAL REQUIREMENTS of these Specifications, the following:

1. Complete materials list of all items proposed to be furnished and installed under this Section.

2. Manufacturers' specifications and other data required to demonstrate compliance with the specified requirements.

3. Shop Drawings minimum 1/4-inch scale showing details of each frame type, elevations of each door design type, details of all openings, and all details of construction, installation, and anchorage.

4. Manufacturer's recommended installation procedures.

   NOTE: The manufacturer's recommended installation procedures, when approved by the Project Manager or Inspector, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the Work.

5. Color Sample.

6. Gauge Level.

7. Maintenance Material.

1.4 PRODUCT HANDLING

A. **Delivery:** Deliver, store and handle metal doors and frames in a manner to prevent damage or deterioration.

B. **Packaging:** Carefully package metal doors and frames in shipping containers to prevent damage to doors or marring the finish during shipping and handling. Identify shipping containers relative to door number and location.

C. **Storage:** Store Doors in an upright position inside the building outside of weather exposure until installed, where directed by the Project Manager or Inspector at least 1-inch or more off the floor or ground and at least 1/4-inch between individual doors.

D. **Protection:** Use all means necessary to protect materials of this Section before, during and after installation and to protect installed work and materials of other trades.

E. **Clean Up and Touch Up:** Abraded, scarred or rusty areas of doors and/or frames shall be cleaned up and touched up with specified coating system immediately upon detection, subject to the approval of the Project Manager or Inspector.

F. **Replacements:** In the event of damage, immediately make all replacements and/or repairs necessary to the approval of the Project Manager or Inspector, at no added cost to the City.

1.5 GENERAL REQUIREMENTS

A. **Labeled Doors and Frames:** Construction and necessary built-in hardware shall conform to NFPA Standards and Uniform Building Code with the Los Angeles City 2001 Amendments. Both doors and frames shall bear Underwriters, Inc. label for the rating indicated on the "Door Schedule" on the Contract Drawings.

B. **Applicable Regulations:** All exterior metal doors must comply with air infiltration standards

as per California Energy Conservation Standards, Title 24, Part 6, Division T-20, Chapter 2, Subchapter 4 of the California Administrative Code.

C. **Field Measurements:** Verify all opening dimensions and field conditions at the job-site prior to submittal of Shop Drawings and fabrication.

D. **Clean Up:** In addition to provisions in Article 7 - REMOVAL, CLEANING, AND DEMOBILIZATION of Division 1 - GENERAL REQUIREMENTS upon completion of work of this Section, remove all tools, equipment and rubbish resulting from this work from the premises and leave the work areas in a safe and clean condition.

PART TWO - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Amweld Building Products, Inc., (626) 968-1866.

B. Curries Mfg. Inc., (909) 371-5600.

C. Fleming, (909) 303-2916.

D. Krieger Steel Products Company, (562) 695-0645.

E. Republic Builders Products Corporation, (562) 404-2161.

F. Steelcraft, (909) 620-4020.

G. Titan Metal Products, Inc., (916) 920-2555.

2.2 MATERIALS

A. **Basic Materials for Doors and Transom Panels:**

1. Cold rolled steel sheets of stretcher-leveled flatness, commercial quality conforming to ASTM A366 and A568 and Commercial Standards, CS 242-62 except where more stringent construction is required to satisfy U.L. labeling requirements.

2. Exterior doors shall be fabricated of sheet steel having a zinc coating of 1.25 ounces per square foot on each side before assembly.

3. Filler for labeled doors shall be material as approved by Underwriters Laboratories for fire rated doors. Other metal doors shall be filled with manufacturer's standard sound deadening material.

4. Paint: Rust-inhibitive primer, Federal Specification TT-P-645 which shall be baked on applied after assembly.

B. **Basic Materials for Frames:**

1. Door Frames: 14-gage (0.0747-inch thick) cold-rolled sheet steel of stretcher-leveled

flatness conforming to ASTM A366-72.

2. Paint: Rust-inhibited zinc chromate primer, Federal Specifications TT-P-645 which shall be applied after assembly.

C. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dipped galvanized items to be built into exterior wall, comply with ASTM A-153, Class C or D as applicable.

2.3 FABRICATION

A. Construction Standards for Doors and Frames: Conform to Commercial Standards, CS242-62 except where more stringent construction is required to satisfy U.L. labeling requirements.

B. General Construction:

1. Construct metal doors and pressed metal frames in accordance with Contract Drawing details and reviewed Shop Drawings. Provide U.L. label on doors at time of delivery to the job-site. U.L. label shall be as noted on the "Door Schedule" on the Contract Drawings.

2. Fabricated steel door and frame units to be rigid, neat in appearance, free from defects, warp or buckles and metal accurately formed to required sizes and profiles.

3. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at the job-site.

C. Door Fabrication:

1. Type: Flush, hollow steel doors, security type with suitable filler and U.L. Label.

2. General: In accordance with details on the Contract Drawings and reviewed Shop Drawings.

3. Metal Covering: Two formed sheets on each side of door not thinner than 12 gage steel, rigidly connected and reinforced with 18-gage steel vertical stiffeners running full length of door, approximately 6-inches on center.

4. Door Top and Bottom: Closed and reinforced with channel member running full width of door. Provide top edges of doors with channels welded in with web flush with upper edges of doors with no depression to eliminate accumulation of water and provide protection against weather and penetration of water to interior of the door.

5. Door Edges and Hardware Reinforcements: Join and reinforce edges with 9-gage minimum steel strip, offset at hinge locations. Drill and tap to receive mortise hinges. Located bottom of bottom hinge 10-inches above door bottom and top of top hinge 5-inches below top of door, and center hinge midway between top and bottom hinges. Reinforce at locksets, panic bars, closers, and remainder of specified hardware; use specified minimum 11-gauge material.

6. Light Panels: Manufacturer's standard design; removal stops secured with rust-resistant oval-head countersunk screws; sizes as indicated in Door Schedule on the Contract Drawings; build into door neatly, plumb and square, and accurately off-centered.

7. Cutouts: Make neatly to indicated size to receive louvers and lights with integral stops and/or applied stops on the exterior securely welded in place. Conceal all welds. Make interior removal stops, of at least 18 gage steel, sized to commensurate glass or louver thickness. Secure in place with countersunk oval head Phillips head sheet metal screws at maximum 10-inches on centers, except as otherwise indicated on the Contract Drawings.

D. <u>Door Frame Fabrication</u>:

1. Type: Pressed metal steel door frames of unit-type design.

2. Fabrication:

   a. Accurately form to required shape, size and profile, as indicated on the Contract Drawings.

   b. Weld corners full length of joint and grind welds smooth.

   c. Jamb anchors on frame to be 16-gage steel for attachment to masonry or wood or concrete; 14-gage steel clip angle at bottom of each jamb fastening to floor; adjustable anchors as required by wall conditions. Provide spreader at the bottom of frame to be removed after frame is set and anchored. Provide minimum two anchors at head section and in jambs and one anchor for each 2-1/2 feet of door height or fraction thereof.

   d. Provide manufacturer's gauge label for each item.

E. <u>Preparation for Finish Hardware</u>:

1. Prepare hollow metal door units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Finish Hardware Schedule and templates provided by the hardware suppliers. Comply with applicable requirements of ANSI-A115, CAC Title 24, NFPA, BHMA and NAAMM.

2. Accurately reinforce door and frame, drill and tap for hardware. For exterior door and frame, all reinforcing plates shall be zinc coated to match door and frame material:

   a. Provide one internal 7 gage steel plate 10-inches long for each of three mortise hinges. Locate top of top hinge 5-inches below top of door. Locate bottom of bottom hinge 10-inches above bottom of door. Locate immediate hinge midway between top and bottom hinges. Weld plates to the door frame.

   b. Reinforce frames with 12-gage steel plates for door closers.

3. Provide a cutout for the lockset strike at center of knob or lever 3'-2" above bottom of

frame.

4. Obtain templates for hinges and lockset strike and other finish hardware from hardware supplier for the required reinforcement cutting and drilling of the frame.

F. **Shop Finish:** Doors and frames to receive two (2) coats of a baked-on-rust inhibitive metal primer over bonderized surfaces and make ready for field painting at the job site specified in Section 09900 - PAINTING.

G. **Factory Baked-On Enamel Finish:**

1. Required on all hollow metal doors and pressed metal frames.

2. Colors: Color shall be selected by the Project Manager or Inspector from manufacturer's standard colors submitted to the Project Manager or Inspector and shall be formulated to match color chip furnished by the Project Manager or Inspector or as noted on the Contract Drawings.

3. Application: To properly clean and phosphate treat galvanized surfaces, manufacturer shall apply a coat of zinc chromate primer (Federal Specification TT-P-636) which shall be at least 1.25 combined oz. per square foot of surface on both sides and then shall apply two (2) coats of an acrylic baking enamel having 20 + 5 gloss conforming to test method 6101 of Federal Standard 141, each coat shall be minimum 1-mil thick and shall be baked under controlled conditions at proper time and temperature for the particular color desired to provide a hard and durable finish.

4. Tests: Baked-on enamel finish shall be capable of withstanding a minimum 1000 hour salt spray test conforming to Federal Standard test method No. 141 without appreciable undercutting and 1000 hours on Atlas Fadeometer without showing appreciable fading.

5. Protection: Doors and frames with baked-on enamel finish shall be wrapped in plastic film to protect against damage during transportation, handling and storage until time of installation. Plastic film wrapping shall be removed just prior to installation of frames and doors.

PART THREE - EXECUTION

3.1 INSPECTION

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until detrimental conditions have been corrected.

3.2 INSTALLATION

A. **General:** Install hollow metal units and accessories in accordance with manufacturer's data and as hereinafter specified.

B. **Installation of Door Frames:** Frames shall be set into position and in, accurate alignment,

plumb, straight and true to plane and shall be rigidly and securely anchored to the adjacent concrete or masonry construction and filled with grout. Bottom anchor to wall shall be installed approximately 24 inches above the floor. Upon completion of door frame installation, the bottom spreader shall then be removed and the frame shall be made ready to receive hardware and the door. Protect frames against damage after erection.

C. **Installation of Doors:** Doors shall be accurately fitted, leaving 1/8 inch (plus or minus 1/32-inch) clearance at sides and top. Doors shall be hung plumb and square, in accurate alignment, true to plane on specified hardware and shall operate freely but not loosely without binding. Installation of astragals specified in Section 08710 - FINISH HARDWARE.

D. **Final Adjustments:**

1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.

2. Leave work in complete and proper operating condition.

3. Remove defective work and replace with work complying with the specified requirements.

E. **Final Cleaning:** Immediately after erection, sand smooth all rusted and damaged areas of prime coat and apply touch-up of compatible air-drying primes prior to painting on the job-site specified in Section 09900 - PAINTING.

F. **Protection:** Provide protection for doors and frames against damage resulting from other construction operations until acceptance by the City. Contractor shall repair any damage to baked-on-enamel finish as directed by the Manufacturer at no added cost to the City.

G. **Maintenance Materials:** Furnish the City with a full, labeled and sealed 1-gallon can of touch-up material of each color and instructions for repair of doors and frames.

H. **Testing**: Upon completion of installation, Contractor shall test installed doors against moisture and air penetration through door, frame and sill joints as directed under the presence of the Project Manager or Inspector. The Contractor shall comply with corrections as directed by the Project Manager or Inspector at no added cost to the City.

(END OF SECTION)

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SECTION 08710
DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes: Finish Hardware for door openings, except as otherwise specified herein.

1. Door hardware for metal doors & frames
2. Door hardware for wood doors
3. Door hardware for other doors indicated
4. Keyed cylinders specified in other Sections

B. Related Sections:

1. Division 6: Rough Carpentry.
2. Division 8: Hollow Metal Doors and Frames.

C. References: Comply with applicable requirements of the following standards. Where these standards conflict with other specific requirements, the most restrictive shall govern.

1. Builders Hardware Manufacturing Association (BHMA)
2. NFPA 101 Life Safety Code
3. NFPA 80 -Fire Doors and Windows
4. ANSI-A156.xx- Various Performance Standards for Finish Hardware
5. UL10C – Positive Pressure Fire Test of Door Assemblies
6. ANSI-A117.1 – Accessible and Usable Buildings and Facilities
7. DHI /ANSI A115.IG – Installation Guide for Doors and Hardware
8. CBC California Building Code

D. Intent of Hardware Groups

1. Should items of hardware not definitely specified be required for completion of the Work, furnish such items of type and quality comparable to adjacent hardware and appropriate for service required.
2. Where items of hardware aren't definitely or correctly specified, are required for completion of the Work, a written statement of such omission, error, or other discrepancy to Architect, prior to date specified for receipt of bids for clarification by addendum; or, furnish such items in the type and quality established by this specification, and appropriate to the service intended.

E. Allowances

1. Refer to Division 1 for allowance amount and procedures.

F. Alternates

1. Refer to Division 1 for Alternates and procedures.

1.2 SUBSTITUTIONS:

A. Comply with Division 1.

1.3 SUBMITTALS:

A. Comply with Division 1.

B. Special Submittal Requirements: Combine submittals of this Section with related Sections to ensure the "design intent" of the system/assembly is understood and can be reviewed together.

C. Product Data: Manufacturer's specifications and technical data including the following:

1. Detailed specification of construction and fabrication.
2. Manufacturer's installation instructions.
3. Wiring diagrams for each electric product specified. Coordinate voltage with electrical before submitting.
4. Submit 5 copies of catalog cuts with hardware schedule.

D. Shop Drawings - Hardware Schedule: Submit 5 complete reproducible copy of detailed hardware schedule. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:

1. List groups and suffixes in proper sequence.
2. Completely describe door and list architectural door number.
3. Door and frame sizes and materials.
4. Degree of opening
5. Manufacturer, product name, and catalog number.
6. Function, type, and style.
7. Size and finish of each item.
8. Fastenings and other pertinent information
9. Mounting heights.
10. Explanation of abbreviations and symbols used within schedule.

E. Templates: Submit templates and "reviewed Hardware Schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cutouts and reinforcing.

F. Samples: (If requested by the Architect)

1. 1 sample of Lever and Rose/Escutcheon design, (pair).
2. 3 samples of metal finishes

G. Contract Closeout Submittals: Comply with Division 1 including specific requirements indicated.

1. Operating and maintenance manuals: Submit 3 sets containing the following.

a. Complete information in care, maintenance, and adjustment, and data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.

2. Copy of final hardware schedule, edited to reflect, "As installed".
3. Copy of final keying schedule
4. One set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

1.4 QUALITY ASSURANCE

A. Comply with Division 1.

1. Statement of qualification for distributor and installers.
2. Statement of compliance with regulatory requirements and single source responsibility.
3. Distributor's Qualifications: Firm with 3 years experience in the distribution of commercial hardware.

    a. Distributor to employ full time Architectural Hardware Consultants (AHC) or similar with 3 years experience for the purpose of scheduling and coordinating hardware and establishing keying schedule.

4. Installer's Qualifications: Firm with 3 years experienced in installation of similar hardware to that required for this Project, including specific requirements indicated.
5. Regulatory Label Requirements: Provide testing agency label or stamp on hardware for labeled openings.

    a. Provide UL listed hardware for labeled and 20 minute openings in conformance with requirements for class of opening scheduled.
    b. Underwriters Laboratories requirements have precedence over this specification where conflict exists.

6. Single Source Responsibility: Except where specified in hardware schedule, furnish products of only one manufacturer for each type of hardware.

B. Review Project for extent of finish hardware required to complete the Work. Where there is a conflict between these Specifications and the existing hardware, notify the Architect in writing and furnish hardware in compliance with the Specification unless otherwise directed in writing by the Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping: Comply with Division 1.

1. Deliver products in original unopened packaging with legible manufacturer's identification.
2. Package hardware to prevent damage during transit and storage.
3. Mark hardware to correspond with "reviewed hardware schedule".
4. Deliver hardware to door and frame manufacturer upon request.

B. Storage and Protection: Comply with manufacturer's recommendations.

1.6 PROJECT CONDITIONS:

A. Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for the proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.

B. Review Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.

1.7 WARRANTY:

A. Refer to Conditions of the Contract

B. Manufacturer’s Warranty:

1. Closers: Ten years
2. Exit Devices: Three Years
3. Locksets & Cylinders: Three years
4. All other Hardware: Two years.

1.8 OWNER’S INSTRUCTION:

A. Instruct Owner’s personnel in operation and maintenance of hardware units.

1.9 MAINTENANCE:

A. Extra Service Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals Section.

1. Special Tools: Provide special wrenches and tools applicable to each different or special hardware component.
2. Maintenance Tools: Provide maintenance tools and accessories supplied by hardware component manufacturer.
3. Delivery, Storage and Protection: Comply with Owner’s requirements for delivery, storage and protection of extra service materials.

B. Maintenance Service: Submit for Owner’s consideration maintenance service agreement for electronic products installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. The following manufacturers are approved subject to compliance with requirements of the Contract Documents. Approval of manufacturers other than those listed shall be in accordance with Division 1.

Item:	Manufacturer:	Approved:
Hinges	**Stanley**	**McKinney, Hager**
Locksets	**Schlage**	**Best**
Electronic Locksets	**Trilogy**	**Owners Standard**
Cylinders	**Best**	**Owners Standard**
Closers	**Stanley**	**Sargent, LCN**
Protection Plates	**Rockwood**	**Trimco, Ives**
Threshold & Gasketing	**Reese**	**Pemko, Zero**

2.2 MATERIALS:

A. Fasteners:

1. Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

    a. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.

    b. Fire-Rated Applications:
        1) Wood or Machine Screws: For the following:
            a) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
            b) Strike plates to frames.
            c) Closers to doors and frames.

        2) Steel Through Bolts: For the following unless door blocking is provided:
            a) Surface hinges to doors.
            b) Closers to doors and frames.
            c) Surface-mounted exit devices.

2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

3. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."

4. Provide surface-concealed fasteners where additional overlapping hardware is required.

5. Combination machine screws and expansion shields shall be used for attaching hardware to concrete or masonry

6. Fasteners exposed to the weather or corrosive environments in the finished work shall be completely non ferrous; made of brass, bronze, or stainless steel.

7. Dissimilar Metals: Provide fasteners and base materials that prevent extreme galvanic corrosion based on their environment. Rain, dew, snow, high humidity, and ocean salt spray must all be taken into account of their reactivity of the metals being joined.

B. Pin and Barrel Continuous Hinges:

1. Tested and approved by BHMA for ANSI A156.26-1996 Grade 1
2. Fabricated from 14 gauge material
3. UL and ULC listed for fire-rated 4’ x 8’ single doors and 8’ x 8’ pairs up to 3 hour.
4. Slim barrel design
5. Twin nylon self lubricating bearings located between all knuckles except top and bottom.
6. Two stainless steel bearings top and bottom, to prevent sagging if nylon bearings degrade during a fire.
7. Limited Lifetime warranty

C. Self-Contained Electronic Locksets (Alarm Lock Trilogy)

1. Self-Contained Electronic Locks shall be cylindrical type, and meet ANSI/BHMA A156.2 Grade 1 requirements.
2. Self-Contained Electronic Locks: Internal, battery-powered, self-contained electronic locks; consisting of complete lockset, and motor/ solenoid driven lock mechanism.
3. Operating trim shall be lever type: Alarm Lock 00 Lever, or equal.
4. Lock Throw: Comply with requirements for length of bolts to comply with labeled fire door requirements, and as follows:
5. Minimum 5/8 inch latchbolt throw
6. Provide curved-lip strike with dust box for each latch or lock bolt, with lip extended to protect frame, finished to match door hardware set, unless otherwise indicated.
7. Locks utilized at fire rated openings shall be listed and labeled by a testing agency acceptable to authorities having jurisdiction, and shall maintain door in positive latched position when door is closed.
8. Provide low-battery detection and warning when maid card is passed; batteries and circuit board on inside of door.

D. Full Mortise Deadlock:

1. 2-3/4 inch backset
2. Integrated lever design for simultaneous retraction of bolt
3. Secure strike plates with 2 inch minimum long screws at wood stud walls
4. 1 inch throw deadbolt
5. Function and design as indicated in the hardware groups

E. Cylinders:

1. Provide cylinder housings, collars, rings & springs as recommended by the manufacturer for proper installation.
2. Provide cylinder cams or tail piece as required to operate all locksets and other keyed hardware items listed in the hardware sets.
3. Provide cylinder guards for all exposed cylinders at exterior perimeter doors.
4. Coordinate and provide as required for related sections.

F. Door Closers shall:

1. Tested and approved by BHMA for ANSI 156.4, Grade 1
2. UL10C certified
3. Closer shall have extra-duty arms and knuckles where required
4. Conform to ANSI 117.1
5. Maximum 2 7/16 inch case projection with non-ferrous cover
6. Separate adjusting valves for closing and latching speed, and backcheck
7. Provide adapter plates, shim spacers and blade stop spacers as required by frame and door conditions
8. Full rack and pinion type closer with 1½“ minimum bore
9. Mount closers on non-public side of door, unless otherwise noted in specification
10. Closers shall be non-handed, non-sized and multi-sized 1 through 6
11. Provide BF or barrier free at non rated doors as required per code

G. Kick Plates: Provide with four beveled edges ANSI J102, 10 inches high by width less 2 inches on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish. .062 minimum thickness

H. Seals: All seals shall be finished to match adjacent frame color. Seals shall be furnished as listed in schedule. Material shall be UL listed for labeled openings.

I. Door Bottoms: Surface mounted or concealed door bottom where listed in the hardware sets.

1. Door seal shall be resilient seal of (Neoprene, Polyurethane, Nylon Brush, Silicone)
2. UL10C Positive Pressure rated seal set when required.
3. Coordinate door bottom with threshold height and door undercut such that door bottom provides accurate seal with threshold without binding door or preventing positive latching.

J. Thresholds: Thresholds shall be aluminum or bronze type for conformance with ADA requirements. Furnish as specified and/or per details. Provide fasteners and screws suitable for floor conditions.

1. Where required, thresholds shall be prepared to accommodate floor closers, pivots, and projecting bolts of latching hardware.
2. Thresholds at floor closers shall have mitered returns and removable access portion for floor closer maintenance.
3. Refer to Door Schedule and Drawing details for type and configuration required. Additionally, where combustible flooring passes under doors, provide fire door thresholds in accordance with applicable regulatory requirements.
4. Saddle, offset, and bumper seal type thresholds as required for applications.

2.3 FINISH:

A. Designations used in Schedule of Finish Hardware - 3.5, and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 including coordination with traditional U.S. finishes shown by certain manufacturers for their products

B. Powder coat door closers to match other hardware, unless otherwise noted.

C. Aluminum items shall be finished to match predominant adjacent material. Seals to coordinate with frame color.

2.4 KEYS AND KEYING:

A. Provide keyed brass construction cores and keys during the construction period. Construction control and operating keys and core shall not be part of the Owner's permanent keying system or furnished in the same keyway (or key section) as the Owner's permanent keying system. Permanent cores and keys (prepared according to the accepted keying schedule) will be furnished to the Owner.

B. Cylinders, removable and interchangeable core system: Best [Premium]

1. Provide keys and keying into existing key system. For estimate furnish keys as indicated below.

C. Permanent keys and cores: Stamped with the applicable key mark for identification. These visual key control marks or codes will not include the actual key cuts. Permanent keys will also be stamped "Do Not Duplicate."

D. Transmit Grand Masterkeys, Masterkeys and other Security keys to Owner by Registered Mail, return receipt requested.

E. For Estimate furnish keys in the following quantities:

1. 1 each Grand Masterkeys
2. 4 each Masterkeys
3. 2 each Change keys each keyed core
4. 15 each Construction masterkeys
5. 1 each Control keys

F. Bitting List: use secured shipment direct from point of origination to Owner upon completion.

G. The Owner, or the Owner's agent, will install permanent cores and return the construction cores to the Hardware Supplier. Construction cores and keys remain the property of the Hardware Supplier.

H. Keying Schedule: Arrange for a keying meeting, and programming meeting with Architect Owner and hardware supplier, and other involved parties to ensure locksets and locking hardware, are functionally correct and keying and programming complies with project requirements. Furnish 3 typed copies of keying and programming schedule to Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of conditions: Examine doors, frames, related items and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.2 HARDWARE LOCATIONS:

A. Mount hardware units at heights indicated in the following publications except as specifically indicated or required to comply with the governing regulations or facility standards.

1. Recommended Locations for Builder's Hardware for Standard Steel Doors and Frames, by the Door and Hardware Institute (DHI).
2. NWWDA Industry Standard I.S.1.7, Hardware Locations for Wood Flush Doors.

3.3 INSTALLATION:

A. Install each hardware item per manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

B. Conform to local governing agency security ordinance.

C. ADA Standard: Conform to ANSI A117.1 for positioning requirements for disabled.

D. Installed hardware using the manufacturers fasteners provided. Drill and tap all screw holes located in metallic materials. Do not use "Riv-Nuts" or similar products.

E. Install Conforming to ICC/ANSI A117.1 Accessible and Usable Building and Facilities.

1. Adjust door closer sweep period so that from an open position of 90 degrees, the time required to move the door from to a position of 12 degrees from the latch is 5 seconds minimum.

F. Closers: Coordinate installation of closer for maximum degree of hold open or opening. Hold open arms to stop door from hitting wall. Closers typically mount on interior side of room.

G. Locksets: Provide appropriate backset to center lockset on stile and rail type doors.

H. Thresholds: Set thresholds for exterior doors in full bed of sealant complying with requirements specified in Division 7 Section “Joint Sealants.” Securely and permanently anchor exterior thresholds using countersunk non-ferrous screws to match color of threshold. Stainless steel screws at aluminum thresholds. Set thresholds at interior acoustical rated openings with acoustical sealant.

I. Mount cylinder keyways in proper position as recommended by manufacturers

J. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals where possible. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

K. Replace fasteners damaged by power-driven tools.

3.4 FIELD QUALITY CONTROL AND FINAL ADJUSTMENT

A. Contractor/Installers, Field Services: After installation is complete, contractor shall inspect completed door openings on site to verify installation of hardware is complete and properly adjusted, in accordance with both the Contract Documents and final shop drawings.

1. Check and adjust closers to ensure proper operation.

    a. Adjust "Backcheck" according to manufacturer's instructions.
    b. Set exterior doors closers to have 5 lbs maximum pressure to open, interior non-rated at 5 lbs, rated openings at 15 lbs

2. Check latchset, lockset, and exit devices are properly installed and adjusted to ensure proper operation.

    a. Verify levers are free from binding.
    b. Ensure latchbolts and dead bolts are engaged into strike and hardware is functioning.

3. Report findings, in writing, to architect and hardware supplier outlining corrective actions and recommendations.

3.5 HARDWARE SETS:

A. See door schedule in drawings for hardware set assignments.

B. The hardware sets represent the product design intent and direction of the owner and architect. They should not be considered a detailed hardware schedule. Detailed or omitted items not included in the following hardware set(s) should be scheduled and

submitted with the appropriate additional hardware required for proper application and functionality.

C. Manufacturer's Abbreviations:

1. BE BEST
2. RO Rockwood
3. ST Stanley
4. SC Schlage
5. AL Alarm Lock (Trilogy)
6. SD Stanley Door Closers
7. TR Trimco
8. DJ Don Jo
9. RS Reese

Hardware Sets

SET #01

Doors: 100, 101, 102, 103, 104, 105, 106, 107, 108, 109

1	Continuous Hinge	653	US32D	ST
1	Deadlock	L9460BD XL-886 LLL/Less Outside Trim		
630	SC			
1	Flush Pull	1096HA	630	TR
1	Door Closer	CLD-4550 CS SRI	689	SD
1	Angle Bracket	P45HD-112 (as required)	689	SD
1	Kick Plate (Push Side)	K1062 10" x 2" LDW x CSK B4E	US32D	RO

SET #02

Doors: 110A, 110B

1	Continuous Hinge	651	US32D	ST
1	Mechanical Lockset	DL2700 WP IC	26D	AL
1	Cylinder Core	1C Series PREM	626	BE
1	Latch Protector	KLP-110	630	DJ
1	Door Closer	CLD-4550 CS SRI	689	SD
1	Gasketing	797B @ Head & Jambs		RS
1	Door Silencer	1608-GRY		

DJ

NOTE: Prior to lockset installation, Contractor to deliver Trilogy locks to the Recreation & Parks Locksmith for programming. When programmed, Contactor to pickup lockset and deliver to jobsite for installation.

END OF SECTION

Opening List

Opening	Hdw Set	Opening Label	Door Type	Frame
100	01			
101	01			
102	01			
103	01			
104	01			
105	01			
106	01			
107	01			
108	01			
109	01			
110A	02			
110B	02			

SECTION 08870
WINDOW FILM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Safety and Security Window Film:
   1. Clear safety film. (Safety S40) (Safety S70) (Safety S80) (Safety S140) (Safety S20 Exterior) (Safety S40 Exterior) (Safety S70 Exterior)

1.2 RELATED SECTIONS

A. Section 08500 - Windows; windows to receive architectural window film.

B. Section 08600 - Skylights; glass skylights to receive architectural window film.

C. Section 08800 - Glazing; general glazing applications to receive architectural window film.

D. Section 08900 - Glazed Curtain Walls; curtain walls to receive architectural window film.

1.3 REFERENCES

A. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

B. ASHRAE - American Society for Heating, Refrigeration, and Air Conditioning Engineers; Handbook of Fundamentals.

C. ASTM International (ASTM):
   1. ASTM D 1044 - Standard Method of Test for Resistance of Transparent Plastics to Surface Abrasion (Taber Abrader Test).
   2. ASTM E 84 - Standard Method of Test for Surface Burning Characteristics of Building Materials.
   3. ASTM E 903 - Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres.

D. Consumer Products Safety Commission 16 CFR, Part 1201 - Safety Standard for Architectural Glazing Materials.

E. NFRC 100/200 (Formerly ASTM E903) - Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres.

1.4 PERFORMANCE REQUIREMENTS

A. Safety Glazing Impact Performance:

1. 150 ft-lbs impact resistance, meeting ANSI Z97.1 (Class B, Unlimited) and 16 CFR 1201 (Category 1) impact requirements with film applied on 1/4 inch annealed glass

B. Blast Hazard Mitigation Performance:
   1. GSA Rating of "3B" with minimum blast load of 4 psi and 28 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
   2. GSA Rating of "3B" with minimum blast load of 10 psi and 89 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.

C. Adhesion to Glass:
   1. Nominal 5 lbs/in peel strength per ASTM D3330 (Method A).

D. Flammability: Surface burning characteristics when tested in accordance ASTM E 84, demonstrating film applied to glass rated Class A for Interior Use:
   1. Flame Spread Index: no greater than 25.
   2. Smoke Developed Index: no greater than 55.

E. Abrasion Resistance:
   1. Film shall have a surface coating that is resistant to abrasion such that less than 5 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.

F. UV Light Rejection:
   1. Minimum of 99% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's current technical literature on each product to be used, including:
   1. Manufacturer's Data Sheets.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. 3rd Party Test Report Submittal Requirements. Submit the following 3rd Party test reports indicating compliance with the test values listed in this section.
   1. Flammability Testing, ASTM E84.
   2. Film Properties Testing, ASTM D882.
   3. Abrasion Resistance Testing, ASTM D1044.
   4. Peel Strength Testing, ASTM D3330
   5. Puncture Strength Testing, ASTM D4830.
   6. Safety Glazing Impact Testing, ANSI Z97.1 or 16 CFR 1201.
   7. Blast Hazard Mitigation Testing, ASTM F1642 / F2912 and/or GSA-TS01-2003.

D. Other Product Submittals:
   1. Manufacturer's summary of 3rd Party Blast Hazard Mitigation Testing, ASTM F1642 / F2912 and/or GSA-TS01-2003

E. Verification Samples: For each film specified, two samples representing actual film color and pattern.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.

1. Provide documentation that the adhesive used on the specified films is a Pressure Sensitive Adhesive (PSA).

B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
   1. Provide documentation that the installer is authorized by the Manufacturer to perform Work specified in this section.
   2. Provide a commercial building reference list of 5 properties where the installer has applied window film. This list will include the following information:
      a. Name of building.
      b. The name and telephone number of a management contact.
      c. Type of glass.
      d. Type of film and/or film attachment system.
      e. Amount of film and/or film attachment system installed.
      f. Date of completion.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Follow Manufacturer's instructions for storage and handling.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY

A. At project closeout, provide to Owner or Owners Representative an executed current copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

B. In order to validate warranty, installation must be performed by an Authorized 3M dealer and according to Manufacturer's installation instructions. Verification of Authorized 3M dealer can be confirmed by submission of active 3M dealer code number.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: 3M Commercial Solutions, which is located at: 3M Center Bldg. 220-12-E-04; St. Paul, MN 55144-1000; Toll Free Tel: 888-650-3497; Tel: 651-737-1081; Fax: 651 737 8241; Email:request info (jrice3@mmm.com); Web:http://www.3m.com/3M/en_US/architectural-design-us/?utm_medium=redirect&utm_source=vanity-

url&utm_campaign=www.3M.com/AMD|http://www.3m.com/3M/en_US/building-window-solutions-us

B. Substitutions: Not permitted.

2.2 CLEAR SAFETY AND SECURITY WINDOW FILM

A. 3M Safety S70 (SH7CLARL): Optically clear polyester film with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive over the other.
   1. Physical / Mechanical Performance Properties:
      a. Film Color: Clear.
      b. Thickness: Nominal 7.0 mils
      c. Tensile Strength (ASTM D 882): 25,000 psi.
      d. Break Strength (ASTM D 882): 175 lbs/in.
   2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding or other optical defects.
   3. Variation in Total Transmission across the Width: Less than 2 percent over the average at any portion along the length.
   4. Identification: Labeled as to Manufacturer as listed in this Section.
   5. Solar Performance Properties: Film applied to 1/4 Inch (6 mm) thick clear glass.
      a. Visible Light Transmission (ASTM E 903): 87 percent.
      b. Ultraviolet Transmission (ASTM E 903): Less than 1 percent.
   6. Impact Resistance for Safety Glazing: Tested on 1/4 inch (6 mm) annealed glass.
      a. Safety Rating (CPSC 16 CFR, Part 1201): Category I (150 ft.-lbs).
   7. Blast Hazard Mitigation: Independent testing with results from high explosive arena blast testing.
      a. GSA Rating of "3B" with minimum blast load of 4 psi and 28 psi*msec, on 1/4 inch single pane annealed glass and 3M Impact Protection Adhesive film attachment system.
      b. GSA Rating of "3B" with minimum blast load of 10 psi and 89 psi*msec, on 1 inch (25 mm) double pane annealed glass and 3M Impact Protection Adhesive film attachment system.

PART 3 EXECUTION

3.1 EXAMINATION

A. Film Examination:
   1. If preparation of glass surfaces is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
      a. Glass surfaces receiving new film should first be examined to verify that they are free from defects and imperfections, which will affect the final appearance.
   2. Do not proceed with installation until glass surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
   3. Commencement of installation constitutes acceptance of conditions.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Refer to Manufacturer's installation instructions for methods of preparation for Impact

Protection Adhesive or Impact Protection Profile film attachment systems.

3.3 INSTALLATION

A. Film Installation, General:
   1. Install in accordance with manufacturer's instructions.
   2. Cut film edges neatly and square at a uniform distance of 1/8 inch (3 mm) to 1/16 inch (1.5 mm) of window sealant. Use new blade tips after 3 to 4 cuts.
   3. Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
   4. Apply film to glass and lightly spray film with slip solution.
   5. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
   6. Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
   7. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.
   8. If completing an exterior application, check with the manufacturer as to whether edge sealing is required.

3.4 CLEANING AND PROTECTION

A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.

END OF SECTION

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SECTION 09200
LATH AND PLASTER

PART ONE - GENERAL

1.1 DESCRIPTION

A. Provide all labor, materials, tools and equipment necessary for lath and plaster work where shown on the Contract Drawings and specified herein, including the following:

1. Wood studding, furring and lathing.
2. Exterior Portland cement plaster.

B. **Related Work:**

1. Work of this Section shall comply with the Contract Documents including, but not necessarily limited to, General Conditions and the General Requirements.
2. Cast-In-Place Concrete in Section 03300.
3. Rough Carpentry in Section 06100.
4. Metal Doors and Frames in Section 08110.
5. Wood Doors in Section 08210.
6. Gypsum Board Systems in Section 09260.
7. Ceramic Tile in Section 09300.
8. Painting in Section 09900.
9. Plumbing and Mechanical in DIVISION 15.
10. Electrical in DIVISION 16.

1.2 QUALITY ASSURANCE

A. **Referenced Standards:**

1. Metal Lath Association "Specifications for Metal Lathing and Furring".
2. ASTM C926-86-Application of Portland Cement Based Plaster.
3. ASTM C-1063-86-Installation of Lathing and Furring for Portland Cement Based Plaster.

B. **Allowable Tolerances:** Finish plaster surfaces to be true and even planes within tolerances of 1/8 inch in 5 feet without waver, cracks or imperfections measured by a straight edge placed at any locations on the plaster surfaces.

C. **Qualifications of Personnel:** Use adequate number of skilled Contractor's employees thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and the methods needed for the proper execution of the Work of this Section.

D. **Codes and Regulations:** Comply with the Uniform Building Code with the latest edition of

Los Angeles City Amendments, except those requirements specified herein govern where they exceed those of the City Building Code.

1.3 SUBMITTALS

A. **General:** Comply with provisions of SUBMITTALS Article 10 in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

B. **Product Data:** Submit the following within 30 calendar days after award of Contract:

1. Complete materials list of all items proposed to be furnished and installed under this Section. Provide mix proportion and coating sequence.

2. Sufficient data to demonstrate compliance with the specified requirements.

4. Samples of the proposed accessories.

5. Wood Studs:

   a. Location of backing, furring, and blocking provided in Wood Studs for other trade of work, coordinate if necessary.

1.4 PRODUCT HANDLING

A. **Delivery:** Deliver materials to the job-site in their original unbroken packages bearing the manufacturer's label and indicating brand and quality of the material.

B. **Storage of Materials:** Store materials under cover at the job-site and maintain in a dry condition until ready for use. Store materials so as to permit inspections and identifications of each shipment. Store each kind of sand separately to prevent the inclusion of foreign matter. Stock sufficient materials on the job-site to prevent interrupting work progress.

1. Immediately remove from the job-site, all materials which have been delivered broken, damaged or in unlabeled conditions.

C. **Protection:** Use all means necessary to protect the work and materials of this Section before, during and after installation and to protect the work and materials of all other trades.

D. **Replacements:** In the event of damage, immediately make all repairs and replacements necessary to the approval of the Project Manager at no additional cost to the City.

1.5 INSPECTION

Notify the Project Manager or Inspector prior to installation of lath and after lath is installed, to allow for inspection of framing and lathing and between each coat of plaster.

PART TWO - PRODUCTS

2.1 METAL PRODUCTS (As Applicable)

A. **Furring Channels:** 3/4-inch hot-rolled or cold-rolled channels weighing not less than 300 pounds per 1,000 lineal feet. 1 ½-inch hot-rolled steel channels weighing not less than 475 pounds per 1,000 lineal feet; with protective coating of rust-inhibitive paint.

B. **Hanger Wires:** Cold drawn galvanized steel wire, No. 8-gage.

C. **Metal Lath:** 3.4 pound per square yard diamond mesh expanded, copper-alloy steel

galvanized for interior cement plaster and for scratch coat plaster behind tile. Use galvanized or protective paint coated lath elsewhere. Use flat rib or rib lath where lath spans more than 16-inches.

D. **Tie Wires:** As per latest edition of Los Angeles City Building Code Amendments to the U.B.C.

E. **Gypsum Lath:** Minimum 3/8-inch thick plain or perforated ASTM C37 conforming to the latest edition of Los Angeles City Building Code Amendments to the U.B.C.

F. **Waterproof Backing:** K-Lath Corporation "Pyro-K-Lath," or "Agura-K-Lath," or equal. Self-furred type with 16-gage galvanized vertical front wires at 1 2-inches on center and 16-gage horizontal back wires at 2-inches on center with perforated Kraft Paper between front and back wires furred with 1/4-inch furring crimps at 6-inches on center and with a sheet of Class "B" (Fed. Spec. UU-P-147b) waterproof paper laminated to back of back wires.

G. **Fire Retardant Gypsum Lath:** 5/8-inch thick, ASTM C37, Type "X" conforming to latest edition of Los Angeles City Building Code Amendments to the U.B.C.

H **Paper Backing:** Asphalt saturated felt weighing not less than 14-pounds per 108 square feet.

I. **Self-Furring Paper-Backed Wire Fabric:** Required for exterior vertical surfaces and/or behind ceramic tile where backing is solid. Fabric shall be 1 ½ -inch x 2-inch mesh, 16 x 16 gage galvanized wire crimped 1/4-inch at 6-inches on center and with slotted perforated absorbent paper separation between front and back wires with Type I, Grade B waterproof paper (Fed. Spec. UV-B-790) laminated to back side of separator paper.

J. **Flat or Non-Furring Paper-Backed Wire Fabric:** Required for horizontal exterior surfaces and for vertical surfaces over wood framing without solid backing. Wire fabric shall be 1-1/2-inch x 2-inch mesh, 16 gage galvanized wire with 11 gage horizontal stiffener wires at 6-inch centers and with slotted perforated absorbent paper between front and back wires. Fabric shall be "Gun-Lath" manufactured by K-Lath Corporation as approved by the Project Manager or Inspector.

K. **Metal Trim Screed:** Superior No. 21 (for 3/4-inch plaster) or No. 22 (for 7/8-inch plaster) Metal Casing, National Cornice Works, Los Angeles, California, as necessary for required work.

2.2 PLASTERING MATERIALS

A. **Portland Cement:** ASTM C150 Type I. Use plastic or waterproof cement only upon written approval of the Project Manager or Inspector. Use white cement (Riverside, Medusa of Trinity) for all exterior cement plaster finish coats.

B. **Gypsum Neat Plaster:** ASTM C28, fibered for scratch coat on metal lath.

C. **Gaging Plaster:** Calcined gypsum ASTM C28.

D. **Keenes Cement:** ASTM C61.

E. **Lime and Lime Putty:** latest edition of Los Angeles City Building Code Amendments to the U.B.C..

F. **Sand:** ASTM C35. Sand for sand-float finish to pass a No. 20 sieve. Use Del Monte White Silica Sand for all exterior cement plaster finish coats.

G. **Water:** From a supply distributed for domestic purposes.

H. **Finish Surface of Locker & Toilet Room:** A factory mixed cement plaster; "Shower Finish"

by a Highland Stucco and Lime Products Inc., Van Nuys, California (Telephone (213) 785-3131) or equal.

I. **Bonding Agent:** "Plasterweld" by Larson Products Corp. (distributed by Pioneer Builders Supplies, Inc., Los Angeles, California).

J. **Vermiculite:** ASTM C35 and provisions of Los Angeles City Building Code with latest Amendments to the U.B.C., Division 47.

K. **Acoustical Sound Insulating Plaster:** "Hi-Sorb" white color by Highland Stucco and Lime Products Inc., Van Nuys, Calif. (phone (213) 785-3131) or equal.

L. **Exterior Stucco:** A factory mixed integrally colored Portland Cement base material designed for hand or machine application meeting ASTM standards and government specifications. Exterior stucco shall be a product of Highland Stucco and Lime Products Co., Van Nuys, California, or La Habra Stucco, or a field mixed Portland Cement with addition of pure mineral oxides guaranteed by the manufacturer to be lime proof and show minimum loss of color value due to weather conditions. Color shall be selected by Project Manager or Inspector.

M. **Pneumatically Applied Fireproofing Plaster:** Fire resistive materials designed for direct pneumatic application to structural steel; "Monokote" Mk-4 by California Zonolite Company, Los Angeles, California; as approved by the Los Angeles City Department of Building and Safety.

N. **Skim Coat Plaster:** "Thoroseal Plaster Mix" by Thoro Systems Products (distributed by L.M. Scofield Co. (213) 723-5285 or equal.

2.3 PLASTER MIXES AND PROPORTIONS

A. **General:** Mix all ingredients in calibrated boxes or containers designed to permit accurate checking at any time. Use batch-type mixer unless otherwise authorized. Mix materials thoroughly and use within 30 minutes after leaving the mixer. Keep all tools and implements clean.

B. **Portland Cement Plaster:**

1. First coat on metal lath for scratch coat behind tile or for 3-coat work: 1 part Portland cement to 4 parts sand, by volume, with addition of hydrated lime in quantity not exceeding 1/10 the weight of the cement.

2. Second coat on metal lath behind mortar setting bed for ceramic tile and for 3-coat work: 1 part Portland Cement to 5 parts sand, by volume, with addition of hydrated lime in a quantity not exceeding 1/10 of the weight of the cement.

3. Exterior Stucco: As hereinbefore specified in Subsection 2.3L. Mixed as prescribed by the stucco manufacturer and under his supervision.

4. Base Coat on Masonry or Concrete for Two-Coat Work: 1 part Portland Cement to 4 parts sand, by volume, with addition of hydrated lime in quantity not exceeding 1/10 the weight of the cement in 25 percent of the volume of the amount of cement.

5. Finish Coat: 1 part Portland Cement to 3 parts sand with addition of hydrated lime in quantity not exceeding 1/10 the weight of the cement.

6. Gauging-Lime Smooth Finish (Putty Coat): 1 part gauging plaster and not more than 3 parts lime putty by volume.

PART THREE - EXECUTION

3.1 PREPARATION WORK

A. **Approvals:** Required for work of other trades prior to being concealed. Uncovering work of other trades not approved and recover as directed by the Project Manager or Inspector at no added cost to the CITY.

B. **Surfaces:** To be cleaned for application of plaster. Exterior plaster surfaces to receive textured coating shall consist of properly applied and cured scratch coat, boron coat and skim coat.

C. **Temperature and Ventilation:** Maintain temperature not lower than 55 degrees F during plastering operations and until plaster is dry. Properly regulate adequate ventilation at all times.

1. Use screens to prevent uneven heat if necessary.

2. Avoid plastering during fraying or hot dry winds.

3.2 WORKMANSHIP

A. **General:** In accordance with best trade practices.

B. **All Finish Plaster Surfaces:** Subject to a 5-foot long straight-edge test for trueness of plane and plumbness; an 1/8-inch in 10-foot tolerance will be allowed. Squareness of internal and external corners shall be within 1/8-inch in 5-foot tolerance. Conduct such tests in the presence of the City. Remove and replace any work not meeting such tolerance tests rejected by the City at no added cost to the City.

C. **Walls:** Make straight and plumb, or sloped as indicated on the Contract Drawings.

D. **Corners and Angeles:** Make Straight, true, and square.

E. **Finished Surfaces:** To be uniform in true planes, flush with grounds, accessories, outlet boxes, and other features as indicated. Surfaces to be free from laps, cracks, checks, sand spalls, catfaces, slobbers, trowel marks and other imperfections.

3.3 LATHING AND FURRING

A. **General:** In accordance to latest edition of Los Angeles City Building Code Amendments to the U.B.C., and as indicated on the Contract Drawings.

1. Apply lath with long dimension at right angles to support framing.

2. Stagger end joints at supports and not on opposite sides of same stud when partition is lathed both sides.

3. Joints at walls not to align with joints in ceilings.

4. Bring edges to moderate close contact.

5. Closely fit lath at angles, corners, outlet boxes and at other openings.

6. All lath to have firm bearing for proper fastening.

B. **Metal Lath:** Use galvanized lath for all exterior plastering and for scratch coats behind ceramic tile. Secure lath in place at intervals not greater than 6-inches. Make side laps at lease ½ -inch and wire tie between supports at maximum 8-inch intervals and secure to every

support. Make end laps at least 1-inch located at supports and staggered. Attach lath in accordance with Los Angeles City Building Code Sections 91.4703 and 91.4711, 1992 Amendments to the U.B.C.

1. Attach lath over waterproof backing in shower and drying room areas to screw-on studs with stainless steel self-tapping screws fitted with galvanized steel washers.

2. Attach lath to screwable or resilient furring channels using wide shouldered self-tapping screws at 6-inches on center.

3. On exterior metal framing, lath shall be attached over waterproof backing to nailable or screw-on studs with stainless steel fasteners and washers. Exercise care not to puncture or damage the waterproof backing wallboard (on sloping surfaces).

C. Waterproofing Backing:

1. Required: Behind metal lath applied to metal studs behind ceramic tile where indicated.

2. Material: As hereinbefore specified in Subsection 2.1 of this Section.

3. Application: Shingle fashion with 3-inch interior laps and 4-inch end laps, lap top edge tile floor waterproofing 4-inches. Make laps over solid backing or supports only. Fasten to studs with galvanized or stainless steel nails, with 1-inch washers cut from scrap sheeting, at 12-inches on center. Backing to be free from tears or breaks when plaster is applied.

D. Metal Furring:

1. Required: For fire protection, concealment of ducts, pipes, conduit, and other mechanical work and for forming architectural features; as indicated on Drawings.

2. Vertical Furring: Except as otherwise indicated on the Drawings, vertical furring to be 3/4-inch channels at 16-inch centers; vertical channels installed in track channels anchored to concrete with 3/16-inch x 1/4-inch drive bolts at track ends and at intervals of 2-feet-0 inches; attached to ceilings by wiring upper ends to continuous horizontal channel attached to ceiling. Vertical furring to be braced with continuous horizontal 3/4-inch channels spaced at 3-feet-0-inches intervals. Each horizontal brace to be tied to each vertical channel and at each end to be attached to abutting construction; as approved by the PROJECT MANAGER OR INSPECTOR.

3. Attach screwable resilient furring channels to metal decking with self-tapping sheet metal screws at 4-inches on center. Space channels as noted on the Contract Drawings.

4. Attach screwable furring channels to masonry with power driven anchors at 2-foot centers alternating from side to side and with two at or near each end. Space channels as noted on the Contract Drawings.

5. Furring around fireproof steel columns shall be framed as indicated secured to the structural steel column to the floor and to the structure above and make ready to receive fireproofing plaster or 5/8" gypsum board.

E. Furring Channels for Suspended Ceilings: Secure 3/4-inch channels to carrying channels with double wrap and twist or tie wire at each intersection. Spacing of furring channels not to exceed 26 inches on center.

3.4 INSTALLATION OF ACCESSORIES (As applicable)

A. **General:** Install metal accessories plumb, level, straight and true to line, and shimmed as necessary. Accurately miter and tightly fit at corners. Install full height and longest practicable lengths. Hold splices to a minimum. Securely fasten accessories to supports by approved methods. Provide prefabricated corner units where ever possible.

B. **Reinforcing Strips:** Locate at junction of different materials where cracking of plaster may occur, except as otherwise indicated on the Contract Drawings or specified.

C. **Metal Trim Screeds:** Locate where indicated on the Contract Drawings. Securely fasten in place. Erect plumb, level straight and true to level.

D. **Metal Base Screeds:** Locate where plaster joins cement on bases.

E. **Expansion Screeds:** Locate where indicated on the Contract Drawings. Secure in place with both flanges nailed with galvanized nails at 6-inches on center. Cut the metal lath at the screed centerline and cut back and place on each side of the screed. Upon completion of plastering operations, remove the "Zip" strip.

F. **Control Joints:** Locate in soffits or horizontal cement plaster areas and space maximum 20 feet apart or as otherwise indicated on the Contract Drawings.

G. **Reveal Molding:** As indicated on the Contract Drawings, properly secure to structure, suitably marked, and protected as necessary to protect anodized finish during plastering and curing operations; such protections to be removed upon completion of plastering operations and cleaned without marring the surfaces.

3.5 APPLICATION OF PLASTER

A. **General:**

1. In 3 coats for all plastering on metal lath, except backing for ceramic tile mortar setting bed. In 2 coats for all plastering on concrete and/or masonry. In 2 coats for backing for ceramic tile.

2. Make finish coats reasonably uniform, thickness not less than 1/16-inch at any point; except not less than 1/8-inch at any point for Portland Cement plaster.

3. Apply finish gypsum plaster coats over plaster base coats.

4. Apply finish Portland Cement plaster coat over Portland Cement plaster base coats.

5. Extend wall plaster down to floor to provide solid backing behind base, except where cement base is indicated on the Contract Drawings.

6. Use of machines for applying plaster is permissible at the option of the printed "Reference Specifications for Machine Applied Plaster" of the Plastering Industries Technical Research Committee. Use of machines for applying and troweling finish plaster coats is not permissible. Plaster screeds will be required on wall and ceiling areas whenever permanent grounds are too far apart to serve as guides for rodding. Apply plaster screeds in conformance with the printed "Reference Specifications Lathing, furring and Plastering in California" of the California Lathing and Plastering Contractors Association, Inc. Locate plaster screeds as directed by the Project Manager or Inspector.

7. Two coats for all plastering on masonry.

B. **Minimum Thickness of Plaster (Including Finish Coat)**

1. Gypsum Plaster on Gypsum Lath: ½ -inch measured from face of the lath.

2. Portland Cement Plaster on Metal Lath: 7/8-inch, measured from back plane of lath.

3. Portland Cement Plaster Backing for Tile: Scratch coat 3/8-inch, measured from face of lath; second coat as necessary for required level plane to receive mortar settling bed for tile.

4. Gypsum Plaster or Cement Plaster on masonry or on concrete: ½ -inch measured from face of concrete or masonry.

5. Gypsum Plaster on Metal Lath: 5/8-inch, measured from face of lath; 3/4-inch from back plane lath.

F. **Exterior Portland Cement Plaster on Metal Lath:** Scratch coat shall be 3/8-inch as measured from face of the lath. The brown coat (second coat) as necessary to produce a level plane to receive final "stucco" finish to produce a total thickness of 1-inch.

3.6 CURING AND PROTECTIONS

A. **Required:** All plaster work to be cured and protected from excessively rapid or slow drying because of weather or lack of air circulation; heat, as required to control drying.

B. **Portland Cement Plaster:**

1. Keep each coat damp for 48 hours after application.

2. Interior Plaster: Keep scratch coat plaster moist minimum 24 hours, then apply brown coat and keep moist for minimum 24 hours, then apply finish coat and keep moist for minimum 24 hours. Fog spray as necessary to maintain moisture during curing periods.

3. Keep exterior plaster moist cured by application of "Fog Spray" during the curing period.

4. Keep exterior stucco moist by covering with 7 ounce burlap maintained in a thoroughly wet condition for at least 48 hours after application. Allow burlap to hang in as long as possible, lengths and tied together at joints; temporary battens, securely anchored in place, to maintain wet burlap in direct contact with cement plaster, or stucco surfaces during the curing period.

C. **Reveal Moldings:** Suitably mask and protect such moldings and trim, including flanges, flush with finish plastering against damage to finish during plastering and curing operations. Remove protections upon completion of plastering and curing operations.

3.8 PATCHING AND CLEANING

A. **Patching:** Neatly patch or replace damaged plaster surfaces after the various other trades have left the work.

1. Cut-out broken or damaged plaster on straight lines with clean and sharp edges. Cut-out cracks to a minimum width of 1-inch. Patch with same materials and methods as original work. Match adjoining work in plane, finish and texture without perceptible joints.

B. **Cleaning:**

1. At completion of work, remove excess plaster from beads, screeds, base, trim and adjoining work and leave the work clean.

2. In addition to provisions of Article 7 of the GENERAL REQUIREMENTS as rapidly as plastering is completed in each space, clean-up rubbish, utensils and surplus material and scaffolding. Clean adjacent surfaces splattered with plaster. Sweep floors and leave area in neat condition for work of other trades.

(END OF SECTION)

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SECTION 09860
ANTI-GRAFFITI COATING

PART ONE - GENERAL

1.1 SUMMARY

A. Provide all labor, materials, equipment and services to apply anti-graffiti coatings on concrete paving and seatwalls, natural stone boulders, exterior concrete masonry surfaces, lightposts, & signage as specified hereinafter and as needed for a complete and proper installation.

B. Anti-Graffiti locations on the Building exterior:

1. Apply to 11'-0" high minimum from finish grade to all exterior exposed ground level walls and fence (including CMU walls). On exterior walls that do not have clear horizontal stopping edge or plain, those walls shall be treated full height to avoid two tone walls.

2. On all exterior steel doors and frames.

3. On all exterior wall mounted plaques and signs.

B. Related Sections:

1. Documents affecting work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS and Articles in GENERAL REQUIREMENTS in DIVISION 1 of these Specifications.

1.2 SUBMITTALS

A. Comply with pertinent conditions in the ARTICLE 10 in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

B. Product Data: Within 30 calendar days after Contractor has received the City's "NOTICE TO PROCEED" or award of Contract submit the following:

1. Materials list of items proposed to be provided under this Section;

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;

3. Manufacturer's recommended installation procedures which, when approved by the Project Manager, will become the basis for accepting or rejecting actual installation procedures used on the Work.

C. Applicator shall submit to the Project Manager a pre-warranty application form to verify amounts of materials to be used.

1.3 QUALITY ASSURANCE

A. Contractor shall contact the manufacturer prior to bidding the work so as to become familiarized with current costs, application procedures and notification requirements.

B. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

C. Material and application shall comply with Rule 66, Los Angeles County Air Pollution Control District and Rule 1113 of the South Coast Air Quality Management District.

D. Applicator shall complete and file a "Job Report" with manufacturer certifying conformance of application procedures and quantities to the manufacturer's requirements.

E. **Applicator Qualifications**: Engage an applicator who is approved by the manufacturer and who employs only persons trained for the application of graffiti-resistant coatings.

F. **Mock-Ups 1**: Prior to application to the new construction, apply graffiti resistant coating to 2 of the brick or concrete block mock-up to show effect on appearance. Do not apply graffiti resistant coating until the mock-up is approved by the Project Manager.

1.4 EXTRA STOCK (MAINTENANCE MATERIALS)

Upon completion of anti-graffiti coating application at the job-site provide the Project Manager with 5 gallons of the anti-graffiti removal product (and necessary gallons of restorer, per 1.7 below) as used on the project, and delivered in 1 gallon unopened and properly labeled containers for future maintenance purposes.

1.5 PRODUCT HANDLING

A. Comply with pertinent conditions in ARTICLE 17 in the GENERAL REQUIREMENTS.

B. Deliver materials to the job-site in satisfactory sealed containers with labels intact with manufacturer's name, brand name, type of material and batch number.

C. Store materials in suitable location where directed by the Project Manager, in original unopened containers in compliance with manufacturer's printed instructions.

D. Inspected for approval before containers are opened and any condemned materials to be removed from the job-site.

E. Protect anti-graffiti coating materials from exposure to weather or damage caused by other construction operations.

1.6 GUARANTEE The Contractor shall conform to provisions of ARTICLE 16 of the GENERAL REQUIREMENTS and furnish the City with a written guarantee, which guaranties that during a period of two (2) years from date of completion and acceptance of the work, the coating will not turn white, peel, chip or crack, and that the Contractor will without additional

cost to the City, promptly make any repairs required as a result of ordinary wear and tear of the elements, and further guaranties that any defective material or work shall be properly repaired or replaced without additional cost to the City.

1.7 MAINTENANCE

A. **Extra Materials**: Furnish the City with five, factory sealed 1 gal. containers of each of the following:

1. Graffiti removal material recommended by the manufacturer for the substrate and the graffiti protection system specified.

2. Restorer for the coating material specified, designed to restore graffiti resistance as required after five removals.

PART TWO-PRODUCTS

2.1 ACCEPTABLE MATERIALS

A. Materials shall be the products of one manufacturer and be either the ones upon which the design is based on the products of the manufacturer approved in advance by the Project Manager in accordance with applicable conditions in the GENERAL CONDITIONS.

B. Material shall be the appropriate type as recommended by the manufacturers (hereinafter named) or provide an equal product of another manufacturer approved in advance by the Project Manager.

C. Material must be approved for use in the City of Los Angeles and must have a Research Report Number as issued by the City of Los Angeles.

2.2 ACCEPTABLE PRODUCTS

A. "Super-Kote A-G5" Sealer manufactured by Ven-Chem Company Inc. P.O. Box 3186, Santa Barbara, California, phone (805) 967-7600 or “Monochem Permashield” by Frazee Paint Co. Research Report No. 28080, phone (800) 826-9048.

B. The "Graffitirasor Systems" manufactured by Rainproof Systems, City of Commerce, CA 90022, Research Report No. 25035, phone (213) 887-8761.

C. “Vandal Guard” by Rainguard Products Co., 821 W. Hyde Park Blvd.; Inglewood, CA 90302, phone (310) 670-2953.

D. “SEI Chemicals GPA-300 or GPA 400”
3137 East 26th Street Vernon, CA 90058 Tel: 323 266 7111 Fax: 888 273 4489

2.3 MATERIAL PERFORMANCE CRITERIA :

A. Completed graffiti protection shall include the following performance criteria:

1. Shall have a flat nonglossy appearance.

2. Shall be nonyellowing and contain no waxes, urethanes or other yellowing resins.

3. Shall cause little or no change in the appearance of the treated surface.

4. Shall allow moisture vapor transmission.

5. Can be cleaned a minimum of five times.

6. Shall be renewable and repairable.

7. Be 98% effective in removing all graffiti on masonry surfaces.

8. Dirt pickup shall not be increased by coating.

9. Manufacturer will warrant product performance.

10. Product shall be VOC compliant.

11. Conform to all State and City waste disposal regulations including but not limited to those involving Proposition 65.

12. Product shall be capable by manufacturer's literature of withstanding 5 years exterior exposure without significant loss of protection, other than spot restoration of areas attacked by graffiti, cleaned, and recoated per written instructions of manufacturer.

13. Anti-graffiti treatment must be resistant to rain, weather, abrasion, peel, ultra-violet, and be clear and non-yellowing.

14. Anti-graffiti treatment should be able to withstand repeated removal of all types of paint and other graffiti materials with little or no defacement of or change to the original surface.

B. Any submitted product must be applied to sample area and have the test listed under "C" below performed.

C. After application of materials, a field demonstration or test will be performed to the satisfaction of Project Manager which will include:

1. Spray paint applied to material to simulate graffiti attack.

2. Attack allowed to stand 14 days before removal.

3. Removal by manufacturer's recommended process shall determine that at least 98% of the graffiti has been removed.

2.4 EQUIPMENT

All clear materials shall be applied by airless spray equipment. Tip size .015-.021

PART THREE - EXECUTION

3.1 SURFACE CONDITIONS

Examine the areas and conditions on which materials of this Section will be applied. Correct conditions detrimental to timely and proper completion of the work. Do not proceed with contracted work of this section until such detrimental conditions are corrected at no added cost to the City.

3.2 ENVIRONMENTAL CONDITIONS

A. Do not proceed with application of anti-graffiti materials when the ambient temperature is less than 45 degrees F., when low temperature of 40 degrees F. or less is predicted within a period of 24 hours, or if rain is expected in the next 24 hours.

B. Do not apply materials in rainy conditions or within 5 days after surfaces have become wet from rainfall or other moisture.

3.3 INSPECTION

Applicator shall notify manufacturer's representative a minimum of 72 hours prior to scheduled application for field inspection.

3.4 APPLICATION

A. Preparation of Surface :

1. Do not commence application until surface is structurally sound, clean, dry, and free from excess dust, greasy stains and efflorescence.

2. Form oils should be completely removed.

3. All cracks, voids, beeholes or mortar shrinkage shall be properly repaired and primed if necessary to make the surface uniform.

4. Allow substrate to dry and age at least 3 weeks before applications of anti-graffiti coating.

5. Porous concrete block should be sealed with approved "Rainproof Acryseal WD" or Monochem Aquaseal HD a minimum of 48 hours before application of anti-graffiti coating material.

6. Remove existing graffiti with "WipeOut" graffiti remover or approval equal. "WipeOut" product of National Chemsearch, Irving Texas, phone (1-(800)-527-9921).

7. Applicator/Contractor to use the application tools and methods as recommended by the coating manufacturer for use on and approved by the Project Manager.

9. Applicator/Contractor is responsible for daily application of a small test area

on surface to be coated before starting daily general application to assure desired results, especially if there have been temperature changes during application.

B. <u>Application of Anti-Graffiti Coating</u>:

1. Coverage: Apply materials at rate per square foot recommended by the material manufacturer.

2. Application Sequence: Apply two coats of the material "Graffitibase" followed by one coat of "Graffiticatcher" in compliance with manufacturer's specifications and recommendations.

    a. A minimum drying time of two hours should be allowed between the first and second coats of "Graffitibase".

    b. A minimum drying time of 4 hours should be allowed between the "Graffitibase" and the "Graffiticatcher".

3. Anti-graffiti coating process should achieve a non-yellowing, durable, clear film completely protecting the substrate from penetration of paint, ink, crayons, dirt, air pollutants, grime and similar materials and help maintain and protect the original appearance of the surface.

4. "Graffitibase" material should be applied with a "crosshatch" method of several horizontal passes followed immediately by vertical passes to build up a heavy wet film to insure sufficient uniformity. This is considered one coat and the same method is repeated for the second coat to build a minimum dry film thickness of 3 mils. Spray large areas in sections so overlap occurs before previously coated areas have dried.

    a. Start application at top of wall and work down surface. Schedule work so that the stopping point each day falls at an opening, column or corner.

5. "Graffiticatcher" should be applied with a "crosshatch" method of several horizontal passes followed immediately by vertical passes to build up a film to insure sufficient uniformity. This is considered one coat.

C. <u>Protection</u>: Applicator shall be responsible for protection of this and all adjacent work from damage during application with drop cloths or other suitable materials.

3.5 CLEAN-UP AND REPAIRS

A. **Required Clean-Up:** Conform to provisions of ARTICLE 7 - in DIVISION 1 - GENERAL REQUIREMENTS. Contractor shall carefully remove all protection materials from adjacent surfaces and any residue resulting from this operation. Completely remove oversprays and spills as soon as possible before curing and excess materials from the job-site.

B. **Repairs:** Any soiling of the work of this section shall be repaired by the installer of the anti-graffiti material as approved by the Project Manager at no added cost to the City.

(END OF SECTION)

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SECTION 09900
PAINTING

PART ONE - GENERAL

1.1 SUMMARY

A. Furnish all tools, equipment, materials, supplies and perform all labor required to paint the work indicated or noted on the Contract Drawings and hereinafter specified, including but not limited to the following:

1. Ferrous metal surfaces not galvanized or primed
2. Galvanized metal surfaces
3. Factory-primed metals, including surfaces of Fire Hose Cabinets
4. Mechanical and/or electrical equipment without complete factory finish
5. All surfaces of wood doors, including top, bottom and side edges
6. All surfaces of door frames
7. Interior surfaces of ducts visible through grilles and registers

B. Related Sections:

1. Documents affecting Work of this Section include, but are not necessarily limited to the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, and Sections in DIVISION 1 of these Specifications.
2. Metal Fabrications in Section 05500
3. Metal Doors and Frames in Section 08110
4. Toilet Partitions and Doors in Section 10165
5. Anti-Graffiti Coating Section 09860

C. Work Not to be Painted:

1. Metal surfaces with factory applied baked-on enamel finish
2. Exposed roof drains and overflow interior piping, except overflow downspout
3. Finish Hardware
4. Toilet Room Accessories
5. Concrete Masonry Units

D. Definition:

1. "Paint" as herein specified, means coating systems, materials including primers, emulsions, epoxies, enamels, sealers, fillers and other applied materials used as prime, intermediate or finish coats.

