







42095 ZEVO DR., TEMECULA, CALIFORNIA 92590-3700  
 Phone: 951.296.6110 Fax: 951.296.6079 Email: stk@stkciv.com

CONSULTANT:

**A.J. FRICK CIVIL ENGINEERING**

42095 ZEVO DR., SUITE A15  
 TEMECULA, CA 92590  
 PHONE: (951) 296-9100  
 FAX: (951) 296-6079

PROJECT ADMINISTERED BY:  
 SAN BERNARDINO COUNTY  
 REAL ESTATE SERVICES  
 DEPARTMENT -  
 PROJECT MANAGEMENT  
 DIVISION

385 N. ARROWHEAD AVE.  
 SAN BERNARDINO, CA 92415

PROJECT NAME:  
 PRADO REGIONAL PARK  
 GUARD SHACK

PROJECT #10J01257

16700 EUCLID AVENUE  
 CHINO, CA 91708

ISSUE INFORMATION:

DATE	INFORMATION
02-22	50% PROGRESS
11-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
07-05-2023	WQMP REV
JAN-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
 SCALE: AS NOTED  
 DATE: MARCH 2023  
 PLOT DATE:  
 DRAWING NAME:  
 SEAL:



SHEET TITLE:  
**PRECISE GRADING PLAN**

SHEET NO.:

**C-2**

ENGINEER'S NOTE  
 REVISED JUNE 2023, BY A.J.F.

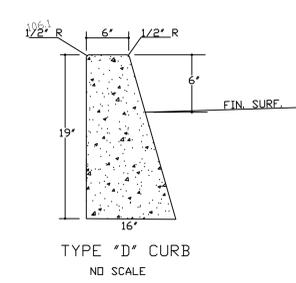
LEGEND:

- REMOVE AC PAVING AND/OR CONC. SLABS/CURBS INCL. IMPORT/EXPORT AND 12" SCARIFY 95% MIN. COMPACTION OF SUBGRADE
- CONSTRUCT 6" MIN. THICK CONC. WALKS INCL. IMPORT/EXPORT AND 12" SCARIFY 90% MIN. COMPACTION OF SUBGRADE INCL. CONC. DRAINS
- CONSTRUCT 4" MIN. THICK AC PAVING / 15' CLII AGG BASE INCL. IMPORT/EXPORT AND 12" SCARIFY 95% MIN. COMPACTION OF SUBGRADE, PER SOIL REPORT BY TERRACON DATED 3-18-2022, PER TERRACON PROJECT NO. CB225011
- CONSTRUCT 4" MIN. THICK AC PAVING / 11' CLII AGG BASE INCL. IMPORT/EXPORT AND 12" SCARIFY 95% MIN. COMPACTION OF SUBGRADE, PER SOIL REPORT BY TERRACON DATED 3-18-2022, PER TERRACON PROJECT NO. CB225011

CONSTRUCTION NOTES:

- THE CONTROL LINE FROM TIN TO TIN IS ASSUMED TO BE NORTH AND THE TEMPORARY BENCHMARK IS THE TOP OF SOUTH TIN, ELEVATION 100.00.
- CLEAR AND GRUB, INCLUDING TREE/ROOT REMOVAL SHALL BE A PART OF THIS WORK, AND REMOVED FROM SITE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COUNTY OF SAN BERNARDINO STANDARD DRAWINGS AND SPECIFICATIONS, OR AS PER ARCH. GENERAL SPECS.
- ALL CUT AND FILL SHALL BE 4:1 SIDE SLOPE AND SHALL MATCH AC/CONCRETE FINISH SURFACES AS PER DETAIL.
- ALL GRADING, OVEREX, SCARIFY, RECOMPACTION, IMPORT OR EXPORT SHALL BE A PART OF THE WORK AS REQUIRED.
- ALL FINISH GRADING SHALL BE SMOOTH AND RESEDED AS DIRECTED BY THE PARK SUPERINTENDENT.
- THE GRASS AREAS HAVE IRRIGATION SPRINKLER SYSTEMS. PLUG AND/OR REMOVE AS DIRECTED BY PARK SUPERINTENDENT DURING CONSTRUCTION AND REPAIR/REPLACE AS REQUIRED TO PROVIDE FULLY OPERATIONAL SYSTEM. CO-ORDINATE WITH PARK SUPERINTENDENT.
- ALL AC AND CONC. AND EXCAVATED ITEMS SHALL BE REMOVED AS PART OF THE WORK.
- EX. UTILITY VAULTS SHALL BE RAISED TO GRADE TO FULLY FLUSH CONDITION WITH ADJACENT SURFACES.
- PROTECT TREES AND EXIST. GRASS AND REPAIR DAMAGED GRASS SURFACES AS DIRECTED BY THE PARK SUPERINTENDENT.
- SOIL REPORT: TERRACON PROJECT NO. CB225011
- REMOVE OR REPAIR ALL UTILITIES, ETC.
- SAVE ALL TREES AND DO NOT DAMAGE.
- CONSTRUCT ADA SIGNAGE AND STRIPING
- PAINT ALL ADA STRIPING BLUE, OTHERS WHITE.
- ALL EDGES OF PAVEMENT (EP) SHALL BE SMOOTHLY FINE GRADED TO DRAIN ACROSS ADJACENT GROUND.
- ALL DISTANCES ARE HORIZONTAL.
- THE JENSEN PRECAST HOLDING TANK SHALL BE ON A LEVEL LAYER OF 6" SAND, NO ROCKS. PROVIDE LOW LEVEL ALARM, SEE ARCH. AND ELECT. DWGS. OR APPROVED EQUAL.
- THE BENCHMARK IS: ELEV. 560.08 CITY OF CHINO, BM 165/71, A 2-1/2" BRASS DISK STAMPED '165/71' SET IN SOUTH OF CONC. HEADWALL LOCATED 50' NORTH AND 70' EAST OF THE CENTERLINE OF EUCLID AVE. AND PINE AVE.
- DANGER: THE UNDERGROUND POWER CONDUIT TO THE ELECTRIC PANEL IS NOT KNOWN AS TO LOCATION AND EXTREME CAUTION IS NECESSARY.
- THE UNDERGROUND LOCATIONS OF EX. UTILITIES IS NOT OF RECORD AND CAUTION IS NECESSARY.

- 3' DETECTABLE WARNING CONES
- FL102.4 PROPOSED FINISH ELEV.
- 103.1 EX. ELEV.



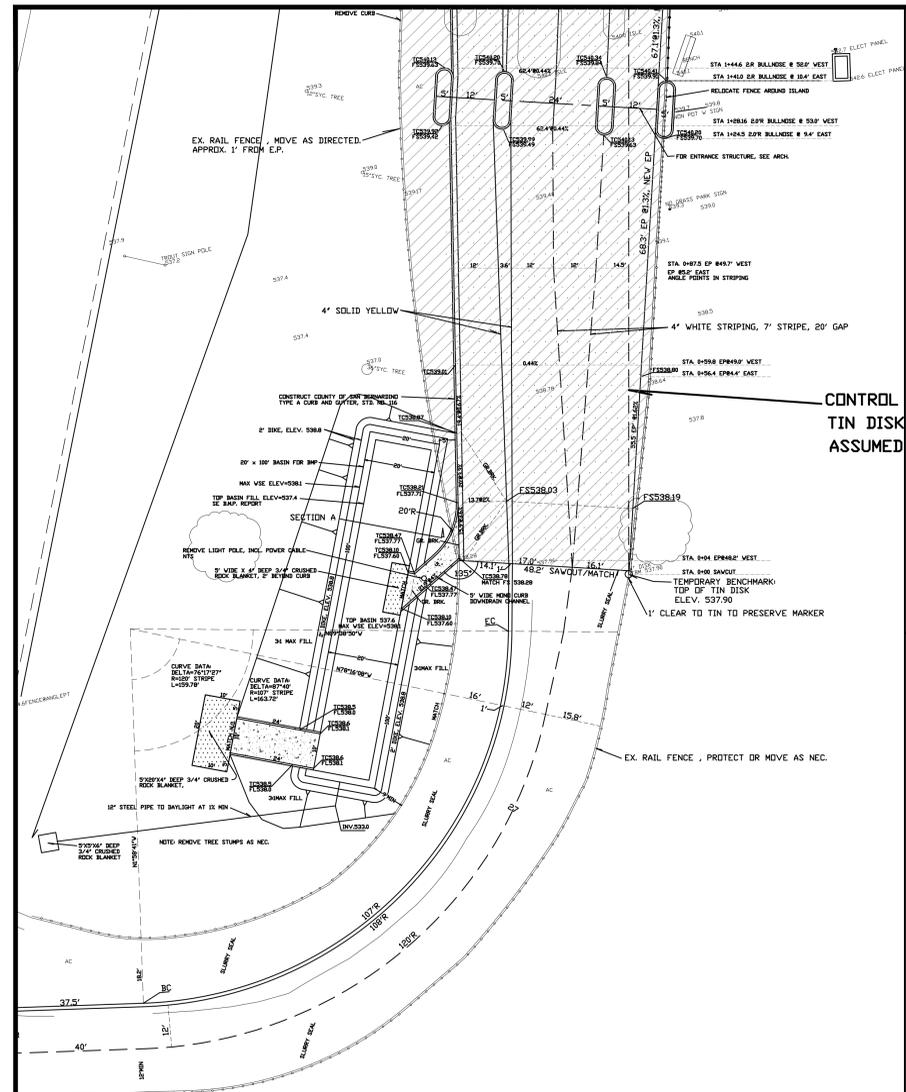
**DIG ALERT**

DIAL BEFORE YOU DIG

TWO WORKING DAYS BEFORE YOU DIG

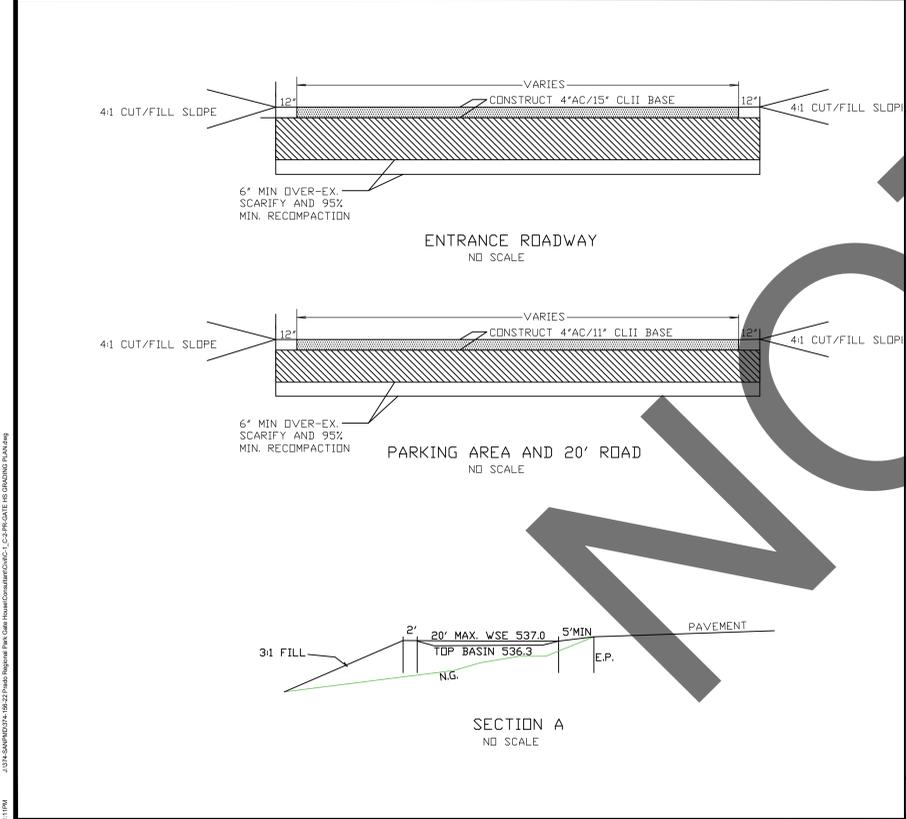
TOLL FREE CALL 811

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT



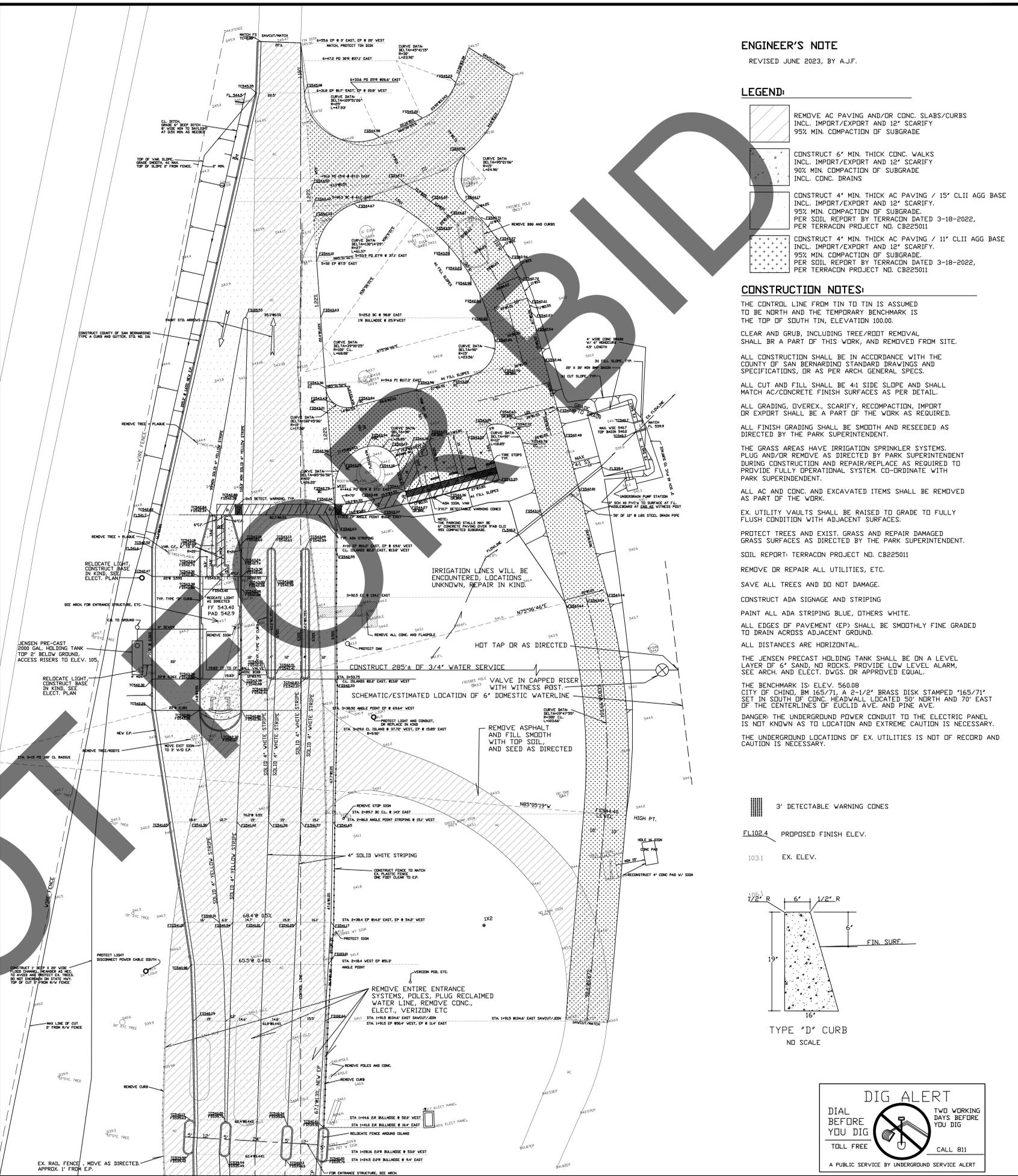
ENLARGED PRECISE GRADING PLAN

SCALE: 1"=20'-0" 16



DETAILS / SECTIONS

SCALE: NTS 20



ENLARGED PRECISE GRADING PLAN

SCALE: 1"=20'-0" 4

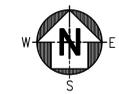
# NOT FOR BID

EUCLID AVENUE

CALTRANS FENCE

**KEY NOTE**

1. EXISTING GUARD SHACK AND ENTRY FEATURES TO BE DEMOLISHED.
2. EXISTING MONUMENT WITH FLAGPOLES TO BE DEMOLISHED AND REPLACED WITH NEW LOCATION. SALVAGE PLAQUES FOR REUSE.
3. EXISTING ROAD TO REMAIN. PROTECT.
4. EXISTING AC PAVING TO BE DEMOLISHED.
5. EXISTING BBQ AND CURBS TO BE DEMOLISHED.
6. EXISTING AC PAVING TO BE DEMOLISHED. FILL SMOOTH WITH TOP SOIL AND SEED AS DIRECTED.
7. EXISTING FENCE TO DEMOLISHED.
8. EXISTING FENCE TO REMAIN AND PROTECT. MOVE AS NECESSARY.
9. EXISTING TREE TO REMAIN. PROTECT.
10. EXISTING TREE TO BE DEMOLISHED.
11. EXISTING LIGHT TO REMAIN. PROTECT.
12. EXISTING SIGN. REMOVE AND RELOCATE.
13. EXISTING SIGN TO BE REMOVED.
14. EXISTING SIGN. REMOVE AND RELOCATE.
15. EXISTING TREE AND PLAQUE (2) TO BE DEMOLISHED.
16. REMOVE AND RELOCATE CONCRETE PAD WITH SIGN.



DEMO SITE PLAN

SCALE: 1"=30'-0" 1



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16700 EUCLID AVENUE  
CHINO, CA 91708

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1-24-2023	95% CDS
3-17-2023	PLAN CHECK CD#
4-5-2023	REVISION $\Delta$
JAN-2024	BID SET

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DRAWING NAME:



SHEET TITLE:

DEMO  
SITE PLAN

SHEET NO.  $\Delta$

A1.0

01/17/2024 11:28AM J:\174-SANB\10214-18-22\174-Sub\Regional\Prado Guard Shack\Architectural\10-PRADO-GUARD SHACK SITE PLAN.dwg









4205 SIVOLI, TEMECULA, CALIFORNIA 92590-3700  
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 SAN BERNARDINO, CA 92415

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 GUARD SHACK

PROJECT #10J01257

16700 EULCLD AVENUE  
 CHINO, CA 91708

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1-24-2023	95% CDS
3-17-2023	PLAN CHECK CD
7-6-2023	REV 2
JAN-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-56-22  
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 PLOT DATE:  
 DRAWING NAME:



SHEET TITLE:  
 DIM/REF PLAN  
 RCP/ROOF PLAN  
 SCHEDULES

SHEET NO.:

A2.1

KEY NOTES

- CONCRETE SLAB WITH SEALER.
- MASONRY WALL WITH CONCRETE CAP.
- GYPSUM BOARD CEILING OVER C.J. FRAMING.
- DROPPED CEILING, GYPSUM BOARD OVER C.J. FRAMING.
- FIBER CEMENT SOFFIT PANELS.
- STANDING SEAM METAL ROOF PANELS.
- TUBULAR SKYLIGHT.
- SAFE WITH ACCESS DOOR IN WALL FOR DEPOSITS.
- TACTILE EXIT SIGN. SEE 18 A22
- TRANSACTION WINDOW STAINLESS STEEL SHELF. SEE 18 A22
- WOOD POSTS BELOW.
- FAUX WOOD BEAM.
- WIRE GROMMET, TYP. OF 13.
- PLASTIC LAMINATE COUNTERTOP.
- METAL ROOF PANELS.
- LINE OF FLOOR BELOW.
- FLOOD VENT FOR BI-DIRECTIONAL WATER FLOW, MOUNTED BETWEEN WOOD STUDS. PROVIDE ONE LOW AND ONE HIGH AT EACH LOCATION. SEE ELEVATIONS FOR HEIGHT LOCATIONS.

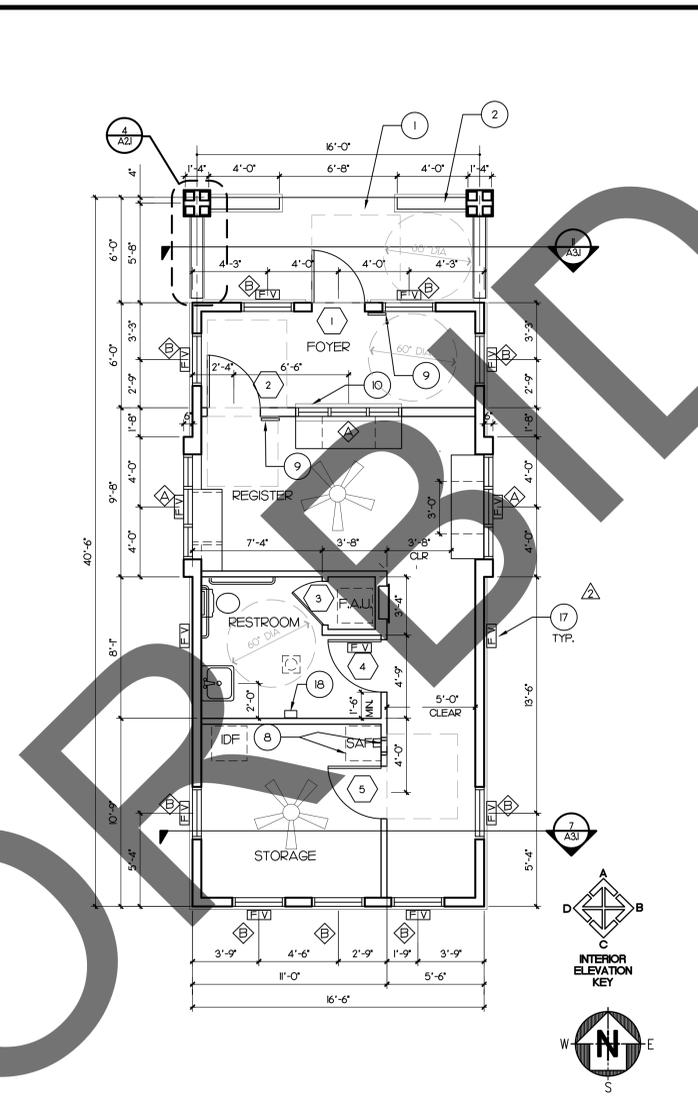
SMART VENT, FLOOD VENT MODEL 540-570, SS FINISH WITH TRIM - SLEEVE KIT, AND SEALING KIT, FLOOD COVERAGE 200 SF PER VENT. ICC ESR-2074  
 MANUF: SMART VENT PRODUCTS, INC.  
 www.smartvent.com, PH 800-507-0865

- SEWAGE HOLDING TANK ALARM INDICATOR.

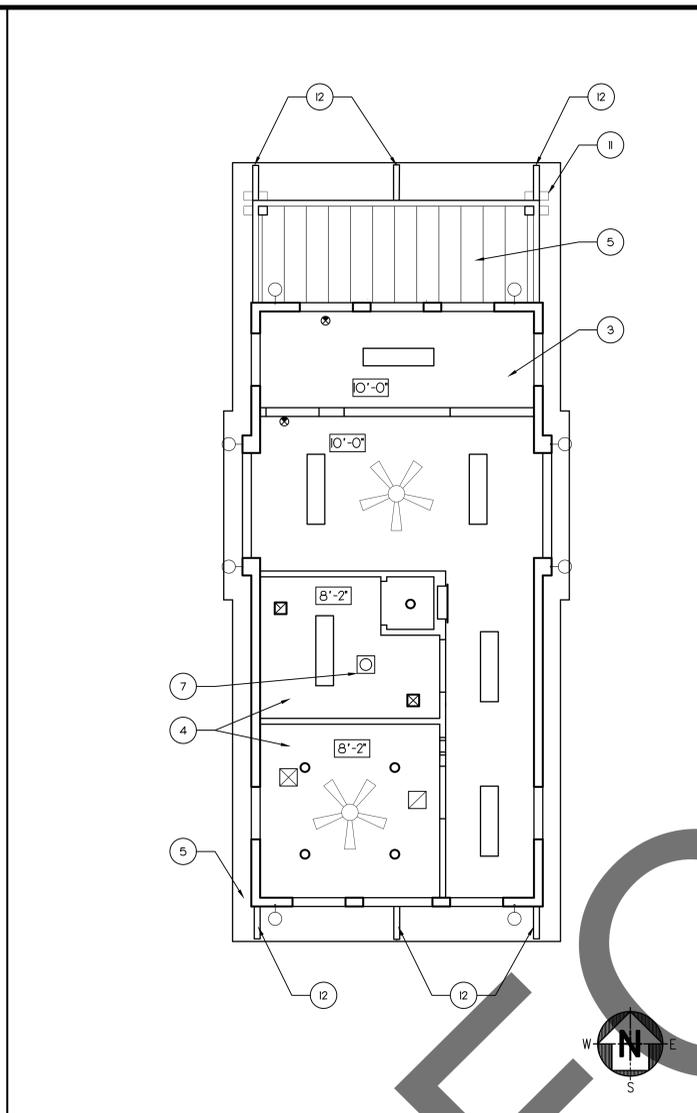
- FLOOD VENT PER KEY NOTE 17
- SEE WINDOW SCHEDULE, A22
- SEE DOOR SCHEDULE, A22

RCP LEGEND

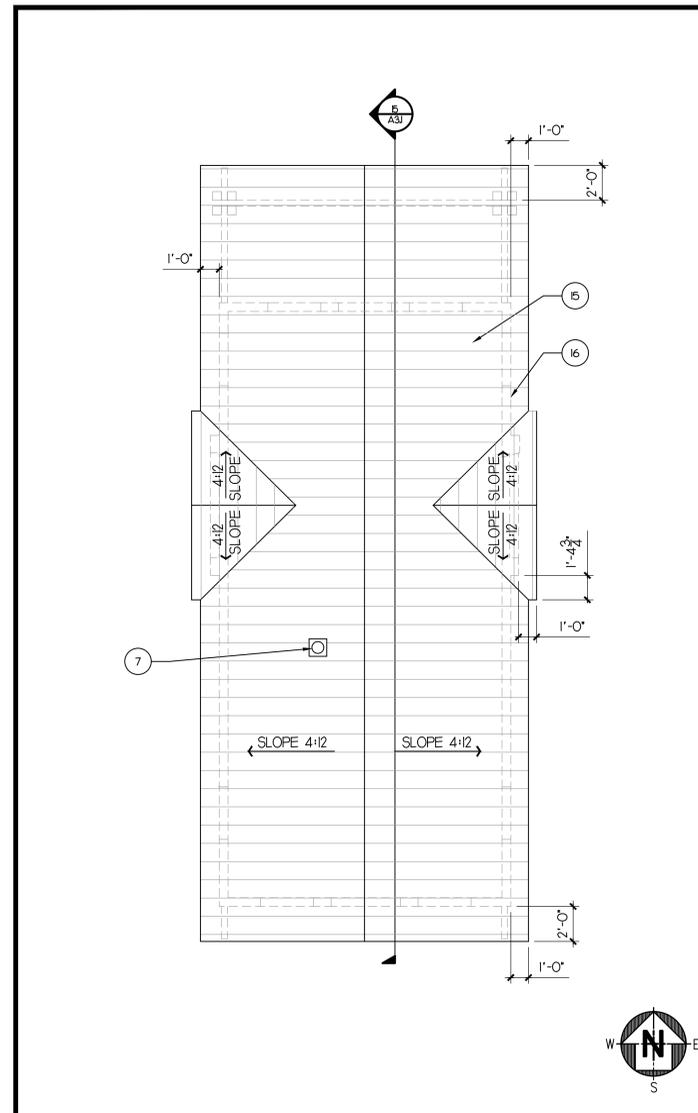
- RECESSED DOWN LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- EXHAUST FAN
- GYPSUM BOARD CEILING
- FIBER CEMENT SOFFIT PANELS
- EXIT SIGN
- TUBULAR SKYLIGHT
- CEILING FAN  
 MANUFACTURE: MINKA AIRE  
 MODEL: F786-OR3 44" EXT. RATED  
 WALL CONTROL-W0400  
 INSTALL AT 7'-0" AFF CLEARANCE MIN.