1.2 QUALITY ASSURANCE

A. Employee: Use adequate number of skilled employees who are thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper execution of work of this Section.

B. **Paint Coordination**:

1. Provide finish coats which are compatible with the prime coats actually used.

2. Review other Specification Sections to verify prime coats to be used and assuring compatibility of the total coating system for the various substrates.

3. Upon request from the Project Manager, furnish data on the characteristics of the specific finish materials to assure compatible prime coats are used.

4. Provide barrier coats over non-compatible primers or remove the primer and re-prime as required.

5. Notify the Project Manager in writing of anticipated problems in using the specified coating systems over prime-coatings supplied under other Specification Sections.

C. **Codes and Regulations:**

1. Work, equipment and materials must conform to applicable Federal, State and local laws and regulations. Current manufacturer's materials safety data sheets for all materials used and/or stored on the job-site must be on the job-site at all times.

1.3 SUBMITTALS

A. General: Comply with applicable provisions in SUBMITTALS Article 10 in DIVISION 1 - GENERAL REQUIREMENTS of these Specifications.

B. **Manufacturer's Data**:

1. Submit manufacturer's printed data and specifications needed to prove compliance with the specified requirements.

2. Submit materials list of all items proposed to be provided under this Section.

C. **Samples**:

1. Color Samples: Required for each type of paint material and color, four 8 1/2-inch x 11-inch swatches, to be submitted to the Project Manager for approval not less than 7 days prior to start of painting.

2. Painting samples at the job-site; submit if required, on actual surfaces and by methods comparable with the painting work requirements representing true quality of the proposed work, to be prepared by the Contractor during work process, as requested by the Project Manager.

3. Revise and resubmit each Sample as requested by the Project Manager until approval is achieved. Approved samples will become standards of color and

finish for accepting or rejecting the work of this Section.

4. Finish painting shall not commence until approved samples are on file at the job-site.

1.4 PRODUCT HANDLING

A. Delivery: Deliver materials to the job-site in factory sealed and properly labeled containers bearing manufacturer's name, type of paint and instructions for mixing and/or reducing.

B. Storage: Store paint materials in suitable dry, clean and well ventilated locations where directed by the Project Manager.

C. Inspection: Required for approval before containers are opened. Condemned materials to be removed from the job-site.

D. Protection: Required of all paint materials from exposure to weather or from damage as caused by other construction operations.

1.5 JOB CONDITIONS

A. Do not apply solvent-thinned paints when surfaced temperatures to be painted and the surrounding air temperatures are below 45 degrees F. or on damp or wet surfaces, unless otherwise permitted by the paint manufacturer's printed instructions as approved by the Project Manager.

B. Do not apply materials during fog, rain or mist or when inclement weather is expected within the dry time specified by the manufacturer.

C. Insure proper ventilation during all interior painting operations.

1.6 EXTRA STOCK (MAINTENANCE MATERIALS)

A. Required: Provide one full quart of sealed and properly labeled container of each paint color and type of paint used in the project for finish paint coats for maintenance use.

B. Delivery: Upon completion of work of this Section, deliver the required paint maintenance and color materials and store on the job-site where directed by the Project Manager as a condition precedent to the City's acceptance of the work of this Section.

1.7 PROTECTION

A. Required for all surfaces not be painted. Mask-off where necessary. Repair or replace damaged work with new work, subject to the approval of the Project Manager at no added cost to the City.

1.8 CLEAN-UP

A. At End of Each Day's Work: Return materials and equipment to the storage area. Remove paint or oil-saturated cloths from the job-site daily or hang out flat and singly to dry.

B. Final Clean-Up: Restore surfaces, not to be painted to original condition if soiled; remove from the job-site all tools, equipment, rubbish and debris; leave the premises in a broom clean condition.

1.9 SAFETY REQUIREMENTS

A. Comply with all safety and health requirements of the "Federal Labor Standards" and in applicable Section in the GENERAL CONDITIONS of these Specifications.

B. All persons engaged in spraying operations or handling flammable or toxic materials shall wear protective apparel.

C. Cloth waste materials which might constitute a fire or health hazard shall be placed in a closed metal container or destroyed by an approved method at end of each day's operations.

1.10 REQUIREMENTS OF REGULATORY AGENCY

A. All paints formulation and their application shall conform to the South Coast Air Quality Management District regulations.

PART TWO - PRODUCTS

2.1 PAINT MATERIALS

A. General: Factory-mixed products of manufacturers hereinafter specified or products which have been tested and approved equal by the Project Manager prior to date of inviting bids.

B. Substitutions: Samples of other similar products of professed equality may be submitted to the Project Manager for testing, but such products will not be considered for use in this project. Time does not permit the Project Manager to properly test unknown paints offered as substitutes for paints specified in this project. Conform to applicable conditions in the GENERAL CONDITIONS of these Specifications.

C. **Paints:**

1. Rust Inhibitive Primer:
    a. Sherwin Williams/Frazee No. 661 "Metal Prime"
    b. Dunn-Edwards: "Red-Oxide Primer No. 43-4"
2. Galvanized Metal Primer:
    a. Sherwin Williams/Frazee No. 661 "Metal Prime"
    b. Dunn-Edwards: "Van Prime" No. W711 MULTI-PRIME No. W713
3. Pretreatment for Galvanized Metal Surfaces:
    a. Sherwin Williams/Frazee "Jasco Prep & Prime"
    b. Dunn-Edwards "Galva-Etch No. GE 123"

4. Exterior Trim Enamel:

    a. Sherwin Williams/Frazee "646 Aroplate Gloss" or 628 "Aroplate Semi-Glass"

    b. Dunn-Edwards Enamelized House Paint W960 PERMA GLOSS

5. Enamel Undercoater-Interior:

    a. Sherwin Williams/Frazee No. "367 Fraflo-Undercoater"

    b. Dunn-Edwards "Undercoater No. E22-1

6. Semi-gloss Enamel - Interior Alkyd type:

    a. Sherwin Williams/Frazee No. "328 Velglo".

    b. Dunn-Edwards No. 72 ARISTOSHEEN Semi-Gloss

7. Pigmented Wall or Ceiling Sealer Alkyd type for Plaster and Concrete:

    a. Sherwin Williams/Frazee - "367 Fraflo"

    b. Dunn-Edwards "Alkylseal No. E 28-1

8. Interior Flat Wall or Ceiling Paint - Vinyl Latex Type:

    a. Sherwin Williams/Frazee No. "011 Majestic"

    b. Dunn-Edwards "Decovel Velvet Flat. W-401

9. Interior and Exterior Wood Stain:

    a. Sherwin Williams/Frazee - 288 Madera Acrylic

    b. Dunn-Edwards-"Weather-Pro" No. WP3 by Okon, Inc.

10. Primer for Aluminum:

    a. Sherwin Williams/Frazee-Zinc Chromate No. 561

    b. Dunn-Edwards-"Van Prime" No. W711 MULTI-PRIME No. W713

11. Gloss Enamel-Interior-Alkyd type:

    a. Sherwin Williams/Frazee - 143 "Mirror Glide Acrylic Gloss Enamel"

    b. Dunn-Edwards W960 PERMASHEEN

12. Eggshell Enamel-Interior - Acrylic type:

    a. Sherwin Williams/Frazee - Lo-Glo No. 022 "Eggshell"

    b. Dunn-Edwards-"DECOSHEEN" No. W411

13. Clear Resin Sealer for Wood:

    a. Sherwin Williams/Frazee-Clearwood Sealer No. 961 Sanding Sealer

    b. Dunn-Edwards-Resin Seal No. V-106A

14. Sanding Sealer-Lacquer type:

    a. Sherwin Williams/Frazee-Sanding Sealer No. 760 M00126

    b. Dunn-Edwards-DECOLAC-High Solids LQX101

15. Clear Semi-Gloss Varnish - Interior:

    a. Sherwin Williams/Frazee - "No. 921 Satin Varnish"

    b. Dunn-Edwards - No. V199

16. Clear Semi-Gloss Lacquer:

    a. Sherwin Williams/Frazee - "No. 727 M40047

    b. Dunn-Edwards - DECOLAC High Solids LQX104

17. Metal Door and Door Frame Paint

    a. TNEMEC, High Performance Coating
    Contact: Chris Hille, (310)637-2363, chille@tnemec.com

D. Miscellaneous Materials: Provide thinners and other materials as may be required for the preparation of surfaces to be painted or stained as recommended by the manufacturer and as approved by the Project Manager.

1. Thinner: As recommended by the Paint Manufacturer.

2. Paste Wood Filler: Fed. Spec. TT-F-336

3. Spackle by the Muralo Co., Inc. or equal.

4. Rust Remover: Manganese Phosphate No. 7 by Armett Assoc.

5. Brushing Sanding Sealer: ICI or Dunn-Edwards or Frazee.

6. Other Materials: As suitable and approved by the Project Manager.

2.2 COLOR SCHEDULES

A. The Project Architect will prepare a color schedule with samples or as noted on the Finish Schedule on the Drawings for guidance in painting if requested.

B. The Project Architect may select, allocate and vary colors on the different surfaces throughout the work.

2.3 APPLICATION EQUIPMENT

A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer and as approved by the Project Manager.

B. Prior to use of application equipment, verify that the proposed equipment is actually compatible with the material to be applied, and that integrity of the finish will not be jeopardized by use of the proposed equipment.

PART THREE - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until detrimental conditions are corrected.

B. Where directed by the Project Manager, correct surface defects which may adversely affect the work of this Section.

3.2 PROTECTION

A. Contractor shall mask off all adjacent surfaces not to be painted and shall repair or replace damaged work with new work subject to the approval of the Project Manager at no added cost to the City.

B. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or splatter from fouling surfaces not be painted.

C. Remove electrical plates, surface hardware and related fittings prior to commencement of work and carefully store, clean and reinstall such items on completion of work in each area.

D. Protect all surfaces, equipment and fixtures from damage resulting from use of fixed, movable and hanging scaffolding planking and staging. Repair damage resulting from inadequate protection at no added cost to the City.

3.3 MATERIALS PREPARATION

A. **General**:

1. Mix and prepare paint materials in strict accordance with manufacturer's recommendations as approved by the Project Manager.

2. When materials are not in use, store in tightly covered containers.

3. Maintain containers used in storage, mixing and application of paint in a clean condition, free from foreign materials and residue.

B. Stirring:

1. Stir materials before application, producing a mixture of uniform density.

2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.4 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturers' recommendations as approved by the Project Manager.

2. Remove removable hardware, switch plates and similar items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.

3. Following completion of painting in each space or area, reinstall the removed items by using employees skilled in the necessary trades.

4. Clean each surface to be painted prior to applying paint of surface treatment.

5. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F. prior to start of mechanical cleaning.

6. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.

7. Contractor responsible for unsatisfactory work due to improper surface conditions.

B. Preparation of Wood Surfaces:

1. Clean wood surfaces until free from dirt, oil, and other foreign substance.

2. Smooth finished wood surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness of sandpaper to produce a uniformly smooth and unmarred wood surface.

3. Unless specifically approved by the Project Manager, do not proceed with painting of wood surfaces until the moisture content of the wood is 12% or less as measured by a moisture meter approved by the Project Manager.

4. Fill open-grain wood with paste wood filler before application of varnish, lacquer or semi-gloss enamel.

5. Prime top, bottom and side edges of doors immediately after fitting of doors.

6. Fill pits and other imperfections in exposed edges of plywood doors and casework with spackle or other suitable filler. Apply filler with putty knife and sand smooth when set.

C. **Preparation of Metal Surfaces**:

1. Thoroughly clean surface until free from dirt, oil, and grease.

2. On galvanized surfaces, use solvent for the initial cleaning, and then treat the surface thoroughly with phosphoric acid etc. Remove etching solution completely before proceeding. Conform to the requirements of Subsection 310-3 of the "Standard Specifications".

3. Allow to dry thoroughly before application of paint.

4. On Shop-Coated Metal:

   a. Cleaned of dust, dirt and other foreign matter.

   b. Spot coat field connections, welds, soldered joints and burned and abraded areas of shop coatings.

5. Copper Pipe: Rub with steel wool to remove the polish and mill coating and clean with solvent.

D. **Preparation of Drywall Surfaces**:

1. Fill cracks, holes or other imperfections with suitable spackle and finish flush with adjoining surfaces.

2. To be cleaned of dust and dirt and be thoroughly dry.

E. **Preparation of Portland Cement Plaster Surfaces**:

1. Fill cracks, holes and other imperfections with suitable patching plaster, finished flush and match adjacent surfaces.

2. To be treated as recommended by the manufacturer of paint to be applied.

3. To be cleaned of dust, dirt, efflorescence, encrustation and be thoroughly dry.

F. Concrete and/or Masonry: Remove dust, dirt, grease or other foreign matter by approved methods.

3.5 APPLICATION AND WORKMANSHIP

A. **General**:

1. Application shall be executed by first class trade painters in accordance with the standards set forth by the Painting and Decorating Contractor's Association of American and in accordance with paint manufacturer's directions using application equipment and techniques best suited for substrate and type of material being applied.

2. Adequately ventilate freshly painted interior areas to allow entrance of fresh air circulation for at least 24 hours after application of paint.

3. Paints shall not be applied when temperature is below 50 F or when environmental conditions are unfavorable to application or drying of paint materials.

4. All wood and metal work to be hand brushed to produce an even film surface. All large surfaces may be rolled. All exposed ceiling structures and other surfaces where hand brushed work would be inferior may be sprayed as approved by the Project Manager.

5. All FRP surfaces shall be sprayed as approved by the Project Manager.

B. Workmanship:

1. Each coat shall be even, with uniform color and texture.

2. Finish painted surfaces shall be free from sags, brush marks, dirt, cloudy or mottled surfaces, scratches, cracks or other blemishes and thin coating on arises.

3. Mixing and thinning of paint materials: thoroughly stir, strain and keep at a uniform consistency during application in accordance with manufacturer's directions. Do not mix together materials of different manufacturer's. Packaged paint materials may be thinned just prior to application in accordance with manufacturer's directions.

C. Coats:

1. Number of necessary coats to produce specified workmanship.

2. Minimum number hereinafter specified.

3. Each coat in full coverage; approval of each coat by the Project Manager or Inspector required before succeeding coat is applied.

4. Undercoats to be dry and hard before application of succeeding coat and to be tinted to approximate color of finish coat.

5. Suitably sand as necessary for proper finish.

6. Prime and succeeding coats for each finish to be products of the same manufacturer unless otherwise specified, indicated or authorized by the Project Manager.

D. Colors:

1. As selected by the Project Manager or as noted on the Contract Drawings.

2. Each coat a proper ground coat for the succeeding coat and differing appreciably in tint from the preceding coat.

3. Finish coats to match approved samples.

E. Priming and Back-Priming of Wood Finish and Millwork:

1. Priming: Required for all surfaces to be exposed, with specified primer or as directed by manufacturer.

2. Back-Priming: Required for all wood and FRP surfaces which will be set against concrete, masonry or plaster with specified primer.

3. Application: At mill or immediately after delivery to the job-site. Notify the Project Manager prior to application, regardless if applied at the mill or at the job-site.

F. <u>Exterior Painting of Metals</u>:

1. Shop-Coated Surfaces (including exterior, interior and all edges of exterior hollow metal doors and exterior pressed metal or channel door frames): One coat of appropriate primer. Two coats of an exterior oil paint.

2. Un-coated Ferrous Metals: 1st Coat of Rust Inhibitive Primer and 2nd and 3rd coats of an exterior trim enamel.

3. Galvanized Metals: 1st coat of galvanized metal primer and 2nd & 3rd coats of exterior oil paint.

G. <u>Interior Painting</u>:

1. Ferrous Metals: 1st coat of Rust Inhibitive Primer and 2nd Coat of Enamel Undercoater and 3rd coat of interior finish enamel.

2. Galvanized Metals: Vinyl Wash Primer Pretreatment, 1st coat of Galvanized Metal Primer and 2nd and 3rd coats of Interior Trim Enamel.

3. Concrete walls: 1st coat of Alkyd type Pigmented Wall Sealer and 2nd coat of Vinyl Latex type Flat Wall Paint.

4. Wood Doors: 1st coat of enamel undercoater, 2nd and 3rd coats of Gloss Enamel.

5. Exposed Metal Piping and Ducts (without complete factory finish).

   a. Priming: One coat of ferrous metal primer on un-coated ferrous metal or one coat of galvanized metal primer on galvanized surfaces or one coat of non-ferrous primer on aluminum or copper.

   b. Finish Painting: Gloss or Eggshell finish in painted spaces as necessary to closely match color and finish of room surfaces in which piping or ducts are located.

6. Interior Plaster Surfaces: 1st coat of Alkyd type pigmented wall sealer, 2nd coat of enamel undercoater and 3rd coat of Enamel.

7. Interior Portion of Ducts (visible through grilles and registers): Two coats of flat black oil based paint.

8. Concrete Masonry Unit Surfaces: 1st coat concrete block primer, 2nd coat of enamel undercoater and 3rd coat enamel, sheen as indicated on the Drawings.

H. **Painting Mechanical and Electrical Work**:

1. Paint all mechanical and electrical equipment, including exposed metal pipes, ducts, pipe stands, supports, copper piping, fire hose cabinets within the building and exposed mechanical equipment on the roof and exterior of the building.

    a. Surfaces of mechanical and electrical work shall match the finish of the adjacent painted wall surfaces where located.
    b. Finish all exterior mechanical equipment or the roof and exterior of building, as indicated on the Drawing.

2. Paint all portions of ducts visible through grilles, and registers; two coats of flat black oil base paint.

3. Paint canvas-covered pipes to match the adjacent painted wall surfaces in which pipe is located.

I. **Painting Miscellaneous Surfaces**:

1. Stain all interior surfaces of millwork, casework, and counters. Same as exposed surfaces. See Article 3.04(B)4. above.
2. Interior surfaces of drawers, two coats of shellac.

3. Paint reveals, two coats of flat black paint where indicated on the Drawings.

4. Wood shelves, hook strips, and plywood backing for mechanical and electrical equipment; "Gloss Enamel Finish" color to match adjacent wall surfaces, except as otherwise noted in the "Finish Schedule" on the Drawings.

J. Touch-Up Painting: Required, all areas or items scratched, marred or defaced in any manner by Contractor's operations as directed by the Project Manager, at no added cost to the City.

1. If factory finish on any equipment furnished by the Contractor is damaged in shipment or during construction operations, equipment shall be refinished by the Contractor to the satisfaction of the Project manager, at no added cost to the City.

2. Contractor shall provide one can of touch-up paint for each different color of factory finish which is to be the final finish surface of the product.

(END OF SECTION)

SECTION 106050

WIRE MESH WINDOW GUARDS

1.00 — GENERAL

1.01 - DESCRIPTION: Furnish all labor, materials, and equipment necessary to fabricate and install wire mesh partitions as indicated on the drawings and in these specifications.

1.02 - RELATED WORK SPECIFIED ELSEWHERE:

(a) Miscellaneous structural supports; in Division 5, MISCELLANEOUS METALS Section.

(b) Finish painting; in Division 9, PAINTING Section.

1.03 - FIELD MEASUREMENTS: Contractor shall verify all measurements and field conditions at the job-site prior to submittal of shop drawings and fabrication.

1.04 - SHOP DRAWINGS: Required, in conformance with provisions of Division 1, indicating materials and details of fabrication and installation.

1.05 - DELIVERY AND STORAGE: Protect all materials and components during shipping, handling, and storage at the job-site against damage. All work showing defects or damage of any kind will not be accepted.

1.06 - CLEAN-UP: Upon completion of work of this Section, remove all tools, equipment, excess materials, and rubbish resulting from this work and leave the work areas in a safe and clean condition.

2.00 - PRODUCTS

2.01 - MANUFACTURER: California Wire Products Corp. or other member of the Woven Wire Products Association.

2.02 - TYPE: Manufacturer's standard woven wire partitions, with necessary hardware and appurtenances for complete installation; heights and lengths as indicated on the drawings.

2.03 - PARTITION MATERIALS (As Applicable):

(a) General: To be new and best quality.

(b) Wire Mesh: No. 10 W and M gauge steel wire, 1-1/2" diamond mesh. (MATCH EXISTING)

(c) Vertical Frames: 1-1/4" x 5/8" cold-rolled "C" section steel channels with 1/4" bolt holes 12" O.C.

(d) Horizontal Frames: 1” x 1/2”” cold-rolled “C” shaped steel channels.

(e) Center Reinforcing Bar: Two 1” x 1/2” cold-rolled “C” shaped steel channels.

(f) Panel Supports: Steel angles or square tubular members as indicated on the drawings.

3.00 - EXECUTION

3.01 - PARTITION, CEILING, DOOR, AND WINDOW PANELS:

(a) Panel Framing: Corners mortised and tenoned and welded, welds ground smooth; frames drilled to receive wire.

(b) Mesh clinched into frames and tack welded; all wires to pass through center of bars.

(c) All wire ends of mesh installed in frames and firmed in place; mesh to be taut.

(d) Stiffeners: Set horizontally in partition panels as indicated with wire mesh between the two channels, channels riveted together and with ends welded to framing members.

(e) Finish: all portions of partitions, doors, windows, and ceiling panels shall be hot-dipped galvanized.

3.02 — INSTALLATION:

(a) General: Rigid, accurate, plumb, level, true to line, securely anchored in place without projecting screws, nuts, or other fastenings that would permit easy removal; all in accordance with the drawings and approved shop drawings.

(b) Attachment of Panels:

1. Anchor partition panels to each other and to corner posts with bolts provided by the fabricator.

2. Anchor partition panels to walls or columns using bent plate or angle brackets and bolts to keep partition panels minimum 1” from wall or column.

SECTION 102113
SOLID PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Solid plastic toilet compartments including the following: (Eclipse)
   1. Floor mounted overhead-braced toilet compartments.
   2. Floor mounted overhead-braced privacy screens.
   3. Floor mounted overhead-braced entry partitions.
   4. Floor mounted urinal screens.
   5. Wall mounted urinal screens.

1.2 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. ASTM B 85 - Standard Specification for Aluminum-Alloy Die Castings.
   3. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

B. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

C. United States Green Building Council (USGBC): LEED Green Building Rating System.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

F. Sustainable Design Submittals:
   1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled

content.
2. Regional Materials: Certify distance in miles between manufacturer and Project and between manufacturer and extraction or harvest point.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

C. Performance Requirements:
1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with the ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials:
a. Class A flame spread/smoke developed rating, tested to ASTM E84.
b. Class B flame spread/smoke developed rating, tested to ASTM E84.
2. Material Fire Ratings:
a. National Fire Protection Association (NFPA) 286: Pass.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. (Labor not included in warranty.)

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Scranton Products, which is located at: 801 E. Corey St.; Scranton, PA 18505; Toll Free Tel: 800-445-5148; Fax: 855-376-6161; Email:request info (info@scrantonproducts.com); Web:http://www.scrantonproducts.com

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MATERIAL

A. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface;
1. Fire Rating: Not required.
2. Fire-resistance Rating: Class A.
3. Fire-resistance Rating: Class B.
4. Fire-resistance Rating: NFPA 266.

5. Recycled Content (Post Industrial): 25 %.
6. Recycled Content (Post Industrial): 100 %.
7. Recycled Content (Post Consumer): 100 %.

B. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.

C. Aluminum Die Castings: ASTM B85, A380 alloy.

D. Stainless Steel Castings: ASTM A167, Type 304.

E. Rubber: Abrasion resistant Styrene Butadiene Rubber, 65 to 80 Shore A durometer, black.

2.3 SOLID PLASTIC TOILET COMPARTMENTS AND SCREENS

A. Basis of Design: Eclipse Toilet Partitions as manufactured by and supplied by Scranton Products.
1. Style: Floor mounted overhead-braced toilet compartments.

B. Doors and Panels: High density polyethylene (HDPE), fabricated from SEQ CHAPTER 1extruded polymer resins, forming single thickness panel.
1. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
2. Thickness: 1 inch (25 mm).
3. Edges: Shiplap.

C. Panel Color: Traditional Series:
1. Black - Orange Peel.
2. Black - Grip Ex.
3. Paisley - Orange Peel.
4. Shale - Orange Peel.
5. Charcoal Grey - Orange Peel.
6. Grey - Orange Peel.
7. Glacier Grey - Orange Peel.
8. White - Orange Peel.

D. Panel Color: Bold Series:
1. Fossil - Orange Peel.
2. Hunter Green - Orange Peel.
3. Burgundy - Orange Peel.
4. Blueberry - Orange Peel.
5. French Blue - Orange Peel.

E. Panel Color: Warm Series:
1. Mahogany - Orange Peel.
2. Concrete - Orange Peel.
3. Linen - Orange Peel.
4. Sandcastle - Orange Peel.
5. Sandstone - Orange Peel.
6. Desert Beige - Orange Peel.
7. Mocha - Orange Peel.

F. Panel Color: Metallic Series:
1. Bronze - Hammered.
2. Bronze - Rotary Brushed.
3. Nickel - Hammered.
4. Nickel - Rotary Brushed.
5. Stainless - Hammered.
6. Stainless - Grip Ex.
7. Stainless - Rotary Brushed.

G. Doors and Dividing Panels:
   1. Standard Privacy:
      a. Height: 55 inches (1397 mm) high and mounted at 14 inches (356 mm) above the finished floor.
   2. High Privacy:
      a. Height: 62 inches (1575 mm) high and mounted at 8 to 14 inches (203 to 356 mm) above the finished floor.
   3. Extra Privacy:
      a. Height: 71-1/2 inches (1816 mm) high and mounted at 4 inches (102 mm) above the finished floor.

H. Metal Posts: 82.75 inches (2102 mm) high, heavy duty extruded aluminum, clear anodized finish, fastened to foot with stainless steel tamper resistant screw.

I. Hidden Shoe (Foot): One-piece molded polyethylene invisible shoe inserted into metal post and secured to metal post with stainless steel tamper resistant screw.

J. Headrail Cap and Corner Cap: One-piece molded polyethylene secured to metal post with stainless steel tamper resistant screw; adjustable to level headrail to finished floor.

K. Wall Brackets: Continuous heavy duty extruded aluminum, clear anodized finish, inserted into slotted panel and fastened to panels with stainless steel tamper resistant screws.
   1. Type: Single Ear bracket aluminum.
   2. Type: Double ear bracket aluminum.
   3. Length: 54 inches (1372 mm).
   4. Length: 65 inches (1651 mm).
   5. Length: 71 inches (1803 mm).

L. Headrail: Heavy duty extruded aluminum, designer anti-grip design, clear anodized finish, fastened to headrail bracket with stainless steel tamper resistant screw and to headrail cap or corner cap with stainless steel tamper resistant screw.
   1. Headrail Brackets: Heavy duty extruded aluminum, clear anodized finish, secured to wall with stainless steel tamper screws.

M. Door Hardware:
   1. Hinges:
      a. Edge-mounted helix style stainless steel continuous hinge.
         1) Closing degree: 5 degrees.
         2) Comes to a full close on its own weight
   2. Occupancy Indicator Latch and Housing:
      a. Material: Satin stainless steel.
      b. Occupancy indicators: Green for occupied and red not occupied.
      c. Slide bolt and button.
   3. Coat Hook and Door Bumper Combination:
      a. Material: Chrome plated Zamak
      b. Handicap Door: Equip with second door pull and door stop.
   4. Door Pulls: Chrome plated Zamak

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved Shop Drawings.

B. Install partitions rigid, straight, plumb, and level.

C. Locate bottom edge of doors and panels ___ inches above finished floor.

D. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).

E. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.

F. Finished surfaces shall be cleaned after installation and be left free of imperfections.

3.4 ADJUSTING

A. Adjust doors and latches to operate correctly.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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ELECTRONIC KNOXBOX® 3200

KnoxBox 3200, the number one high-security key lock box trusted by emergency responders and property owners, is now available with the electronic Knox eLock Core™. Store up to 10 keys to gain rapid access to commercial properties. Box openings are recorded and tracked in the cloud-based KnoxConnect™ Management System.



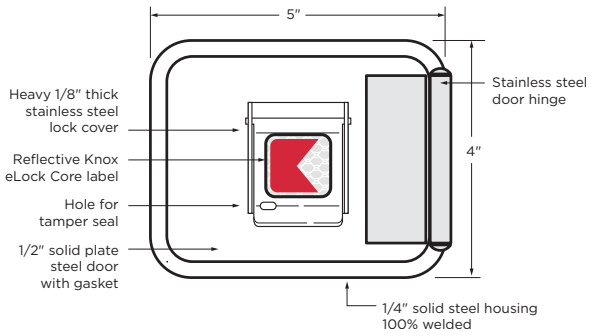
Available in 3 colors:

Black | Aluminum | Dark Bronze

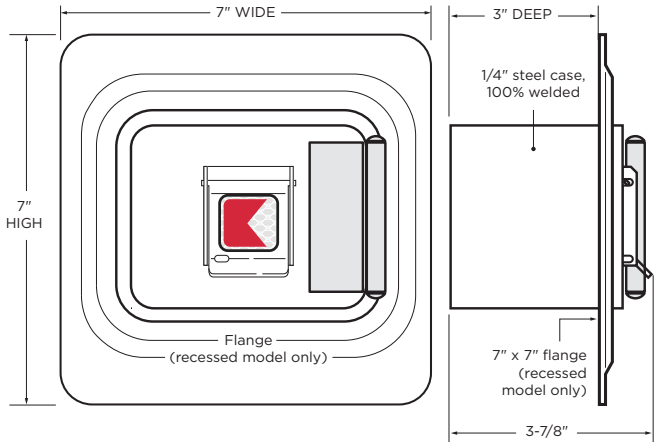
WEIGHT:
Surface Mount - 8 lbs.
Recessed Mount - 9 lbs.

DIMENSIONS:
Surface Mount Body - 4" H x 5" W x 3-7/8" D
Recessed Mount Flange - 7" H x 7" W

SURFACE MOUNT - FRONT VIEW



RECESS MOUNT - FRONT VIEW **SIDE VIEW**



FEATURES

- Stores maximum 10 keys. Access cards and small entry items may also fit in interior compartment but will reduce max key quantity.
- Knox eLock Core, powered by Knox eKey™
- Dust cover reflective label for Knox eLock System identification
- Enables tracking of box openings via cloud-based KnoxConnect™
- Built Knox-Rugged and secure: UL 1037, UL 1610, UL 1332
- Finished with Knox-Coat® to protect four times better than standard powder coat
- Weather-resistant door gasket
- Knox RainGuard™ provides weather protection
- Hinged door

BENEFITS

- No wiring or battery needed for power
- Captures box openings by date and time
- Allows rapid property access
- Reduces property damage
- Prevents forced entry into buildings
- Minimizes first responder injury
- Compliant to National Fire Code (NFPA, IFC, IBC)

OPTIONS

- Knox Tamper Alert connects to building's alarm system for extra security
- Mount types: Recessed and Surface
- 3 color options: Black, Aluminum, Dark Bronze

ACCESSORIES

- Multi-Purpose Switch for use on electrical doors, gates and other electrical equipment
- Recess Mounting Kit for new concrete or masonry construction
- Public Safety Labels
- Tag-Out Tamper Seals, Key Tags, and Key Rings

ORDERING SPECIFICATIONS

To insure procurement and delivery of the Electronic KnoxBox 3200, it is suggested that following specification paragraph is used:

KnoxBox surface/recessed mount with hinged door, with/without UL Listed Knox Tamper Alert. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal and stainless steel door hinge. Box is UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability, a rainguard to protect against certain weather conditions and a reflective Knox label indicating the Knox eLock System.

Exterior Dimensions: Surface Mount Body - 4" H x 5" W x 3-7/8" D
Recessed Mount Flange - 7" H x 7" W

Electronic Lock: Powered by Knox eKey. Communicates using industry standard encryption.

Finish: Knox-Coat proprietary finishing process

Color: Black, Dark Bronze or Aluminum

P/N: KnoxBox KLS-3200 (mfr's cat. ID)

Mfr's Name: KNOX COMPANY

1601 W. DEER VALLEY RD. PHOENIX, AZ 85027 | T. 800-552-5669 | F. 623-687-2290 | INFO@KNOXBOX.COM | KNOXBOX.COM
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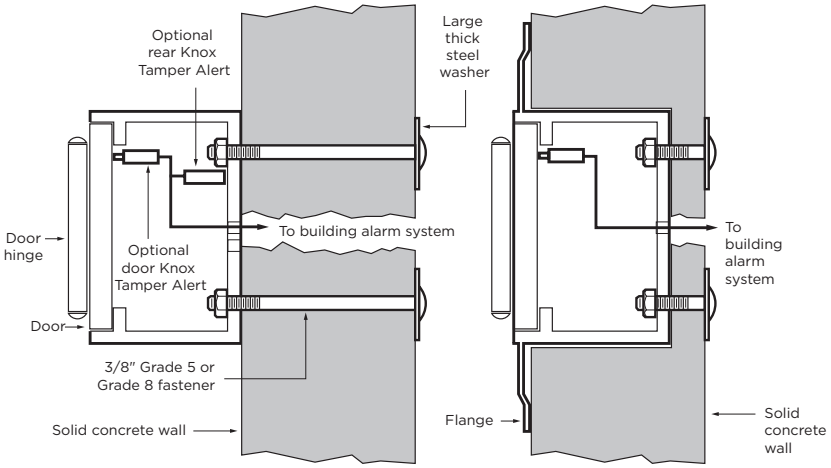
KNOX®
When seconds matter™

ELECTRONIC KNOXBOX® 3200

GENERAL MOUNTING INSTRUCTIONS

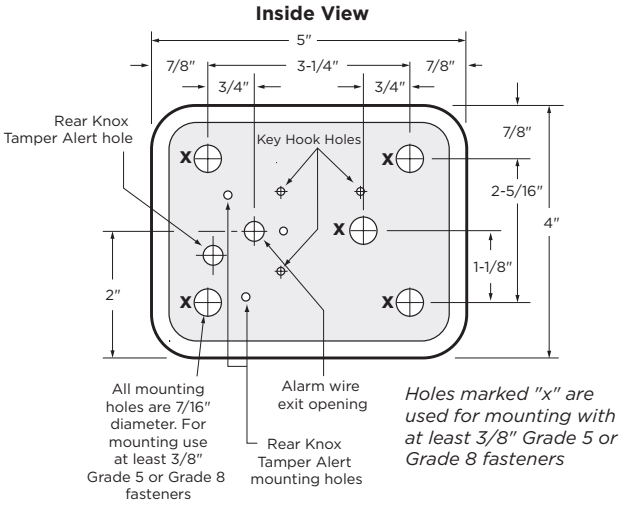
Suggested minimum mounting height, 6 feet above ground.

ATTENTION: KnoxBox is a very strong device that MUST be mounted properly to ensure maximum security and resist physical attack.



KnoxBox 3200 Hinged Door Surface Mount

KnoxBox 3200 Hinged Door Recess Mount



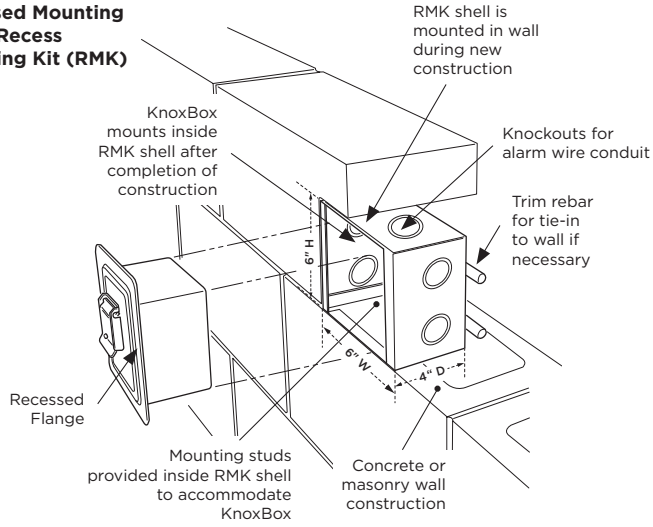
RECESS MOUNTING KIT AND INSTALLATION INSTRUCTIONS

The Recess Mounting Kit (RMK) includes shell housing and mounting hardware, which may only be used for recessed models to cast-in-place within new concrete or masonry construction. The KnoxBox is mounted into the shell housing after construction is completed.

RECESS MOUNTING KIT DIMENSIONS

Rough-in Dimensions:
6-1/2" H x 6-1/2" W x 5" D

Recessed Mounting Using Recess Mounting Kit (RMK)



IMPORTANT:
Care should be taken to ensure the front of the Recess Mounting Kit (RMK) shell housing, including the cover plate and screw heads, is flush with the wall. The RMK must be plumbed to ensure vertical alignment of the box.

ABOUT KNOX COMPANY

Over forty years ago, a unique concept in rapid access for emergency response was born. The KnoxBox®, a high-security key lock box, was designed to provide rapid access for emergency responders to reduce response times, minimize injuries and protect property from forced entry.

Today, one revolutionary lock box has grown into a complete system providing rapid access for public safety agencies, industries, military, and property owners across the world. The Knox Company is trusted by over 14,000 fire departments, law enforcement agencies, and governmental entities.

KNOX COMPANY
1601 W. DEER VALLEY RD
PHOENIX, AZ 85027

T. 800.552.5669
F. 623.687.2290

KNOXBOX.COM
INFO@KNOXBOX.COM

URBAN FORM WALL MOUNT BENCH

Model Number : UFWM-17S Seat Support

UFWM-17E Seat End 2 x 6 Re-plast Planks



PRODUCT SPECIFICATIONS

Produits Re-Plast Avantage +™ Recycled Plastic Slats
Planks Actual Size 1 7/16 x 5 3/8
Standard Lengths are 6,10 and 12Ft
This product will not rot, splinter, or warp reducing maintenance costs over the life of the product.

Colours Available: Black, Green, Harbour Grey, Light Grey, Redwood, Sand, Walnut

10 YEAR LIMITED WARRANTY

Durable Powder Coated Aluminum Supports

Spacing Between the Supports NOT TO EXCEED 20"

Standard Colours: Brown Slate, Victor Ridge II, Nordic Lichen, Timeless Rust, Grey Gold, Textured Silver, Precious Sand, Groovy Red, Black Textured, Earth Clay, Noble Bronze, Modern Khaki

Long Lasting Stainless Steel Hardware

CUSTOMIZED SOLUTIONS

Custom Powder Coating (Setup Charges May Apply)
2 x 4 Recycled Plastic Planks. (Must specify)
Bolt on Arm Rests (UFWM-ARM)
Customizable to any Length
INST-1 Stainless steel bolt down kit

DESIGNER NOTES

Taking its design cues from the Urban Form line, this cantilevered wall-mounted bench system is as straightforward as it is attractive. Crisp, modern lines and subtle motifs on the supports complete the look. This bench is great in applications where space is at a premium and where ease of cleaning around the base of a traditional bench would be cumbersome. The overall impression is that the bench is 'floating' along the wall and the capped lumber ends add to the aesthetic appeal.

Determining what is required for every application is simple. Each bench requires 2 ends (UFWM-17E). The number of supports (UFWM-17S) required is determined by the total length and dividing it up to a maximum span distances of 20". For example, a 72" bench would have 3 supports 18" apart from each other and a 60" bench would have 2 supports 20" apart from each other. The lumber comes in 3 lengths 6ft, 10ft and 12ft. The seating utilizes 3 boards deep giving a comfortable 17" seating surface.

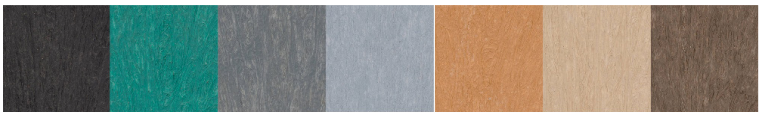
PRODUCT DIMENSIONS

Seat End UFWM-17E
Depth : 17" inches/432 mm
Height : 12.5 inches/318 mm
Weight : 2 lbs/.9 kg

Seat Support UFWM-17S
Depth : 17" inches/432 mm
Height : 12.5 inches/318 mm
Weight : 2 lbs/.9 kg

Re-plast Lumber
Thickness : 1 7/16 inches/38 mm
Depth : 5 3/8 inches/138 mm
Weight: 3.2 lbs/ft 4.6 kg/meter

AVAILABLE RECYCLED PLASTIC LUMBER COLOURS



Black Green Harbour Grey Light Grey Redwood Sand Walnut

RECYCLED CONTENT

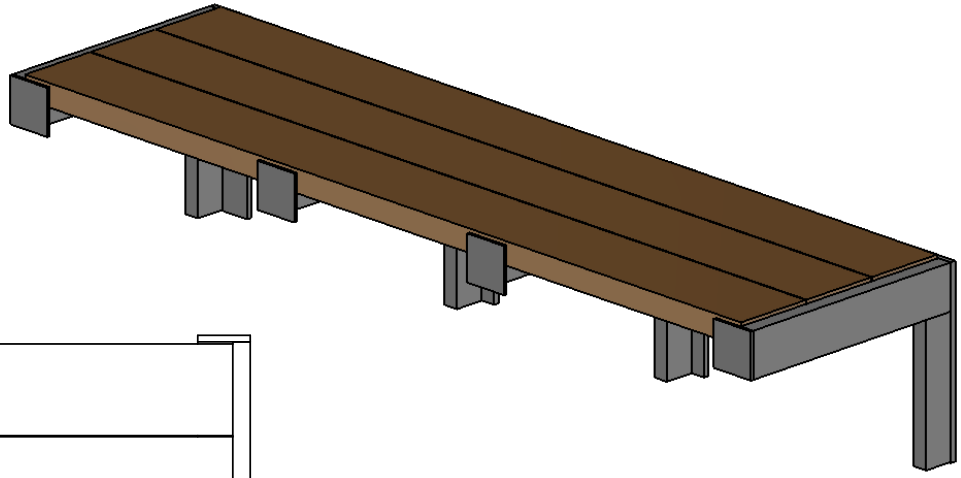
86% RECYCLED CONTENT BY WEIGHT
100% RECYCLABLE

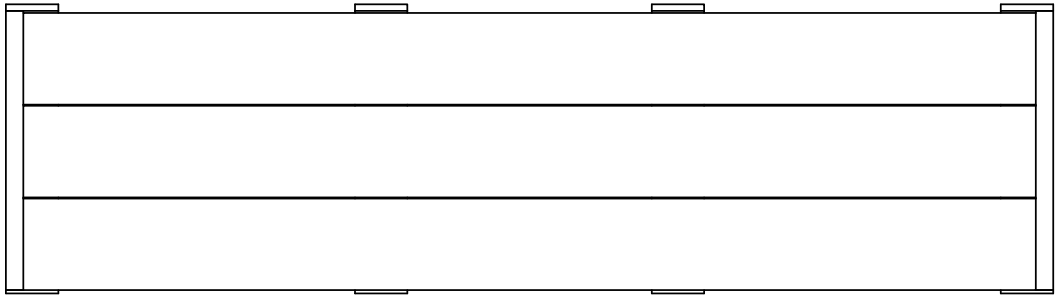
100% Canadian Made

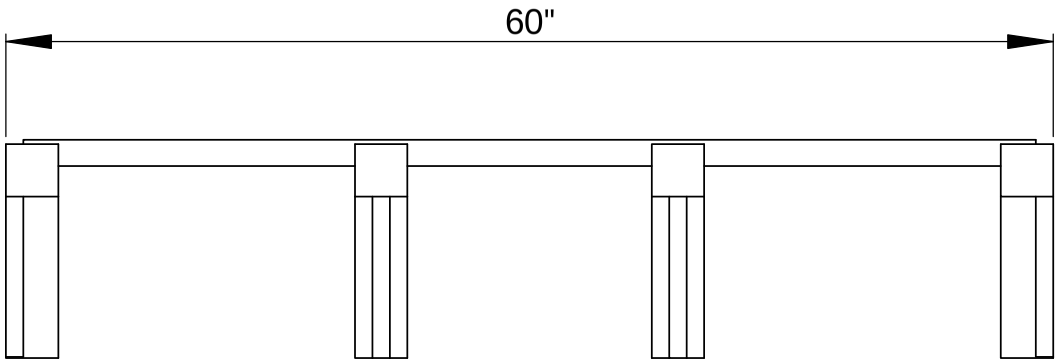
Wishbone Ltd. provides an extended 10 year limited warranty from the date of invoice.

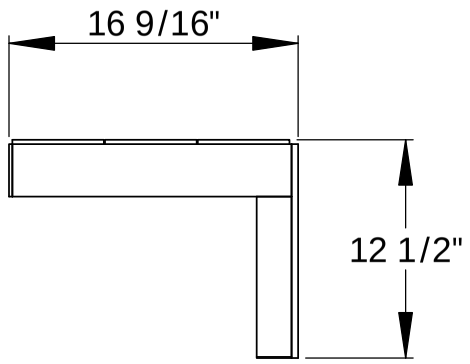
Visit us online at www.Wishboneltd.com

Wishbone Site Furnishings | #210-27090 Gloucester Way | Langley, BC CANADA V4W 3Y5
1.866.626.0476 sales@wishboneltd.com









PROPRIETARY AND CONFIDENTIAL

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Wishbone site furnishings

	NAME	DATE
DRAWN	SEAN B.	JAN 12, 2016
CHECKED	JOHN J.	-

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ±1/16"
ANGULAR: ±2°
TWO PLACE DECIMAL ±.02"
THREE PLACE DECIMAL ±.005"

Wishbone Site Furnishings

URBAN FORM WALL MOUNT - 17"

SIZE	DWG. NO.	REV.
A	UFWM-17	-

SCALE: 1:11 | MATERIAL: - | SHEET 1 of 1

126400-2

SECTION 13 1010
POOL CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes formwork, reinforcement, accessories, cast-in place concrete, finishing and curing for pool floor structure.

B. Concrete work shall conform to ACI 301 except as modified below.

1.2 SUBMITTALS

A. Product Data: Submit for admixtures, reinforcing steel, epoxy, non-shrink grout, and waterstops.

B. Design Data: Submit mix design.

1.3 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI 301 and 347.

B. Perform concrete reinforcing work in accordance with ACI 301, ACI 318, and Manual of Practice.

C. Perform cast-in-place concrete work in accordance with ACI 301.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

A. Form Materials: At the discretion of the Contractor.

B. Plywood: PS 1, MDO, Douglas Fir species; Structural 1 grade; sound undamaged sheets with clean true edges.

C. Lumber: Douglas Fir species; #1 grade.

D. Form Release Agent: Colorless mineral oil which will not stain concrete or impair natural bonding characteristics of coating intended for use on concrete.

2.2 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars, plain finish.

B. Reinforcing Steel Stainless Steel: ASTM A955/A955M, 60 ksi yield grade; deformed billet steel bars, plain finish.

C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing.

D. Fabricate concrete reinforcing in accordance with ACI 315.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150, Normal-Type II/V Portland type.

B. Fine and Coarse Aggregates: Use 1 inch coarse aggregate conforming to ASTM C-33 Size #5 and comply with Title 24, Section 1903A.3.

C. Water: Clean and not detrimental to concrete.

D. Air Entrainment Admixture: ASTM C260.

2.4 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94.

B. Provide concrete with the strengths as indicated on the drawings with a maximum slump of 4 inches for all flatwork.

C. Select mix design proportions for normal weight concrete in accordance with Title 24, Section 1905.2.

2.5 COMPOUNDS, HARDENERS AND SEALERS

A. Curing Compound: ASTM C309.

B. Absorptive Mats: ASTM C171.

2.6 EPOXY

A. Cartridge type two-component 100% solids epoxy based system dispensed and mixed through a static mixing nozzle supplied by the manufacturer and meeting requirements of ASTM C-881 Type I and IV with 14,830 psi minimum compressive strength. The epoxy shall be tested for use in cracked and uncracked concrete per ICC-ES AC308.

B. Model SET-XP manufactured by Simpson Strong -Tie.

2.7 NON-SHRINK GROUT

A. Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents with minimum compressive strength of 9,000 psi at 28 days and suitable for concrete repair applications from featheredge to 4 inch depth.

B. Model Rapid Set Cement All manufactured by CTS Cement Manufacturing.

2.8 EXPANDING RUBBER WATERSTOP

A. Caulk type elastic sealant, single component hydrophilic urethane compound with minimum physical properties of 350 psi tensile strength, 700 percent elongation, and 20 Hs hardness.

B. Model Adeka Ultraseal P-201 manufactured by Asahi Denka Kogyo K.K.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

A. Erect formwork, shoring and bracing to achieve design requirements.

B. Provide bracing to ensure stability of formwork.

C. Apply form release agent to formwork prior to placing form accessories and reinforcement.

D. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are affected by agent.

E. Clean forms as erection proceeds, to remove foreign matter.

3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

A. Provide formed openings where required for work to be embedded in and passing through concrete members.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install concrete accessories straight, level, and plumb.

D. Place formed construction joint device in floor slabs as shown on the plans.

E. Place joint filler as shown on the plans.

3.3 REINFORCEMENT PLACEMENT

A. Place reinforcement, supported and secured against displacement.

B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

3.4 PLACING CONCRETE

A. Prepare previously placed concrete as indicated.

B. Place concrete continuously between predetermined expansion, control and construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.5 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads. Comply with Title 24, Section 1906A.2.

B. Remove formwork progressively and in accordance with code requirements.

3.6 FLOOR FINISHING

A. Finish concrete surfaces in accordance with ACI 301 and ACI 302.

B. Uniformly spread, screed, and float concrete.

C. Provide smooth hard trowel finish on pool floor slab for installation of painted finishes.

D. Maintain surface flatness, with maximum variation of 1/8 inch in 10 ft.

E. At pool deep end, slope floor uniformly to drains for complete drainage.

3.7 CURING

A. Apply curing compounds on floor surfaces.

B. Immediately after placement, protect concrete from premature drying.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for not less than 7 days. Comply with Title 24, Section 1905A.11.

3.8 FORMED SURFACES

A. Provide concrete wall surfaces to be left exposed with as formed finish. Provide formed concrete surfaces on edge and bottom of pool deck cantilever with sacked finish.

3.9 FIELD QUALITY CONTROL

A. Three (3) Concrete Test Cylinders: Taken for 50 cubic yards of each class of concrete placed.

B. One (1) Slump Test: Taken for each set of test cylinders taken.

3.10 DEFECTIVE CONCRETE

A. Replace concrete not conforming to required lines, details and elevations, as directed by Architect/Engineer.

END OF SECTION

SECTION 13 1012
POOL FINISHES AND WATERPROOFING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes pool gutter and surge chamber fluid applied waterproofing, pool paint, and pool tile.

1.2 SUBMITTALS

A. Product Data: Submit for all products listed in this Section.

B. Samples: Submit for each type, size, and color of tile listed.

C. Color Chart: Submit manufacturer’s color chart for the following:

1. Tile grout.

D. Manufacturer's Installation Instructions: Submit for pool paint and fluid applied waterproofing.

1.3 CLOSEOUT SUBMITTALS

A. Extra Materials: Submit 25 pieces of gutter cap tile and 25 pieces of water line tile.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with TCA (Tile Council of America) Handbook and ANSI (American National Standards Institute) A108 Series/A118 Series.

PART 2 PRODUCTS

2.1 GUTTER, MAIN DRAIN BASIN AND SURGE CHAMBER FLUID APPLIED WATERPROOFING

A. Cementitious crystalline waterproofing coating designed for concrete substrates with a blend of portland cement, fine treated silica sand and active chemicals. The active chemicals shall generate a non-soluble crystalline formation of dendritic fibers within the concrete to seal against water penetration. Coating shall be resistant to pool chemicals and certified to meet NSF (National Sanitation Foundation) Standard 61 for use with potable water.

B. Xypex Concentrate manufactured by Xypex Chemical Corporation.

2.2 POOL PAINT

A. Two component, high gloss, high solids solvent based epoxy resin topcoat for application over a two component epoxy resin primer for concrete surfaces. Colors shall be white for pool shell, black for lane markers, targets, stair tread edge, and slope break bands. Provide slip resistant additive for steps and shallow pool floor in accordance with manufacturer’s requirements.

B. Poolpoxy Hi-Bild, Hi-Bild Primer and Add-A-Grip manufactured by Nelsonite.

2.4 POOL TILE

A. Porcelain body, square edges, 0 to 0.5 percent moisture absorption, and conforming to ANSI/TCA A137.1. Surface finish, size, and color as scheduled.

B. Mortar: ANSI/ACI (American Concrete Institute) A118.1; Portland cement, sand, and water.

C. Grout: Cementitious type, resistant to shrinking.

D. Manufactured by American Olean Tile Company, Cepac Tile or Dal-Tile Corporation.

2.7 POOL TILE SCHEDULE

A. Tile colors listed in this schedule are from the following manufacturers:

1. American Olean Tile Company (AO).

2. Cepac Tile (CT).

3. Dal-Tile Corporation (DT).

4. Inlays, Inc. (II)

B. Deck:

1. Deck Depth Markers - Unglazed ceramic, 1 x 1 inch, and white (AO #A13 or DT #D617) background with red (AO #R26 or DT #D017) numbers.

2. No Diving Graphic - Unglazed ceramic, 1 x 1 inch and 2 x 2 inch tile with white background and colors arranged to produce 8 x 8 inch graphic as detailed (II Mosaic Marker).

3. Wall Depth Markers - Glazed ceramic, 4.25 x 4.25 inch, white background (CT #920) with 4 inch high red numbers to match style of deck depth marker numbers.

C. Pool:

1. Gutter Cap - Glazed ceramic, 6 x 2-1/2 x 3/4 inch, rounded corners, and light blue (CT #925) color.

2. Gutter Step Edge - Glazed ceramic, 6 x 3/4 inch, and (CT#925) color.

3. Gutter Step - Unglazed ceramic, 2 x 2 inch, and light blue (AO #A98 or DT #D169) color.

4. Step Edge - Unglazed ceramic, 2 x 2 inch with 2 x 1 inch cap, and black (AO #A34 or DT #D311) color.

5. Top Step - Unglazed ceramic, 2 x 2 inch, and light blue (AO #A98 or DT #D169) color.

6. Waterline - Glazed ceramic, 6 x 6 inch, and light blue (CT #925) color.

PART 3 EXECUTION

3.1 INSTALLATION OF FLUID APPLIED WATERPROOFING

A. Verify surfaces are solid, free of dirt, paint, loose particles, cracks, pits, rough projections, and foreign matter detrimental to adhesion and application of waterproofing.

B. Do not apply waterproofing to damp, frozen, dirty, dusty, or surfaces unacceptable to manufacturer.

C. Verify items which penetrate surfaces to receive waterproofing are securely installed.

D. Beginning of installation means acceptance of substrate.

E. Clean and prepare surfaces to receive waterproofing, in accordance with manufacturer's instructions.

F. Apply two coats of waterproofing in accordance with manufacturer's instructions.

G. Cure final application in accordance with manufacturer's instructions.

3.2 INSTALLATION OF POOL PAINT

A. Verify surfaces to receive work are clean and surface conditions are as recommend by paint manufacturer. Concrete surfaces shall have cured for 28 days minimum.

B. Beginning of installation means acceptance of existing conditions.

C. Protect surfaces near work from damage or disfiguration.

D. Install paint in accordance with manufacturer’s instructions.

3.3 INSTALLATION OF POOL TILE

A. Verify that surfaces are ready to receive work.

B. Beginning of installation means installer accepts condition of existing surfaces.

C. Protect surrounding work from damage or disfiguration.

D. Vacuum clean existing surfaces and damp clean.

E. Seal substrate surface cracks with filler.

F. Install mortar bed, tile, and grout in accordance with manufacturer's instructions.

G. Apply mortar bed over concrete surfaces to a minimum thickness of 1/4 inch.

H. Lay tile to pattern indicated.

I. Lay tile so upper surface is flush with adjacent finishes.

J. Use trim finishes as indicated at corners.

K. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight without voids, cracks, excess mortar, or excess grout. Smooth all cut edges.

L. Sound tile after setting. Replace hollow sounding units.

M. Allow tile to set for a minimum of 48 hours prior to grouting.

N. Grout tile joints.

END OF SECTION

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SECTION 13 1013
POOL DECK EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section includes pool deck equipment, safety equipment, and signs.

1.2 SUBMITTALS

A. Product Data: Submit for all products listed in this Section.

B. Operation and Maintenance Instructions: Submit for disabled access lift and water test kit.

PART 2 PRODUCTS

2.1 DISABLED ACCESS LIFT

A. Lift: Assembly shall have powder coated stainless steel and aluminum construction, 24 volt rechargeable battery pack, plastic seat with seat belt, 344 degrees total rotation, and a 300 pound lifting capacity. Supply with optional foot rest, 2 rotating arm rests, caddie, stainless steel anchor socket with cover, and spanner key. Lift shall accommodate anchor set back of 24 inches from pool wall and comply with all requirements of CBC Section 11B-1009.2.

B. Model “Splash Extended Reach” manufactured by SR Smith.

2.2 GRAB RAIL

A. Type 304 polished and buffed stainless steel tubing with 1.9 inch outside diameter by 0.109 inch wall thickness. Tubing shall have smooth wrinkle free bends and have a "figure 4" bend.

B. Model #30102 manufactured by Paragon Aquatics or model #37150 manufactured by Spectrum Products.

2.3 LIFEGUARD CHAIR

A. Custom lifeguard chair fabricated from welded steel pipe and channel with hot dip galvanized finish, concrete filled steps, and cedar planks as indicated.

2.4 ROPE ANCHOR

A. Machined brass insert with chrome plated bronze eyebolt having 3/4 inch diameter opening.

B. Model #70317 and #70318 manufactured by Paragon Aquatics.

2.5 SAFETY EQUIPMENT

A. Body Hook: 16 foot aluminum pole and hook with wall anchors. Model #42-065 by Lincoln Equipment.

B. Ring Buoy: 24 inch diameter with 20 foot throw line. Provide 2. Model #44-075 by Lincoln Equipment.

C. Slope Break Lane Float: Assembly shall have 3/4 inch polypropylene rope, brass chromed end hooks, 5 by 9 inch blue and white locking polyethylene floats spaced 3 feet on center. Provide 2 in 60 foot length. Model #44-115, #44-125 and #44-190 by Lincoln Equipment.

2.6 SAFETY SIGNS

A. 0.040 inch thick white aluminum with dark contrasting printed text and/or diagrams.

1. Artificial Respiration and CPR Sign: 18 x 24 inches with text 1/4 inch high minimum and illustrations for artificial respiration and CPR procedures.

2. Chemical Hazard Signs: 10 x 10 inches NFPA diamond signs for sodium hypochlorite and muriatic acid with 4 inch high printed number signals for health, flammability and reactivity.

3. Diarrhea Sign: 12 x 18 inches with 1 inch high letters warning people with diarrhea not to enter the pool.

4. Emergency Phone Number Sign: 12 x 18 inches with emergency telephone number 911, the number of the nearest emergency services, and the name and street address of the pool facility.

5. Keep Closed Sign: 12 x 18 inches with 4 inch high letters mounted on outside of all gates with “KEEP CLOSED.”

6. Pool Capacity Sign: 18 x 24 inches with 4 inch high letters to indicate maximum number of pool users as follows “POOL CAPACITY 360 PERSONS.”

B. Manufactured by Industrial Sign Company or Seton.

2.7 STAIR HANDRAIL

A. Type 304 polished and buffed stainless steel tubing with 1.9 inch outside diameter by 0.109 inch wall thickness. Tubing shall have smooth wrinkle free bends and be dimensioned as indicated.

B. Manufactured by Paragon Aquatics or Spectrum Products.

2.8 STANCHION SOCKET

A. Minimum 6 inch high cast bronze body to accept 1.9 inch outside diameter pipe tube and internal threading for bronze closure cap. Provide one opening device for each socket.

B. Model #38201-TC manufactured by Paragon Aquatics or model #23638 manufactured by Spectrum Products.

2.9 WATER TEST KIT

A. Complete water test kit to include carrying case, 2 ounce reagents, 5 slide comparators, and drop test for free and total chlorine, pH, total alkalinity, calcium hardness, total hardness, cyanuric acid and acid/base demand.

B. Model #K-1741C manufactured by Taylor.

2.10 UNDERWATER LIGHT

A. Stainless steel light, niche, and face ring, 55 watt white LED bulb, 120 volt, with low water cut-off switch, and U.L. listed with encapsulated terminals. Cord length as required to change bulb on deck two feet back from pool edge.

B. Model “IntelliBrite 5G” manufactured by Pentair Pool Products.

2.11 WEDGE ANCHOR

A. Minimum 4.25 inch long cast bronze body to accept 1.9 inch outside diameter pipe tube with bronze locking wedge and stainless steel set bolt and washer.

B. Model #28102 manufactured by Paragon Aquatics or model #24010 manufactured by Spectrum Products.

2.12 WEDGE ANCHOR ESCUTCHEON PLATE

A. Stainless steel body with stainless steel set screw and designed to fit over wedge anchor.

B. Model #28301SS manufactured by Paragon Aquatics or model #35214 manufactured by Spectrum Products.

2.13 SURGE CHAMBER ACCESS COVER

A. Fiberglass reinforced plastic access cover and frame, 30 inch diameter, traffic rated, security lock, and gray color. Provide with manufacturer’s lifting aid.

B. Model #VPFL-760 manufactured by Virtual Polymer Compounds, LLC.

2.14 PIPE TUNNEL ACCESS COVER

A. Fiberglass reinforced plastic access cover and frame, size as indicated, traffic rated, security lock, and gray color. Provide with manufacturer’s lifting aid.

B. Custom model manufactured by Virtual Polymer Compounds, LLC.

PART 3 EXECUTION

3.1 INSTALLATION OF ANCHORS AND SOCKETS

A. Install anchors and sockets level and plumb.

B. Install anchors and sockets flush with adjacent concrete deck, plaster surface, or tile surface as appropriate.

3.2 INSTALLATION OF SAFETY SIGNS

A. Install signs with stainless steel expansion anchors and finishing hardware in locations indicated.

3.4 INSTALLATION OF SAFETY EQUIPMENT

A. Install body hook and ring buoy in locations indicated by Owner.

B. Assemble all components of slope break lane float lines and attach to appropriate rope anchors.

C. Assemble all components of disabled access lift and place on pool deck to demonstrate operation to Owner.

END OF SECTION

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SECTION 13 1014
POOL MECHANICAL EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Section includes pool mechanical equipment, piping, valves, and fittings.

1.2 SUBMITTALS

A. Product Data: Submit for all products listed in this Section.

B. Valve Sequencing Chart: Submit chart for approval after completing pool start-up and adjusting all systems.

C. Operation and Maintenance Instructions: Submit for filter, heater, all pumps, variable frequency drive, all sanitation equipment, flow meter, make-up water solenoid valve, and splash pad controller.

1.3 QUALITY ASSURANCE

A. All mechanical equipment shall be certified to meet NSF (National Sanitation Foundation) Standard 50 requirements.

B. Install piping in accordance with AWWA (American Water Works Association) Manual 23.

C. Pipe Joint Test: Contractor shall provide 3 sample PVC pipe joints for Inspector approval demonstrating proper preparation, priming and solvent welding techniques. Test joints shall be made with the largest pipe size used on the project. If tests indicate Work does not meet specified requirements, the tests shall be performed again.

PART 2 PRODUCTS

2.1 ACID FEED PUMP

A. Pump: Peristaltic action pump capable of producing 25 feet of suction lift with mechanical feed rate control, on-off switch, plastic housing, injection check valve, foot valve with strainer, and mounting bracket.

B. Liquid End: Materials shall be suitable for the delivery of hydrochloric acid with connections for 3/8 inch tubing.

C. Performance: 85 gallons per day maximum output, 25 pounds per square inch minimum injection pressure, and 120 volt power connection.

D. Model #85M5 manufactured by Stenner Pump Company.

2.1 ACID FUME TANK

A. Seamless polyethylene single wall construction with cone bottom, polyethylene support stand, 22 inch diameter, 47 inch height, and 55 gallon capacity. Provide solid polyethylene cover and 3/4 inch bottom drain ball valve with threaded hose connection. Acid tank vent pipe shall terminate in a 1 inch PVC diffuser pipe 20 inches long on bottom of tank. Pipe shall have 1/8 inch diameter holes at 1 inch along top and capped tees at each end for support. Tank shall have 3/4 inch vent pipe to outside of building.

B. Model #TC2247AP manufactured by Chem-Tainer Industries, Inc..

2.3 ACID STORAGE TANK

A. Seamless polyethylene double wall construction, 16 inch airtight sealed manway, 52 inch diameter, 56 inch height, and 350 gallon capacity.

B. Bulkhead Fittings: All penetrations shall be on top of tank through PVC compression fittings with viton gaskets. Provide 1-1/4 inch bulkhead fitting with 90 degree female cam action coupler and airtight plug for filling, 2 inch fitting for level gauge, 3/4 inch fitting for vent pipe, 3/4 inch fitting for vacuum breaker, and 3/8 inch fitting for chemical pump suction.

C. Model #TC5256DC with FA and GB Series fittings manufactured by Chem-Tainer Industries.

2.4 CHEMICAL CONTROLLER

A. Integrated micro processor based controller to continuously monitor pH, ORP, PPM, temperature, flow rate, pressure levels, surge chamber water level, and control feeders for sodium hypochlorite and muriatic acid. Assembly shall have the following:

1. Controls: Sealed glass pH electrode, sealed platinum ORP electrode, solid state PPM sensor, temperature sensor, influent and effluent filter pressure sensors, optical level sensor, sensor cell assembly with rotary flow switch, and digital readout indicating pH, ORP, PPM, temperature, flow, filter influent and effluent pressure levels, and Langelier Saturation Index. Controls shall be accessible by push-button menu keys with set level from 0 to 14 for pH, 0 to 999 mV for ORP, and 0 to 10 PPM for chlorine. Controller shall have RS-232 communication port and remote data monitoring by computer or telephone. Signet 2536 paddlewheel flow sensor with 10 inch PVC saddle for flow monitoring at swimming pool and 4 inch PVC saddle at splash pad.

2. Circuitry: 115 volt power connection with 2 outputs of 5 amps each for chemical feeders and 4 to 20 mA output signals for VFD flow control.

3. Housing: NEMA 3R fiberglass enclosure.

B. Model #PC7000 manufactured by Chemtrol.

2.5 CHEMICAL TANK LEVEL GAUGE

A. Double plastic dome and nut assembly, gasket, 2 inch threaded bushing, polyethylene indicator tube with tank level in 1/8 increments, polyethylene float with plastic rod assembly. All internal tank parts shall be suitable for use with muriatic acid and sodium hypochlorite, and manufactured from plastic.

B. Manufactured by Krueger Sentry Gauge.

2.6 CHEMICAL TANK VACUUM BREAKER

A. PVC body, 3/4 inch threaded end, viton diaphragm, viton seals and 2 inch Hg vacuum response.

B. Model #VBM075-PV manufactured by Plast-O-Matic.

2.7 CHEMICAL TUBING

A. Polyethylene tubing, translucent, with tube fittings for all connections.

B. Manufactured by Finger Lakes Extrusion or Parflex.

2.8 CHLORINE FEED PUMP

A. Pump: Peristaltic action double head pump capable of producing 25 feet of suction lift with mechanical feed rate control, on-off switch, plastic housing, injection check valve, foot valve with strainer, and mounting bracket.

B. Liquid End: Materials shall be suitable for the delivery of sodium hypochlorite with connections for 3/8 inch tubing.

C. Performance: 120 gallons per day maximum output, 25 pounds per square inch minimum injection pressure, and 120 volt power connection.

D. Model #170DM4 manufactured by Stenner Pump Company.

2.9 CHLORINE STORAGE TANK

A. Seamless polyethylene double wall construction, 16 inch vented manway, 59 inch diameter, 71 inch height, and 500 gallon capacity.

B. Bulkhead Fittings: All penetrations shall be on top of tank through PVC compression fittings with viton gaskets. Provide 2 inch bulkhead fitting with 90 degree male cam action coupler and airtight cap for filling, 2 inch fitting for level gauge, and 3/8 inch fittings for chemical pump suction.

C. Model #TC5971DC with FA and GB Series fittings manufactured by Chem-Tainer Industries.

2.10 CIRCULATION PUMP

A. Type: Horizontal centrifugal self priming pump, thermoplastic construction with strainer pot housing, plastic strainer basket with 5/32 inch perforations and removable clear cover, 6 inch suction and 4 inch discharge with flanged connections. Pump shall be certified to meet NSF Standard 50 requirements.

B. Motor: Premium efficiency, 3450 rpm, 15 hp, 240 volt, 3 phase, 60 hertz.

C. Performance: 475 gpm at 90 feet of head.

D. Provide 1 additional strainer basket.

E. Model EQK-1500 manufactured by Pentair Pool Products.

2.11 FILTER

A. Pressure high-rate permanent media type with NSF listing for flow of 20 gallons per minute per square foot of filter area. Assembly shall have the following:

1. Tank: Filament wound fiberglass tank designed for seismic installation, 42 inch diameter, with viewport manhole, media dump port, internal PVC header with molded ABS laterals and distribution lenses, external schedule 80 PVC header piping with flanged connections, backwash valve with piston operated hydraulic cylinder and transparent housing, backwash sight glass, influent and effluent pressure gauges, internal automatic air bleed system, and stainless steel fasteners. Tank shall be designed for a working pressure of 50 pounds per square inch.

2. Backwash: Semi-automatic system shall backwash one filter tank at a time. Backwashing shall be controlled by a rotating dial. System shall include 1/2 hp pressure amplification boost pump and tank with water connection to pool circulation system.

B. System shall have 3 tanks with a total filter area of 81 square feet.

C. Each tank shall have the manufacturer's recommended amount of #20 silica sand with an effective particle size of 0.45 millimeter and uniformity coefficient of 1.5 maximum.

D. Model #SS3-96-08 manufactured by Stark Aquatic Systems.

2.12 FLOW METER – HEAT EXCHANGER BYPASS

A. Analog: Self powered meter with 5-1/2 inch dial indicating flow from 0 to 800 gpm, 250 degree dampened meter, ±2 percent accuracy, wall mounting kit, and paddle wheel flow sensor with 6 inch PVC pipe saddle.

B. Model #5090 and #515 manufactured by Signet.

2.13 GAUGES

A. Pressure Gauge: Polished stainless steel case, aluminum face, 1/4 inch NPT brass bottom connection, bronze tube, 0-60 psi scale range, ±1 percent accuracy, and 3.5 inch diameter acrylic face.

B. Vacuum Gauge: Polished stainless steel case, aluminum face, 1/4 inch NPT brass bottom connection, bronze tube, 0-30 inches of mercury scale range, ±1 percent accuracy, and 3.5 inch diameter acrylic face.

C. Model 690 manufactured by Trerice.

2.14 HEAT EXCHANGER

A. Shell and tube type with cast iron shell, 5 inch flanged end connections, 2.5 inch threaded boiler connections, and cupro-nickel tubes.

B. Model CN2000 manufactured Bowman.

2.15 HEAT EXCHANGER CIRCULATION PUMP

A. Single stage horizontal in-line design, all bronze construction with cupro-nickel shaft sleeve, enclosed bronze impeller, ceramic mechanical seal, 2 inch suction and 2 inch discharge with 125# ANSI flanges, 1750 rpm, 0.75 hp, 120 volt, 1 phase, 60 hertz, 100 gallons per minute at 15 feet head.

B. Model 1935 manufactured TACO.

2.16 HEAT EXCHANGER EXPANSION TANK

A. Welded steel tank, IAPMO listed, rated for working pressure of 150 psig with epoxy finish, 2.1 gallon volume, polypropylene lining, butyl rubber diaphragm sealed into tank, shrader valve for adjustable air precharge, and stainless steel connections.

B. Model XT-8 manufactured Zurn Industries.

2.17 HEATER

A. General: Outdoor heater designed for swimming pool heating applications and natural gas operation. Sealed combustion type using stainless steel burners, intertwined cupro-nickel fin tubing, bronze header, stainless steel condensing heat exchanger, ASME pressure relief valve, slow opening diaphragm gas valve, pressure regulator, blower assembly with pressure switch to control gas/air ration, hot surface ignition, bronze primary pump, bronze cold water run pump, temperature gauges, pressure gauge, flow switch, and enclosed in a galvanized steel outer jacket. AGA design certifications for a minimal thermal efficiency of 97 percent and low NOx rating of less than 20 ppm.

B. Options: Provide exhaust vent stack and combustion elbow for outdoor installation. Provide condensate drain and neutralizer kit.

C. Controls: Front mounted control panel with plug-in electrical components, LCD display, diagnostic information center with system alerts, built-in circuit breaker, and meet California Code.

D. Performance: Gross input 1,999,000 BTU/hr with gross output 1,939,000 BTU/hr at sea level.

E. Model #XTherm P-2005A manufactured by Raypak.

2.18 HEATER PRESSURE REDUCING VALVE

A. All bronze body and bell housing, balanced piston design, built-in bypass to prevent closed system, nylon reinforced Buna-N diaphragm, renewable stainless steel seats, threaded union ends, pressure rated to 300 psi with 25-75 psi spring range.

B. Model 500XL manufactured by Zurn Industries.

2.19 MAIN DRAIN GRATE

A. Fiberglass grate, 30 by 30 inches with four stainless steel anchoring bolts, 128 square inch open area, and NSF certified flow rate of 1,432 gallons per minute for floor installation.

B. Model AEGIS #3030AEC manufactured by Neptune Benson.

2.20 PIPE HANGERS AND SUPPORTS

A. Steel pipe hangers, supports, brackets and clamps shall be designed and manufactured in accordance with MSS (Manufacturers Standardization Society) SP58. Hangers shall be hot dip galvanized after fabrication in accordance with ASTM A123. All hanger hardware shall be hot dip galvanized or stainless steel. Provide means of preventing dissimilar metal contact such as plastic coating, isolation tape or felt.

B. Manufactured by Cooper B-Line or Nibco.

2.21 PIPE SLEEVE – FIRE RATED

A. Fire resistant wrap strip system for PVC pipe penetrations, UL listed with 1 hour minimum rating, and silicone sealant.

B. Model #WS 400 and IC 15WB manufactured by 3M Fire Protection Products.

2.22 POOL PIPING - BURIED AND ABOVE GRADE

A. PVC Pipe: ASTM (American Society for Testing and Materials) D1785, Schedule 80.

1. Fittings: ANSI (American National Standards Institute)/ASTM D2467, PVC.

2. Joints: ASTM D2855, solvent weld.

B. Manufactured by Apache, Harvel Plastics or Spears Manufacturing.

2.23 POOL PIPING – HEATER CIRCULATION LOOP

A. Copper Tubing: ASTM B88, Type L hard drawn.

1. Fittings: ANSI/ASME B16.22 wrought copper.

2. Joints: ANSI/ASTM B32, solder, Grade 95TA.

B. Manufactured by Cerro Copper Products or Mueller Brass Company.

2.24 POOL PIPING – HEAT EXCHANGER CIRCULATION LOOP

A. CPVC Pipe: ASTM F441, Schedule 80

1. Fittings: ANSI/ASTM F439, CPVC.

2. Joints: ASTM D2855, solvent weld.

B. Manufactured by Apache, Harvel Plastics or Spears Manufacturing.

2.25 PVC WATERSTOP

A. Fabricated from Type 1 PVC sheet conforming to ASTM 1784, 1/2 inch thick minimum with a diameter 4 inches larger than outside diameter of pipe. A one-piece Class 150 PVC flange with the pipe stop removed can also be used.

B. Manufactured by Apache, Harvel Plastics or Spears Manufacturing.

2.26 RUBBER BELT WATERSTOP

A. Continuous belt formed with individual EPDM rubber interlocking links, fastened with glass reinforced nylon plastic pressure plates, and 316 stainless steel bolts and nuts. Size as required.

B. Model Link-Seal Corrosive Service Type manufactured by Thunderline Corp.

2.27 THERMOMETER

A. Stainless steel case and stem, 30 to 130 degree F scale range, 3 inch diameter face and nylon well.

B. Model #SL1-DW manufactured by Pentair Pool Products.

2.28 VALVE - BALL

A. PVC body and ball, full line size, double lever handle, double union with socket ends, viton seals, teflon seats, pressure rating of 150 pounds per square inch at 70 degrees F.

B. Manufactured by Asahi/America, Hayward or Spears Manufacturing Company.

2.29 VALVE – BRONZE BALL

A. Bronze two piece body, chrome plated brass ball, teflon seats and stuffing box ring, lever handle, solder or threaded ends, pressure rating of 600 pounds per square inch at 70 degrees F.

B. Manufactured by Nibco or Stockham.

2.30 VALVE – BRONZE CHECK

A. Bronze body and swing check, solder or threaded ends, pressure rating of 200 pounds per square inch at 70 degrees F.

B. Manufactured by Nibco or Stockham.

2.31 VALVE - BUTTERFLY

A. PVC wafer body, full line size, EPDM liner, stainless steel shaft, PVC disc, gear operators for 8 inch and larger, lever operators for 6 inch and smaller, and pressure rating of 150 pounds per square inch at 70 degrees F. Heat exchanger isolation valves shall have CPVC body and disc. Heat exchanger bypass valve gear operator shall have padlock feature for lockout after setting flow.

B. Manufactured by Asahi/America or Spears Manufacturing Company.

2.32 VALVE - CHECK

A. PVC body, non-slam seatless check valve, flangeless wafer body or flanged end style, full line size, pressure rating of 150 pounds per square inch at 70 degrees F. Model Butterfly Check manufactured by Spears Manufacturing Company or Techno.

B. Diameter 2 inch and Below: PVC body and ball, full line size, double union with socket ends, viton seals and seats, and pressure rating of 150 pounds per square inch at 70 degrees F. Manufactured by Asahi/America or Spears Manufacturing Company.

2.33 VALVE - MAKE UP WATER

A. 2-way solenoid valve with PVC body, 3 inch diameter, normally closed, NEMA 4X coil, 11 watt, viton seals, threaded end connections, and pressure rating of 140 pounds per square inch at 75 degrees F.

B. Model PS300VW11-PV, manufactured by Plast-O-Matic Valves.

2.34 VARIABLE FREQUENCY DRIVE

A. Rating horsepower and voltage as required for circulation pump, variable torque, 14 to 122 degree F ambient operating temperature, alphanumeric backlit display keypad, 4-20 milliamp signal input, sinusoidal PWM output with voltage vector control, internal time clock, oversized NEMA 4X enclosure with temperature controlled cooling fans. Protective functions shall include over current, over voltage, under voltage, motor overload, low overload, drive fault, ground fault, over temperature, and line surge.

B. Model #MA7200, manufactured by TECO Westinghouse.

2.35 SURGE CHAMBER

A. Pre-cast reinforced concrete structure conforming to ASTM C857 design loading criteria. Concrete materials shall conform to ASTM C33 and ASTM C150 requirements with minimum

compressive strength of 5,500 psi at 28 days. Structure shall have 5,750 gallon volume, and 30 inch diameter opening for access cover.

B. Model #HZ-5000 manufactured by Jensen Precast.

PART 3 EXECUTION

3.1 PIPING AND FITTING INSTALLATION

A. Install piping in accordance with AWWA (American Water Works Association) Manual 23.

B. Install piping to conserve space, not interfere with use of space and other work. Route piping in orderly manner, and maintain gradient. Group whenever practical at common elevations.

C. Install plastic slip-on labels or tape with pressure-sensitive adhesive and 1 inch high letters. Label "SURGE CHAMBER SUCTION", "BACKWASH", "POOL DRAIN" "CHEMICAL CONTROLLER", "POOL SUPPLY", and "POOL FILL". Indicate flow direction with 3 inch long arrows at 10 foot maximum intervals. Label pool "MAIN DRAIN VALVE" on gear operator.

D. Install hangers or floor supports at 8 foot maximum intervals and as necessary to prohibit pipe vibration. Provide transverse and longitudinal bracing for seismic installation per SMACNA (Sheet Metal Air Conditioning Contractors National Association).

E. Support piping adjacent to pump such that no weight is carried on pump casings. For close coupled or base mounted pumps, provide supports under elbows on pump suction and discharge line sizes 4 inches and over.

F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

G. Install valves with easy access to operators and clear line of sight to position indicators. Install check valves with 5 diameters of straight pipe upstream according to manufacturer’s instructions.

H. Use fittings of larger pipe size when joining different size pipes.

I. Install pool fittings flush with adjacent finish surfaces.

J. Install PVC waterstop at center of slab or wall thickness and solvent welded in place to pipe.

3.2 MECHANICAL EQUIPMENT INSTALLATION

A. Install equipment in accordance with manufacturer's instructions.

B. Anchor pool mechanical equipment to concrete with stainless steel expansion anchors. Provide size and number as indicated for seismic installation.

C. Install close coupled and base mounted pumps on concrete base with anchor bolts, set and level, and grout in place.

D. Bond each heater, circulation pump and UV system to the pool shell reinforcing steel.

E. Pipe heater pressure relief valve line to floor sink.

F. Install flow meter sensor with 15 diameters of straight pipe upstream and 5 diameters downstream according to manufacturer’s instructions.

G. Install plastic nameplates or labels with pressure-sensitive adhesive. Label acid tank "350 GALLONS – DILUTED MURIATIC ACID – 7% HCL MAXIMUM" with 1.5 inch high letters. Label chlorine tank "500 GALLONS – 12.5% SODIUM HYPOCHLORITE" with 1.5 inch high letters. Label "HEATER BYPASS FLOW METER – 400 GPM" with 1/2 inch high letters.

3.3 FIELD TESTS

A. Pressure Tests: Hydrostatically test all buried water piping systems prior to backfilling from inside of pool shell to inside of equipment room.

B. Buried Piping: Flush piping to clean and remove all air and test at a pressure of 80 psi. Install hose bibb at each end of system and calibrated test gauge to observe any loss of pressure. Close off system and retain required test pressure for one hour minimum and inspect all joints and connections for leakage. Repair all leaks by removing and replacing failed joints with new solvent welded fittings, and repeat test until all leakage has been stopped. Maintain a pressure of 40 psi in all lines throughout the remaining construction period.

3.4 VALVE SEQUENCING CHART

A. Tag and number all manual valves with plastic plates or brass attached to valve body with chain.

B. Provide 8 1/2" x 11" chart with each valve number, description of valve, and valve position required for each of the following:

1. Normal pool operation.

2. Filter backwash.

3. Draining pool.

4. Manual pool water fill.

C. List key pool data on chart including surface area, volume and turnover rate.

D. Laminate chart to rigid backing and mount to wall in equipment room.

E. Include copy of chart with operation and maintenance manual.

END OF SECTION

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SECTION 13 1015
POOL SYSTEMS START-UP

PART 1 GENERAL

1.1 SUMMARY

A. Section includes start-up procedures for all pool systems and instruction of Owner's personnel on operation and maintenance of all pool systems.

1.2 SUBMITTALS

A. Reports: Submit results of water analysis, and manufacturer’s start-up certificates.

1.3 POOL SYSTEMS START-UP

A. Provide seven days notification prior to starting pool systems.

B. Ensure that each piece of equipment and system is ready for operation. Do not paint and fill pool until all mechanical systems are operational.

C. Execute start-up in accordance with manufacturers' instructions.

D. Fill pool slowly with City make-up water and protect finishes from damage. Add sufficient sequestering agent to pool water to reduce reaction of metal ions with chlorine. Follow manufacturer’s instructions for product use.

E. Provide complete domestic water analysis to determine quantities and types of chemicals necessary to maintain pool water within the following levels:

1. pH: 7.2 to 7.6.

2. Alkalinity: 80 to 100 ppm.

3. Calcium hardness: 200 to 400 ppm.

4. Chlorine: 1.0 to 1.5 ppm.

5. Total dissolved solids: 300 to 1,000 ppm.

F. Provide all chemicals and balance water immediately after initial pool filling and until project completion and acceptance by the Owner.

G. Start up the entire pool system and operate all components for 7 consecutive days minimum. Start-up will include all equipment required for proper operation of the pool and the following:

1. Periodically clean pump strainer until no further accumulation of debris occurs.

2. Add chemicals as required for acceptable water quality.

3. Adjust all safety and automatic controls for proper operation and sequence.

4. Immediately repair and correct all deficiencies during the operational test and continue the test until 7 days of satisfactory performance has occurred without any defects.

H. After successful conclusion of operational testing, clean strainers, backwash filter media, and leave the entire pool systems ready for use.

1.4 OPERATING INSTRUCTIONS

A. Provide instruction and demonstrate use and operation of the following equipment by the manufacturer's representative. Provide certificate from manufacturer's representatives that equipment and systems are adjusted and operating properly.

1. Filter system: Set filter effluent valve and adjust backwash rate of flow valve for required backwash rate. Perform initial prolonged backwash to remove fines from filter media.

2. Heating system: Heater shall be adjusted for proper operation after pool temperature reaches 82 degrees. Set heat exchanger bypass loop diversion valve for 400 gallon per minute flow.

3. Chemical controller and chemical feed pumps: Set controller bypass loop valves for proper flow rate across probes. Set feed pump output rates for proper operation with controller. Instruct Owner on controller programming, probe maintenance, and demonstrate flow switch feed pump safety interlock.

4. Circulation pump variable frequency drives: Set drive to maintain constant flow rate of 475 gallons per minute for each swimming pool pump based on milliamp signal from chemical controller. Set a manual drive frequency for proper flow during backwash operation and coordinate with filter valve settings to achieve required backwash rate for each tank.

B. Provide instruction and demonstrate operation of entire pool mechanical system by Contractor. Review valve sequencing chart and proper valve positioning for normal operation, filter backwash, pool draining, and manual pool water fill. Restrict main drain valve for 80% flow (1/8 inch water depth) over gutter during normal operation. Restrict pool supply valve to apply backpressure on mechanical systems. Set fill system surge chamber optical sensors to the level indicated on the drawings.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 13 31 23
PRE-ENGINEERED FABRIC SHADE STRUCTURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

A. A single, State of California-licensed fabric shade structure contractor shall be responsible for the design, wet-stamped engineering drawings, permitting, fabrication, supply, and erection of the work specified herein, including foundations. The intent of this specification is to have only one shade contractor be responsible for all of the functions listed above.

1.3 SUBMITTALS

1.3.1 With Bid Submittals:

A. Provide proof of existing reference sites with structures of similar project scope and scale, and that are engineered to LABC 2016 specifications.

B. Provide a minimum of 7 fabric samples to demonstrate fabric color range, and a digital (PDF) or paper document showing a minimum of 9 powder coat color choices. Also, provide a letter of authorization from the fabric manufacturer delineating authorized use of the specified fabric.

C. Provide proof of all quality assurance items, including;

1. A list of at least 3 reference projects in California that have been installed a minimum of 12 years.

2. Proof of General Liability, Professional Liability, and Umbrella insurance, as per Section 1.4B.

3. Proof of current State of California Contractor's License, Class A or Class B.

4. Proof of current City of Los Angeles Approved Fabricator license.

5. Proof of a minimum of $6,000,000 aggregate bonding capacity.

6. Proof of current IAS certification, as per Section 1.4D.

7. Proof of an Annual Maintenance Inspection Program.

8. Proof of a Corporate Safety and/or Injury & Illness Prevention Program.

9. Proof of current status as an ISNetworld Member Contractor.

1.4 QUALITY ASSURANCE

Fabrication and erection are limited to firms with proven experience in the design, fabrication, and erection of fabric shade structures, and such firms shall meet the following minimum requirements. No substitutions shall be allowed for the following:

A. A single shade structure contractor shall design, engineer, manufacture, and erect the fabric shade structures, including the foundations, and shall provide a dedicated Project Manager throughout the entire Scope of Work related to the shade structure(s).

B. All bidders shall have at least 15 years' experience in the design, engineering, manufacture, and erection of fabric shade structures, engineered to California Building Code requirements with similar scope, and a successful construction record of in-service performance.

C. All bidders shall provide proof with bid submittal of a minimum of $1,000,000 General/Public Liability insurance, $3,000,000 Professional Liability (PL) insurance, and additional $5,000,000 Umbrella/Excess Liability insurance.

D. All bidders shall be a currently licensed contractor in the State of California, and shall provide proof of a minimum aggregate bonding capacity of $6,000,000 with bid.

E. Manufacturer shall have a City of Los Angeles Approved Fabricator license and be accredited by the IAS (International Accreditation Service) for Structural Steel Fabrication under CBC 2016, Section 1704.2.5.2.

F. The fabric shade structure contractor shall have a Corporate Quality Control program (manual), which describes their complete quality assurance program.

G. All bidders must be a current Member Contractor with ISNetworld, which confirms the bidder's strict adherence to Safety, Insurance, Quality, and Regulatory standards.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for fabric shade structure(s) shown on the drawings in relation to the property survey and existing structures, and verify locations by field measurements prior to erection of the fabric shade structure(s).

1.6 WARRANTY

A. The successful bidder shall provide a 12-month warranty on all labor and materials.

B. A supplemental warranty from the manufacturer shall be provided for a period of 10 years (pro-rated) on fabric and 10 years on the structural integrity of the steel, from date of substantial completion.

C. The warranty shall not deprive the Owner of other rights the Owner may have under the provisions of the Contract Documents, and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 – PRODUCTS

2.1 GENERAL

A. The structures shall consist of one (1) custom Orion Cantilever Structure 15’-0” x 30’-0” with 10’-0” entry height. Structural columns shall be a minimum of 10.750” x 0.385”

B. The structures shall be manufactured by Shade Structures, Inc., d/b/a USA SHADE & Fabric Structures, or approved equal that includes the engineering drawings, fabric roof, steel cables, all fasteners, and erection of structure(s), including foundations.

C. Contact: USA SHADE & Fabric Structures
1085 N. Main Street, Suite C
Orange, CA 92867
Phone: 323-490-9502
Attn: Liz Norton
enorton@usa-shade.com

D. To qualify as an approved equal, please submit product documentation, fabric samples, and all quality assurance criteria, as per Section 1.4, at least 10 days prior to bid in order to be considered. No substitutions will be allowed after the deadline. Any approval of alternate manufacturers shall be by addendum prior to the bid date and shall not be allowed without written notification.

E. The fabric shade structure(s) shall conform to the current adopted version of the California Building Code 2016.

F. All fabric shade structures are designed and engineered to meet the minimum of 110mph Wind Load, Risk Category II, Exposure C, and Seismic (earthquake) Load based on Seismic Design Category D, Seismic Risk Category II, and a Live Load of 5psf. All fabric shade structures shall be engineered with a zero wind pass–through factor on the fabric. When ASD Steel Design Method is used based on CBC 2013 Section 1605A.3.1, the load combinations Dead Load + 0.75 Live load + 0.75 Wind Load, and 0.6 Dead Load + Wind Load must be analyzed. NO EXCEPTIONS.

G. Steel:

1. All steel members of the fabric shade structure shall be designed in strict accordance with the requirements of the “American Institute of Steel Construction” (AISC) Specifications and the “American Iron and Steel Institute” (AISI) Specifications for Cold-Formed Members and manufactured in a IAS- (International Accreditation Service) accredited facility for Structural Steel Fabrication under CBC 2013 Section 1704.2.5.2.

2. All connections shall have a maximum internal sleeving tolerance of .0625” using high-tensile strength steel sections with a minimum sleeve length of 6”.

3. All non-hollow structural steel members shall comply to ASTM A-36. All hollow structural steel members shall be cold-formed, high-strength steel and comply with ASTM A-500, Grade C. All steel plates shall comply with ASTM A-572, Grade 50. All galvanized steel tubing shall be triple-coated for rust protection using an in-line electroplating coat process. All galvanized steel tubing shall be internally coated with zinc and organic coatings to prevent corrosion.

H. Bolts:

1. All structural field connections of the shade structure shall be designed and made with high-strength bolted connections using ASTM A-325, Grade B or SAE J249, Grade 8.

2. Where applicable, all stainless steel bolts shall comply with ASTM F-593, Alloy Group 1 or 2. All bolt fittings shall include rubber washers for water-tight seal at the joints. All nuts shall comply with ASTM F-594, Alloy Group 1 or 2.

I. Welding:

1. All shop-welded connections of the fabric shade structure shall be designed and performed in strict accordance with the requirements of the "American Welding Society" (AWS) Specifications. Structural welds shall be made in compliance with the requirements of the "pre-qualified" welded joints, where applicable and by certified welders. No onsite or field welding shall be permitted.

2. All full penetration welds shall be continuously inspected by an independent inspection agency and shall be tested to the requirement of 2013 CBC.

J. Powder Coating:

1. Galvanized steel tubing preparation prior to powder coating shall be executed in accordance with solvent cleaning SSPC-SP1. Solvents such as water, mineral spirits, xylol, and toluol, which are to be used to remove foreign matter from the surface. A mechanical method prior to solvent cleaning, and prior to surface preparation, shall be executed according to Power Tool Cleaning SSPC-SP3, utilizing wire brushes, abrasive wheels, needle gun, etc.

2. Carbon structural steel tubing preparation prior to powder coating shall be executed in accordance with commercial blast cleaning SSPC-SP6 or NACE #3. A commercial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, mill scale, rust, coating, oxides, corrosion, and other foreign material.

3. Powder coating shall be sufficiently applied (minimum 3 mils thickness) and cured at the recommended temperature to provide proper adhesion and stability to meet salt spray and adhesion tests, as defined by the American Society of Testing Materials.

4. Raw powder used in the powder coat process shall have the following characteristics:
    a. Specific gravity: 1.68 +/- 0.05
    b. Theoretical coverage: 114 +/- 4ft^2/mil
    c. Mass loss during cure: <1%
    d. Maximum storage temperature: 80°F
    e. Interpon® 800 is a high-durability TGIC powder coating designed for exterior exposure. Tested against the most severe specifications, Interpon® 800 gives significantly improved gloss retention and resistance to color change.

5. When the fabric shade structure(s) will be located within 15 miles of the ocean or standing body of water, rust protection undercoat primer will be required on all structures. Sherwin-Williams® POWDURA® epoxy powder coating Z.R Primer shall be applied in accordance with the manufacturer's specifications. Primer should be fused only and then top coated with the selected powder coat to ensure proper inter-coat adhesion.

a. The primer's attributes shall be:

a.	Specific gravity (g/ml):	2.37
b.	Coverage at 1.0 mil (ft^2/lb):	81.6
c.	Adhesion: ASTM D-3359	5B
d.	Flexibility: ASTM D-552	Pass 1/8"
e.	Pencil hardness: ASTM D-3363	H-2H
f.	Impact resistance (in.lb): ASTM D-2794	Dir & Rev, 120 in-lbs
g.	Salt spray resistance: ASTM B-117	2000 hours
h.	Humidity resistance: ASTM D-4585	2000 hours
i.	60° Gloss: ASTM D-523	50 ~ 70
j.	Cure schedule (metal temp):	10min @ 200°C (390°F) 25min @ 135°C (275°F)
k.	Film thickness tange (mils):	2.0 ~ 3.0

K. Tension Cable: Steel cable is determined based on calculated engineering loads.

1. For light and medium loads, 0.25" (nominal) galvanized 7x19 strand cable shall be used.

2. For heavy loads, and depending on structural size, either 0.375" (nominal) or 0.5" (nominal) galvanized 7x19 strand cable shall be used.

L. Fabric Roof Systems:

1. UV Shade Fabric:
   a. Colourshade® FR UV shade fabric is made of a UV-stabilized, high-density polyethylene (HDPE), as manufactured by Multiknit® (Pty) Ltd. HDPE mesh shall be a heat-stentered, three bar Rachel-knitted, lockstitch fabric with one monofilament and two tape yarns to ensure that the material will not unravel if cut. Raw fabric rolls shall be 9.8425 feet wide.
   b. Fabric Properties:
      ~ Life Expectancy: minimum 8 years with continuous exposure to the sun
      ~ Fading: minimum fading after 5 years (3 years for Red)
      ~ Fabric Mass: 5.31 oz/yd^2 ~ 5.6 oz/yd^2 (180gsm ~ 190gsm)
      ~ Fabric Width: 9.8425 feet (3m)
      ~ Roll Length: 164.04 feet (50m)
      ~ Roll Dimensions: 62.99 inches x 16.5354 inches (160cm x 42cm)
      ~ Roll Weight +/- 66 lbs (+/- 30kg)
      ~ Minimum Temp: -13°F (-25°C)
      ~ Maximum Temp: +176°F (80°C)
   c. Fabric shall meet the following flame spread and fire propagation tests:
      1) ASTM E-84
      2) NFPA 701 Test Method 2
      3) California's Office of the State Fire Marshal, Registered Flame Resistant Product

2. Stitching & Thread:
   a. All sewing seams are to be double-stitched.
   b. The thread shall be GORE® TENARA® mildew-resistant sewing thread, manufactured from 100% expanded PTFE (Teflon™). Thread shall meet or exceed the following:
      1) Flexible temperature range

2) Very low shrinkage factor
3) Extremely high strength, durable in outdoor climates
4) Resists flex and abrasion of fabric
5) Unaffected by cleaning agents, acid rain, mildew, salt water, and is unaffected by most industrial pollutants
6) Treated for prolonged exposure to the sun
7) Rot resistant

3. Shade and UV Factors:
   a. Shade protection and UV screen protection factors shall be as follows:

Color	UV Block %	Shade %
Pacific Blue	85%	80%~86%
Rain Forest Green	85%	79%~86%
Red	86%	80%~83%
Silver	81%	80%~85%
Desert Sand	92%	80%~84%
Terracotta	82%	80%~83%
Yellow	89%	80%~82%

PART 3 – EXECUTION

3.1 INSTALLATION

A. The installation of fabric shade structures shall be performed by manufacturer or manufacturer-approved contractor, which shall be bonded and holding a current contractor's license with the State of California's Contractors State License Board. All installation personnel must have experience in the erection of tensioned fabric structures.

B. The installation shall comply with the manufacturer's instructions for assembly, installation and erection, per approved drawings.

C. Concrete:

1. Unless noted otherwise for footings and piers by the Project Engineer, the concrete specification for footings and/or piers shall meet a minimum 3,500psi at 28-day strength.

2. Concrete work shall be executed in accordance with the latest edition of American Concrete Building Code ACI 318-99.

3. Concrete specifications shall comply in accordance with the Section 03300 Cast-in-Place Concrete, detailed as per plans, and shall be as follows:
   a. 28 Days Strength F'c = 3000 psi
   b. Aggregate: HR
   c. Slump: 3 ~ 5 inch
   d. Portland Cement shall conform to C-150
   e. Aggregate shall conform to ASTM C-33

4. All reinforcement shall conform to ASTM A-615 grade 60.

5. Reinforcing steel shall be detailed, fabricated, and placed in accordance with the latest ACI Detailing Manual and Manual of Standard Practice.

6. Whenever daily ambient temperatures are below 80 degrees Fahrenheit, the contractor may have mix accelerators and hot water added at the batch plant (See Table 1).

7. The contractor shall not pour any concrete when the daily ambient temperature is to be below 55 degrees Fahrenheit.

TABLE 1

Temperature Range	% Accelerator	Type Accelerator
75~80 degrees F	1%	High Early (non calcium)
70~75 degrees F	2%	High Early (non calcium)
Below 70 degrees F	3%	High Early (non calcium)

D. Foundations:

1. All anchor bolts set in new concrete shall comply with ASTM F-1554 Grade 55 (Galvanized).

2. All anchor bolts shall be Hot-Dip Galvanized.

3. Footings and full rebar cages shall be drilled, set, and poured as per manufacturer's specifications. These Hip Roof fabric shade structures are to have a minimum footing of 30" x 12'-0" with full rebar cage, with recessed base plate attachment as per final approved manufacturer's engineered specifications and drawings.

END OF SECTION 13 31 23

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SECTION 260100 - BASIC MATERIALS AND METHODS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 WORK INCLUDED

A. The specifications and drawings are intended to cover a complete installation of systems. The omission of expressed reference to any item of labor or material for the proper execution of the work in accordance with present practice of the trade shall not relieve the Contractor from providing such additional labor and materials.

B. All labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of electrical system, complete, as shown on the drawings and/or specified herein. Work includes but is not necessarily limited to the following:

1. Conduits for all wiring systems, unless otherwise specifically noted.
2. All electrical wiring and connections to equipment furnished under other sections of Specifications.
3. All electrical wiring and connections to Owner furnished equipment.
4. All wiring and conduit for Air Conditioning and Heating and Ventilating systems, and electrical equipment in Plumbing Section of work.
5. Time clocks and contactors for control of lighting and air conditioning.
6. Pull wires in conduit runs indicated as conduit only (CO).
7. Lighting panelboards.
8. Building electrical wiring, conduits, outlet boxes, junction boxes, convenience outlets, switches, plates and all miscellaneous items of electrical equipment, apparatus and material specified and/or shown on Drawings.
9. All required grounds.
10. All anchors, chases, sleeves and supports for electrical equipment.
11. Excavation necessary for execution and completion of electrical work.
12. Required backing, supports and blocking for lighting fixtures.
13. Complete Fire Alarm and Detection System.

14. Intrusion Alarm System – Conduit & J-Boxes.

15. Telephone System – Conduit & J-Boxes.

16. Public Address System- Conduit & J-Boxes.

17. Network Wiring System – Conduit & J-Boxes.

18. Tests of entire system.

19. Lighting fixtures complete with lamps and required accessories.

20. Guarantees.

21. Temporary power for building construction.

22. Temporary lighting during construction.

23. Complete connections to all motors, apparatus, electrically operated devices, etc., as shown on Drawings.

24. Circuits, switches, starters and connections for all exhaust fans, blowers and heaters.

25. Flashing of conduits through roof.

26. Shop Drawings.

27. Include an allowance of $1000.00 for the material cost of any lighting fixture where an outlet is shown on drawings without a fixture type designation or if the fixture type designation shown is not in the lighting fixture schedule.

28. In these specifications, Fire Alarm, PA/Intercom, Intrusion Alarm, etc. are referred to as Auxiliary Systems or Signal Systems.

1.03 GUARANTEE

A. In addition to guarantee required in Division 01 or specifically specified elsewhere, all materials and equipment provided and installed under this Division of Specifications shall be guaranteed by Contractor in writing for a period of one year from date of acceptance of work by Owner. Should any trouble develop during this period due to defective materials or faulty workmanship, the Contractor shall furnish all necessary labor and materials to correct the trouble without costs to Owner.

B. Guarantee complete and perfect operation of entire system and that all apparatus will perform in accordance with detailed drawings and Specifications.

C. Guarantee that all equipment will be supported in such a way as to be free from objectionable vibration and noise.

D. Guarantee that all licenses and royalties for use of any patented feature of system will be paid before acceptance of system.

1.04 GENERAL REQUIREMENTS

A. Codes: Construct project in accordance with following codes and regulations.

1. 2019 California Electrical Code (CEC), Part 3, Title 24 C.C.R.

2. 2019 California Mechanical Code (CMC), Part 4, Title 24 C.C.R.

3. 2019 California Plumbing Code (CPC), Part 5, Title 24 C.C.R.

4. 2019 California Energy Code, Part 6, Title 24 C.C.R.

5. 2019 California Historical Building Code, Title 24 C.C.R.

6. 2019 California Fire Code, Part 9, Title 24 C.C.R.

7. 2019 California Existing Building Code, Title 24 C.C.R.

8. 2019 California Green Building Standards Code (CALGreen Code), Part 11, Title 24 C.C.R.

9. 2019 California Referenced Standards Code, Part 12, Title 24 C.C.R.

10. Local codes and ordinances.

11. Division of State Architect.

Keep a copy of applicable code available at Site while performing work of this Section. Nothing in these Drawings and Specifications to be construed as authority to violate codes and ordinances. Conflict with applicable regulations to be resolved at Contractor's expense before installation.

B. Permits, Fees and Inspections: Obtain and pay for all necessary permits and fees required by any constituted authority having jurisdiction including utilities. Arrange and pay for all required inspections or examinations and deliver certificates of inspection to Architect.

C. Record Drawings:

1. Provide record drawings for work of this Section.

2. Keep up-to-date a complete "As-Built" record set of blueline prints corrected daily and showing every change from original Drawings and Specifications and exact "As-Built" locations, sizes, and kinds of equipment.

3. Prints for this purpose may be obtained from Architect at cost of printing. Keep this set of Drawings on job and use only as a record set.

4. Drawings to serve as work progress sheets. Make neat and legible notations in red ink thereon daily as work proceeds, showing work as actually installed. Drawings to be available at all times for inspection, and kept at a location designated by Architect.

5. On completion of work, obtain one set of prints from Architect at cost of printing, and note neatly in scale all changes on record set. Deliver complete set of prints together with one set of blueline prints to Architect together with Contractor's name, address and phone number. Incorrect, non-legible or non-reproducible drawings will not be accepted.

D. Selection and Ordering of Equipment and Materials: Within two weeks after award of Contract, arrange for purchase and delivery of all light fixtures, equipment and materials required in ample quantities and at proper time. Inform Architect immediately of any inability to obtain suitable delivery of any equipment or material. Send copy of letter verifying date of purchases to Architect.

E. Shop Drawings and Material Lists:

1. Submit material lists and shop drawings as called for in Division 01, and as supplemented by this Division, and with sufficient promptness to ensure that overall work of project will not be delayed.

2. Submit six copies of a list of materials and equipment manufacturers that Contractor intends to use.

3. Provide shop drawings for following:

a. Panelboards.

b. Musco poles and luminaries.

c. Lighting fixtures, lamps and necessary accessories.

d. Time switches.

e. Contactors.

f. Magnetic Motor Starters.

g. Disconnect switches.

h. Wall dimmers.

4. Do not fabricate work until reviewed shop drawings for work have been received from Architect. Work fabricated or erected in advance of reviewed shop drawings will be at risk of Contractor.

5. Architect's or Engineer's review of shop drawings does not relieve Contractor of responsibility for errors including details, dimensions, or materials, as well as conformance with requirements of Drawings and Specifications.

6. Shop drawings will be checked by Architect and Engineer for conformance to design as a convenience to Contractor. Dimensions will not be checked. Should interferences become evident, notify Architect immediately so that matter may be resolved prior to proceeding with fabrication.

7. No reimbursement based on a claim that work was placed in accordance with dimensions shown on a reviewed shop drawing will be allowed for removing or replacing work already in place.

8. Make available a copy of every reviewed shop drawing at Project Site.

9. Submit shop drawings in coherent groups; e.g., all lighting fixtures at one time.

10. Submit actual samples of specified equipment or material to Architect for review when requested.

F. Substitution and Approval of Material:

1. Base all bids and proposals only upon materials, construction and equipment named or described in specification and/or shown on drawing. Should a Contractor wish to use other equipment than that specified, he shall submit proposed substitution by fully describing equipment he prefers to use and by listing credit or additional cost to his bid as a separate item should substitution be acceptable.

2. All equipment and materials proposed for substitution shall be similar in design and equal in quality and function to those specified herein or on drawings. Contractor (not sales vendor) shall demonstrate his proposed substitution and shall specifically note all differences between item specified and proposed substitution. Actual samples and test data, certified by an independent testing laboratory, shall be submitted when requested.

3. Each substitution will be given consideration, but without any obligation expressed or implied on part of Architect to change named requirements of specification. Only one substitution for each item of equipment will be permitted. Contractor assumes sole responsibility for performance and space requirements for substitute equipment. Decision of Architect shall be final as to whether or not substitution is acceptable.

G. Terminology:

1. Term "provide" used on Drawings and elsewhere in the Specifications shall be considered to mean "furnish and install".

2. Term "UL" means Underwriters Laboratories Inc.

H. Workmanship: See supplementary Conditions, Architect is sole judge of whether execution is in a workmanlike manner.

I. Safety Conditions: Be responsible in preventing energized switches, circuit breakers or circuits from being turned to "On" position during construction period. Be

responsible for damages to personnel and/or property resulting from contact with energized circuits, switches, circuit breakers, busses or other electrical apparatus. Construct all electrical work with electrical system de-energized in area. At no time permit work on equipment or apparatus with energized circuits.

J. Verification of Dimensions: All scaled and figured dimensions are approximate and are given for estimating purposes only. Before proceeding with work carefully check and verify all dimensions and sizes and assume all responsibility for fitting of materials and equipment to other parts of equipment and to structure. Where apparatus and equipment have been indicated on drawings, dimensions have been taken from typical equipment of class indicated. Carefully check drawings and see that equipment will fit into spaces provided.

K. Locations:

1. Locations of conduits, outlets, apparatus and equipment indicated on drawings are approximate only and shall be changed to meet architectural and structural conditions as required.

2. Install conduit and equipment in a manner and in locations avoiding all obstructions, preserving headroom, keeping openings and passageways clear and readily accessible for maintenance and repairs. Make changes in locations of conduit or equipment which may be necessary to accomplish this. Drawings are essentially diagrammatic to extent that many offsets, bends, special fittings and exact locations are not indicated. Examine all drawings prepared by manufacturers, suppliers and installers of all equipment including air conditioning and plumbing fixture shelving, for requirements and locations of equipment and outlets.

3. Should any structural interferences prevent installation of outlets, setting of cabinets for lighting panelboards, running of conduits, or installation of other electrical equipment at locations shown on Drawings, necessary minor deviations therefore as determined by Engineer may be permitted. In event changes in indicated locations or arrangements are necessary due to developed conditions in building's construction or rearrangement of furnishings or equipment, Owner shall be permitted to move any junction box or utility outlet a distance of 10' and such changes shall be made without extra cost providing change is ordered before work is installed. Submit an estimate of cost or credit for other changes and proceed only upon written authority of Architect.

4. Be cautioned that diagrams showing electrical connections are diagrammatic only and must not be used for obtaining lineal runs of wiring or conduit. Wiring diagrams do not necessarily show exact physical arrangement of equipment.

5. Locations of outlets, lighting fixtures, cabinets, panelboards, apparatus, motors, mechanical equipment, etc., shown on Electrical Drawings is only approximate. Do not scale them from Electrical Drawings.

6. Verify locations of outlets, lighting fixtures, equipment etc., with Architectural Drawings of interior and exterior details and finish, and coordinate location of electrical work with mechanical and other equipment.

7. Locate lighting fixtures as per reflected ceiling plans prepared by Architect.

L. These Specifications and attendant Drawings are intended to cover a complete and operable electrical system. Follow Drawings and Specifications and execute all work according to true intent and meaning. Should any error or omission exist in either or both of these Drawings and Specifications, or conflict one with another, have same explained and adjusted by Engineer before submitting bid price for electrical work; otherwise at own expense, supply proper materials and labor to completely install same, make good any damage to or defect in work of results obtained therefore caused by such error, omission or conflict. Most restrictive, greater quantity or size, better quality or other superior condition of all representations shall prevail. It is intended that outlets be located symmetrical with Architectural elements notwithstanding fact that locations indicated on Drawings may be distorted for clarity.

M. Omission of expressed reference in Drawings or Specifications to any item of labor or material necessary for proper execution of work in accordance with present good practice of trade will not relieve Contractor from providing such additional labor and materials.

N. Job Visits by Engineer: Periodic visits to job by Engineer is for express purpose of verifying compliance by Contractor with contract documents. Such visits by Engineer shall not be construed as construction supervision. Neither shall such visits be construed to make Engineer responsible for providing a safe place for performance of work by Contractor or Contractor's employees or safety of supplies of Contractor or his subcontractors.

O. Cooperation with Others: Organize work that will harmonize with work of all trades so that all work may proceed as expeditiously as possible. Be responsible for correct placement of work and connection of work to all related trades.

P. Protection of Finish: Provide adequate means for protecting all finished parts of materials and equipment against damage from any cause during progress of work and until acceptance by Architect. Cover all material and equipment in storage and during construction in such a manner that no finished surfaces will be damaged, marred or splattered with paint. Keep moving parts perfectly clean and dry. No paint spraying will be permitted in building. Replace or refinish damaged material or equipment including face plates or panels without additional costs to Owner.

Q. Cleaning Equipment and Premises: Thoroughly clean all parts of materials, equipment and exposed parts such as receptacles and panelboards, of cement, plaster and other materials. Remove all oil and grease spots with a non-inflammable cleaning solvent. Brush exposed metal work with steel brushes to remove rust and other spots and leave smooth and clean. During progress of work, carefully clean up and leave premises and all portions of building free from debris. At completion of work, remove all waste materials and debris resulting, leaving everything in a complete and satisfactory condition.

R. Cutting and Patching: Include all cutting and patching in bid. Do not cut any structural members without first having received written permission from Architect. Cutting of round openings which can be done by use of a rotary drill shall be done by Contractor requiring same. Cutting and patching finish work shall be performed by workmen of the respective trade.

S. Conditions at Site: Visit Job Site and become familiar with all existing conditions within scope of work and include in Bid Proposal allowance for these conditions. Verify exact locations of services prior to construction. Notify all other Contractors of these utility locations.

T. Documents: Read all relevant documents, become familiar with job, scope of work, type of general construction, Architectural, Structural, Mechanical and Electrical Drawings and Specifications. Also become familiar with purpose for which these Drawings have been prepared and become cognizant of all details involved.

U. Acceptance: Before work will be accepted, demonstrate to Owner and Architect that entire installation is complete and in proper operating condition and Contract has been fully and properly executed. Following items shall be prepared and submitted to Architect:

1. Two copies of all test results required under this Division.

2. Two copies of local and/or state code enforcing authorities final inspection certificates.

3. Copies of as-built record drawings as required.

4. Notify Architect in writing when installation is complete and that a final inspection of this work can be performed. In event defects or deficiencies are found during this final inspection they shall be corrected to satisfaction of Architect before final acceptance can be issued.

5. Two Maintenance and Operating Manuals as required.

V. Field Inspections: Provide proper facilities for access of Owner or Owner's representative to conveniently examine and inspect all portions of work covered in this Contract at any and all reasonable hours.

W. Completing Work: At completion of work, remove all waste materials and debris resulting from work, leaving everything in a complete and satisfactory condition.

X. Electrical Superintendent: Include services of a qualified electrical foreman capable of interpreting intent of Drawings and Specifications, to study Plans, Specifications and references, and coordinate all requirements with other trades, authorized to make decisions and issue instructions; be constantly in charge of work and available at job site at all times and at final inspection. Instruct Owner's representative for proper operation and recommend maintenance of all systems.

Y. Maintenance and Operating Manuals:

1. Before completion and acceptance of work, furnish Owner with two complete sets of operating and maintenance instruction manuals. Bind each set in durable hardboard binder and index.

2. Compile data for manuals upon approval of material list and sketches so as not to delay final approval of work installed. Operating manuals to contain all pertinent data relating to electrical installation such as fixture cuts, manufacturer's approval, shop drawings, sketches, wiring diagrams and equipment operating instructions.

3. Instruct Owner's operating personnel with electrical operating procedures before work is considered complete.

Z. Extra Work or Costs to This Contractor Due to Other Contractors or Trades: Adjusted between this Contractor and offending Contractor at no extra cost to Owner. Notify Architect before such extra work is done.

AA. Tests:

1. Upon completion of work and adjustment of all equipment, all systems shall be tested under direction of Owner's representative to demonstrate that all equipment furnished and installed and/or connected under provision of these Specifications shall function electrically in manner required. All tests shall be completed prior to final inspection of project.

2. All systems shall test free from short circuits and grounds and shall be free from mechanical and electrical defects. All circuits shall be tested for proper neutral connection.

3. All instrumentation and personnel required for testing shall be furnished by Contractor.

BB. Noise Control:

1. Perform electrical work to a manner in minimize transmission of noise and preserve acoustical properties of building structure.

2. Where equipment is mounted on vibration isolators, use flexible connections to reduce transmission of noise.

3. Where conduits pass through sleeves in interior walls, floors, or ceilings, completely fill space between each conduit and its sleeve to provide an airtight seal.

4. Use glass fiber material, "Duxseal" compound, for acoustic seals.

CC. Seismic Bracing Standards: All pipes, cable trays, conduits, etc. shall be supported and braced in accordance with SMACNA “Seismic Restraint Manual, Guidelines for Mechanical Systems”, including Appendix B, “Additional Requirements for OSHPD” and “Addendum no. 1, September 2000”. Comply with CBC, where requirements are more stringent than SMACNA, including, but not limited to the following:

1. Pipes and conduit shall be braced to resist the forces prescribed in California Building Code.

2. Where possible, pipes, conduit and their connections shall be constructed of ductile materials (copper, ductile iron, steel or aluminum and brazed, welded, or screwed connections.) Pipes, conduits and their connections, constructed of nonductile materials (e.g., cast iron, no-hub pipe and plastic), shall have the brace spacing reduced to one-half of the spacing allowed for ductile material in accordance with California Building Code or SMACNA Seismic Restraint Manual.

3. Seismic restraints may be omitted for the following conditions:

   a. All piping suspended by individual hangers 12 inches or less in length from the top of the pipe to the bottom of the structural support for the hanger.

   b. All electrical conduit less than 2.5 inches trade size.

4. For rigidly supported, electrical conduit, or cable trays, the product of $C_a I_p$ need not to exceed 1.2 for any value of I_p.

5. All Trapeze assemblies supporting, cable trays and conduit shall be braced to resist the forces and relative displacements per ASCE 7 Chapter 13, considering the total weight of the elements on the trapeze.

6. Conduit supported by a trapeze where none of these elements would individually be braced need not be braced if connection to the pipe/conduit of directional changes do not restrict movement of the trapeze. If this flexibility is not provided, bracing will be required when the aggregate weight of the pipes and conduit exceed 10 pounds/foot. The weight shall be determined assuming all pipes and conduits are filled with water.

DD. Bracing Standards Application: Comply with bracing standards by evaluating the complete installation of all utilities and equipment, and providing a comprehensive solution based on Contractor's layout, coordination withal other trades, and with the structural design and all other provisions for incorporating systems into the buildings. Show bracing products and layout in shop drawing submittals. The following criteria apply to the bracing of all systems:

1. The design parameters for determining the Total Design Lateral Force shall be as designated on the structural drawing.

2. Seismic Hazard Levels (SHL) shall be as designated on structural drawings.

3. Contractor shall submit documentation for each condition, which is not specifically covered in the SMACNA manual, including piping configurations and conditions, structural systems, structural connection methods, and other issues regarding the application of the standards.

4. Provide expansion anchors, sized per SMACNA guidelines, for use in concrete.

5. For connections to structural steel, wood framing, etc. provide bolted or welded connections, sized per SMACNA guidelines.

6. Seismic bracing components consisting of structural shapes.

7. Seismic bracing cable shall be galvanized steel, conforming to ASTM A603, zinc-coated with minimum 0.4 ounces/sf, pre-stretched, 7 x 19 strand, sized per SMACNA guidelines.

EE. In hard ceiling space where access to j-boxes, detectors, etc is required, provide ceiling access panel, fire-rated typical.

END OF SECTION

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SECTION 260160 - ELECTRICAL DEMOLITION FOR REMODELING

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Electrical demolition.

PART 2: PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual Sections.

PART 3: EXECUTION

3.01 EXAMINATION

A. Verify that abandoned wiring and equipment serve only abandoned facilities.

B. Drawings are based on field observation and existing record documents. Report discrepancies to Architect/Engineer before disturbing existing installation.

C. Beginning of demolition means installer accepts existing conditions.

3.02 DEMOLITION

A. Provide all necessary electrical demolition. See Architectural drawings for extent of wall removal and other demolition. Remove existing electrical devices in walls to be demolished. Re-route and reconnect as required, any active circuits feeding through these walls in order to keep upstream and downstream circuits active. Remove exposed conduit, wiring, devices, etc. as required.

B. Where new lighting is shown in an area with existing lighting, demolish existing lights, associated conduits, wires, devices, etc. Dispose of existing ballasts with PCB in accordance with all regulations of all governing agencies having jurisdiction.

C. Where mechanical equipment is to be demolished as shown on mechanical drawings, demolish disconnect switches, conduits, wires and associated electrical equipment.

D. Dispose of all demolished equipment and devices. Equipment with salvage value shall be disposed of per District's instructions.

E. When underground conduits are indicated to be removed or intercepted, assume that all existing underground conduits are concrete encased and provide all work to remove encasement as necessary.

END OF SECTION

SECTION 260533 - CONDUIT

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Rigid metal conduit and fittings.
2. Intermediate metal conduit and fittings.
3. Electrical metallic tubing and fittings.
4. Flexible metal conduit and fittings.
5. Liquidtight flexible metal conduit and fittings.
6. Non-metallic conduit and fittings.

PART 2: PRODUCTS

2.01 RIGID STEEL CONDUIT AND FITTINGS

A. Rigid Steel Conduit: Hot dipped galvanized inside and out, galvanized threads, mild steel, zinc coated, inside and outside protective coating. Standard lengths: 10'-0".

B. Bushings: Threaded insulated metallic type except sizes 1" and smaller may be non-metallic type. Setscrew bushings are not acceptable.

C. Couplings, elbows, bends and other fittings: Same material and finish as rigid steel conduit. All shall be threaded type.

2.02 RIGID ALUMINUM CONDUIT AND FITTINGS

A. Conduit: Extruded from 6063-T24 alloy of maximum 1/10% copper content and containing lubricating inside liners; rigid threaded type.

B. Bushings: Insulated metallic except that sizes 1" and smaller may be non-metallic.

2.03 INTERMEDIATE METAL CONDUIT (IMC) AND FITTINGS

A. Conduit: Galvanized steel, zinc coated, protective coating inside and out.

B. Fittings and Conduit Bodies: Use fittings and conduit bodies specified above for rigid steel conduit.

C. Conduit: May be used in lieu of rigid steel conduit where permitted by code, except in concrete, underground, runs longer than 100 feet for all power feeders with conduit greater than 2 inches.

2.04 ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS

A. Conduit: Hot dipped galvanized or sherardized inside and out, zinc coated with protective enamel coating inside. Provide bushings at ends of conduits.

B. Connectors: Steel, insulated, bused tap-on or wrench tightened compression type. (Couplings similar) Indentor or screw type not acceptable.

C. Conduit: May be used in lieu of rigid steel conduit where permitted by code, except exposed, in concrete and for runs more than 100' for all power feeders with conduit greater than 2 inches.

2.05 FLEXIBLE METAL CONDUIT AND FITTINGS

A. Conduit: Steel single strip, hot dipped galvanized on all 4 sides prior to fabrication. Flexible aluminum conduit will not be allowed.

B. Connectors: Die cast with ridges that thread into conduit. (Binding screw type connectors are not acceptable.)

C. Conduit: May be used in lieu of rigid steel conduit where specifically indicated; at connections to vibrating equipment; at drops to light fixtures from J-boxes; at locations judged by Architect impractical to use rigid conduit. Maximum length for any application shall be 6 feet.

2.06 LIQUIDTIGHT FLEXIBLE CONDUIT AND FITTINGS

A. Conduit: Steel, single strip, hot dipped galvanized on 4 sides prior to fabrication.

B. Connectors: Insulated, special Appleton "STN" Series.

C. Jacket: Liquidtight, polyvinyl chloride plastic.

D. Conduit: Use for final connection to motor terminal boxes and transformers. Use at exterior locations, damp locations, wet locations and for flex connections in kitchen, restrooms and similar areas.

2.07 PLASTIC CONDUIT AND FITTINGS

A. Conduit: Extruded, virgin polyvinyl chloride compound, Schedule 40, heavy wall, in 10'-0" lengths with couplings.

B. Fittings: Non-threaded type couplings.

C. Conduit: May be used underground only. Vertical elbows and risers of all sizes shall be rigid steel with 20 mil bonded PVC coating.

2.08 CONDUIT SUPPORTS

A. Conduit Clamps, Straps, and Supports: Steel or malleable iron. Clamps: Unistrut Nos. P111 thru P1124, Kindorf No. C105. Straps: One or two hole as required.

B. Conduit hangers, racks and trapezes: Steel, threaded rods, channel iron "U" shaped racks equal to "Unistrut".

C. Individual conduit hangers: Steel, threaded rods with malleable iron split rings.

D. Hanger rods: 3/8" minimum diameter for 2" and smaller conduit, factory made. 1/2" minimum for 2-1/2" and larger conduit.

E. Wire supports: 12 gauge zinc coated iron tie wire, or 16 gauge galvanized double annealed steel tie wire.

2.09 CONDUIT ROOF JACKS AND FLASHING

A. Roof Jacks:

1. For Single Conduits Through Roof: Stonemen Stormtite Series #1100-4; seamless 4 pound lead flashing assembly, 8" skirt, steel reinforced varipitch boot; caulk type cast iron counterflashing sleeve, with vandalproof set screws, and Perma-seal waterproofing compound.

2. Sleeves for Conduits: Sleeves shall be adjustable type, of 26 gage galvanized iron, Adjust-to Crete Co. Adjust-to-Crete, or Jet Line Products Inc. Jet-Line, or equal.

3. Where conduit enters a building through a concrete foundation below grade, or ground water level, or where it is necessary to seal around a conduit where it passes through a concrete floor or wall, provide O-Z/Gedney Type FSK Thru Wall and Floor Seal, or equal.

2.10 CONDUIT PULLING CORDS

A. Pull Wire: No. 12 galvanized iron or nylon pull wire rated 250 pounds tensile strength.

2.11 CONDUIT FITTINGS, ELLS AND BUSHINGS

A. Special conduit fittings: Crouse-Hinds "Condulets" or Appleton "Unilets".

B. Ells: Same quality, same finish and same make as conduit.

C. Bushings: Thomas & Betts or approved equal.

D. Seismic separations and expansion joints: OZ type "AX" complete with bonding strap and clamps. At exterior locations use OZ type "EX".

2.12 CONDUIT SEALS AND SEALING COMPOUND

A. Vertical seals: Crouse Hinds type "EYD" or Appleton type "SF".

B. Horizontal Seals: Crouse Hinds type "EYS" or Appleton type "ESU".

C. Sealing compound: Crouse Hinds "CHICO" or Appleton "APELCO".

D. Fireproofing Compound: Dow Corning No. 3-6548 RTV or equal by 3M Company or Nelson.

2.13 UNDERGROUND SPACERS FOR PVC CONDUIT

A. Spacers: PVC, interlocking type, intermediate and base styles.

B. Sizes: For 2" to 4" conduit.

C. Manufacturer: Carlon or approved equal.

2.14 SPECIAL UNDERGROUND COUPLINGS FOR PVC CONDUIT

A. Expansion couplings: PVC type to expand up to 4".

B. Couplings: Socket type for joining PVC conduit.

C. Adapters: Socket type at one end for PVC conduit and threaded female type at other end for metallic connection.

2.15 PLASTIC CONDUIT CEMENT

A. Solvent weld cement: Fast drying, brush-on type.

2.16 MC CABLE

A. Metal Clad (MC) cable system is not allowed.

PART 3: EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

A. Arrange conduit to maintain headroom and present a neat appearance.

B. Unless indicated otherwise, conceal conduit within or behind finished walls and ceiling.

C. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.

D. Maintain minimum 6 inch clearance between conduit and piping. Maintain 12 inch clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.

E. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers.

F. Group conduit in parallel runs where practical and use conduit rack constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit.

G. Do not fasten conduit with wire or perforated pipe straps. Remove all wire used for temporary conduit support during construction, before conductors are pulled.

H. Do not support conduit from any equipment subject to vibration. Support from structural members only.

I. Structural Considerations for Conduit Routing:

1. Where conduits are to pass through or will interfere with any Structural member, or where notching, boring or cutting of the structure is necessary, or where special openings are required through walls, floors, footings, or other buildings elements, to accommodate the electrical work, such work shall conform to State Building Code.

2. Where conduits are terminated in groups at panelboards, switchboards and signal cabinets, etc., provide templates or spacers to hold conduits in proper position and to preserve alignment. Conduits terminating at signal cabinets shall enter cabinets in following approved locations only: Conduits entering top, side, and bottom of cabinets shall be aligned in a single row, centered 2" from rear of cabinet; conduits entering back of cabinet shall be aligned in a single row centered 2" from top of cabinet. Conduits shall not be spaced closer than 3" on centers.

3. 1" and smaller conduits above metal lath ceilings shall be tied to ceiling channels. 1-1/4" conduits above metal lath ceilings shall be rigidly suspended with pipe hangers or pipe racks or shall be secured to superstructure with factory made pipe straps. Conduits in metal lath or steel stud partitions, shall be tied to furring channels or studs. In ceiling spaces and in partitions, tie wires shall be spaced not more than 5'-0" apart, shall hold conduit tight against channels and studs at point of tie and shall not bear any of weight of conduit. Tie wire shall be #16 gage galvanized double annealed steel tie wire.

4. Where auxiliary supports, saddles, brackets,, etc., are required to meet special conditions they shall be made rigid and secure before conduit is attached thereto.

5. Conduit in ceiling spaces, in stud walls and under floors shall be supported with factory made pipe straps or shall be suspended with pipe hangers or pipe racks. Pipe straps shall be attached to and shall hold conduit tight at point of support against ceiling and floor joists, rafters, and wall studs, or 2" x 4" headers fitted between joists or wall studs.

6. Conduits installed on exposed steel trusses and rafters shall be fastened with factory made conduit straps or clamps which shall hold conduit tight against supporting member at point of support.

7. Conduits under buildings shall be strapped with factory made conduit straps to underside of concrete floor or joists, or wood floor joists, or shall be suspended with pipe hangers or pipe racks. Conduits under building shall not rest on ground but shall be suspended from building or shall be buried below surface of ground. 1" and larger conduits under buildings shall be suspended with conduit hangers or racks.

8. Pipe hangers for individual conduits shall be factory made, consisting of a pipe ring and threaded suspension rod. Pipe ring shall be malleable iron, split and hinged, and shall securely hold conduit, or shall be springable wrought steel. Rings shall be bolted to or interlocked with suspension rod socket. Rods shall be 3/8" for 2" conduit hangers and smaller and shall be 1/2" for 2-1/2" conduit hangers and larger.

9. Pipe racks for groups of parallel conduits and for supporting total weights not exceeding 500 pounds shall be trapezed type and shall consist of a cross channel, Steel City Kindorf #B-900, Unistrut #P-1000 suspended with a 3/8" minimum diameter steel rod at each end. Each rod shall be fastened with nuts, top and bottom to cross channel and with a square washer on top of channel. Each conduit shall be clamped to top for cross channel with conduit clamps, Steel City Kindorf #C-105 or Unistrut Nos. P-1111 through P-1124. Conduits shall not be stacked one on top of another, but a maximum of 2 tiers maybe on same rack providing an additional cross channel is installed. Where a pipe rack is to be longer than 18", or if weight it is to support exceeds 500 pounds, submit details of installation to the Architect for approval.

10. Factory-made pipe straps shall be one or 2-hole formed galvanized clamps, heavy duty type, except where otherwise specified.

11. Hangers straps, rods, or pipe supports under concrete shall be attached to inserts set at time concrete is poured. Under wood use bolts, lag bolts, or lag screws; under steel joists or trusses use beam clamps.

3.02 CONDUIT INSTALLATION

A. Cut conduit square using a saw or pipe cutter; de-burr cut ends.

B. Bring conduit to the shoulder of fittings and couplings and fasten securely.

C. Use conduit hubs or sealing locknuts for fastening conduit to cast boxes, and for fastening conduit to sheet metal boxes in damp or wet locations.

D. Install no more than equivalent of two 90- degree bends between boxes for conduits 2" diameter and larger, three for conduit under 2" diameter. Locate pull boxes as required.

E. Use conduit bodies to make sharp changes in direction, as around beams.

F. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 2 inch size.

G. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

H. Support rigid, intermediate and thin wall conduit at 8'-0" maximum on centers and 3'-0" from junction boxes.

I. Support flexible and liquidtight flexible conduit at 4'-0" maximum on centers and 12" from junction boxes.

J. PVC conduit: Use underground only. Encase in 3” concrete (2000 psi) envelope except under building.

K. Provide No. 12 AWG insulated conductor or suitable pull string in empty conduit, except sleeves and nipples.

L. Install expansion-deflection joints where conduit crosses building expansion or seismic joints.

M. Where conduit penetrates fire-rated walls and floors, seal opening around conduit with UL listed fire barrier, "3M" calk or equal.

N. Route conduit to roof mounted devices and equipment through roof jacks. Provide flashing/roof jacks for all new and existing conduits which penetrate roof to appropriate Roofing Section(s) for installation.

O. Run conduit to equipment on roof concealed in attic space. Penetrate roof at equipment locations only.

P. For conduits to roof mounted HVAC equipment, penetrate roof with roof jacks outside footprint of HVAC units. Do not penetrate roof inside HVAC units.

Q. Do not use aluminum conduit below grade, cast in concrete or in masonry in contact with earth.

R. Conduit underground may be rigid conduit and in these conditions shall be given two heavy coatings of a suitable primer and a single half lapped layer of protective plastic tape. Primer and tape shall be "Scotchrap" No. 50 tape. Primer and tape shall be "Scotchrap" Primer or Trantex V-10 tape and Dutch Brand Primer. Primer and tape shall be in strict accordance with manufacturer's instructions. As an alternate, conduit and fittings shall have a PVC bonded coating (40 mil thickness minimum) by Occidental Coating Company.

S. Where conduit is installed underground, under slabs on grade, exposed to weather or in wet locations, make joints liquidtight and gastight.

T. For underground or underslab conduit, apply a heavy coat of Pabco P & B No. 2 paint to all surfaces within 6" each side of fittings and to areas where wrenches or other

tools have been applied. On exposed conduit, repair scratches and other defects with galvanizing repair stick, Enterprise Galvanizing "Galvabar".

U. Cut threads on rigid conduit to standard taper and to a length such that all bare metal exposed by threading operation will be completely covered by couplings or fittings used. In addition, cut lengths of thread such that all joints will become secure and wrench tight just preceding point where conduit ends would butt together in couplings and where conduit ends would butt into ends or shoulders of other fittings. Securely tighten all threaded connections.

V. Make joints in rigid conduit installed in concrete or masonry liquid-and-gas-tight, with red lead and oil, or other approved joint compound and engage not less than five threads.