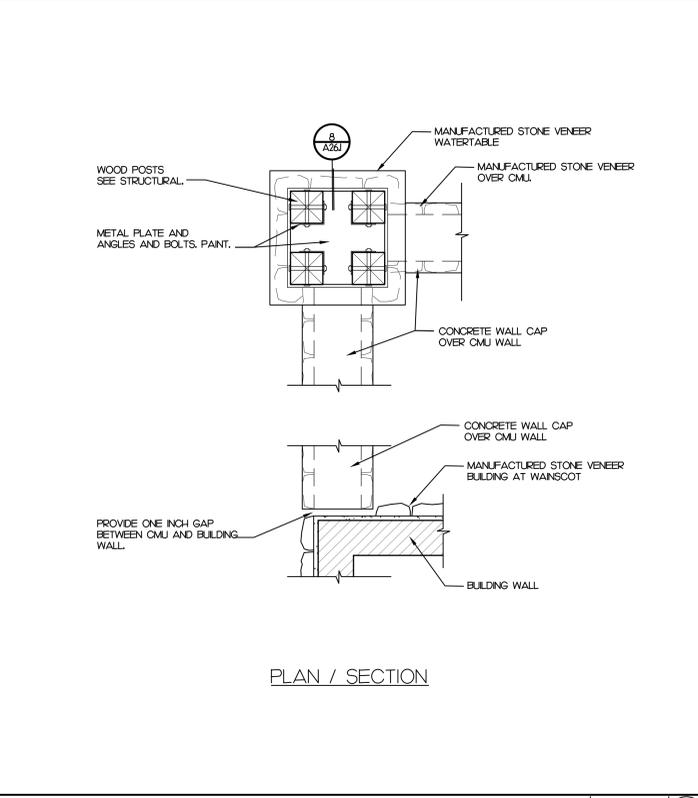
DIMENSION/REFERENCE PLAN SCALE: 1/4"=1'-0" 2



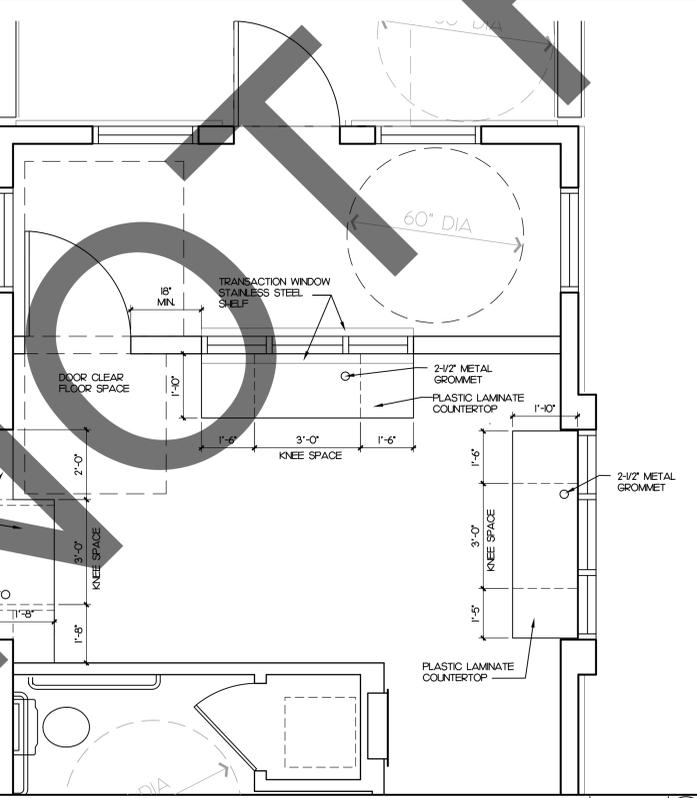
REFLECTED CEILING PLAN SCALE: 1/4"=1'-0" 6



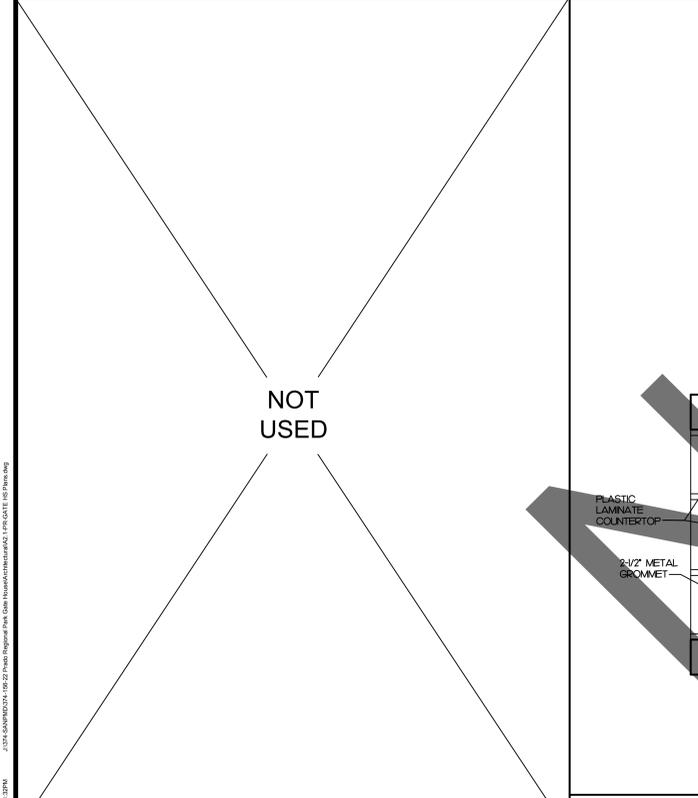
ROOF PLAN SCALE: 1/4"=1'-0" 10



FOUR POST COLUMN / CMU WALL SCALE: 1/4"=1'-0" 4



ENLARGED PLAN-REGISTER SCALE: 1/2"=1'-0" 8



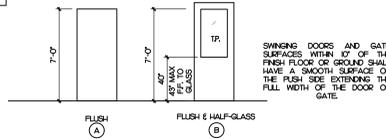
NOT USED

**DOOR SCHEDULE**

DOOR MARK	OPENING SIZE	THICKNESS (NOTE 2)	CONSTRUCTION (3)	FACING & FIN. (4)	GLAZING (5)	RATING (6)	FRAME (7)	SILL (7)	HARDWARE GROUP (8)	TYPE (9)	REMARKS
1	3070	-	HM	MP	X	-	-	-	-	B	① ② ③ ④ ⑤
2	3070	X	HM	MP	-	-	-	-	-	A	②
3	2670	X	X	X	-	-	-	-	-	A	
4	3070	X	X	X	-	-	-	-	-	A	② ⑥
5	3070	X	X	X	-	-	-	-	-	A	②

- SYMBOL** (DNO) ← DOOR MARK (DNO-DOOR NUMBER)
- NOTES**
1. "X" SHOWN ON SCHEDULE INDICATES TYPICAL
  2. ALL DOORS 1-3/4" THICK UNLESS OTHERWISE NOTED
  3. DOOR CONSTRUCTION:  
TYPICAL - SOLID CORE  
HC - HOLLOW CORE  
HM - HOLLOW METAL
  4. FACING & FINISH:  
TYPICAL - PAINT GRADE  
MP - METAL PAINTED
  5. GLAZING:  
TYPICAL - TEMPERED PLATE  
CW - CLEAR WIRE
  6. 3/4, 1, 1/2, ETC. INDICATES HOURS OF FIRE RATING.
  7. NUMBER INDICATES DETAIL SHOWN ON SHEET A-A1
  8. SEE SPECIFICATIONS FOR HARDWARE GROUPS.
  9. DOOR TYPES:

- REMARKS**
1. INSTALL SIGN ABOVE DOOR STATING "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED". PROVIDE 1" HIGH LETTERS ON A CONTRASTING BACKGROUND.
  2. W/ CLOSER.
  3. PROVIDE EXIT SIGNAGE - SEE (B/A22)
  4. LOCK OR LATCH SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
  5. PROVIDE WEATHER STRIPPING AT JAMES.
  6. PROVIDE A.D.A. RR. SIGNAGE. SEE (B/A22)



NOTE: ALL DOORS TO HAVE THE BOTTOM 10" A SMOOTH UNINTERRUPTED SURFACE OR SHALL BE PROVIDED WITH A 10" HIGH SMOOTH METAL PANEL AT THE BOTTOM OF THE DOOR.

NOTE: ALL EXITS TO BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT

**FINISH SCHEDULE**

ROOM NAME	FLOOR		WALL A		WALL B		WALL C		WALL D		CEILING		REMARKS
	MTL	BASE	MTL	FIN	MTL	FIN	MTL	FIN	MTL	FIN	MTL	FIN	
OFFICE	FI	B2	-	-	WI	A	WI	A	WI	A	CI	A	8-2
RESTROOM	F2	BI	WI	W2	A	B	WI	W2	A	B	CI	A	8-2
REGISTER	FI	B2	WI	A	WI	A	WI	A	WI	A	CI	A	10-0
FALL	FI	B2	WI	A	WI	A	WI	A	WI	A	CI	A	8-2
HALL	FI	B2	-	-	WI	A	WI	A	WI	A	CI	A	8-2
FOYER	FI	B2	WI	A	WI	A	WI	A	WI	A	CI	A	8-2

**MATERIALS LIST**

- FLOORS**
- F1 - EXPOSED CONCRETE W/ SMOOTH TROWEL FINISH AND SEALER
  - F2 - CERAMIC TILE - (DEPRESS FLOOR SLAB 2')
- BASE**
- B1 - CERAMIC TILE - COVER, MATCH WALL TILES
  - B2 - 4" TOP SET BASE
- WALLS**
- W1 - GYPSUM BOARD 5/8" (TYPE "X" TAPED & TEXTURED (MEDIUM/ORANGE PEEL, PROVIDE WATER RESISTIVE TYPE BEHIND WET AREAS)
  - W2 - CERAMIC TILE OVER CONCRETE BACKER BOARD, FINISH HEIGHT PER INTERIOR ELEVATION.
- CEILING**
- C1 - GYPSUM BOARD - 5/8" TYPE "X" TAPED & TEXTURED (SPATTER/ORANGE PEEL, PROVIDE WATER RESISTIVE AS NOTED).

**FINISH LIST**

- A - PAINT - EGGSHELL
- B - CERAMIC TILE
- C - MANUFACTURER'S FINISH (CLEAN)



42005 2500 DR., TEMECULA, CALIFORNIA 92590-3700  
Phone: 951.266.0110 Fax: 951.266.6079 Email: stk@stkr.com

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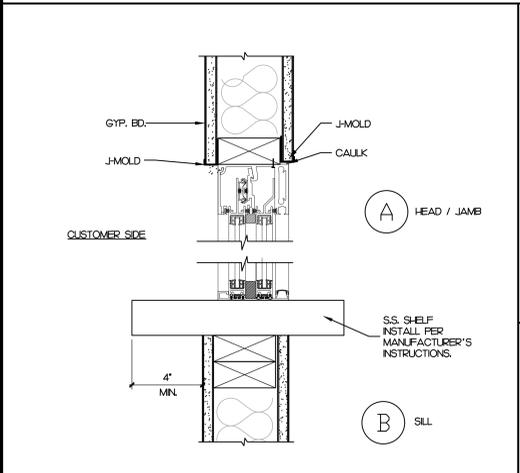


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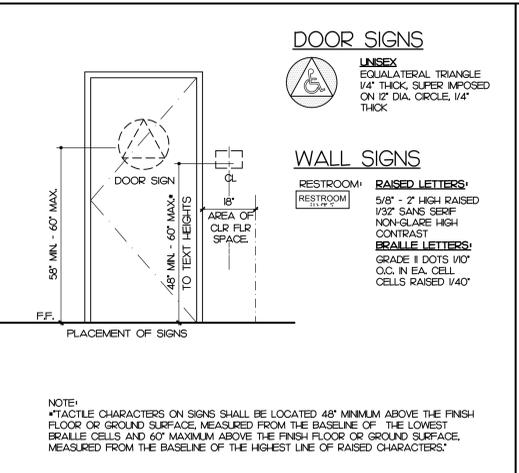
SCHEDULES  
DETAILS

SHEET NO.:

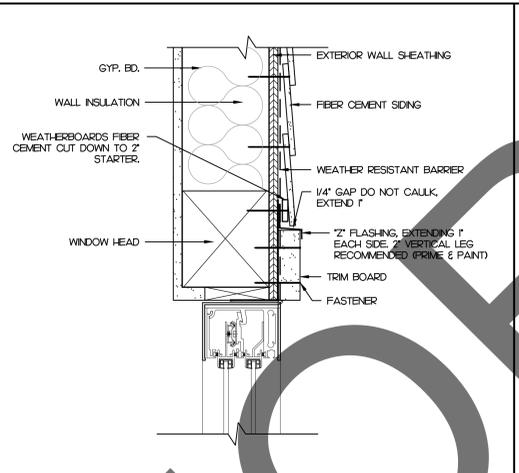
**A2.2**



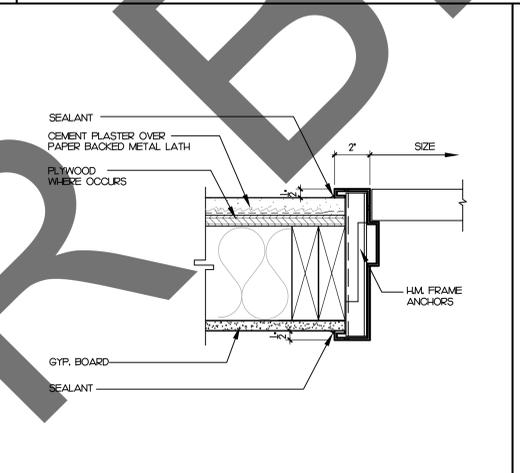
**SERVICE WINDOW-INTERIOR** SCALE: 3/4"-0" (18)



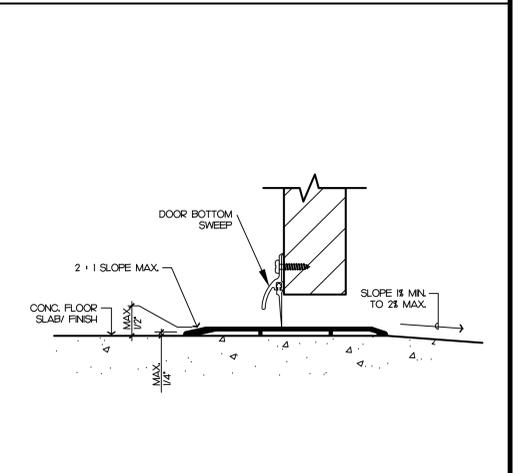
**RR DOOR SIGNS** SCALE: 1/2"-0" (14)



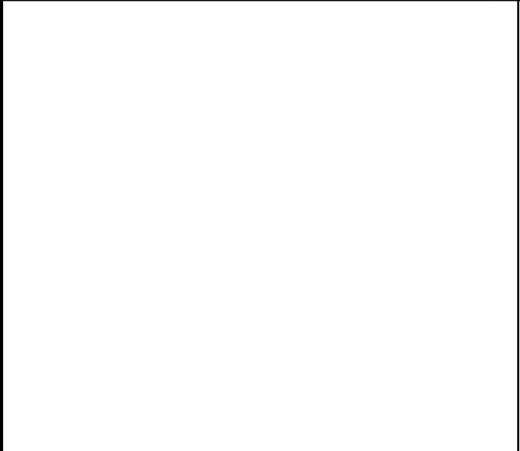
**SERVICE WINDOW HEAD** SCALE: 3/4"-0" (10)



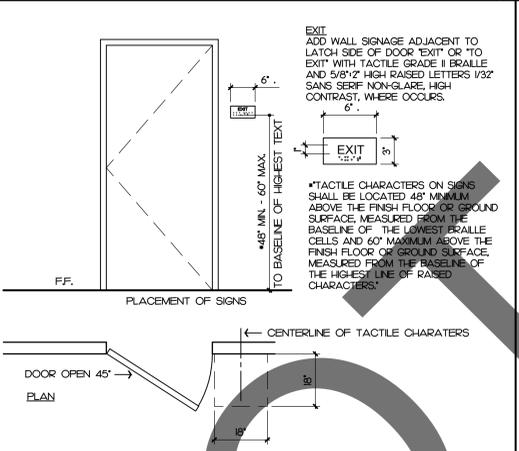
**DOOR JAMB** SCALE: 3/4"-0" (6)



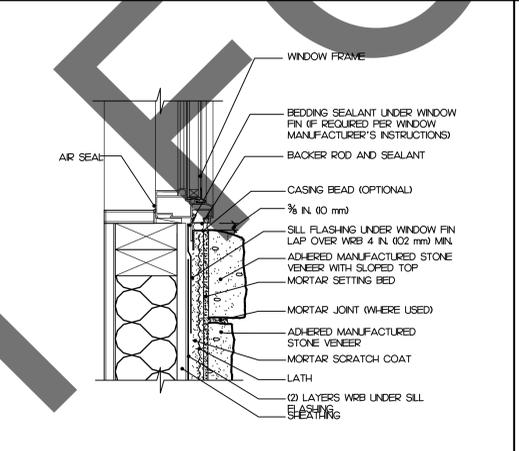
**THRESHOLD** SCALE: 3/4"-0" (2)



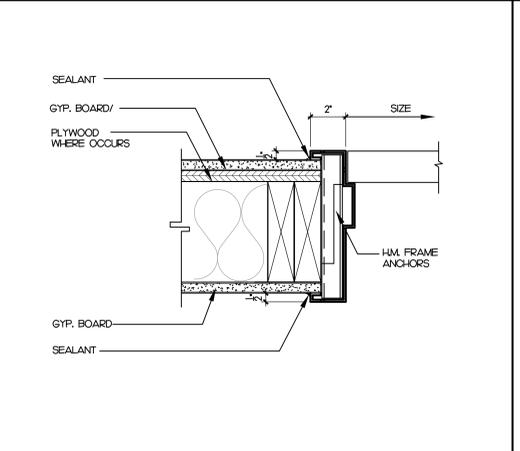
**EXIT DOOR SIGN** SCALE: 1/2"-0" (15)



**WINDOW SILL** SCALE: 3/4"-0" (11)



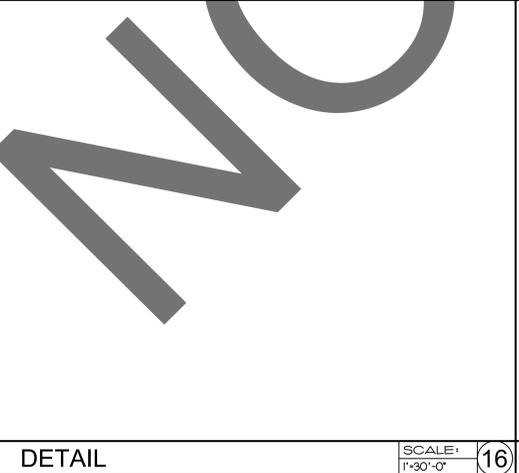
**WINDOW HEAD** SCALE: 3/4"-0" (8)



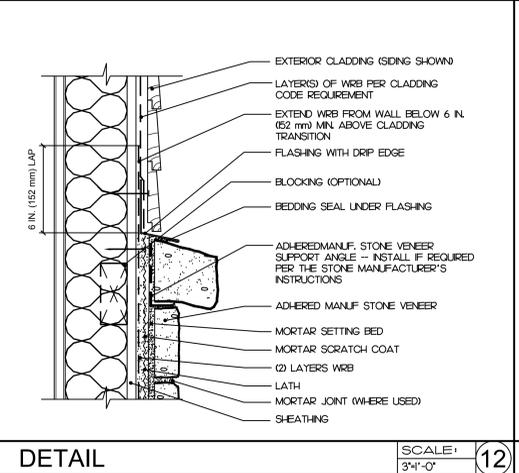
**THRESHOLD** SCALE: 3/4"-0" (3)



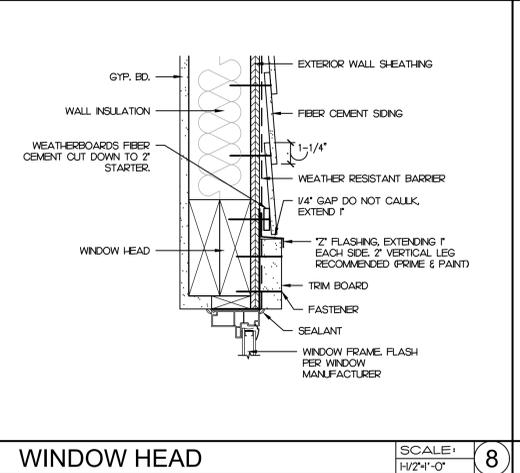
**DETAIL** SCALE: 1"-30"-0" (16)



**DETAIL** SCALE: 3/4"-0" (12)



**WINDOW HEAD** SCALE: 1/2"-0" (8)



**WINDOW SCHEDULE** SCALE: 1/4"-0" (4)

- ALL EXTERIOR WINDOWS DUAL GLAZED. FIELD MEASURE ALL ROUGH OPENINGS PRIOR TO FABRICATION/INSTALLATION.
  - ALL WINDOWS SIZES SHOWN ARE NOMINAL SIZE. SEE MFR. INFORMATION FOR ROUGH OPENING SIZES.
  - (A) INTERIOR WINDOW SILL, SEE (B/A22)
- T.P. = TEMPERED PLATE



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 DRAWING NAME:



SHEET TITLE:

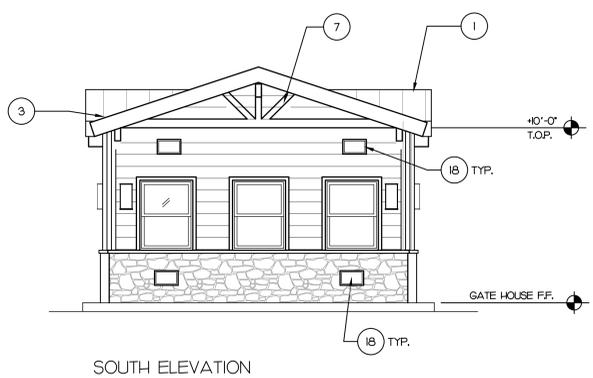
ELEVATIONS  
 /SECTIONS

SHEET NO.:

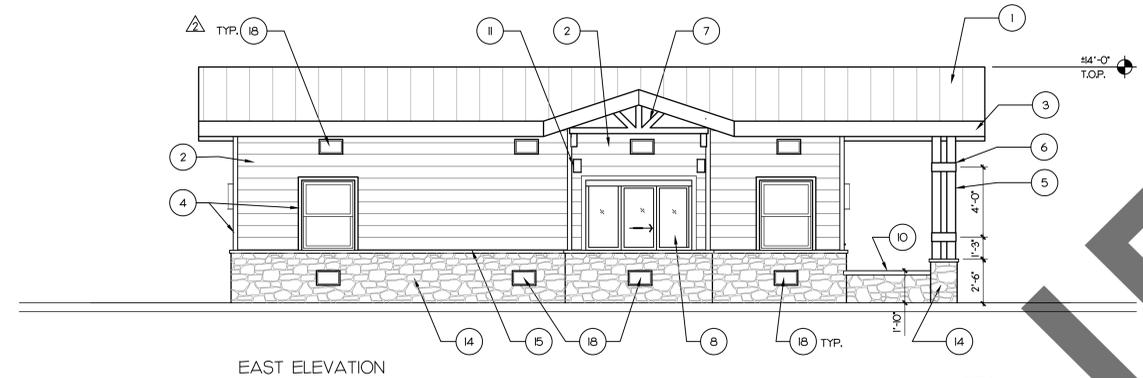
A3.1

KEY NOTE

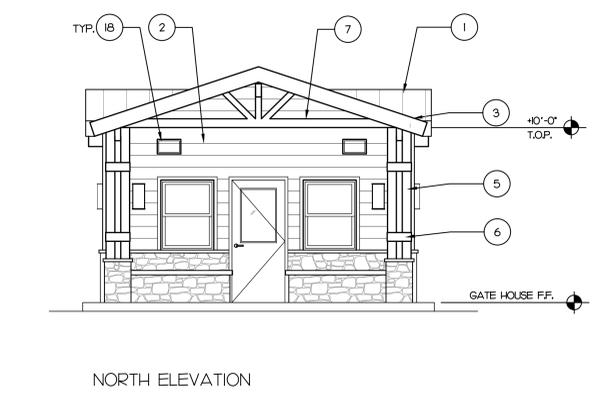
1. STANDING SEAM METAL ROOF.
2. FIBER CEMENT LAP SIDING
3. FASCIA BOARD- FIBER CEMENT TRIM
4. FIBER CEMENT BOARD TRIM
5. WOOD POST, PAINTED
6. STEEL BAND, PAINT, SEE 12 A&I
7. GABLE END WALL FIBER CEMENT SIDING TRIM, SEE 16 A&I
8. ANODIZED ALUMINUM SERVICE WINDOW
9. CONCRETE CURB
10. CONCRETE WALL CAP
11. WALL MOUNTED LIGHT FIXTURE- REF. ELECT.
12. MINIMUM R-30 BATT INSULATION
13. R-21 BATT INSULATION
14. MANUFACTURED STONE VENEER
15. MANUFACTURED STONE VENEER WATER TABLE
16. ROOF RAFTERS, SEE STRUCTURAL PLANS.
17. LOUVERS, SEE MECH. PLANS.
18. FLOOD VENTS, LOW VENT INSTALLED AT +12" AFF., UPPER VENTS INSTALLED AT 8'-6" AFF.