W. Keep bends and offsets in conduit runs to an absolute minimum. Replace all deformed, flattened or kinked conduit. Provide large radius factory made bends or power bend rigid metal conduit of 1-1/4" trade size or larger.

X. Place sleeves for electrical conduit passing through walls, beams or slabs before concrete is poured (exception-floor slabs on earth). Where conduit passes through suspended floor slabs, outside of chases, sleeves shall be standard weight black steel pipe extending 1-1/2" above the finished floor level. Sleeves at other locations shall be either lightweight galvanized steel tube, or galvanized sheet steel, with a minimum thickness of 24 USSG. Clearance between conduit and sleeves shall be not less than 1/2". Sleeves through outside walls below grade shall be caulked tight. Caulk with oakum and mastic to obtain watertight joint.

Y. Penetration Membrane: Where penetration cannot be avoided, cut and re-seal membrane at point of penetration.

Z. Provide minimum 3/4" conduit size underground.

AA. Run exposed conduit parallel with or at right angles to building line, beams, or ceilings. Place symmetrical bends or metal boxes at changes in direction or taps.

BB. Stub from each panel which is flush mounted in a wall, from top of panel a minimum of 3-3/4" conduits to nearest ceiling space or other accessible locations and cap for future use. Tag to indicate panel origination.

CC. Independently support conduit rising from floor for motor connections if over 24" above floor. Support shall not be a motor or duct work which may transmit vibrations.

DD. Provide pull wire in all conduit runs indicated as conduit only (C.O.).

EE. Do not run conduit closer than 12" to any hot water pipe, steam pipe, heater flue or vent.

FF. Terminate conduit stub-ups through floor for connection to equipment of junction boxes in couplings flush with top of concrete slab floor.

GG. Within building, bury underground conduit a minimum of 6" below bottom of slab.

HH. Use rigid metal conduit where legally required, where exposed to weather, where located in unheated areas, or where subject to mechanical injury, here defined as exposed conduit less than 7'-6" above floor in areas accessible to anyone other than authorized operating or maintenance personnel.

II. Where a conduit from one structure crosses to another structure, e.g., from a building to an arcade or from one arcade to another arcade, use a section of liquid-tight flex conduit at the crossing with sufficient slack to allow the two structures to move during an earthquake without breaking the conduit. For stub up to relocatable buildings, provide liquid-tite flex from stub up to first box on back of building.

JJ. Provide PVC deflection - expansion joint fittings where underground run passes through expansion joint or is necessary for seismic conditions.

KK. Provide a green insulated ground wire in all flexible conduit runs regardless of length.

LL. Wipe plastic conduit (PVC) clean before joining. Apply even coat of cement to entire area to be inserted into fitting. Let joint cure for 20 minutes minimum. Use approved solvent-weld cement specifically manufactured for purpose. Threading of PVC conduit is prohibited.

MM. Install an equipment ground (green) insulated conductor in each non-metallic conduit.

NN. Do not install PVC conduit above grade for any reason. Seal both ends of all PVC conduit runs at each junction box or conduit interruption with sealant. Seal steel conduit risers to panelboards, switchboards, or pullboxes from underground PVC conduit runs.

OO. Flash and counterflash all conduit runs passing through roof.

PP. Use electrical metallic tubing above grade in dry locations only and where not subject to mechanical injury or otherwise prohibited. Concrete and masonry in contact with earth are not considered dry locations.

QQ. Use liquid tight flexible conduit for final connections to motors and vibrating equipment. Use flexible conduit where required for equipment servicing for connections to recessed lighting fixtures from nearby accessible junction boxes, and for concealed runs in dry locations where structural conditions prevent use of other types of conduit.

RR. For conduits for computer cables and coax cables, use large radius bends. Do not use j-box or pull box to change direction. Install boxes at straight conduit sections only and sweep conduit to make turns. Do not use condulet fittings to change directions.

SS. Minimum radius for conduits designated for computer LAN wiring, coax cable wiring, data wiring, fibre-optics wiring, and TV cable wiring shall be as follows:

3/4"C	-	12"
1"C	-	12"
1-1/4"C	-	18"
2"C	-	24"

2-1/2"C	-	24"
3"C	-	30"
3-1/2"C	-	30"
4"C	-	30"
5"C	-	36"
6"C	-	42"

TT. Size all conduits as legally required or larger where indicated or preferred. Where portions of a conduit run are increased in size, for whatever reason, make all remaining portions in that run same size.

UU. Mark all underground conduit stub-outs with a 6 inch square by 2 foot deep concrete block with an embedded brass nameplate indicating the origin of conduit.

VV. Do not cut concrete, masonry or structural members except where approved by Architect.

WW. Underground Requirements:

1. Except for branch circuit conduits and auxiliary system branch circuits within a building, all conduits installed underground shall be entirely encased in concrete (2000 psi), 3" thick on all sides with multiple conduits spaced not less than 3" apart, except where otherwise specified. Provide approved conduit spacers as required to prevent any deflection of conduits when concrete is placed and to preserve position and alignment of conduits in concrete. Conduits shall be tied to spacers. Anchors shall be installed to prevent floating of conduits during pouring of concrete. Red concrete shall be used to encase conduits of systems operating above 600 volts. To protect conduits from underground to surface wall mounted panels, terminal cabinets, etc., encase conduits in 3" high concrete curb.

2. Assemble sections of conduit with approved fittings and stagger all joints. Cut ends of conduit shall be reamed to remove all rough edges. Joints in all conduits shall be made liquid-tight. All bends at risers shall be completely below surface where possible.

3. Two or more conduit runs in a common trench shall be separated by at least 3" of concrete. Conduit runs installed in a common trench with other utility lines and water, gas, sew lines, shall be separated from such lines by at least 12" horizontally. Power conduits shall be separated from low voltage signal conduits by 6" of concrete.

4. Slope underground conduits between two pull boxes towards one of the boxes to avoid water and moisture trap. For underground conduits coming out of a building, slope conduits towards the first pull boxes. Take care to install underground conduits such that water cannot travel through underground pull boxes and conduits back into a building. Prevention method shall include but not limited to installing pull boxes with draining provision where conduits enter building, sealing both ends of each conduit water tight, etc.

5. Provide electronic markers to identify conduit stub locations at property lines, as required by electric service utility company.

6. All underground conduit systems for use by service utility company shall meet all requirements of utility company.

3.03 EXCAVATION AND BACKFILL

A. Include all excavation and backfilling required for work under this Section.

1. Bury underground conduit at least 27 inches below finished grade to top of conduit encasement.

2. Underground branch circuit conduit, within building limits, 6" below bottom of slab unless specifically indicated otherwise in these specifications.

3. After installation of work has been inspected and approved, backfill trenches with clean earth, moistened and layer tamped to same compaction density as specified for both building and site locations under "Earthwork".

B. Locate existing underground pipes by use of electronic locating devices and exercise utmost care in excavation work. Contractor is responsible for satisfactory repair of any underground utility line damaged as result of his excavation.

C. Trenches or any other excavation required for installation of electrical work, which are outside of barricaded working area, shall be barricaded at all times with continuous portable barricades. At completion of work, remove barricades from site. Backfill trenches and excavations outside of barricaded working area immediately after approval of conduit work by Inspector.

D. Where asphalt concrete has been cut, backfill up to existing grade.

E. Do not start excavations until approval is obtained from Inspector.

END OF SECTION

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SECTION 260519 - WIRE AND CABLE-RATED 600 VOLT

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Building wire.
2. Ground Conductors.
3. Wiring connections and terminations.
4. Conductor Identification.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260526 - Grounding.
3. Section 260533 - Conduit.
4. Section 260553 - Electrical Identification.

PART 2: PRODUCTS

2.01 BUILDING WIRE

A. Wires shall be single conductor type THHN or THWN insulated with polyvinyl chloride and covered with a protective sheath of nylon, rated at 600 volts. Wires may be operated at 90 degrees C. maximum continuous conductor temperature in dry locations, and 75 degrees C. in wet locations and shall be listed by UL Standard 83 for thermoplastic insulated wires, listed by Underwriter's Laboratories (UL) for installation in accordance with Article 310 of the California Electrical Code (CEC). Conductors shall be solid copper for 12 AWG and smaller conductors, and stranded copper for 10 AWG and larger conductors. Conductors shall be insulated with PVC and sheathed with nylon. Wires shall be identified by surface markings indicating manufacturer's identification, conductor size and metal, voltage rating, UL symbol, type designations and optional rating. Indentations for lettering are not permitted. Wires shall be tested in accordance with the requirements of UL standard for types THWN, or THHN.

B. Conductors shall be solid Class B or stranded Class C, annealed uncoated copper in accordance with UL standards, or another Nationally Recognized Testing Laboratory (NRTL).

C. Control Circuits: Copper, stranded conductor 600 volt insulation, THWN/THHN.

D. Minimum branch circuit wiring: No. 12 AWG copper, 600 volt insulation.

E. Minimum wire size except for control wiring: No. 14 AWG copper, 600 volt insulation.

F. Wiring for fluorescent lighting fixtures mounted end-to-End: Type “THHN”.

2.02 GROUND CONDUCTORS

A. Equipment ground: Insulated conductor green in color.

B. Isolated circuit ground: Insulated conductor green in color.

C. Ground Wires: Bare copper or with green colored insulation.

2.03 CONDUCTOR ARRANGEMENT AND IDENTIFICATION

A. Ties: T & B "Ty-rap" or 3M Company.

B. Lacing: Nylon twine.

C. Markers: Adhesive type, Brady.

2.04 CONDUCTORS

A. All Wire: New and delivered to job site in unbroken packages.

B. Each package shall bear Underwriter's and Manufacturer's labels and seals indicating date of manufacture and maximum allowable voltage.

PART 3: EXECUTION

3.01 INSTALLATION

A. Wires shall not be installed until debris and moisture is removed from conduits, boxes, and cabinets. Wires stored at site shall be protected from physical damage until they are installed and walls are completed.

B. Wire-pulling compounds furnished as lubricants for installation of conductors in raceways shall be compounds approved and listed by UL, NRTL, or equal. Oil, grease, graphite, or similar substances are not permitted. Pulling of 2 AWG or larger conductors shall be performed with a cable pull machine. Any runs shorter than 50 feet are exempt. When pulling conductors, do not exceed manufacturer’s recommended values

C. At outlets for light, power, and signal equipment, pigtail splices with 8-inch circuit conductor leads for connection to fixtures, equipment, and devices.

D. Pressure cable connectors, pre-insulated 3M Scotchlok, Hubbell Power, O-Z/Gedney or equal, Y, R or B spring-loaded twist-on type, may be furnished in splicing number 8 AWG or smaller wires for wiring systems; except public address and telephone systems.

E. Joints, splices, taps, and connections to switchboard neutral, bonding or grounding conductors, conductors to ground busses, and transformer connections for wires 6 gage and larger shall be performed with high-pressure cable connectors approved for installation with copper conductors. Connectors shall be insulated with heavy wall heat shrink WCSM, or cold-applied roll-on sleeve RVS. Insulation level shall be a minimum of 600V and joints, splices, and taps shall be qualified to ANSI C 119.1, UL, NRTL, or equal listed mechanical pressure connections.

F. Connections to any bussing and high-press cable connectors shall be securely bolted together with corrosion-resistant plated carbon steel, minimum grade five machine screws secured with constant pressure-type locking devices.

G. Connection of any bonding or grounding conductors shall be securely bolted together with corrosion-resistant plated carbon steel, minimum grade five machine screws secured with constant pressure-type locking devices.

H. Wire switchboards, panel cabinets, pull boxes, and other cabinets except public address, shall be neatly grouped and tied in bundles with nylon ties at 10-inch intervals. In switchboards, panels and terminal blocks, wires shall be fanned out to terminals. If bundles are longer than 24 inches, a maximum of nine current carrying conductors may be bundled together.

I. Install conductor lengths with a minimum length within the wiring space. Conductors must be long enough to reach the terminal location in a manner that avoids strain on the connecting lug.

J. Maintain the conductor required bending radius.

K. Neutral conductors larger than 6 gage, which are not color identified throughout their entire length, shall be taped, painted white or natural gray, or taped white where they appear in switchboards, cabinet, gutters or pull boxes. Neutral conductors 6 gage and smaller shall be white color identified throughout their entire length.

L. Fire alarm and clock wiring shall be continuous from terminal cabinets or from equipment to each device. Splices are not permitted between devices and/or terminal cabinets at junction and pull boxes. Wiring shall be terminated at terminal blocks or devices only.

M. Wiring systems shall be free from short circuits and grounds, other than required grounds. The contractor shall be responsible for the testing of feeder and branch circuit conductor’s insulation resistance. The insulation of the conductors shall be tested prior to connections to any panelboards, switchboards, variable frequency drives, lighting control systems, ballasts, and wiring devices such as but not limited to GFI receptacles, TVSS receptacles, or equipment. Insulation testing of panelboards and switchboards shall be independently performed from the insulation testing of any conductors as specified in other sections of this specification.

1. Utilize the services of an approved independent testing laboratory to perform megger time-resistance insulation testing of feeder conductors. Tests must be conducted with wires disconnected at both ends.

   a Provide calibration program records to assure the testing instrument to be within rated accuracy. The test equipment accuracy shall be in accord with the requirements stated by the National Institute of Standards and Technology (NIST).

   b Test equipment shall be provided with a label stating the date of last calibration. As a minimum the equipment shall have been calibrated within the past 12 months.

   c Test reports shall include the following:

      (1) Identification of the testing organization.
      (2) Equipment identification.
      (3) Ambient conditions.
      (4) Identification of the testing technician.
      (5) Summary of project.
      (6) Description of equipment being tested.
      (7) Description of tests.
      (8) Test results.
      (9) Analysis, interpretation and recommendations.

3.02 COLOR CODES

A. General Wiring:

1. Color code conductor insulation as follows:

SYSTEM VOLTAGE		
Conductor	208Y/120	480Y/277
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Natural Gray

Neutrals shall be colored-distinguished if circuits of two voltage systems are used in the same raceway.

2. For phase and neutral conductors 6 gage or larger, permanent plastic-colored tape may be furnished to mark conductor end instead of coded insulation. Tape shall cover not less than 2 inches of conductor insulation within enclosure.

B. Signal Systems: Wires for signal systems shall be color-coded. Except where otherwise specified, color-coding shall be as follows:

SYSTEM	COLOR CODE
Clocks	Pink, Gray and Orange
Fire Alarm Horns	Pink (+) and Gray (-)

Fire Alarm Strobes	Orange (+) and Blue (-)
Un-Interruptible 24 Volt Power (Annunciator, Water Flow, and Audible Device)	Yellow (+) and White (-) Note: A single white wire may be common to both
Interruptible 24 Volt Power (4 wire smoke detectors, duct detectors)	Brown (+) and White (-) Note: A single white wire may be common to both
Switch-Leg Sprinkler Bell (Between water flow and audible device)	Violet (+) and White (-)
Door Holding Magnets (Non Power Limited)	Black (+) and White (-)

3.03 FEEDER IDENTIFICATION

A. Feeder wires and cables shall be identified at each point the conduit run is broken by a cabinet, box, gutter, etc. Where terminal ends are available, identification shall be by means of heat shrink wire markers, which provide terminal strain relief. Markers shall be by Tyco Electronics, Panduit, Brady Perma-Sleeve, or equal. Identification in other areas shall be by means of wrap-around tape markers from Tyco Electronics, Panduit, Brady Perma-Code or equal. Markers shall include feeder designation, size, and description.

3.04 TAPE AND SPLICE KITS

A. Splices, joints, and connectors joining conductors in dry and wet locations shall be covered with insulation equivalent to that provided on conductors. Free ends of conductors connected to energized sources shall be taped. Voids in irregular connectors shall be filled with insulating compound before taping. Thermoplastic insulating tape approved by UL, NRTL, or equal for installation as sole insulation of splices shall be furnished and shall be installed according to manufacturer's printed specifications.

3.05 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.06 CLEANUP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

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SECTION 260526 - GROUNDING

PART 1: GENERAL

1.01 Provide required grounding.

1.02 SYSTEM DESCRIPTION

A. All metallic objects on the premises that enclose electrical conductors or that are likely to be energized by electrical currents shall be effectively grounded.

B. All metal equipment parts such as enclosures, raceways, and equipment grounding conductors and all earth grounding electrodes shall be solidly joined together into a continuous electrically conductive system.

C. All metallic systems shall be solidly interconnected to the electrical system as provided by the service entrance and for each grounded separately derived system that is installed.

D. A separately derived A.C. source shall be grounded to the equipment grounding conductor and to a separate made electrode.

E. Electrical continuity to ground metal raceways and enclosures, isolated from equipment ground by use of non-metallic conduit or fittings, shall be provided by a green insulated grounding conductor of approved size within each raceway connected to isolated metallic raceways, or enclosures at each end. Each flexible conduit shall be provided with a green insulated grounding conductor of approved size. In addition to using metallic conduits as ground, provide a ground wire sized per code in every conduit.

F. Cold water or other utility piping systems shall not be used as the only source of grounding electrodes. Grounding electrodes shall be "made electrodes" specified as follows:

1. Grounding electrodes as specified in Part 2 of this Specification.

2. Concrete enclosed electrode, which is made up of at least 20'-0" of #4 AWG, minimum size, copper conductor, encased by at least 2" of concrete, located within or near bottom of a concrete foundation, or footing, which is in direct contact with earth. Footing rebar must be connected to copper wire using approved connections. An external electrode as specified in Article 2.01, Paragraph B of this Specification Section must be installed and connected to foundation or footing rebar.

G. Non-current-carrying metal parts of high voltage equipment enclosure, signal and power conduits, switchboard and panelboard enclosures, motor frames, equipment cabinets, and metal frames of buildings shall be permanently and effectively grounded.

H. Metallic or semi-conducting shields, and lead sheaths of cables operating at high voltage, shall be permanently and effectively grounded at each splice and termination.

I. Neutral of service conductors shall be grounded as follows:

1. Neutral shall be grounded at only one point within school site for that particular service. Preferable location of grounding point shall be at service switchboard, or main switch.

2. Equipment and conduit grounding conductors shall be bonded to that grounding point.

3. If other buildings on campus are served from a switchboard or panelboard in another building, power supply is classified as a feeder and not as a service.

4. Equipment grounding conductor is carried from switchboard to each individual building. At building, grounding conductor is bonded with power equipment enclosures, metal frames of building, etc., to "made electrode" for that building.

5. Neutral of feeder shall not be grounded.

J. If there is a distribution transformer at a building, secondary neutral conductor shall be grounded to "made electrode" serving building.

K. Within every building, main switchboard or panel, shall be bonded to a 1" or larger cold water line with a 1" conduit with one #6 wire. Metallic piping systems (gas, fire sprinkler, etc.) shall be bonded to cold water line with 3/4" conduit with one #8 wire.

PART 2: PRODUCTS

2.01 YARD BOXES

A. Yard boxes shall be precast concrete and shall be approximately 14" wide, 19" long, and 12" deep (outside dimensions), or larger, if necessary, to obtain required clearances. Boxes shall be equipped with bolt-down, checkered, cast iron covers and a cast iron frame cast into box. Yard boxes shall be Brooks 36 or approved equal.

2.02 ELECTRODES

A. "Made" electrodes shall be approved copper-clad steel ground rods, minimum 3/4" diameter, 10'-0" long.

2.03 GROUND ENHANCEMENT MATERIAL

A. Ground enhancement material as manufactured by Erico Electrical Products shall be used packed inside a 3" diameter hole around ground rod. Manufacturer's installation instructions must be followed for each ground rod installation.

PART 3: EXECUTION

3.01 ELECTRICAL DEVICES

A. Grounding electrodes shall be located in nearest usable planting area, where not otherwise indicated on Drawings, and each electrode shall terminate within a concrete yard box installed flush with finish grade. In planting areas, concrete yard box shall be 2" above planting surfaces.

B. If concrete enclosed electrode is used, grounding wire shall terminate to a suitable copper plate with grounding lugs.

C. Grounding rods shall be driven to a depth of not less than 8'-0". A permanent ground enhancement material as manufactured by Erico Electrical Products shall be used at each ground rod to improve grounding effectiveness. The manufacture's guidelines shall be used for each installation.

D. Grounding electrodes shall have a resistance to ground of not more than 5 ohms.

E. When using grounding rods, if resistance to ground exceeds 5 ohms, 2 or more rods connected in parallel shall be provided to meet grounding resistance requirement.

F. Ground rods shall be separated from one another by not less than 10'-0"

G. Parallel grounding rods shall be connected together with approved fittings and approved grounding conductors in galvanized rigid steel conduit, buried not less than 12" below finish grade.

H. Electrical Contractor shall include in his bid, cost of services of an approved independent testing laboratory, to test grounding resistance of all made electrodes, ground rods, and bonding of building steel, water pipes, gas pipes and other utility piping. Tests to be performed are as follows:

1. Visually and mechanically examine ground system connections for completeness and adequacy.

2. Perform "fall of potential" tests on each ground rod or ground electrode where suitable locations are available per IEEE Standard No. 81, Section 8.2.1.2. Where suitable locations are not available, measurements will be referenced to a known dead earth or reference ground.

3. Perform the two point method test per IEEE No. 81, Section 8.2.1.1 to determine ground resistance between ground rod and building steel, and utility piping - such as water, gas and panelboard grounds. Metal railings at building entrances and at handicapped ramps shall also be tested.

4. Test shall be conducted in presence of the District Electrical Inspector.

I. Three copies of test results shall be submitted to the District Electrical Inspector. Test results shall be submitted on an official form from the independent testing laboratory showing project location, test engineer, test conditions, test equipment data, ground system layout or diagram, and final test results.

END OF SECTION

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SECTION 260534 - BOXES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Wall and ceiling outlet boxes.
2. Pull and junction boxes.
3. Sealant.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260533 - Conduit
3. Section 262726 - Wiring Devices.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS-OUTLET BOXES

A. Raco

B. Steel City

C. Bowers

2.02 OUTLET BOXES

A. Sheet Metal Outlet Boxes: One piece galvanized, pressed steel, knockout type, 4-11/16" sq. by 2-1/8" deep in all locations unless otherwise indicated or required.

B. Cast Boxes: Aluminum, or Cast feralloy, deep type, gasketed cover, threaded hubs.

C. Where Wiremold type box have to be used, e.g., on existing concrete wall, provide proper box such that the total depth of a box including the device mounted on the box, will not exceed 4 inches.

2.03 ACCEPTABLE MANUFACTURERS-FLOOR BOXES

A. Hubbell

B. Walker Parkersburg

C. Steel City

2.04 PULL AND JUNCTION BOXES

A. Interior and non-weatherproof boxes shall be constructed of blue or galvanized steel with ample laps, spot welded, and shall be rigid under torsional and deflecting forces. Boxes shall have auxiliary angle iron framing where necessary to ensure rigidity. Covers shall be fastened to box with a sufficient number of brass machine screws to ensure continuous contact all around. Flush type boxes shall be drilled and tapped for cover screws at Site if boxes are not installed plumb. All surfaces of pull and junction boxes and covers shall be given one coat of metal primer, and one coat of aluminum paint.

B. Weatherproof pull and junction boxes shall conform to foregoing for interior boxes with following modifications: Cover of flush mounting boxes shall have a weather-tight gasket cemented to and trimmed even with cover all around. Surface or semi-flush mounting pull and junction boxes shall be UL approved as rain-tight and shall be complete with threaded conduit hubs. All exposed portions of boxes shall be galvanized and finished with a prime coat and coat of baked-on gray enamel.

C. All junction and pull-boxes shall be rigidly fastened to the structure and shall not depend on conduits for support.

D. Cast Metal Boxes for Outdoor and Wet Location Installations: Type 4 and Type 6, flat-flanged, surface-mounted junction box, UL listed as rain-tight. Galvanized cast iron OR Cast aluminum box and cover with ground flange, neoprene gasket, and stainless steel cover screws.

2.05 ACCEPTABLE MANUFACTURERS-SEALANT

A. Crouse Hinds "CHICO"

B. Permacel

C. Ductseal

2.06 ACCEPTABLE MANUFACTURERS - FIRE PROOFING SEALANT

A. Dow Corning

B. 3M Company

C. Nelson

PART 3: EXECUTION

3.01 COORDINATION OF BOX LOCATIONS

A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.

B. Electrical box locations shown on Contract Drawings are approximate unless dimensioned. Verify exact location of floor boxes and outlets in offices and work areas with Owner's representative prior to rough-in.

C. Locate and install boxes to allow access.

D. Locate and install to maintain headroom and to present a neat appearance.

3.02 OUTLET BOX INSTALLATION

A. Unless otherwise noted on plan or specifically allowed by the Engineer, conceal all boxes flush in wall or in ceiling space above drop ceiling. In finished areas and where it is not possible to conceal conduits and boxes, for example, on existing concrete wall, provide Wiremold type metallic surface raceways and boxes.

B. Do not install boxes back-to-back in walls. Provide minimum 6 inch separation, except provide minimum 24 inch separation in acoustic-rated walls.

C. Provide knockout closures for unused openings.

D. Support boxes independently of conduit except for cast box that is connected to two rigid metal conduits, both supported within 12 inches of box.

E. Use multiple-gang boxes where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

F. Install boxes in walls without damaging wall insulation.

G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.

H. Position outlets to locate lighting fixtures as shown on reflected ceiling plans.

I. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed lighting fixture, to be accessible through lighting fixture ceiling opening.

J. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs. Accurately position to allow for surface finish thickness. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes. Install plaster rings to interface with equipment to be mounted thereon.

K. Align wall-mounted outlet boxes for switches, thermostats, and similar devices.

L. Provide cast outlet boxes in exterior locations and wet locations. Provide cast bell-boxes at interior locations where box is exposed to view. (do not use regular 4/s or handy box with exposed knockouts and unfinished appearances for these interior exposed applications).

M. Where boxes are installed in fire rated ceiling or walls, be responsible for preserving integrity of fire rating as required.

N. In fire-rated wall, use 4" square deep boxes. Do not aggregate more than 100 square inches of boxes for any 100 square feet of wall or partitions. Separate outlet boxes on opposite sides of walls or partition by a minimum horizontal distance of 24 inches. Where the separation cannot be achieved due to site condition, provide 2-hour rated fire-proof material behind boxes to maintain fire rating of walls.

3.03 FLOOR BOX INSTALLATION

A. Set boxes level and flush with finished concrete floor.

B. Use cast iron floor boxes for installations in slab on grade.

3.04 PULL AND JUNCTION BOX INSTALLATION

A. Locate pull boxes and junction boxes above accessible ceilings or in unfinished areas.

B. Support pull and junction boxes independent of conduit.

END OF SECTION

SECTION 260553 - ELECTRICAL IDENTIFICATION

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Nameplates.

a Wire and cable markers.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260519 - Wire and Cable -Rated 600 Volt.
3. Section 260526 - Grounding.
4. Section 260533 - Conduit.
5. Section 260534 - Boxes.
6. Section 260923 - Contactors and Time Switches.
7. Section 262416 - Panelboards.
8. Section 262816 - Disconnect Switches.
9. Auxiliary System Sections.

PART 2: PRODUCTS

2.01 MATERIALS

A. Nameplates: Engraved three-layer laminated plastic, white letters on a black background.

B. Wire Markers: Cloth markers, split sleeve or tubing type.

PART 3: EXECUTION

3.01 INSTALLATION

A. Degrease and clean surfaces to receive nameplates.

B. Install nameplates parallel to equipment lines.

C. Secure nameplates to equipment fronts using screws or rivets. Secure nameplate to outside face of panelboard doors.

D. Embossed tape will not be permitted for any application.

3.02 WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboard gutters, pull boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control wiring.

3.03 NAMEPLATE ENGRAVING SCHEDULE

A. Provide nameplates of minimum letter height as scheduled below.

B. Panelboards, Switchboards, and Distribution Sections: 1/4 inch identifying equipment designation; 1/8 inch identifying voltage rating and source. Provide nameplates on load centers furnished with relocatable buildings. Nameplates for relocatable buildings shall match description on circuit breakers or switches at switchboards or panelboards feeding the buildings.

C. Individual Circuit Breakers, Switches, Motor Starters in Panelboards, and Distribution Sections: 1/8 inch identifying circuit and load served, including location.

D. Individual Circuit Breakers, fused and non-fused disconnect Switches, and Motor Starters: 1/8 inch identifying load served.

E. Exterior metal pull boxes: 1/4 inch identifying systems in boxes.

F. Terminal Cabinets: 1/4 inch identifying systems.

3.04 MARK CONDUCTOR RUNS

A. Apply markers after conductors installed in conduits.

B. Apply in panelboards and in junction boxes.

C. Mark feeders in panelboards, switchboards and distribution sections.

3.05 MARK JUNCTION BOXES

A. Mark covers of junction boxes with non-erasable marker to indicate circuit numbers or systems contained within boxes.

B. Mark fire alarm boxes with red marker and identifying as "FA".

C. Paint fire alarm conduits red at intervals such that conduits can be clearly identified for fire alarm system.

END OF SECTION

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SECTION 260921 - ELECTRICAL-HVAC-PLUMBING COORDINATION

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Coordination with HVAC and Plumbing Sections of work.

2. Electrical components, wiring and connections to electrical HVAC and Plumbing equipment.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.

2. Section 260533 - Conduit.

3. Section 260519 - Wire and Cable.

4. Section 260534 - Boxes.

5. Section 262813 - Fuses.

6. Section 260553 - Electrical Identification.

7. Section 262816 - Disconnect Switches.

1.03 QUALITY ASSURANCE

A. Size fuses in accordance with manufacturer's published data and equipment nameplate information.

B. Confirm with Mechanical Contractor correct sizes of all starter heater sizes.

1.04 PROJECT RECORD DOCUMENTS

A. Submit record documents under provisions of Section 017839 and Section 016000.

PART 2: PRODUCTS

2.01 MATERIALS

A. Air Conditioning and Heating & Ventilating equipment will be furnished and installed by HVAC Contractor. Plumbing equipment will be furnished and installed by Plumbing Contractor.

B. Electrical components for these systems will be a part of work of this section.

PART 3: EXECUTION

3.01 INSTALLATION

A. Furnish, install and connect all required electrical components for air conditioning and heating systems and for plumbing system.

B. Secure a control wiring diagram from Air Conditioning Equipment Supplier at time of receipt of Contract and determine all control and protective apparatus and devices necessary for correct and proper operation of air conditioning equipment and furnish such apparatus and devices. Be responsible for proper wiring and connecting of air conditioning equipment and plumbing equipment.

C. Refer to mechanical plans, check all locations of mechanical equipment that may or may not show on electrical plans and include in bid sum sufficient to cover total cost of mechanical installation. Coordinate with Air Conditioning Equipment Supplier to ensure that all equipment is covered in Contract.

D. Unless specifically noted on drawings, run conduit in attic or ceiling space to equipment on roof so that no conduit runs or lays on roof. Penetrate roof at equipment location only.

END OF SECTION

SECTION 262416 - PANELBOARDS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Lighting branch circuit panelboards.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260519 - Wire and Cable.
3. Section 260526 - Grounding.
4. Section 260529 - Supporting Devices.
5. Section 260533 - Conduit.
6. Section 260553 - Electrical Identification.
7. Section 260923 - Contactor and Time Switches.

1.03 SUBMITTALS

A. Submit shop drawings for equipment and component devices.

B. Include outline and support point dimensions, voltage, main bus ampacity, circuit breaker arrangement and sizes.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURER - PANELBOARDS

A. Square D.

B. General Electric.

C. Cutler Hammer

D. ITE.

2.02 BRANCH CIRCUIT PANELBOARDS

A. Lighting panelboards: Safety type with 277/480 volt and 120/208 volt, three phase, four wire. Circuit breakers: Molded case thermal magnetic type quick-make, quick-break approved by designated use and voltage, bolt-on, 20 ampere single pole branch circuit unless otherwise indicated on schedules. Toggle type mechanism shall have trip indicator. Circuit breakers where used to switch light fixtures: Type "SWD". Breakers for HVAC equipment shall be HACR rated. Minimum interrupting capacity rating for 120/208 volt units: 10,000 amperes and for 277/480 volt system units: 14,000 amperes. 120/208 volt panelboards shall have 200% rated neutral bus. Provide a handle tie on the single pole breakers on each multi-wire branch circuit (circuits sharing a common neutral) such that the circuits of each multi-wire branch circuit can be disconnected simultaneously.

B. Panelboard cabinets for lighting panels: Single door, with Underwriters' label.

C. Cabinets: Constructed in accordance with N.E.C. Standards, of not less than No.12 gauge galvanized sheet steel and painted inside with rust resistant paint. Minimum width: 20 inches; depth: 5-3/4".

D. Panelboard cabinets shall be sufficient height and width to allow a minimum of 4 inch wiring gutters around all sides, except feeder entrance side, which shall be 6 inches wide.

E. Fronts of all cabinets shall be constructed of one (1) piece of code gauge galvanized sheet but not less than 12 gauge steel, fastened with screws and countersunk washers.

F. Doors: Fastened to trims with substantial continuous flush hinges, flush spring catch latch and cylinder lock with two (2) keys for each floor. All locks: Master keyed.

G. Directory frames: 1/32", Lucite.

H. Interiors: Factory assembled rigid frame, supporting bus, mains and neutral bar. Bussing: Copper and arrange for sequence phasing throughout with a current density in copper not to exceed 1000 amperes per square inch. Neutral bar: Located at opposite end of structure from mains.

I. Circuit number labels shall be engraved laminated plastic, white letters on a black background. Stick on decal paper label is not acceptable.

J. Equipment supplier shall provide “Flash Hazard” warning signs as required by the NEC.

K. Panelboards shall be by "Original Equipment Manufacturer" that also manufactures circuit breakers. Load center type panelboards are not acceptable.

PART 3: EXECUTION

3.01 INSTALLATION

A. Install panelboards plumb.

B. Height: 6 ft maximum to top of panelboard.

C. Provide filler plates for unused spaces in panelboards.

D. Provide typed circuit directory for each panelboard. Do not revise branch circuit numbers for any reason.

E. Stub three empty 3/4 inch conduits to accessible location above ceiling out of each recessed panelboard and cap.

F. Provide padlocking device for each and every circuit breaker in "Off" position in each and every panelboard.

G. Use common internal trip element for two and three pole circuit breakers.

H. Finish panels gray.

I. Rigidly support cabinets to building construction in an approved manner.

J. Provide approved lock-in devices on all circuit breakers serving fire alarm panels and devices, motors, heaters, clocks, signal circuits, night lights, drinking fountains, or equipment remotely located. (Lock-in devices are not padlocking devices.)

K. Provide identifying screwed on bakelite nameplate to face of each panelboard.

L. Coordinate with other trades and ensure that no pipes or ducts are installed in the space within 6 feet above top of panelboards. Be responsible also that all doors from electrical rooms swing out from room.

M. Provide handle tie bars on circuit breakers serving each multi-wire branch circuits sharing a common neutral wire.

3.02 FIELD QUALITY CONTROL

A. Measure steady state load currents at each panelboard feeder. Should difference at any panelboard between phases exceed 20 percent, notify Electrical Engineer immediately. Take care to maintain proper phasing for multi-wire branch circuits.

B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers.

END OF SECTION

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SECTION 262726 - WIRING DEVICES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Wall Switches
2. Receptacles.
3. Device plates and box covers.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260526 - Grounding.
3. Section 260534 - Boxes.
4. Section 260553 - Electrical Identification.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS – WALL SWITCHES

A. Harvey Hubbell Company.

B. Pass and Seymour.

C. Leviton.

2.02 WALL SWITCHES

A. Wall switches for Lighting Circuit AC general use snap switch with toggle handle, rated 20 amperes and 120/277 volts AC. Handle: White or color as selected by Architect, plastic. Decorator spec grade.

2.03 ACCEPTABLE MANUFACTURERS - RECEPTACLES

A. Harvey Hubbell Company.

B. Pass and Seymour.

C. Leviton.

2.04 RECEPTACLES

A. Convenience and Straight-blade Receptacles: NEMA Configuration 5-15R: Decorator Spec Grade, White.

B. Convenience and Straight-Blade Receptacles: NEMA configuration 5-20R: Decorator Spec Grade, White.

C. Convenience receptacle, isolated ground type, orange in color: Decorator Spec Grade.

D. GFI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter, NEMA 5-20R, Decorator Spec Grade, White. Unit shall comply with UL 2003 GFCI requirements including lockout action.

E. Receptacles: Highest specification grade.

F. Provide tamper-resistant receptacles with thermoplastic dual mechanism shutter system to help prevent insertion of foreign objects. Receptacles shall have extra heavy-duty brass, one-piece mounting strap with integral ground. Receptacles shall be white color, impact resistant nylon face and back body. For tamper-resistant receptacles rated 20 amps/125 volts, provide NEMA 5-20R, white in color. For tamper-resistant receptacles rated 15 amps/125 volts, provide NEMA 5-15R, white in color. Provide Decorator Spec Grade receptacles.

G. Split wired half controlled receptacle: NEMA 5-20R, 20 amp, Pass & Seymour 26352CH-W or equal.

2.05 ACCEPTABLE MANUFACTURERS - WALL PLATES (Match manufacturer of Device)

A. Harvey Hubbell Company.

B. Pass and Seymour.

C. Leviton.

D. TayMac.

E. Match manufacturer of switches and receptacles.

2.06 WALL PLATES

A. Interior Device Plates: Sierra Electric .040 stainless steel to suit device; multi-gang where required; blank plates at junction boxes and capped outlets.

B. Weatherproof Cover Plates: Receptacles in wet locations shall be installed with an outlet enclosure clearly marked “Suitable for Wet Locations While In Use”. There must be a gasket between the enclosure and the mounting surface, and between the cover and base to assure a proper seal. The enclosure must employ stainless steel mounting hardware and enclosure shall be recessed where possible and by TayMac Corporation or equal.

C. Highest specification grade.

PART 3: EXECUTION

3.01 INSTALLATION

A. Install wall switches 48 inches above floor to top of wall box, “OFF” position down. Verify mounting height with Architect prior to installation.

B. Install convenience receptacles 18 inches above floor, or as noted on drawings, grounding pole on bottom.

C. Install specific-use receptacles at heights shown on Contract Drawings.

D. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets in non-public places.

E. Install devices and wall plates flush and level.

F. Provide etched plates with 3/16” high black letters for:

1. Outlets where voltage is other than 120 volt.

2. When switch controls device other than lighting fixture.

3. When switch is located out of sight of unit being controlled.

4. Lock switches.

5. Where more than one switch occurs under a common plate.

6. Air Distribution System control switches.

G. Install plates with all four edges in continuous contact with finished wall surfaces without use of mats or similar devices.

H. Provide blank cover plates for all boxes as required.

I. In Kitchen, all 15A and 20A 115V receptacles shall be GFI type.

END OF SECTION

SECTION 262813 - FUSES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Fuses.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.

2. Section 262816 - Disconnect Switches.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - FUSES

A. Bussmann

B. Gould-Chase Shawmut

2.02 FUSES

A. Fuses, 600 amperes or less: Dual-element with a minimum time delay of 10 seconds at 500% rating; current limiting; interrupting capacity of 200,000 amperes RMS symmetrical.

B. Fuses: Of same manufacturer, of sizes shown on Drawings, of required size for proper operation of equipment protected.

C. Fuses, 250 volt: LPN-RK, Class "RK".

D. Fuses, 600 volt: LPS-RK, class "RK".

2.03 SPARE FUSES

A. Furnish 3 spare fuses of each type and each size.

PART 3: EXECUTION

3.01 INSTALLATION

A. Install fuses in switches and other equipment requiring fuses.

B. Do not ship equipment from factory with fuses installed.

C. Verify that correct size fuses are installed in switch. Verify that all three fuses in a three-pole switch and two fuses in a two-pole switch are exactly of same amperage and voltage ratings.

3.02 TESTS

A. Operate system with fuses in place after approval by inspecting authority.

B. Replace immediately any defective fuse and/or correct any and all deficiencies discovered through blown fuses.

END OF SECTION

SECTION 262816 - DISCONNECT SWITCHES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Disconnect switches.

2. Enclosures.

B. Related Work

1. Section 260100 - Basic Materials and Methods.

2. Section 260553 - Electrical Identification.

3. Section 262813 - Fuses.

1.03 SUBMITTALS

A. Include outline drawings with dimensions, and equipment ratings for voltage, capacity and horsepower.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - DISCONNECT SWITCHES

A. General Electric.

B. Cutler Hammer.

C. Square "D" Company.

2.02 DISCONNECT SWITCHES

A. Fusible Switch Assemblies: Heavy duty, quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in "ON" position. Handle lockable in "OFF" position. Fuse Clips: Designed to accommodate Class R fuses, current limiting, 200,000 A.I.C.

B. Nonfusible Switch Assemblies: Heavy duty quick-make, quick-break, load interrupter enclosed knife switch with externally operable hand interlocked to prevent opening front cover with switch in “ON” position. Handle lockable in “OFF” position.

C. Enclosures: NEMA Type 1 or NEMA Type 3R as indicated on Drawings.

D. Fusible and Nonfusible Switch Enclosures: Assembled with defeatable door interlocks that prevent door from opening when operating handle is in "ON" position.

PART 3: EXECUTION

3.01 INSTALLATION

A. Install disconnect switches where indicated on Drawings.
B. Install fuses in fusible disconnect switches.

C. Install "Caution" sticker on inside of switch door indicating exact type of fuses to be installed therein.

D. Verify that size, type and rating of fuses installed in each switch is correct and that all fuses in any one individual switch are the exactly same.

3.02 IDENTIFICATION

A. Provide screwed-on bakelite nameplate.

B. See Section 260553 for nameplate data.

END OF SECTION

SECTION 265100 - LIGHTING FIXTURES

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specifications collectively apply to work of this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

1. Lighting fixtures and accessories.
2. Lamps.
3. Ballasts.
4. Parking Lot Poles.

B. Related Work:

1. Section 260100 - Basic Materials and Methods.
2. Section 260519 - Wire and Cable.
3. Section 260526 - Grounding.
4. Section 260529 - Supporting Devices.
5. Section 260533 - Conduit.
6. Section 260534 - Boxes.

1.03 SUBMITTALS

A. Submit Shop Drawings.

B. Include outline drawings, lamp and ballast data, support points, weights, and accessory information for each lighting fixture type.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - LIGHTING FIXTURES

A. See Lighting Fixture Schedule on drawings.

2.02 SWITCHING AND DIMMING CONTROLS

A. General

1. All devices color per architect.

2. Observe manufacturers installation instructions with particular attention to derating requirements for multiple gang installations.

3. Use factory made multiple gang faceplates matching device color.

4. Daylight Controls may be integrated into luminaires Performance shall equal or exceed specification for individual devices.

B. Switches

1. Standard snap style

2. 120/277 volt, 20A

3. Listed

4. Specification grade

5. Color per architect

C. Automatic control switch

1. Automatic control switch shall be a push button wall switch capable of on/off manual operation and shall also be capable of receiving automatic control signals through interrupting power to the switch and load.

2. Control switch shall mount in a standard single gang or multi-gang wall box and shall fit behind a decorator style face plate.

3. Control switch shall use an air gap relay rated for 15 Amp ballast, tungsten, general use and shall be compatible with all electronic ballasts and HID loads.

4. The control switch when used with an occupancy sensor shall provide manual on/off control from the push button and automatic shut off based on occupancy. When occupancy is not detected and the sensor's time delay has expired, the lights shall turn off. If occupancy is detected within 15 seconds of this shut off, the switch shall turn the lights back on. Otherwise, lights will remain off until the switch is manually turned on.
5. Control switch shall be capable of 3-way, 4-way, or multi-way switching.

6. Control switch shall be The Watt Shopper AS-100 or Sentry Switch or approved equal.

D. Motion sensors

1. Provide a dual technology sensor that detects presence in the control area by detecting Doppler shifts in transmitted ultrasound and passive infrared heat changes. Detection verification of both technologies must occur in order to activate lighting systems. Upon verification, detection by either shall hold lighting on.

2. Sensor shall have a retrigger feature in which detection by either technology shall retrigger the lighting system on within 5 seconds of being switched off.

3. Sensor shall be mounted and adjusted in order to eliminate detection through open doorways and outside of controlled area. To provide small motion diction and immediate activation upon entry, coverage of both technologies must be complete and overlapping throughout the controlled area.

4. The PIR technology shall utilize a temperature compensated, dual element sensor and a multi-element Fresnel lens. The lens shall be Poly IR4 material. The lens shall cover up to 2000 square feet for walking motion when mounted at 10 feet and 1000 square feet of desktop motion.

5. Ceiling or high wall mounted. Coordinate location for best detection when used with suspended lighting.

6. Ultrasonic sensing shall be volumetric in coverage with a frequency of 40 KHz. It shall automatically adjust the detection threshold dynamically to compensate for constantly changing levels of activity and air flow throughout controlled space.

7. Sensors shall have a time delay that is adjusted automatically or shall have a fixed time delay of 5 to 30 minutes, set by DIP switches.

E. Automatic daylighting switches

1. Provide an ON/OFF daylight controller to reduce the controlled lighting as the daylight level increases. Where two stages of reduction are specified, provide a two stage controller providing a sequence reduction. As an alternate, two single stage controllers may be provided to provide two stages of reduction as long as these two devices may be adjusted to provide the desired sequencing of the lighting reduction and maintain this sequencing when switching the lights off and again when switching the lights on.

2. Ceiling mounted or luminaire mounted. The function of the automatic daylighting switches shall not be provided by a wall switch or a device mounted at wall switch height. If the device s powered by line voltage then it must be enclosed in an enclosure rated a minimum of NEMA 1 with a tamper proof cover or locking cover.

3. Independently adjustable setpoint and deadband. Setpoint shall be adjustable from at least 10 footcandles up to100 footcandles. Deadband shall be adjustable up to at least 100% setpoint.

4. Adjustable time delay. Lighting level must be above the off setpoint continuously for the length of the time delay before the lights will switch off. The device shall not have a length of the time delay shorter than 3 minutes. Time delay shall be adjustable to up to 20 minutes.

5. Low voltage device to be connected by low voltage wiring to a power pack. If control sequence can be met, one power pack may be used with multiple control devices.

6. Daylight switch shall provide visible indicator of the current status of the control output. Indicator shall be an LED.

7. Daylight switch to provide a test mode that temporarily bypasses the time delays. If left in test mode, the daylight switch will automatically resume normal time delays at the end of a period no longer than 60 minutes. (This item is a requirement of the 2005 Title 24 standard).

F. Automatic daylighting dimming systems

1. Provide a daylighting controller to continuously dim the fluorescent lights. Daylighting controller may be a self contained photosensor or a controller with a remote photocell. Photocell or photosensor are to be ceiling mounted or attached to a pendant fixture.

2. Photosensor to provide 0 – 10 V dimming signal to continuously dim the ballasts proprietary methods of signaling dimming ballasts shall be acceptable.

3. Daylighting controller may be open or closed loop type. Closed loop devices may not be used in applications where there are adjoining dimming zones such that the luminaires from one dimming zone can be viewed by the daylighting controls in another zone. All daylighting controllers shall provide proportional control. An open loop device may accomplish this with one adjustment. All closed loop devices shall have at least two adjustments to provide an adjustable response. Any device which attempts to maintain a constant photocell signal shall not be acceptable.

4. All adjustments shall be adjustable from the photocell.

5. Provide an occupant adjustment or override wall switch to allow the teacher to adjust the light levels.

6. Approved sensor/control manufacturers: Wattstopper, Lutron, Leviton, Lithonia, Novitas, Douglas.

PART 3: EXECUTION

3.01 INSTALLATION

A. Install lamps in lighting fixtures.

B. Support surface-mounted lighting fixtures directly from building structure. Provide additional blocking, unistruts, steel channels, etc. as required.

C. Install recessed lighting fixtures with attached accessible junctions boxes to permit removal and access from below. Use plaster frames in plaster , gypsum wallboard or acoustic ceilings. In grid ceiling rated for light fixture support, support recessed fluorescent light fixtures directly from T-bar using approved earthquake clips and in addition, 2 No. 12 wires (slack wires), one at each diagonal end of fixture attached directly to a structural member. If two opposite ends of a fixture do not rest on ceiling main runners, provide 4 No. 12 wires (support wires) to structural member. In grid ceiling not rated for fixture support, attach fixture to grid using approved earthquake clips and in addition 4 No. 12 support wires directly to structural member.

D. Provide safety chain between fixture and structure for recessed light fixtures. Mount hanger channels to span structural and/or T-bar ceilings.

E. Provide required backing for all lighting fixtures.

F. Join continuously mounted fixtures by use of chase nipples.

G. Provide spacers where required.

H. Mount light fixtures so that fixture labels are not visible when viewed from below.

I. For recessed fixtures in fire rated ceiling, provide fireproofing enclosure equal to rating of ceiling.

J. In each pendant of a pendant mounted light fixture, provide a safety wire or cable attached to the fixture and structure at each support capable of supporting four times the supported load. Provide swivel mounts at ceiling and longitudinal sway mounts at fixtures to allow fixtures to swing freely a minimum of 45 degrees from vertical.

K. Test motion sensors and daylighting controls.

L. For all dimming systems, contractor is responsible for burning in all lamps for 100 hours. Lamps are to operate at full output for this period.

M. Contractor is responsible for setting up and adjusting all control devices per the manufacturer's adjustments and resulting performance.

3.02 TESTS

A. Immediately before turning completed job over to Owner, clean all light fixtures inside and out, including plastics and glassware, adjust and tighten all trim, replace broken or damaged parts, lamp and test fixtures for electrical and mechanical operation. Replace all inoperative lamps, ballasts and other inoperative equipment.

B. Replace noisy ballasts immediately.

C. Include in bid the service of a California Registered Professional Engineer or a Professional recognized by the State of California to review and certify the final installed lighting control system as required by the California Energy Code (Title-24). The Professional shall sign the required documents, submit to the proper agency and be responsible for certifying the installed lighting control system.

END OF SECTION

SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

PART 1 – GENERAL

1.1 SUMMARY

A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.

B. The purpose of these specifications is to define the lighting system performance and design standards for Verdugo Hills Recreation City Pool Deck using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.

C. The sports lighting will be for the following venues:

1. Pool
2. Deck
3. Security

E. The primary goals of this sports lighting project are:

1. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
2. Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors. The LED design should provide better control than a good HID design.
3. Life-cycle Cost: In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
4. Control and Monitoring: To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

1.2 LIGHTING PERFORMANCE

A. Illumination Levels and Design Factors: Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Pool	30 footcandles	2.0:1	72	10’ x 10’
Deck	25 footcandles	3.0:1	81	10’ x 10’

Security	2 footcandles	N/A	81	10’ x 10’

B. Hours of usage: Designs shall be based on the following hours of usage

Area of Lighting	Annual Usage Hours	25 year Usage Hours
Pool & Deck	1000	25,000
Security	4500	112,500

C. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75 for Pool & Deck lights, 5700K and a CRI of 70 for Security lights.

D. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
4	P1 – P4	50

1.3 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

B. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following.

	Average	Maximum
150’ from Deck edge Maximum Vertical Footcandles	.5 fc	1 fc
150’ from Deck edge Horizontal Footcandles	.5 fc	1 fc

C. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.

D. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified independent testing laboratory with a minimum of five years experience or by a manufacturer’s laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

1.4 LIFE-CYCLE COSTS

A. Manufacturer shall submit a 25-year life cycle cost calculation as outlined in the required submittal information.

B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 – PRODUCT

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system shall consist of the following:

1. Galvanized steel poles and cross-arm assembly.
2. Non-approved pole technology:
    a. Square static cast concrete poles will not be accepted.
    b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
3. Lighting systems shall use concrete foundations. See Section 2.3 for details.
    a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
    b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-inforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
4. Manufacturer will supply all drivers and supporting electrical equipment
    a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure.
    b. Alternate: Integral drivers mounted at the top of the pole will require a pole mounted enclosure approximately 10 feet above grade. The enclosure shall include a disconnect per circuit and surge protection.

5. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
6. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
7. All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment. Luminaires will be painted black.
8. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
9. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
    a. Integrated grounding via concrete encased electrode grounding system.
    b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780.The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:
    1. Electric power: 240 Volt, 1 Phase
    2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.

B. Energy Consumption: The kW consumption for the field lighting system shall be 6.12 kW.

2.3 STRUCTURAL PARAMETERS

A. Wind Loads: Wind loads shall be based on the 2016 California Building Code. Wind loads to be calculated using ASCE 7-10, a design wind speed of 110 mph, exposure category C and wind importance factor of 1.0.

B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2009 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-5).

C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report. Geotechnical Professionals Inc (GPI), Rpt # 2500.08I, dated October 3, 2017

D. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

2.4 CONTROL

A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.

C. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute “early off” commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

D. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

E. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility
2. Report hours saved by using early off and push buttons by users.

F. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

A. It shall be the Contractor’s responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner’s approval / payment for additional costs associated with:

1. Providing engineered foundation embedment design by a registered engineer in the State of California for soils other than specified soil conditions;
2. Additional materials required to achieve alternate foundation;
3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.

B. Field Light Level Accountability

1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 Years.

2. The contractor/manufacturer shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner's light meter in the presence of the owner.

3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.

B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.

B. Approved Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.

C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.

D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. ***Submit checklist below with submittal.***

Yes/ No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	G	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years experience.
	H	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	I	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Calfornia, if required by owner. (May be supplied upon award).
	J	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system to include monitoring. They will also provide ten (10) references of customers currently using proposed system in the state of California.
	K	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of California.

	L	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of California.
	M	Project References	Manufacturer to provide a list of five (5) projects where the technology and specific fixture proposed for this project has been installed in the state of California. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	N	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	O	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	P	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	Q	Life-cycle Cost Calculation	Document life-cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included in the warranty. All costs should be based on 25 Years. (complete table below)

25-Year Life Cycle Operating Cost			
a.	**Luminaire energy consumption** _____ luminaires x _____ kW demand per luminaire x _____ kWh rate x 1000 annual usage hours x 25 years (Pool & Deck Lights only)		
	TOTAL 25 -Year Life-cycle Operating Cost	=	

The information supplied herein shall be used for the purpose of complying with the specifications for Verdugo Hills Recreation City Pool Deck. By signing below I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

Manufacturer: _____ **Signature:** _____

Contact Name: _____ **Date:** _____/_____/_____

Contractor: _____ **Signature:** _____

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SECTION 283100 - FIRE ALARM SYSTEMS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Addenda, Alternates, Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specifications collectively apply to work of this Section.

1.02 WORK INCLUDED

A. Section Includes:

1. The work under this section includes all labor, material, equipment, supplies, labor, testing, and accessories required to furnish and install a complete Fire Alarm System as indicated on the drawings and as specified herein.

2. It is the intent of the Drawings and Specifications for the Contractor to provide and install a complete, fully operational, and tested system.

3. All miscellaneous system components including, but not limited to control panels, digital communicator, alarm detection devices, alarm initiation devices, alarm indicating devices, remote power supplies, terminal cabinets, terminal blocks, conduits, wires, programming, testing, etc, as well as any other related items, shall be furnished and installed complete under this section, such that the system shall perform all functions listed herein in compliance with all of the specified requirements.

4. The complete installation shall conform to the following codes:

   2019 Building Standards Administrative Code, Part 1, Title 24 C.C.R.

   2019 California Building Code (CBC), Part 2, Title 24 C.C.R.

   2019 California Electrical Code (CEC), Part 3, Title 24 C.C.R.

   2019 California Mechanical Code (CMC), Part 4, Title 24 C.C.R.

   2019 California Plumbing (CPC), Part 5, Title 24 C.C.R.

   2019 California Fire Code (CFC), Part 9, Title 24, C.C.R.

   2019 California Referenced Standards Code, Part 12, Title 24 C.C.R.

   Title 19, CCR, Public Safety, State Fire Marshal Regulations.

B. Related Sections:

1. Section 260100: Basic Materials and Methods.

2. Section 260533: Conduit

3. Section 260519: Wire and Cable

4. Section 260526: Grounding

1.03 SYSTEM REQUIREMENTS

A. Fire detection system shall continually supervise and monitor the following initiating, signaling, and monitoring circuits:

1. Manual fire-pull stations.

2. Smoke and heat detectors, duct detectors, including those installed under other sections.

3. Fire sprinkler flow and tamper switches including PIV tamper switches.

4. Alarm signaling circuits including alarm, horns and visual alarm units.

5. Annunciators.

6. Power supplies and batteries.

7. Interconnection with HVAC system where applicable, kitchen fire suppression system and elevator equipment for control of recall function and elevator circuit breaker shunt trip to control power.

B. System controls shall be UL listed for power limited applications in accordance with California Electrical Code.

C. The fire alarm devices and equipment shall be listed for installation for the fire alarm control panel to which they are being connected.

D. Complete installation shall conform to the version of NFPA 72, California Fire Code, California Building Code (CBC), and California Electrical Code (CEC) as approved by DSA on stamped drawings.

E. System labels and devices programming addresses shall be based on final signage and building labeling submittals.

1.04 CERTIFICATION

A. Certification: Installation of fire alarm system shall not begin until Shop Drawings, including State Fire Marshal listing numbers of fire alarm components, are submitted and reviewed by the Architect. Written certification by fire alarm equipment distributor or manufacturer shall be submitted to the Architect stating

that system and its component parts are as approved and listed by the State Fire Marshal, and that the design conforms to requirements set forth in CBC.

1.05 PERFORMANCE

A. System shall be fully programmable, configurable, and expandable in the field without special tools or PROM programmers and shall not require replacement of memory ICs. Installer shall provide a CD of all system installed software, site specific system programming and all information and tools required to re-program or modify the system.

1.06 SYSTEM FUNCTIONAL OPERATION

A. When a fire alarm condition is detected by one of the system alarm initiating devices, the following functions shall occur:

1. System alarm LED shall flash.

2. Local sounding device in panel shall be activated.

3. The LCD display shall indicate type of device, custom label location label and point status alarm condition.

4. Appropriate change of status message shall be transmitted to remote annunciator(s).

5. Automatic programs assigned to alarm point shall be executed and associated indicating devices and relays activated.

6. UDACT (Universal Digital Alarm Communicator Transmitter) shall activate.

B. Trouble and Supervisory Conditions.

a. When any trouble condition is detected the following functions shall occur:

1. System trouble LED shall flash.

2. Local sounding device in panel shall be activated.

3. The LCD display shall indicate the type of trouble and custom label location associated with the trouble condition and its location. Unacknowledged alarm messages shall have priority over trouble messages. If such an alarm is displayed, then trouble messages shall not be displayed.

4. Appropriate message shall be transmitted to remote annunciators.

5. UDACT shall activate.

b. When any supervisory condition occurs such as a sprinkler valve tamper, the following function shall occur:

1. System supervisory LED shall flash.

2. Local sounding device in panel shall be activated.

3. Appropriate message shall be transmitted to remote annunciators.

4. UDACT shall activate.

C. Activation of control panel ACKNOWLEDGE switch in response to a single new alarm, trouble or supervisory condition shall silence panel sounding device and change system alarm, trouble, or supervisory LED from flashing to steady-ON. If additional new alarm, trouble, or supervisory conditions exist in the system; activation of this switch shall advance display to next alarm, trouble, or supervisory condition that exists, and shall not silence local audible device or change LED to steady until new conditions have been so acknowledged. New alarm conditions shall always be displayed before new trouble conditions. Occurrence of a new alarm, trouble, or supervisory condition shall cause panel to resound, and sequences as described above, shall repeat.

D. Activation of the signal silence switch shall cause appropriate notification (indicating) appliances and relays to return to normal condition. Selection of notification appliance circuits and relays silenced by this switch shall be fully programmable.

E. Activation of system reset switch shall cause electronically latched initiating devices or zones, as well as associated output devices and circuits, to return to normal condition after sixty seconds of alarm. If alarm conditions exist in system after system reset switch activation, system shall then re-sound alarm conditions as indicated hereafter.

F. Activation of lamp test switch shall turn on LED indicators, LCD display, and local sounding device in panel, and then return to previous condition.

G. Fire alarm indicating appliances may be silenced, after one minute, by operating signal silence switch at the FACP or by use of key supervised alarm silence switch at remote annunciators. A subsequent zone alarm shall reactivate signals. Fire alarm indicating appliances shall be automatically silenced after 4 minutes of operation; visual indicating appliances shall be extinguished at system reset or automatically after 4 minutes of operation. Fire sprinkler flow alarm bells shall not silence until the contacts in the fire sprinkler flow switch return to the normal non-alarm state. Appropriate signage must be installed on or next to the sprinkler alarm bell.

H. Elevator lobby smoke detectors shall, in addition to operations listed above, cause elevator cars to be recalled as follows:

1. Elevator cars shall be recalled to main level of egress.

2. Elevator cars shall be recalled to predetermined alternate level if main lobby smoke detector is activated.

I. Initiation and indicating circuits shall be monitored for open/short circuit and ground fault conditions, these conditions shall be indicated on the Fire Alarm Control Panel and Annunciator displays while remaining circuits continue to operate normally.

J. All notification appliance circuits shall be silenceable for testing purposes by authorized persons. Protected pass-codes, keys, or another secure method that does not require entering into the system programming shall be used.

1.07 POWER REQUIREMENTS

A. The fire alarm control panel and remote power supply shall receive 120 VAC power, 60 Hz, through a dedicated 20 amps circuit. Circuit breaker protection for the dedicated fire alarm power circuits shall be equipped with a handle lock-on device, the breaker handle shall be colored red and labeled “FIRE ALARM”. Clearly label the Electrical panel name, location and circuit number on the inside of the fire alarm control panel and all remote power supplies using a p-touch style labeling system. Transient voltage surge suppression shall be provided at the 120VAC input terminal.

B. System shall be provided with sufficient battery capacity to operate entire system upon loss of normal 120 VAC power, in a normal quiescent mode, for a period of 24 hours with 5 minutes of alarm indication at end of this period. System shall automatically transfer to standby batteries upon power failure. Battery charging and recharging operations shall be automatic. Batteries, once discharged, shall recharge at a rate to provide a minimum of 70 percent capacity in 12 hours.

C. Circuits requiring system operating power shall be 24 VDC and shall be individually protected at control panel.

1.08 SUBMITTALS

A. Component Plan Submittal: Availability and listing for its application shall be verified for all system components before presentation of the submittal. Include the following information and details as applicable:

1. Installer name, address, telephone number.

2. List of system components, equipment and devices, including manufacturer model numbers, quantity and California State Fire Marshal listing numbers, mounting heights, and symbols per LAUSD symbol list.

3. Copies of manufacturer specification sheets for equipment and devices indicated. Highlight or identify the specific components on Catalog cut sheets.

4. Voltage Drop Calculations: Include the following information for the worst case:

   a. Point-to-point or Ohms law calculations.

   b. Zone used in calculations.

   c. Voltage drop percent. Voltage drop shall not exceed manufacturer's requirements. If voltage drop exceeds 10 percent, indicate manufacturer listed operating voltage ranges for equipment and devices.

5. Battery types, amp hours, and load calculations including the following:

   a. Normal operation: 100 percent of applicable devices for 24 hours to equal control panel amps plus list of amps per device that draw power form the panel during standby power condition including, but not limited to, zone modules, detectors and devices as identified.

   b. Alarm condition: 100 percent of applicable devices for 5 minutes to equal control panel amps plus list of amps per device that draw power from panel during alarm condition including, but not limited to, the following:

      (1) Zone modules.
      (2) Signal modules.
      (3) Detectors.
      (4) Signal devices.
      (5) Annunciator.
      (6) Other devices as identified.

   c. Normal operation plus alarm operation load calculation shall include total amp hours required and total amp hours provided.

6. Provide one copy of testing procedures.

B. Shop Drawings: Provide Shop Drawings, in the same size as the design Drawings, Shop Drawings shall include the following:

1. Provide drawing scale, elevations of all system enclosures, and actual layout of the Fire Alarm Control Panel, power supply, annunciator, and all main system components.

2. Site Plan indicating PIV and all related fire sprinkler system devices and equipment to be monitored or supervised; such as water flow valves, and main equipment such as control panels, power supplies, annunciators, and components such as outdoor wall-mounted horns, sprinkler bells, pull boxes, underground pull boxes, wiring routes on buildings exterior and

underground locations. In each conduit or raceway run indicate conduit sizes, and quantities and type of wires.

3. Complete battery calculations, and voltage drop calculation shall be included; these calculations shall be based on the devices maximum UL current rating.

4. One line drawing for the entire system network indicating all system components and wiring. The one line diagram shall show but not be limited to panel to panel interconnections, conductors gauge and quantity, conduit size and type (designation) and specific function.

5. System panel one-line drawings indicating the quantity and type (designation) of conductors entering and exiting the fire alarm terminal cabinet in each building (enclosure) for initiating, notification, or other command control functions required for complete system operation:

    a. Individual floor/building plan view drawings indicating all device locations including end of line resistors “EOLR” in accordance with the legend provided.

    b. Individual point addresses for all initiation and notification devices.

    c. Device “typical” wiring diagrams. These drawings shall indicate specific termination details for all peripheral equipment and/or interface devices.

6. Provide interfacing with equipment furnished by others including voltages, and other required coordination items.

7. Each of the pictorial diagrams included shall appear identical to the products they are intended to depict, in order to speed installation of the system, and to enhance the accuracy of the installation Work. Typical wiring diagrams or catalog sheets are not permitted.

8. Background Drawings with device locations of DSA approved drawings are available in electronic format and may be obtained from the Owner Authorized Representative (OAR). Contractor is solely responsible for the accuracy and completeness of shop drawings. Buildings that are not part of the contract shall be clearly identified “NOT IN CONTRACT”. Shop Drawings shall be prepared in the latest version of AutoCAD with 3 – CD ROM electronic copies submitted along

9. Other installation and coordination drawings specifically related to this section shall be included as follows:

    a. Size A (8-1/2 inch x 11 inches) and size B (11 inch x 17 inch) shall be bound into the manual.

    b. Larger drawings shall be folded and inserted into transparent envelopes and bound into the manual.

10. Installation and coordination drawings for items in other sections shall be included with submittal of Shop Drawings. Submit blue line copies and one reproducible copy of installation and coordination drawings.

11. Samples: Provide Samples of material and equipment as required by the Architect. If Samples are requested, they shall be submitted within 10 days from date of request.

C. In addition to the above requirements, provide submittals to meet any additional requirements of DSA.

1.09 QUALITY ASSURANCE

A. Installer shall have successfully completed at least 5 projects of equal scope in the past 5 years, and have been in business of furnishing and installing fire alarm systems of this type for at least 5 years.

B. Installer shall be a factory authorized distributor and service provider for the brand of equipment offered and shall provide documentation to the Architect upon request.

C. Installer shall maintain a fully equipped service organization capable of furnishing repair service to the equipment and shall maintain a spare set of major parts for the system at all times.

D. Installer shall furnish a letter from manufacturer of equipment certifying equipment has been installed according to factory standards and that system is operating properly.

E. Certifications: Installer shall submit certification from the equipment manufacturer indicating that installer is an authorized representative of the equipment manufacturer and is trained on network applications.

F. All materials and equipment installed shall be new.

G. All of the equipment in this specification shall be furnished and installed by the Authorized Factory Distributor of the equipment. Furnish a letter from the manufacturer of all major equipment, which certifies that the installer is an authorized distributor and that the equipment has been installed according to factory intended practices. Furnish a written guarantee from the manufacturer that they will have a service representative assigned to this area for the life of the equipment.

H. Contractor/Installer's electricians and fire/life safety technicians shall be certified in accordance with Labor Code sections 3099, and 3099.2, and section 209.0 of the California Code of Regulations.

I. System startup and testing shall be performed under the direct observation of the IOR and OAR. The Contractor at this time shall provide a legible half size reproduction of the original completed fire alarm red-line drawings (this copy will

be retained by the Owner), an accurate copy of the fire alarm system points list, and a copy of the construction drawings on CD in AutoCad format,

J. Provide and install the most current software package available at the time of installation. At the time of Owner Acceptance of the installation, all equipment, including any and all updated software which is to include the appropriate operating system, pass-codes, electronic keys and program disks, manuals and cables employed in the installation of the system, shall be delivered to the OAR who will, in turn, forward the items to the appropriate maintenance area Electrical Department. In addition, when the programming software is available in disk format, a backup copy of the most up to date revision, in disk format, shall be delivered to the OAR at the completion of the project. A software license agreement shall be made available for the responsible Owner representative to sign at the time of training.

1.10 WARRANTY

A. The Fire Alarm Equipment Manufacturer shall provide a 3 year material warranty. Installer shall provide a 3 year labor warranty.

B. Complete maintenance and repair service for the fire alarm system shall be available from a factory trained authorized representative of the manufacturer for a period of 5 years after expiration of the warranty.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Fire alarm equipment shall be standard products of the Notifier Co. ONIX Series. Deviations from intended functions of specified system are not permitted. Equipment shall not be ordered or installed until such equipment has been reviewed and approved by the Architect.

2.02 FIRE ALARM CONTROL PANEL (FACP) OR NETWORK NODES

A. Furnish Notifier Model No. NFS-320 Fire Alarm Control Panel as indicated on drawings.

B. Operator Control:

1. Acknowledge Switch: Activation of control panel acknowledge switch in response to a single new trouble or alarm condition shall silence panel sounding device and change system alarm or trouble LED from flashing to steady-ON. If additional new alarm or trouble conditions exist in system, activation of this switch shall advance display to next alarm or trouble condition that exists, and shall not silence local audible device or change LED to steady until new conditions have been so acknowledged. New alarm conditions shall always be displayed before new trouble conditions. Occurrence of a new alarm or trouble condition shall cause panel to resound, and sequences as described above, shall repeat.

2. Signal (Alarm) Silence Switch: Activation of the signal silence switch shall cause all programmed alarm notification appliances and relays to return to the normal condition after an alarm condition. The selection of notification circuits and relays that are silenceable by this switch shall be fully field programmable within the confines of all applicable standards. The FACP software shall include silence inhibit and auto-silence timers.

3. Alarm Activate (Drill) Switch: Alarm activate switch shall activate all notification appliance circuits. The drill function shall latch until the panel is silenced or reset.

4. System Reset Switch: Activation of the System Reset switch shall cause all electronically-latched initiating devices, appliances or software zone, as well as all associated output devices and circuits, to return to their normal condition.

5. Lamp Test Switch: Switch shall activate all local system LEDs, light each segment of the liquid crystal display and display the panel software revision for service personnel.

C. System Capacity and General Operation

1. The control panel or each network node shall provide, or be capable of expansion to 318 Intelligent /addressable devices for the NFS-320.

2. The control panel or each network node shall include Form-C alarm, trouble, supervisory, and security relays rated at a minimum of 2.0 amps @ 30 VDC. It shall also include four Class B (NFPA Style Y) or Class A (NFPA Style Z) programmable Notifications Appliance Circuits.

3. The control panel or each network node shall support up to 4 output circuits (signal or relay). Programmable notification appliance circuits shall be class B.

4. The system shall include a full featured operator interface control and annunciation panel that shall include a backlit Liquid Crystal Display (LCD), individual color coded system status LEDs, and an alphanumeric keypad with easy touch rubber keys for the field programming and control of the fire alarm system.

5. The system shall be programmable, configurable, and expandable in the field without the need for special tools, PROM programmers or PC based programmers. It shall not require replacement of memory ICs to facilitate programming changes.

6. The system shall allow the programming of any input to activate any output or group of outputs. The FACP shall support up to 20 logic equations, including “and” “or” and “not”, or timed delay equations to be used for advanced programming. Logic equations shall require the use of a PC with software utility designed for programming.

7. The FACP or each network node shall provide the following features:

   a. Drift compensation to extend detector accuracy over life. Drift Compensation shall also include a smoothing feature, allowing transient noise signals to be filtered out.

   b. Detector Sensitivity test, meeting requirements of NFPA 72 Chapter 7.

   c. Maintenance alert, with two levels (maintenance alert/maintenance urgent), to warn of excessive smoke detector dirt or dust accumulation.

   d. Nine sensitivity levels for alarm, selected by detector. The alarm level range shall be .5 to 2.35 percent per foot for photoelectric detectors and 0.5 to 2.5 percent per foot for ionization detectors. The system shall also support sensitive advance detection laser detectors with an alarm level range of .03 percent per foot to 1.0 percent per foot. The system shall also include up to nine levels of Pre- alarm, selected by detector, to indicate impending alarms to maintenance personnel.

   e. Circuit boards, programming, and interconnecting cables to enable the system to display or print system reports.

   f. Alarm verification, with counters and a trouble indication to alert maintenance personnel when a detector enters verification 20 times.

   g. PAS pre-signal, meeting NFPA 72 requirements.

   h. Rapid manual station reporting (less than 3 seconds) shall meet NFPA 72 Chapter 1 requirements for activation of notification circuits within 10 Seconds of initiating device activation.

   i. Periodic detector test, conducted automatically by the software.

   j. Self optimizing pre-alarm for advance fire warning, which allows each detector to learn its particular environment and set its pre-alarm level to just above normal peaks.

   k. Cross zoning with the capability of counting: two detectors in alarm, two software zones in alarm, or one smoke detector and one thermal detector.

   l. Walk test, with a check for two detectors set to same address.

   m. Control-by-time for non-fire operations, with holiday schedules.

   n. Day/night automatic adjustment of detector sensitivity.

o. RS 232 serial port to support a District supplied printer to be used for silent testing and certification of the system.

8. The FACP shall be capable of coding main panel(s) node notification circuits in temporal code (NFPA 72 A-2-2.2.2).The panel shall also provide a coding option that will synchronize specific strobe lights designed to accept a specific “sync pulse”.

9. Network Communication

a. The network architecture shall be based on a Local Area Network (LAN), a firmware package that utilizes a peer-to-peer, inherently regenerative communication format and protocol. The protocol shall be based on ARCNET or equivalent non-proprietary protocol.

b. Failure of any node shall not cause failure or communication degradation of any other node or change the network communication protocol among surviving nodes located within distance limitations. A node may be an intelligent Fire Alarm Control Panel (FACP), Network Control Station PC (NCS) or Network Control Annunciator (NCA).

c. Each network node address shall be capable of storing Event Equations which shall be used to activate outputs on one network node from inputs on other network nodes.

D. System Display

1. Utilize the 640-character display option. The design of the CPU shall provide for a configuration with the 640-character display mounted on the front of the unit in place of the standard 80-character display.

2. The 640-character display shall provide all the controls and indicators used by the system operator:

a. The 640-character display shall include the following operator control switches: Acknowledge, Alarm, Silence, Alarm Activate (drill), System Reset, and Lamp Test.

3. The display shall annunciate status information and custom alphanumeric labels for all intelligent detector, addressable modules, internal panel circuits, and software zones.

4. The 640-character display shall provide 10 Light-Emitting-Diodes (LEDs) that indicate the status of the following system parameters: AC Power and Network Communication, Fire Alarm, Pre alarm Warning, Security Alarm, Supervisory Event, System Trouble, Alarm Silence, Disabled Points, CPU failure.

5. The 640-character display shall use 10 “soft” keys for screen navigation or to accomplish dedicated programming functions. Full programming access shall require use of a laptop and the proper programming utility. The programming utility shall be provided to the OAR who will forward it to the local maintenance area representative.

6. The system shall support the display of battery charging current and voltage on the LCD display.

E. Signaling Line Circuits (SLC)

1. Each FACP or FACP network node shall support a minimum of one SLC for the Notifier NFS-320. Each SLC interface shall provide power to and communicate with up to 159 intelligent detectors (ionization, photoelectric or thermal) and 159 intelligent modules (monitor or control) for a loop capacity of 318 devices.

2. CPU shall receive analog information from all intelligent detectors to be processed to determine whether normal, alarm, pre-alarm, or trouble conditions exist for each detector. The software shall automatically maintain the detector’s desired sensitivity level by adjusting for the effects of environmental factors including the accumulation of dust in each detector. The analog information shall also be used for automatic detectors testing and for the automatic determination of detector maintenance requirements.

F. Enclosures:

1. The control panel shall be housed in a UL-listed cabinet suitable for surface or semi-flush mounting. The cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and manufacturer’s standard finish.

2. The back box and door shall be constructed of 0.030 steel with provisions for electrical conduit connections into the sides and top.

3. The supplied door shall include a key lock and shall include glass or other transparent opening for viewing of all indicators. For convenience, the door may be site configured for either right or left hand hinging.

G. Power Supply:

1. An off-line switching power supply shall be available for the fire alarm control panel or network node and provide 6.0 amps of available power for the NFS2-640, and 4.5 amps for NFS2-3030 for control panel and peripheral devices.

2. Provisions shall be made to allow the audio-visual power to be increased as required by adding modular expansion audio-visual power supplies.

3. Over-current protection shall be provided on all power outputs. The power supply shall provide an integral battery charger. Battery arrangement may be configured in the field.

4. The power supply shall continuously monitor all field wires for earth ground conditions, and shall have the following LED indicators:

   a. Ground Fault LED

   b. AC Power Fail LED

   c. NCA-2 on LED (4)

5. The main power supply shall operate on 120 VAC, 60 Hz, and shall provide all necessary power for the FACP or network node(s).

6. The main power supply shall provide a battery charger using dual rate charging techniques for fast battery recharge and be capable of charging batteries up to 60 AH for the NFS-320.

2.03 REMOTE ANNUNCIATORS

A. A non-networked fire alarm system annunciator is required when there is only one FACP in the system. Provide a Notifier Model LCD-80TM or LCD-160 alphanumeric display remote annunciator, or equal. A Network annunciator is required for any system that contains more than one fire alarm control panel (FACP) or network node.

   1. Control switches for system acknowledge, signal silence and system reset via a touchpad.

   2. Time/date display field.

   3. Local piezo sounder with alarm/trouble resound.

   4. On-line green LED (flashing).

   5. Evacuation/drill switches, via a touchpad.

   6. Pre-signal hold via a touchpad.

   7. System test at control panel and CTR.

B. Following additional features shall be furnished:

   1. Device Fire Annunciation.

   2. Device Trouble Annunciation.

   3. System Operation Annunciation.

4. "Power On" LED.

C. Typewritten operating instructions and a site map shall be posted adjacent to all remote annunciator(s). The site map shall be sized and include all designations and devices as described in section 3.02 N. of this specification. Project site map shall depict all fire alarm devices in the building(s) in which they are installed. The instruction and site map shall be mounted in suitable document frames and attached to the wall with a minimum of two screws each. Contractor's name and telephone number shall not be placed on either the instruction or the site map.

2.04 POWER SUPPLIES

A. Remote Notification Appliance Circuit (NAC) extender power supplies shall be Notifier No. FCPS-24S6 or equal. Unit shall be furnished with main printed circuit board, transformers, lockable cabinet, and batteries. Unit shall be configured to drive 4 notification appliance circuits. The remote power supplies shall be configured with a monitor module to report trouble conditions to the controlling FACP via an SLC. Triggering of NAC inputs shall be directly controlled from the FACP without the use of addressable control or relay modules.

2.05 PERIPHERAL DEVICES AND EQUIPMENT

A. Manual Stations:

1. Interior Use: Station shall be Notifier, Model No. BNG-1TS or equal, addressable semi-flush, non-breakable glass type. Station housing shall be fabricated of die-cast aluminum with reset lock and key. Provide an addressable monitor module Model No. FMM-101 for each manual station.

B. Smoke Detectors: Smoke Detectors shall be Notifier Model No. FAPT-851 or equal, addressable smoke detectors. Provide base Model No. B710LP. Detector shall be microprocessor based, using a combination of photoelectric, and thermal sensing technologies. The smoke detector shall have its loop number and electronic address permanently and clearly labeled onto the device base using a p-touch type labeling system. The label shall be visible without removing the detector head.

C. Monitor Modules:

1. Monitor module shall be Notifier Model No. FMM-1 or equal. Module shall connect a supervised zone of conventional initiating devices, N.O. dry contact devices, including 4-wire smoke detectors, to one of SLC loops. Monitor module shall install in a 4-inch square by 2-1/8 inch deep electrical box. The module shall have its loop number, electronic address, and function label on the front cover using a p-Touch type labeling system.

2. Monitor module shall provide address-setting means using rotary decimal switches and shall store an internal type of device. An LED shall be

provided which shall flash under normal conditions indicating that monitor module is operational and in regular communication with control panel.

D. Control Modules:

1. Control module shall be Notifier Model No. FCM-1 or equal. Module shall be used to connect a conventional indicating appliance or MR type isolation relay to one of the SLC loops. Control module shall install in a standard 4-inch square by 2-1/8 inches deep electrical box. Audio/visual/relay power shall be provided by a separate loop from main control panel or from supervised remote power supplies. The module shall have its loop number, electronic address, and function label on the front cover using a p-Touch type labeling system. Provide and install System Sensor Model A77-716B or equal power supervision relay to monitor 24 volt DC power.

2. Control module shall provide address-setting means using rotary decimal switches and shall store an internal identifying code which control panel shall use to identify type of device. An LED shall be provided which shall flash under normal conditions, indicating that control module is operational and in regular communication with control panel.

E. Relay Modules:

1. Relay Module shall be Notifier FRM-1 the module shall have its loop number, electronic address, and function label on the front cover using a p-Touch type labeling system.

2. If controlled circuit exceeds the voltage or current rating of the relay module an Air Products and Controls MR-100 series relay shall be provided and installed. A System Sensor Model A77-716B or equal power supervision relay shall be provided and installed with each relay module that is controlling an isolation relay not configured in a fail safe mode.

F. Isolator Modules:

1. Isolator module shall be Notifier, Model No. ISO-X, or equal. Module shall isolate wire-to-wire circuits on an SLC loop in order to limit number of other modules or detectors that are incapacitated by short circuit fault. If a wire-to-wire short occurs, isolator shall automatically open-circuit SLC loop. When short is corrected, isolators shall automatically reconnect isolated section of SLC loop.

2. Isolator module shall not require address setting, although isolators will electrically reduce capacity of loop by 2 detectors or module addresses. Isolator module will install in a standard 4-inch deep electrical box. It shall include a single LED that shall flash to indicate that isolator is operational and shall illuminate steadily to indicate that a short has been detected and isolated.

G. Strobes:

1. Strobe indicating appliances shall be System Sensor Model No. SR standard candela output or Model No. SRH high candela output or equal. Devices shall be UL listed and shall be wall-mounted. Entire unit shall be red finish. Strobe light shall have a clear Lexan lens. The word "FIRE" shall be printed on two sides of the strobe body. Strobes shall meet ADA and UL 1971 requirements. The strobe shall provide a selectable minimum light intensity of 15, 30, 60, 75, 90, 110, 135, 150, or 185 Candela as indicated on the Drawings to meet or exceed requirements of ADA and UL 1971. Strobes shall be mounted on manufacturer recommended outlet boxes. Weather proof strobe shall be model No. SRK or Model No. SRHK. Provide and install a model No. BBS-2 back box skirt on all indoor outlet boxes.
2. Strobe synchronization modules if required shall be System Sensor Model No. MDL or equal, to be installed in conjunction with two or more strobes located in same room or corridor or as indicated on Drawings. (Strobe synchronization modules must be compatible with installed strobes)

H. Universal Digital Alarm Communicator Transmitter shall be Notifier Model No. UDACT. The UDACT is an interface for communication of digital information between a fire alarm control panel and a UL-Listed central station.

1. The UDACT shall be compact in size, mounting in a standard module position of the fire alarm control cabinet. Optionally, the UDACT shall have the ability for remote mounting, up to 6000 feet from the fire alarm control panel. The wire connections between the UDACT and the control panel shall be supervised with one pair for power and one pair for multiplexed communication of overall system status.

2. The UDACT shall include connections for dual telephone lines (with voltage detect), per UL/NFPA/FCC requirements. It shall include the ability for split reporting of panel events between up to three different telephone numbers.

3. It shall be completely field programmable from a built in keypad or laptop computer, and shall be capable of transmitting events in multiple formats.

4. Communication shall include vital system status such as:

   a. Independent Zone (Alarm, trouble, non-alarm, supervisory

   b. Independent Addressable Device Status

   c. AC (Mains) and Earth Fault

   d. System Off Normal

   e. 12 and 24 Hour Test Signal

f. Abnormal Test Signal (per UL requirements)

g. EIA-485 Communications Failure

h. Phone Line Failure

5. The UDACT shall support independent zone/point reporting when used in the Contact ID format. This enables the central station to have exact details concerning the origin of the fire or response emergency.

6. The UDACT shall be supplied with two eight conductor, 2 to 6 foot long line cords. One end of the cords shall plug into the jacks on the UDACT. The other end of the cords shall plug into industry standard RJ-31X surface mounted telephone jacks. Install jacks in a screw cover box adjacent to the FACP if sufficient space is not available within the FACP, or adjacent fire alarm terminal cabinet. The line cords shall be installed in conduit when it is necessary to locate the jacks remotely from the FACP enclosure. The jacks shall be mounted to the rear of the box. The telephone number for each line shall be labeled on its respective jack.

I. Network Cables/SLC/Annunciator Data/Audio Output Cables: The construction and physical characteristics such as aqua-seal water block, wire gage, insulation and jacket types, etc. shall not be altered. Equivalent cables must be specifically approved and recommended by the manufacturer of the fire alarm system equipment. Any and all substitutions will require approval from the Architect/Engineer of Record.

1. Indoor Network and EVAC System Audio Output Circuit(s) applications shall be in conduit or in surface mounted raceway as indicated on drawings: West Penn No. D980, one pair 18 gage solid copper, unshielded, copolene II insulated and PVC jacketed, or approved equal.

2. Indoor SLC applications in conduit or in surface mounted raceway where it is indicated on drawings: West Penn No. D990, one pair 16 gage solid copper, unshielded, copolene II insulated and PVC jacketed, or approved equal.

3. Indoor Annunciator applications in conduit or in surface mounted raceway where it is indicated on drawings: West Penn No. D975, one pair 18 gage solid copper, shielded, copolene II insulated and PVC jacketed, or approved equal.

4. Outdoor/Underground Network Applications: West Penn AQ224, 2-conductor 18 gage stranded copper, unshielded, water-blocked construction and PVC insulated, or approved equal.

5. Outdoor/Underground SLC applications: West Penn AQ225, 2-conductor 16 gage, AQ226, 2 conductor 14 gage, or AQ227, 2 conductor 12 gage stranded copper, unshielded water-blocked construction and PVC insulated, or approved equal.

The above cable types are based and specified on the recommendations and approval of Notifier Fire Alarm Systems. If the submitted and approved fire alarm system requires a different cable configuration with additional conductors, multi-conductor versus twisted pairs, etc. than is specified above, the contractor shall request a substitution to supply and install the approved configuration of cables as required by the make and model of the fire alarm system that is to be installed.

J. For locations where devices have to be surface mounted to surface boxes, provide special red surface type boxes ordered from the fire alarm device manufacturer. Do not just use standard 4/S boxes with knockouts.

PART 3: EXECUTION

3.01 GENERAL

A. Fire alarm system shall not be used for any purpose other than fire alarm functions.

B. Fire alarm shall be interconnected but not limited to the following systems:

1. All systems required by code to be connected to the fire alarm systems shall be connected.

2. Ventilation systems where required for the purpose of fan shutdown

3. Damper control or smoke management systems.

4. Water based fire sprinkler systems.

5. Chemical fire extinguisher systems.

6. Elevator controls for the purpose of elevator cab Phase 1 recall and shunt trip control, circuit supervision and shunt trip power supervision.

C. Fire alarm system shall not be interconnected to any of the following:

1. Sump warning systems,

2. Carbon monoxide detection systems,

3. Methane gas detection systems.

4. Elevator car alarm bell circuit.

5. Any other unrelated system.

3.02 SYSTEM INSTALLATION

A. Install required conductors to devices indicated on Drawings. Provide required conductor terminations to devices for a complete system to function as specified

and indicated on Drawings. Refer to Section 16120: Wire and Cable, for installation and color coding requirements.

B. Splices are not allowed in junction boxes. Terminations shall be in terminal cabinets or on equipment terminals. There shall not be any splicing in underground boxes, no exception.

C. Conductors shall be installed within conduits, boxes, and terminal cabinets in a totally enclosed installation. Furnish and install conductors required to connect incoming and outgoing circuits, including spare conductors, to terminal strips within terminal cabinets.

D. Wiring within equipment and terminal cabinets shall be installed to conform to contract documentation and NFPA 72 standards, and shall be terminated on terminal blocks having terminals for required connections. Wiring shall be cabled, laced, and securely fastened in place so that no weight is imposed on equipment or terminals.

E. Install required terminal blocks within terminal cabinets. Terminal blocks shall be installed on inside back of cabinets only, not on side. Incoming wiring shall be terminated on the left side of terminal blocks; outgoing wiring shall be terminated on the right side of the terminal blocks.

F. Conductors shall be color-coded per specification section 16120 Low Voltage wires and tagged with code markers at terminal cabinets, and equipment. A wire index shall be typed and installed on terminal cabinet doors. Index shall be covered with clear plastic adhesive covers. Wiring shall be identified as to building and location of devices in the index.

G. Wiring within equipment and terminal cabinets shall be carefully strapped, and shall be formed in rectangular configuration. Wires shall be properly numbered in numerical order and shall maintain same number throughout the Project site.

H. Complete installation shall comply with local building codes and applicable provisions of the California Electrical Code, California Fire Code and the NFPA 72 National Fire Alarm Code.

I. Location of outlet boxes and equipment on Drawings is approximate, unless dimensions are indicated. Do not scale Drawings to determine locations and routing of conduits and outlet boxes. Location of outlet boxes and equipment shall conform to architectural features of the building and other Work already in place, and must be ascertained in the field before the start of Work.

J. Drawings generally indicate Work to be provided, but do not indicate all bends, transitions or special fittings required to clear beams, girders or other Work already in place. Investigate conditions where conduits are to be installed, and furnish and install required fittings.

K. Provide p-touch label of approximately 1 inch wide with red lettering for each initiating device that is hidden from view. Tags shall indicate the name and type

of device: Heat Detector, or Duct Smoke Detector. Tags shall be permanently attached on access panel or t-bar grid which is used to access a hidden device.

L. Provide smoke and heat detectors in elevator hoist-ways if a fire sprinkler head is located at the top of the elevator hoist-way. Provisions shall be made for access to the detector without entering the elevator hoist-way. Access shall be provided through an approved enclosure with self-locking fire rated door. The detectors shall be so placed as to allow service to them without the service personnel having to reach into the hoist-way in the way of travel of the elevator car.

Access to elevator hoist-ways and machine rooms (including escalators) must be supervised by the Owner's licensed elevator/escalator maintenance contractor. OAR is responsible for coordinating access in accordance with Contractor's schedule. Contractor shall provide a minimum of 48 hours notice.

M. Provide and install adjacent to each annunciator a neatly typewritten copy of the Fire Alarm Operating Instructions. The instructions shall reflect the installed and programmed features of the system. Instructions that include information on non-installed or programmed features will not be acceptable. The instructions shall be placed into a suitably sized dark colored wood or metal frame with a glass document face cover. The frame shall be attached to the wall with a minimum of two screws into the wall material with appropriate anchors.

N. Provide and install adjacent to each annunciator a neatly drawn site map showing all rooms with designations and buildings with names as programmed into the system. This map shall be sized to allow (normal vision) reading of the designations, names etc. A map so reduced in size to the point of not being readable will not be acceptable. This map shall include symbols indicating the locations of all installed fire sprinkler flow switches, riser shut off valves, post indicating valves and manual pull stations. Provide a symbol list on the map for the symbols used. The site map shall be placed into a suitably sized dark colored wood or metal frame with a glass document face cover. The frame shall be attached to the wall with a minimum of two screws into the wall material with the appropriate anchors.

3.03 SYSTEM OPERATION

A. Unless otherwise specified, but not limited to actuation of manual stations, smoke detectors, heat detectors, linear heat or smoke detectors, or water-flow switches shall cause the following operations to occur:

1. Activate audible circuits.

2. Actuate strobe units until the panel is reset or strobe circuit time-out.

3. UL listed central station shall be notified via – Universal Digital Alarm Communicator Transmitter (UDACT).

3.04 TESTING

A. A 48 hour notice shall be provided to the IOR before final testing.

B. Testing of fire detection system shall be as required by the State Fire Marshal and local authorities having jurisdiction. Installer is responsible for identifying required testing, coordinating, scheduling, and conducting tests before Substantial Completion. Tests shall include the following:

1. Operation of all signal-initiating devices (smoke detectors, heat detectors, pull stations etc.).

2. Operation of all indicating devices (alarm horns, alarm bells and alarm strobes).

3. Operation of all system features under normal operation.

4. Operation of all system supervisory features.

5. Operation of all system features on standby power, with primary power turned off.

6. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

7. Close sprinkler system flow valves and verify proper supervisory alarm at the FACP.

8. Verify activation of flow switches.

9. Open initiating device circuits and verify that trouble signal actuates.

10. Open signaling line circuits and verify that trouble signal actuates.

11. Open and short notification appliance circuits and verify that trouble signal actuates.

12. Open and short (wire only) network communications and verify that trouble signals are received at network annunciators or reporting terminals.

13. Ground initiating device circuits and verify response of trouble signals.

14. Ground signaling line circuit and verify response of trouble signals.

15. Ground notification appliance circuit and verify response of trouble signals.

16. Check alert tone to alarm notification devices.

17. Check installation, supervision, and operation of intelligent smoke detectors.

18. Alarm conditions that the system is required to detect shall be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.

19. When the system is equipped with optional features, consult the manufacturer manual to determine proper testing procedures.

C. Upon completion of installation of fire alarm equipment, provide to the OAR a signed, written statement confirming that fire alarm equipment was installed in accordance with the Specifications, Shop Drawings, instructions and directions provided by the manufacturer.

D. Demonstrate in presence of the IOR that circuit and wiring tests are free of shorts and grounds and that installation performs as specified herein and within manufacturer's guidelines.

E. Software Modifications:

1. Provide the services of a factory trained and authorized technician to perform system software modification, upgrades or changes. Response time of the technician to the Project site shall not exceed 24 hours.

2. Provide hardware, software, programming tools, and documentation necessary to modify the fire alarm network on the Project site. Modification includes: addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modification on-site. Modification of software shall not require power-down of the system or loss of system fire protection while modifications are being provided.

F. Complete the inspection and testing form as required by NFPA 72, and submit one copy of the completed form to the Architect and IOR.

3.05 OPERATING/SERVICE MANUALS

A. Deliver to OAR, 3 copies of service manuals including the following:

1. Installation manuals, programming manuals and user manual if applicable for every control panel, control panel power supply, FACP input/output/relay or control module, auxiliary power supply, UDACT, remote NAC extender power supply, door holder power supplies, all installed annunciators, initiating and indicating devices and all addressable monitor, relay and control modules. Catalog cut sheets are not acceptable.

2. A printed copy of the system configuration as programmed, including all system labeling codes, and passwords.

3. An electronic copy on compact disk of the system configuration program

4. Final test report.

5. Detailed explanation of the operation of the system.

6. Instructions for routine maintenance.

7. Detailed wiring diagram for the connection of relays, addressable monitor, control or relay modules as applied in the interfacing of peripheral systems or equipment to the fire alarm system.

8. An electronic copy (CD) of the posted site/fire alarm map in Auto-Cad and pdf formats.

9. A single reproducible set of record drawings reflecting the system exactly as it was installed including exact location of components.

10. Provide codes and passwords for fire alarm system at testing.

3.06 SPARE PARTS

A. The following new spare parts shall be furnished in unopened boxes:

1. 5% spare pull stations including the associated monitor module (minimum one spare pull station per type).

2. 5% spare smoke and heat detectors (minimum one spare smoke and heat detector per type).

3. 5% spare audible devices (minimum one spare audible device per type).

4. 5% spare strobe devices (minimum one spare strobe device per type).

3.07 SYSTEM USER AND MAINTENANCE PERSONNEL TRAINING

A. Before Substantial Completion, provide one instruction period for the Project site based Owner operators and system users.

1. The instruction period shall be scheduled and coordinated by the OAR.

3.08 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.09 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off Project site.

END OF SECTION

APPENDIX

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CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
Bureau of Engineering
GEOTECHNICAL ENGINEERING DIVISION

October 11, 2017

VERDUGO HILLS POOL DECK AND SECURITY LIGHTING PROJECT
10654 IRMA AVENUE, LOS ANGELES, CA 91042
W.O. E170164D **GEO FILE NO. 17-137**

1.0 INTRODUCTION

The Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division (GED) has prepared this report to provide design and construction recommendations for the project. The project site, as shown on Figure 1 – Vicinity Map, is located on the northwest corner of Hillrose Street and Irma Avenue in the Tujunga area of Los Angeles. The project site is adjacent to Verdugo Hills High School. The pool address is 10654 Irma Avenue. This project also includes 10625 N Plainview Avenue, 10658 Irma Avenue, and 10646 Irma Avenue.

2.0 PROJECT DESCRIPTION

The project includes installing new light-emitting diode (LED) light poles security light poles. We understand the proposed LED light poles may be up to approximately 50 feet high. The approximate light pole locations are presented on Figure 2 – Proposed Light Pole Location Map.

3.0 GEOTECHNICAL INVESTIGATION

Our geotechnical investigation consisted of field exploration and laboratory testing, which were both completed by Geotechnical Professionals, Inc. (GPI). A copy of GPI's data report is included in Appendix A of this report. The findings and recommendations in this report are based on the information presented in GPI's report. The GED has reviewed their report, concurs with the information contained in it, and accepts responsibility for the use of its contents.

3.1 SUBSURFACE CONDITIONS

GPI drilled three hollow-stem auger (HSA) borings, each to a depth of approximately 21 feet below ground surface (bgs). Uncertified fill was encountered in all three borings. The fill thickness ranges from approximately 3½ feet (VH-1) to 12½ feet (VH-2). VH-2 was drilled in close proximity to the deep middle portion of the existing pool. The fill mostly consists of silty sand with gravel and some cobbles. The native soil mostly consists of poorly graded gravel with silt, well graded sand with silt, and silty sand. Gravel and cobbles were also encountered in the native soil. The field Standard Penetration Test blow counts indicate the native soil is medium dense to very dense.

Groundwater wasn't encountered in our three borings to the maximum explored depth of 21½ feet bgs. Groundwater levels are expected to fluctuate with seasonal rainfalls, dry weather (i.e. drought conditions), and pumping activities. Nevertheless, groundwater is not expected to affect construction of the proposed light pole foundations.

3.2 LABORATORY TEST RESULTS

The laboratory testing program for all three HSA borings consisted of in-situ moisture content and dry density, fines content (percent passing the No. 200 sieve), grain size distribution, and direct shear.

Direct shear tests were performed on two relatively undisturbed samples of the native soil and on one relatively undisturbed sample of the uncertified fill material. The test results indicate the ultimate friction angle and cohesion value of the fill tested is approximately 33 degrees and 186 pounds per square foot (psf), respectively. The test results indicate the ultimate friction angle and cohesion value of the native soil ranges from 28 to 34 degrees and 6 to 426 psf, respectively.

4.0 RECOMMENDATIONS

Based on the results of the geotechnical investigation, the proposed project is considered feasible from a geotechnical standpoint provided the recommendations presented in this report are incorporated into the design and construction. If changes in the design are made, or if changed conditions are encountered during construction, GED shall be notified. Supplemental recommendations may be required.

4.1 SITE PREPARATION

The construction area should be cleared of any vegetation and stripped of miscellaneous debris and other deleterious material. Organic matter and other material that may interfere with construction should be removed. Earthwork associated with the new light poles is not anticipated at this time; however, if higher lateral capacities are desired, supplemental earthwork recommendations will be provided. Supplemental recommendations would likely include over-excavation and replacement with compacted fill. The vertical and lateral extents would need to be determined.

4.2 NEW LIGHT POLE FOUNDATIONS

We recommend the new light poles be supported on cast-in-drilled-hole (CIDH) piles with a minimum diameter of 30 inches. Recommendations are provided in the following sections.

4.2.1 2017 LABC Seismic Design Parameters

Seismic design parameters for the project are provided in accordance with the 2017 Los Angeles Building Code (LABC). Latitude 34.26293°N and Longitude 118.30075°W coordinates were used for the site location.

Seismic Design Parameters

Parameter	Value	Reference
Site Class	D	ASCE 7-10 Table 20.3-1
S_S	2.678	ASCE 7-10 Figure 22-1
S_1	0.964	ASCE 7-10 Figure 22-2
S_{MS}	2.678	ASCE 7-10 Equation 11.4-1
S_{M1}	1.446	ASCE 7-10 Equation 11.4-2
S_{DS}	1.785	ASCE 7-10 Equation 11.4-3
S_{D1}	0.964	ASCE 7-10 Equation 11.4-4
T_O (seconds)	0.108	ASCE 7-10 Chapter 11
T_S (seconds)	0.540	ASCE 7-10 Chapter 11

4.2.2 Axial Capacity in Compression

The minimum pile embedment depth shall be 9 feet or 3 feet into the native sandy soil, whichever is greater. The actual CIDH pile depths will depend on the results of the lateral load analysis, which shall be completed by the structural engineer. Based on the proposed light pole locations (see Figure 2), we don't consider the subsurface conditions in VH-2, and particularly the fill thickness, to be representative. The recommendations presented in this section are based on an assumed fill thickness of 5½ feet.

Allowable axial compression capacities are presented on Figure 3 for a 30-inch, 36-inch, and 42-inch diameter CIDH pile. The axial compression capacities presented on Figure 3 assume the piles develop their capacity solely from skin friction or side resistance. The total settlement is not expected to exceed ½-inch provided the piles are properly constructed (see Section 4.2.5).

4.2.3 Axial Capacity in Tension

The allowable axial tensile capacity may be assumed to be ½ the axial capacity in compression (see Section 4.2.2). The weight of the concrete shaft may be added to the tensile capacity.

4.2.4 Lateral Load Behavior

The lateral load behavior of the pile was evaluated using the LPILE (Ensoft, 2016) software program. LPILE (2016) uses load deflection (p-y) curves to approximate the relationship between soil resistance and pile deflection. The lateral load behavior was evaluated for a free head deflection of ½-inch, and the pile depth was assumed to be 9 feet. Also, we assumed a perfectly elastic pile and a cracked section. The modulus of elasticity for the cracked section was estimated to be 1802500 pounds per square inch.

The uncertified fill was both modeled in LPILE using a total unit weight of 98 pcf, effective friction angle of 20 degrees, and no cohesion. A request for modification of building ordinances for deriving lateral support from the existing undocumented fill will be submitted concurrently with this report. The native soil was assumed to have an effective friction angle of 34 degrees and no cohesion.

The results of the LPILE analyses are summarized in Appendix B.

4.2.5 CIDH Pile Construction

We expect the CIDH pile can be drilled using conventional equipment. Due to the granular nature of the fill and native soil, caving conditions may be encountered. Steel casing is required to support the sides of the excavation if caving conditions are encountered. If casing is installed, the inside diameter of the casing shall be at least as large as the diameter of the piles. Drilling shall be completed within the casing.

The contractor shall remove loose soil (i.e. slough) from the bottom of the pile excavation. The drilled holes shall be plumb to within a tolerance of 2 percent. Upon completion of drilling, secure covers shall be placed over the excavations. Concrete placement shall be completed within 12 hours of drilling and drilled holes shall not be left open overnight. CIDH pile excavations shall be observed and approved by GEO during drilling and prior to installation of steel reinforcement.

Depending on the final depth and construction methods, concrete placement by the pump and tremie method may be required. Concrete shall not be allowed to free fall more than 6 feet. Concrete placement shall be performed in a manner such that it does not hit the side of the drilled hole.

If temporary casing is utilized, it shall be raised slowly during concrete placement as the drilled hole is filled with concrete. The bottom of the casing shall remain a minimum of 3 feet below the level of concrete during the pour.

5.0 CLOSURE

If you have any questions about this report, please contact Easton Forcier at (213) 847-0476.

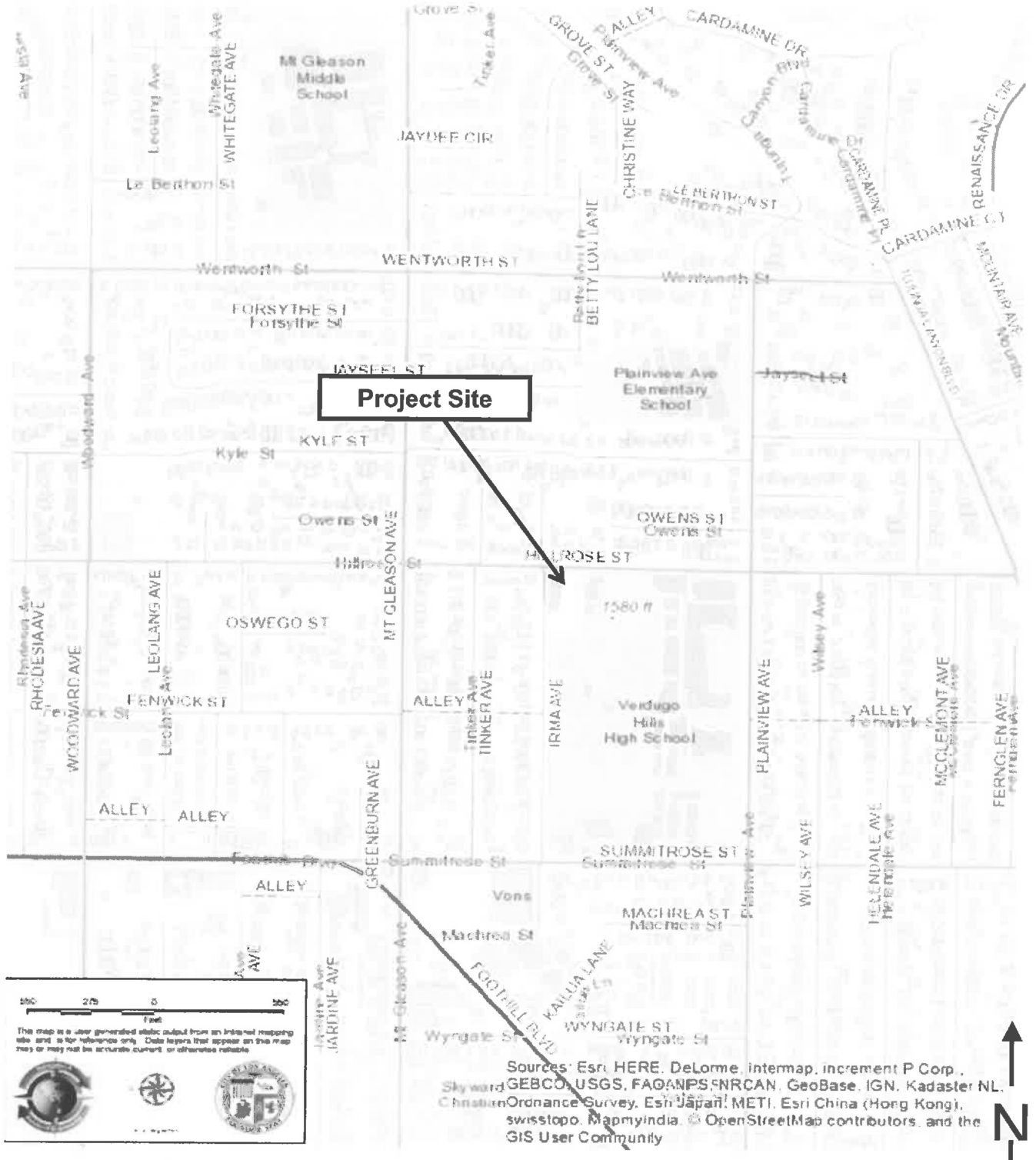


Easton Forcier 10-11-17

Easton Forcier, GE 2948
Geotechnical Engineer I

Figure 1 – Vicinity Map
Figure 2 – Proposed Light Pole Location Map
Figure 3 – Allowable Axial Compression of CIDH Pile vs. Depth
Appendix A – Data Report by Geotechnical Professionals, Inc. dated October 3, 2017
Appendix B – LPILE Results

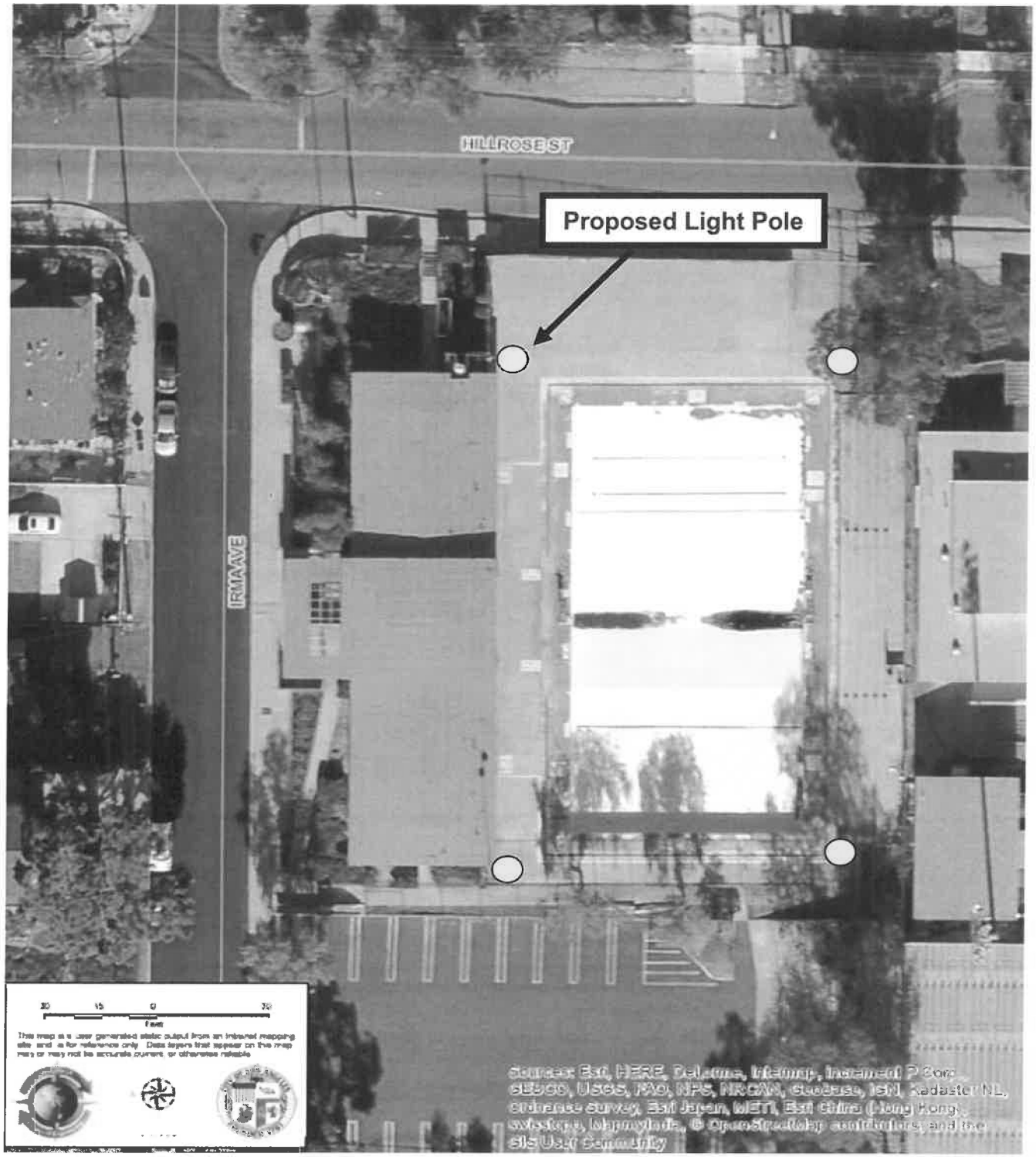
Q:\PROJECTS\2017\17-137 Verdugo Hills Pool and Bathhouse Improvement\Reports\Report Text 10-11-17.docx



Reference: NavigateLA

Site Vicinity Map

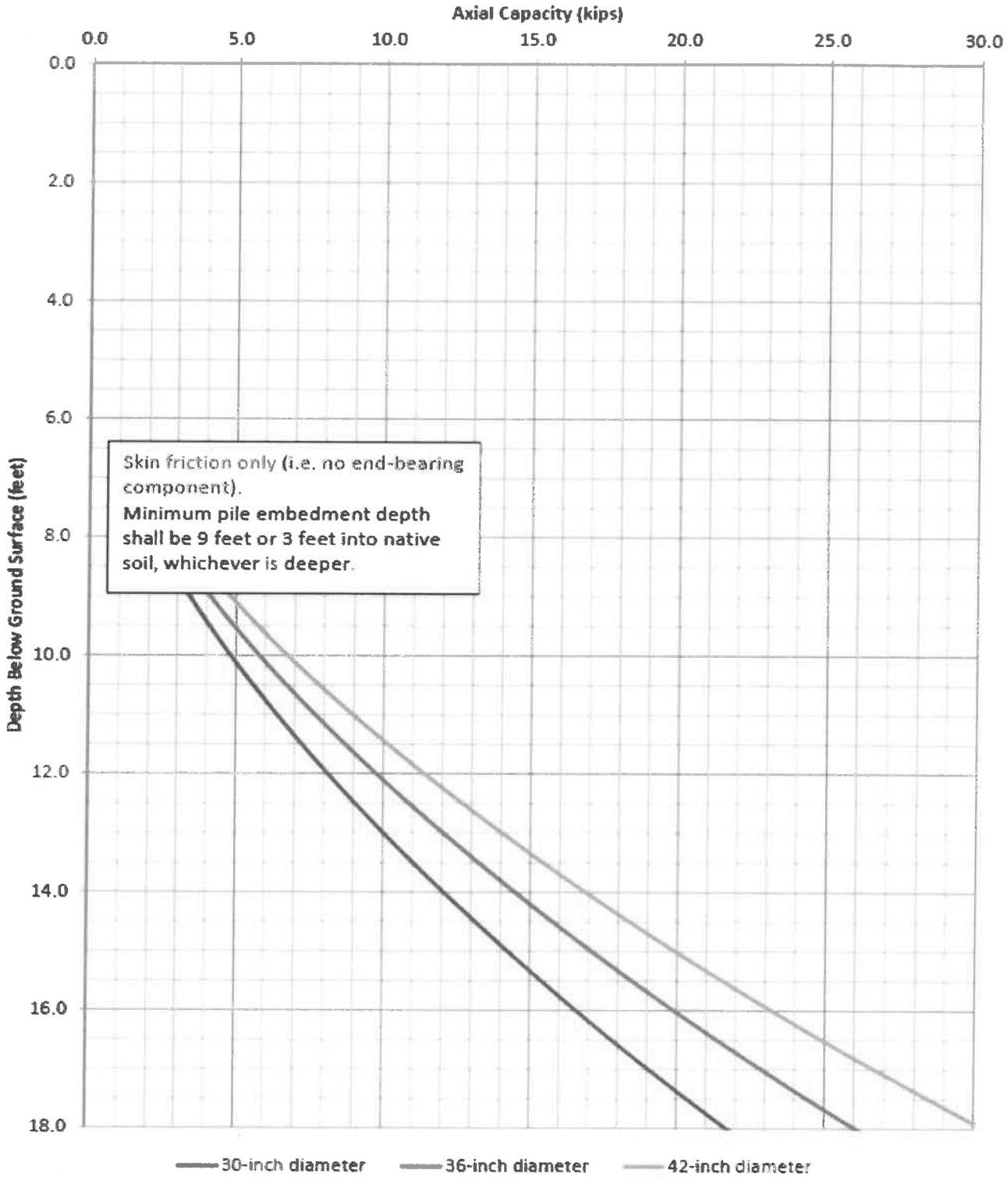
VERDUGO HILLS POOL DECK SECURITY LIGHTING **10654 IRMA AVENUE** LOS ANGELES, CALIFORNIA	BUREAU OF ENGINEERING GEOTECHNICAL ENGINEERING GROUP (GEO) GEO FILE No.: 17-137 October 2017	Figure No. 1



Proposed Light Pole Location Map

VERDUGO HILLS POOL DECK SECURITY LIGHTING **10654 IRMA AVENUE** LOS ANGELES, CALIFORNIA	BUREAU OF ENGINEERING GEOTECHNICAL ENGINEERING GROUP (GEO) GEO FILE No.: 17-137 October 2017	Figure No. 2

Allowable Downward Capacity of CIDH Pile vs. Depth



VERDUGO HILLS POOL DECK SECURITY LIGHTING **10654 IRMA AVENUE** LOS ANGELES, CALIFORNIA	BUREAU OF ENGINEERING GEOTECHNICAL ENGINEERING GROUP (GEO) GEO FILE No.: 17-137 October 2017	Figure No. 3

Appendix A

Geotechnical Professionals, Inc.

Data Report

October 3, 2017

City of Los Angeles
Department of Public Works Bureau of Engineering
Geotechnical Engineering Group
1149 South Broadway, Suite 120
Los Angeles, California 90015

Attention: Mr. Patrick J. Schmidt
Acting Group Manager

Subject: Data Report
Geotechnical Investigation for
Verdugo Pool Deck and Security Lighting Project
10645 Irma Avenue
Los Angeles, California
Contract No. C-121601, TOS No. 17-137
Work Order No. E170164D
GPI Project No. 2500.08I

Dear Mr. Schmidt:

This report presents geotechnical data from a subsurface field investigation and laboratory testing performed by Geotechnical Professionals Inc. (GPI) for the subject project. The site location is presented in Figure 1.

SCOPE OF WORK

The scope of the geotechnical investigation presented in this report was developed by the Geotechnical Engineering Group (GEO) of the City of Los Angeles Department of Public Works, as outlined in Task Order Solicitation No. 17-137 and further updated by GEO staff. We understand that GEO will review the data from this investigation and will be responsible for geotechnical recommendations for the subject project, as the Geotechnical Engineer of Record.

The geotechnical field investigation included three hollow-stem auger borings to depths of 21½ feet below site grades. The locations of the subsurface explorations were selected by GEO and marked in the field by GPI on September 7, 2017. The approximate locations are presented in Figure 2. A detailed description of field drilling procedures for the hollow-stem auger borings and logs are presented in Appendix A.

Geotechnical laboratory testing, as requested by GEO, included the following types and number of tests:

- 11 Moisture and Density (ASTM D 2216)
- 2 Percent Passing No. 200 Sieve (ASTM D 1140)

5736 Corporate Avenue • Cypress, CA 90630 • (714) 220-2211 • FAX (714) 220-2122

- 4 Full Sieve Analyses (ASTM D 6913)
- 3 sets Direct Shear Tests (ASTM D 3080)

A detailed description of laboratory test procedures and results are presented in Appendix B.

CONCLUDING REMARKS

GPI warrants that the services covered by this report were performed as requested by GEO, in accordance with the standard procedures indicated, and with the standard of care of the geotechnical engineering profession in Southern California at this time. No other warranty or representation is included or intended in this report.

We appreciate the opportunity of offering our services on this project. Do not hesitate to call us if you have any questions on the contents of this report.

Respectfully submitted by,
Geotechnical Professionals Inc.

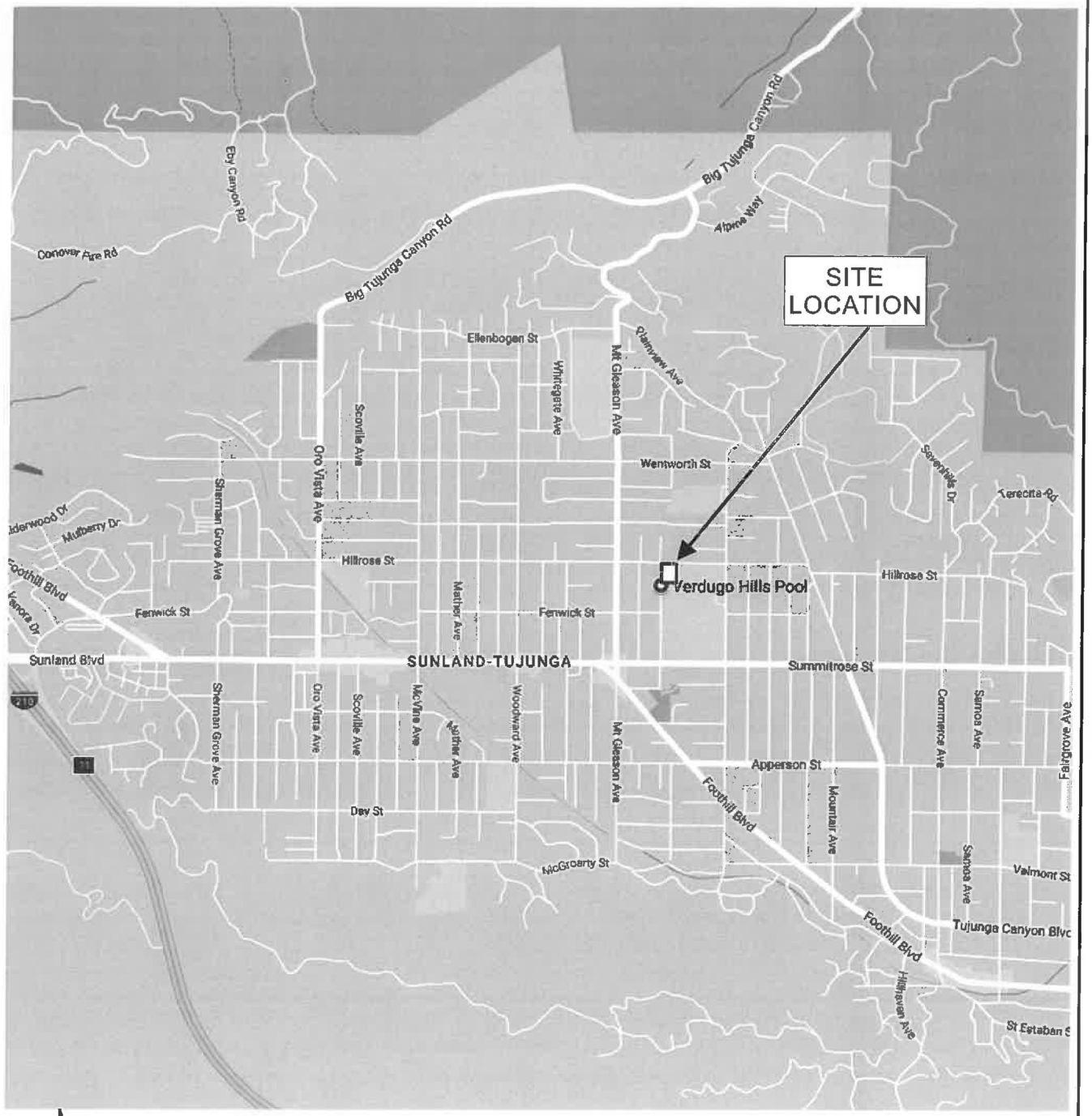




Donald A. Cords, G.E.
Principal

DAC:sph

Attachments: Figure 1 - Site Location Map
Figure 2 - Site Plan
Appendix A - Exploratory Borings
Appendix B - Laboratory Test Results



BASE PLAN REPRODUCED FROM GOOGLE MAPS © 2017

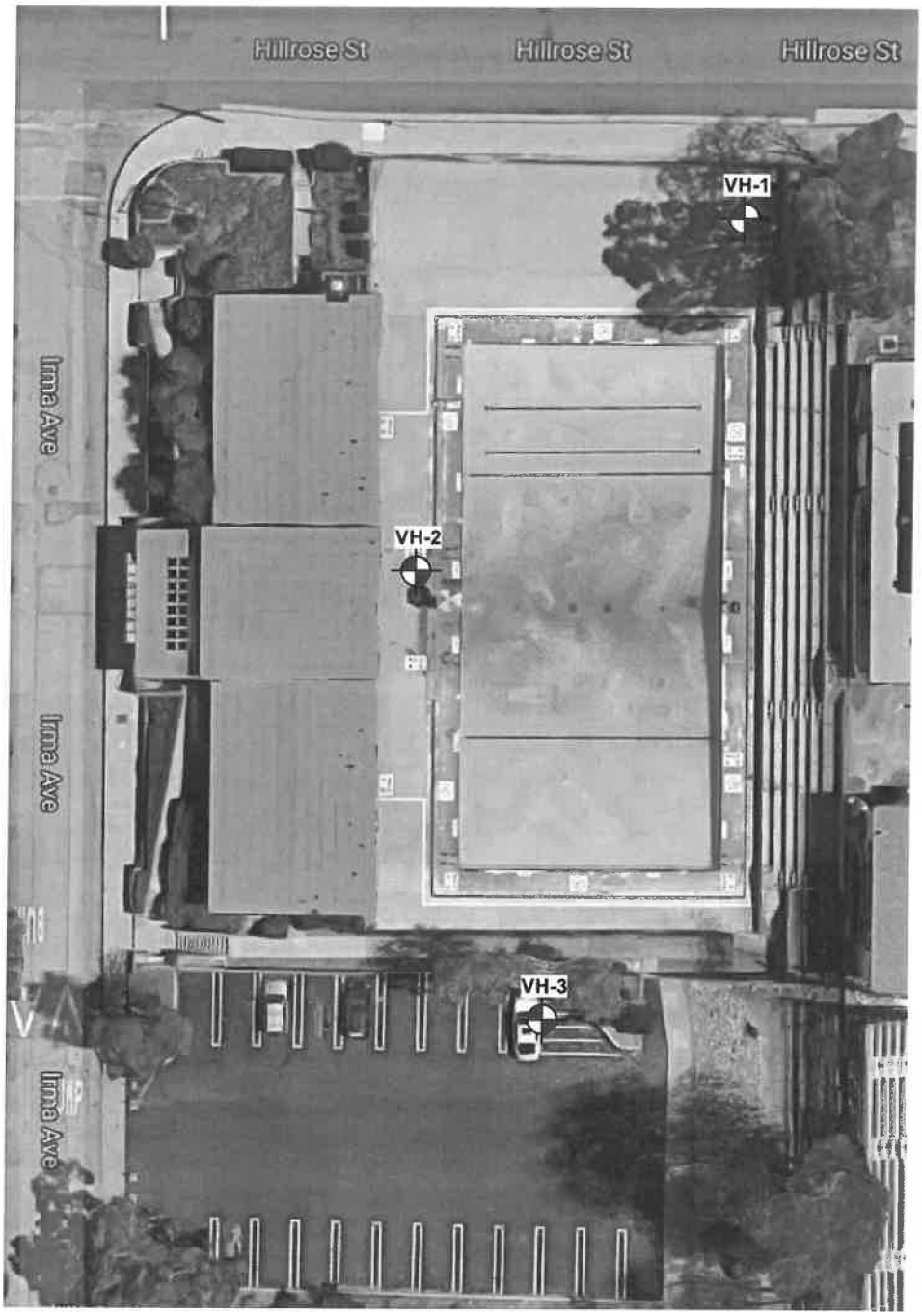
GPI GEOTECHNICAL PROFESSIONALS, INC.

VERDUGO HILLS POOL DECK (17-137)

GPI PROJECT NO.: 2500.08I | SCALE: 1" = 2000'

SITE LOCATION MAP

FIGURE 1



N

0 40 80 FEET

EXPLANATION

VH-3 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BORINGS

BASE PLAN REPRODUCED FROM GOOGLE MAPS © 2017

GPI GEOTECHNICAL PROFESSIONALS, INC.

VERDUGO HILLS POOL (17-137)

GPI PROJECT NO.: 2500.08I | SCALE: 1" = 40'

SITE PLAN

FIGURE 2

APPENDIX A

APPENDIX A

EXPLORATORY BORINGS

The subsurface conditions at the site were investigated by drilling and sampling three hollow-stem auger borings. The borings were advanced to depths of 21½ feet below the existing ground surface. The borings were performed with a rubber-tracked limited access hollow-stem auger drill rig.

The locations of the explorations are shown on the Site Plan, Figure 2. The latitude/longitude and Northing/Easting of each boring location at the site are as follows:

Boring No.	Latitude	Longitude	UTM Easting	UTM Northing	UTM Zone
VH-1	34° 15' 47.33"	-118° 18' 0.90"	380292.38	3792098.73	11S
VH-2	33° 15' 46.60"	-118° 18' 1.83"	380268.24	3792076.41	11S
VH-3	33° 15' 45.61"	-118° 18' 1.41"	380277.37	3792041.47	11S

The latitude and longitude of the location were determined based on a handheld NAD 83 Coordinate System Global Positional System unit. The Universal Transverse Mercator (UTM) Easting/Northing locations were converted from the latitude/longitude.

Relatively undisturbed samples were obtained using a brass-ring lined sampler (ASTM D 3550) and split-spoon sampler by means of the Standard Penetration Test (SPT, ASTM D 6066). The brass-rings have an inside diameter of 2.42 inches. The ring samples were driven into the soil by a 140-pound hammer dropping 30 inches. The number of blows needed to drive the sampler into the soil was recorded as the penetration resistance. The spoon sampler was driven into the soil by a 140-pound hammer dropping 30 inches, employing the "free-fall" hammer described above. After an initial seating drive of 6 inches, the number of blows needed to drive the sampler into the soil a depth of 12 inches was recorded as the penetration resistance. These values are the raw uncorrected blowcounts.

Bulk samples of the soils within the upper 3 feet were obtained at all boring locations.

The field explorations for the investigation were performed under the continuous technical supervision of GPI's representative, who visually inspected the site, maintained detailed logs of the borings, classified the soils encountered, and obtained relatively undisturbed samples for examination and laboratory testing. The soils encountered in the borings were classified in the field and through further examination in the laboratory in accordance with the Unified Soils Classification System. Detailed logs of the borings are presented in Figures A-1 to A-3 in this appendix. Laboratory test results of moisture content and dry density are presented on the logs. For other laboratory tests, the type of test performed is shown with the following abbreviations:

DS – Direct Shear Test
GS – Full Sieve Analysis
#200 – Percent Passing No. 200 Sieve

Soil samples were screened for organic vapors using a photo-ionization detector (Mini-Rae 2000). Organic vapors were not detected above 50 ppm for any of the samples.

Upon completion of the borings, the boreholes were backfilled with soil cuttings. The ground surface elevations, as shown on the boring logs, at the exploration locations were estimated from topographic maps contained within NavigateLA website and should be considered to be very approximate.

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					B	0	5-Inch PCC over NO BASE	
	0	0.7	121	55	D		Fill: **SILTY SAND (SM)** light brown, dry, dense, with gravel and cobble	1560
	0			27	S	5	Natural: **SILTY SAND (SM)** light brown, slightly moist, medium dense, with gravel	
DS	0	2.0	110	47	D		**SAND (SW-SM)** light brown, dry, dense, with silt, trace gravel and cobbles	1555
GS	0			54	S	10		
	0	0.9	130	75/9"	D		@ 12.5 feet, very dense	1550
	0			51	S	15	@ 15 feet, dense	
	0	0.7	129	78	D		@ 17.5 feet, very dense	1545
	0			72	S	20		
							Total depth 21.5 feet Latitude: 34.263148 Longitude: -118.300251	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 9-15-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
VERDUGO HILLS POOL

LOG OF BORING NO. VH-1

FIGURE A-1

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					B	0	6-Inch PCC over 3.5-Inch BASE	
	0						Fill: **SILTY SAND (SM)** brown, slightly moist, medium dense, with gravel and cobbles	1560
	0	5.5	123	17	D	5		
	0			9	S		@ 7.5 feet, loose	1555
DS	0	4.9	114	36	D	10	@ 10 feet, medium dense	
	0			23	S		Natural: **GRAVEL (GP-GM)** brown, dry, medium dense, with sand and silt, trace cobble	1550
GS	0	2.9	122	44	D	15		
GS	0			36	S		**SAND (SW-SP)** brown, slightly moist, dense, with gravel and silt	1545
	0	4.5	120	75	D	20		
							Total depth 21 feet Latitude: 34.262944 Longitude: -118.300510	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 9-15-17
EQUIPMENT USED: 8" Hollow Stem Auger
GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
VERDUGO HILLS POOL

LOG OF BORING NO. VH-2

FIGURE A-2

LAB TESTING	PID	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					B	0	3-Inch AC over NO BASE	
DS	0	0.8	118	50/5"	D		Fill: **SILTY SAND (SM)** light brown, dry, very dense, with gravel and cobble	1560
	0			27	S	5	Natural: **SILTY SAND (SM)** light brown, dry, medium dense, trace gravel and cobble	1555
GS	0	1.7	112	50/5"	D		@ 7.5 feet, very dense	
	0			24	S	10		1550
				33	D		@ 12.5 feet, dense	
	0			40	S	15		1545
	0	1.9	119	73/10"	D		@ 17.5 feet, very dense	
				33	S	20		1540
							Total depth 21.5 feet Latitude: 34.262630 Longitude: -118.300406	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 9-15-17

EQUIPMENT USED: 8" Hollow Stem Auger

GROUNDWATER LEVEL: Not Encountered

GPI

PROJECT NO.: 2500.08I
VERDUGO HILLS POOL

LOG OF BORING NO. VH-3

FIGURE A-3

APPENDIX B

APPENDIX B

LABORATORY TESTS

INTRODUCTION

Representative undisturbed soil samples and bulk samples were carefully packaged in the field and sealed to prevent moisture loss. The samples were then transported to our Cypress office for examination and testing assignments. Laboratory tests were performed on selected representative samples as an aid in classifying the soils and to evaluate the physical properties of the soils affecting foundation design and construction procedures. Detailed descriptions of the laboratory tests are presented below under the appropriate test headings. Test results are presented on the boring logs and in the figures that follow.

MOISTURE CONTENT AND DRY DENSITY

Moisture content and dry density were determined from a number of the ring samples. The samples were first trimmed to obtain volume and wet weight and then were dried in accordance with ASTM D 2216. After drying, the weight of each sample was measured, and moisture content and dry density were calculated. Moisture content and dry density values are presented on the boring logs in Appendix A.

PERCENT PASSING NO. 200 SIEVE

Two soil samples were dried, weighed, soaked in water until individual soil particles were separated, and then washed on the No. 200 sieve. That portion of the material retained on the No. 200 sieve was oven-dried and weighed to determine the percentage of the material passing the No. 200 sieve. A summary of the percentages passing the No. 200 sieve is presented below.