SOUTH ELEVATION



EAST ELEVATION



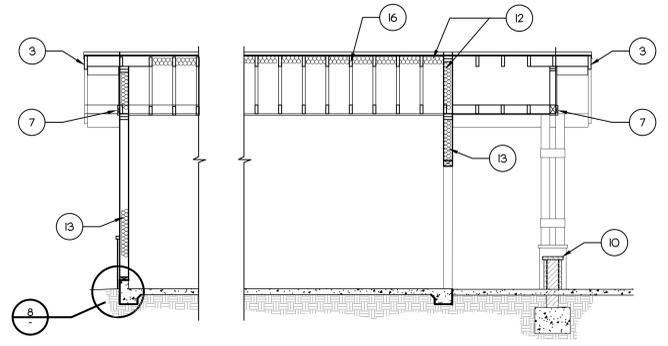
NORTH ELEVATION



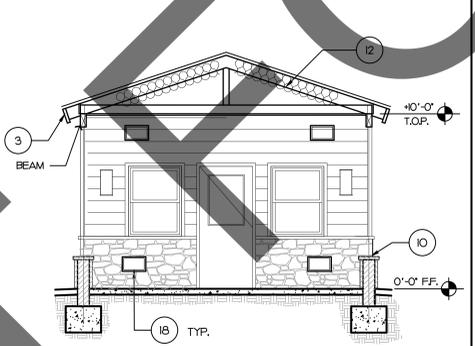
WEST ELEVATION

EXTERIOR ELEVATIONS

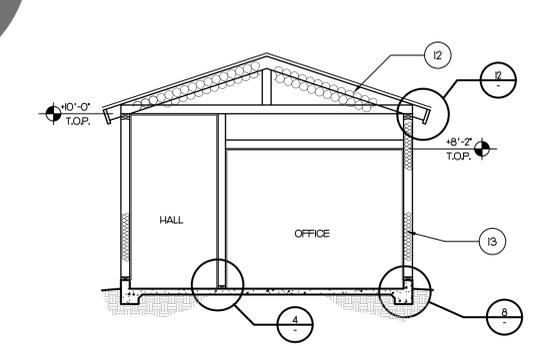
SCALE: 1/4" = 1'-0" 6



SCALE: 3/8" = 1'-0" 15



SCALE: 3/8" = 1'-0" 11



SCALE: 3/8" = 1'-0" 7

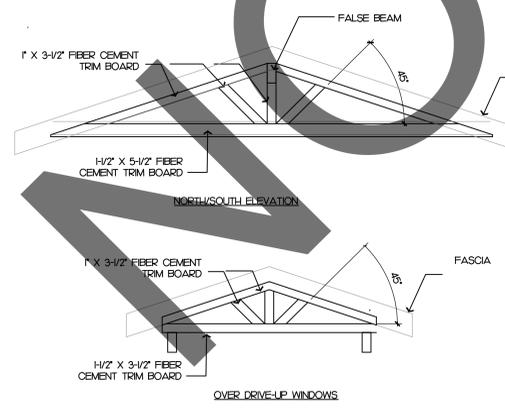
BUILDING SECTION

BUILDING SECTION

BUILDING SECTION

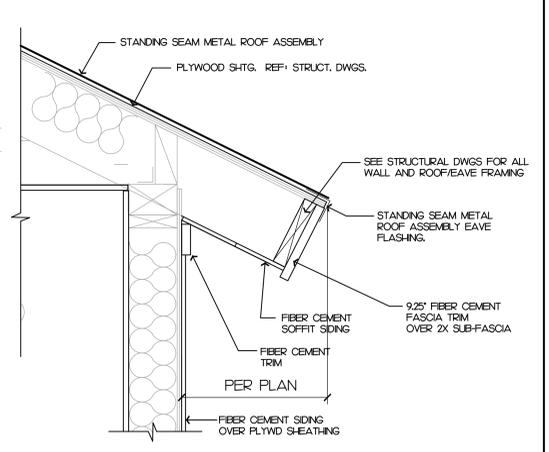
EXTERIOR FINISHES

NOT USED



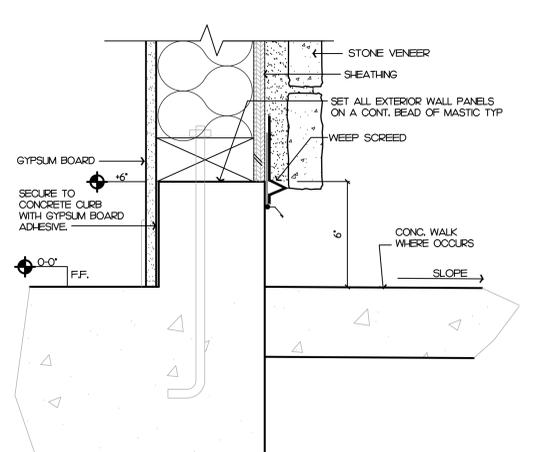
GABLE WALL TRIM

SCALE: 3/8" = 1'-0" 16



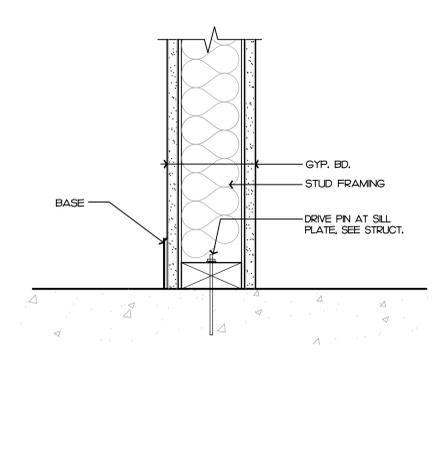
EAVE DETAIL

SCALE: 1/2" = 1'-0" 12



SILL DETAIL

SCALE: 3" = 1'-0" 8



SILL DETAIL

SCALE: 3" = 1'-0" 4

1/17/2024 1:39PM J:\174-SANBANDON\174-188-22\Draw\Regional\Prado Guard Shack\Architectural\A3.1 PRADO ELEVATIONS.dwg





4205 ZEVOR DR., TEMECULA, CALIFORNIA 92590-3700  
 Phone: 951.266.8110 Fax: 951.266.8079 Email: stk@stkc.com

CONSULTANT

PROJECT ADMINISTERED BY:  
 SAN BERNARDINO COUNTY  
 REAL ESTATE SERVICES  
 DEPARTMENT -  
 PROJECT MANAGEMENT  
 DIVISION

385 N. ARROWHEAD AVE.  
 SAN BERNARDINO, CA 92415

PROJECT NAME:  
 PRADO REGIONAL PARK  
 GUARD SHACK

PROJECT #10J01257

16700 EUCLID AVENUE  
 CHINO, CA 91708

ISSUE INFORMATION	
DATE	INFORMATION
12-22	50% PROGRESS
1-8-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
JAN-2024	BID SET

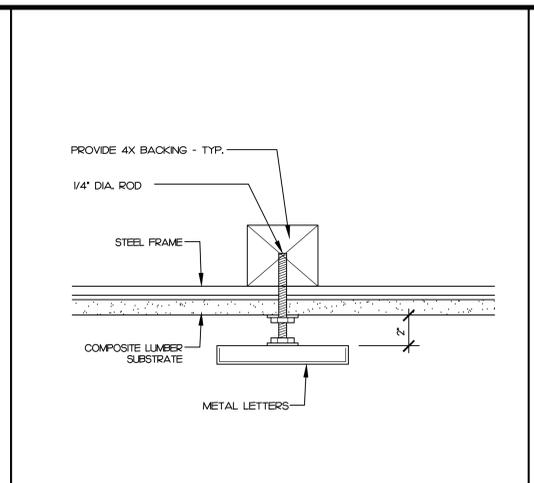
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 STK PROJECT NO.: 374-156-22  
 SCALE: AS NOTED  
 DATE: MARCH 2023  
 PLOT DATE:  
 DRAWING NAME:



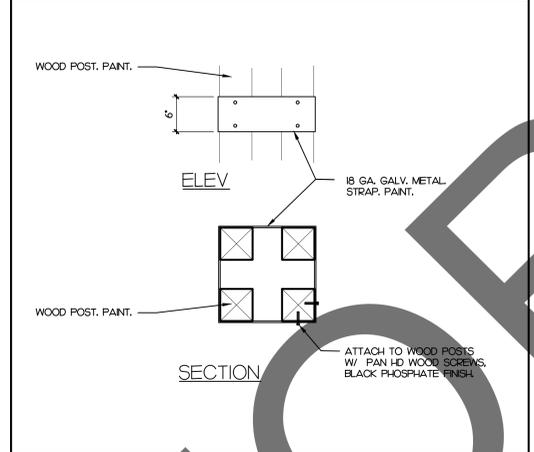
SHEET TITLE:  
 DETAILS

SHEET NO.:

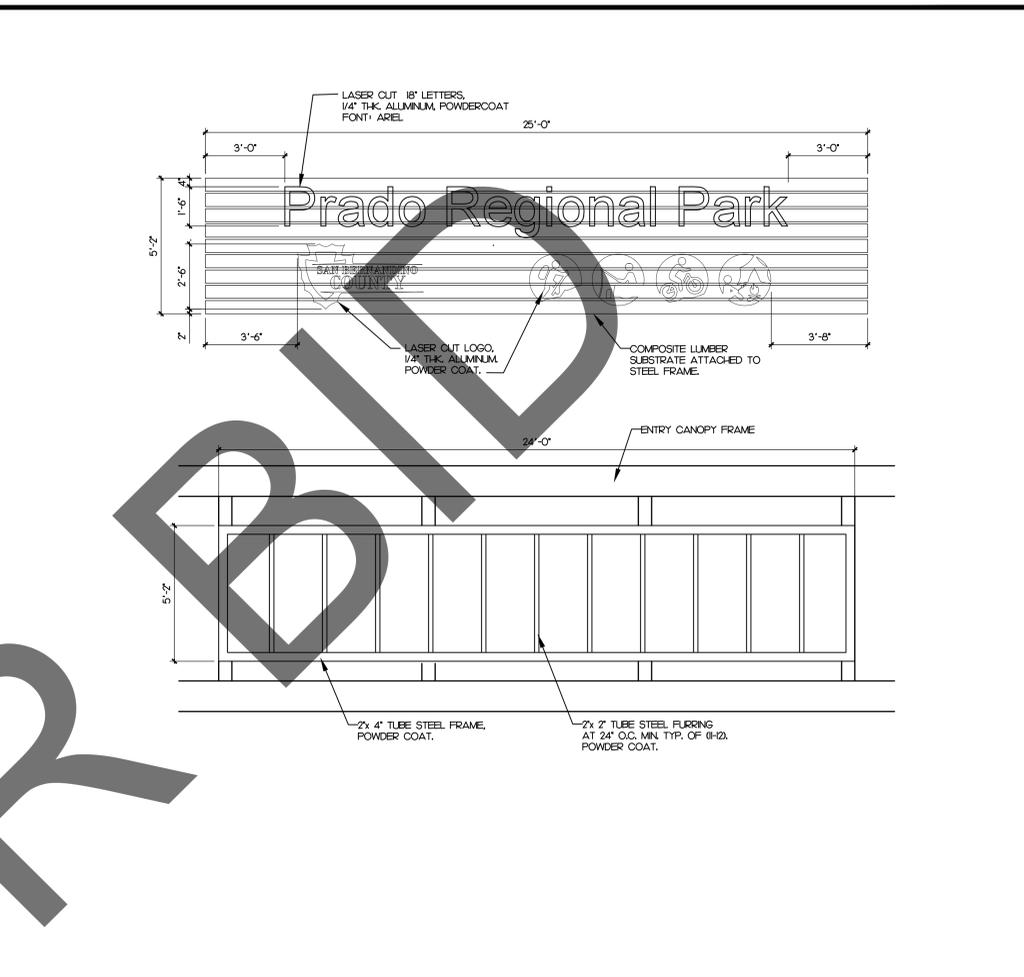
A6.1



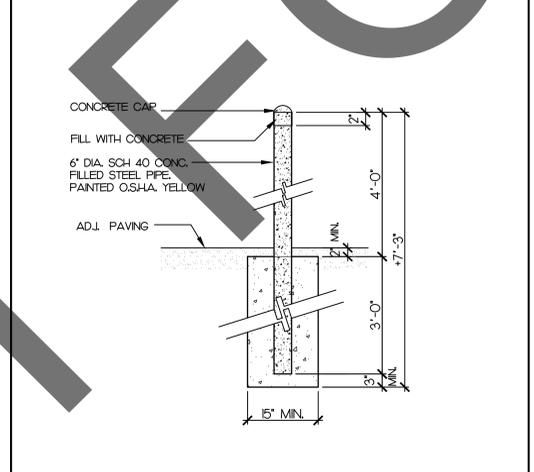
DETAIL SCALE: 3/4"=1'-0" 9



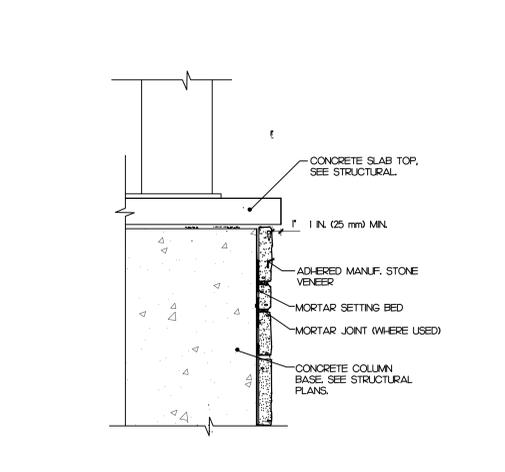
STEEL BAND - WOOD POSTS SCALE: 1/4"=1'-0" 10



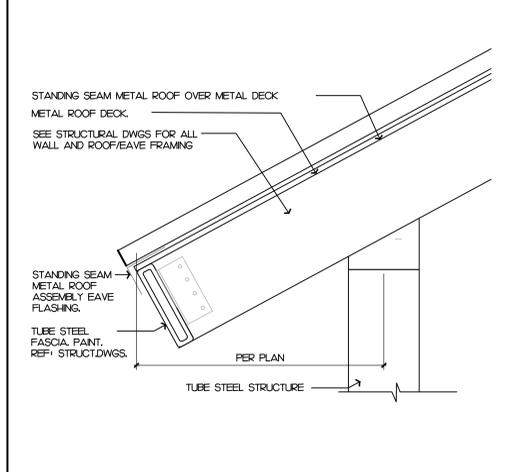
SIGN ELEVATION / FRAME SCALE: 3/8"=1'-0" 2



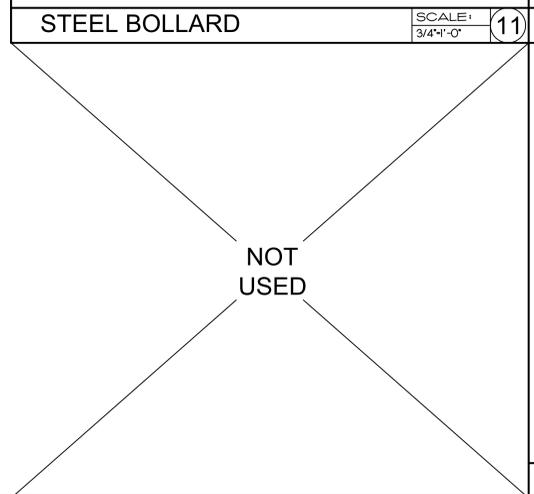
STEEL BOLLARD SCALE: 3/4"=1'-0" 11



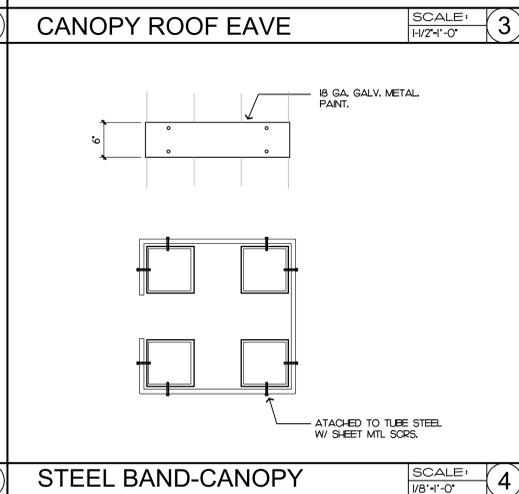
MANUF. STONE VENEER SCALE: 1/2"=1'-0" 7



CANOPY ROOF EAVE SCALE: 1/2"=1'-0" 3



COLUMN BASE SCALE: 1"=1'-0" 8



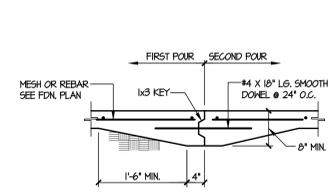
STEEL BAND-CANOPY SCALE: 1/8"=1'-0" 4

NOT USED

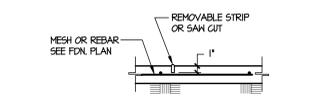
NOT USED

NOT FOR CONSTRUCTION

01/11/2024, 4:39PM C:\STK\BANKING\2024\186-22\Prado Regional Park\_Guard Shack\A6.1.dwg PLOT DATE: 03/21/2023

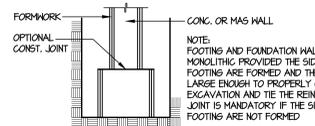


**CONSTRUCTION JOINT**  
(C.J. ON PLANS AND 30'-0" O.C. MAX.)

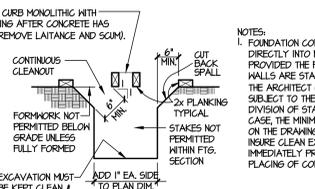


**WEAKENED PLANE JOINT**  
(W.P.J. ON PLANS AND 15'-0" O.C. MAX.)

**TYPICAL SLAB JOINT DETAILS**  
SCALE: NOT TO SCALE



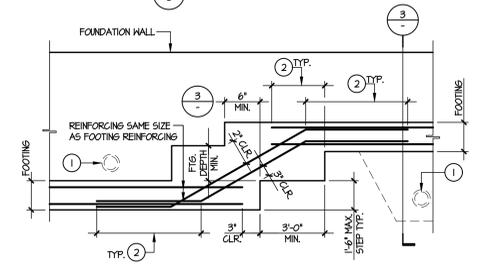
**FULLY FORMED FOOTING (MONOLITHIC POUR)**



**UNIFORM FOOTING POURED AGAINST GRADE**  
MANDATORY MINIMUM FORMWORK UNLESS FULLY FORMED

**TYPICAL FOUNDATION FORMING DETAILS**  
SCALE: NOT TO SCALE

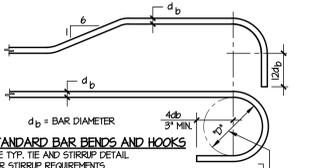
- NOTES:**
- PIPE WITH SLEEVE PER SEE FOUNDATION NOTE B ON S01 SEE CIVIL/PLUMBING/ELECT. DWGS.
  - LAP SPICE PER



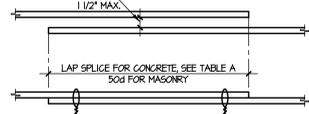
**TYPICAL STEPPED FOOTING DETAIL**  
SCALE: NOT TO SCALE

TABLE A		TABLE B	
BAR SIZE	BAR LAP	BAR SIZE	BAR LAP
#4	21"	#4	25"
#5	33"	#5	31"
#6	40"	#6	37"
#7	50"	#7	54"
#8	66"	#8	62"
#9	75"	#9	70"
#10	84"	#10	74"
#11	93"	#11	87"

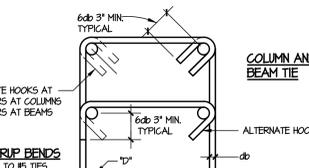
- NOTES:**
- ALL TABULATED BAR LAPS SHALL BE MULTIPLIED BY 1.3 FOR LIGHT WEIGHT CONCRETE.
  - ALL TABULATED BAR LAPS SHALL BE MULTIPLIED BY 1.3 FOR BARS AT TOP OF FOOTINGS.
  - CLEAR SPACING OF BARS BEING DEVELOPED OR SPICED NOT LESS THAN 2d; CLEAR COVER NOT LESS THAN 4d; AND STIRRUPS OR TIES THROUGHOUT 1d NOT LESS THAN THE MINIMUM OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPICED NOT LESS THAN 2d; AND CLEAR COVER NOT LESS THAN 4d.



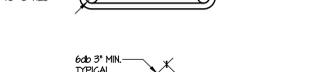
**STANDARD BAR BENDS AND HOOKS**  
SEE TYP. TIE AND STIRRUP DETAIL FOR STIRRUP REQUIREMENTS



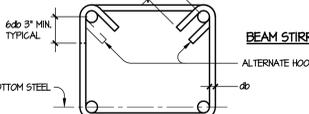
**TYPICAL REINFORCING BAR DETAILS**  
SCALE: NOT TO SCALE



**COLUMN AND BEAM TIE**



**BEAM STIRRUP**



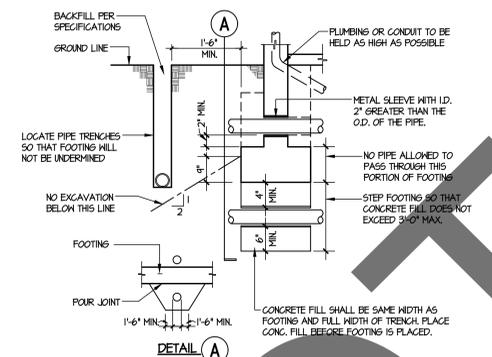
**TYPICAL TIE AND STIRRUP DETAILS**  
SCALE: NOT TO SCALE

- STRUCTURAL OBSERVATION**
- WHERE REQUIRED BY THE PROVISIONS OF SECTION 104A.6 THE OWNER SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS AS DEFINED. THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR HAVE THE RESPONSIBILITY FOR INSPECTION REQUIRED BY SECTIONS 104 APPENDIX CHAPTER I, AND 104A OR ANY OTHER SECTIONS OF THE 2022 C.B.C. AT THE CONCLUSION OF THE WORK INCLUDED IN THE PERMIT. THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
  - STRUCTURAL OBSERVATION SHALL BE PROVIDED BY THE STRUCTURAL ENGINEER AT THE FOLLOWING PHASES AS A MINIMUM.
    - UPON COMPLETION OF FOUNDATION REINFORCEMENT, IMMEDIATELY PRIOR TO CONCRETE POUR.
    - SHEAR WALL NAILING AND ANCHORAGE PRIOR TO COVERING WALLS.
    - ROOF FLYWOOD NAILING OBSERVATION.
    - ADDITIONAL VISITATION AS DEEMED NECESSARY BY THE STRUCTURAL ENGINEER.
  - FOR ALL ITEMS THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER 48 HOURS PRIOR TO COMPLETION OF THE WORK TO BE OBSERVED.

- MASONRY**
- ALL MASONRY CONSTRUCTION SHALL COMPLY WITH THE 2022 C.B.C. CHAPTER 21A.
  - REINFORCING SHALL HAVE A MINIMUM ONE BAR DIAMETER GROUT COVERAGE.
  - REINFORCING SPLICES SHALL HAVE A MINIMUM 12 BAR DIA. LAP. PROVIDE MIN. 12 BAR DIA. LAP TYP. FOR ALL THE FOLLOWING CONDITIONS:
    - ALL VERTICAL JAMB REINFORCING SPLICES
    - VERTICAL REINFORCING SPLICES OCCURRING AT MID 1/3 HEIGHT OF WALL
    - ALL CHORD BAR SPLICES
  - MASONRY CONSTRUCTION SHALL BE REINFORCED AND GROUTED SOLID.
  - PIPES OR DUCTS ARE NOT PERMITTED WITHIN MASONRY CONSTRUCTION UNDO.
  - CEMENT: PORTLAND CEMENT TYPE I OR II, LOW ALKALI, ASTM C-150.
  - MORTAR SHALL CONFORM TO C.B.C. 2108A.2, TYPE S - 2000 P.S.I.
  - GROUT: 1 PART CEMENT, 3 PART SAND, 2 PART GRAVEL 2000 P.S.I. MINIMUM COMPRESSIVE STRENGTH.
  - CONCRETE BLOCK SHALL CONFORM TO A.S.T.M. C90 MINIMUM COMPRESSIVE STRENGTH 2000 P.S.I. (MEDIUM HEIGHT).
  - MASONRY SHALL BE Laid IN RUNNING BOND UNDO ON ARCH.
  - ALL BOLTS IN MASONRY SHALL BE ACCURATELY SET WITH TEMPLATES.
  - CORE TESTS:
    - COMPRESSION: 2000 P.S.I.
    - TENSILE: 200 P.S.I.
  - UNIT STRENGTH OF MASONRY SHALL BE 2000 PSI.
  - METAL REINFORCEMENT SHALL BE LOCATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REINFORCEMENT SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING BY NAIL POSITIONERS OR OTHER SUITABLE DEVICES AT INTERVALS NOT EXCEEDING 200 BAR DIAMETERS.

- STRUCTURAL STEEL**
- STEEL SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING A.S.T.M. DESIGNATIONS.
 

STRUCTURAL SHAPES & PLATES	ASTM A-36	GRADE B
PIPE COLLING	ASTM A-53	GRADE B
STEEL TUBE	ASTM A-500	GRADE B
MACHINE BOLTS	ASTM A-307	GRADE A
HIGH STRENGTH BOLTS	ASTM A-325	(TYPE 6)
HEADED STUD ANCHORS	ASTM A-108	GRADE 105 TO 1020
STRUCTURAL PLATE	ASTM A572	GRADE 50
ANCHOR BOLTS (IN CONCRETE)	ASTM F1554	GRADE 36
  - NO STRUCTURAL STEEL SHALL BE FABRICATED OR ERECTED PRIOR TO REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER.
  - ALL ERECTION AND FABRICATION SHALL COMPLY WITH THE LATEST EDITION OF THE AISC.
  - WELDING SHALL BE PERFORMED ONLY BY CERTIFIED WELDERS. ALL SHOP WELDING SHALL BE DONE IN THE SHOP OF AN APPROVED FABRICATOR.
  - NO FIELD CUTTING OR BURNING OF STRUCTURAL STEEL WILL BE PERMITTED WITHOUT WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.
  - ALL EXPOSED STEEL SHALL BE GALVANIZED UNDO.
  - ALL EXPOSED WELDS SHALL BE GRIND SMOOTH.
  - WELD FILLER: E70XX UNDO.



**TYPICAL PIPE TRENCH AND FOOTING DETAIL**  
SCALE: NOT TO SCALE

**LEGEND:**

AB.	ANCHOR BOLT	H.A.B.	HEADED ANCHOR BOLT
AD.	HOLD DOWN	H.B.	HOLLOW STRUCTURAL SECTION
BLKS.	BLOCKING	H.C.	HORIZONTAL
BLK.S.	BLOCKING	H.S.A.	HEADED STUD ANCHOR
BLA.	BELOW	H.S.B.	HIGH STRENGTH BOLT
BN.	BOUNDARY NAILING	H.S.C.	HOLLOW STRUCTURAL SECTION
BYD.	BEYOND	J.S.T.	JOIST
C.	CAMBER	LDR.	LEDGER
CB.	CARRIAGE BOLT	L.H.	LIGHT HEIGHT
CLR.	CLEAR	M.S.	MASONRY
C.J.	CONSTRUCTION JOINT	M.B.	MACHINE BOLT
CON.	CONT. NAILING	M.F.	METAL FLOOR
COL.	COLUMN	M.D.	METAL DECK ROOF
CONC.	CONCRETE	N.	NEAR
CONC.	CONCRETE	N.S.	NEAR SIDE
CONT.	CONTINUOUS	N.T.S.	NOT TO SCALE
C.P.	COMPLETE PENETRATION	O.C.	OPPOSITE HAND
C.P.E.	CONT. PANEL EDGES	O.H.	OPENING
C.U.	CONDENSING UNIT	OPNG.	OPENING
DBA.	DEFORMED BAR ANCHOR	P.F.	FOUR JOINT
DBL.	DOUBLE	P.F.L.	PLYWOOD HEB JOIST
D.B.	DRAG BAR	PLT.	PLATE
D.C.M.	DEMAND CRITICAL WELD	PLYHD.	PLYWOOD
DIA.	DIAMETER	REQD.	REQUIRED
DRNG.	DRAWING	REM.	REMAINDER
EA.	EACH	R.S.	ROUGH SAWN
EF.	EXHAUST FAN	SITES.	SHEATING
ELEV.	ELEVATION	S.J.	SEPARATION JOINT
EX.	EXISTING	S.Q.	SQUARE
E.J.	EXPANSION JOINT	S.S.	SIMILAR
EN.	EDGE NAILING	S.M.	SHEET METAL
ES.	EDGE SCREEN	S.P.	SEE PLAN
EQ.	EQUAL	STAGG.	STAGGERED
EXT.	EXTERIOR	STD.	STANDARD
EXT.	EXTERIOR	STL.	STEEL
FRON.	FOUNDATION	STL. JOIST	STEEL JOIST
FRESH.	FRESH CONCRETE	T.O.P.	TOP OF CONCRETE
F.H.S.	FIELD HEAD WOOD SCREWS	T.O.M.	TOP OF MASONRY
F.H.S.	FIELD NAILING	T.O.M.D.	TOP OF METAL DECK
F.O.C.	FACE OF CONCRETE	T.O.P.	TOP OF PLYWOOD
F.O.M.	FACE OF MASONRY	T.O.P.A.R.	TOP OF PARAPET
F.O.S.	FACE OF STUD	T.O.S.	TOP OF STEEL
FRM.	FRAMING	T.S.	TUBE STEEL
FRM.	FRAMING	TYP.	TYPICAL
FTG.	FOOTING	UNDO.	UNLESS NOTED OTHERWISE
GA.	GALVANIZED	VERT.	VERTICAL
GAUSE.	GAUSE	W.	WHERE OCCURS
GLB.	GLUE LAMINATED BEAM	W.P.J.	WEAKENED PLANE JOINT
G.P.S.M.	GYPSON BOARD	WAF.	WELDED WIRE FABRIC

- DETAIL REFERENCE**
- 1- SHEET NO. WHERE DRAWN
  - 58- HALL ELEVATION SHEET NO. WHERE DRAWN
  - 58- HALL SECTION SHEET NO. WHERE DRAWN
- STEP FOOTING**
- 0'-0" REF. REFERENCE ELEVATION TO BOTTOM OF FOOTING
  - 3'-0" REF. REFERENCE ELEVATION TO TOP OF FOOTING
  - 0'-0" INDICATES SLAB DEPRESSION

**COMMON NAIL SCHEDULE**

SIZE	DIAMETER (IN)	LENGTH (IN)
8d	0.131	2 1/2
10d	0.148	3
12d	0.148	3-1/4
16d	0.162	3-1/2
20d	0.192	4

- SPECIAL INSPECTION**
- AN INSPECTOR EMPLOYED BY THE OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF STATE OF CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 1 WILL BE ASSIGNED TO THE WORK. HIS DUTIES ARE SPECIFICALLY DEFINED IN TITLE 24, PART 1 AND SECTION 4-342.
  - REFERENCE DSA FORM 103 FOR REQUIRED TESTS AND INSPECTIONS.
  - THE GEO-TECHNICAL ENGINEER SHALL INSPECT THE PLACING AND PREPARING OF ALL FILL BELOW BUILDINGS AND FAVING.

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REMARKS
WELDING			
CONCRETE AND PARTIAL REINFORCEMENT WELDS	YES	NO	DURING THE WELDING
SINGLE PASS FILLET WELDS ≤ 5/16"	NO	YES	DURING THE WELDING
INSPECT BOLTS TO BE INSTALLED IN CONCRETE	YES	NO	PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED
INSPECTION OF CONCRETE PLACEMENT FOR PROPER PLACEMENT TECHNIQUES	YES	NO	
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	YES	NO	
VERIFYING USE OF REQUIRED DESIGN MIX	NO	YES	PRIOR TO POURING OF CONCRETE
FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	YES	NO	AT THE TIME FRESH CONCRETE IS SAMPLED
VERIFICATION OF IN-SITU CONCRETE STRENGTH	NO	YES	PRIOR TO STRESSING OF TENSORS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS
INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	NO	YES	PRIOR TO POURING OF CONCRETE
NON-STRUCTURAL SLABS	NO	NO	
CONTINUOUS CONCRETE FOOTINGS (LIGHT FRAME CONSTRUCTION)	NO	NO	
POST INSTALLED ANCHORS	YES	NO	FULL TEST 20% OF ANCHORS, WHERE FAILURE OCCURS TEST ALL
VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	NO	YES	PRIOR TO THE FORMWORK
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	NO	YES	PRIOR TO THE FORMWORK
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS	NO	YES	PRIOR TO THE FORMWORK
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	YES	NO	PRIOR TO THE FORMWORK
OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	NO	YES	PRIOR TO PLACEMENT OF CONTROLLED FILL
FIELD GLUING OPERATIONS OF ELEMENTS OF THE SEISMIC - FORCE - RESISTING SYSTEM	N/A	N/A	DURING FIELD GLUING
NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC - FORCE - RESISTING SYSTEM INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS AND HOLD-DOWNS	NO	YES	PRIOR TO AND DURING NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS
EXTERIOR GLAZING, INTERIOR AND EXTERIOR NON-BEARING WALLS AND EXTERIOR/INTERIOR VENEER	NO	YES	DURING ERECTION AND FASTENING

- METAL DESIGN:**
- STEEL MATERIAL FOR DECK UNITS SHALL CONFORM TO ASTM A-601, GR. C OR ASTM A-663 (65), OR 33 EPICORE ER18 GR. EA, EPICORE ROOF DECK.
  - ALL DECK UNITS SHALL BE GALVANIZED. GALVANIZED COATING SHALL CONFORM TO ASTM A-525, CLASS C-60.
  - WELDING SHALL BE WITH E60 OR E70 ELECTRODE AND PERFORMED BY A CERTIFIED, LICENSED LIGHT GAUGE WELDER PER AWS D13.

- GENERAL**
- ALL CONSTRUCTION SHALL COMPLY WITH THE 2022 CALIFORNIA BUILDING CODE AND ALL APPLICABLE ORDINANCES.
  - FRAMING CONDITIONS NOT SPECIFICALLY SHOWN OR INDICATED SHALL BE FRAMED SIMILAR TO DETAILS SHOWN FOR THE RESPECTIVE MATERIALS OR CONDITIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT.
  - WITHOUT EXCLUSION OF ANY REFERENCE IN THE CONSTRUCTION DOCUMENT TO ANY RULE OR REGULATION, THE STRUCTURAL ENGINEER IS NOT ASSUMING ANY PROVISIONS OF SUPERVISION OF CONSTRUCTION METHODS OR PROCESSES.

**DESIGN LOADS**

1. ROOF LIVE LOAD (REDUCIBLE PER SECTION 1607A.10)	20 P.S.F.
2. ROOF DEAD LOAD	10 P.S.F.
3. WIND DESIGN	
BASIC WIND SPEED (3 SECOND GUST)	45 MPH
WIND EXPOSURE	C
COMPONENTS AND CLADDING DESIGN PRESSURE	35.28 P.S.F. (WALL)
4. SEISMIC DESIGN	
SEISMIC IMPORTANCE FACTOR (I <sub>e</sub> )	1.0
HAPPED SPECTRAL RESPONSE ACCELERATIONS:	
S <sub>1</sub> (10)	0.25
S <sub>2</sub> (10)	0.25
SITE CLASS	D (DEFAULT)
STRUCTURAL RESPONSE COEFFICIENTS:	
S <sub>1</sub> (10)	0.75
S <sub>2</sub> (10)	0.75
SEISMIC DESIGN CATEGORY	D
SEISMIC FORCE RESISTING SYSTEM	LIGHT FRAME WOOD SHEARWALLS
RESPONSE MODIFICATION FACTOR (R)	6.5
DESIGN BASE SHEAR (V)	0.22W (STRENGTH LEVEL)

- FOUNDATIONS**
- FILL SHALL BE COMPACTED TO A MINIMUM OF 90% IN ACCORDANCE WITH THE SPECIFICATIONS.
  - TYPE OF SOIL: PROPERLY GRADED SAND (SP)
  - MAXIMUM ALLOWABLE SOIL BEARING PRESSURE: 1500 PSF (NON-COMPACTABLE)
  - ALL FOOTINGS SHALL BE CARRIED A MIN. OF 24" BELOW ENGINEERED COMPACTED FILL OR NATURAL GRADE.
  - ALL FOOTINGS SHALL REST ENTIRELY ON ENGINEERED COMPACTED FILL OR ENTIRELY ON NATURAL GRADE.
  - PRIOR TO FORMING AND PLACING OF THE REINFORCING, ALL EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE GEO-TECHNICAL ENGINEER.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL FOOTINGS AND UTILITY LINE RELATIONSHIPS SO THAT THE REQUIREMENTS OF DETAIL 31- ARE MET. THE COST OF STEPPING THE FOOTINGS TO MEET THE REQUIREMENTS OF 21- AND 31- SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND NEW UTILITY LINES SHALL BE LOCATED PRIOR TO FOUNDATION EXCAVATION.

- CONCRETE**
- THE MINIMUM STRENGTH OF CONCRETE AT END OF 28 DAYS SHALL BE:
 

SLABS ON GRADE	4000 P.S.I.	150 P.C.F.
FOOTINGS AND GRADE BEAMS	4000 P.S.I.	150 P.C.F.
  - REINFORCING:
    - BOLTS IN CONCRETE: ASTM F1554 GRADE 36 UNDO.
    - TYPICAL REINFORCING: GRADE 60 (95 AND LARGER)
    - PROVIDE MINIMUM LAP ON ALL BARS PER TABLE A ON 6/50/1 UNDO.
    - FOOTING CORNERS PER 1605.2
    - STAGGER ALL SPLICES OF ALL HORIZONTAL REINFORCING
    - PROVIDE MIN. CERTIFICATE ON ALL REINFORCING STEEL. TESTING REPT. ON REINFORCING STEEL # 4 REBAR.
  - THE FOLLOWING MINIMUM CONCRETE COVERAGES SHALL BE MAINTAINED UNLESS NOTED OTHERWISE:
 

SLABS ON GRADE	CENTER OF SLAB
CAST AGAINST AND EXPOSED TO EARTH	3"
FORMED, EXPOSED TO EARTH AND HEATHER	1"
#5 AND LARGER	1 1/2"
#5 AND SMALLER	1 1/2"
NOT EXPOSED TO HEATHER OR EARTH	1 1/2"
WALLS, SLABS, AND JOISTS: #4 AND #8	1 1/2"
#11 AND SMALLER	1 1/2"
COLUMNS, BEAMS, GIRDERS	1 1/2"
  - THE MINIMUM CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER SHALL BE 40 BUT NOT LESS THAN 1 INCH.
  - CONCRETE READY-MIXED CONCRETE ASTM C64.
  - CEMENT: PORTLAND CEMENT TYPE I OR II LOW ALKALI: ASTM C-150
  - NORMAL WT. CONC. - AGGREGATES: NATURAL ROCK AND SAND: ASTM C-33
  - LIGHT WT. CONC. - AGGREGATES: NATURAL ROCK AND SAND: ASTM C-290
  - DOVELS, ANCHOR BOLTS, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING OF CONCRETE OR GROUT.
  - ANCHOR BOLTS WITH UPSET THREADS SHALL NOT BE USED.
  - NO PIPES, DUCTS, OR CONDUIT SHALL BE PLACED IN CONCRETE UNLESS SPECIFICALLY DETAILED OR NOTED.
  - ROUGHEN AND CLEAN CONSTRUCTION JOINTS PER ACI 308-14 SECTION 12.12.10 & 26.5.6
  - CONSTRUCTION OF THE CONCRETE PORTION OF THIS PROJECT IS BASED ON:
    - NON-STRUCTURAL SLABS
    - CONTINUOUS CONCRETE FOOTINGS (LIGHT FRAME CONSTRUCTION)
  - REVISED DOCUMENTS WILL HAVE TO BE SUBMITTED TO THE DSA FOR REVIEW AND APPROVAL. A RENEWAL FEE TO BE DETERMINED BY THE DSA WILL BE REQUIRED.
  - CONSTRUCTION SHALL NOT PROCEED UNTIL DSA APPROVAL IS OBTAINED. ALSO CONSTRUCTION SCHEDULE MUST CONSIDER AND ALLOW ADEQUATE TIME FOR THE APPROVAL PROCESS.

- WELDS**
- ALL STRUCTURAL WELDS SHALL BE DOUGLAS FIR-LARCH OF THE GRADES INDICATED UNLESS OTHERWISE NOTED.
  - SLIP PLATES: DOUGLAS FIR PRESURE TREATED (NO. 2)
  - 2" x 3" T&G DECKING: SELECT DEX STRUCTURAL FRAMING.
  - 2'-4" THICK 2'-4" WIDE NO.2
  - 2'-4" THICK 5" AND WIDER NO.1
  - BEAMS 5" x 4" THICKER: SELECT STRUCT.
  - POSTS AND TIMBERS 5" x 5" x 1" LARGER SELECT STRUCT.
  - ALL STRUCTURAL LUMBER SHALL BE GRADED IN ACCORDANCE WITH THE STANDARDS OF THE WEST COAST LUMBER INSPECTION BUREAU.
  - ALL WOOD BEARING ON MASONRY OR CONCRETE SHALL BE PRESURE TREATED DOUGLAS FIR AS OUTLINED IN C.B.C. SECTION 2305.1.1 & 2304.12 AND A.N.F.A. II AND TI.
  - PLYWOOD ROOF AND SHEAR WALL SHEATHING SHALL BE GRADE MARKED STRUCTURAL I OR II (PER PLANS) PS-10, WITH EXTERIOR GLUE.
  - BOLTS SHALL BE ASTM A-307, PROVIDE STANDARD CUT WASHER BETWEEN BOLT HEADS AND NUTS AND THE WOOD. WHERE BOLTS ARE IN TENSION PROVIDE HALLMARKED IRON WASHERS.
  - STRUCTURAL LUMBER MEMBERS SHALL NOT BE CUT OR NOTCHED FOR PIPES OR CONDUITS ETC. UNLESS SPECIFICALLY DETAILED OR NOTED.
  - PROVIDE APPROVED METAL CROSS BRIDGING AT 8'-0" ON CENTER FOR JOISTS AND RAFTERS GREATER THAN 6" IN DEPTH.
  - 2" SOLID BLOCKING SHALL BE PROVIDED BETWEEN JOISTS AND RAFTERS AT ALL BEARING SUPPORTS.
  - NOTCH AS REQUIRED. ALL JOISTS AND RAFTERS TO PROVIDE LEVEL, FULL BEARING AT JOIST HANGERS, FLATES AND SUPPORTS.
  - BORER HOLES FOR BOLTS 1/8" LARGER THAN THE NOMINAL BOLT DIAMETER.
  - BORER HOLES EXCEEDING ONE THIRD OF THE WIDTH OF THE MEMBER BEING PENETRATED SHALL NOT BE PLACED IN STUDS UNLESS FULLY DETAILED ON THE APPROVED PLANS. HOLES NOT EXCEEDING ONE THIRD OF THE WIDTH SHALL BE NEATLY BORED AND SHALL BE LOCATED IN THE CENTER OF THE MEMBER BEING PENETRATED.
  - REIGHTEN ALL BOLTS PRIOR TO COVERING, AND MAKING THE BOLTED CONNECTION INACCESSIBLE.
  - ALL NAILS ARE TO BE COMMON NAILS AND ARE TO BE GALVANIZED WHEN EXPOSED.
  - INSTALL WALL BRACINGS ON ALL STUD WALLS NOT COVERED WITH PLYWOOD PER C.B.C. SECTION 2308.0
  - UNLESS OTHERWISE NOTED OTHERWISE ON PLAN

**CEILING JOIST NOTE:**

CONTRACTOR SHALL COORDINATE ALL GYPED AND PLASTER CEILING WITH THE ARCHITECTURAL DWGS. CONTRACTOR SHALL PROVIDE CEILING JOISTS AS INDICATED IN CEILING JOIST SCHEDULE ABOVE, AND DETAIL 1750.3 WHERE PLASTER OR GYPED CEILING EXCEED THE SPANS OF THIS TABLE. CONTRACTOR SHALL COORDINATE ALL OPENINGS IN CEILING FRAMING FOR MECHANICAL REGISTERS, AND RECESSED LIGHTING, ETC. AND FRAME OPENINGS WIDER THAN 14 1/2 INCHES PER DETAIL 1850.3

MAX. SPAN (JOIST)	MAX. SPAN (GYP. BOARD FINISH)	MAX. SPAN (PLASTER FINISH)
2'-4" @ 16" O.C.	10'-0"	8'-0"
2'-6" @ 16" O.C.	14'-0"	12'-0"
2'-8" @ 16" O.C.	18'-0"	14'-0"

**CEILING JOIST NOTE:**

OPENING WIDTH	MIN. SIZE AT BEARING WALL	MIN. SIZE AT NON BEARING WALL
(OPENING WIDTH)	(SOLID MEMBER)	(BUILT UP MEMBER)
3'-0" or less	8wd width x 4"	2-2x4
3'-0" to 4'-0"	8wd width x 6"	2-2x6
4'-0" to 6'-0"	8wd width x 8"	2-2x8



2075 San Jacinto Ave., San Jose, California 95131-1119  
Phone: 408.252.2004 Fax: 408.252.2044 Email: info@stkg.com

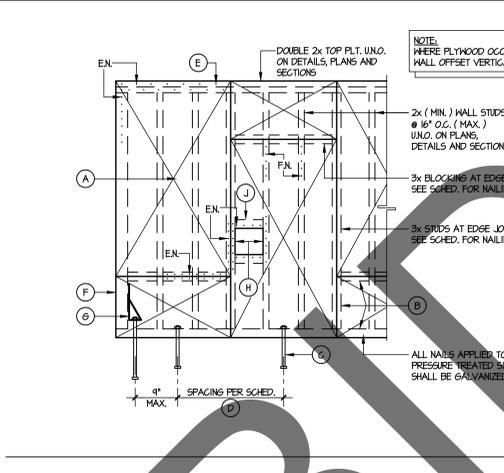
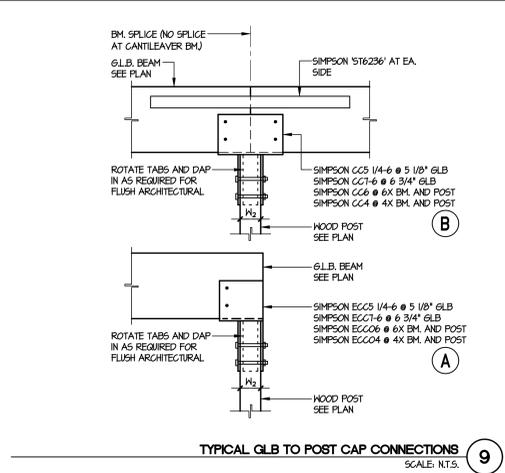
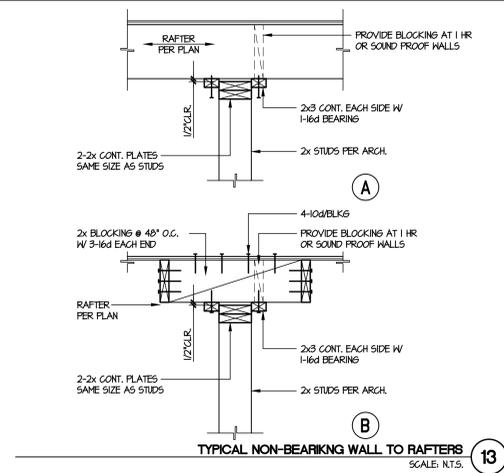
**CONSULTANTS**



**miyamoto.**  
1000 BAKER BLVD  
DOWNEY, CA 90241  
TEL: 562.799.8888  
WWW.MIYAMOTO.COM

**PROJECT ADMINISTERED BY:**  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
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PROJECT MANAGEMENT



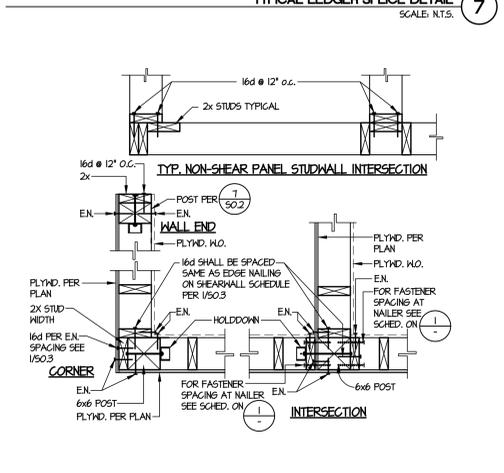
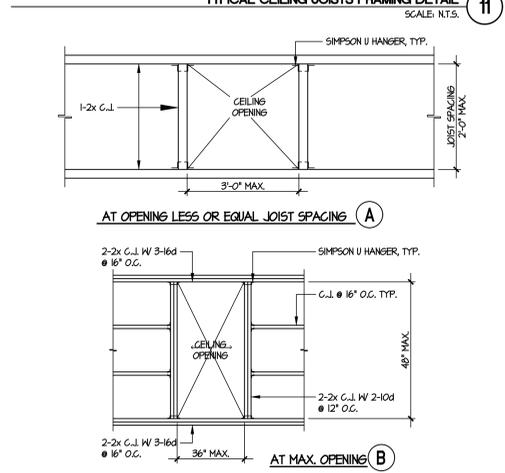
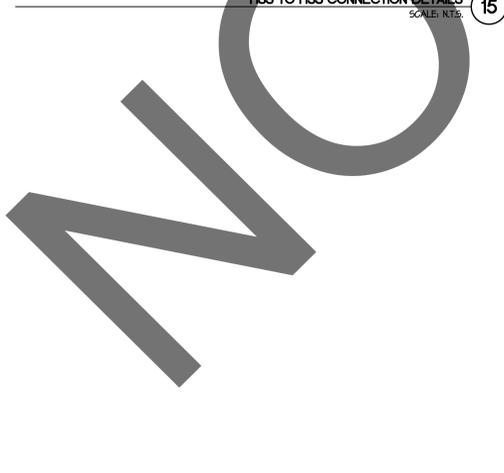
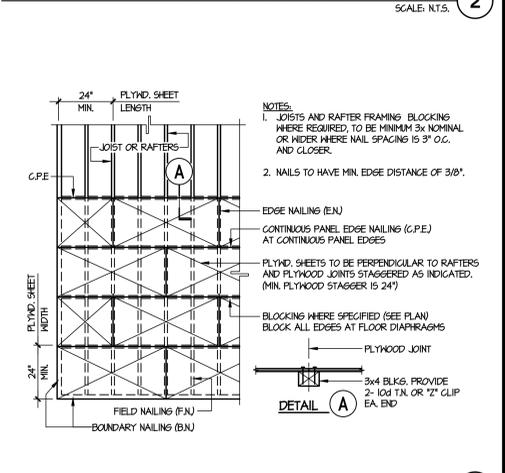
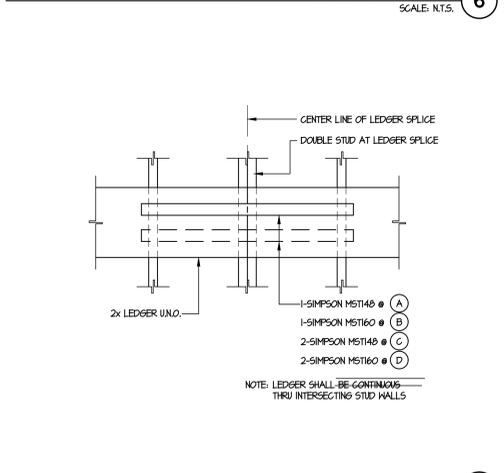
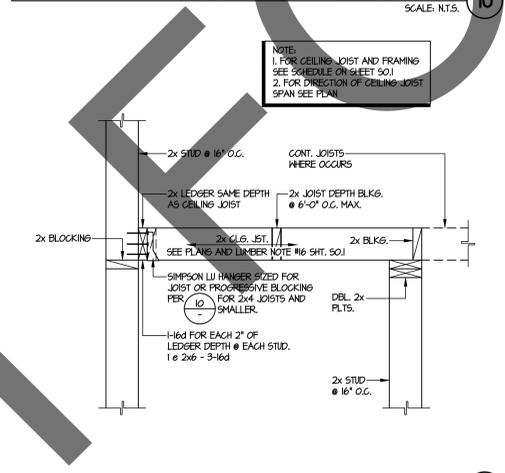
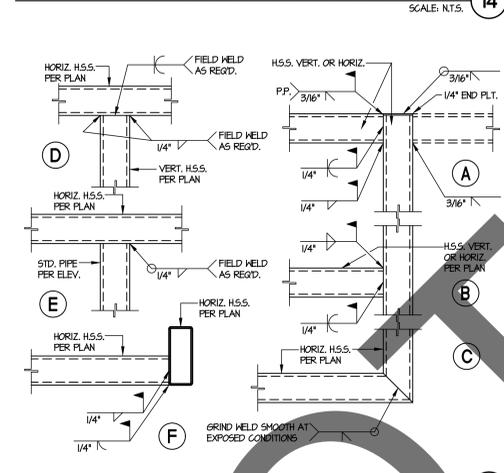
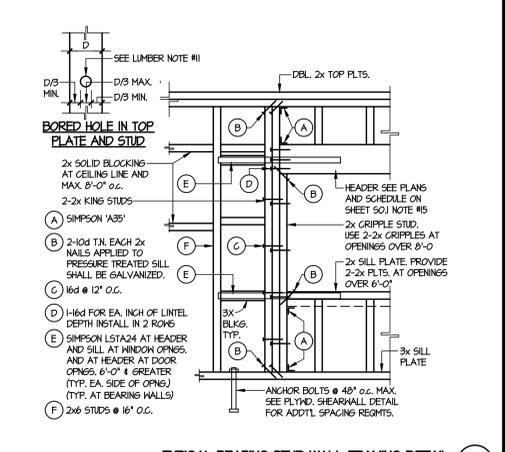
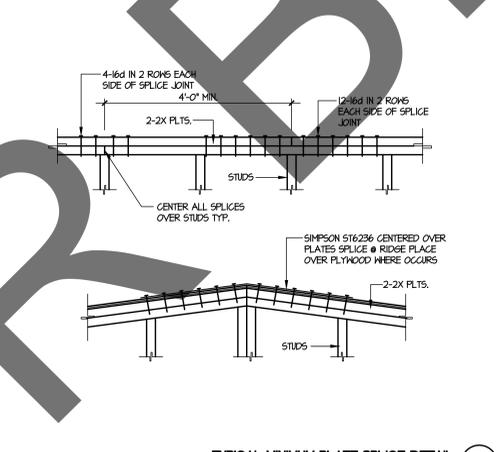
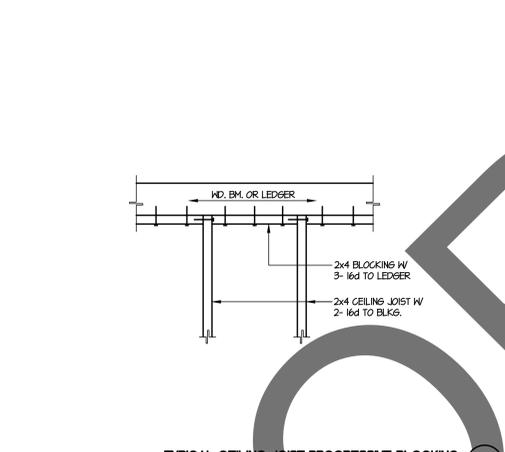
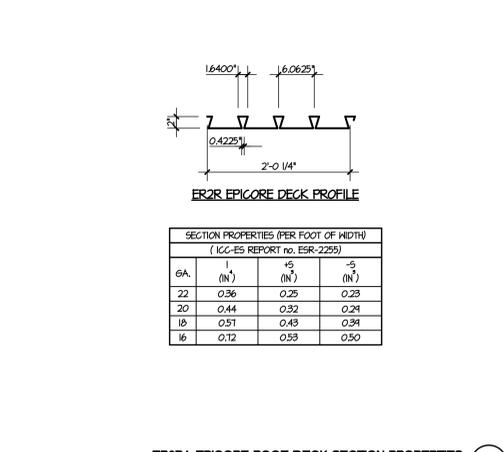


**SHEARWALL SCHEDULE**  
STRUCTURAL I

TYPE	EDGE	FIELD	A.B. SPACING	ALLOWABLE SHEAR
A	10d @ 6" O.C.	10d @ 12" O.C.	42" O.C.	340K/FT.
B	10d @ 4" O.C.	10d @ 12" O.C.	28" O.C.	510K/FT.
C	10d @ 3" O.C. STAGGS	10d @ 12" O.C.	21" O.C.	665K/FT.
D	10d @ 2" O.C. STAGGS	10d @ 12" O.C.	16" O.C.	810K/FT.

NOTE: WHERE PLYWOOD OCCURS EACH SIDE OF WALL, OFFSET VERTICAL PLYND. JOINTS.

ALL PLYWOOD TO BE 1/2" STRUCTURAL I. SEE NOTES ON SO1.  
 PROVIDE 3x (MIN.) MEMBERS AT ALL ADJOINING PANEL EDGE AND SILLS. WHERE PLYWOOD OCCURS BOTH SIDES OFFSET VERTICAL PLYWOOD JOINTS.  
 ANCHOR BOLTS TO BE 5/8" x 12" MIN. SEE SHEARWALL SCHEDULE FOR SPACING (SEE NOTE 12 AT SHEARING EACH SIDE). PROVIDE 2 BOLTS PER PANEL MIN. PROVIDE GALVANIZED SIMPSON TIPS 5/8" x 3" AT ALL ANCHOR BOLTS AT 4" NOMINAL HIDE SILL PLATES. PROVIDE SIMPSON GALVANIZED TIPS 5/8" x 6" AT ALL 6" NOMINAL HIDE SILL PLATES. A CUT WASHER SHALL BE UTILIZED BETWEEN THE NUT AND THE TOP OF THE SLOTTED WASHER. THE WASHER SHALL BE POSITIONED SUCH THAT THE EDGE OF THE PLATE WASHER IS WITHIN 1/2" OF THE SHEATED EDGE OF THE SILL PLATE. WHERE PLYWOOD OCCURS EACH SIDE OF THE WALL, THE WASHER SHALL BE PLACED WITHIN 1/2" OF EACH FACE OF SILL PLATE.  
 REDUCE SPACING BY 1/2 WHERE SHEARWALL OCCURS BOTH SIDES.  
 STAGGER NAILS FOR TYPE 'C' AND 'D' SHEARWALLS @ DOUBLE TOP PLATES.  
 4x MIN. POST @ HOLD DOWN LOCATIONS. UNO. ON PLANS, DETAILS OR SECTIONS.  
 HOLD DOWN, SEE PLAN FOR TYPE AND (SO2) FOR INSTALLATION.  
 14 1/2" SQUARE MAX. OPENING. (STUDS SHALL NOT BE CUT UNLESS SPECIFICALLY DETAILED).  
 3x BLOCKING AT OPENINGS.