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	PERCENT PASSING No. 200 SIEVE
VH-1	10	Sand with Silt (SP-SM)	10
VH-2	15	Sand with Silt (SP-SM)	8

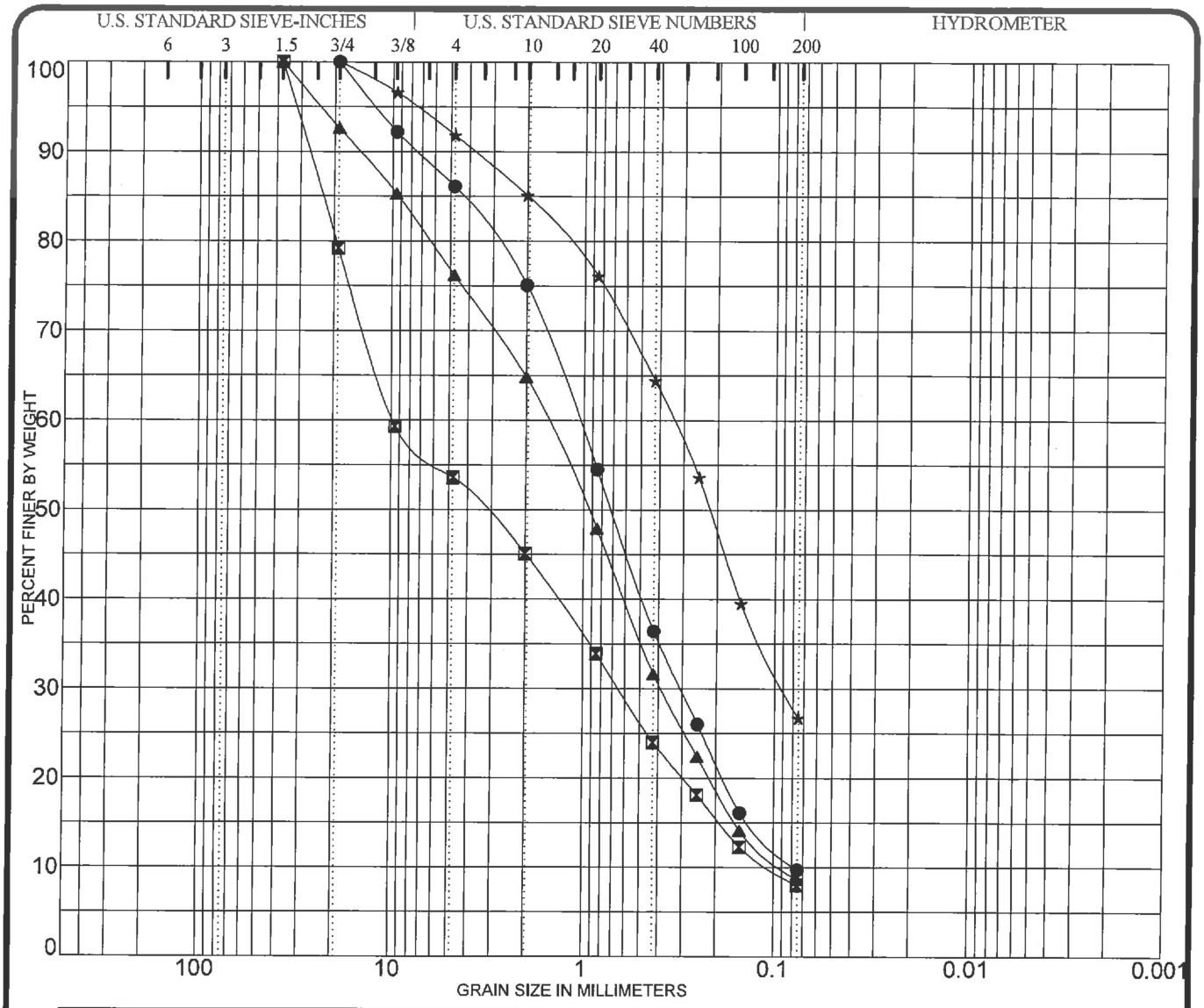
GRAIN SIZE DISTRIBUTION

A total of four soil samples were dried, weighed, soaked in water until individual soil particles were separated, and then washed on the No. 200 sieve. That portion of the material retained on the No. 200 sieve was oven-dried and weighed to determine the percentage of the material passing the No. 200 sieve. The retained material was run through a standard set of sieves in accordance with ASTM D 422. The weight of soil retained on each sieve was recorded and the total dry weight was calculated. The grain size distribution data from the full sieve analyses is presented in Figures B-1 and B-2. A summary of the percentages passing the No. 200 sieve (ASTM D1140) is presented below.

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	PERCENT PASSING No. 200 SIEVE
VH-1	10	Sand (SW-SM) with silt	10
VH-2	15	Gravel (GW) with sand and silt	8
VH-2	17.5	Sand (SW-SP) with gravel and silt	9
VH-3	7.5	Silty Sand (SM)	27

DIRECT SHEAR

Direct shear tests were performed on undisturbed samples in accordance with ASTM D 3080. The samples were placed in the shear machine, and a normal load was applied. The samples were inundated for 2 hours, allowed to consolidate, and then were sheared to failure at a strain rate of 0.002 inches per minute. The tests were repeated on additional test specimens under increased normal loads. Shear stress and sample deformation were monitored throughout the test. The results of the direct shear tests are presented in Figures B-3 to B-5.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location		Classification	MC%	LL	PL	PI	Cc	Cu
●	VH-1	10.0	SAND (SW-SM) with silt					1.14	13.8
⊠	VH-2	15.0	GRAVEL (GP-GM) with sand and silt					0.42	94.0
▲	VH-2	17.5	SAND (SW-SP) with gravel and silt					1.07	17.5
★	VH-3	7.5	SILTY SAND (SM)						

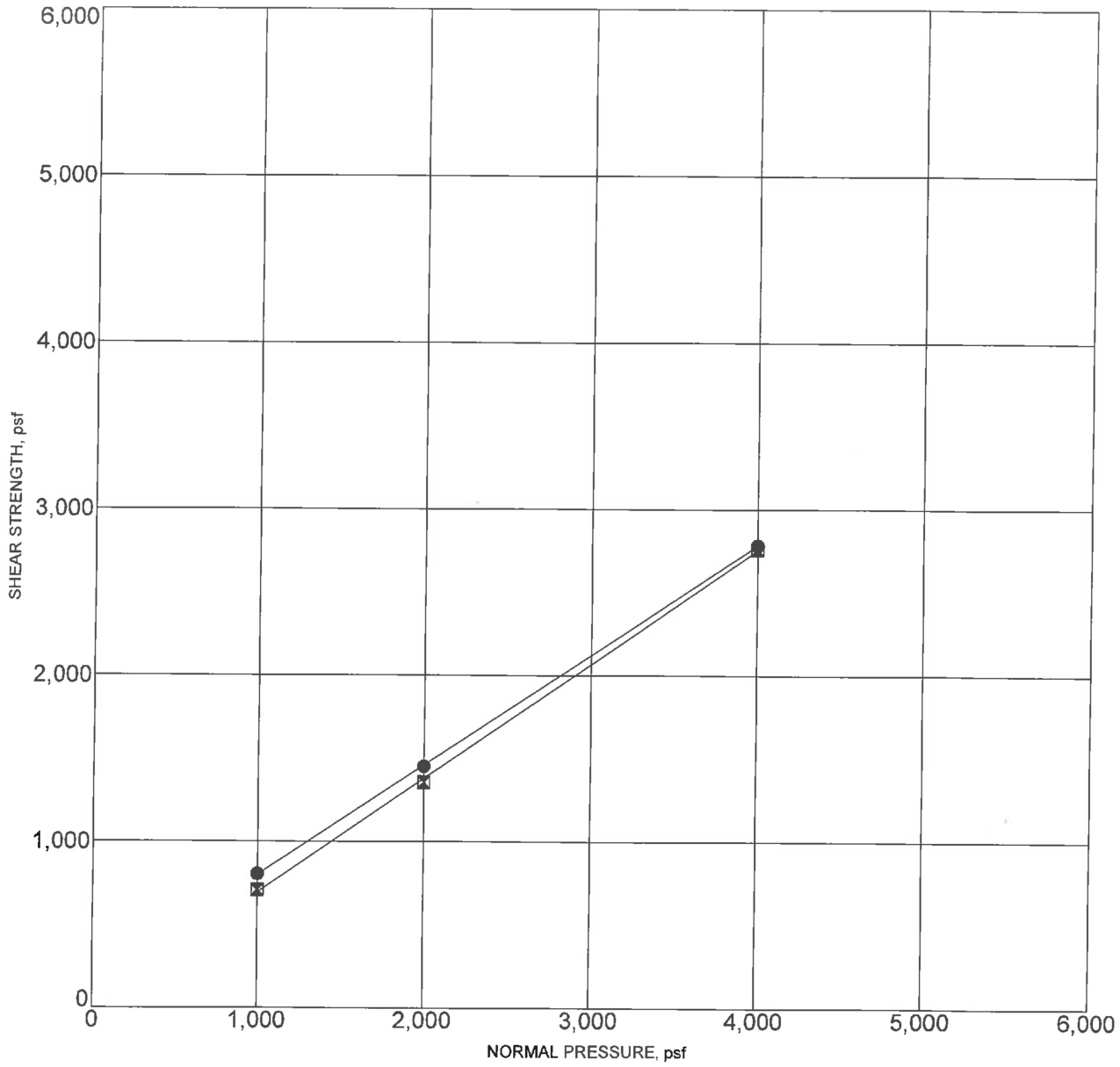
	Sample Location		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	VH-1	10.0	19.00	1.07	0.307	0.0775	13.9	76.4	9.7	
⊠	VH-2	15.0	37.50	9.73	0.647	0.1035	46.4	45.6	8.0	
▲	VH-2	17.5	37.50	1.57	0.388	0.0895	23.8	67.6	8.6	
★	VH-3	7.5	19.00	0.34	0.090		8.2	65.1	26.7	

PROJECT: VERDUGO HILLS POOL PROJECT NO. 2500.08I

GPI

GRAIN SIZE DISTRIBUTION

FIGURE B-1



● **PEAK STRENGTH**
Friction Angle= 33 degrees
Cohesion= 138 psf

⧓ **ULTIMATE STRENGTH**
Friction Angle= 34 degrees
Cohesion= 6 psf

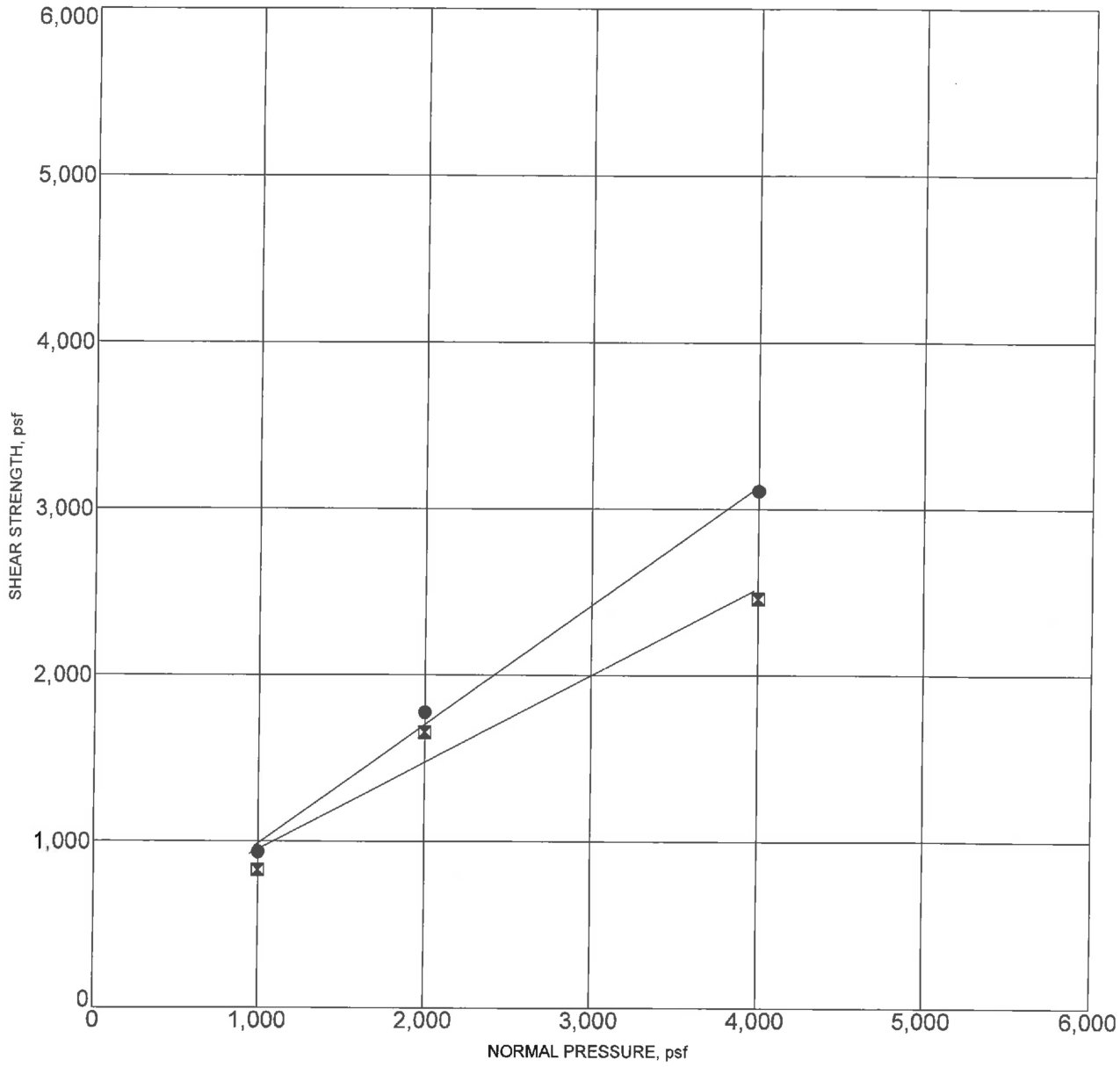
Sample Location		Classification	DD,pcf	MC,%
VH-1	7.5	SAND (SW-SM) with silt	110	2.0

PROJECT: VERDUGO HILLS POOL PROJECT NO.2500.08I

GPI

DIRECT SHEAR TEST RESULTS

FIGURE B-2



● **PEAK STRENGTH**
Friction Angle= 36 degrees
Cohesion= 270 psf

⧓ **ULTIMATE STRENGTH**
Friction Angle= 28 degrees
Cohesion= 426 psf

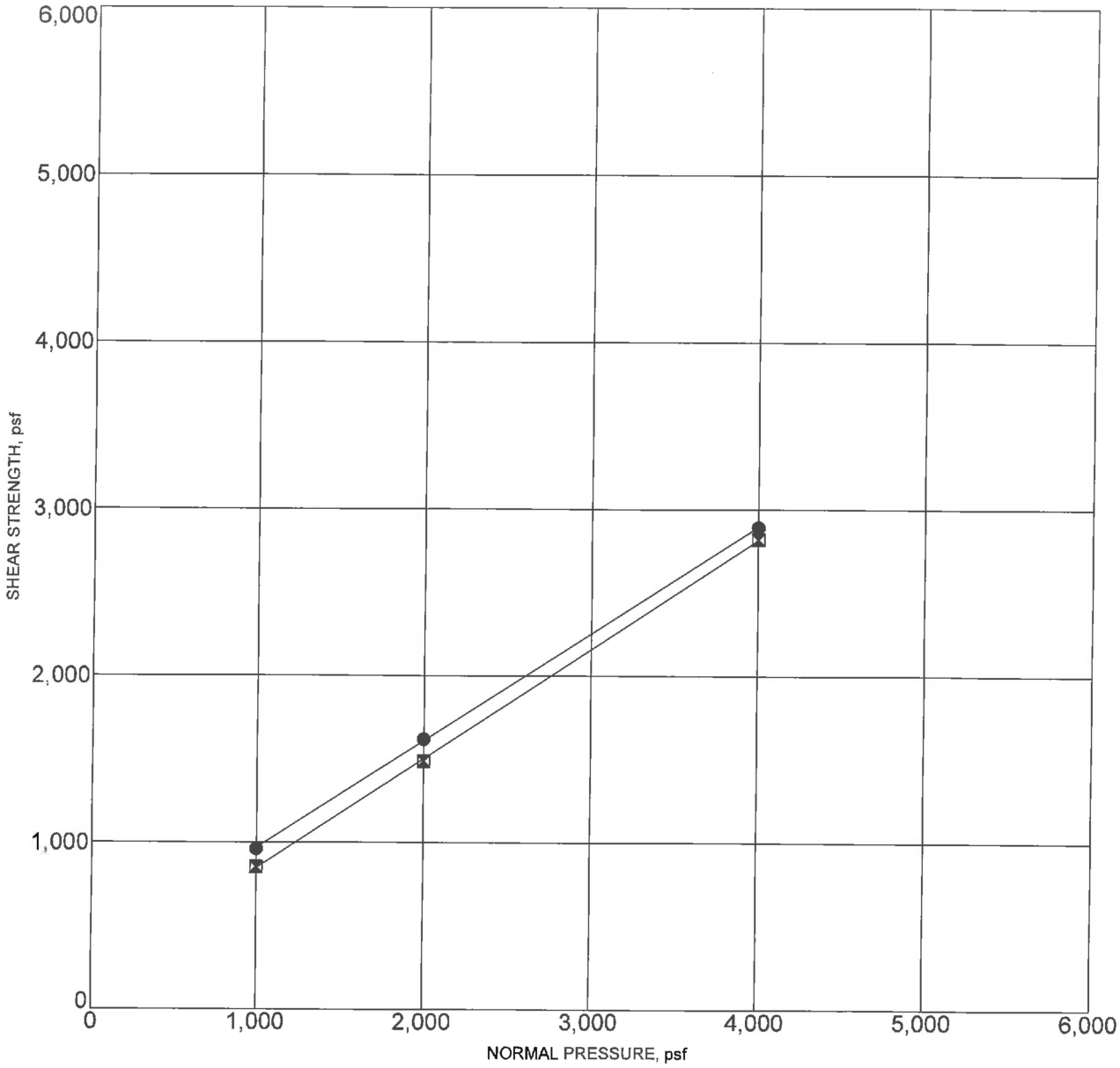
Sample Location		Classification	DD,pcf	MC,%
VH-2	10.0	SILTY SAND (SM) with gravel	114	4.9

PROJECT: VERDUGO HILLS POOL PROJECT NO.2500.08I

GPI

DIRECT SHEAR TEST RESULTS

FIGURE B-3



● **PEAK STRENGTH**
Friction Angle= 33 degrees
Cohesion= 324 psf

⊠ **ULTIMATE STRENGTH**
Friction Angle= 33 degrees
Cohesion= 186 psf

Sample Location		Classification	DD,pcf	MC,%
VH-3	2.5	SILTY SAND (SM) with gravel	118	0.8

PROJECT: VERDUGO HILLS POOL PROJECT NO.2500.08I

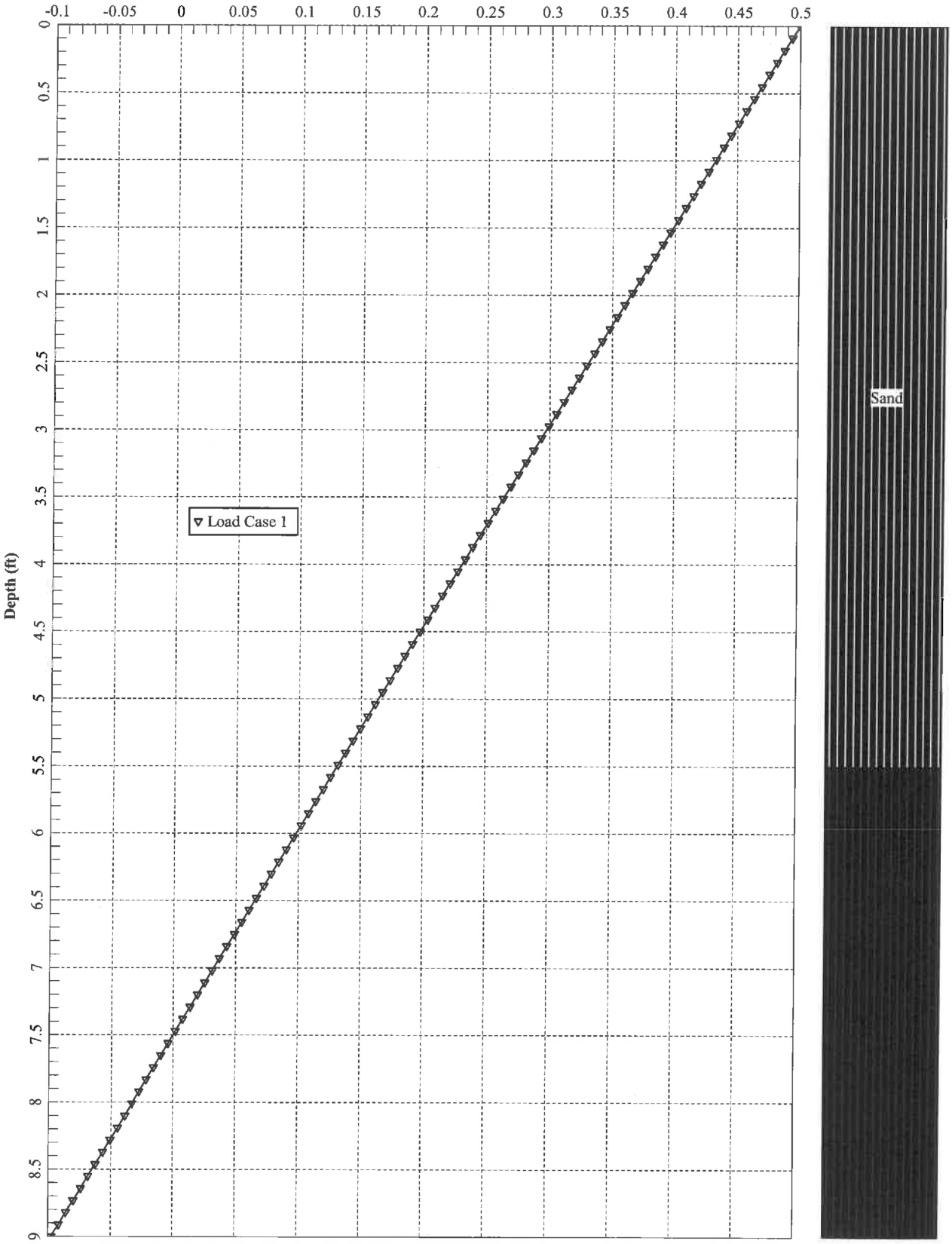
GPI

DIRECT SHEAR TEST RESULTS

FIGURE B-4

Appendix B

LPILE Results


30-inch diameter
Lateral Pile Deflection (inches)
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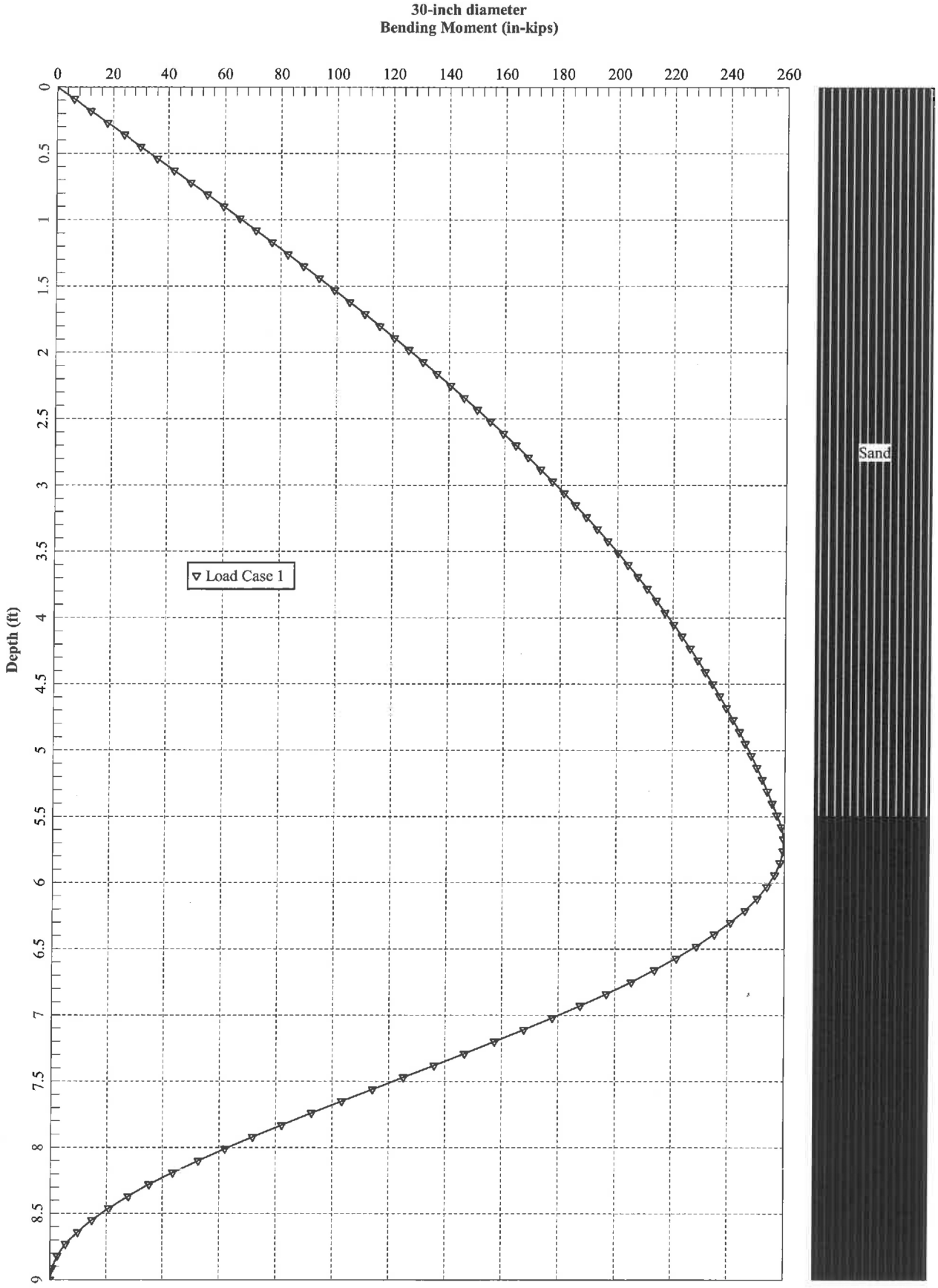
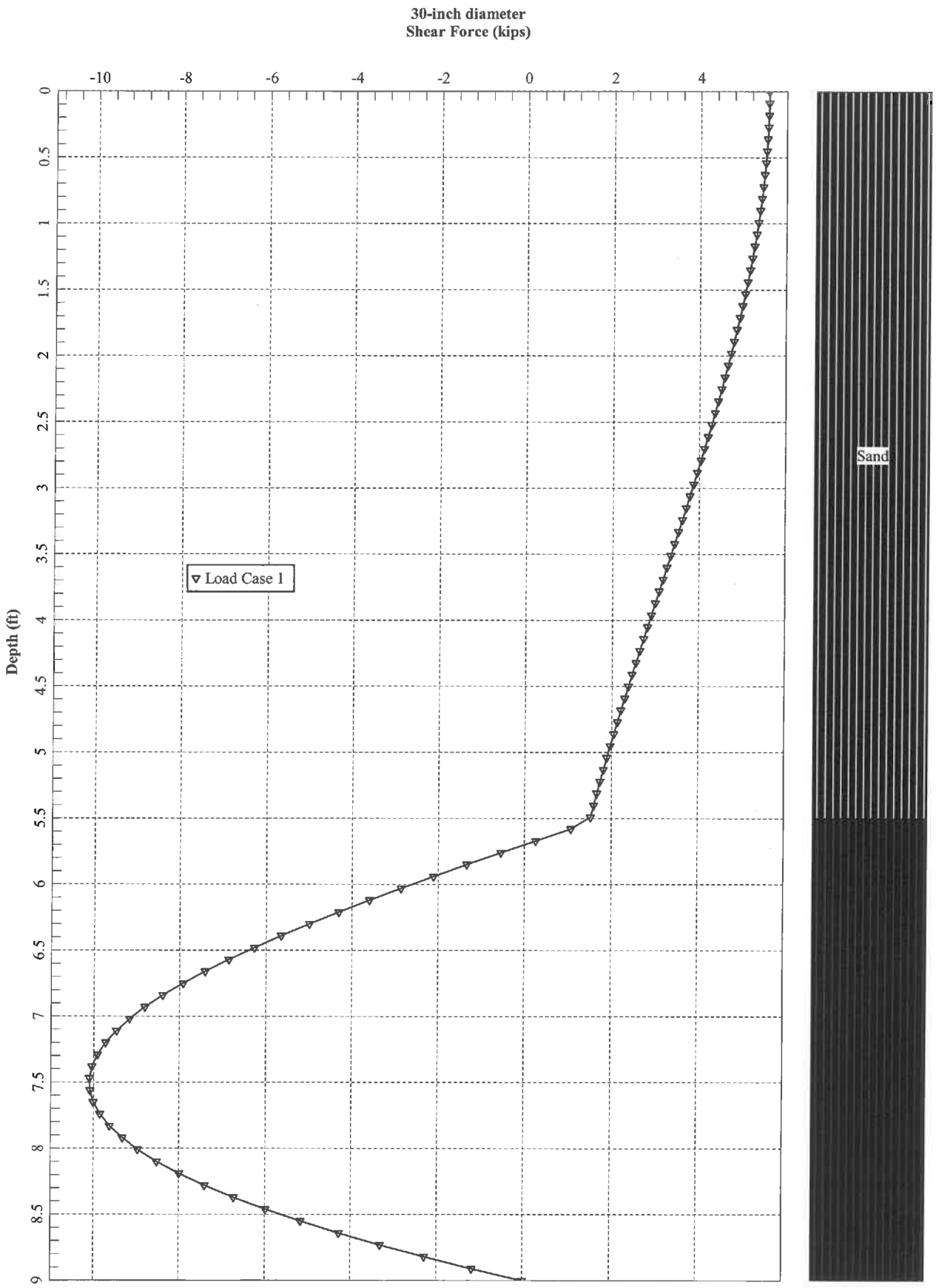
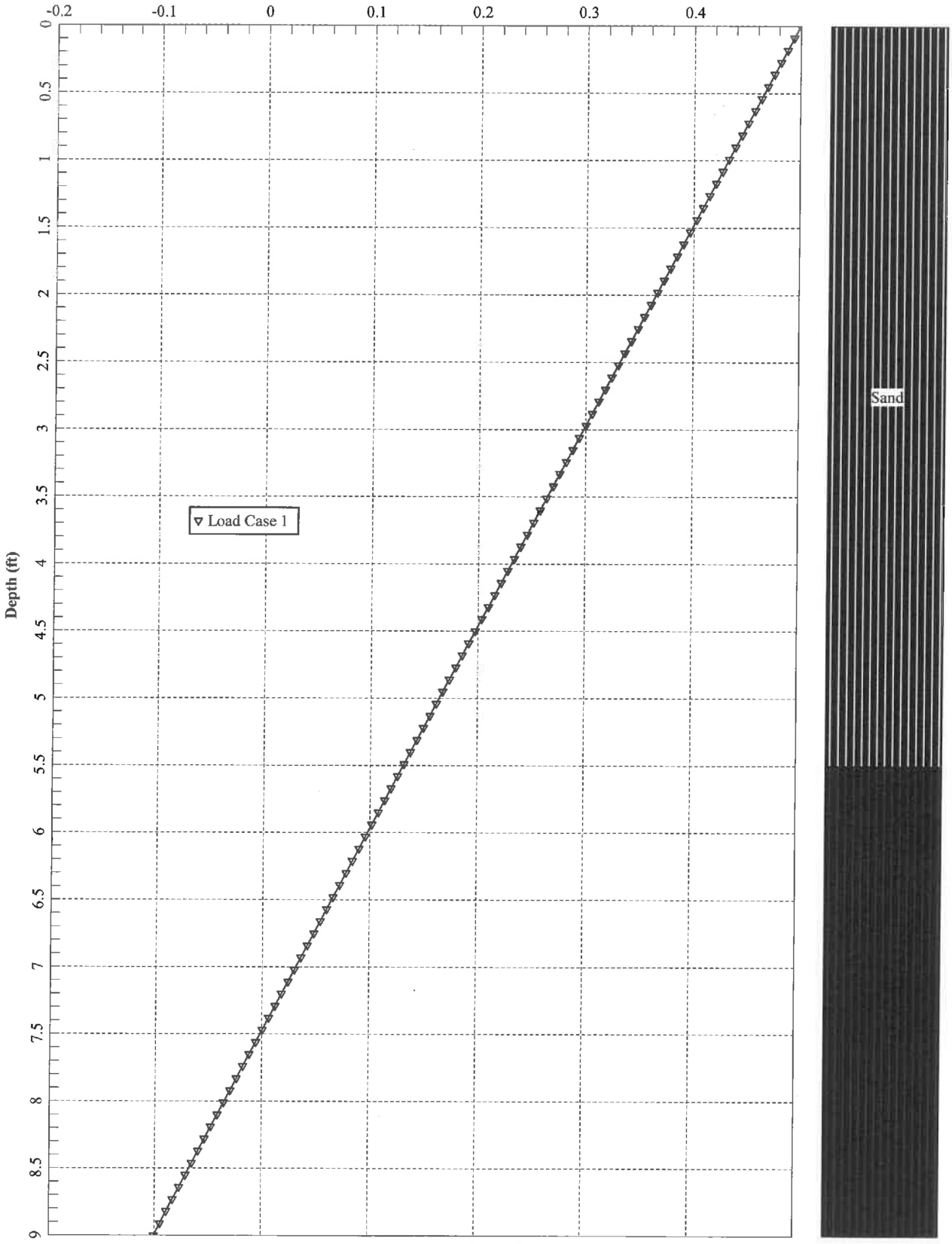
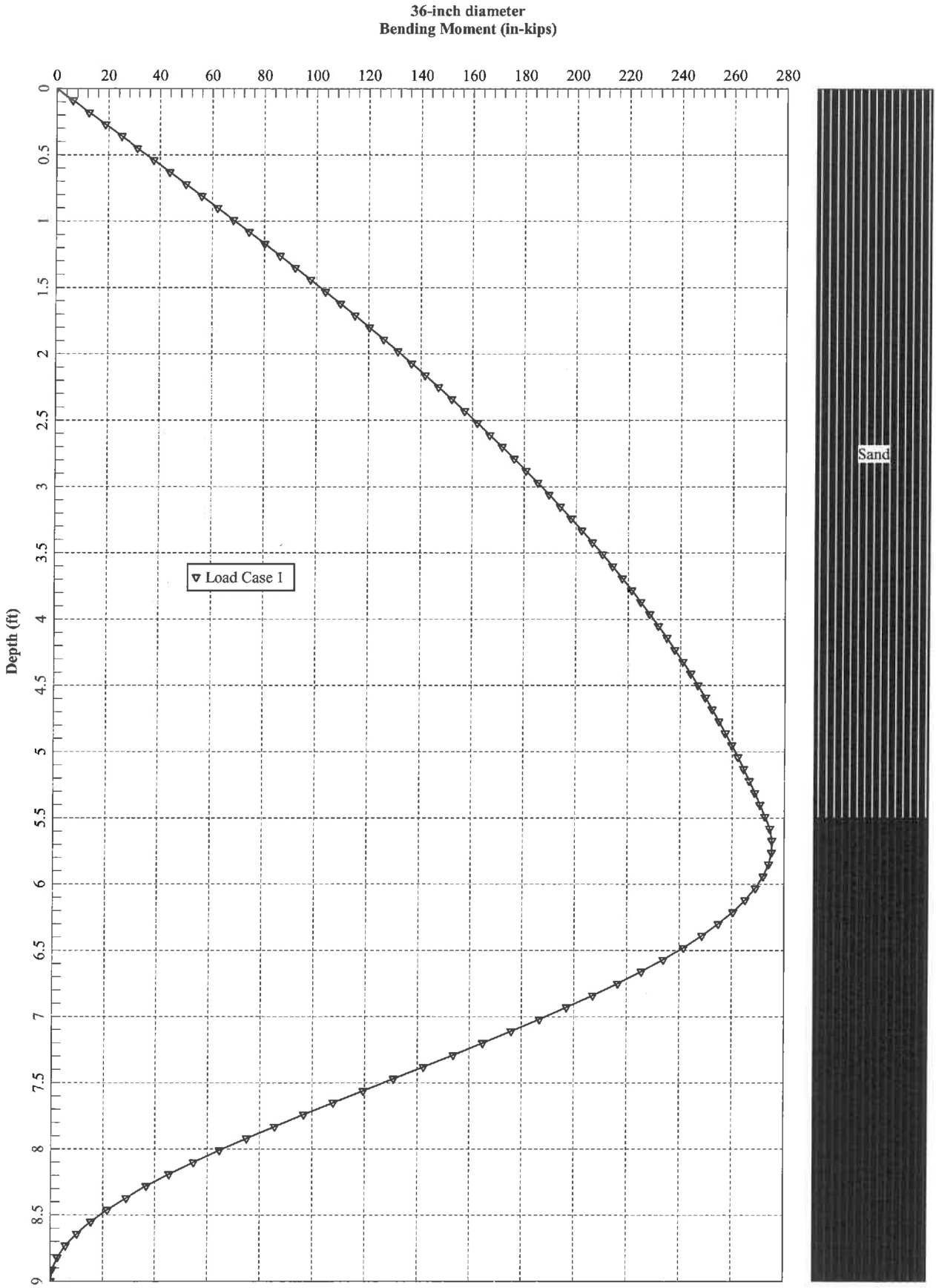
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand

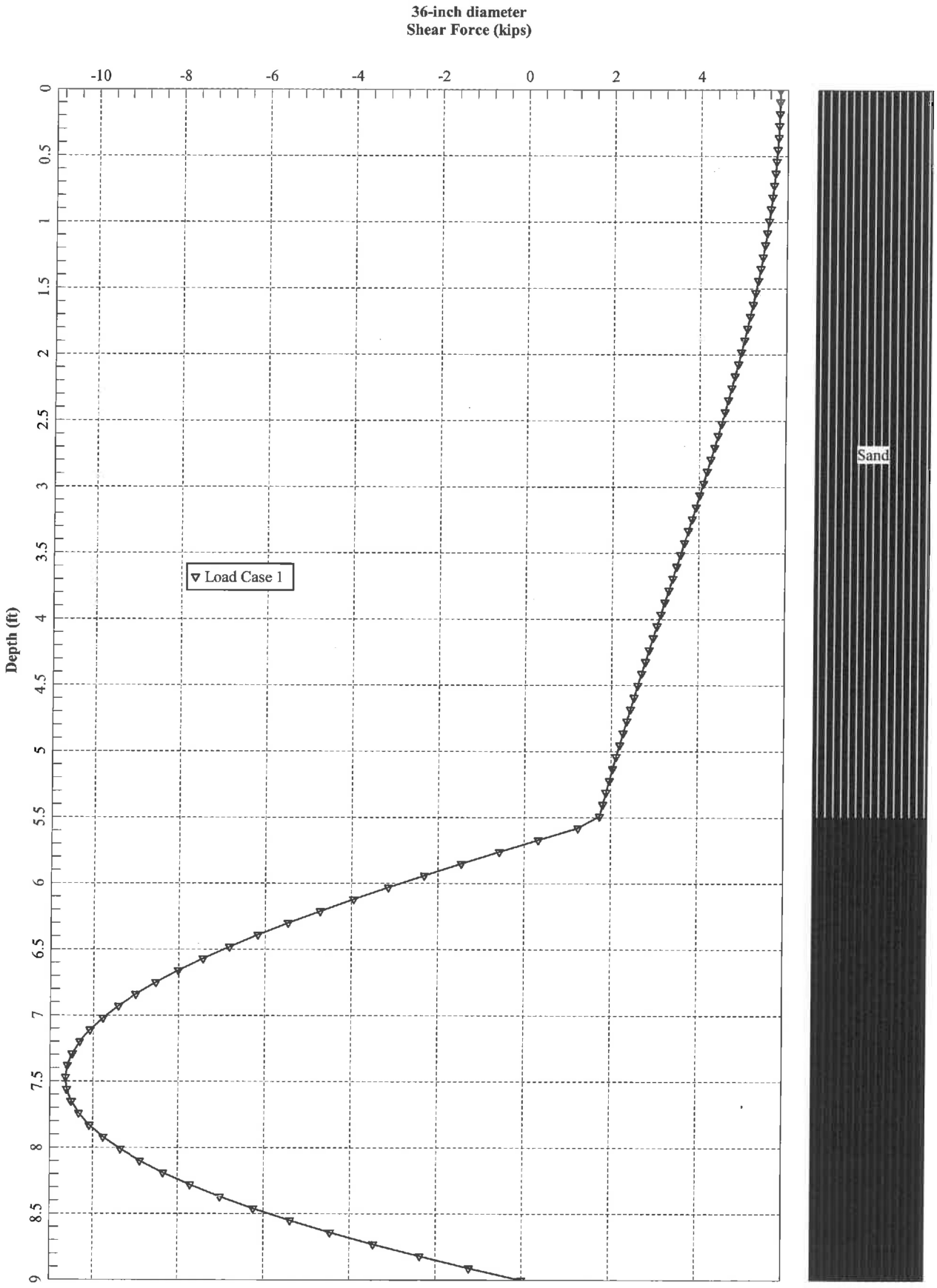

30-inch diameter
Bending Moment (in-kips)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand


30-inch diameter
Shear Force (kips)
-10
-8
-6
-4
-2
0
2
4
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand

36-inch diameter
Lateral Pile Deflection (inches)




36-inch diameter
Bending Moment (in-kips)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand


36-inch diameter
Shear Force (kips)
-10
-8
-6
-4
-2
0
2
4
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
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6.5
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7.5
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8.5
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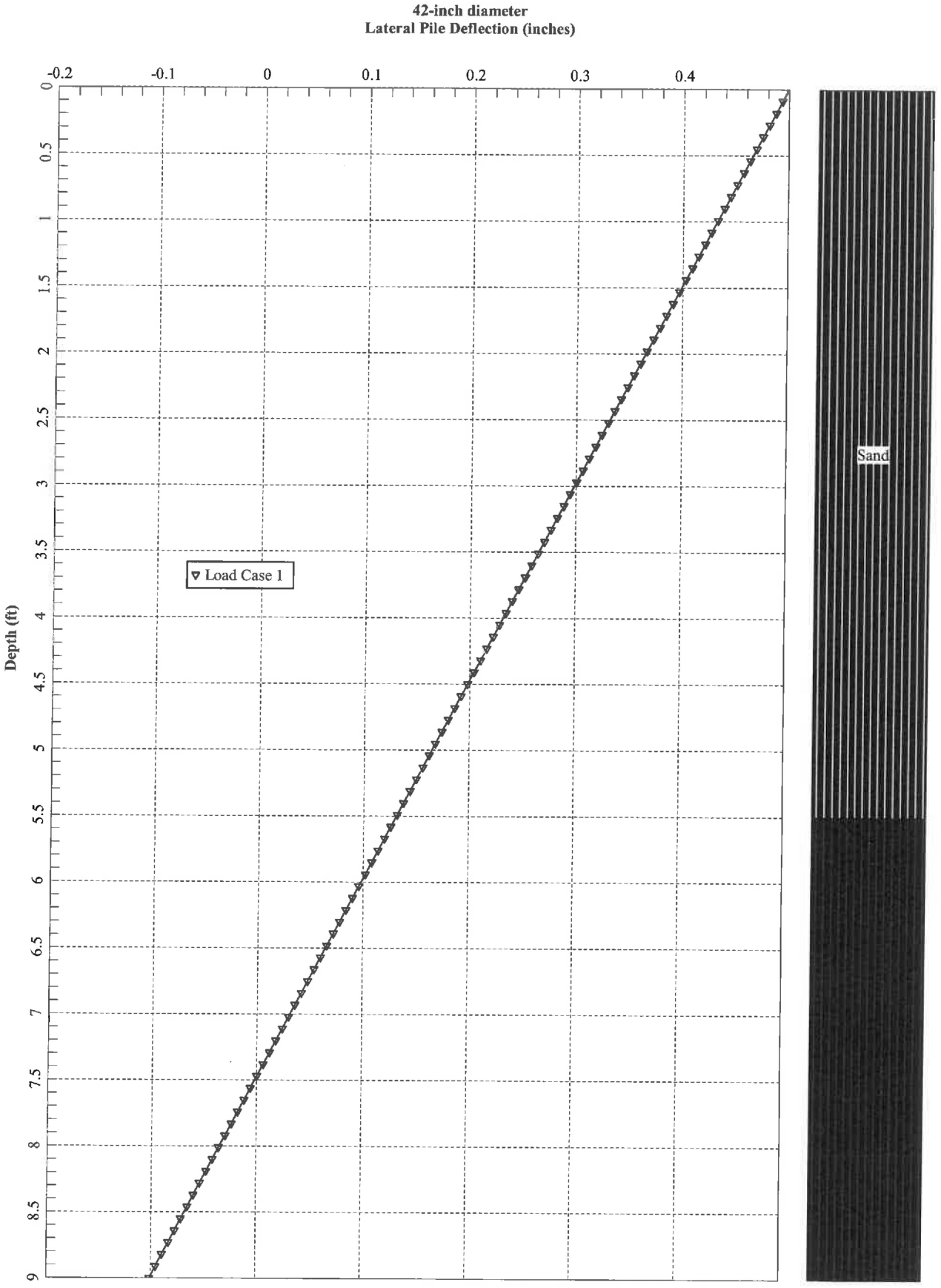
Load Case 1
Sand


42-inch diameter
Lateral Pile Deflection (inches)
-0.2
-0.1
0
0.1
0.2
0.3
0.4
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
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5.5
6
6.5
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7.5
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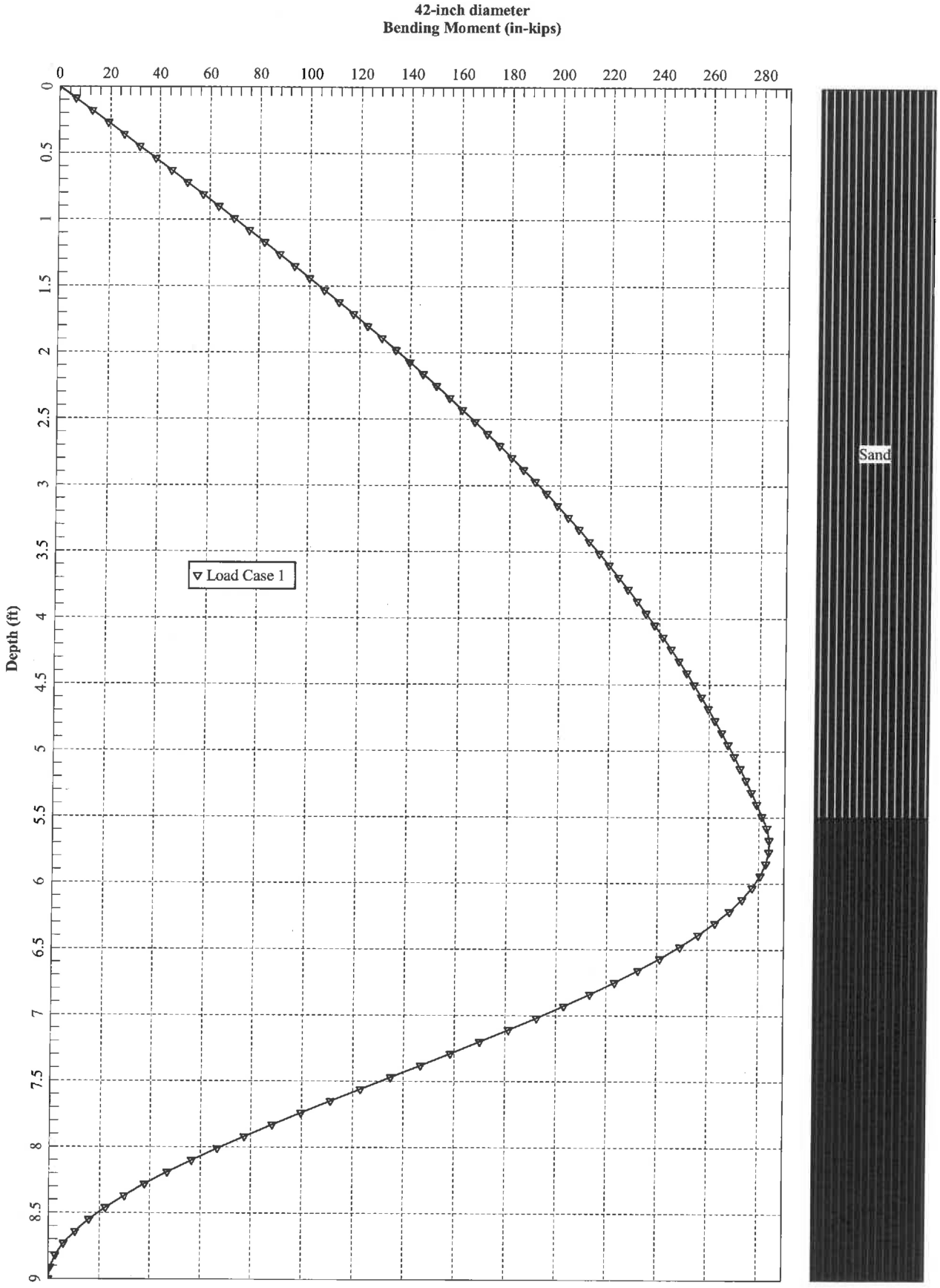
8.5
9
Load Case 1
Sand


42-inch diameter
Bending Moment (in-kips)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
Depth (ft)
0
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2.5
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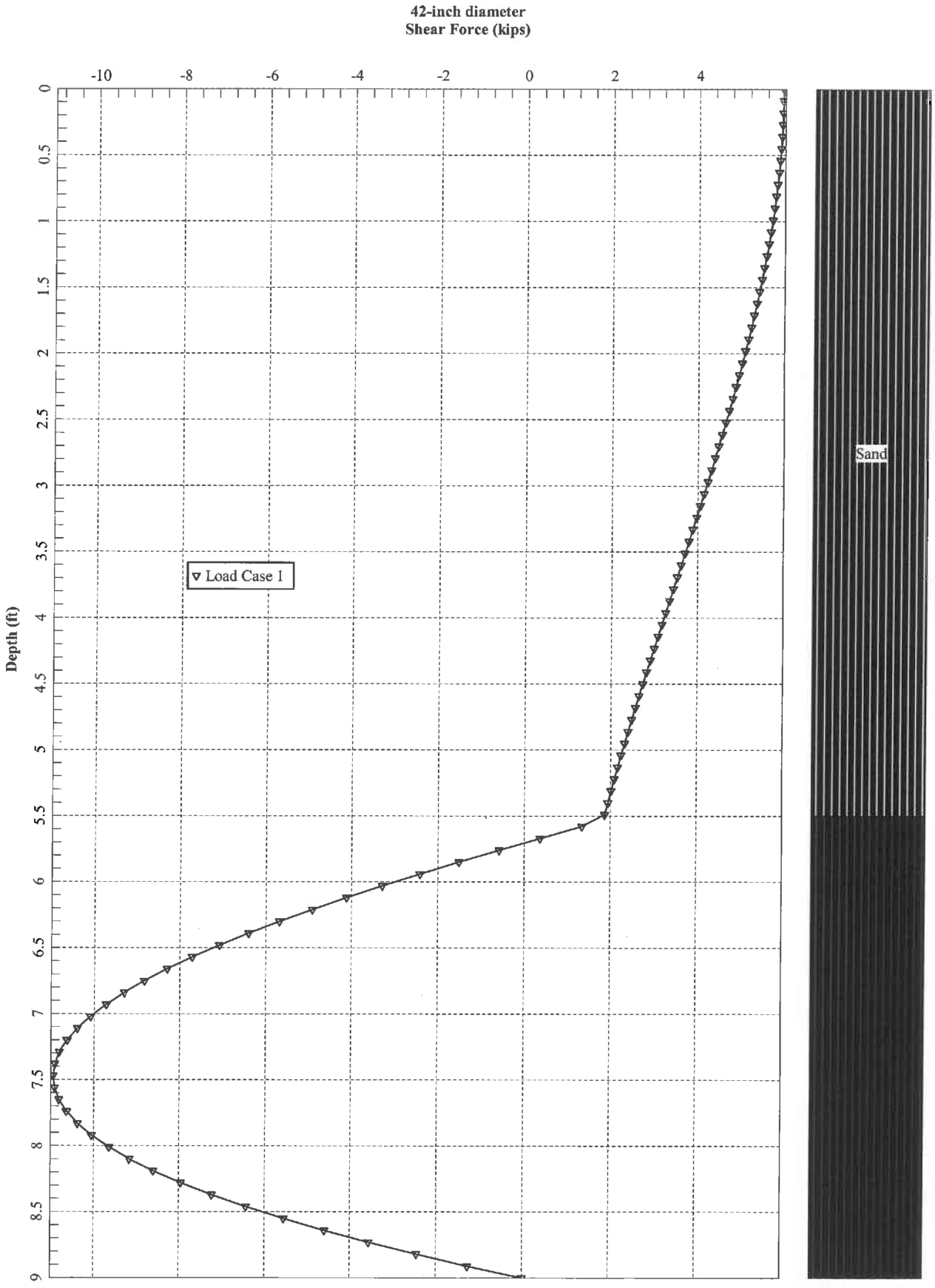
Load Case 1
Sand


42-inch diameter
Shear Force (kips)
-10
-8
-6
-4
-2
0
2
4
Depth (ft)
0
0.5
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1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
Bureau of Engineering
GEOTECHNICAL ENGINEERING DIVISION

September 13, 2018

SUPPLEMENTAL GEOTECHNICAL REPORT – VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
W.O. E170164D **GED FILE NO. 17-137**

INTRODUCTION

The Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division (GED) has prepared this report to provide supplemental recommendations for the project. The GED's original geotechnical engineering report dated October 11, 2017 was approved by the Los Angeles Department of Building and Safety (LADBS), Grading Division on November 3, 2017 under Log Number 100429. All previous recommendations for the project remain applicable, except those specifically modified herein.

PROJECT DESCRIPTION

At the time our original report was prepared, the project included the installation of four new light poles, one near each corner of the existing pool.

The project now includes construction of a pedestrian access ramp on the west side of the existing administration building. The ramp will extend from the sidewalk on the east side of Irma Avenue to the west entrance of the building. The preliminary plan, cross-section, and elevation are presented on Drawing No. L401, which is attached to this report. As shown on Section B-B', the ramp will be approximately 11½ feet wide, and the ramp wall(s) will retain up to about 8 feet of soil.

BACKGROUND

Uncertified fill was encountered in all three borings during our original (2017) investigation. The fill thickness ranges from approximately 3½ feet to 12½ feet. The thickest fill was encountered in Boring VH-2, which was drilled west of the pool and east of the administration building. The GED is of the opinion that the fill in this boring may have been classified incorrectly, and the actual fill thickness may be less than 12½ feet. The fill mostly consists of silty sand with gravel and some cobbles. Exploratory borings were not advanced in the proposed handicap ramp area.

The native soil encountered in our previous (2017) borings mostly consists of poorly graded gravel with silt, well graded sand with silt, and silty sand. Gravel and cobbles were also encountered in the native soil. The field Standard Penetration Test blow counts indicate the native soil is medium dense to very dense.

SUPPLEMENTAL GEOTECHNICAL INVESTIGATION

Geocon West, Inc. (Geocon) completed supplemental field exploration and laboratory testing associated with the current project. Geocon summarized their findings in a data report dated September 12, 2018, and a copy of their report is attached to this report. The GED has reviewed Geocon's report, concurs with the information contained in it and accepts responsibility for the use of its contents.

Field Exploration

Geocon attempted to hand auger two exploratory borings in close proximity to the proposed ramp. Refusal was encountered in both borings very close to the ground surface. Geocon also excavated a test pit using hand digging equipment to a depth of approximately 10½ below ground surface. The locations of the limited access borings and exploratory test pit are presented on Figure 2 of Geocon's data report.

Laboratory Testing

The laboratory testing program included in-situ moisture content and dry density, maximum dry density and optimum moisture content (i.e. compaction), consolidation, direct shear, and fines content.

SUPPLEMENTAL FINDINGS

Subsurface Conditions

Uncertified fill up to approximately 7½ feet was encountered in the exploratory test pit, TP1. The fill mostly consists of silty sand with gravel. Fill indicators, including concrete, asphalt, and nails were observed in this material. The fill-native contact is expected to be close to the street elevation (approximately 1552 feet). The native soil encountered in TP1 is consistent with that encountered in our previous (2017) borings.

Laboratory Test Results

Direct shear tests were performed on three relatively undisturbed samples. Two of the samples consisted of the existing fill material from approximate depths of 2½ and 5 feet. The remaining sample consisted of the native soil from a depth of approximately 7½ feet.

The direct shear test results indicate the silty sand with gravel fill has an ultimate friction angle and cohesion value ranging from approximately 32 to 33 degrees and 130 to 230 pounds per square foot (psf), respectively.

The direct shear test results indicate the ultimate friction angle and cohesion value of the native soil is 37 degrees and 90 psf, respectively. Our previous (2017) test results indicated the the ultimate friction angle and cohesion value of the native soil ranges from 28 to 34 degrees and 6 to 426 psf, respectively.

RECOMMENDATIONS

Supplemental recommendations are provided in the following sections for earthwork, temporary excavations, temporary shoring, foundations, lateral load resistance, lateral earth pressures, and retaining wall drainage.

Earthwork

We anticipate most of the access ramp will be supported on shallow footings embedded into native soil; therefore, vertical and lateral over-excavation will not be required. Footings may be supported on both native soil and compacted fill.

If the uncertified fill thickness is greater than anticipated, over-excavation may be required in some areas. Existing uncertified fill shall be removed beneath proposed footings and replaced with properly compacted fill. If vertical over-excavation is performed, compacted fill shall extend laterally beyond each edge of the footings. The amount of lateral excavation shall generally be equal to the fill thickness below the bottom of footings or two feet, whichever is greater, except at the west property boundary. We anticipate the footings near the west property boundary will be embedded into native soil.

Prior to fill placement, the excavation bottom shall be scarified 6 inches, moisture conditioned and compacted to at least 90 percent relative compaction (RC), as determined by ASTM D1557. If native soil is encountered at the bottom of footing elevation, this material shall be scarified at least 12 inches, moisture conditioned, and compacted to at least 95 percent RC. The earthwork shall result in at least 12 inches of compacted fill beneath all structural foundations. The lateral over-excavation shall extend at least 1 foot beyond the edge of the footings.

We expect the existing fill and native soil can be reused as compacted fill. All deleterious materials, including materials greater than 3 inches in diameter, shall be removed if these materials are to be reused.

Fill shall be moisture conditioned to within 3 percent above the optimum moisture content and compacted. Primary structural fill beneath footings shall be compacted to at least 95 percent RC; however, 90 percent RC is acceptable if the results of a hydrometer test indicate the clay content of the fill material is at least 15 percent. All secondary fill, including retaining wall backfill, shall be compacted to at least 90 percent RC.

Temporary Excavations

Temporary excavations may be used where space is available. Temporary excavations shall not extend within the theoretical 1:1 projection of the existing building footing foundations. Vertical excavations shall not exceed 4 feet in height. The existing uncertified fill and native soil may be sloped back no steeper than 1:1 (H:V) to 7 feet in vertical height. The existing fill and native soil may be sloped back no steeper than 1.5:1 for slope heights greater than 7 feet.

Temporary Shoring

Temporary shoring may be required to facilitate the earthwork beneath the proposed ramp foundations, and particularly in the southeast portion. The contractor is responsible for the shoring design. The GED shall be provided an opportunity to review the shoring design prior to installation.

Cantilever or braced shoring may be considered at this site as an alternative to temporary excavations. Shoring systems shall be designed for a maximum deflection of ½-inch. Sheet piles, box shoring, and/or trench shields (i.e. speed shores) are not acceptable. Prior to excavation, it is recommended that walls, structures, or portions of structures within a horizontal distance of 1½ times the depth of the excavation be inspected to determine their present condition. For documentation purposes, photographs should be taken of preconstruction conditions and level surveys should be performed.

During construction, deflection of the shoring system shall be monitored initially on a frequent basis until it can be demonstrated that adjacent structures are not adversely impacted. At that time, less frequent monitoring can be performed. In addition, structures should be periodically monitored for signs of distress. If distress is observed, the GED shall be contacted immediately.

Cantilever or braced shoring shall be designed for the lateral earth pressures shown on Figure 1. The values shown on Figure 1 are based on the assumption that (1) the shored soil material is level at ground surface, (2) the exposed height of the shoring is no greater than 12 feet, and (3) the shoring is temporary, and will not be required to support the soil longer than about six months. Surcharge coefficients of 0.31 and 0.47 may be used with uniform vertical surcharges for cantilever and braced shoring lateral earth pressures, respectively. These surcharge pressures should be added to the lateral earth pressures.

Cantilever Shoring – Soldier Piles and Lagging

Drilled holes for soldier piles shall be backfilled with Controlled Low Strength Material (CLSM) per Greenbook Section 201, from the bottom of lagging (i.e. proposed excavation depth) to the ground surface. The CLSM shall contain a minimum of one sack of Portland cement per cubic yard of slurry and a maximum of two sacks of Portland cement per cubic yard of slurry. Drilled holes below the excavation bottom shall be backfilled with structural concrete. To reduce the potential for sloughing and caving of the soils, continuous lagging shall be installed between the soldier piles. All lumber shall be pressure-treated in accordance with Specification C-2 of the American Wood Preservers Association.

There is the potential for soil caving to occur during pile excavation, and if caving conditions are encountered, steel casing shall be used to support the excavation. The inside diameter of the steel casing shall be at least as large as the diameter of the shoring pile. Drilling shall be accomplished within the steel casing. Even though the piles will be used for temporary shoring, it will be necessary for the contractor to remove loose soil from the bottom of the pile excavation. Upon completion of drilling, secure covers shall be placed over the excavations. Concrete placement shall be completed within 12 hours of drilling and drilled holes shall not be left open overnight. Drilled excavations shall be observed and approved by the GED prior to installation of the steel beams.

Concrete placement by the pumping and tremie method may be required. No drilled hole should be drilled immediately adjacent to another pile until the concrete in the other pile has attained its initial set. The tremie pipe, if required, shall extend to the bottom of the pile excavation. During concrete placement, the bottom of the tremie pipe shall remain embedded at all times in at least 3 feet of concrete. During concrete placement, the casing shall be removed slowly. Furthermore, the casing shall extend above ground surface and shall always be filled with a sufficient head of concrete above the bottom of the casing before it is removed.

Shallow Foundation

The proposed access ramp may be supported on footings that are embedded at least 24 inches below the lowest adjacent grade and at least 6 inches into native soil, whichever is greater. The minimum footing width shall be 18 inches. The actual footing dimensions will depend on the results of the lateral load analysis, which shall be performed by the structural engineer.

Footings may be designed for a net allowable bearing capacity of 2,500 pounds per square foot (psf) for dead plus live loads. A 1/3 increase may be used for short term loading conditions such as wind or seismic forces. The total settlement is not expected to exceed 1 inch, and the differential settlement is not expected to exceed ½ the total settlement.

Lateral Load Resistance

Lateral load resistance for the footings will be developed by passive soil pressure against the sides of footings below grade and by friction acting along the base of concrete footings bearing on native soil and/or compacted fill. An allowable passive pressure of 250 psf per foot of depth, beginning from 1 foot below the lowest adjacent grade, may be used for design purposes. An allowable passive pressure of 250 psf per foot of depth, *beginning from the ground surface*, may be used if footings are located directly adjacent to exterior slabs/pavement. The allowable passive pressure is only applicable for level (ground slope equal to or flatter than 5:1 (horizontal:vertical) conditions. An allowable coefficient of friction of 0.35 may be used for dead and sustained live loads for frictional resistance of the footings constructed directly on compacted fill.

Lateral Earth Pressures

Ramp walls designed to rotate at the top ($y/H \geq 0.004$) shall be designed to withstand an "active" pressure of 35 pounds per cubic foot (pcf). Ramp walls designed to be rigid ($y/H < 0.004$) shall be designed to withstand an "at-rest" pressure of 55 pcf. The recommended lateral earth pressure value assumes that the surface of the backfill behind the walls is close to horizontal (inclination of 5:1 or flatter). The foregoing lateral earth pressure assumes non-expansive backfill and no buildup of hydrostatic pore pressure. Care should be exercised to prevent infiltration of surface water behind the walls.

The 2017 Los Angeles Building Code requires that retaining walls greater than 6 feet high be designed for a dynamic earth pressure. We estimated the seismically induced increment using the provisional recommendations by Lew et al. (2010) and the Mononobe-Okabe (M-O) method. The horizontal acceleration used in the (M-O) method, k_h, was assumed to be 1/3 of the PGA_M. The PGA_M at the project site is equal to 1.00g; therefore, k_h, was assumed to be 0.33g. Also, a total unit weight of 125 pcf was assumed for the site soil, which is based on the results of in-situ moisture and dry density tests. The total active pressure during the earthquake, P_{AE}, was calculated to be 66 pcf. If the walls are designed for an active condition, the seismic pressure increment shall be 30 pcf, which is applied as a triangular pressure distribution. If the walls are designed for an "at-rest" condition, the seismic earth pressure increment shall be 11 pcf, which is also applied as a triangular pressure distribution.

Retaining Wall Drainage

The lateral earth pressures provided above assume non-expansive backfill and no buildup of hydrostatic pressure behind the wall. To prevent buildup of hydrostatic pressure behind the ramp walls, the subsurface drainage system shall consist of granular filter material and a rigid PVC perforated subdrain pipe. A 12-inch-thick layer of filter material should be placed against the wall and extended up to approximately 12 inches below the backfill surface. The filter material should be a clean, well-graded mixture of sand and gravel meeting the following grading requirements:

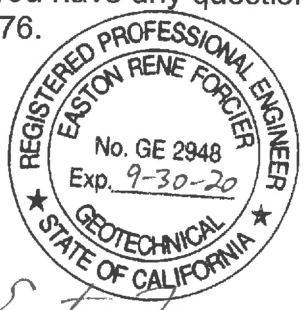
Sieve Size	Percentage Passing Sieve
1"	100
¾"	90-100
⅜"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

An alternative to graded filter material is to use clean gravel (¾-inch size) with a geotextile placed between the gravel and backfill soil. The geotextile should be Mirafi 140NC or equivalent.

The perforated subdrain pipe shall be installed within the filter material near the bottom of the wall. The pipe should be at least 4 inches in diameter and be placed with the perforations downward. The pipe should be surrounded with granular material. The subdrain pipe should lead to a free discharge outlet such as a weep hole(s).