2275 San Jacinto Ave., San Jacinto, California 92583-0118  
Phone: 951.422.2264 Fax: 951.422.0244 Email: info@stkb.com

**CONSULTANTS**

**miyamoto.**  
10000 Wilshire Blvd., Suite 1000, Los Angeles, CA 90024  
Tel: 310.444.8888  
www.miyamoto.com

**PROJECT ADMINISTERED BY:**  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

**PROJECT NAME:**  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

**ISSUE INFORMATION:**

DATE	INFORMATION
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
JAN-2024	BID SET

**SHEET INFORMATION:**  
STK PROJECT NO: 374-157-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:

**SHEET TITLE:**  
TYPICAL WOOD  
AND MISC. DETAILS

SCALE: AS NOTED

SHEET NO: **S0.3**

**ROOF FRAMING PLAN NOTES**

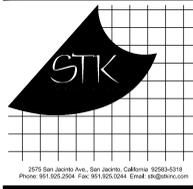
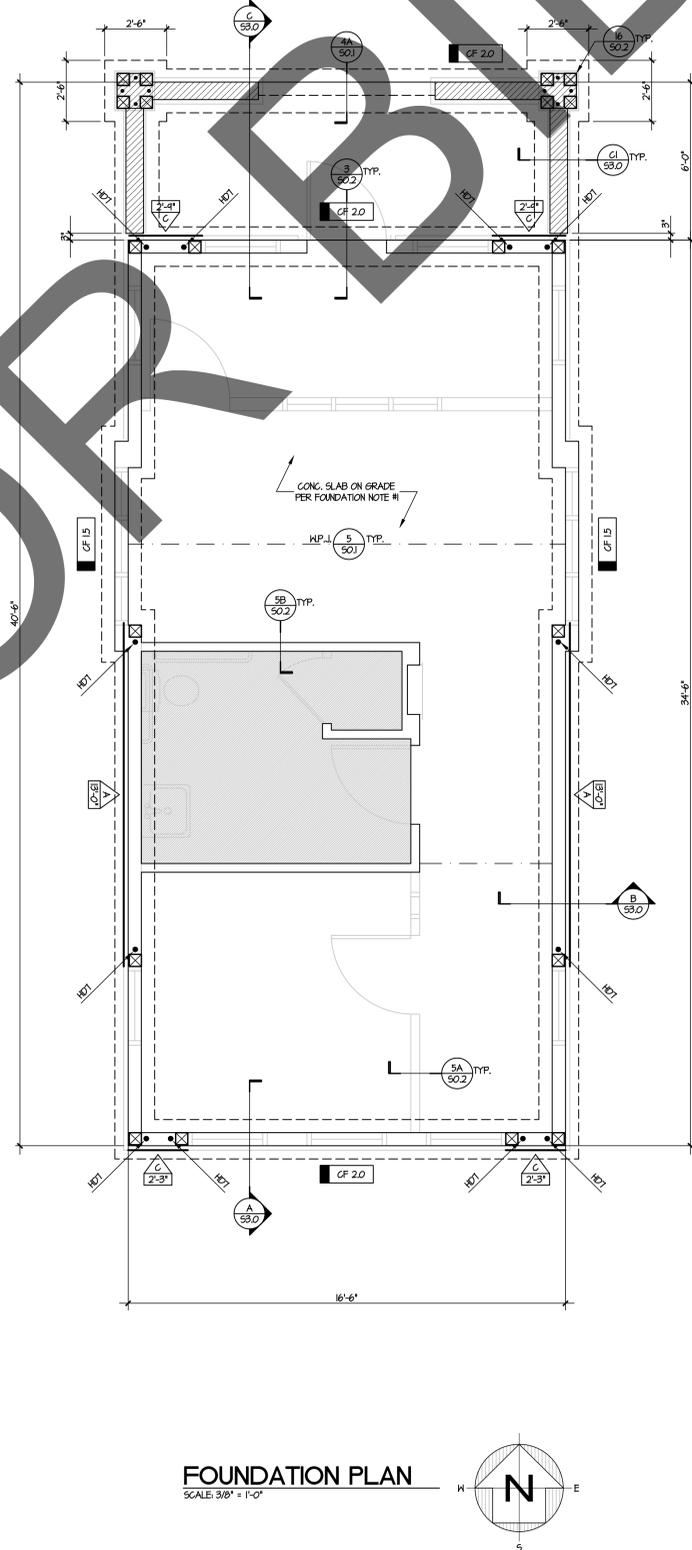
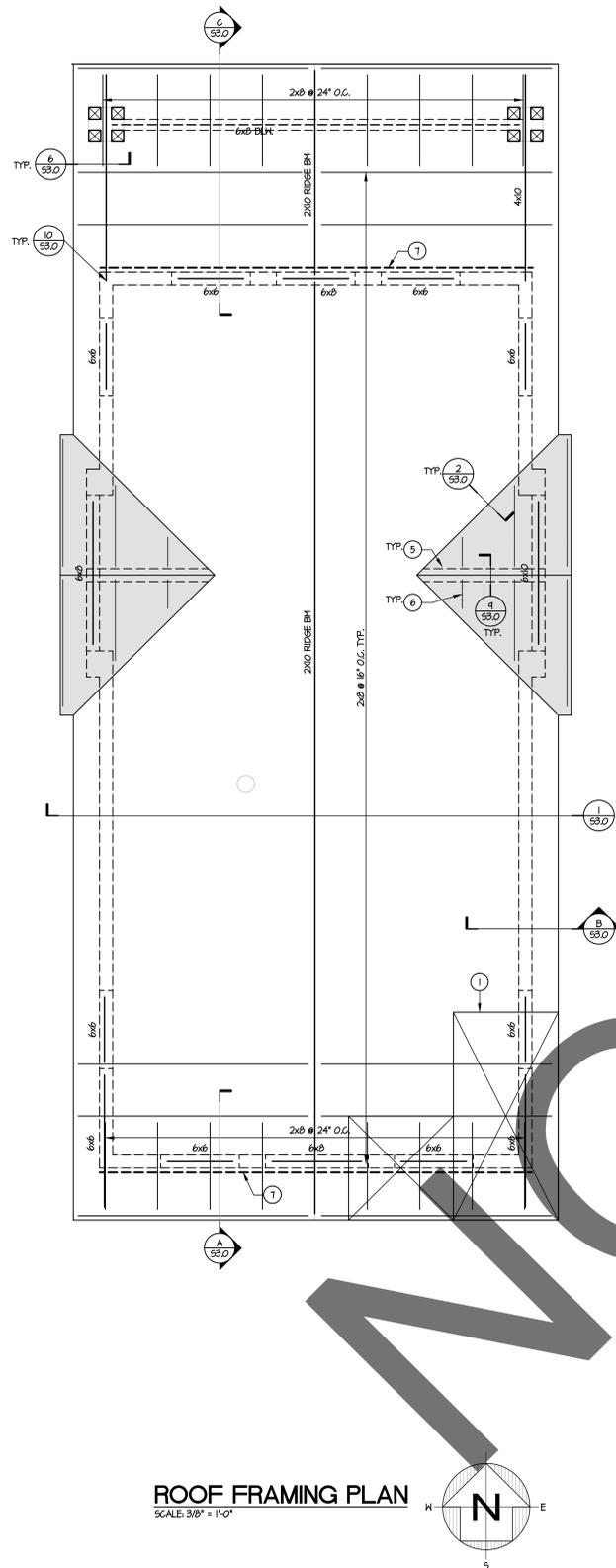
- 5/8" STRUCT. PLYWOOD W/ 10d @ 6" O.C. BN, 10d @ 6" O.C. EN, 10d @ 12" O.C. FN. BLOCK WALL EDGES TYP. SEE 3/503
- SEE HEADER SCHEDULE SHEET 501 FOR ALL HEADERS NOT IDENTIFIED. NOTE: AT 2X6 STUD EXTERIOR WALLS (AS REQUIRED BY ENERGY REQUIREMENTS) THE 6x HEADER WIDTH PER THE HEADER SCHEDULE MAY BE UTILIZED. THE 1/4" NET WALL WIDTH REQUIREMENTS MAY BE ACHIEVED BY ADDING A 2x OF THE SAME MEMBER DEPTH AND A 1/4" SHIM.
- CONTRACTOR SHALL COORDINATE ALL GYP. BOARD AND PLASTER CEILING WITH THE ARCHITECTURAL DRAWINGS.
- SHADED PORTIONS INDICATE CALIFORNIA FRAMING.
- 2x4 GRIPPLE WALL FOR CALIF. FRAMING SUPPORT.
- 2x6 @ 24" O.C. AT CALIFORNIA FRAMING.
- SIMPSON CH51C16 STRAP CONT. AT WALL HEADERS. INSTALL STRAP OVER PLYWOOD SHTG. PER NOTE 6 DETAIL 2503

**FOUNDATION PLAN NOTES**

- 4" THK. CONC. SLAB W/ #4 @ 18" O.C. EN. @ MID SLAB OVER IS MIL VAPOR BARRIER OVER COMPACTED SUB-GRADE PER SPECIFICATIONS AND DETAILS.
- ALL EXTERIOR WALLS AND PARAPETS WHICH ARE NOT ALREADY INDICATED AS SHEAR WALLS SHALL RECEIVE PLYWOOD AND NAILING PER SHEAR WALL TYPE 'A'.  
 (A) DENOTES SHEARWALL TYPE SEE 1/503  
 (B) DENOTES MIN. SHEARWALL LENGTH.  
 (NOTE: PLYWD. SHALL EXTEND FULL LENGTH OF WALL AT INTERIOR SHEAR WALLS AS REQ'D FOR FLUSH FINISH)
- SEE ARCH. DWGS FOR ALL DIMENSIONS NOT SHOWN AND VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- FRAMING AT OPENINGS PER TYP. STUD WALL FRAMING DETAIL 3/503
- (H) DENOTES HOLD DOWN AND HOLD DOWN SIZE FOR TYPICAL HOLD DOWN DETAIL. SEE 1/502 HIDDEN FOOTING AS REQ'D. BY 1C/502 IN THE VICINITY OF HD. BOLTS
- ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
- VERIFY ALL CURB HEIGHTS WITH ARCHITECTURAL DRAWINGS.
- INDICATES 6" CMU WALL W/ #5 @ 24" O.C. EACH WAY AT CENTER OF WALL. GROUT ALL CELLS SOLID.
- SHADED PORTION INDICATES DEPRESSIONED SLAB. VERIFY SIZE AND EXTENT PER ARCHITECTURAL DWGS.

**CONTINUOUS FOOTING SCHEDULE**

MARK	WIDTH	REINFORCEMENT	MIN. DEPTH
CF15	1'-6"	2- #5 TOP & BOTTOM	1'-8"
CF20	2'-0"	2- #5 TOP & BOTTOM	2'-0"
CF25	2'-6"	3- #5 TOP & BOTTOM	2'-0"



**miyamoto.**  
1000 18th Street, Suite 100, San Bernardino, CA 92415  
Tel: 909.398.8888  
www.miyamoto.com

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SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
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GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

**ISSUE INFORMATION**

DATE	INFORMATION
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CD's
JAN-2024	BID SET

**SHEET INFORMATION:**  
STK PROJECT NO: 374-157-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:

SHEET TITLE:  
GATE HOUSE  
FOUNDATION AND  
ROOF FRAMING PLAN

SCALE: AS NOTED

SHEET NO:  
**S1.0**



2575 San Jacinto Ave., San Jacinto, California 92583-0218  
 Phone: 951.625.2264 Fax: 951.625.0264 Email: info@stkc.com

CONSULTANTS



**miyamoto.**  
 11000 Wilshire Blvd., Suite 1000, Los Angeles, CA 90024  
 Tel: 310.844.8888  
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ISSUE INFORMATION

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SHEET INFORMATION

STK PROJECT NO: 374-157-22  
 SCALE: AS NOTED  
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 PLOT DATE:  
 DRAWING NAME:

SEAL:

SHEET TITLE:  
 GATE HOUSE  
 CANOPY PLANS

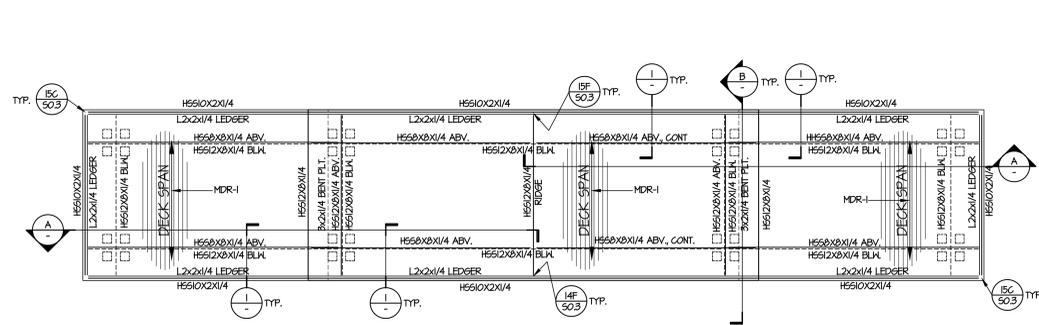
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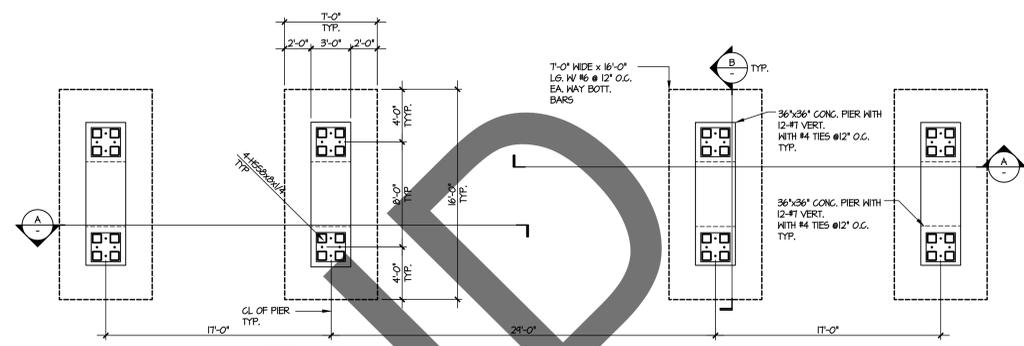
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**ROOF PLAN NOTES**

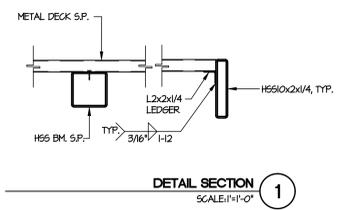
- MDR-1  
 2"x20" GA. EPICORE ERZR (ICC-ES E-2041) W/ 1/2" RIDDLE WELD @ 8" O.C. AT ALL SUPPORTS PARALLEL TO CORRUGATIONS AND 1/2" RIDDLE WELD (MIN. 2) AT EACH LOW CORRUGATION PERPENDICULAR TO SUPPORTS. TOP SEAM WELDS (1/2" MIN. SEAM WELD OR 1" MIN. FILLET WELD) @ 24" O.C. TYPICAL THRU OUT W/O. DECK SHALL BE CONTINUOUS FOR A MIN. OF 2 OR MORE SPANS. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INSULATION REQUIREMENTS. AT EXPOSED EXTERIOR CONDITIONS USE 18 GA. EPICORE ERZR, G40 GALVANIZED AND PRIME PAINTED. SEE 13 FOR PROFILE
- COORDINATE ALL BOTTOM OF METAL DECK (B.O.M.D.) WITH ARCHITECTURAL ROOF ELEVATIONS.



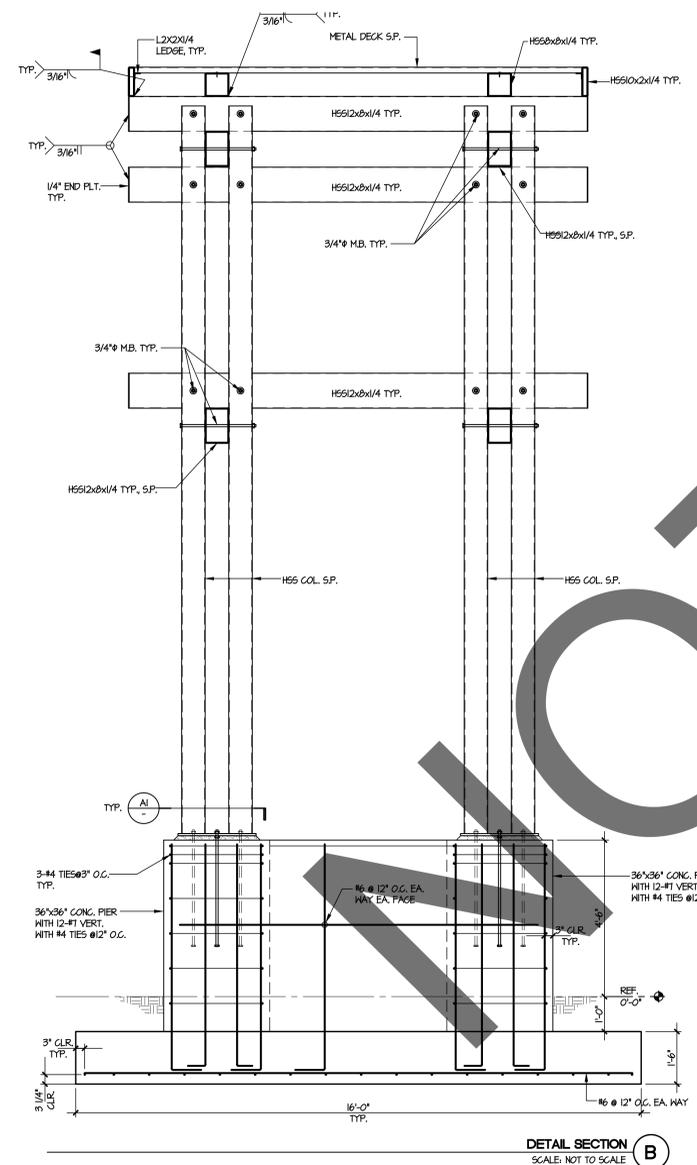
**ROOF FRAMING PLAN**  
 SCALE: 3/16" = 1'-0"



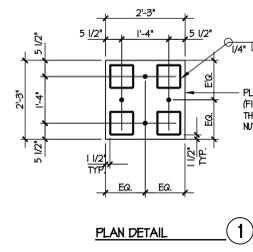
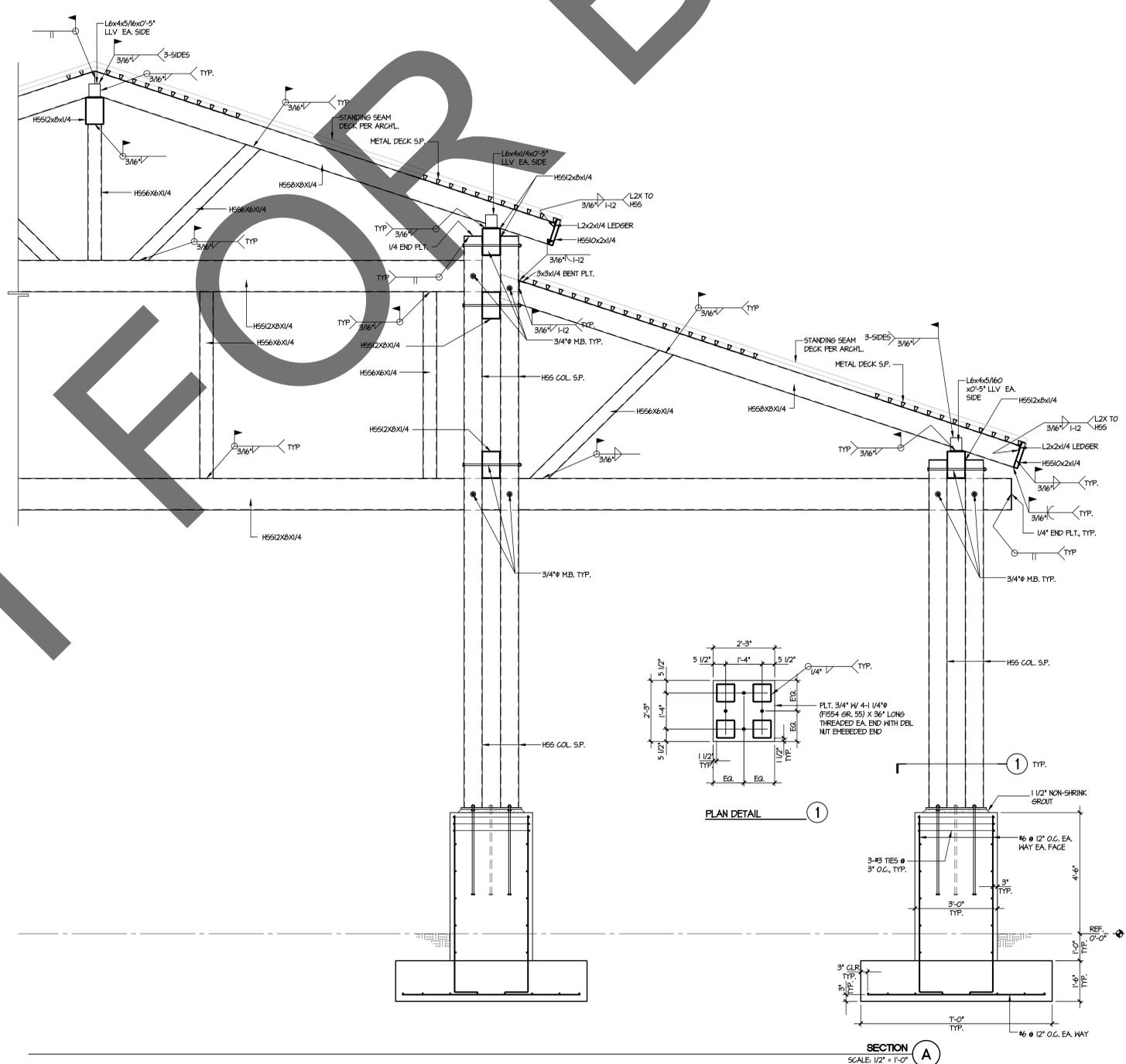
**FOUNDATION PLAN**  
 SCALE: 3/16" = 1'-0"



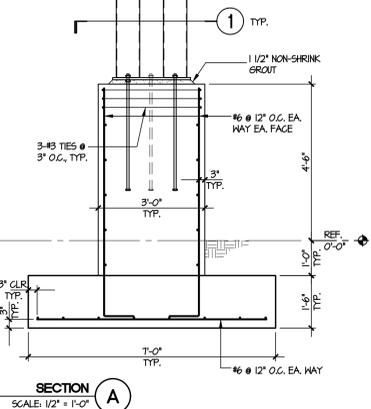
**DETAIL SECTION 1**  
 SCALE: 1" = 1'-0"



**DETAIL SECTION B**  
 SCALE: NOT TO SCALE



**PLAN DETAIL 1**



**SECTION A**  
 SCALE: 1/2" = 1'-0"



R: L:\PROJECT\2022\12-152 PRADO REGIONAL PARK ENTRY KIOSK BUILDING\12-152 M-FRONT - 2024-01-10 - JANEY RODRIGUEZ

### EXHAUST FAN SCHEDULE

TAG	MFR. & MODEL NO.	AREA SERVED	FAN SYSTEM				SONES	ELECTRICAL		OPR.WT WITH ACCESSORIES (LBS)	REMARKS (SEE EQUIPMENT NOTES BELOW)
			CFM	ESP	RPM	HP		V-PH-HZ	AMPS		
EF-1	COOK GEMINI GC-146	RESTROOM	70	0.35	845	1/2	-	120V-1ø-60Hz	0.313	16	1 2 3 4 5

EQUIPMENT NOTES:  
 ① FAN SPEED CONTROLLER (120V-1ø-60Hz, 5 AMPS)    ② CEILING EXHAUST FAN    ③ WITH INTEGRAL BACK DRAFT DAMPER    ④ TIME DELAY SWITCH    ⑤ WHITE STEEL GRILLE

### FAN COIL SCHEDULE

TAG	MFR. & MODEL NO.	AREA SERVED	CFM	REFRIGERANT TYPE	ELECTRICAL			MIN OSA	OPER. WT. (LBS)	REMARKS (SEE EQUIPMENT NOTES BELOW)
					MCA	MOC/P	V-PH-HZ			
FC-1	YORK JHETC42FC2N1	GATE HOUSE	1,100	R-410A	4.8	15	208V-1ø-60Hz	115	125	1 2

EQUIPMENT NOTES:  
 ① REMOTE THERMOSTAT    ② MERV 13 FILTER

### CONDENSING UNIT SCHEDULE

TAG	MFR. & MODEL NO.	DESIGN COOLING CONDITION			COOLING CAPACITY		ELECTRICAL			OPER. WT. (LBS)	REMARKS (SEE EQUIPMENT NOTES BELOW)
		OUTDOOR AMB. TEMP. °F	ENTERING DB/WB	LEAVING DB/WB	BTU/HR	SEER/EER	MCA	MOC/P	V-PH-HZ		
CU-1	YORK YH2F36T2S	105	89/66	74/63	31,000 TOTAL 24,600 SENSIBLE	15.2 SEER 11.7 EER	20.6	35	208V-1ø-60Hz	204	1

EQUIPMENT NOTES:  
 ① CONDENSING UNIT MOUNTED ON LEVEL PAD

### MECHANICAL BASIS OF DESIGN

A. OUTDOOR DESIGN CONDITIONS:  
 1. SUMMER: 105°F DB/69°F WB  
 2. WINTER: 32°F

B. DESIGN CONDITIONS:

OCCUPANT SPACE	OCC DENSITY	LIGHTING DENSITY	COOLING TEMPERATURE	HEATING TEMPERATURE	RELATIVE HUMIDITY	VENTILATION PER OCCUPANT
OFFICE	100 SF/OCC	0.7 WSF	74°F +/- 2°F	70°F +/- 2°F	50%	15 CFM/OCC
LOBBY	15 SF/OCC	0.85 WSF	74°F +/- 2°F	70°F +/- 2°F	50%	15 CFM/OCC
ELECTRICAL ROOM	N/A	N/A	90°F MAX	N/A	N/A	N/A
DATA TELECOM	N/A	N/A	78°F MAX	N/A	N/A	N/A

C. HVAC CONTROL METHOD:  
 1. PROGRAMMABLE WIFI ENABLED STAND ALONE THERMOSTAT  
 2. ENERGY MANAGEMENT SYSTEM (EMS) CONTROL OF ALL EQUIPMENT.  
 3. TIE-IN TO CAMPUS EMS  
 4. ELECTRICAL ROOM TO HAVE TEMPERATURE MONITORING ONLY

D. CALIFORNIA VENTILATION CRITERIA:  
 1. COMPLY WITH CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD.  
 A. GREATER OF 15 CFM/PERSON OR 0.15 CFM/SF  
 E. EXHAUST TO OUTDOORS (MINIMUM RATES)  
 1. RESTROOMS: 75 CFM/WC or U  
 2. RESTROOMS: AIR CHANGE EVERY 5 MINUTES  
 F. BUILDING ENVELOPE:  
 1. REFER TO THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ENVELOPE REQUIREMENTS  
 2. ALL ENVELOPE COMPONENTS SHALL MEET CALIFORNIA ENERGY CODE MINIMUM PRESCRIPTIVE CRITERIA.  
 G. DUCTWORK DESIGN CRITERIA (MAXIMUM ALLOWABLE AIR PRESSURE DROPS AND AIR VELOCITIES) TO MEET HIGH EFFICIENCY OPERATION WITH MINIMAL ACOUSTICAL NOISE. DUCT STATIC PRESSURE FRICTION LOSS SHALL NOT EXCEED 0.2" PER 100 FEET IN MECHANICAL ROOMS AND SHAFTS. LOW PRESSURE SUPPLY AND EXHAUST DUCT STATIC PRESSURE FRICTION LOSS BASED ON A MAXIMUM OF 0.08" PER 100 FEET. LOW PRESSURE RETURN DUCT STATIC PRESSURE FRICTION LOSS BASED ON A MAXIMUM OF 0.05" PER 100 FEET. MEDIUM PRESSURE DUCTWORK SHALL NOT EXCEED MAXIMUM VELOCITY AS LISTED BELOW.  
 1. IN ADDITION, MAXIMUM SUPPLY, RETURN AND EXHAUST DUCT AIR FLOW VELOCITIES, REGARDLESS OF PRESSURE DROP, SHALL NOT EXCEED THE FOLLOWING CRITERIA:  
 A. MAINS ABOVE CEILING: 1750 FPM  
 B. MAINS ABOVE OPEN OCCUPIED SPACES: 1450 FPM  
 C. BRANCHES ABOVE CEILING: 1400 FPM  
 D. BRANCHES ABOVE OPEN OCCUPIED SPACES: 1150 FPM  
 E. RUN-OUTS TO DIFFUSERS: 725 FPM  
 F. IN SHAFTS: 2500 FPM  
 G. IN MECHANICAL ROOMS: 3000 FPM  
 H. ACOUSTICAL  
 1. THE FOLLOWING NOISE NCRC CRITERIA LEVELS WILL BE DESIGNED AS DEFINED IN THE ASHRAE HVAC APPLICATIONS HANDBOOK. THESE LEVELS ADDRESS THE MECHANICAL SYSTEMS ONLY. ACTUAL SOUND PERFORMANCE REQUIREMENTS FOR EACH SPACE MUST BE VERIFIED WITH ACOUSTICAL CONSULTANT.  
 A. CORRIDORS AND LOBBIES: 40  
 B. OFFICES: 30  
 I. SEISMIC  
 1. ANCHORAGE AND RESTRAINTS ARE A DEFERRED SUBMITTAL BY THE CONTRACTOR AND MUST BE COORDINATED WITH STRUCTURAL ENGINEER AND AUTHORITY HAVING JURISDICTION.

### AIR DISTRIBUTION SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NO.	FINISH	ACCESSORIES
CD	CEILING DIFFUSER	"KRUEGER" MODEL 1240	BRITISH WHITE	
CE/CR	CEILING REGISTER	"KRUEGER" MODEL 880	BRITISH WHITE	
SG	SUPPLY SIDEWALL GRILLE	"KRUEGER" MODEL 880	BRITISH WHITE	
RG	RETURN SIDEWALL GRILLE	"KRUEGER" MODEL 885	BRITISH WHITE	

① AT ALL HARD LID CEILINGS, CONTRACTOR SHALL PROVIDE FOR "MAT" CABLE DRIVEN DAMPERS, MODEL RT-150. CABLE SHALL BE ROUTED BEHIND GRILLE OPENING AND INSTALLED PER MANUFACTURER'S REQUIREMENTS.

### REFRIGERANT PIPE MATERIAL SCHEDULE

SERVICE	PIPE MATERIAL	JOINT TYPES	FITTINGS MATERIAL	PRESSURE RATING	VALVE TYPES
REFRIGERATION PIPE SIZES 1/4" TO 3/4" (OD)	NITROGENIZED ACR-ANNEALED COPPER TYPE "K"	BRAZED FLARE	COPPER TYPE "K" BRASS	700 PSI	BALL SOLENOID TXV
REFRIGERATION PIPE SIZES 7/8" TO 1-5/8" (OD)	NITROGENIZED ACR-DRAWN TEMPER COPPER TYPE "K"	BRAZED FLARE	COPPER TYPE "K" BRASS	700 PSI	BALL SOLENOID TXV

### PIPE INSULATION SCHEDULE

REFRIGERANT CONDITION OR PHASE	FLUID TEMPERATURE RANGE (°F)	CONDUCTIVITY RANGE (IN BTU-IN/HR PER SQFT/°F)	INSULATION MEAN RATING TEMPERATURE (°F)	PIPE SIZE (IN. DIA.)		
				1 to < 1.5	1.5 to < 4	4 to < 8
SPACE HEATING, HOT WATER SYSTEMS (STEAM, STEAM CONDENSATE AND HOT WATER) AND SERVICE WATER HEATING SYSTEMS						
HIGH PRESSURE VAPOR (HP GAS)	201° - 250°	0.25 - 0.29	150°	2.5	2.5	2.5
	141° - 200°		125°	1.5	1.5	2.0
LIQUID	165° - 140°	0.22 - 0.28	100°	1.0	1.5	1.5
	40° - 60°		75°	0.5	1.0	1.0
LOW PRESSURE VAPOR (LPG)	BELOW 40°	0.20 - 0.26	50°	1.0	1.5	1.5

NOTE:  
 1. WHERE INSULATED PIPING IS EXPOSED OUTDOORS, IT SHALL BE COVERED. COVER OUTDOOR EXPOSED INSULATED PIPING WITH 0.018 INCH THICK CORRUGATED ALUMINUM JACKET  
 2. VERIFY REFRIGERATION FLUID OPERATING TEMPERATURE RANGES WITH EQUIPMENT MANUFACTURER.  
 3. THE ABOVE TABLE APPLIES TO ALL REFRIGERATION PIPING SYSTEMS, INCLUDING COOLING ONLY WITH/WITHOUT HOT GAS BYPASS, HEAT PUMP SYSTEMS INCLUDING MINI-SPLITS AND VRF/VRV HEAT PUMP AND HEAT RECOVERY SYSTEMS.  
 4. VRF/VRV 3-PIPE HEAT RECOVERY SYSTEMS TYPICALLY HAVE HIGH PRESSURE VAPOR PIPING (FOR HEATING THAT EXCEEDS 201°F)  
 5. VRF 2-PIPE HEAT RECOVERY SYSTEMS TYPICALLY HAVE HIGH PRESSURE VAPOR PIPING (FOR HEATING) THAT IS LESS THAN 201°F.  
 6. FOR VRF/VRV HEAT RECOVERY SYSTEMS, THE ABOVE TABLE APPLIES TO PIPING BETWEEN THE OUTDOOR UNIT (HU) AND MIDDLE SELECTION BOX (HRB) AND INDOOR UNITS (FAN COIL UNITS).  
 7. ALL INSULATION WALL THICKNESS GREATER THAN 1-1/2" REQUIRES DOUBLE LAYER (1" PLUS 1-1/2" OR 1-1/2" PLUS 1") TO MEET ASTM E84 (UL 723). EACH INDIVIDUAL LAYER MUST BE FULLY VAPOR PROOF, SEALED AND MEET ASTM E84 25/50 FLAME SPREADING/ SMOKE GENERATED RATINGS.

### MECHANICAL GENERAL NOTES

1. THE TOTAL INSTALLATION SHALL COMPLY WITH ANY AND ALL REQUIREMENTS OF THE LEGALLY CONSTITUTED AUTHORITIES HAVING JURISDICTION INCLUDING 2022 CBC (CALIFORNIA BUILDING CODE), 2022 CM/CPC (CALIFORNIA MECHANICAL AND PLUMBING CODE), 2022 CAL GREEN REQUIREMENTS AND THE 2022 TITLE 24 ENERGY CODE.

2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO WORK.

3. ALL DIMENSIONS ARE APPROXIMATE AND ARE GIVEN FOR ESTIMATE PURPOSES ONLY. BEFORE PROCEEDING WITH THE WORK THE CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS, SIZES, REQUIRED CLEARANCES AND SHALL ASSUME FULL RESPONSIBILITY FOR THE FITTING OF ALL EQUIPMENT AND MATERIALS HEREIN REQUIRED TO OTHER PARTS OF THE WORK OF OTHER TRADES. DUCT DIMENSIONS SHOWN ON PLANS ARE NET INSIDE CLEAR.

4. THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS AND LOCATIONS ARE NOT EXACTLY LOCATED. ALL DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE NET INSIDE DIMENSIONS. DO NOT FABRICATE DUCTWORK FROM THESE DRAWINGS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SHOP DRAWINGS WHICH REFLECT THE PROPOSED INSTALLATION. THE SHOP DRAWINGS MUST BE APPROVED BY THE ENGINEER PRIOR TO ANY SHEET METAL FABRICATION. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCURATE AS-BUILT DRAWINGS AT THE COMPLETION OF THE PROJECT AND SUBMITTING THEM TO THE ENGINEER AND OWNER.

5. IN THE PREPARATION OF THESE DOCUMENTS, CERTAIN ASSUMPTIONS ARE MADE REGARDING EXISTING CONDITIONS. SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL QUANTITIES OF MONEY OR DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF EXISTING BUILDINGS AND/OR EQUIPMENT. THEREFORE, THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY CHANGES OR ADDITIONAL COSTS INCURRED DUE TO EXISTING CONDITIONS.

6. THE CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT HIS WORK AND EQUIPMENT. HE SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.

7. THE INSTALLATION OF ACCESS PANELS OR OTHER INDICATING EQUIPMENT OR SPECIALTIES REQUIRING READING ADJUSTMENT, INSPECTION, REPAIRS, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.

8. WHERE MATERIAL IS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED, IT SHALL BE OF THE SAME TYPE AND QUALITY AS EXISTING MATERIAL.

9. PROVIDE MANUAL VOLUME DAMPERS AT UPSTREAM PORTION OF ALL TERMINAL AIR BRANCHES. THESE SHALL BE OF THE LOCKING QUADRANT TYPE. WHERE LOCATED OVER SLOPED OR HARD CEILINGS, PROVIDE DURO-DYNE ANGLE DRIVE OR BOWDEN CABLE CONTROL SYSTEM OR INDOOR UNITED EMERTECH POWER/BALANCE SYSTEM. REMOTE PLATE LOCATIONS TO BE LOCATED AS DETERMINED BY ARCHITECT.

10. PROVIDE MINIMUM 1" ACOUSTICAL LINING IN ALL DUCTWORK WITHIN 10 FEET OF ALL AIR MOVING EQUIPMENT. PROVIDE DURO-DYNE FLEXIBLE CONNECTION AT ALL DUCT AT EQUIPMENT LOCATIONS.

11. DUCTS IN AN UNCONDITIONED SPACE OR EXTERIOR DUCT WORK SHALL HAVE A MIN. OF R-8 INSULATION. DUCTS WITHIN THE CONDITIONED ENVELOPE ABOVE A CEILING SHALL HAVE A MIN. OF R-4.2 INSULATION. EXTERIOR DUCTWORK SHALL NOT HAVE INSULATION EXPOSED TO THE ENVIRONMENT.

12. WHERE NOT SPECIFICALLY INDICATED OTHERWISE, ALL DUCTWORK AND EQUIPMENT SHALL BE SUPPORTED PER THE SMACNA GUIDELINES FOR SEISMIC RESTRAINT AND CURRENT APPLICABLE UNIFORM MECHANICAL CODE.

13. WHEN A FIRE ALARM SYSTEM WITH FULL COVERAGE SMOKE DETECTORS ARE PROVIDED, DUCT SMOKE DETECTORS MAY BE ELIMINATED. FIRE ALARM CONTRACTOR SHALL WIRE SMOKE/FIRE DAMPER ACTUATORS TO AREA SMOKE DETECTORS.

14. TESTING, ADJUSTING, AND BALANCING (TAB) OF THE AIR CONDITIONING SYSTEMS AND RELATED ANCILLARY EQUIPMENT WILL BE PERFORMED BY A CERTIFIED, INDEPENDENT THIRD PARTY, AGENCY SECURED BY THE MECHANICAL CONTRACTOR. A COMPLETE AIR BALANCE REPORT TO BE SUBMITTED TO THE ADMINISTRATIVE AUTHORITY AND TO THE MECHANICAL ENGINEER AND APPROVED PRIOR TO FINAL PAYMENT.

15. AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED AND INSULATED AS PROVIDED IN CHAPTER 6 OF 2022 CM/C.

16. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DEVELOPED INDEX NOT TO EXCEED 50 (2022 CM/C SECTION 602.2).

17. ALL DUCTWORK SHALL BE HARD DUCT. FLEXIBLE AIR DUCTS SHALL BE NOT MORE THAN 5' IN LENGTH AND SHALL NOT BE USED IN LIEU OF RIGID ELBOWS OR FITTINGS. FLEXIBLE AIR DUCTS SHALL BE PERMITTED TO BE USED AS AN ELBOW AT A TERMINAL DEVICE (ISEC 603.4.1.6.1).

18. ANY SUBSTITUTION MADE BY THE CONTRACTOR THAT IS DIFFERENT FROM WHAT IS SPECIFIED ON THE DRAWINGS SHALL BE CLEARLY INDICATED ON THE SUBMITTALS AS TO ALL THAT IS BEING SUBSTITUTED.

19. THERMOSTATS SHALL COMPLY WITH THE 2022 ENERGY COMMISSION AND SHALL BE WIFI ENABLED.

20. AT THE TIME OF ROUGH INSTALLATION, OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUCT OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM.

21. WHERE MORE THAN ONE HEATING, COOLING, VENTILATING, OR REFRIGERATING SYSTEM IS INSTALLED ON THE ROOF OF A BUILDING OR WITHIN A BUILDING, IT SHALL BE PERMANENTLY IDENTIFIED AS TO THE AREA OR SPACE SERVED BY THE EQUIPMENT. (CM/C 33.5). PROVIDE PERMANENT LABELING AND IDENTIFICATION FOR ALL HVAC UNIT (SINGLE SYSTEM OR MULTIPLE) AND THERMOSTATS. IDENTIFICATION FOR THE THERMOSTATS SHALL CORRELATE TO THE HVAC UNIT THAT IT SERVES.

22. AIR CONDITIONING REFRIGERATION CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION PER CM/C SECTION 1105.11.

### ANCHORAGE AND BRACING NOTES

1. PIPES, DUCTS AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE 2008 SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS", THE "SUPERSTRUT SEISMIC RESTRAINT SYSTEM" FOR PIPES AND CONDUITS ONLY.

### APPLICABLE CODES

- 2022 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (IBC WITH AMENDMENTS)
- 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (NEC WITH AMENDMENTS)
- 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R. (UMC WITH AMENDMENTS)
- 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (UPC WITH AMENDMENTS)
- 2022 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (IFC WITH AMENDMENTS)
- 2022 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
- 2022 TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- 2022 CALIFORNIA ENERGY CODE (PART 6, TITLE 24 C.C.R.)
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSG), PART 11, TITLE 24 C.C.R.
- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL MECHANICAL CODE (IMC)
- 2021 INTERNATIONAL PLUMBING CODE (IPC)

### HVAC LEGEND

SYMBOL	ABBREVIATIONS	DESCRIPTION
		SQ, RECT. OR ROUND DUCT AS NOTED
		DUCT WITH ACOUSTICAL LINER
		EXIST. DUCT OR EQUIP. TO REMAIN
		EXIST. DUCT OR EQUIP. TO BE REMOVED
		FLEXIBLE DUCT
	CD	CEILING DIFFUSER, SUPPLY
	CR / CE	CEILING REGISTER, RETURN & EXHAUST
	SD / SR	SIDE WALL DIFFUSER & SIDE WALL REGISTER
		SECTION THROUGH DUCT
		DUCT DOWN
		SQUARE TO ROUND TRANSITION
		DUCT ACCESS DOOR
		DUCT WITH TURNING VANES
		DETAIL REFERENCE
		SECTION REFERENCE
		EQUIPMENT REFERENCE
	MVD	MANUAL VOLUME DAMPER
	TSTAT	THERMOSTAT
		BACK DRAFT DAMPER
		SWITCH
		TIME CLOCK
	A.F.F.	ABOVE FINISHED FLOOR
	CFM	CUBIC FEET OF AIR PER MINUTE
	CFMS	CFM SUPPLY
	CFMR	CFM RETURN
	CFME	CFM EXHAUST
	O.S.A.	OUTSIDE AIR
	30X10	INDICATES SQUARE DUCT (INCHES)
	10ø	INDICATES ROUND DUCT (INCHES)
	REFR.	REFRIGERANT LINES

---DX---



CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way, San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3700 Email: cadd@designwesteng.com

PROJECT ADMINISTERED BY:  
 SAN BERNARDINO COUNTY  
 REAL ESTATE SERVICES  
 DEPARTMENT -  
 PROJECT MANAGEMENT  
 DIVISION

385 N. ARROWHEAD AVE.  
 SAN BERNARDINO, CA 92415

PROJECT NAME:  
 PRADO REGIONAL PARK  
 GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
 CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:  
 STK PROJECT NO.: 374-156-22  
 SCALE: AS NOTED  
 DATE: MARCH 2023  
 PLOT DATE:  
 DRAWING NAME:



SHEET TITLE:  
 MECHANICAL  
 LEGEND NOTES &  
 SCHEDULES

SHEET NO.:

M0.1



4025 ZEVOR DRIVE, TEMECULA, CALIFORNIA 92592-3700  
Phone: 951.266.9110 Fax: 951.266.9079 Email: stk@stk.com

CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandewater Way, San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3700 Email: cdd@designwest.com

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

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16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

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12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:

SCALE: 3/4"=1'-0" AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:



SHEET TITLE:  
MECHANICAL  
TITLE 24  
REQUIREMENTS

SHEET NO.:

M0.2

22-132

STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION  
Envelope Component Approach  
CERTIFICATE OF COMPLIANCE  
Project Name: Prado Regional Park Gate House  
Project Address: 16700 Euclid Ave  
Report Page: (Page 1 of 12)  
Date Prepared: 1/23/2023

**A. GENERAL INFORMATION**

01 Project Location (city)	Chino	05 # of Stories (Habitable Above Grade)	1
02 Zipcode	91708	06 Total Conditioned Floor Area (ft <sup>2</sup> )	492
03 Climate Zone	10	07 Total Unconditioned Floor Area (ft <sup>2</sup> )	0
04 Occupancy Types Within Project (select all that apply). If one occupancy constitutes = 80% of the conditioned floor area, the entire building envelope may be designed to comply with the provisions of that occupancy (per 140.0(f)).		08 Project includes unconditioned enclosed space(s) > 5,000 ft <sup>2</sup> under a roof with a ceiling height of at least 15 ft.	<input type="checkbox"/>

• Office • Support Areas

**B. PROJECT SCOPE**

This table specifies project envelope components within the permit application demonstrating compliance using the prescriptive paths outlined in 140.3/170.2 and 141.0(a)/180.1 and 141.0(b)/180.2 for alterations and alterations.

My project consists of (check all that apply):

<input checked="" type="checkbox"/> New Construction or Newly Conditioned Space	<input checked="" type="checkbox"/> Walls	<input type="checkbox"/> Exterior Opaque Doors
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft <sup>2</sup> directly under roof with ceiling height > 15ft	<input type="checkbox"/> Floors	<input checked="" type="checkbox"/> Fenestration/ Glazed Doors <sup>1</sup>
<input type="checkbox"/> Addition of conditioned space	<input type="checkbox"/> Roofs	<input type="checkbox"/> Fenestration/ Glazed Doors <sup>1</sup>
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft <sup>2</sup> directly under roof with ceiling height > 15ft	<input type="checkbox"/> Walls	<input type="checkbox"/> Exterior Opaque Doors
<input type="checkbox"/> Addition <= 700 ft <sup>2</sup>	<input type="checkbox"/> Floors	<input type="checkbox"/> Fenestration/ Glazed Doors <sup>1</sup>
<input type="checkbox"/> Addition > 700 ft <sup>2</sup>	<input type="checkbox"/> Roofs	<input type="checkbox"/> Fenestration/ Glazed Doors <sup>1</sup>
<input type="checkbox"/> Alteration of conditioned space	<input type="checkbox"/> Roof Assembly	<input type="checkbox"/> Walls Exterior Opaque Doors NA. for Alts.
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft <sup>2</sup> directly under roof with ceiling height > 15ft	<input type="checkbox"/> Roofing Material <sup>2</sup>	<input type="checkbox"/> Floors
<input type="checkbox"/> and lighting system installed for the first time	<input type="checkbox"/> Fenestration	

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**B. PROJECT SCOPE**

<sup>1</sup>FOOTNOTE: Doors that are more than 25% glass in area are considered Glazed Doors and should be documented on table K with fenestration.  
<sup>2</sup>Roof recoats and replacements must also check "Roof Assembly" box and document compliance with insulation requirements in Table F. Roof recoats may document compliance with roof material only in Table G.

**C. COMPLIANCE RESULTS**

Results in this table are automatically calculated from data input and calculations in Tables F through L. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see the applicable table referenced below.

Roof Assembly	Roofing Materials	Walls	Floors	Doors	Fenestration	Daylighting Spaces > 5,000ft <sup>2</sup>	Compliance Results
01 (See Table F)	02 (See Table G)	03 (See Table H)	04 (See Table I)	05 (See Table J)	06 (See Table K)	07 (See Table L)	08 COMPLIES
Yes	Yes	Yes	Yes	Yes	Yes	Yes	COMPLIES

**D. EXCEPTIONAL CONDITIONS**

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. ROOF ASSEMBLY SCHEDULE**

This table demonstrates compliance for prescriptive roof assembly requirements in 140.3(a)1B/170.2(a)1B for new construction, 141.0(a)/180.1 for additions, or 141.0(b)2Biii/180.2 for alterations.

01	02	03	04	05	06
Indicate roof types included in the project:	<input checked="" type="checkbox"/> Framed	<input type="checkbox"/> Metal Panels	<input type="checkbox"/> Metal Building	<input type="checkbox"/> SIPS	<input type="checkbox"/> Metal Building
Include Framed Roof Assemblies in Area-Weighted Average U-factor Calculation <sup>1</sup>	<input checked="" type="checkbox"/>				

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**F. ROOF ASSEMBLY SCHEDULE**

This table demonstrates compliance with prescriptive wall assembly requirements in 140.3(a)1A/170.2(a)1A for new construction, 141.0(a)/180.1 for additions, and 141.0(b)2B/180.2 for alterations. Roof recoats and replacements must also document compliance with insulation requirements in Table F. Roof recoats may document compliance with roof material only in Table G.

03	04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location/ Fire Rating	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance	U-factor per Design	Net Area <sup>2</sup> ft <sup>2</sup>
South Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	44
East Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	240
West Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	17
East Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	17
North Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	38

**Area-Weighted Average U-factor Compliance Calculation for Framed/ SIPS/ Span Deck & Concrete/ Metal Panel Roofs**

01	02	03	04	05
Roof Type	Total Area of Roof Type (ft <sup>2</sup> )	Area-weighted U-factor for Roof Type	Required	Design
Framed	492	0.034	0.031	
<b>Total for all Roof Types:</b>	<b>492</b>	<b>0.034</b>	<b>0.031</b>	<b>COMPLIES</b>

**G. RATED ROOFING MATERIAL (COOL ROOF)**

This table demonstrates compliance with prescriptive roof material requirements in 140.3(a)1A/170.2(a)1A for new construction, 141.0(a)/180.1 for additions, and 141.0(b)2B/180.2 for alterations. Roof recoats and replacements must also document compliance with insulation requirements in Table F. Roof recoats may document compliance with roof material only in Table G.

01	02	03	04	05	06	07	08	09	10
Tag/Plan Detail ID	Name/ Location	Status	Occupancy Type	Roof Slope	Roof Material	Compliance Method	Required Minimum Material Performance	Designed Material Performance	U-factor/ R-value of Assembly
R-30 Roof Attic	Roof	New	Nonresidential	Low slope	To Be Determined	Aged solar reflectance and thermal emittance	Reflectance <sup>1</sup> 0.63 Emittance 0.75	Reflectance <sup>1</sup> 0.63 Emittance 0.75	

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**H. WALL ASSEMBLY SCHEDULE**

This table demonstrates compliance with prescriptive wall assembly requirements in 140.3(a)1/170.2(a)1 for new construction, 141.0(a)/180.1 for additions and 141.0(b)1B/180.2 for alterations.

01	02	03	04	05	06	07	08	09	10	11	12	13
Indicate wall types included in the project:	<input checked="" type="checkbox"/> Framed	<input type="checkbox"/> Mass (new only)	<input type="checkbox"/> Concrete Sandwich Panel (new only)	<input type="checkbox"/> SIPS	<input type="checkbox"/> ICF (new only)	<input type="checkbox"/> Metal Panels	<input type="checkbox"/> Metal Building	<input type="checkbox"/> Spandrel/ Curtain Wall	<input type="checkbox"/> Straw Bale	<input type="checkbox"/> Log Home (new only)		
Calculate Area-Weighted Average U-factor for Metal Framed Walls <sup>1</sup>	<input checked="" type="checkbox"/>											
Include Wood Framed Walls in Area-Weighted Average U-factor Calculation <sup>2</sup>	<input checked="" type="checkbox"/>											

**Area-Weighted Average U-factor Compliance Calculation for Wood Framed/ SIPS/ Spandrel/ Curtain/ Metal Panel/ Straw Bale Wall Types**

01	02	03	04	05
Wall Type	Total Area of Wall Type (ft <sup>2</sup> )	Area-weighted U-factor for Wall Type	Required	Design
Framed	697	0.059	0.059	
<b>Total for all Wall Types:</b>	<b>697</b>	<b>0.059</b>	<b>0.059</b>	<b>COMPLIES</b>

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**H. WALL ASSEMBLY SCHEDULE**

Area-Weighted Average U-factor Compliance Calculation for Wood Framed/ SIPS/ Spandrel/ Curtain/ Metal Panel/ Straw Bale Wall Types

01	02	03	04	05
Wall Type	Total Area of Wall Type (ft <sup>2</sup> )	Area-weighted U-factor for Wall Type	Required	Design
Framed	697	0.059	0.059	
<b>Total for all Wall Types:</b>	<b>697</b>	<b>0.059</b>	<b>0.059</b>	<b>COMPLIES</b>

**I. FLOOR ASSEMBLY SCHEDULE**

This section does not apply to this project.

**J. EXTERIOR DOOR SCHEDULE**

This section does not apply to this project.

**K. FENESTRATION AND GLAZED DOOR SCHEDULE**

This table demonstrates compliance with prescriptive fenestration requirements in 140.3(a)5/170.2(a)3 for new construction, 141.0(a)/180.1 for additions, or 141.0(b)2A/180.2 for alterations. Exterior doors that are more than 25% glass in area are considered Glazed Doors and should be documented on this table with fenestration.

01	02	03	04	05
Indicate fenestration types included in the project:	<input type="checkbox"/> Vertical (alterations)	<input checked="" type="checkbox"/> Vertical (new)	<input type="checkbox"/> Skylights	<input type="checkbox"/> Glazed Doors (new only)

**Vertical Fenestration and Glazed Doors - Total Building & West Facing Area (New Construction & Additions Only)**

01	02	03	04	05
Elevation Item Tag/ Description	Orientation (Azimuth) <sup>1</sup>	Gross Exterior Wall Area <sup>2</sup> (ft <sup>2</sup> )	Display Perimeter Length <sup>2</sup> (ft)	Vertical Fenestration Area per Design <sup>3</sup> (ft <sup>2</sup> )
Window Fixed window	West	360	0	105
Window Fixed window	West Facing	440.8	07	405
Window Fixed window	West Facing	144	09	105

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**K. FENESTRATION AND GLAZED DOOR SCHEDULE**

Vertical Fenestration and Glazed Doors - U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)

04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Fenestration Type	Occupancy & Status	U-factor/ (R)SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design <sup>1</sup>	Product Performance Unit	Required Product Performance	Product Performance per Design	Area ft <sup>2</sup>
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	35	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	13	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	35	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	8	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	57	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	57	

**Vertical Fenestration and Glazed Doors - U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)**

01	02	03	04	05
Calculate Area-Weighted Average U-factor for Vertical Fenestration and Glazed Doors <sup>1</sup>	<input checked="" type="checkbox"/>			
Calculate Area-Weighted Average (RSHGC/ SHGC) for Vertical Fenestration and Glazed Doors <sup>1</sup>	<input checked="" type="checkbox"/>			
Calculate Area-Weighted Average VT for Vertical Fenestration and Glazed Doors <sup>1</sup>	<input checked="" type="checkbox"/>			

**Vertical Fenestration and Glazed Doors - U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)**

04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Fenestration Type	Occupancy & Status	U-factor/ (R)SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design <sup>1</sup>	Product Performance Unit	Required Product Performance	Product Performance per Design	Area ft <sup>2</sup>
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	13	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	13	

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**F. ROOF ASSEMBLY SCHEDULE**

Framed Roof Assemblies

07	08	09	10	11	12	13	14	15	16
Tag/Plan Detail ID	How Design U-factor was determined	Roof Type & Frame Material	Frame Spacing Depth	Cavity Insulation per Design <sup>2</sup>	Continuous Insulation per Design <sup>2</sup>	Thermal Performance Unit	Required Thermal Performance	U-factor per Design	Net Area <sup>2</sup> ft <sup>2</sup>
Roof	JA4 Tables	Wood		30	0	U-factor	0.034	per JA4 per Software/Other 0.031	101
Roof	JA4 Tables	Wood		30	0	U-factor	0.034	per JA4 per Software/Other 0.031	71
Roof	JA4 Tables	Wood		30	0	U-factor	0.034	per JA4 per Software/Other 0.031	230
Roof	JA4 Tables	Wood		30	0	U-factor	0.034	per JA4 per Software/Other 0.031	90

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**H. WALL ASSEMBLY SCHEDULE**

This table demonstrates compliance with prescriptive wall assembly requirements in 140.3(a)1/170.2(a)1 for new construction, 141.0(a)/180.1 for additions and 141.0(b)1B/180.2 for alterations.

03	04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location/ Fire Rating	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance	U-factor per Design	Net Area <sup>2</sup> ft <sup>2</sup>
South Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	44
East Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	240
West Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	17
East Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	17
North Exterior Wall	Nonresidential/Relocatable 1 CZ: New	JA4 Tables	Demising wall	Wood 1/2" gyp 16" OC 2x6	21	2	U-factor	0.059	per JA4 per Software/Other 0.059	38

**FOOTNOTES:** If any individual assembly is non-compliant, assemblies may show compliance using an area-weighted calculation. Metal framed walls may not be combined with other wall types. Wood framed walls are combined with SIPS, spandrel & curtain, metal panel and straw bale wall types. The area-weighted compliance option is not available for alterations demonstrating compliance with R-values in Table 141.0-C.  
<sup>1</sup> If "R-value" is shown in cell 10 as the Thermal Performance Unit, the R-value shown here is for cavity insulation per 141.0(b)1B.  
<sup>2</sup> Wall area minus any fenestration area

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**K. FENESTRATION AND GLAZED DOOR SCHEDULE**

Vertical Fenestration and Glazed Doors - U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)

04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Fenestration Type	Occupancy & Status	U-factor/ (R)SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design <sup>1</sup>	Product Performance Unit	Required Product Performance	Product Performance per Design	Area ft <sup>2</sup>
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	35	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	13	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified		U-factor (max) 0.36 RSHGC (max) 0.25 VT (min) 0.3	0.36 0.25 0.3	0.36 0.25 0.3	35	
Window Fixed window	Nonresidential/Relocatable 1 CZ: New		NFRC Certified						



CONSULTANT:

DESIGN WEST ENGINEERING MECHANICAL-ELECTRICAL-ENERGY CONSULTANTS



PROJECT ADMINISTERED BY: SAN BERNARDINO COUNTY REAL ESTATE SERVICES DEPARTMENT - PROJECT MANAGEMENT DIVISION

385 N. ARROWHEAD AVE. SAN BERNARDINO, CA 92415

PROJECT NAME: PRADO REGIONAL PARK GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE CHINO, CA 91708

ISSUE INFORMATION:

Table with columns: DATE, INFORMATION. Rows: 12-1-22 50% PROGRESS, 1-18-23 85% CDS, 1-24-2023 95% CDS, 3-17-2023 PLAN CHECK Cds, 01-10-2024 BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22 SCALE: AS NOTED PLOT DATE: MARCH 2023 DRAWING NAME:



SHEET TITLE: MECHANICAL TITLE 24 REQUIREMENTS

SHEET NO.:

M0.3

22-132

Envelope Component Approach (Page 10 of 12) - Mechanical Systems. Includes tables for fenestration and glazed door schedule, and area-weighted average U-factor, SHGC, VT compliance calculation.

Mechanical Systems (Page 1 of 10) - General Information and B. PROJECT SCOPE. Includes project location, climate zone, and mechanical system details.