CLOSURE

If you have any questions about this report, please contact Easton Forcier at (213) 847-0476.

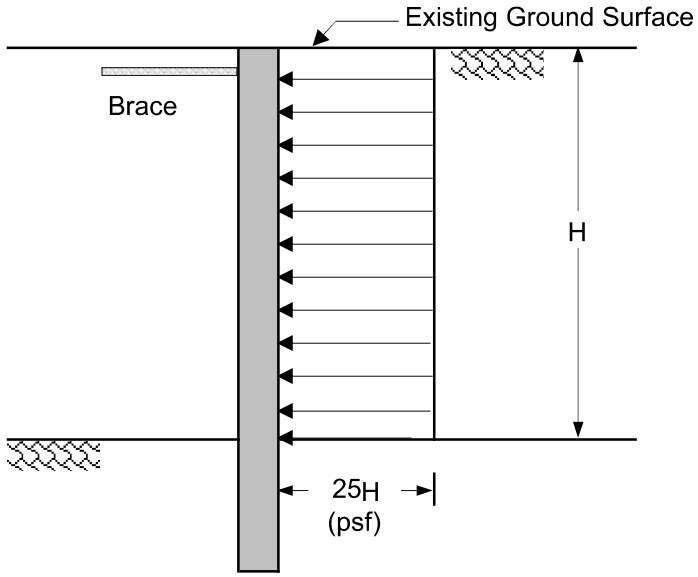


Easton R Forcier 9-13-18

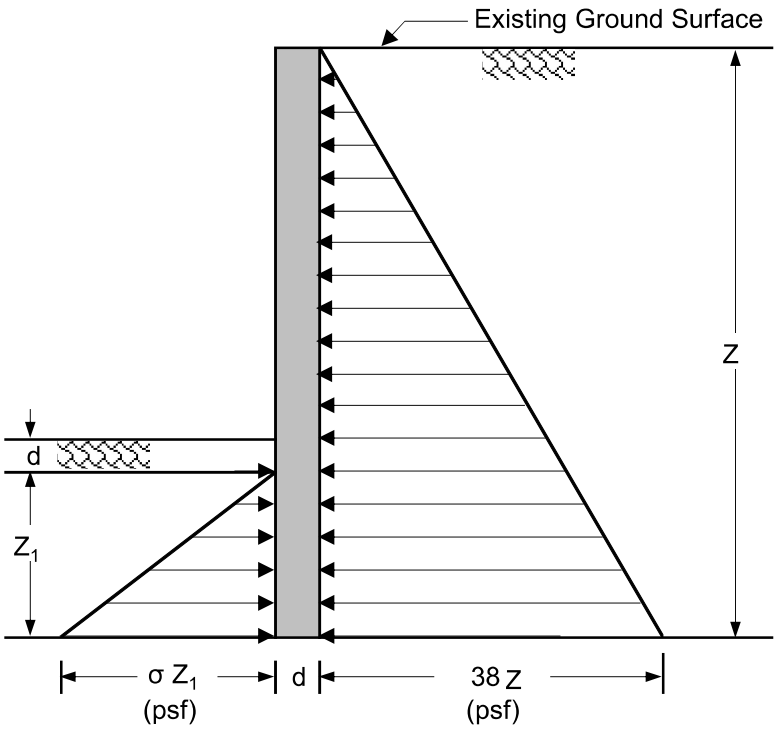
Easton R Forcier, GE 2948
Geotechnical Engineer II

Attachments: Drawing No. L401 – Preliminary Ramp Plan, Section and Elevation
Figure 1 – Lateral Earth Pressures for Temporary Shoring Systems
Geotechnical Data Report by Geocon West, Inc. dated 9/12/18

Q:\PROJECTS\2017\17-137 Verdugo Hills Pool and Bathhouse Improvement\Analysis\Lateral earth pressures shoring



BRACED SHORING



CANTILEVER SHORING

σ = 542 pcf for soldier piles spaced at least 2.5d apart
σ = 271 pcf for soldier piles spaced less than 2.5d apart

Notes:
1. Not to scale.
2. Dimensions are in feet.
3. Earth pressures shown are based on level backfill conditions behind shoring elements and groundwater below bottom of shoring elements.

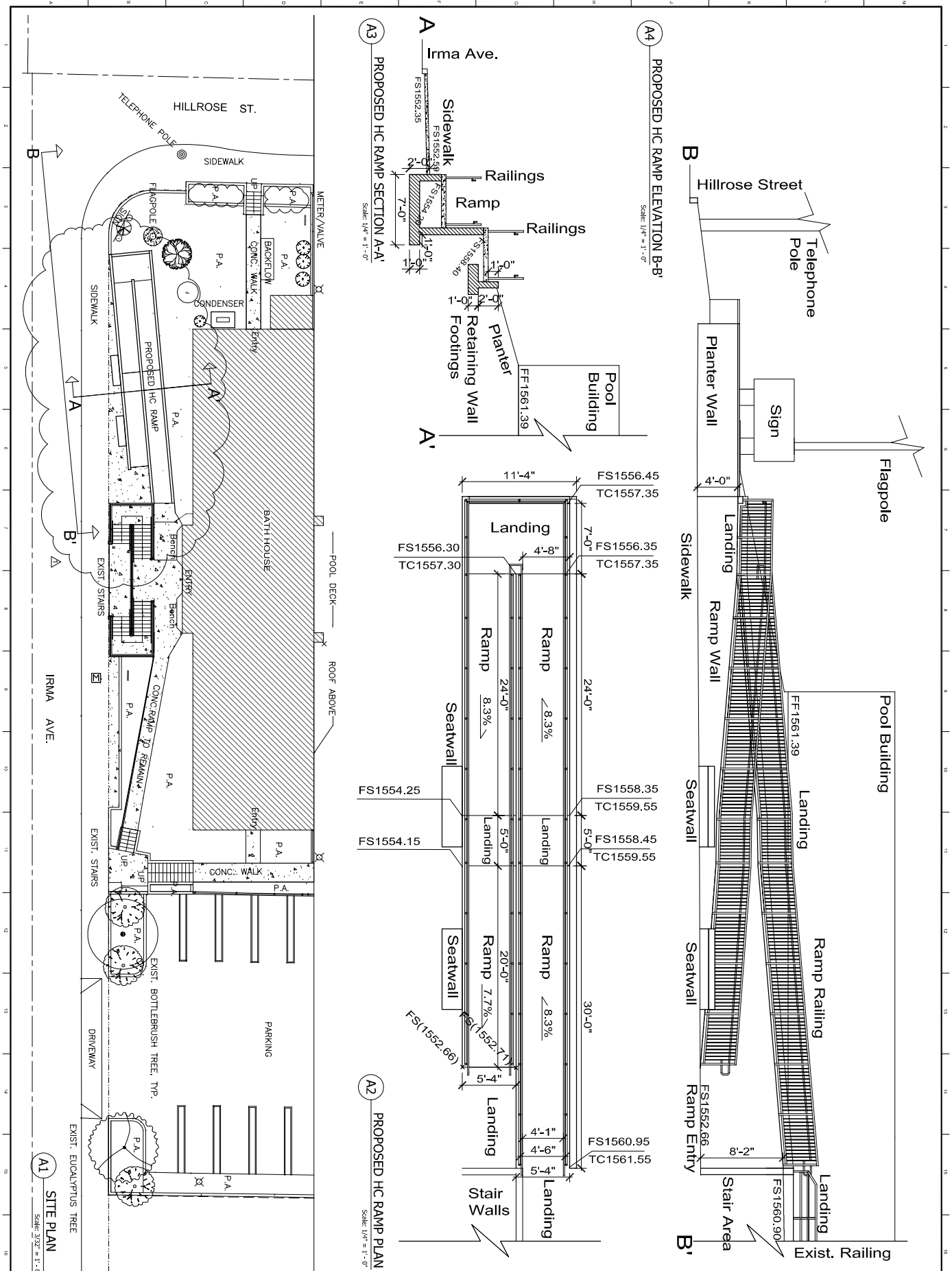
LATERAL EARTH PRESSURES FOR TEMPORARY SHORING SYSTEMS
VERDUGO HILLS POOL ACCESS RAMP
16054 Irma Avenue
Los Angeles, California

By: ERF	Date: 4/18/2018	GED File No.: 17-137
City of Los Angeles, DPW, BOE, Geotechnical Engineering Division		Figure 1

REVISION DATE: 4/4/2018 2:24 PM FILE: Q:\IN-HOUSE-DESIGN\VERDUGO HILLS POOL\LANDSCAPE\L402\HCRAMPCONCEPTCURRENT.DWG

REVISION DATES (DESIGN STAGE ONLY)

THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

VERTICAL CONTROL:	
HORIZONTAL CONTROL:	
SHEET TITLE:	PRELIMINARY HC RAMP PLANS, SECTION, & ELEVATION
PROJECT:	VERDUGO HILL POOL BUILDING REFURBISHMENT
ADDRESS:	10654 IRMA AVE. TUJUNGA, CA. 91042

GARY LEE MOORE, P.E. CITY ENGINEER

ARCHITECTURAL DIVISION DATE:

ARCHITECT:	Gregory Nuno LIC. NO. —
DESIGNED BY:	Gregory Nuno
DRAWN BY:	Gregory Nuno
CHECKED BY:	Jane Adrian
APPROVED BY:	MAHMOOD KARIMZADEH, A.I.A., PRINCIPAL ARCHITECT

REGISTERED LANDSCAPE ARCHITECT GREGORY J. NUNO No. 3597 Registration 06-31-19 Renewal Date STATE OF CALIFORNIA

NO.	REVISIONS:	DATE:	BY:
1	HANDICAPPED RAMP	04-04-18	GN

SERIAL NO.

INDEX NO. -

BUILDING NO. -

ENGINEERING CITY OF LOS ANGELES

PLOT REQ: 1420787.2 PM —

WORK ORDER NO.	DRAWING NO.	SHEET	OF	SHEETS
E1701640	-	L401		

PLANT FILE NO.: -

GEOCON
WEST, INC.

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

GEOTECHNICAL DATA REPORT

VERDUGO HILLS POOL
PEDESTRIAN ACCESS RAMP
PROJECT
10654 IRMA AVENUE
LOS ANGELES, CALIFORNIA
W.O. E170164D GED FILE 17-137
TOS NO. 17-137A

PREPARED FOR

CITY OF LOS ANGELES, GEOTECHNICAL ENGINEERING DIVISION
LOS ANGELES, CALIFORNIA

PROJECT NO. A8950-06-15

SEPTEMBER 12, 2018

Project No. A8950-06-15
September 12, 2018

VIA EMAIL

Patrick Schmidt
City of Los Angeles, Geotechnical Engineering Division
1149 South Broadway, Suite 120
Los Angeles, California 90015-2213

Subject: GEOTECHNICAL DATA REPORT
VERDUGO HILLS POOL
PEDESTRIAN ACCESS RAMP PROJECT
10654 IRMA AVENUE
LOS ANGELES, CALIFORNIA
W.O. E170164D GED FILE 17-137 TOS NO. 17-137A

Dear Mr. Schmidt:

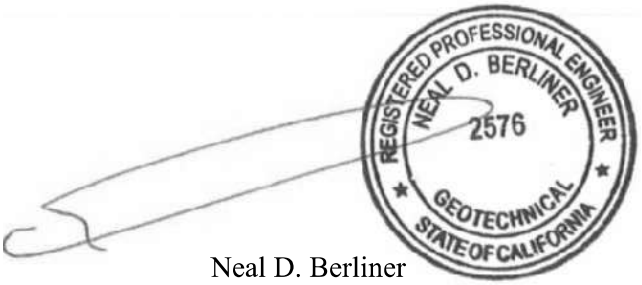
In accordance with your authorization of our proposal dated June 29, 2018, we have prepared this geotechnical data report for the Verdugo Hills Pool Pedestrian Access Ramp project located in the City of Los Angeles, California. The accompanying report presents information regarding the geotechnical site investigation and laboratory testing programs, and the results of the laboratory tests performed.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,

GEOCON WEST, INC.





Rex Panoy
Staff Engineer

Neal D. Berliner
GE 2576

(Email) Addressee

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3. LABORATORY TESTING 2

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Figure B6, Consolidation Test Results
Figure B7, Grain Size Analysis
Figure B8, Laboratory Test Results
Figure B9, Corrosivity Test Results

GEOTECHNICAL SITE INVESTIGATION

1. PURPOSE AND SCOPE

This geotechnical data report presents information regarding the geotechnical site investigation, laboratory-testing programs, and results of the laboratory tests performed for the Verdugo Hills Pool Pedestrian Access Ramp project located in the City Los Angeles, California (see Vicinity Map, Figure 1). The purpose of the geotechnical site investigation was to evaluate subsurface soil and geologic conditions underlying the site.

The project consists of the construction of a pedestrian/handicap access ramp that is 11½ feet wide and retains up to approximately 8 feet of soil. The ramp will extend to the north, originating from west entrance of the Bath House (see Figure 2).

2. SUBSURFACE EXPLORATION

The scope of our geotechnical site investigation included a site reconnaissance, field exploration, laboratory testing, and the preparation of this data report. The site was explored on August 1, 2018, by attempting to excavate borings using manual auger equipment. However, based on the presence of abundant gravel, refusal was encountered at depths of 1 foot and ½ foot in the hand auger borings B1 and B2, respectively. Based on input from the City of Los Angeles Engineering Geologist present during the exploration, a test pit was excavated to advance hand auger equipment within the test pit. The test pit was excavated to a maximum depth of 5½ feet below the ground surface and a hand auger boring excavated within the test pit where refusal was encountered at a depth of 10½ feet below the ground surface. The approximate locations of the excavations are depicted on the Field Exploration Location Map (see Figure 2). A detailed discussion of the field investigation, including the excavation logs, is presented in Appendix A.

Organic Vapor Analyzer (OVA) readings were obtained at each sample depth during the test pit excavation. The OVA readings, which measure volatile organic compounds, are included in the borings logs.

3. LABORATORY TESTING

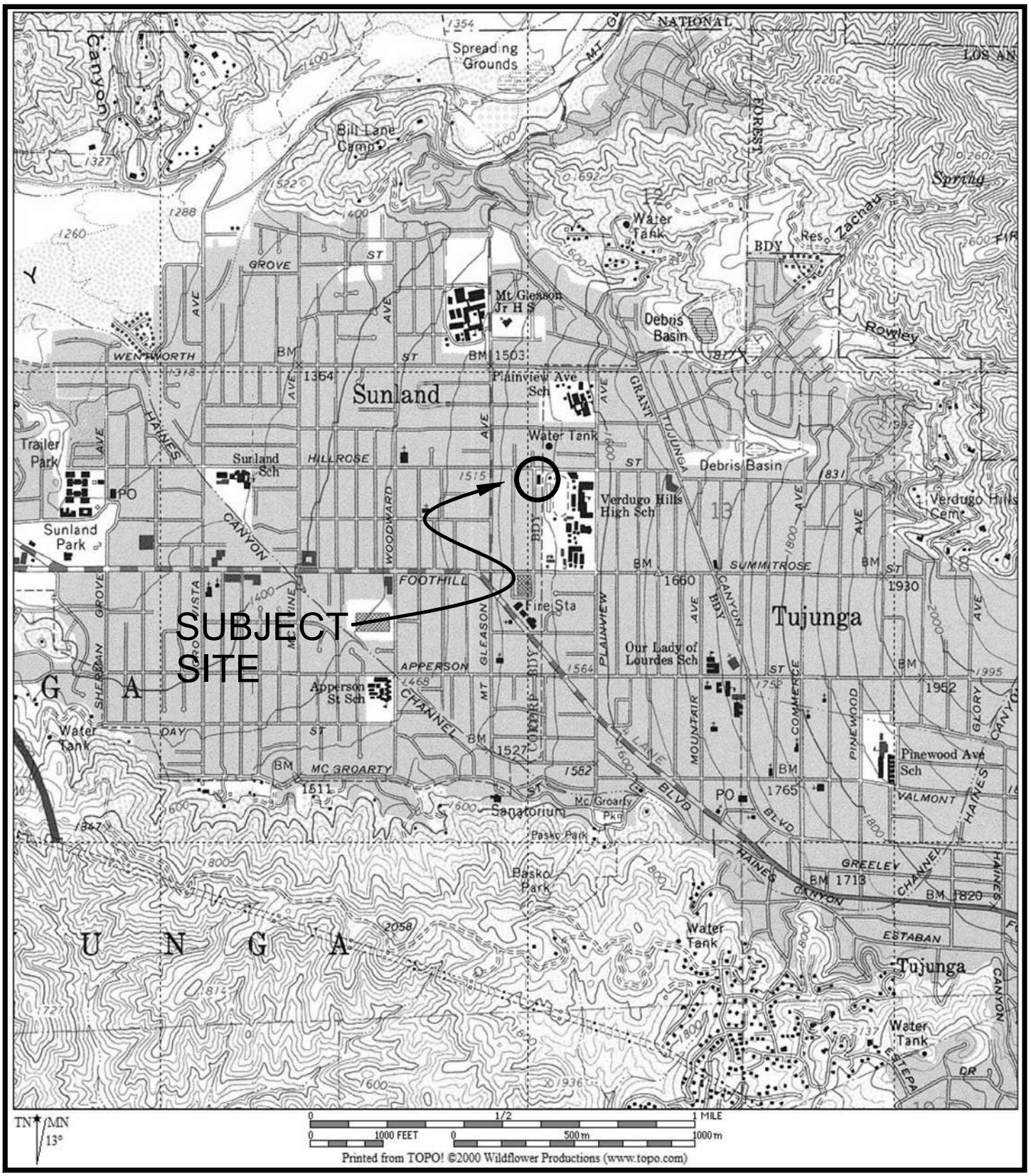
Laboratory tests were performed on selected undisturbed and remolded samples obtained during the investigation to determine pertinent physical soil properties as directed by the City of Los Angeles, Geotechnical Engineering Division (GED). The requested testing included the following;

- In-situ Dry Density and Field Moisture (ASTM D2937)
- Grain Size Analysis/#200 Wash (ASTM D1140)
- Direct Shear (ASTM D3080)
- Consolidation (ASTM D2435)
- Laboratory Maximum Dry Density and Optimum Moisture Content (ASTM D1557)

The in-situ dry density and field moisture content were determined from the sample prior to performing other tests whenever possible, and are reported to the nearest 0.1 pounds per cubic foot for the dry density, and 0.1 percent for the moisture content.

Each undisturbed soil sample was soaked for at least 24 hours prior to performing direct shear testing. The samples were tested at varying normal loads while fully submerged in water, with one sample utilized for each normal load.

Appendix B presents a summary of the laboratory test results.



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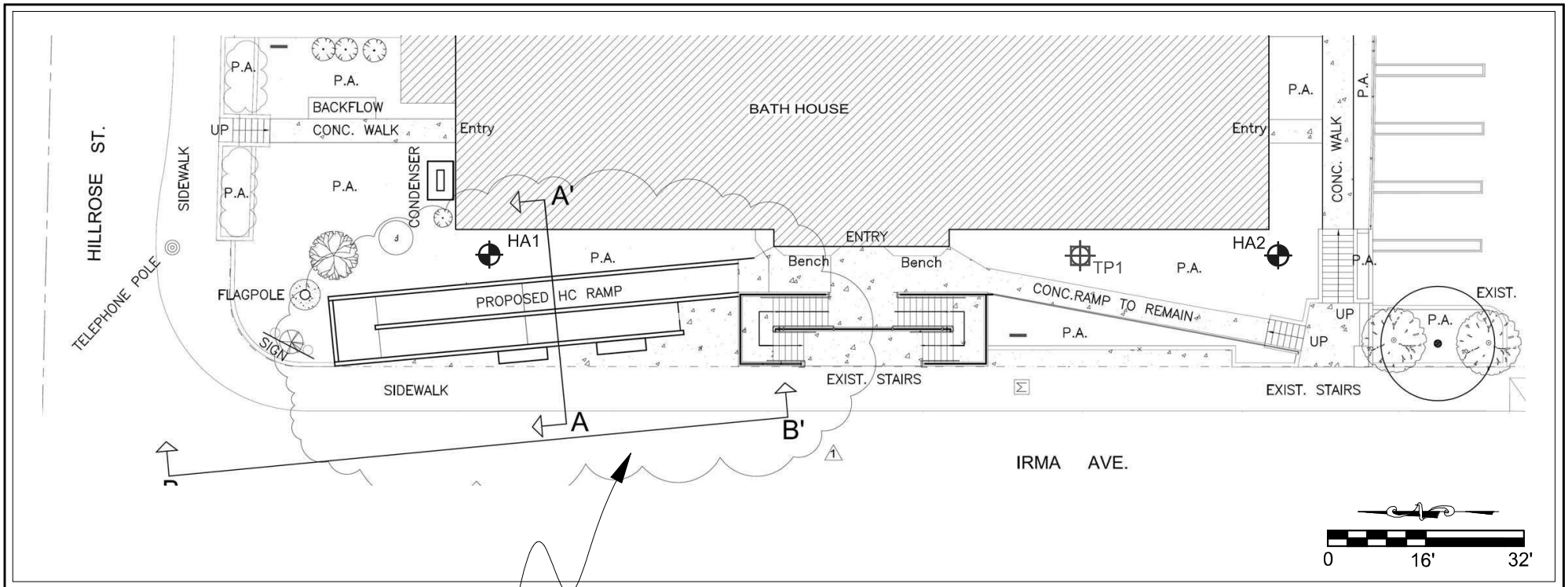
DRAFTED BY: RP	CHECKED BY: HHD

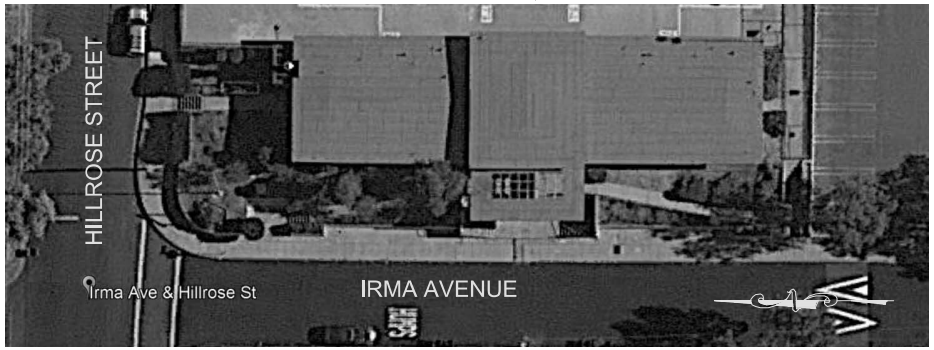
VICINITY MAP

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. 1





LEGEND

HA2 Approximate Location of Hand Auger Boring

TP1 Approximate Test Pit Location

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FIELD EXPLORATION LOCATION MAP
CITY OF LA BUREAU OF ENGINEERING
VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018 | PROJECT NO. A8950-06-15 | FIG. 2

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

The site was explored on August 1, 2018, by attempting to excavate borings using manual auger equipment. However, based on the presence of abundant gravel, refusal was encountered at depths of 1 foot and ½ foot in the hand auger borings B1 and B2, respectively. A test pit was excavated to a maximum depth of 5½ feet below the ground surface with a hand auger boring excavated within the test pit where refusal was encountered at a depth of 10½ feet. Representative and relatively undisturbed samples were obtained by driving a 3-inch-O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a slide-hammer. The California Modified Sampler was equipped with 1-inch high by 23/8-inch diameter brass sampler rings to facilitate removal and testing. Bulk samples of the upper 5 feet of soil from test pit were also obtained.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). The logs of the borings and test pit are presented on Figures A1 through A3. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the boring logs were revised based on subsequent laboratory testing. The locations of the borings are shown on Figure 2.

PROJECT NO. A8950-06-15

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B1** ELEV. (MSL.) -- DATE COMPLETED **8/1/18** EQUIPMENT **HAND AUGER** BY: **RP**	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand with Gravel, well graded, medium dense, slightly moist, brown, fine- to coarse-grained, abundant roots and gravel to 4". - refusal encountered due to abundant gravel and rocks Total depth of boring: 1 foot (refusal encountered) All fill. No groundwater encountered Backfilled with soil cuttings and tamped.			

Figure A1,
Log of Boring B1, Page 1 of 1

A8950-06-15 BORING LOGS.GPJ

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. A8950-06-15

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B2** ELEV. (MSL.) -- DATE COMPLETED **8/1/18** EQUIPMENT **HAND AUGER** BY: **RP**	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand with Gravel, well graded, medium dense, slightly moist, brown, fine- to coarse-grained, abundant rocks and gravel to 4". - refusal encountered due to abundant gravel and rocks Total depth of boring: 0.5 foot (refusal encountered) All fill. No groundwater encountered Backfilled with soil cuttings and tamped.			

A8950-06-15 BORING LOGS.GPJ

Figure A2,
Log of Boring B2, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8950-06-15

TEST PIT TP 1

ELEV. (MSL.) -- DATE COMPLETED **8/1/18**

EQUIPMENT **HAND AUGER** BY: **RP**

DEPTH IN FEET	SAMPLE NO. OVA READING	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand with Gravel, well graded, medium dense, slightly moist, brown, fine- to coarse-grained, gravel (to 4").			
2	BULK @0-5				- increase in moisture			
	B1@2.5' 0.1 PPM				- moist		113.5	11.0
4					- metal nail			
					- slightly moist, trace rootlets			
6	B1@5' 0.03 PPM				- concrete/asphalt fragments and metal nail - slight decrease in silt, abundant rocks and cobbles (up to 10")		102.6	8.9
8	B1@7'.5 0.1 PPM			SW	**ALLUVIUM** Sand with Gravel, well graded, slightly moist, light brown, fine- to coarse-grained, gravel (to 2.5").		102.3	8.7
10	B1@10' 0.1 PPM				- refusal encountered due to abundant gravel and rocks		129.0	4.5
					Total depth of boring: 10.5 feet (refusal encountered) Fill to 7.5 feet. No groundwater encountered Backfilled with soil cuttings and tamped.			

A8950-06-15 BORING LOGS.GPJ

Figure A3,
Log of Test Pit TP 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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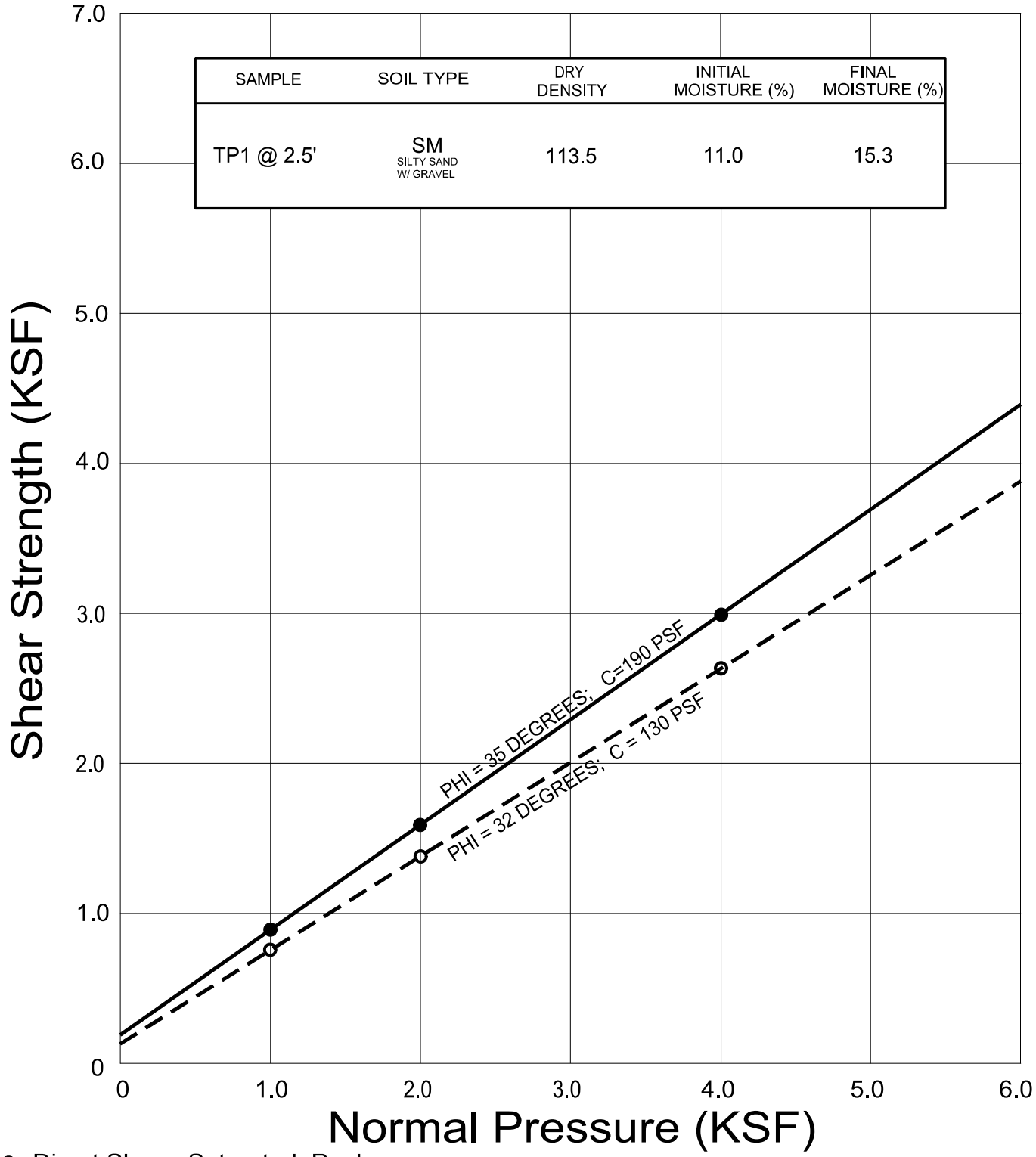
APPENDIX B

APPENDIX B

LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the International ASTM, or other suggested procedures. Selected samples were tested for direct shear strength, consolidation, fines content, and in-place dry density and moisture content. The results of the laboratory tests are summarized in Figures B1 through B9. The in-place dry density and moisture content of the samples tested are presented on the boring log, Appendix A.

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
TP1 @ 2.5'	SM SILTY SAND W/ GRAVEL	113.5	11.0	15.3



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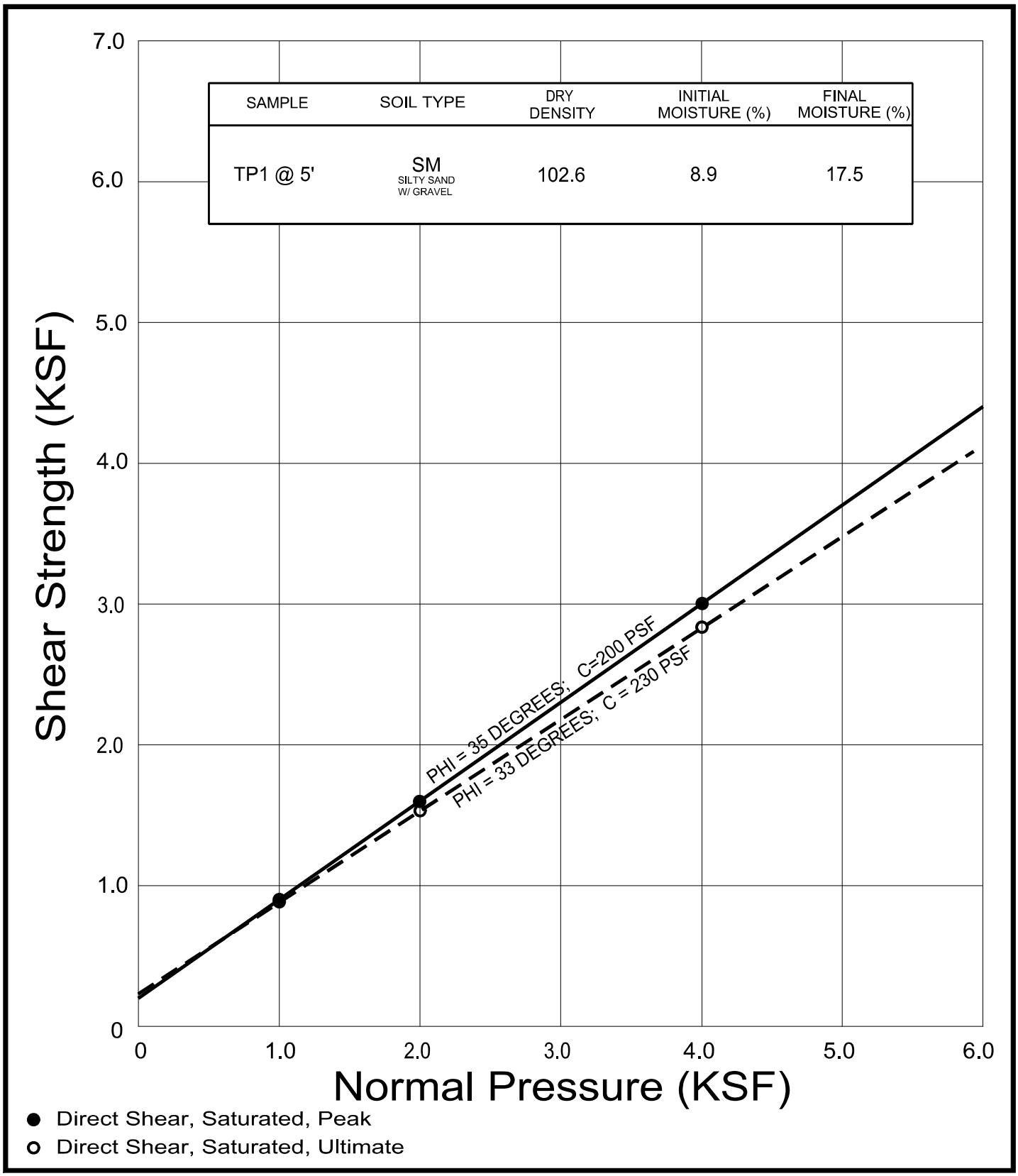
DIRECT SHEAR TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL BLDG. REFURBISHMENT
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B1



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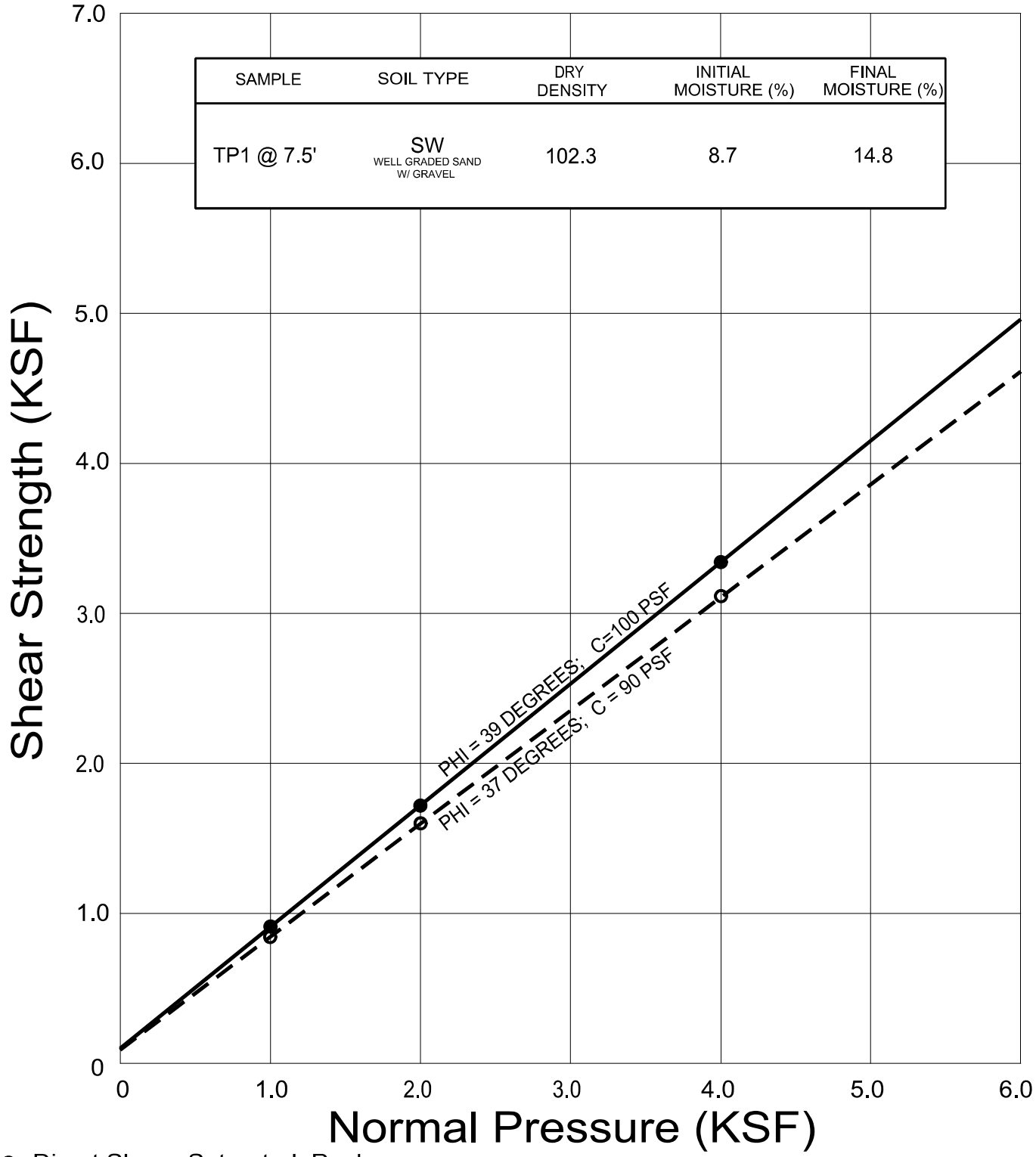
DIRECT SHEAR TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B2

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
TP1 @ 7.5'	SW WELL GRADED SAND W/ GRAVEL	102.3	8.7	14.8



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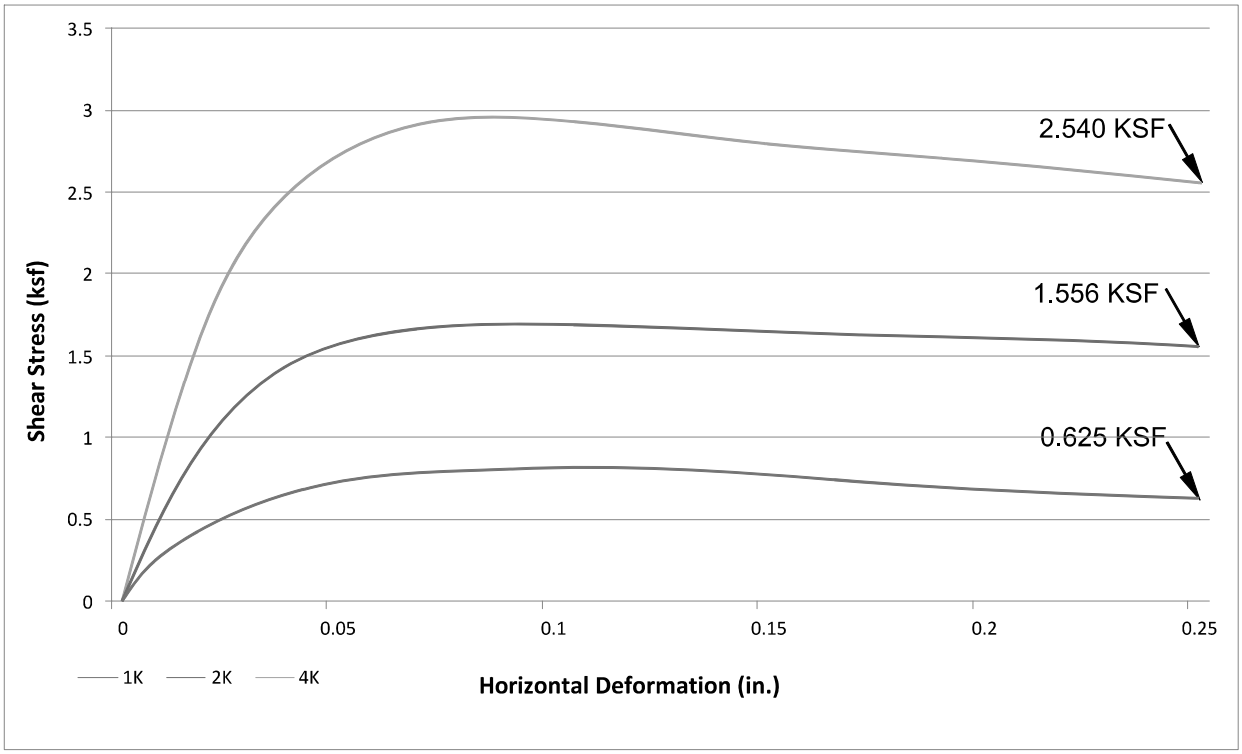
DIRECT SHEAR TEST RESULTS

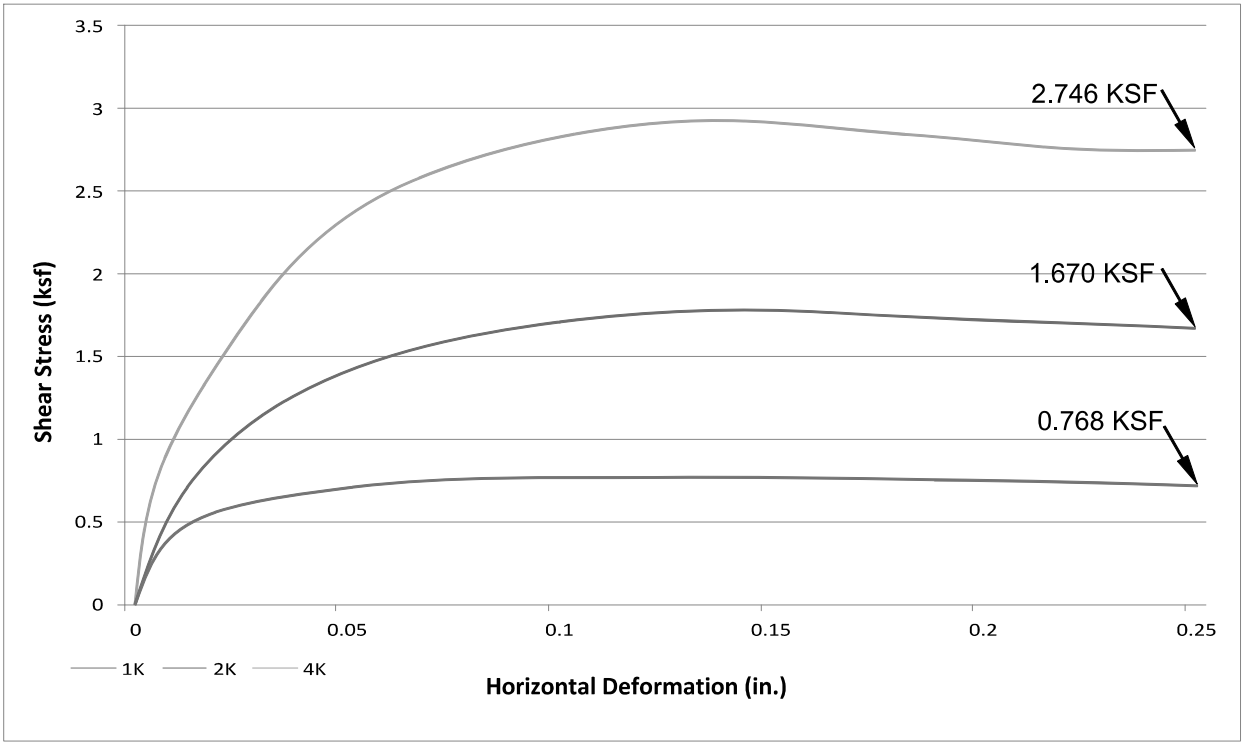
CITY OF LA BUREAU OF ENGINEERING
VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B3

TP1 @ 2.5'



TP1 @ 5'



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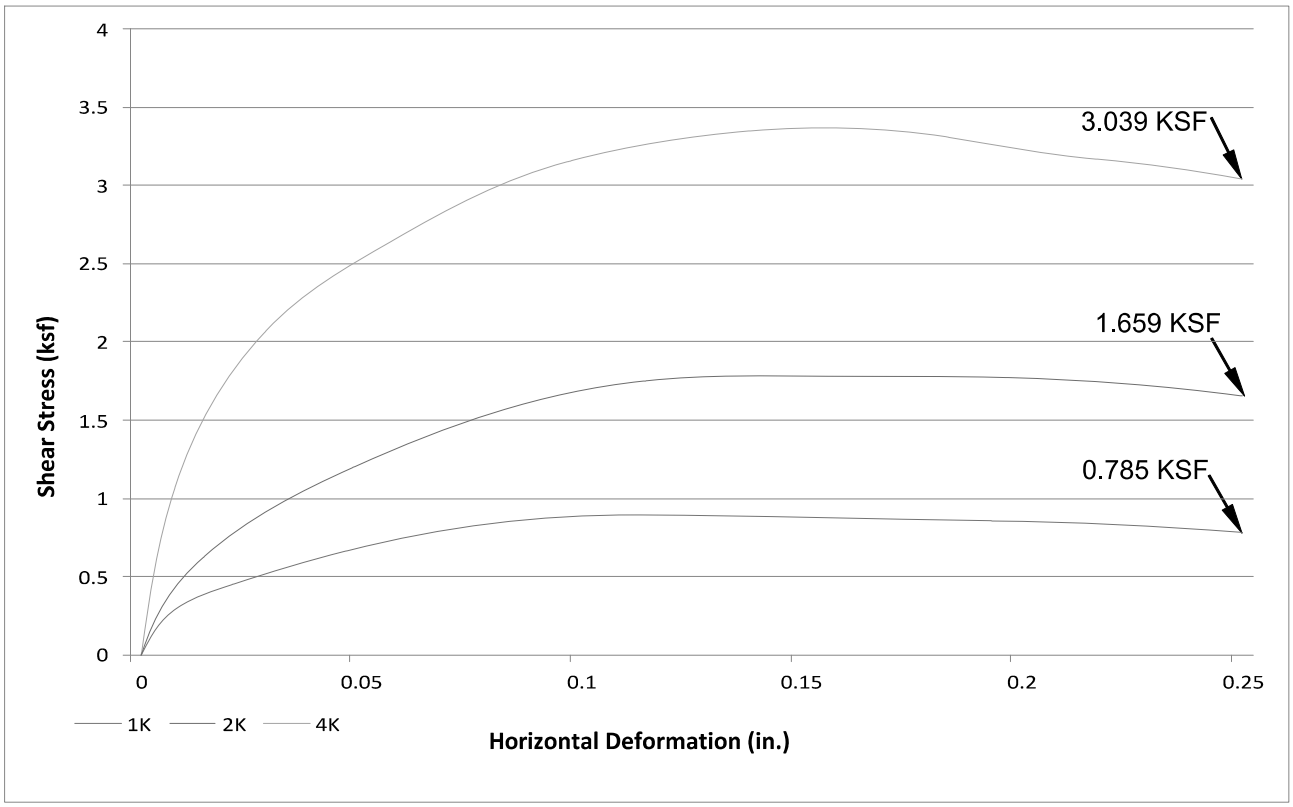
DIRECT SHEAR TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B4

TP1 @ 7.5'



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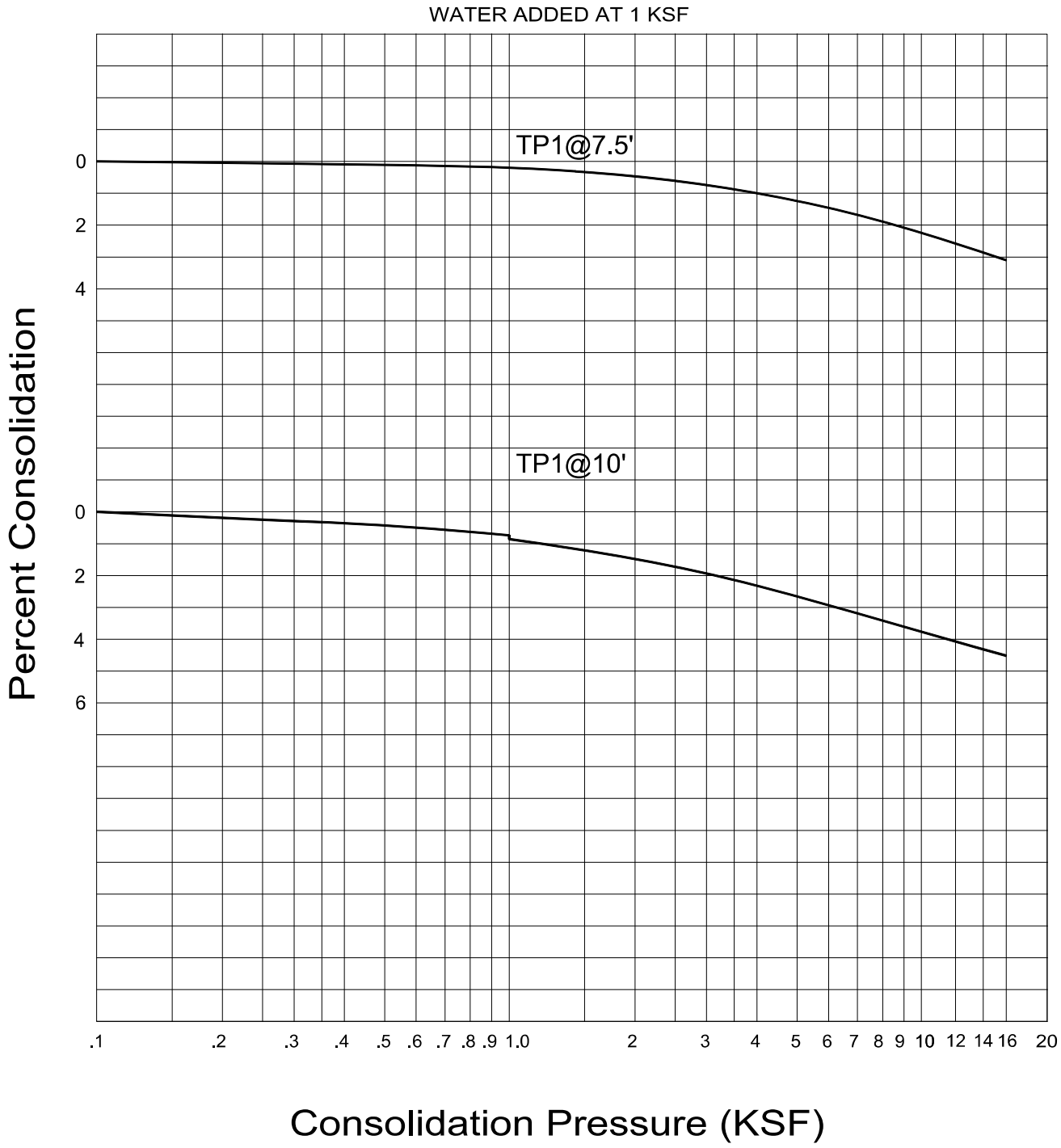
DRAFTED BY: RP	CHECKED BY: HHD

DIRECT SHEAR TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B5



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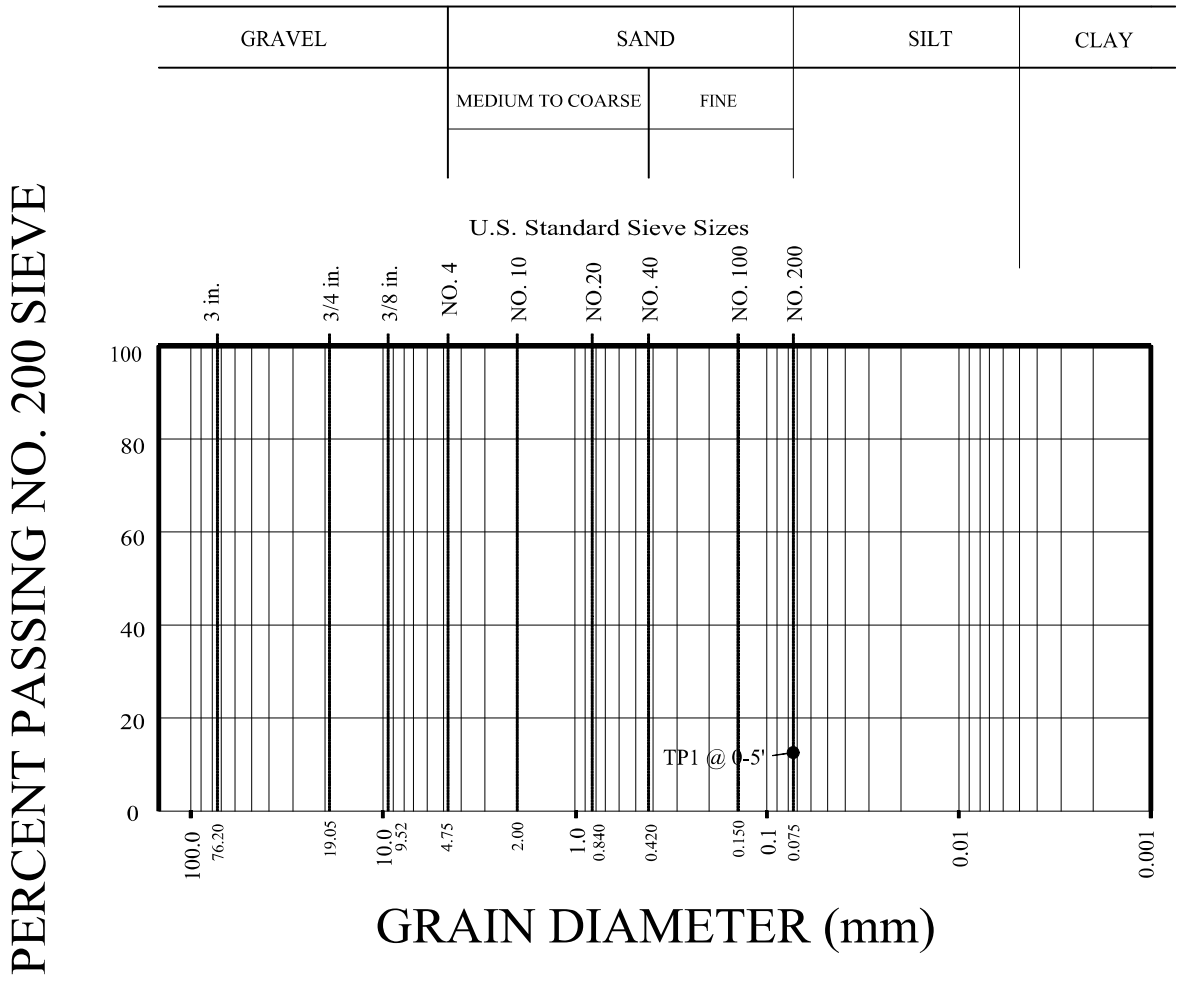
DRAFTED BY: RP	CHECKED BY: HHD

CONSOLIDATION TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL BLDG. REFURBISHMENT
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B6



SAMPLE	PERCENT PASSING NO. 200 SIEVE
TP1 @ 0-5'	12.8

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GRAIN SIZE ANALYSIS

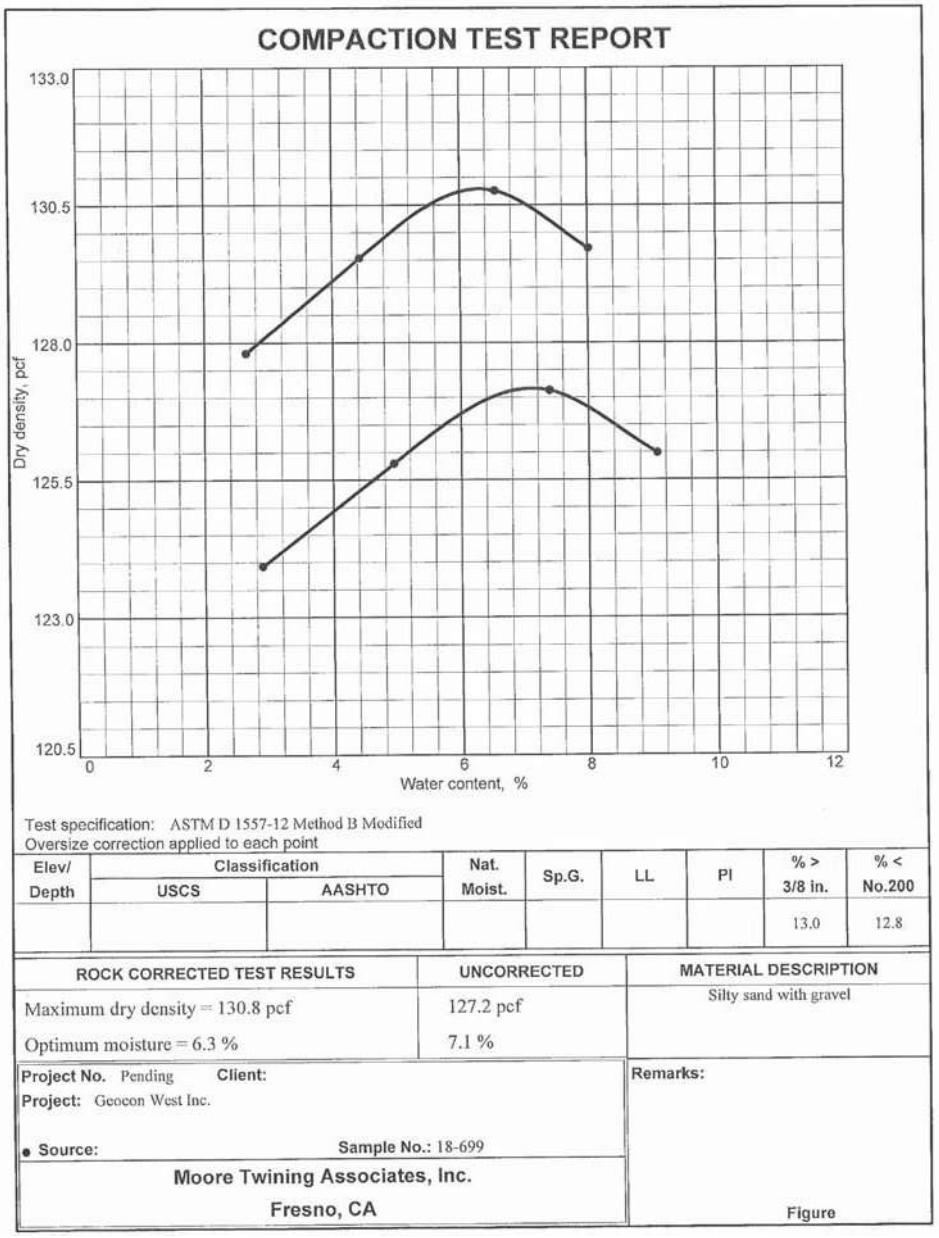
CITY OF LA BUREAU OF ENGINEERING

VERDUGO HILLS POOL BLDG. REFURBISHMENT
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018	PROJECT NO. A8950-06-15	FIG. B7

SUMMARY OF LABORATORY MAXIMUM DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS (ASTM D1557-12)

Sample No.	Soil Description	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture (%)
TP1 @ 0-5'	Brown Silty Sand with Gravel	130.8	6.3



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LABORATORY TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING
VERDUGO HILLS POOL BLDG. REFURBISHMENT
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

AUG. 2018	PROJECT NO. A8950-06-15	FIG. B8

SUMMARY OF LABORATORY POTENTIAL OF HYDROGEN (pH) AND RESISTIVITY TEST RESULTS CALIFORNIA TEST NO. 643

Sample No.	pH	Resistivity (ohm centimeters)
TP1 @ 0-5'	6.55	17,000 (Mildly Corrosive)

SUMMARY OF LABORATORY CHLORIDE CONTENT TEST RESULTS EPA NO. 325.3

Sample No.	Chloride Ion Content (%)
TP1 @ 0-5'	0.008

SUMMARY OF LABORATORY WATER SOLUBLE SULFATE TEST RESULTS CALIFORNIA TEST NO. 417

Sample No.	Water Soluble Sulfate (% SO_4)	Sulfate Exposure*
TP1 @ 0-5'	0.000	Negligible

* Reference: 2016 California Building Code, Section 1904 and ACI 318-11 Section 4.3.

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CORROSIVITY TEST RESULTS

CITY OF LA BUREAU OF ENGINEERING
VERDUGO HILLS POOL BLDG. REFURBISHMENT
10654 IRMA AVENUE
TUJUNGA, CALIFORNIA

SEP. 2018 | PROJECT NO. A8950-06-15 | FIG. B9

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
Bureau of Engineering
GEOTECHNICAL ENGINEERING DIVISION

December 6, 2018

ADDENDUM TO SUPPLEMENTAL GEOTECHNICAL REPORT
VERDUGO HILLS POOL – PEDESTRIAN ACCESS RAMP
10654 IRMA AVENUE
W.O.# E170164D **GED FILE NO. 17-137**

Reference: The City of Los Angeles, Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division, "Supplemental Geotechnical Report – Verdugo Hills Pool, Pedestrian Access Ramp, 10654 Irma Avenue," dated September 13, 2018.

The City of Los Angeles Department of Public Works, Bureau of Engineering, Geotechnical Engineering Division (GED) has prepared this addendum report to provide supplemental recommendations for temporary excavations. The recommendations provided in this addendum supercede those in the referenced report. All other recommendations, except those specifically modified herein, remain applicable.

Temporary excavations up to a maximum vertical height of 11 feet may be sloped no steeper than 1:1. As mentioned in the referenced report, temporary excavations shall not extend within the 1:1 theoretical projection of the existing building footings. We anticipate temporary shoring will be required to facilitate construction of the ramp in areas close to the existing building.

CLOSURE

If you have any questions about this report, please contact Easton Forcier at (213) 847-0476.



Easton 12-6-18

Easton R Forcier, GE 2948
Geotechnical Engineer II

Q:\PROJECTS\2017\17-137 Verdugo Hills Pool and Bathhouse Improvement\Reports\Addendum 12-6-18.doc

Aurora
INDUSTRIAL HYGIENE

June 30, 2021

Dave Romero, Environmental Specialist
City of Los Angeles
Department of Recreation and Parks
221 North Figueroa Street, Suite 400
Los Angeles, CA 90012
rap.environmental@lacity.org

Asbestos, Lead, PCBs, and Universal Waste: Verdugo Hills Pool Complex
10654 Irma Ave, Tujunga, CA 91042

To Whom It May Concern:

This report documents the findings, recommendations, and conclusions from the sampling conducted by Robert Rinck, a California Department of Public Health Certified Inspector/Assessor (CDPH #00002723) and a California Certified Asbestos Consultant (CAC #03-3374) and Ethan Rinck, a California Department of Public Health Certified Sampling Technician (CDPH #00001916). The purpose of the survey was to provide asbestos, lead, and polychlorinated biphenyl (PCBs) sampling at the Verdugo Hills Pool Complex located at 10654 Irma Avenue in Tujunga, California. The inspection was conducted on June 17, 2021. All information was reviewed and the final report signed by Grace M. Rinck, a Certified Industrial Hygienist (CIH), CAC and CDPH Certified Inspector/Risk Assessor.

EXECUTIVE SUMMARY

The window putty on twenty-five windows was determined to contain asbestos.

Table 1 - ACM

Material	Location	Cond.	DP	Amount
Window putty	Windows	Damaged	Med.	25 windows

The following surfaces were found to be painted with Lead-Based Paint (0.7 mg/m^2 or greater):

Table 2 – LBP

Room/Area	Component	Substrate	Color	Cond.	Result
Exterior	Fascia	Wood	White	Poor	1.2
Exterior	Eaves	Wood	White	Fair	3.1

The following components were found to be lead-containing:

Table 3 – Lead Containing Components

Room/Area	Component	Substrate	Color	Cond.	Result
Restrooms	Toilets	Porcelain	White	Intact	5.1
Women's Locker Rm.	Shower tile wall	Ceramic	Tan	Intact	0.1
Men's Locker Rm.	Shower tile wall	Ceramic	Tan	Intact	0.1
Locker rooms	Janitor sinks	Porcelain	White	Intact	0.1
Men's RR	Urinal	Porcelain	White	Intact	4.7
Men's RR	Tile wall at sink	Ceramic	White	Intact	0.1

Lead-containing paint (defined as less than 0.7 mg/m^2 but greater than 0.06 mg/m^2) was detected on the following components:

Table 4 – Lead Containing Paint

Room/Area	Component	Substrate	Color	Cond.	Result
Exterior	Doorframe	Metal	Brown	Intact	0.15
Exterior	Lattice	Wood	White	Poor	0.15
Exterior	Doorframe	Metal	Brown	Intact	0.2
Exterior	Gate	Metal	Brown	Poor	0.18
Exterior	Gate panel	Metal	Brown	Intact	0.1
Exterior	Doorframe	Metal	Brown	Intact	0.14
Exterior	Downspout	Metal	Tan	Intact	0.28
Center	Wall	Brick	Tan	Intact	0.12
Center	Wall	Brick	Tan	Intact	0.07
Center	Baseboard	Concrete	Tan	Fair	0.15
Women's RR	Door	Metal	Tan	Intact	0.3
Women's RR	Doorframe	Metal	Tan	Intact	0.4
Women's RR	Wall	Metal	Green	Intact	0.29
Women's Locker Rm.	Wall	Brick	Tan	Fair	0.13
Women's Locker Rm.	Baseboard	Concrete	Tan	Fair	0.3
Women's Locker Rm.	Door	Metal	Tan	Intact	0.4
Women's Locker Rm.	Doorframe	Metal	Tan	Intact	0.4
Women's Locker Rm.	Partition	Metal	Blue	Fair	0.08
Women's Locker Rm.	Ceiling decking	Wood	Tan	Intact	0.22
Men's Locker Rm.	Wall	Brick	Tan	Intact	0.26
Men's Locker Rm.	Baseboard	Concrete	Tan	Intact	0.1
Men's Locker Rm.	Partition	Wood	Tan	Intact	0.13
Men's Locker Rm.	Door	Metal	Tan	Intact	0.3
Men's Locker Rm.	Doorframe	Metal	Tan	Intact	0.25

Room/Area	Component	Substrate	Color	Cond.	Result
Men's RR	Door	Metal	Tan	Intact	0.4
Men's RR	Doorframe	Metal	Tan	Intact	0.4
Men's RR	Ceiling	Wood	Tan	Intact	0.13
Men's RR	Stall	Metal	Tan	Intact	0.12

PCBs and Universal Waste

Polychlorinated biphenyl (PCBs) were detected in the walkway caulking, but below the EPA regulatory limit of 50 ppm (50,000 ppb). PCBs were not detected in the window putty.