Mechanical Systems (Page 4 of 10) - H. FAN SYSTEMS & AIR ECONOMIZERS. Includes fan system serving information and exhaust air heat recovery details.

Envelope Component Approach (Page 11 of 12) - Mechanical Systems. Includes tables for daylight in large enclosed spaces, required certificates of installation, acceptance, and verification.

Mechanical Systems (Page 2 of 10) - C. COMPLIANCE RESULTS and D. EXCEPTIONAL CONDITIONS. Includes compliance results table and remarks.

Mechanical Systems (Page 5 of 10) - Fan Energy Index (FEI) and I. SYSTEM CONTROLS. Includes FEI table and system control details.

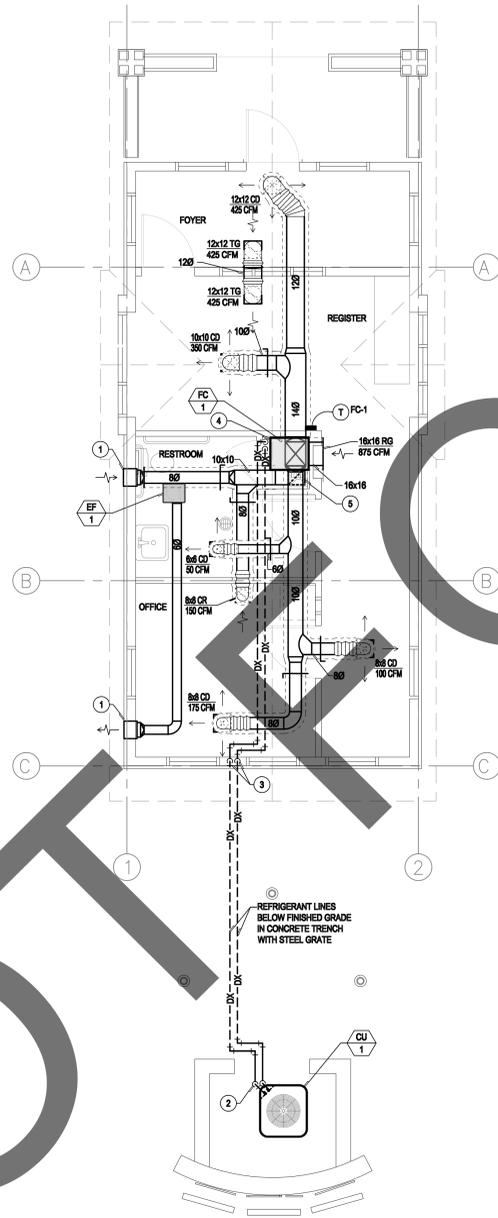
Envelope Component Approach (Page 12 of 12) - Mechanical Systems. Includes documentation author's declaration and responsible person's declaration.

Mechanical Systems (Page 3 of 10) - F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS) and G. PUMPS. Includes equipment sizing and pump details.

Mechanical Systems (Page 6 of 10) - J. VENTILATION AND INDOOR AIR QUALITY. Includes ventilation and indoor air quality table and system information.

R: L\_PROJECT 2022.12-15-PRADO REGIONAL PARK ENTRY KIOSK BUILDING 12-15E M-FRONT - 2024-01-10 - JANEY RODRIGUEZ

NOT FOR BID

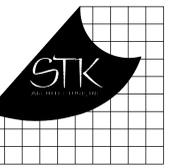


**GENERAL NOTES**

1. ALL SPIN-IN OR TAP TYPE DUCT CONNECTIONS SHALL BE PROVIDED WITH AN EXTRACTOR.
2. T-STATS SHALL NOT BE MOUNTED IN DIRECT LINE OF ANY SUPPLY DIFFUSER OR NEAR ANY HEAT REJECTION EQUIPMENT.
3. DUCT DIMENSIONS ARE INSIDE CLEAR. ADD AN ADDITIONAL 3" MINIMUM FOR R-8 DUCT INSULATION. SIZES MAY CHANGE PER MANUFACTURER.
4. ALL DUCTWORK SHALL BE HARD DUCT. FLEXIBLE AIR DUCTS AND CONNECTORS SHALL BE NOT MORE THAN 5' IN LENGTH AND SHALL NOT BE USED IN LIEU OF RIDGED ELBOWS OR FITTINGS. FLEXIBLE AIR DUCTS SHALL BE PERMITTED TO BE USED AS AN ELBOW AT A TERMINAL DEVICE (SEC 603.4.1 CM).
5. ALL VENTING SHALL HAVE A MIN. OF 18" CLEARANCE FROM ANY FORCED AIR INLET W/ A MIN. OF 3" CLEARANCE ABOVE & A MIN. OF 4" CLEARANCE FROM ANY PROPERTY LINE EXCEPT A PUBLIC WAY. (502 CM)
6. PROVIDE 1" ACOUSTICAL LINING IN ALL DUCTWORK WITHIN 10 FEET OF ALL AIR MOVING EQUIPMENT. PROVIDE DURO-DYNE FLEXIBLE CONNECTION AT ALL DUCT AT EQUIPMENT LOCATIONS.
7. ALL THERMOSTATS SHALL BE PROGRAMMED TO RUN IN FAN MODE DURING OCCUPIED HOURS. COORDINATE WORKING HOURS WITH OWNER. COOLING/HEATING MODE SHALL RUN AS NEEDED, PER TEMPERATURE SET POINT AND OCCUPANT LOAD.
8. CONTRACTOR SHALL COORDINATE DUCT RUNS WITH PLUMBING CONTRACTOR.
9. ALL RESTROOM DOORS SHALL HAVE A 1" UNDERCUT.

**CONSTRUCTION NOTES**

- 1 PROVIDE 12"x6" LOUVER WITH MIN. 50% FREE AREA
- 2 ROUTE REFRIGERANT LINES DN BELOW GRADE. REFRIGERANT LINES SHALL BE INSTALLED IN A TRENCH WITH GRATE. PIPING SHALL NOT BE BURIED. CONTRACTOR SHALL STRICTLY FOLLOW MANUFACTURER GUIDELINES FOR UNDERGROUND REFRIGERANT PIPING
- 3 ROUTE REFRIGERANT LINES UP FROM BELOW GRADE TO CEILING SPACE
- 4 ROUTE REFRIGERANT LINES DN FROM CEILING SPACE TO FAN COIL
- 5 ROUTE 10X10 RETURN DUCT DN



4205 ZEVO DR., TEMECULA, CALIFORNIA 92592-3700  
Phone: 951.296.9110 Fax: 951.296.6079 Email: stk@stkinc.com

CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way, San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3700 Email: cadd@designwesteng.com

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS

01-10-2024 BID SET

SHEET INFORMATION:

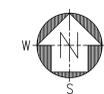
STK PROJECT NO.: 374-156-22  
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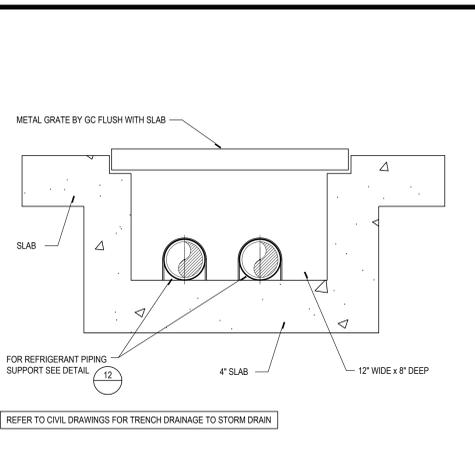
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MECHANICAL  
FLOOR PLAN

SHEET NO.:  
M1.1

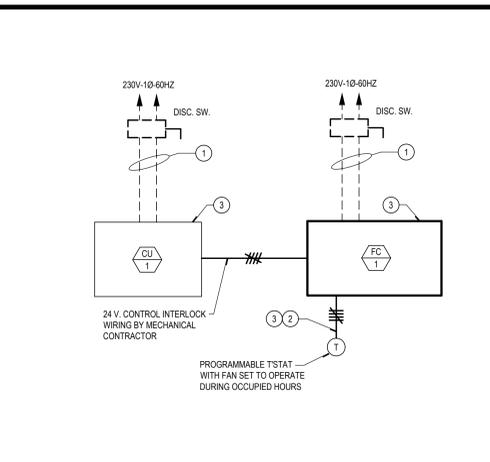


R: L:\PROJECT\2022\12-152 PRADO REGIONAL PARK ENTRY KIOSK BUILDING\12-152 M-DETAILS - 2024-01-10 - JAMER RODRIGUEZ

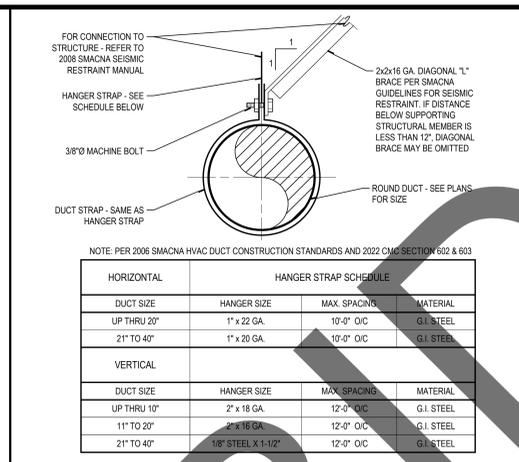
NOT FOR CONSTRUCTION



REFRIGERANT LINES TRENCH 13



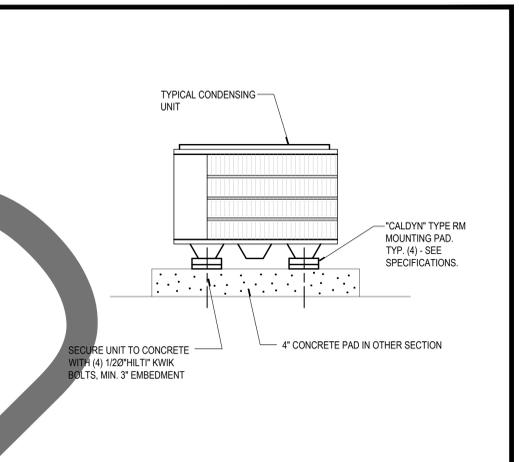
SPLIT SYSTEM WIRING DIAGRAM 9



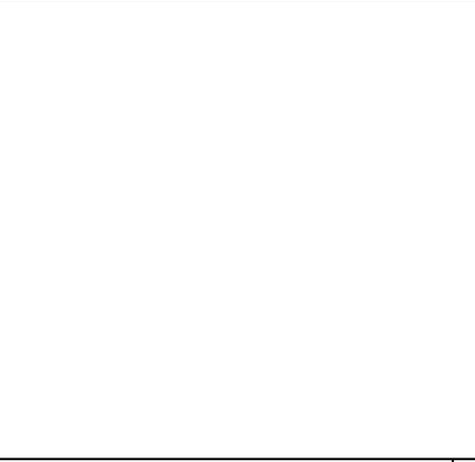
NOTE: PER 2008 SMACNA HVAC DUCT CONSTRUCTION STANDARDS AND 2022 CMC SECTION 602 & 603

HORIZONTAL		HANGER STRAP SCHEDULE	
DUCT SIZE	HANGER SIZE	MAX. SPACING	MATERIAL
UP THRU 20"	1" x 22 GA.	10'-0" O/C	G.I. STEEL
21" TO 40"	1" x 20 GA.	10'-0" O/C	G.I. STEEL
VERTICAL		HANGER STRAP SCHEDULE	
DUCT SIZE	HANGER SIZE	MAX. SPACING	MATERIAL
UP THRU 10"	2" x 18 GA.	12'-0" O/C	G.I. STEEL
11" TO 20"	2" x 16 GA.	12'-0" O/C	G.I. STEEL
21" TO 40"	1 1/2" STEEL X 1-1/2"	12'-0" O/C	G.I. STEEL

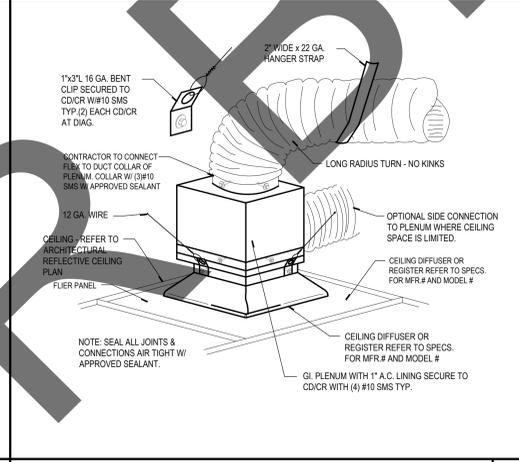
ROUND DUCT SUPPORT 5



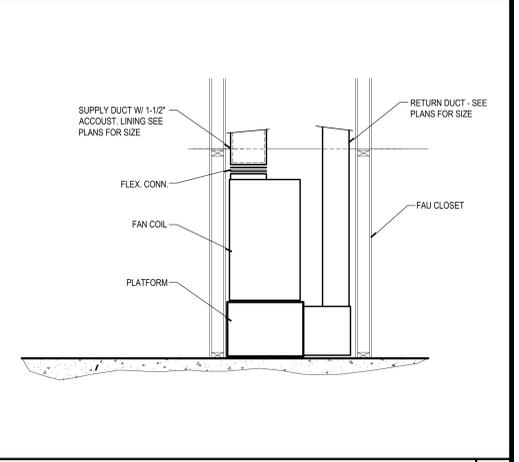
CONDENSING UNIT MOUNTING 1



WIRING DIAGRAM - EXHAUST FAN 10



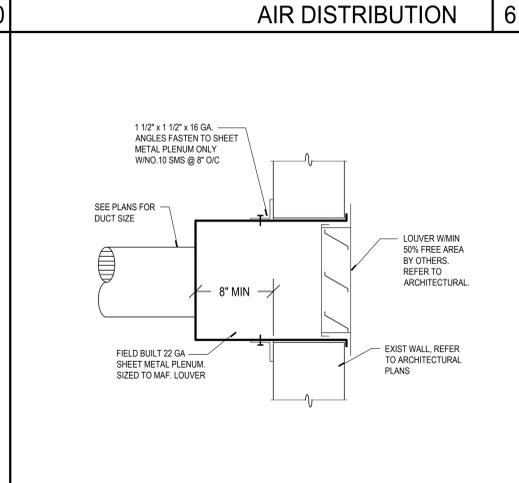
AIR DISTRIBUTION 6



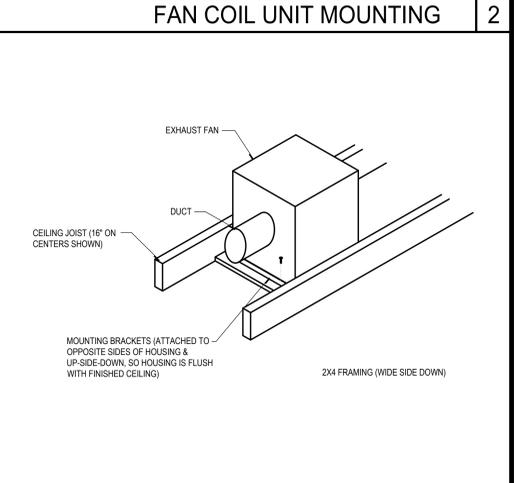
FAN COIL UNIT MOUNTING 2



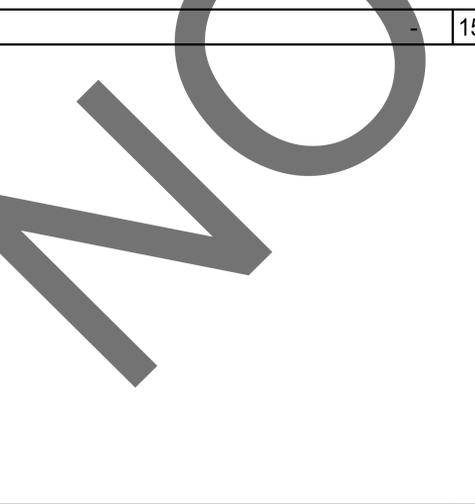
WIRING NOTES 11



AIR DISTRIBUTION - SIDEWALL 7



EXHAUST FAN MOUNTING 3



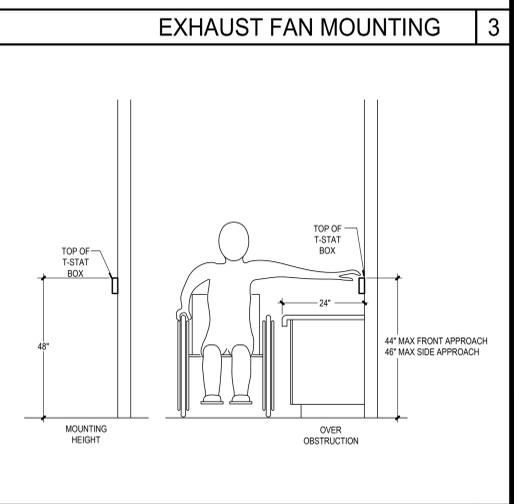
PIPE SUPPORT ON SLAB 12

SMACNA TABLE 3-5 ROUND DUCT GAUGE UNREINFORCED POSITIVE PRESSURE TO 10 IN. WC.

RECTANGULAR		DUCT	
DUCT SIZE	GAUGE	TRANSVERSE JOINT	BRACING
UP TO 12"	26	DD, SS	NONE
13" TO 18"	24	DD, SS	NONE
19" TO 30"	24	DD, SS	NONE
31" TO 42"	22	1" PS OR BS	1x1x1-1/8
43" TO 54"	22	1-1/2" STANDING SEAM	1.5x1.5
ROUND		DUCT	
DUCT SIZE	GAUGE	TRANSVERSE JOINT	BRACING
UP TO 9"	28	2" SLIP	NONE
10" TO 14"	28	4" SLIP	NONE
14" TO 18"	26	4" SLIP	NONE
18" TO 24"	24	4" SLIP	1x1x1-1/8

NOTE:  
 1. PER SMACNA-2008<sup>®</sup> HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, 3RD EDITION AND 2022 CMC.  
 2. LOW PRESSURE DUCT CONSTRUCTION: GAUGES, TRANSVERSE JOINTS, SPACING OF JOINTS AND INTERMEDIATE BRACING SHALL BE AS TABULATED ABOVE, IN WHICH TRANSVERSE JOINTS ARE SHOWN SS FOR S-STOP, DS FOR DRIVE SLIP, PS FOR POCKET SLIP, AND BS FOR BAR SLIP. PS AND BS LAPPED AND RIVETED AT CORNERS. INTERMEDIATE BRACING WHERE SHOWN MAY BE OMITTED IF DUCT SECTIONS OF FOUR FEET (4'-0") OR LESS ARE USED. MAXIMUM SPACING OF BRACING - FOUR FEET (4'-0")

DUCT GAUGE SCHEDULE 8



THERMOSTAT MOUNTING 4

**STK**  
 4205 ZEVO DR., TEMECULA, CALIFORNIA 92590-3700  
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SHEET TITLE:  
**MECHANICAL  
 DETAILS**

SHEET NO.:  
**M2.1**

WATER HEATER SCHEDULE							
TAG	MFR. & MODEL NO.	LOCATION	UEF	RECOVERY	WATTAGE	ELECTRICAL	WEIGHT (LBS)
						V-PH-HZ	AMPS
WH 1	CHRONOMITE M-ZOL	RESTROOM	0.93	0.5 GPM @ 57 DEG. TEMP. RISE	4,160	208V-1Ø-60Hz	20

FIXTURE SCHEDULE							
SYMBOL	SPECIFICATION	CONNECTION SIZE:					
		WASTE	TRAP	VENT	CW	HW	ELEC.
WC 1	WATERCLOSET; KOHLER "KINGSTON" K-25077-SS, ADA, 16-1/2" HIGH RIM (1/28 GPF); FLOOR MOUNTED, ELONGATED BOWL, TANK TYPE, WHITE VITREOUS CHINA, 82MM PLASTIC SEAT MODEL ZJ21ST1, ELONGATED, OPEN FRONT, 1/4 ANGLE STOPS, STAIN & CHEMICAL RESISTANT.	3"	INT.	2"	1/2"	-	-
L 1	LAVATORY; KOHLER "CHESAPEAKE" K-1728, WHITE VITREOUS CHINA, WALL HUNG LAVATORY W/ FAUCET HOLES ON CENTERS, CHICAGO FAUCET EQ-A12C-13ABCP DECK MOUNTED SINGLE HOLE CHROME TRADITIONAL SINK FAUCET WITH BATTERY OPERATED DUAL BEAM INFRARED SENSOR, CHICAGO FAUCET 1314BNF-ECST THERMOSTATIC MIXING VALVE, W/ 0.5 GPM AERATOR, PROVIDE ASSE 100% APPROVED TMY SET TO 110°; 6RD STRAINER DRAIN W/ 1/2" CAST BRASS P-TRAP WITH CHROME FINISH, W/ QUARTER TURN ANGLE STOPS, PROVIDE JOSAM 1700 SERIES WALL CARRIER ON ADA COMPLIANT PROVIDE TRUEBRO LAV GUARD PER ADA CODE 4.19.4	2"	1-1/2"	1-1/2"	1/2"	1/2"	BATT.
HB 1	HOSE BIBB; WOODFORD NARROW WALL HYDRANT MODEL 24, CHROME FINISH WITH VACUUM BREAKER, WITH LOOSE TEE KEY OPERATED CONTROL VALVE.	-	-	-	3/4"	-	-
FD 1	FLOOR DRAIN; JOSAM 3002-5A FLOOR DRAIN W/ 1/2" CAST IRON BODY W/ 1/2" NPT FLANGE, ADJUSTABLE NICKEL STRAINER, POLISHED BRONZE GRATE, PROVIDED WITH TRAP PRIMER CONNECTION FOR TP-1.	2"	2"	1-1/2"	-	-	-
FS 1	FLOOR SINK; JOSAM 4930Z FLOOR SINK, 8" SQUARE TOP-MEDIUM RECEPTOR, 1/8" DEEP 50MM, ACID RESISTANT COATED INTERIOR AND GRATE, PROVIDED WITH TRAP PRIMER CONNECTION FOR TP-1.	2"	2"	1-1/2"	-	-	-
TP 1	TRAP PRIMER; MIFAB MODEL "M507" 1/2" INLET AND 1/2" OUTLET WITH OPTIONAL DISTRIBUTION UNIT, MAY BE LOCATED AS INDICATED ON DRAWINGS OR AS REQUIRED BY CODE. UPC LISTED, PROVIDED WITH A 12" X 12" ACCESS PANEL OR LARGER OPENING ON THE REQUIRED ACCESS TO THE EQUIPMENT AND SHUT-OFF VALVE. (CONTRACTOR TO VERIFY).	-	-	-	1/2"	-	-

PIPE MATERIAL SCHEDULE					
SERVICE	PIPE MATERIAL & WEIGHT	TYPE OF JOINTS	PRESSURE FITTINGS MATERIAL	SHUT-OFF RATINGS PSI - SWP	VALVE
COLD WATER ABV. GROUND	COPPER L TUBE	SOLDERED	CAST BRONZE/ WROUGHT COPPER	125	BALL GATE CHECK
COLD WATER BELOW GROUND TO 5' OUTSIDE BUILDING	COPPER K TUBE	BRAZED	CAST BRONZE/ WROUGHT COPPER	125	BALL GATE
COLD WATER BELOW GROUND BEYOND 5'-0"	SCHEDULE 80 PVC	SOLVENT-WELD	PVC	125	GATE
HOT WATER ABV. GROUND	COPPER L TUBE	SOLDERED	CAST BRONZE/ WROUGHT COPPER	125	BALL CHECK
WASTE, SOIL & ROOF DRAINS	SCH 40 PVC DWV SCHEDULE 40 ABS	SOLVENT-WELD	ABS	N/A	N/A
CONDENSATE	COPPER L TUBE	SOLDERED	BRONZE	125	N/A

PLUMBING SIZING FORM					
PIPE SIZE IS BASED ON CHART A.105.1(1) @ 3.6 P.S.I. / 100 FT.					
FIXTURE UNITS ARE BASED ON TABLE A.103.1(2) FROM APPENDIX A					
SIZE	FIXTURE UNITS			FIXTURE UNITS	
	F. TANK	F. VALVE	GPM	NUMBER	FIXTURE UNIT TOTAL
1/2"	1	0	1.5	2.5	2.5
3/4"	6	0	5.5	3.2	3.2
1"	15	0	12	4.0	4.0
1-1/4"	46	0	19	4.8	4.8
1-1/2"	54	13	30	5.5	5.5
2"	187	80	65	6.0	6.0
2-1/2"	433	236	125	7.5	7.5
3"	691	636	160	8.0	8.0
4"	1171	1171	230	8.0	8.0
TOTAL FIXTURE UNITS					7
TOTAL G.P.M.					8
VELOCITY FOR COLD WATER PIPING LESS THAN 8 FT. PER SECOND					
VELOCITY FOR HOT WATER PIPING LESS THAN 5 FT. PER SECOND					
MAXIMUM SIZE FOR HOT WATER PIPING SHALL BE 1-1/2"					

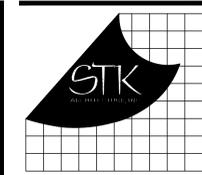
- ### GENERAL NOTES
- THE TOTAL INSTALLATION SHALL COMPLY WITH ANY AND ALL REQUIREMENTS OF THE LEGALLY CONSTITUTED AUTHORITIES HAVING JURISDICTION INCLUDING 2022 CBC (CALIFORNIA BUILDING CODE), 2022 CAL. GREEN REQUIREMENTS AND 2022 CMICPC (CALIFORNIA MECHANICAL AND PLUMBING CODE).
  - THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO WORK. ALL INDICATED DIMENSIONS ARE APPROXIMATE AND ARE GIVEN FOR ESTIMATE PURPOSES ONLY.
  - BEFORE PROCEEDING WITH THE WORK THIS CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS, SIZES, REQUIRED CLEARANCES AND SHALL ASSUME FULL RESPONSIBILITY FOR THE FITTING OF ALL EQUIPMENT AND MATERIALS HEREIN REQUIRED TO OTHER PARTS OF THE WORK OF OTHER TRADES.
  - THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT ALL OFFSETS, BENDS, SPECIAL FITTINGS AND LOCATIONS ARE NOT EXACTLY LOCATED. IN THE PREPARATION OF THESE DOCUMENTS, CERTAIN ASSUMPTIONS ARE MADE REGARDING EXISTING CONDITIONS. SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL SUMS OF MONEY OR DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF EXISTING BUILDINGS AND/OR EQUIPMENT. THEREFORE, THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY CHANGES OR ADDITIONAL COSTS INCURRED DUE TO EXISTING CONDITIONS.
  - ITEMS RELATED TO PLUMBING UTILITIES AND/OR OTHER SERVICE(S); MATERIALS, LABOR, PERMITS, FEES, ETC. SHALL BE VERIFIED WITH THE RESPECTIVE SERVING UTILITY COMPANY PRIOR TO SUBMISSION OF A BID. THE ACT OF SUBMITTING A BID SHALL CONSTITUTE FULL RESPONSIBILITY OF THE CONTRACTOR TO INSTALL SERVICES IN COMPLIANCE WITH THE REQUIREMENTS OF THE SERVING UTILITY COMPANY AND THE MECHANICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHARGES LEVIED BY THE SERVING UTILITY COMPANY EXCEPTING THE FIRST BILLING DEPOSIT.
  - THE CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT THEIR WORK AND EQUIPMENT. THEY SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.
  - THE INSTALLATION OF ACCESS PANELS OR OTHER INDICATING EQUIPMENT OR SPECIALTIES REQUIRING READING, ADJUSTMENT, INSPECTION, REPAIRS, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.
  - ALL EQUIPMENT AND FIXTURES INSTALLED UNDER THIS CONTRACT SHALL BE HUNG OR ANCHORED IN ACCORDANCE WITH 2022 CPDSCS.
  - THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS.
  - WHERE MATERIAL IS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED, IT SHALL BE OF THE SAME TYPE AND QUALITY AS EXISTING MATERIAL.
  - THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL REQUIRED HYDRAULIC CALCULATIONS AND FIRE SPRINKLER HEAD LOCATION IN ACCORDANCE WITH NFPA 13 TO THE LOCAL FIRE DEPARTMENT FOR REVIEW AND APPROVAL OF THE FIRE PROTECTION SYSTEM.
  - TEST SYSTEM(S) IN ACCORDANCE WITH REQUIREMENTS OF THE GOVERNING AUTHORITIES.
  - ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE AND LOCATED AS PER CODE REQUIREMENTS THE CONTRACTOR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC. AND THE ARCHITECT PRIOR TO ANY INSTALLATION.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL PAVED AREAS WHICH ARE EXCAVATED AND/OR DAMAGED BY THEIR OPERATIONS. IN ADDITION, THE CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL PLANTED AREAS DAMAGED BY THEIR OPERATIONS.
  - ALL CONNECTIONS TO EXISTING SERVICES SHALL BE MADE SUCH THAT INTERRUPTION TIME WILL BE AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL GIVE THE OWNERS REPRESENTATIVE SUFFICIENT NOTICE OF SUCH INTERRUPTIONS AND THE ACTUAL SHUT-DOWN TIME SHALL BE AT A TIME DESIGNATED BY THE OWNERS REPRESENTATIVE.
  - ALL EXTERIOR WATER SHUT-OFF VALVES BELOW GROUND SHALL BE INSTALLED IN YARD BOXES WITH COVERS CONSPICUOUSLY MARKED "WATER SHUT-OFF" RESPECTIVELY.
  - WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION, POTABLE WATER SYSTEMS SHALL BE DISINFECTED AND FLUSHED PRIOR TO USE BY WATER CHLORINATION SOLUTION AND HAVE BACTERIOLOGICAL EXAMINATION MADE BY AN APPROVED AGENCY PER 802 CFS, SEC. 809.10 AND AS PRESCRIBED IN AWWA C651, METHODS OF "CLEANING" DISINFECTING FOR NEW OR REPAIR PIPING AS DESCRIBED IN C651 OR NFPA 24.
  - PLUMBING PIPE, FITTINGS AND FIXTURES USED TO CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH AB 1953.
  - ANY SUBSTITUTION MADE BY THE CONTRACTOR THAT IS DIFFERENT FROM WHAT IS SPECIFIED ON THE DRAWINGS SHALL BE CLEARLY INDICATED ON THE SUBMITTAL AS TO ALL THAT IS BEING SUBSTITUTED.
  - SHUT-OFF VALVES SHALL BE PROVIDED IN MAIN BRANCHES, RUNS TO RISERS AND WHERE INDICATED ON DRAWINGS.
  - NEW NON-RESIDENTIAL WATER CLOSETS SHALL COMPLY WITH 2022 CAL-GREEN 5.303.3.1 AND SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATER SENSE SPECIFICATION FOR TANK-TYPE TOILETS.
  - NEW NON-RESIDENTIAL WALL MOUNTED URINALS SHALL COMPLY WITH 2022 CAL-GREEN 5.303.3.2 AND SHALL NOT EXCEED 0.125 GALLONS PER FLUSH.
  - NEW NON-RESIDENTIAL LAVATORY FAUCETS SHALL COMPLY WITH 2022 CAL-GREEN 5.303.3.4 AND SHALL NOT EXCEED 0.5 GALLONS PER MINUTE AT 60 PSI.
  - NEW NON-RESIDENTIAL KITCHEN FAUCETS SHALL COMPLY WITH 2022 CAL-GREEN 5.303.3.4 AND SHALL NOT EXCEED 1.8 GALLONS PER MIN AT 60 PSI.