Table 5 – PCBs

Sample #	Material	Result (ug/kg or ppb)	EPA Limit (ug/kg)
39172-01	Window Putty	None detected	50,000
39172-02	Walkway caulking	1370	

The following Universal Wastes were identified:

Table 6 – Universal Waste

Component	Amount
Single Fluorescent lightbulbs	34
Single incandescent lightbulbs	8

METHODOLOGY

Asbestos

Twenty-five (25) bulk samples were collected and analyzed by Polarized Light Microscopy (PLM) for Asbestos via EPA Method 600/R-93/116 "Method for Determination of Asbestos in Bulk Building Materials" by LA Testing. LA Testing is an EPA accredited laboratory located at 520 Mission Street in South Pasadena, California. Samples approximately 1 cubic centimeter (cc) in size were obtained using appropriate sampling equipment. The sampling area was misted with water to minimize the potential for the release of airborne fibers. Collected samples were placed in sealed plastic bags, labeled and transported under chain of custody to LA Testing. Laboratory results are attached.

Lead

A lead-based paint inspection was conducted using a portable x-ray fluorescence (XRF) spectrum analyzer instrument, (Niton XLP 300A Serial #91830). The HUD Guidelines define X-Ray fluorescent analyzer ("XRF") measurements greater than or equal to 1.0 mg/cm^2 (milligrams per square centimeter) or 5000 ppm (parts per million by weight) (0.5% by dry weight) using laboratory analysis, lead positive. Los

Angeles County Health Code (Chapter 11.28, Section 11.28.010, C.) defines "Dangerous levels of lead-bearing substances" means any paint, varnish, lacquer, putty, plaster, or similar coating or structural material, which contains lead or its compounds in excess of seven-tenths (.7) of one milligram per square centimeter, when measured by a lead-detecting instrument approved by the director, or any substance, when measured by any scientifically accepted method…(see code for full definition). This report reflects the Los Angeles County standard of seven-tenths (.7) of one milligram per square centimeter and when tested by laboratory analysis at the HUD standard of 5000 ppm (parts per million by weight) (0.5% by dry weight).

PCBs

The collected samples for PCBs were assigned a unique sample identification number, placed in sealed glass containers, labeled, and delivered under proper chain of custody protocol to American Scientific Laboratories, LLC located at 2520 North San Fernando Road in Los Angeles, California. The samples were analyzed using EPA Method 8082; Polychlorinated Biphenyls by gas chromatography.

Universal Wastes/Other Hazardous Wastes

A visual inspection was conducted for universal wastes at the Verdugo Pool Complex, including batteries, electronic devices, mercury-containing equipment, and fluorescent bulks/tubes.

DISCUSSION AND RECOMMENDATIONS

Asbestos

ACM: Asbestos was detected in the window putty on 25 windows on the Verdugo Pool Complex building. This material was observed to be in damaged condition. Aurora recommends that the window putty be removed or repaired by a licensed asbestos contractor as soon as possible and any debris removed.

Regulatory Information:

The California Environmental Protection Agency (Cal/EPA) defines asbestos containing material (ACM) as containing asbestos in an amount greater or equal than 1%. The local enforcement agency for Cal/EPA is the South Coast Air Quality District (SCAQMD). California OSHA (Cal/OSHA) has determined that building materials containing asbestos at "trace" levels can still pose a health risk and thus regulates asbestos materials containing greater than 0.1% asbestos (ACCM).

CalOSHA 8CCR1529, 8CCR 5208 and all other applicable federal, state, and local regulations regarding the maintenance, removal, transport and disposal of ACM should be applied. Notification to SCAQMD whenever 100 square feet or linear feet of ACM or more will be disturbed is also required.

Lead

LBP: The exterior eaves and fascia of the building were found to be painted with lead-based paint in poor and fair condition.

Lead containing paint and lead containing components: Lead containing paint was detected at lower concentrations on other surfaces in poor to intact condition. Lead was detected in restroom and locker room ceramic and porcelain components.

Regulatory Information:

California regulations (8 CCR 1532.1) define lead-related construction work as, "Construction, alteration, painting, demolition, salvage, renovation, repair, or maintenance of any residential, public or commercial building, including preparation and cleanup, that, by using or disturbing lead containing material or soil, may result in significant exposure of individuals to lead". As such, Cal/OSHA does not distinguish between LBP and paint, which contains lead at a lower concentration. The presence of lead at any level requires that exposure assessments be conducted and the provisions of 8 CCR 1532.1 be followed, including but not limited to training, notification, medical evaluations, and personal protective equipment. Objective data confirming that materials or surface coatings containing less than 0.06% (600 ppm) of lead may be used to demonstrate that employee exposure will not exceed the AL (action level), as long as every unique surface or material has been sampled or analyzed.

Handling/Disposal

If paint is chipping or peeling from its substrate, the damaged paint should be cleaned from the substrate and this waste tested as described below. Prior to any demolition or remodeling activities, the substrate/attached paint should also be tested as described below.

A composite sample should be analyzed for Total Threshold Limit Concentration (TTLC) by USEPA reference method SW846. If the concentration of lead is greater than 1000 mg/kg the sample must be disposed of by a landfill which can handle such wastes. If the concentration is less than 50 mg/kg the sample may be disposed of as construction debris, if it is to remain in California. If the result falls between 50 mg/kg and 1000 mg/kg, the sample must be further analyzed by the Waste Extraction Test (WET) for Soluble Threshold Limit Concentration (STLC) as described in 22 CCR 66261.24a. If this concentration exceeds 5 mg/liter the sample must be handled and disposed of as hazardous waste...

Outside of California

All lead-containing paint which may be disposed of outside the State of California must be tested for Toxicity Characteristic Leaching Procedure (TCLP) regardless of whether it is essentially intact. The sample may be a composite of the paint and the substrate if the paint is intact. Any material with results exceeding 5 mg/l must be treated as hazardous waste.

PCBs and Universal Wastes

PCBs were not detected in the window caulking. PCBs were detected in a sample of walkway caulking but at a concentration much lower than the hazardous waste concentration of 50 ppm.

Thirty-four fluorescent light bulbs were counted.

Regulatory Information:

Solid wastes are designated hazardous by California regulations (CCR Title 22, Section 66261.3). Hazardous waste includes acutely hazardous waste, extremely hazardous waste, non-RCRA hazardous waste, RCRA hazardous waste, special waste, and universal waste. PCB wastes are regulated as non-RCRA hazardous waste when PCB concentrations are ≥ 5 ppm in liquids and ≥ 50 ppm in non-liquid wastes. PCBs at > 5000 ppm are an extremely hazardous waste under California regulations.

Fluorescent light bulbs are considered universal waste and may contain a small amount of mercury. They should be recycled or disposed properly as universal waste.

Limitations

This report is based solely upon the condition of the property on the dates of the inspection. Aurora has performed this work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted industrial hygiene practices in effect at the time the work was performed. This report is limited to accessible materials that could be sampled with discretion and with minimum damage to the property. No warranties, express or implied, are made by Aurora as to the use of any information disclosed in this report.

I hope that this information is helpful.

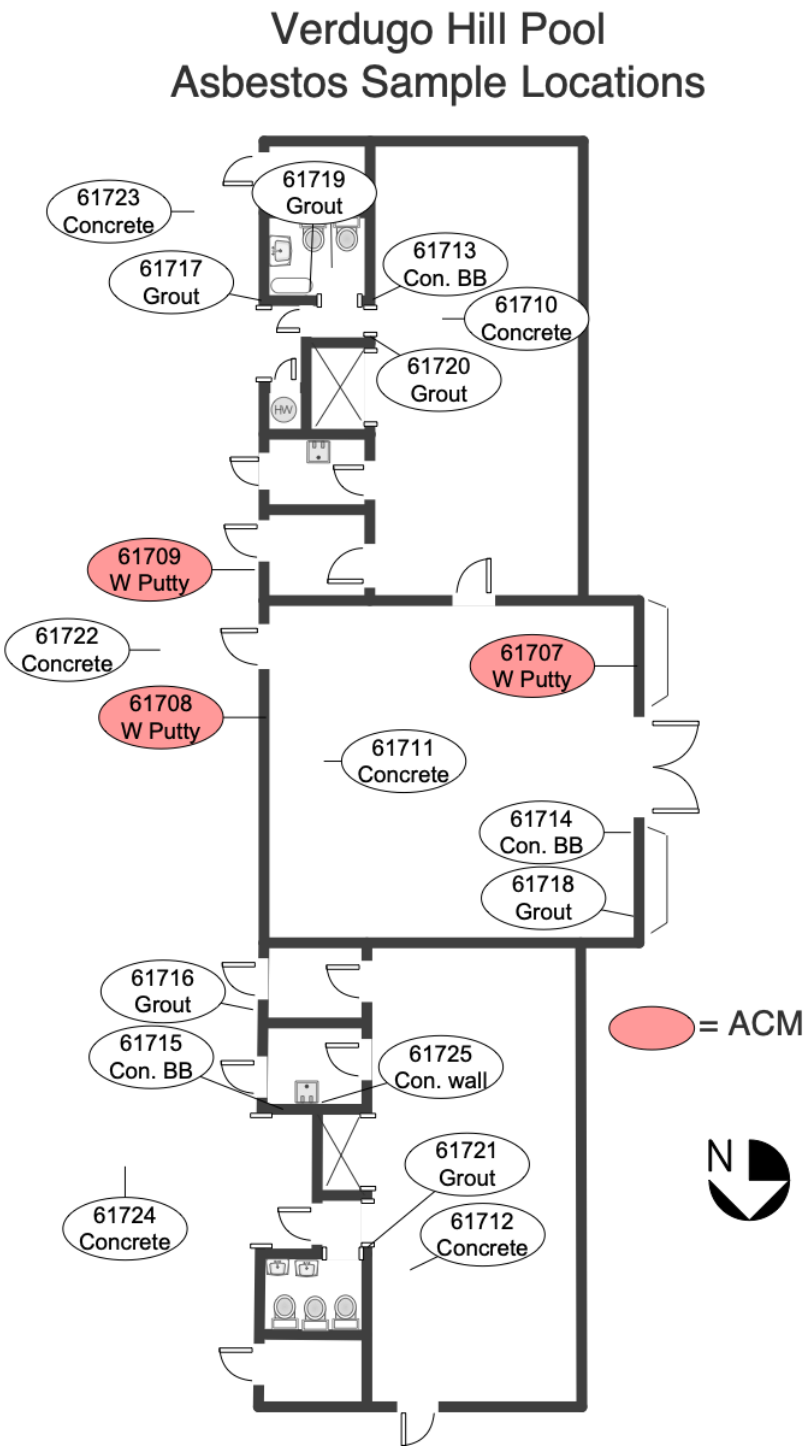
Sincerely,

AURORA INDUSTRIAL HYGIENE, Inc.

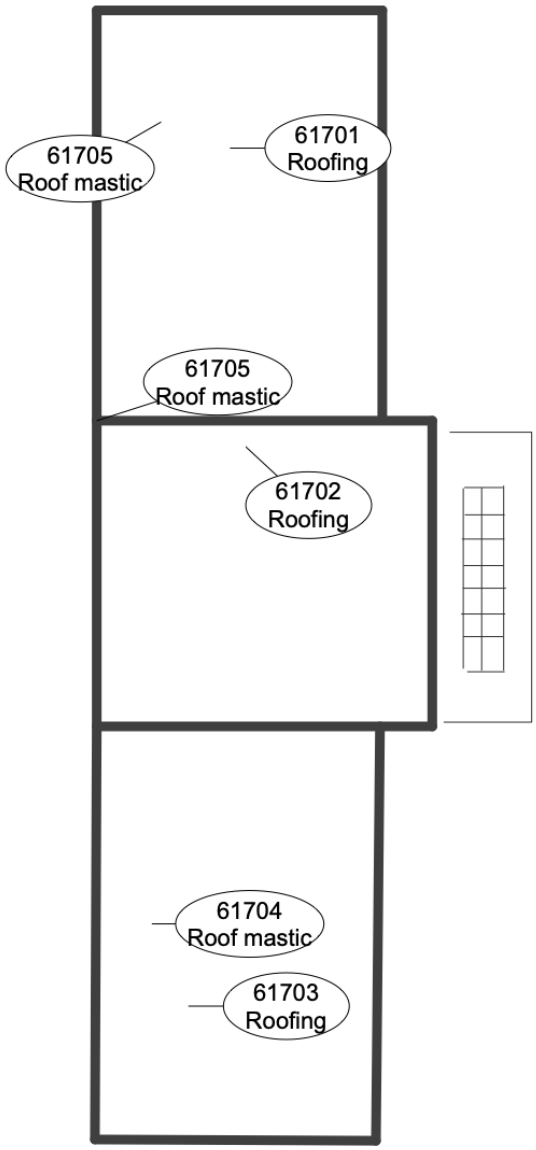


Grace M. Rinck, CIH, CAC, CDPH Certified

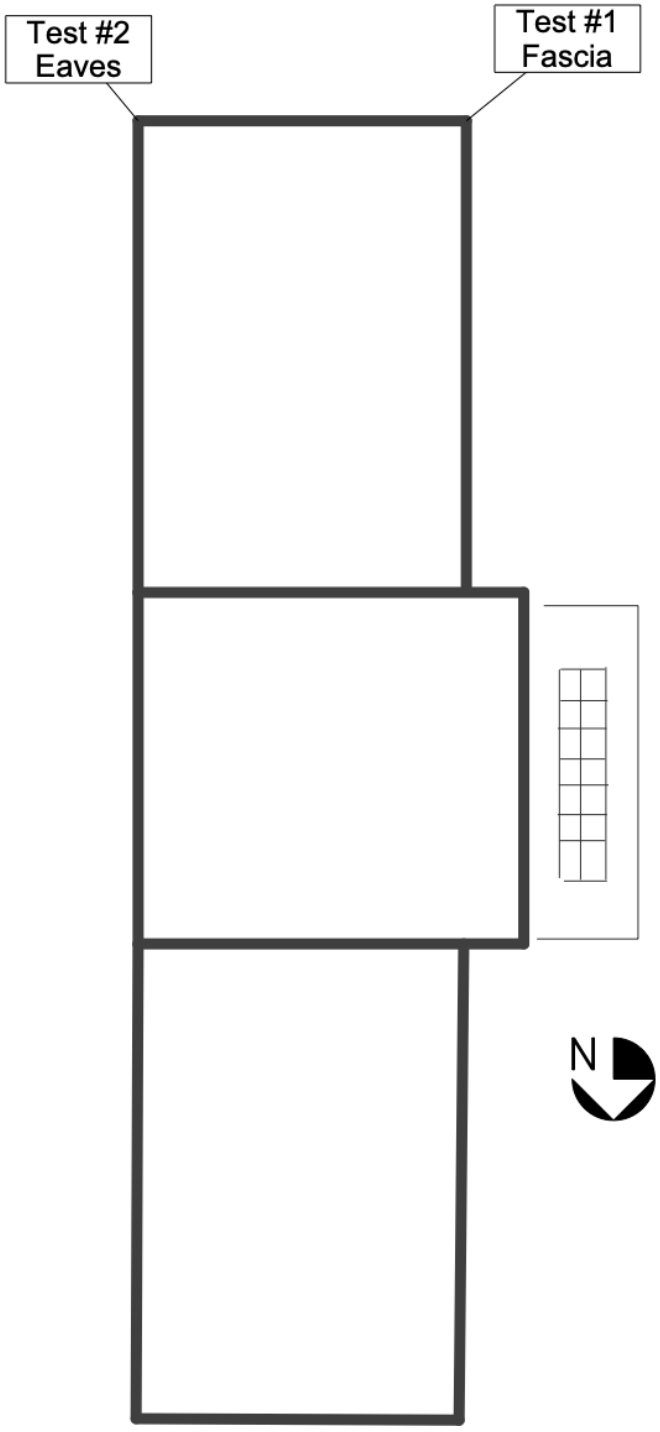
Sample Location Diagrams



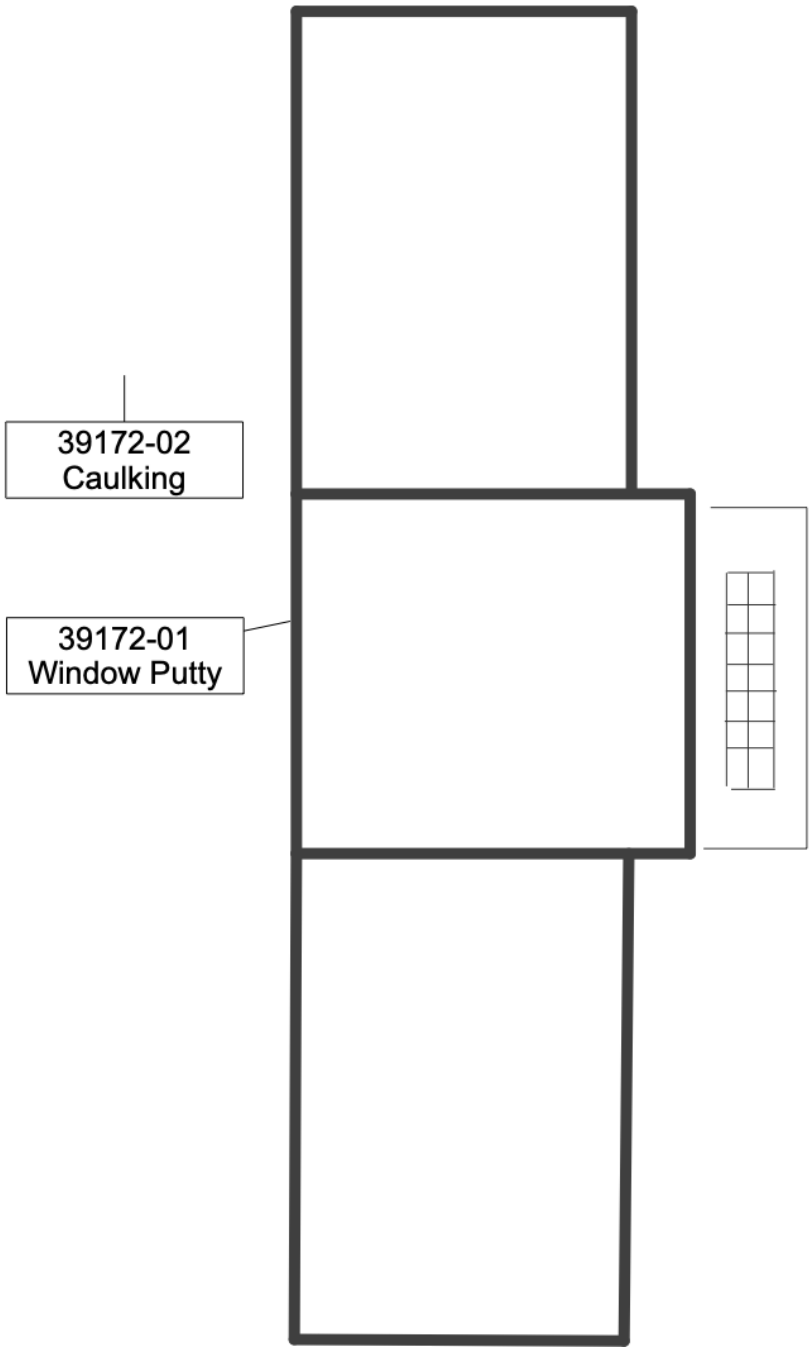
Verdugo Hills Pool Roof
Asbestos Sample Locations



Verdudo Hills Pool - Lead Based Paint Test Locations



Verdudo Hills Pool - PCB Test Locations



Photos



Asbestos containing window putty



Asbestos containing window putty



Lead based paint on eaves and fascia

Sampling Summaries

Table 7: ACM Sample Summary

Sample #	Material	Location	Cond.	DP	Amount	Result
61701	Roofing, rolled	N, center, S roofs	Good	Low	5300 SF	None Detected
61702	Roofing, rolled		Good	Low		None Detected
61703	Roofing, rolled		Good	Low		None Detected
61704	Roof mastic	Penetrations, patch	Good	Low	83 SF	None Detected
61705	Roof mastic		Good	Low		None Detected
61706	Roof mastic		Good	Low		None Detected
61707	**Window putty**	**Windows**	**Damaged**	**Med.**	**25 windows**	**2% Chrysotile**
61708	Window putty		Damaged	Med.		None Detected
61709	Window putty		Damaged	Med.		None Detected
61710	Concrete	Slab (floor)	Good	Low	5000 SF	None Detected
61711	Concrete		Good	Low		None Detected
61712	Concrete		Good	Low		None Detected
61713	Concrete	Baseboards	Good	Low	Throughout	None Detected
61714	Concrete		Good	Low		None Detected
61715	Concrete		Good	Low		None Detected
61716	Grout	Brick walls	Good	Low	Throughout	None Detected
61717	Grout		Good	Low		None Detected
61718	Grout		Good	Low		None Detected
61719	Grout	Ceramic tile in restrooms	Good	Low	Throughout	None Detected
61720	Grout		Good	Low		None Detected
61721	Grout		Good	Low		None Detected
61722	Concrete	Exterior walkways	Good	Low	Throughout	None Detected
61723	Concrete		Good	Low		None Detected
61724	Concrete		Good	Low		None Detected
61725	Concrete	Walls at J sinks	Good	Low	80 SF	None Detected

Cond. = Condition; DP= Damage Potential

Table 8: Full XRF Lead Sampling Summary

The following data table summarizes the surfaces sampled. The table columns are identified below:

Test # Identifies the XRF reading number.
Room Identifies the room.
Location "A" is main entrance. Locations "B", "C", and "D" follow in a clockwise direction.
Component Identifies the actual component tested.
Substrate Identifies the material the paint is adhered to.
Color The visible color of the upper coatings.
Cond. (Condition) The condition of the paint was determined, as defined in the *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing:*

Intact – the entire surface is intact.
Fair – less than or equal to ten percent of the total surface area of the component is deteriorated.
Poor – more than ten percent of the total surface area of the component is deteriorated.

Result Result expressed in mg/cm^2

Test #	Room/Area	Side	Component	Substrate	Color	Cond.	Result
1	**Exterior**	**D**	**Fascia**	**Wood**	**White**	**Poor**	**1.2**
2	**Exterior**	**D**	**Eaves**	**Wood**	**White**	**Fair**	**3.1**
3	Exterior	D	Flashing	Metal	Gray	Intact	0
4	Exterior	D	Wall	Brick	Brown	Intact	0
5	Exterior	D	Door	Metal	Brown	Intact	0
6	Exterior	D	Doorframe	Metal	Brown	Intact	0.15
7	Exterior	A	Door	Metal	Brown	Intact	0
8	Exterior	A	Doorframe	Metal	Brown	Intact	0.03
9	Exterior	A	Lattice	Wood	White	Poor	0.15
10	Exterior	C	Door	Metal	Brown	Intact	0
11	Exterior	C	Doorframe	Metal	Brown	Intact	0.2
12	Exterior	C	Wall	Brick	Brown	Intact	0.02
13	Exterior	C	Gate	Metal	Brown	Poor	0.18
14	Exterior	C	Gate panel	Metal	Brown	Intact	0.1
15	Exterior	B	Door	Metal	Brown	Intact	0
16	Exterior	B	Doorframe	Metal	Brown	Intact	0.14
17	Exterior	B	Wall	Brick	Brown	Intact	0
18	Exterior	D	Downspout	Metal	Tan	Intact	0.28
19	Exterior	N/A	Safety stripe/sign	Concrete	White	Fair	0
20	Center	A	Wall	Brick	Tan	Intact	0.12

Test #	Room/Area	Side	Component	Substrate	Color	Cond.	Result
21	Center	B	Wall	Brick	Tan	Intact	0.07
22	Center	A	Door	Metal	Brown	Intact	0
23	Center	A	Doorframe	Metal	Brown	Intact	0
24	Center	A	Baseboard	Concrete	Tan	Fair	0.15
25	Center	N/A	Floor	Concrete	Red	Fair	0.01
26	Center	A	Desk	Wood	Brown	Intact	0.02
27	Center	A	Window panel	Wood	Tan	Intact	0
28	Center	N/A	Soffit	Wood	Tan	Intact	0.04
29	Women's RR	D	Door	Metal	Tan	Intact	0.3
30	Women's RR	D	Doorframe	Metal	Tan	Intact	0.4
31	Women's RR	A	Tile wall	Ceramic	Beige	Intact	0.03
32	Women's RR	A	Tile baseboard	Ceramic	Beige	Intact	0
33	**Women's RR**	**B**	**Toilet**	**Porcelain**	**White**	**Intact**	**5.1**
34	Women's RR	D	Sink	Porcelain	White	Intact	0.01
35	Women's RR	D	Wall	Metal	Green	Intact	0.29
36	Women's RR	N/A	Floor	Concrete	Red	Intact	0
37	Women's Locker Rm.	B	Partition	Metal	Tan	Intact	0.06
38	Women's Locker Rm.	A	Wall	Brick	Tan	Fair	0.13
39	Women's Locker Rm.	A	Baseboard	Concrete	Tan	Fair	0.3
40	Women's Locker Rm.	N/A	Floor	Concrete	Red	Intact	0.01
41	Women's Locker Rm.	C	Door	Metal	Tan	Intact	0.4
42	Women's Locker Rm.	C	Doorframe	Metal	Tan	Intact	0.4
43	Women's Locker Rm.	A	Partition	Metal	Blue	Fair	0.08
44	Women's Locker Rm.	N/A	Ceiling beam	Wood	Tan	Intact	0.05
45	Women's Locker Rm.	N/A	Ceiling decking	Wood	Tan	Intact	0.22
46	Women's Locker Rm.	B	Door	Metal	Brown	Intact	0
47	Women's Locker Rm.	B	Doorframe	Metal	Brown	Intact	0
48	Women's Locker Rm.	C	Shower wall	Ceramic	Tan	Intact	0.1
49	Men's Locker Rm.	A	Wall	Brick	Tan	Intact	0.26
50	Men's Locker Rm.	A	Baseboard	Concrete	Tan	Intact	0.1
51	Men's Locker Rm.	B	Partition	Wood	Tan	Intact	0.13
52	Men's Locker Rm.	C	Door	Metal	Tan	Intact	0.3
53	Men's Locker Rm.	C	Doorframe	Metal	Tan	Intact	0.25
54	Men's Locker Rm.	D	Door	Metal	Red	Intact	0.01
55	Men's Locker Rm.	D	Doorframe	Metal	Red	Intact	0.01
56	Men's Locker Rm.	N/A	Floor	Concrete	Red	Intact	0
57	Men's Locker Rm.	C	Shower wall	Ceramic	Tan	Intact	0.1
58	Men's Locker Rm.	C	Shower baseboard	Ceramic	Red	Intact	0.01
59	Men's Locker Rm.	C	Doorframe	Ceramic	Brown	Intact	0.01
60	Men's Locker Rm.	C	Doorframe	Ceramic	Beige	Intact	0.02
61	Men's Locker Rm.	D	Janitor sink	Porcelain	White	Intact	0.1
62	Men's RR	B	Door	Metal	Tan	Intact	0.4

Test #	Room/Area	Side	Component	Substrate	Color	Cond.	Result
63	Men's RR	B	Doorframe	Metal	Tan	Intact	0.4
64	Men's RR	N/A	Floor	Concrete	Red	Intact	0.01
65	Men's RR	N/A	Tile floor	Ceramic	White	Intact	0.01
66	Men's RR	B	Tile wall	Ceramic	Brown	Intact	0.01
67	Men's RR	B	Baseboard	Ceramic	Beige	Intact	0.01
68	Men's RR	N/A	Ceiling	Wood	Tan	Intact	0.13
69	Men's RR	D	Stall	Metal	Tan	Intact	0.12
70	**Men's RR**	**B**	**Urinal**	**Porcelain**	**White**	**Intact**	**4.7**
71	Men's RR	C	Sink	Porcelain	White	Intact	0.06
72	Men's RR	C	Tile sink wall	Ceramic	White	Intact	0.1

Laboratory/Chain-of-Custody Forms

LA Testing

520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order:	322111443
Customer ID:	ARIH26
Customer PO:	
Project ID:	

Attention:	Grace Rinck	**Phone:**	(626) 403-4104
	Aurora Industrial Hygiene	**Fax:**	
	1132 Mission Street	**Received Date:**	06/18/2021 2:00 PM
	Suite B	**Analysis Date:**	06/22/2021
	South Pasadena, CA 91030	**Collected Date:**	06/17/2021
Project:	39172 Verdugo Hills		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
61701-Shingle 1 *322111443-0001*	Roofing	Brown/Tan/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
61701-Tar *322111443-0001A*	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61701-Roofing *322111443-0001B*	Roofing	Black Non-Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
61701-Felt *322111443-0001C*	Roofing	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
61701-Shingle 2 *322111443-0001D*	Roofing	Tan/Black/Beige Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
61702-Shingle 1 *322111443-0002*	Roofing	Brown/Tan/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
61702-Tar *322111443-0002A*	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61702-Roofing *322111443-0002B*	Roofing	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
61702-Felt *322111443-0002C*	Roofing	Black Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
61702-Shingle 2 *322111443-0002D*	Roofing	Tan/Black/Beige Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
61703-Shingle *322111443-0003*	Roofing	Brown/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
61703-Tar *322111443-0003A*	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61703-Felt *322111443-0003B*	Roofing	Black Fibrous Homogeneous	8% Glass	92% Non-fibrous (Other)	None Detected
61704 *322111443-0004*	Roof Mastic	Gray/Black Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
61705 *322111443-0005*	Roof Mastic	Gray/Black Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
61706 *322111443-0006*	Roof Mastic	Gray/Black Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected

Initial report from: 06/22/2021 16:01:28

LA Testing
520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 322111443
Customer ID: ARIH26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
61707 *322111443-0007*	Window Putty	Gray/Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
61708 *322111443-0008*	Window Putty	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61709 *322111443-0009*	Window Putty	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61710-Concrete 1 *322111443-0010*	Concrete Slab	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61710-Concrete 2 *322111443-0010A*	Concrete Slab	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61711-Concrete 1 *322111443-0011*	Concrete Slab	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61711-Concrete 2 *322111443-0011A*	Concrete Slab	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61712 *322111443-0012*	Concrete Slab	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61713 *322111443-0013*	Concrete Baseboard	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61714 *322111443-0014*	Concrete Baseboard	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61715 *322111443-0015*	Concrete Baseboard	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61716 *322111443-0016*	Brick Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61717 *322111443-0017*	Brick Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61718-Thinset *322111443-0018*	Brick Grout	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61718-Grout *322111443-0018A*	Brick Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61719 *322111443-0019*	Ceramic Tile Grout	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61720 *322111443-0020*	Ceramic Tile Grout	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61721 *322111443-0021*	Ceramic Tile Grout	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61722 *322111443-0022*	Concrete Walkway	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 06/22/2021 16:01:28

LA Testing

520 Mission Street South Pasadena, CA 91030

Tel/Fax: (323) 254-9960 / (323) 254-9982

http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order:	322111443
Customer ID:	ARIH26
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
61723 *322111443-0023*	Concrete Walkway	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61724 *322111443-0024*	Concrete Walkway	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61725-Texture *322111443-0025*	Concrete Wall	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61725-Finish Coat *322111443-0025A*	Concrete Wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
61725-Base Coat *322111443-0025B*	Concrete Wall	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

David Flores (11)

Joel Paruli (29)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore LA Testing recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 06/22/2021 16:01:28

OrderID: 322111443

California Customers

LA Testing Order Number / Lab Use Only

#322111443

EMSL Analytical, Inc.
520 Mission Street
South Pasadena, CA 91030

PHONE: 800-303-0047
EMAIL: pasadenalab@latesting.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	AURORA	Company Name:	
Contact Name:	GRACE RINCK	Billing Contact:	
Street Address:	1132 MISSION ST.	Street Address:	
City, State, Zip:	SOUTH PASADENA	City, State, Zip:	
Country:		Country:	
Phone:		Phone:	
Email(s) for Report:		Email(s) for Invoice:	

Project Information

Project Name/No:	39172 VERDUGO HILLS	Purchase Order:	
LAT LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected:	CA
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)		
Sampled By Name:	R. RINCK	Sampled By Signature:	
No. of Samples in Shipment			

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0.08%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0.08%)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ CARB Modified AHERA
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM CARB 435 - Level A (<0.25%)
- ☐ PLM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level C (<0.01%)
- ☐ CARB Guidance Compliance Prep
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)

Other

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
61701	ROOFING		6-17-2021
02	"		
03	"		
04	ROOF MASTIC		
05	"		
06	"		
07	WINDOW PUTTY		
08	"		

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 6/18/21 1300	Received by: RP (OS)	Date/Time 6/18/21 2pm
Relinquished by:	Date/Time:	Received by:	Date/Time

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc. (DBA LA Testing) Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to LA Testing constitutes acceptance and acknowledgment of all terms and conditions by Customer.

OrderID: 322111443

Asbestos Chain of Custody (Air, Bulk, Soil)
California Customers

LA Testing Order Number / Lab Use Only

#322111443

EMSL Analytical, Inc.
520 Mission Street
South Pasadena, CA 91030

PHONE: 800-303-0047
EMAIL: pasadenalab@latesting.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
61709	〃		
10	CONCRETE SLAB		
11	〃		
12	〃		
13	CONCRETE BASEBOARD		
14	〃		
15	〃		
16	BRICK GROUT		
17	〃		
18	〃		
19	CERAMIC TILE GROUT		
20	〃		
21	〃		
22	CONCRETE WALKWAY		
23	〃		
24	〃		
25	CONCRETE WALL		

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time:	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-51 LAT Asbestos CA
Clients LA Testing R3 03/24/2021

☐ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc. (DBA LA Testing) Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to LA Testing constitutes acceptance and acknowledgment of all terms and conditions by Customer.

American Scientific Laboratories, LLC
Environmental Testing Services
2520 N. San Fernando Road, LA CA 90065 Tel: (323) 223-9700 • Fax: (323) 223-9500

25 June 2021

Grace Rinck

Aurora Industrial Hygiene

1132 Mission Street, Suite B

South Pasadena, CA 91030

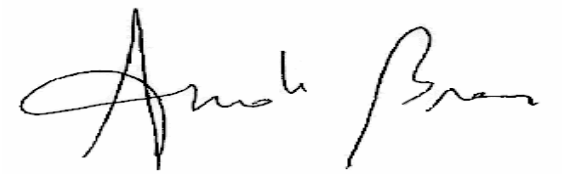
Work Order #: 2106146

Project Name: Verdugo Hills Pool

Project ID: 39172

Site Address:

Enclosed are the results of analyses for samples received by the laboratory on June 18, 2021. If you have any questions concerning this report, please feel free to contact us.



Molky Brar

Laboratory Director

American Scientific Laboratories, LLC (ASL) accepts sample materials from clients for analysis with the assumption that all of the information provided to ASL verbally or in writing by our clients (and/or their agents), regarding samples being submitted to ASL, is complete and accurate. ASL accepts all samples subject to the following conditions:

1) ASL is not responsible for verifying any client-provided information regarding any samples submitted to the laboratory.
2) ASL is not responsible for any consequences resulting from any inaccuracies , omissions, or misrepresentations contained in client-provided information regarding samples submitted to the laboratory.

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Road, LA, CA 90065 Tel: (323) 223-9700 • Fax: (323) 223-9500

Page ____ Of ____

COC# GLOBAL ID _____ E REPORT: ☐ PDF ☐ EDF ☐ EDD ASL JOB# 2106146

CHAIN OF CUSTODY RECORD

Company: Aurora Industrial Hygiene, Inc.		Report To:	ANALYSIS REQUESTED
Address: 1132 Mission Street	Project Name: Verdugo Hills Pool	Address:	PCB's
	Site Address:	Invoice To:	
Telephone Fax:		Address:	
Special Instruction:	Project ID: 39172		
E-mail:	Project Manager:	P.O.#:	

ITEM	LAB USE ONLY	SAMPLE DESCRIPTION			Container(s)		Matrix	Preservation	PCB's	Remarks
	Lab ID	Sample ID	Date	Time	#	Type				
	2106146-01	39172-01	6-17-21			Glass jar			x	
	2106146-02	39172-02	6-17-21			Glass jar			x	

Collected By: R. RINCK	Date 6-17-21 Time	Relinquished By:	Date Time
Relinquished By:	Date 6.18.21 Time 13:30	Received For Laboratory: Janet Chan	Date 6-18-21 Time 13:30
Received By:	Date Time	Condition of Sample:	

TAT ☑ Normal ☐ Rush

White - Report, Yellow - Laboratory, Pink - Client

Job# 2106196

ASL Sample Receipt Form

Client: Aurora Industrial Hygiene, Inc.

Date: 6-18-2021

Sample Information:

Temperature: 25.0 °C ☐ Blank ☒ Sample

Custody Seal: ☐ Yes ☒ No ☐ Not Available

Received Within Holding Time: ☒ Yes ☐ No

Container:

Proper Containers and Sufficient Volume: ☒ Yes ☐ No

Soil: ☐ 4oz ☐ 8oz ☐ Sleeve ☐ VOA 2 ☒ 20s - Glass Jar

Water: ☐ 500AG ☐ 1AG ☐ 125PB ☐ 250PB ☐ 500PB ☐ VOA ☐ Other _____

Air: ☐ Tedlar®

Sample Containers Intact: ☒ Yes ☐ No

Trip Blank ☐ Yes ☒ No

Chain-of-Custody (COC):

Received: ☒ Yes ☐ No

Samplers Name: ☒ Yes ☐ No

Container Labels match COC: ☒ Yes ☐ No

COC documents received complete: ☒ Yes ☐ No

Proper Preservation Noted: ☐ Yes ☐ No N/A

Completed By: Janet Chin

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Road, LA CA 90065 Tel: (323) 223-9700 • Fax: (323) 223-9500

Aurora Industrial Hygiene	Project: Verdugo Hills Pool	Work Order No: 2106146
1132 Mission Street, Suite B	Project Number: 39172	**Reported:**
South Pasadena CA, 91030	Project Manager: Grace Rinck	06/25/2021 12:34

ANALYTICAL SUMMARY REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
39172-01	2106146-01	Solid	06/17/2021 00:00	06/18/2021 13:30
39172-02	2106146-02	Solid	06/17/2021 00:00	06/18/2021 13:30

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amolk Brar, Lab Director

American Scientific Laboratories, LLC
Environmental Testing Services
2520 N. San Fernando Road, LA CA 90065 Tel: (323) 223-9700 • Fax: (323) 223-9500

Aurora Industrial Hygiene	Project: Verdugo Hills Pool	Work Order No: 2106146
1132 Mission Street, Suite B	Project Number: 39172	**Reported:**
South Pasadena CA, 91030	Project Manager: Grace Rinck	06/25/2021 12:34

Analytical Results

Client Sample ID: 39172-01

Laboratory Sample ID: 2106146-01 (Solid)

Analyte	Result	Notes	PQL	Units	Dilution	Prep Method	Analyzed	Analyst	Method
Polychlorinated Biphenyls (PCBs) by Gas Chromatography				Batch ID:	BF10580		Prepared: 06/18/2021 16:00		
Aroclor 1016	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1221	ND		837	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1232	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1242	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1248	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1254	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Aroclor 1260	ND		412	ug/kg	1	3550 SV	06/18/2021 16:15	AY	8082
Surrogate: Decachlorobiphenyl			*101 %*	*43-169*		3550 SV	06/18/2021 16:15	AY	*8082*

Analytical Results

Client Sample ID: 39172-02

Laboratory Sample ID: 2106146-02 (Solid)

Analyte	Result	Notes	PQL	Units	Dilution	Prep Method	Analyzed	Analyst	Method
Polychlorinated Biphenyls (PCBs) by Gas Chromatography				Batch ID:	BF10580		Prepared: 06/18/2021 16:00		
Aroclor 1016	ND		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1221	ND		1000	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1232	ND		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1242	ND		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1248	ND		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1254	**1370**		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Aroclor 1260	ND		495	ug/kg	1	3550 SV	06/18/2021 16:30	AY	8082
Surrogate: Decachlorobiphenyl			*110 %*	*43-169*		3550 SV	06/18/2021 16:30	AY	*8082*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amolk Brar, Lab Director

American Scientific Laboratories, LLC
Environmental Testing Services
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Aurora Industrial Hygiene	Project: Verdugo Hills Pool	Work Order No: 2106146
1132 Mission Street, Suite B	Project Number: 39172	**Reported:**
South Pasadena CA, 91030	Project Manager: Grace Rinck	06/25/2021 12:34

Polychlorinated Biphenyls (PCBs) by Gas Chromatography - Quality Control Report

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BF10580 - 3550 SV - 8082										
LCS (BF10580-BS1)				Prepared & Analyzed: 06/18/202						
Aroclor 1260	146	33.0	ug/kg	167		87.8	39-150			
Surrogate: Decachlorobiphenyl	*17.5*		*"*	*16.7*		*105*	*43-169*			
LCS Dup (BF10580-BSD1)				Prepared & Analyzed: 06/18/202						
Aroclor 1260	134	33.0	ug/kg	167		80.3	39-150	8.98	30	
Surrogate: Decachlorobiphenyl	*16.0*		*"*	*16.7*		*96.2*	*43-169*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Amolk Brar, Lab Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Road, LA CA 90065 Tel: (323) 223-9700 • Fax: (323) 223-9500

Aurora Industrial Hygiene	Project: Verdugo Hills Pool	Work Order No: 2106146
1132 Mission Street, Suite B	Project Number: 39172	**Reported:**
South Pasadena CA, 91030	Project Manager: Grace Rinck	06/25/2021 12:34

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the practical quantitation limit (PQL)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Certifications

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation June 17, 2021

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☑ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
10654 Irma Avenue	Tujunga	Los Angeles	91042

Construction date (year) of structure	Type of structure	Children living in structure?
unknown	☐ Multi-unit building ☐ School or daycare ☐ Single family dwelling ☑ Other pool complex	☐ Yes ☑ No ☐ Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
David Ramero, LA City Dep of Parks & Recreation	(213) 202-2700

Address [number, street, apartment (if applicable)]	City	State	Zip Code
221 N. Figueroa Street, Suite 400	Los Angeles	CA	90012

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☑ Intact lead-based paint detected ☑ Deteriorated lead-based paint detected

☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other _____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Robert Rinck	213 445-9836

Address [number, street, apartment (if applicable)]	City	State	Zip Code
601 Beverly Drive	Arcadia	CA	91006

CDPH certification number	Signature	Date
LRC 00002734		6/30/2021

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

DATE: 6/17/2021

JOB#: 39172

Location/Address:
Verdugo Hills Pool Complex, 10654 Irma Avenue, Tujunga, CA 91042

Niton XLP 300A Serial# 91830

Inspector:

*Calibration Check Tolerance Used: 1.07 mg/cm2 Using 1.02-1.12 mg/cm2 NISH SRM Paint Film

First Calibration Check: **Time: 1515 hrs**

1st Reading	2nd Reading	3rd Reading	Average
1.00	**1.00**	**0.9**	**0.97**

Second Calibration Check: **Time: 1247 hrs**

1st Reading	2nd Reading	3rd Reading	Average
1.00	**1.00**	**1.00**	**1.00**

Third Calibration Check: **Time:**

1st Reading	2nd Reading	3rd Reading	Average

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant



Robert Andrew Rinck
Name

Certification No. **03-3374**

Expires on **07/31/21**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
	Lead Project Monitor	LRC-00002722	10/14/2021
	Lead Inspector/Assessor	LRC-00002723	10/14/2021

Robert Rinck

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD.

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: November 25, 2022

To: Municipal Facilities Committee

From: Steven Fierce, AIA
Municipal Facilities Program Manager
Bureau of Engineering

Subject: **VERDUGO HILLS POOL AND BATHHOUSE REFURBISHMENT– (COUNCIL DISTRICT 7) – APPROVAL TO ADVERTISE FOR BID AND AWARD AND TO IDENTIFY FUNDS IN THE 2023-24 FISCAL YEAR TO CLOSE THE FUNDING SHORTFALL OF $2.77 MILLION DOLLARS**

RECOMMENDATION

The Bureau of Engineering (BOE) recommends that the Municipal Facilities Committee (MFC):

1. Recommend that the Board of Recreation and Parks (Board) solicit construction bids for the Verdugo Hills Pool and Bathhouse Refurbishment Project (Work Order No. E170164F) with the construction cost estimate of $4,720,000.

2. Instruct CAO staff to work with Council District 7 (CD 7) to identify supplemental funding sources to address the anticipated shortfall of $2.77 Million, which may include additional contributions of City capital funds that will be pursued as a last recourse through the City Budget process for the upcoming 2023-24 Fiscal Year budget.

Discussion/Background:

The Verdugo Hill Pool and Bathhouse Refurbishment project (Project) is located in Council District 7, at 10654 Irma Ave., Tujunga, Ca 91042. The pool and bathhouse were constructed in 1951, and serve the Recreation and Parks (RAP) North Valley Area.

The project comprises refurbishment and upgrades of the existing swimming pool and bathhouse to meet the latest RAP standards, Los Angeles County Department of Health Services requirements, Los Angeles Department of Building and Safety (LADBS) Building Code, and the American with Disabilities Acts (ADA) requirements.

The major elements of the Project scope of work include the replacement of the pool equipment infrastructure, refurbishment of the pool tank, and installation of sports field and security lighting. The pool tank refurbishment requires the repair of cracks and installation of a new pool finish surface. The pool equipment upgrades will address the replacement of all existing pool input and output piping and drain systems, reconstruction of the existing pool deck, installation of an ADA pool chair lift, replacement of water

filtration, heating and pumping equipment, and installation of new underwater pool lighting. Building related improvements include upgrading the electrical power to the bathhouse, replacement of the lighting, security alarm, and fire-life safety equipment. Site improvements are limited to the installation of a new ADA ramp from public sidewalk to the pool house main entrance, replacement of the steel fence enclosing the pool deck, and installation of new landscape and irrigation.

The Design has been completed and the project is now ready to be solicited for construction bids.

Funding Status
Throughout the past year, the BOE has acknowledged, documented, and reported the unusually high cost of inflation and escalation in construction costs to the Municipal Facilities Committee (Attachment No1). Due to the significant increase in construction costs, the BOE updated the project budget, available funding, and subsequent project shortfall. To reduce the funding shortfall, the BOE removed its project management and construction management staff costs from the Project budget. The Project Budget and funding shortfall of approximately $2.77 Million has been detailed in the BOE project Budget Summary (Attachment No 2) and summarized in the tables below:

Total Project Budget / Funding	
Funding Source	**Funding Amount**
Prop K-Competitive	$1,000,000
Site and Facilities	$1,692,600
Quimby	$261,000
CTIEP	$182,000
MICLA	$518,000
Total Project Funds	**$ 3,653,600**
Project Costs	
Pre-Design costs	$128,000
Design Consultant	$173,000
Other Direct Costs (BCA, Materials Testing, Artwork, Permits)	$694,000
Estimate Construction Cost	$4,720,000
15% Construction Contingency	$707,900
BOE Project Estimate	$6,422,900
Project Funding Shortfall	**$ (2,769,300)**

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

In order to fully fund the project cost for this Project completing the construction, additional funds will need to be appropriated in the 2023-24 Fiscal Year to close the funding gap and ensure construction is not delayed.

Funding Sources	Expended/ Committed	Amount for Construction	FY 22-23 4th Qtr.	FY 23-24 1st Qtr.	FY 23-24 2nd Qtr.	FY 23-24 3rd. Qtr.	FY 23-24 4th Qtr.	FY 24-25 1st. Qtr.
Prop K Funds	$241,400	$758,600	$ 758,600					
Sites & Facilities		$1,692,600	$ 200,000	$ 1,492,600				
Quimby		$261,000			$ 261,000			
CTIEP		$182,000			$ 182,000			
MICLA Funds		$518,000			$ 518,000			
Subtotal		***$3,412,200***						
Projected Shortfall		*$2,770,000*			$ 500,000	*$ 1,150,000*	*$670,000*	*$ 450,000*
TOTALS		**$6,182,200**	$ 958,600	$ 1,492,600	$ 1,461,000	$ 1,150,000	$ 670,000	$ 450,000
	**Staff to identify supplemental funding sources to address the anticipated funding shortfall, which may include additional contributions of City capital funds that will be pursued as a last recourse through the City budget process in the 2023-24 FY.*							

This report recommends the Committee to approve the solicitation of construction bids, and direct CAO staff to work with Council District 7 (CD 7) and the Department of Recreation and Parks to identify funds to address the shortfall of approximately $2.77 Million Dollars in the 2023-24 Fiscal Year. Once bids have been received, BOE staff will return to the Steering Committee with an updated project shortfall and subsequently seek approval to move forward with construction.

cc:

Bernyce Hollins, City Administrative Officer
LaTanya Roux, City Administrative Officer
Elis Lee, City Administrative Officer
Deborah Weintraub, Bureau of Engineering
Bernadette Hernandez, Bureau of Engineering
Alex Ngo, Bureau of Engineering

Attachments:
No 1. Construction Inflation Report dated 7/28/2022
No 2. BOE Project Budget Summary

COUNTY CLERK'S USE

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
1149 S. BROADWAY, 7th FLOOR
LOS ANGELES, CALIFORNIA 90015
CALIFORNIA ENVIRONMENTAL QUALITY ACT

ATTACHMENT NO. 3

NOTICE OF EXEMPTION

(Articles II and III – City CEQA Guidelines)

Submission of this form is optional. The form shall be filed with the County Clerk, 12400 E. Imperial Highway, Norwalk, California, 90650, pursuant to Public Resources Code Section 21152(b). Pursuant to Public Resources Code Section 21167(d), the filing of this notice starts a 35-day statute of limitations on court challenges to the approval of the project.

LEAD CITY AGENCY AND ADDRESS:	**COUNCIL DISTRICT**
City of Los Angeles c/o Los Angeles City Engineer 1149 S. Broadway, MS 939 Los Angeles, CA 90015	**7**
PROJECT TITLE: Verdugo Hills Pool (CIP No./ W.O. E170164B)	**LOG REFERENCE**

PROJECT LOCATION: The proposed Project is located at 10654 Irma Avenue in Tujunga, within the Sunland – Tujunga – Lake View Terrace – Shadow Hills – East La Tuna Canyon Community Plan Area. The Project site is located southeast of Hillrose Street and Irma Avenue. See Figure 1.

T.G. 503 J3

DESCRIPTION OF NATURE, PURPOSE, AND BENEFICIARIES OF PROJECT. The Project consists of refurbishment of an existing bathhouse to meet current public health and safety standards. The facility does not meet the current standard building codes and does not comply with the Americans with Disabilities Act *(see narrative for additional information).*

CONTACT PERSON	**TELEPHONE NUMBER**
Shilpa Gupta	213-485-4560

EXEMPT STATUS: (Check One)

	CITY CEQA GUIDELINES	STATE CEQA GUIDELINES
☐ MINISTERIAL	Art. II, Sec. 2.b	Sec. 15268
☐ DECLARED EMERGENCY	Art. II, Sec. 2.a(1)	Sec. 15269(a)
☐ EMERGENCY PROJECT	Art. II, Sec. 2.a(2)	Sec. 15269(b)(c)
☐ GENERAL EXEMPTION	Art. II, Sec. 1	Sec. 15061(b)(3)
☒ CATEGORICAL EXEMPTION*	Art. III, Sec. 1 Class 1 Cat. 1, 3, 12 Art. III, Sec. 1 Class 2 Cat. 3	Sec. 15301(a), (c) Sec. 15302(c) and Sec. 15331
☐ STATUTORY*	Art. _____	Sec. _____

* See Public Resources Code Sec. 21080 and set forth state and city guidelines provisions.

JUSTIFICATION FOR PROJECT EXEMPTION: This Project is exempt from CEQA pursuant to *State CEQA Guidelines Section* 15301 (a), *Existing Facilities*; Section 15301(c), Section 15302(c), *Replacement or Reconstruction*; and Section 15331, Class 31, *Historical Resource Restoration/Rehabilitation.* This Project is exempt from CEQA pursuant to *City of Los Angeles CEQA Guidelines* Art. III Class 1, *Existing Facilities,* Category 1, 3 and 12 and Class 2, *Replacement or Reconstruction* Category 3. *None of the limitations set forth in State CEQA Guidelines 15300.2 apply. (see narrative for additional information).*

SIGNATURE:	TITLE:	DATE:
Maria Martin	Environmental Affairs Officer Environmental Management Group	

FEE:	RECEIPT NO.	REC'D BY	DATE
$75.00_____			

DISTRIBUTION: (1) County Clerk (2) Agency Record

CATEGORICAL EXEMPTION NARRATIVE

I. PROJECT DESCRIPTION (continued)

The proposed Project is upgrade an existing pool and bathhouse to meet current building and safety standards of the City. The Verdugo Hills Pool is located in the community of Tujunga within the City. Improvements will take place at the existing swimming pool and the bathhouse as shown in Figure 2, Project Layout Map. Below are the major Project components:

-Install four style stadium lights;

-Demolish and replace existing pool tank;

-Upgrade surge tank and water filtration mechanical system for the pool;

-Construct gender neutral restroom;

-Upgrade indoor lighting and electrical systems;

-Construct a shade structure by the pool;

-Construct a new American with Disabilities Act (ADA) ramp at the entrance;

-Resurface existing parking lot;

-Paint and designate an ADA parking;

-Upgrade ramp to the pool from parking area;

-Create ADA curb; and

-Paint the interior walls as needed.

II. PROJECT HISTORY

Verdugo Hills Pool is currently in operation. However, the swimming pool and its equipment need to be replaced and the associated bathhouse needs to be refurbished because they are damaged and do not meet the current health, safety and environmental protection codes. The pool deck is cracked and leaks water into the storage room below. There are currently large underutilized changing stalls which will be converted to showers and gender-neutral restrooms with wheelchair restroom stall. A shade structure and a new splash pad would be constructed adjacent to the swimming pool. The construction will last for approximately 12 months. Project will not result in an increase in capacity or use of the facility.

The Verdugo Hills Pool and bathhouse facility are listed in SurveyLA as eligible for Federal and State Register listings in the National Register of Historic Places (NRHP), California Registry of Historic Resources (CRHR), under Criteria C/3/3 as an excellent and rare example of a Mid-Century Modern pool building in Tujunga (Historic Resources Group [HRG] 2015a). The Verdugo Hills pool and bathhouse is also eligible for listing and for designation as a Los Angeles Historical Cultural Monument (HCM). Thus, it is a historical resource for the purposes of CEQA. In accordance with CEQA, if a project meets the Secretary of Interior's Standards for the Treatment of Historic Properties, it can be considered categorically exempt from CEQA (14 CCR § 15331). As discussed further in *Environmental Review*, this Project has been determined to conform with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) and it is, thus, determined to be exempt under CEQA (14 CCR § 15126.4(b)(1)).

DRAFT

III. ENVIRONMENTAL REVIEW

Basis for Categorical Exemption

This Project is exempt from CEQA pursuant to *State CEQA Guidelines Section* 15301 (a) and (c), *Existing Facilities* because it involves the reconstruction and rehabilitation of existing pool and bathhouse a shade structure and pole lights, as well as the creating a new ADA curb with no expansion of the facility, and under State CEQA Guidelines Section 15302(c), *Replacement or Reconstruction*, to meet City Building Codes and ADA requirements. Although the Verdugo Hills pool and bathhouse is eligible for listing in the National Register of Historic Places (NRHP), California Registry of Historic Resources (CRHR), and for designation as a Los Angeles Historical Cultural Monument (HCM), some "maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of historical resources in a manner consistent with the Secretary of Interior's Standards" is exempt under State CEQA Guidelines Section 15331, Class 31, *Historical Resource Restoration/Rehabilitation.*

This Project is exempt from CEQA pursuant to *City of Los Angeles CEQA Guidelines* Art. III Class 1, *Existing Facilities,* Categories 1, 3 and 12 and Class 2, *Replacement or Reconstruction* Category 3 for the reasons state above. *None of the limitations set forth in State CEQA Guidelines 15300.2 apply.*

Consideration of Potential Exceptions to use of a Categorical Exemption

The State CEQA Guidelines (CCR Sec 15300.2) limit the use of categorical exemptions in the following circumstances:

1. Location. Exemption Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is located – a project that ordinarily has a less than significant impact on the environment may have a significant impact in a particularly sensitive environment. Therefore, these classes are considered to apply in all instances, except where the project may impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

The project is exempt under Classes 1, 2, and 31 therefore this exception does not apply.

2. Cumulative Impact. This exception applies when, although a particular project may not have a significant impact, the cumulative impact of successive projects of the same type in the same place, over time is significant. While other similar projects are occurring elsewhere in the City, they have been determined to be happening in different neighborhoods locations and times, therefore no cumulative impacts are anticipated as a result of this project.

Given the nature of the project and the life expectancy of the replaced structure and equipment (approximately 30 years), this project is not anticipated to result in a cumulative impact when included with successive projects in the same place and over time.

3. Significant Effect. This exception applies when, although the project may otherwise be exempt, there is a reasonable possibility that the project will have a significant effect due to unusual circumstances.

The Project site is located in a high wind area. Compliance with applicable structural building design

standards of existing codes and applicable specification from the most recent edition of the California Building Code, and Los Angeles Building (LABC) for wind load would reduce effects associated with high winds.

The Project construction activities would comply with the BOE Master Specifications Section 01561, *Environmental Control*, for fugitive dust control, the standard practice for BOE construction activities projects. No reasonable possibility has been identified that the Project will have a significant effect due to unusual circumstances related to air quality. As such, this exception does not apply.

The construction work shall be performed in accordance with Work Area Traffic Control Handbook (WATCH) as required by the California Manual on Uniform Traffic Control Devices (CA MUTCD) published by Caltrans, imposed on projects of this nature. City construction crews will coordinate with schools and Department of Transportation and provide flaggers when required. When any nearby Project activity encroaches upon a sidewalk, walkway or crosswalk area, pedestrians shall be provided warning if they are detoured away from the construction site. Advance notification of sidewalk closures shall be provided in mail by BOE and at least one lane of traffic in each direction will be maintained at all times.

This is routine construction work to enhance public health and safety. Standard conditions and construction practices will be implemented for this Project. No unusual construction noise or traffic effects are anticipated. Standard conditions and construction practices will be implemented for this Project. No unusual construction noise or traffic effects are anticipated. No reasonable possibility has been identified that the Project will have a significant effect due to unusual circumstances because routine construction method as well as City Engineer Standard Specifications (Greenbook, 2012) would be followed. The Los Angeles Municipal Code Section 111 et. all would be applicable for construction hours from 7 am to 9 pm on Monday through Friday on Saturdays from 8 am to 6 pm.

For the reasons state above, there are no unusual circumstances involving air quality, traffic, cultural resources (Section 6), or noise from the construction and operation of the Project.

Unless otherwise stated, the proposed project will be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards including but not limited to:

- Los Angeles Municipal Code
- Bureau of Engineering Standard Plans
- Standard Specifications for Public Works Construction
- Work Area Traffic Control Handbook
- Additions and Amendments to the Standard Specifications for Public Works Construction

The Project may include removal of trees by the front entrance. Therefore, tree removals would comply with the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3503.5. If mature tree removal were to occur during the nesting bird season, typically between January 21 and September 2, all suitable habitat would be thoroughly surveyed for the presence of nesting birds by a qualified biologist (or qualified arborist) within three days prior to any tree removal. If any active nests are detected, the area will be flagged, and a minimum 250-foot (500-foot for raptors) non-disturbance buffer would be established (a modification to this buffer would be determined by the monitoring biologist and in consultation with U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife), and would be avoided until the nesting cycle has been completed or the monitoring biologist determines that the nest has failed. Furthermore, the tree removal to replacement policies pursuant to the Recreation and Parks Department would be applicable. (Table 1)

Table 1 -

Tree Removed	Trunk Diameter	Notes		Trees Planted	Size	Qty	Trunk Diameter	Total
Ailanthus altissima, tree of heaven	Multiple 4"	Invasive						
Ailanthus altissima, tree of heaven	Multiple 4"	Invasive						
Lagerstroemia indica, crape myrtle	6"	Dead or Dying						
Lagerstroemia indica, crape myrtle	4"			Chilopsis 'burgundy', desert willow	24" box	8	3"	24"
Lagerstroemia indica, crape myrtle	8" (4"x2")			Calistemon viminalis 'slim', slim weeping bottlebrush	15 gal.	6	2"	12"
Lagerstroemia indica, crape myrtle	8" (4"x2")							
Callistemon viminalis, weeping bottlebrush	8"							
Callistemon viminalis, weeping bottlebrush	8"							
Total (does not include invasive/dead trees)	**36"**					**14**		**36"**

Therefore, there is no potential for significant impacts to biological resources due to unusual circumstances and this exception does not apply.

There are no historical and scenic features or a scenic highway in the vicinity of the project and this exception does not apply.

4. Scenic Highway. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

There are no historical and scenic features or a scenic highway in the vicinity of the project and this exception does not apply.

5. Hazardous Waste Site. This exception applies when a project is located on a site listed as a hazardous waste site under Government Code Section 65962.5.

As of February 26, 2020, the State Department of Toxic Substances Control (DTSC) (Envirostor at www.envirostor.dtsc.ca.gov) has not listed any contaminated sites in the vicinity of the project; therefore, this exception does not apply here.

As of February 26, 2020, the California Regional Water Quality Control Board (RWQCB) (Geotracker at https://geotracker.waterboards.ca.gov/) has not listed any contaminated sites in the vicinity of the project; therefore, this exception does not apply here.

6. Historical Resources. This exception applies when a project may cause a substantial adverse change in the significance of a historical resource.

A cultural resources survey was conducted (*Cultural Resources Assessment for the Verdugo Hillss Pool and Bathhouse, City of Los Angeles, California*, SWCA April 2020). The purpose of the study is to

document the Verdugo Hills Pool and bathhouse facility, determine whether any other cultural resources have been recorded or are likely to occur, and to make recommendations for avoiding impacts to those resources as a result of project implementation.

On May 30, 2019, SWCA conducted a search of the California Historical Resources Information System (CHRIS) at the South Central Coastal Information System (SCCIC), located on the campus of California State University, Fullerton. The SLF was conducted by the Native American Heritage Commission at the request of SWCA. The results were received on June 19, 2019. An intensive-level built environment survey of the project area was conducted on June 11, 2019.

SWCA collected archival information on the Verdugo Hills Pool and documented the historical development of the facility from its origin in 1949. SWCA also conducted an intensive pedestrian survey of the project area to document the current conditions. As part of the current assessment, SWCA recorded and evaluated the facility for its eligibility for listing in the NRHP and the CRHR, as well as for local designation as a City of Los Angeles HCM. This is a municipal facility consisting of a bathhouse building and a swimming pool, both permitted in 1949 and opened in 1951. As identified by SurveyLA, the Verdugo Hills Pool bathhouse is eligible under Criteria C/3/3 for listing in the NRHP, the CRHR, and as a Los Angeles HCM as “excellent and rare example of a Mid-Century Modern pool building in Tujunga.” The facility is not eligible for listing under Criteria A/1/1/1, B/2/2, or D/4/4 because it lacks links to significant events or individuals, and does not have the potential to yield information important in prehistory or history. In addition to a consideration of all applicable criteria, two relevant context/theme/property type frameworks and their associated eligibility standards and integrity thresholds were identified and applied to this evaluation.

Based on the results of this survey, the project site does not contain historical resources. Within the “Public and Private Institutional Development, 1850–1980” context, “Government Infrastructure and Services, 1850–1980” subcontext, “Municipal Parks, Recreation, and Leisure, 1886–1978” theme, and “Municipal Recreational Facilities, 1932–1978” subtheme of significance, as identified by SurveyLA, the Verdugo Hills Pool and bathhouse facility is not individually eligible for listing in the NRHP, the CRHR, or for designation as a Los Angeles HCM under Criteria A/1/1.

Within the “Municipal Recreational Facilities, 1932–1978” subtheme of significance, as identified by SurveyLA, the pool and bathhouse are more thoroughly considered individually when evaluated under Criteria C/3/3: “embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.” Although the pool was built in 1949, during the period of significance for the theme (1932–1978), is part of a municipal recreation center, and retains sufficient historic integrity to convey its historical association as a Los Angeles municipal pool, this association does not appear to embody greater significance than similar pools. The pool does not possess high artistic values or represent a significant and distinguishable entity whose components lack individual distinction and it is not eligible for listing in the NRHP, the CRHR, or as a Los Angeles HCM under Criteria C/3/3.

The bathhouse is individually eligible for listing in the NRHP, the CRHR, and for designation as a Los Angeles HCM under Criteria C/3/3. In 2015 SurveyLA identified the bathhouse as eligible under Criteria C/3/3 for the NRHP, the CRHR, and for designation as an HCM because it is an “excellent example of a Mid-Century Modern pool building in Tujunga.” The bathhouse was built in 1973, during the period of significance for the theme (1932–1978), is part of a municipal recreation center, and retains sufficient historic integrity to convey its historical association as a Los Angeles municipal bathhouse. The

bathhouse is one of approximately 14 extant Mid-Century Modern bathhouses. Therefore, the building is eligible for listing in the NRHP, the CRHR, and as a Los Angeles HCM under Criteria C/3/3.

Within the "Architecture and Engineering, 1850–1980" context; "L.A. Modernism, 1946–1976" subcontext; "Post-War Modernism, 1946–1976" theme; "Mid-Century Modernism, 1945–1970" subtheme of significance, as identified by SurveyLA, the Verdugo Hills bathhouse is eligible for listing in the NRHP, the CRHR, and for designation as a Los Angeles HCM. In 2015 SurveyLA identified the bathhouse as eligible under Criteria C/3/3 for the NRHP, the CRHR, and for designation as an HCM because it is an "excellent example of a Mid-Century Modern pool building in Tujunga." Built in 1949, during the period of significance (1945–1970), it retains essential character-defining features of Mid-Century Modernism. The bathhouse is one of approximately 14 extant Mid-Century Modern bathhouses.

In accordance with CEQA, a project that has been determined to conform with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) can generally be considered to be a project that will not cause a significant adverse impact (14 CCR § 15126.4(b)(1)). If a project meets the Secretary of Interior's Standards for the Treatment of Historic Properties, it can be considered categorically exempt from CEQA (14 CCR § 15331)

There are no known archaeological resources recorded within the project area, and there is a low potential for encountering intact prehistoric and historic archaeological resources. Therefore based on the findings by SWCA, that the project area does not contain historical resources and this is a previously developed site, encountering archeological resources is not anticipated.

In case of any historical artifacts being encountered, City Engineer Standard Specifications, Section 6-3.2, (Greenbook, 2012) states: "If discovery is made of items of archaeological or paleontological interest, the Contractor shall immediately cease excavation in the area of discovery and shall not continue until ordered by the Engineer." Therefore, during activities in which there will be ground disturbances (i.e., digging, drilling, etc.) if any evidence of archaeological, cultural, or paleontological resources are found, all work within the vicinity of the find shall stop until a qualified archaeologist can assess the finds and make recommendations. No excavation of any finds should be attempted by project personnel unless directed by a qualified archaeologist. Construction activities may continue in other areas. If the discovery proves significant under CEQA (Section 15064.5f; Public Resources Code or PRC 21082), additional work such as testing or data recovery may be warranted.

The discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The Los Angeles County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

In case of unforeseen discovery of cultural resources, measures are in place to manage to cultural finds. Therefore, no impact to cultural resources would occur.