PLUMBING LEGEND AND SYMBOLS		
SYMBOL	ABBREV.	DESCRIPTION
DETAIL No. SHEET No.		DETAIL REFERENCE
STACKRISER		SECTION REFERENCE
ID. No.		PLUMBING STACK OR RISER REFERENCE
EQUIPMENT		EQUIPMENT REFERENCE
ID. No.		
CW		COLD WATER
HW		HOT WATER
POP-OFF		POP-OFF DRAIN LINE OR HIDDEN WATER LINE
S or W		SOIL OR WASTE BELOW GRADE (w/ FLOOR)
COND		CONDENSATE DRAIN
BV		BALL VALVE
SOV		SHUT OFF VALVE
SOV or GC		SHUT OFF VALVE OR GAS COCK ON RISER
CV		SWING CHECK VALVE
PRV		PRESSURE REDUCING VALVE
PTR		PRESSURE-TEMPERATURE RELIEF VALVE
RRBPP		REDUCED PRESSURE BACKFLOW PREVENTER
DN		PIPE DOWN
UP		PIPE UP
DN		TEE DOWN
UP		TEE UP
		PIPE RISER & PIPE DROP (UP AND DOWN)
FCO		FLOOR CLEANOUT
WCO		WALL CLEANOUT
CO		CLEANOUT PLUG
COTG		YARD CLEANOUT or CLEANOUT TO GRADE
HB		HOSE BIBB WITH VACUUM BREAKER
WHA & TP		WATER HAMMER ARRESTOR & TRAP PRIMER
AP		ACCESS PANEL
ABV		ABOVE
BEL		BELOW
CONN		CONNECTION
CONT		CONTINUATION
DN		DOWN
ADA		AMERICAN DISABILITY ACT
VTR		VENT THROUGH ROOF
W		WITH
FU		PLUMBING FIXTURE UNIT
B.F.F.		BELOW FINISH FLOOR

- ### ANCHORAGE AND BRACING NOTES
- PIPES, DUCTS AND CONDUITS SHALL BE SUPPORTED AND BRACED PER THE SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS", THE "SUPERSTRUT SEISMIC RESTRAINT SYSTEM" FOR PIPES AND CONDUITS ONLY.

PIPE INSULATION SCHEDULE							
FLUID TEMPERATURE RANGE (°F)	CONDUCTIVITY RANGE (IN BTU-IN/HR PER SQFT°F)	INSULATION MEAN RATING TEMPERATURE (°F)	PIPE SIZE (IN. DIA.)				
			< 1	1 to < 1.5	1.5 to < 4	4 to < 8	8 and larger
REQUIRED INSULATION THICKNESS (IN.)							
SPACE HEATING, HOT WATER SYSTEMS (STEAM, STEAM CONDENSATE AND HOT WATER) AND SERVICE WATER HEATING SYSTEMS							
105° - 140°	0.22 - 0.28	100°	INCHES R-VALUE	1.0 R-7.7	1.5 R-12.5	1.5 R-11	1.5 R-9

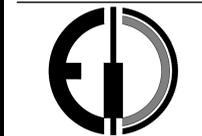
NOTE: WHERE INSULATED PIPING IS EXPOSED OUTDOORS, IT SHALL BE COVERED. COVER OUTDOOR EXPOSED INSULATED PIPING WITH 0.016 INCH THICK CORRUGATED ALUMINUM JACKET. PROVIDE VALVE STEM EXTENSIONS SUCH THAT INSULATION IS NOT DAMAGED WHEN VALVE IS CYCLED.



4035 ZEVO DR., TEMECULA, CALIFORNIA 92592-3780  
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WATER HEATER REQUIREMENTS



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GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS

01-10-2024 BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:



SHEET TITLE:  
PLUMBING  
WATER HEATER  
REQUIREMENTS

SHEET NO.:  
P0.2

STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 3 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM**  
This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in 120.3 and 140.5. For multifamily and hotel/motel occupancies, compliance is demonstrated with requirements 110.3(c), 160.4, 170.2(d).

**Mandatory Pipe Insulation All Occupancies**

Item	Requirement
13	For systems serving dwelling units, pipe insulation must meet the minimum insulation requirements in Table 160.4-A (see blow) except: • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members. • Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5. • Piping surrounded with a minimum of 1 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation.
14	For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A (see below) per 120.3: • Recirculating system piping, including supply and return piping of the water heater • The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system • Pipes that are externally heated
15	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service per 120.3(b) / 160.4(f). Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve.

**TABLE 120.3-A / 160.4-A PIPE INSULATION THICKNESS**

Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hour per ft² per °F)	Insulation Mean Rating Temp (°F)	Nominal Pipe Diameter (in)			
			< 1	1 to < 1.5	1.5 to < 4	1.5 to < 4 Multifamily & Hotel/Motel
105-140	0.22 - 0.28	100	1.0 in or R-7.7	1.5 in or R-12.5	1.5 in or R-11	2.0 in or R-16

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101  
Documentation Software: EnergyPro  
Compliance ID: EnergyPro-4473-0123-0111  
Report Generated: 2023-01-23 10:20:20

STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 6 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Steven Johnson  
Signature: *Steven Johnson*  
Signature Date: 2023-01-23  
Company: Design West Engineering  
Address: 412 East Vanderbilt Way  
City/State/Zip: San Bernardino CA 92408  
Phone: 909-890-3700

**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: Steven Johnson  
Signature: *Steven Johnson*  
Company: Design West Engineering  
Address: 412 E. Vanderbilt Way  
City/State/Zip: San Bernardino CA 92408  
Date Signed: 2023-01-23  
License: M33209  
Phone: 909-890-3700

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101  
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STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 2 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**E. ADDITIONAL REMARKS**  
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. DOMESTIC HOT WATER EQUIPMENT**  
This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated and with 141.0 / 180.1 / 180.2 for addition and alteration scopes.

**Equipment Schedule: Water Heating Efficiency and Standby Loss**

System Name	03	04	05	06					
Chronomite M-20L	Exception to 140.5(c) / 170.2(d)3								
07	08	09	10	11	12	13	14	15	
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM/ First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
Chronomite M-20L	Commercial Gas Instantaneous Water Heater	0.1	14,195	FHR >= 75	0.98	0.92	UEF		

**FOOTNOTE:** In systems >= 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% requirements via an input capacity-weighted average.

**Water Heating Equipment All Occupancies**

Item	Yes	No	Not Applicable	Requirement
18			<input checked="" type="checkbox"/>	Unfired storage tank insulation shall have internal + External >= R-16 OR External >= R-3.5. Label required per 110.3(c)3
19			<input checked="" type="checkbox"/>	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20			<input checked="" type="checkbox"/>	Isolation valves for instantaneous water heater with input rating > 6.8 BTU/h or 2.1 W has been specified per 110.3(c)6
21			<input checked="" type="checkbox"/>	School buildings < 25,000 ft² and < 4 stories must install a heat pump water heating system per 140.5(b)1. Water heating systems serving an individual bathroom space may be an instantaneous electric water heater.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101  
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STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 4 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**  
There are no forms required for this project.

**K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**  
There are no forms required for this project.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101  
Documentation Software: EnergyPro  
Compliance ID: EnergyPro-4473-0123-0111  
Report Generated: 2023-01-23 10:20:20

STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 1 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**A. GENERAL INFORMATION**

01	Project Location (city)	China	02	Climate Zone	10
03	Occupancy Types Within Project (select all that apply):				
• Other: • Support Areas					

**B. PROJECT SCOPE**  
This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in 140.1 / 170.2(d) and 141.0(b) / 180.1 or 141.0(b)2 / 180.2 for additions or alterations. Solar water heating systems are documented on the NRCC-SAB compliance document. Combined hydronic water heating systems are documented on the NRCC-MCH compliance document.

01	02	03
My project consists of (check all that apply):	System Type <sup>1,2</sup>	System Components
<input checked="" type="checkbox"/> New system (DHW system being installed for the first time in newly constructed building)	Individual System (serving nonresidential spaces)	<input checked="" type="checkbox"/> Equipment <input checked="" type="checkbox"/> Distribution <input checked="" type="checkbox"/> Controls
<input type="checkbox"/> System Alteration (equipment, distribution or controls)		<input type="checkbox"/> Equipment <input type="checkbox"/> Distribution <input type="checkbox"/> Controls

**FOOTNOTES:** Point of use water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.  
<sup>1</sup> Dwelling units refers to hotel/motel guest rooms and units in a multifamily residential occupancy.  
<sup>2</sup> DHW systems serving 2 or more dwelling units are considered "Central Systems" for multifamily occupancies

**C. COMPLIANCE RESULTS**  
Table C will indicate if the project data input into the compliance document is compliant with water heating requirements. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to table D. or the table indicated as not compliant for guidance.

01	02	03	04
Domestic Hot Water Equipment	Distribution Systems	Controls	Compliance Results
Table F	Table G	Table H	
Yes	Yes	Yes	COMPLIES

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101  
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Report Generated: 2023-01-23 10:20:20

STATE OF CALIFORNIA  
**Domestic Water Heating System**  
CALIFORNIA ENERGY COMMISSION

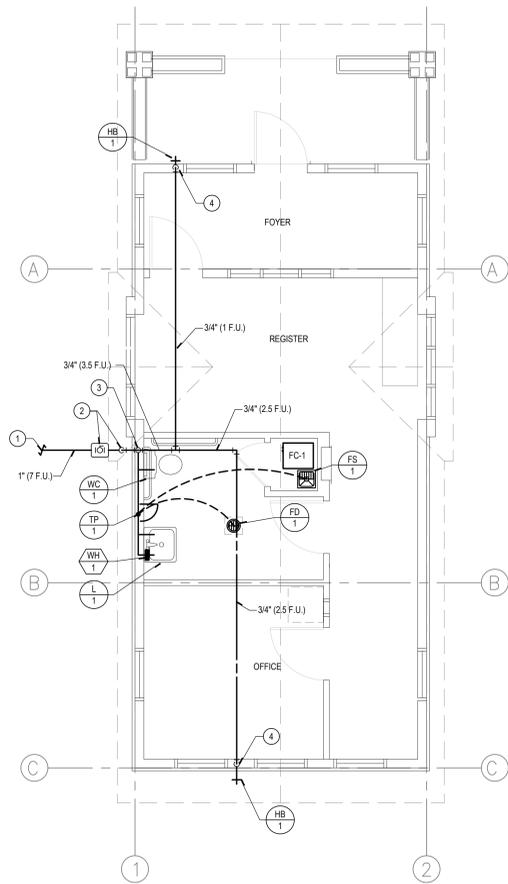
**CERTIFICATE OF COMPLIANCE** NRCC-PLB-E  
Project Name: Prado Regional Park Gate House Report Page: (Page 4 of 6)  
Project Address: 16700 Euclid Ave Date Prepared: 1/23/2023

**H. DOMESTIC HOT WATER CONTROLS**  
This table is used to demonstrate compliance with control requirements in 110.3 for all occupancies. For multifamily residential and hotel/motel occupancies, compliance is also demonstrated with requirements in 160.4(e) / 170.2(d).

Item	Yes	No	Not Applicable	Requirement
01	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Construction documents require manufacturer certification that service water-heating systems are equipped with automatic temperature controls capable of adjusting temperature settings per 110.3(a).
02	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Systems with capacity > 167,000 BTU/h equipped with outlet temperature controls per 110.3(c)1 unless covered by California Plumbing Code 613.0.
03	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system per 110.3(c)2 unless systems serves healthcare facility.
04	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	For recirculation systems serving multiple dwelling units, design includes automatic pump controls per 170.2(d) or 180.1(b)3 for alterations.
05	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix R44.4.9 per 170.2(d).
06	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Combustion air positive shut-off shall be provided per 160.4(3) on all newly installed commercial boilers as follows: • Boilers with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure • Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
07	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Boiler combustion air fans with motor >= 10 hp shall meet one of the following: • The fan motor shall be driven by a variable speed drive OR • The fan motor shall include controls that limit the fan motor demand to <= 30% of the total design wattage at 50% of the design air volume.
08	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Newly installed boilers with an input capacity (dhw) / SMMBtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

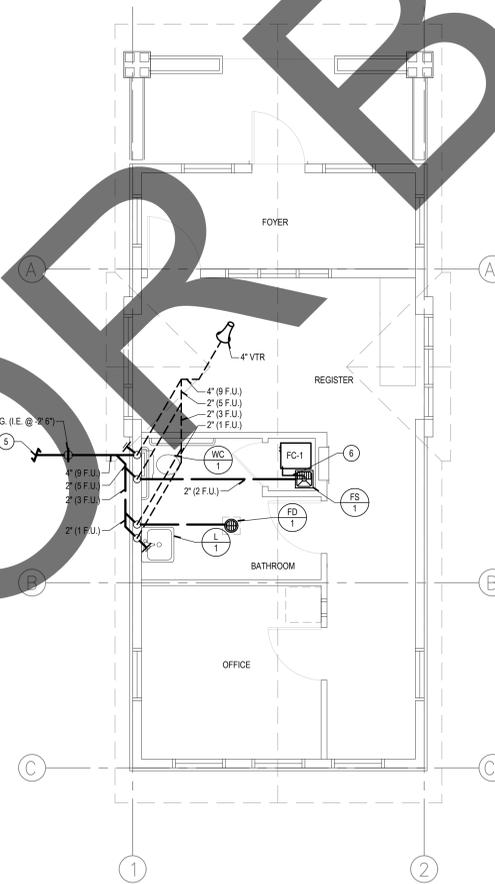
Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
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Documentation Software: EnergyPro  
Compliance ID: EnergyPro-4473-0123-0111  
Report Generated: 2023-01-23 10:20:20

R: L PROJECT 2022 12-12 PRADO REGIONAL PARK ENTRY KIOSK BUILDING 12-12 P-FLOOR - 2024-01-10 - JAMES RODRIGUEZ



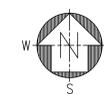
PLUMBING FLOOR PLAN - DOMESTIC WATER

SCALE: 1/4" = 1'-0" 1



PLUMBING FLOOR PLAN - WASTE & VENT

SCALE: 1/4" = 1'-0" 1



GENERAL NOTES

- EACH VENT SHALL TERMINATE NOT LESS THAN 10' FROM, OR NOT LESS THAN 3' ABOVE, AN OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAWT, OR NOT LESS THAN 3' IN EVERY DIRECTION FROM A LOT LINE, ALLEY AND STREET EXCEPTED PER CPC SEC. 906.
- ALL WASTE LINES INSIDE THE BUILDING SHALL BE SLOPED AT 2% SLOPE.
- ALL WASTE LINES OUTSIDE THE BUILDING SHALL BE SLOPED AT 1% SLOPE UNLESS NOTED OTHERWISE ON CIVIL DRAWINGS.
- WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS. PER ADA CODE 606.5.
- NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE, ACCORDING TO THE METHOD SET IN SECTION 609.9 OF THE CPC.



CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way, San Bernardino, CA 92408  
Phone: 909.860.3700 Fax: 909.860.3700 Email: cadd@designwesteng.com

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

CONSTRUCTION NOTES

- FOR CONTINUATION OF 1" CW LINE. REFER TO CIVIL DRAWINGS
- 1" CW RISER & APPROVED 1" CW S.O.V. IN CONC. YARDBOX. SEE DETAIL 5P3.1
- 3/4" CW DN IN WALL TO FULL SIZE HEADER (3.5 F.U.)
- 3/4" CW DN IN WALL TO HOSE BIBB
- FOR CONTINUATION OF 4" WASTE SEE CIVIL DRAWINGS
- 3/4" COND DRAIN LINE FROM FC-1 TO FLOOR SINK

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS

01-10-2024 BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:



SHEET TITLE:  
PLUMBING  
FLOOR PLAN

SHEET NO.:  
P2.1

R: L PROJECT 2022 12-152 PRADO REGIONAL PARK ENTRY KIOSK BUILDING 12-152 P-DETAILS - 2024-01-10 - JAVIER RODRIGUEZ

NOT FOR

-	17	-	13	-	9
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-	20	-	16	-	12
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-	19	-	15		

### GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST CODE OF FEDERAL REGULATIONS (CFR), NATIONAL ELECTRICAL CODE EDITION AND ALL APPLICABLE LOCAL CODES AND REGULATIONS.
- ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE TO UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
- WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF MECHANICAL, PLUMBING AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ANY WORK.
- CONTRACTOR SHALL EXTEND WIRING FROM ALL JUNCTION BOXES, SWITCHES, ETC. AND MAKE FINAL CONNECTION AS REQUIRED TO ALL BUILDING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
- LOCATION OF LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS, AT OR NEAR DOORS, INSTALL SWITCHES ON SIDE OPPOSITE TO DOOR HINGE. VERIFY FINAL HINGE LOCATION IN FIELD PRIOR TO ANY WORK.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OR OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND MINIMUM CODE REQUIRED WORKING CLEARANCES AT ALL TIMES.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL OUTLET BOXES FOR SWITCHES, BELLSTROBES, FIRE ALARM PULL STATIONS, RECEPTACLES ETC. WITH CABINETS, FURNITURE, EQUIPMENT ETC., TO AVOID CONFLICT.
- WHERE ELECTRIC MOTORS OR HEATERS ARE INSTALLED IN HUNG CEILINGS, PROVIDE DISCONNECT SWITCH IN HUNG CEILING WITHIN REACH FROM ACCESS POINT.
- FURNISH APPROVED EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.
- FURNISH PULL STRING IN EACH RACEWAY RUN OVER 10' IN LENGTH, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
- NOT MORE THAN THREE LIGHTING OR CONVENIENCE OUTLET CIRCUITS ARE PERMITTED IN ONE CONDUIT, PROVIDE SEPARATE CONDUIT FOR EACH HOMERUN INDICATED ON THE DRAWING, UNLESS INDICATED OTHERWISE.
- PROVIDE PULL BOXES WHERE NECESSARY TO FACILITATE PULLING OF CONDUCTORS. COORDINATE LOCATIONS OF BOXES WITH OTHER TRADES TO AVOID CONFLICT. PULL BOXES SHALL BE ACCESSIBLE. THE SIZE OF PULL BOX SHALL COMPLY WITH N.E.C. REQUIREMENTS.
- SEE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATION FOR ADDITIONAL CONNECTION REQUIREMENTS TO CONTROL PANELS, CONTROL TRANSFORMERS, POWER FOR CONTROL SYSTEMS AND PE SWITCHES, TIME CLOCKS, VALVES, STATIS, RELAYS, DUCT SMOKE DETECTOR LOCATIONS, ETC. INDICATED ON CONTROL WIRING DIAGRAMS. ELECTRICAL CONTRACTOR SHALL VERIFY FINAL CONTROL WIRING REQUIREMENTS WITH MECHANICAL AND PLUMBING CONTRACTORS PRIOR TO ANY WORK AND PROVIDE ALL NECESSARY DEVICES AND CONNECTIONS AS REQUIRED.
- ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT (UP TO 16') SHALL BE WEATHERPROOF TYPE, NEMA 3R.
- NO CONDUIT RUNS SHALL BE ALLOWED IN CONCRETE SLABS, ALL CONDUITS WILL BE PLACED ABOVE ACCESSIBLE CEILING SPACES UNLESS SPECIFICALLY INDICATED TO BE UNDERGROUND.
- LIGHTING, POWER, TELEPHONE AND COMMUNICATIONS OUTLETS SHALL NOT BE PLACED BACK-TO-BACK.
- WHERE MORE THAN ONE LIGHT SWITCH OCCURS AT SAME LOCATION, SWITCHES SHALL BE MOUNTED IN A MULTIPLE GANG BOX UNDER A SINGLE COVER PLATE. PLATES WITH MORE THAN (3) LIGHT SWITCHES SHALL BE LABELED TO INDICATE THE LIGHT FIXTURES CONTROLLED.
- DISCONNECT SWITCHES SHALL BE MOUNTED ON INDIVIDUAL SUPPORTS, OR OTHERWISE DIRECTLY ON EQUIPMENT, PROVIDED NO MODIFICATION TO EQUIPMENT IS NECESSARY.
- ALL ELECTRICAL POWER, LIGHTING, TELEPHONE OR SIGNAL WIRING IN FIRE RATED WALL IS TO BE INSTALLED IN A METALLIC CONDUIT SYSTEM.
- ALL ELECTRIC MATERIAL SHALL BE LISTED BY "UL" FOR THE TYPE OF APPLICATION AND "UL" LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- ALL DISTRIBUTION AND CONTROL EQUIPMENT (SUCH AS CB'S, SWITCHES, CONTACTORS, ETC.), TERMINATIONS SHALL BE FULLY RATED PER UL AS FOLLOWS:
  - 125A OR LESS - 60°C OR MORE;
  - MORE THAN 125A - 75°C OR MORE.
- ANY ERRORS, OMISSIONS, OR DESIGN DISCREPANCIES ON PLANS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER FOR CLARIFICATION OR CORRECTION PRIOR TO CONSTRUCTION AND PREPARATION OF SUBMITTAL PACKAGES.
- CONDUCTORS SHALL HAVE UNDERWRITERS LABORATORIES, INC. (UL) LISTED, 600 VOLT INSULATION OF TYPE SPECIFIED BELOW OR ELSEWHERE IN THE SPECIFICATIONS. CONDUCTORS SHALL BE COPPER.
  - #10 AWG AND SMALLER, SOLID WIRE TYPE THW OR THHN/THWN, THHW/THWN FOR DRY LOCATION ONLY;
  - #8 AWG TO #2 AWG, STRANDED TYPE THW OR THHN/THHW;
  - #1 AWG AND LARGER, STRANDED TYPE XHHW.
- FEEDERS: TYPE THW OR THHN/THWN, OR XHHW.
- PROVIDE GREEN INSULATED GROUNDING CONDUCTOR IN EACH RACEWAY INCLUDING CONDUITS, PLUG STRIPS, WIREMOLD. SIZE OF GROUNDING SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 250.
- WIRING METHOD SHALL BE EMT ABOVE GROUND AND MOUNTED IN CONCEALED SPACES AND SCHEDULE-40 PVC FOR UNDERGROUND INSTALLATION. USE RIGID WHEN ENCASED IN CONCRETE OR SUSCEPTIBLE TO DAMAGE.
- ALL SWITCH LOCATIONS ARE REQUIRED TO HAVE A NEUTRAL CONDUCTOR PROVIDED AT THE SWITCH LOCATION PER NEC 404.2(C).
- UNLESS OTHERWISE INDICATED, SHARING OF NEUTRAL/GROUNDED CONDUCTORS AMONG SINGLE PHASE BRANCH CIRCUITS OF DIFFERENT PHASES INSTALLED IN THE SAME RACEWAY IS NOT PERMITTED. PROVIDE DEDICATED NEUTRAL/GROUNDED CONDUCTOR FOR EACH INDIVIDUAL BRANCH CIRCUIT.
- BASIS OF ELECTRICAL DESIGN LIMITS VOLTAGE DROP TO 2% FOR FEEDERS AND 3% FOR BRANCH CIRCUITS, ANY CHANGES MADE IN THE FIELD SHALL LIMIT VOLTAGE DROP TO THESE PERCENTAGES.
- BRANCH CIRCUIT CONDUITS SHALL BE CONCEALED IN WALL OR CEILING SPACES. EXPOSED CONDUITS ARE NOT ALLOWED WHERE CONCEALED METHODS ARE AVAILABLE.
- CONTRACTOR SHALL PROVIDE CONDUCTORS AND CONDUITS REQUIRED FOR ALL BRANCH CIRCUITS AND FEEDERS. FOR CIRCUIT SIZES NOT SHOWN, REFER TO PANEL SCHEDULES FOR CONDUCTOR AND CONDUIT SIZES.
- ALL EMERGENCY CIRCUITS SHALL BE ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT AND SHALL NOT ENTER SAME RACEWAY, BOXES OR CABINETS WITH OTHER WIRING EXCEPT WHERE PROVIDED IN NEC 700.9B.
- REFER TO LIGHTING CONTROL DETAILS FOR WIRING AND CONDUIT REQUIREMENTS. CONTRACTOR SHALL PROVIDE ALL WIRING AND CONDUITS REQUIRED BY MANUFACTURER TO FIXTURES AND CONTROLS.
- THE CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER TRADES. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION, WHICH DIFFERS FROM THE WORK AS SHOWN ON THE CONTRACT DOCUMENTS, SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERRUPTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
- EXACT ROUTING METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN WOOD ROOF DECKS, WALL FLOORS OR STRUCTURAL STEEL MEMBERS SHALL BE DETERMINED BY THE CONTRACTOR IN FIELD. PERFORM CORING, SAWCUTTING, PATCHING AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED MANNER TO MEET THE FIRE RATING AND WATER PROOFING REQUIREMENTS OF THE PARTICULAR WALL, FLOOR OR CEILING. ALL FIRE SEALS SHALL BE UL APPROVED. CONTRACTOR SHALL SCAN ALL CONCRETE WALLS AND SLABS FOR THE PRESENCE OF REBAR AND/OR UTILITIES PRIOR TO DRILLING OR CUTTING IF CONCRETE WORK IS INVOLVED. CONTRACTOR SHALL PROVIDE CERTIFICATION OF CALIBRATION OF CONCRETE SCANNING EQUIPMENT PRIOR TO PERFORMING WORK.
- ALL HARDWARE EXPOSED TO OUTDOOR ENVIRONMENTS SHALL BE STAINLESS STEEL.

### APPLICABLE CODES

- 2022 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (IBC WITH AMENDMENTS)
- 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (NEC WITH AMENDMENTS)
- 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R. (IMC WITH AMENDMENTS)
- 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (UPC WITH AMENDMENTS)
- 2019 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (IFC WITH AMENDMENTS)
- 2019 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
- TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- 2019 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 C.C.R.
- 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGSBS), PART 11, TITLE 24 C.C.R.

### ABBREVIATIONS

A	AMPERE	NEC	NATIONAL ELECTRICAL CODE
AF	AMPERE FRAME RATING (CIRCUIT BREAKER)	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
AFF	ABOVE FINISHED FLOOR	NEW (N)	NEW, TO BE FURNISHED AND INSTALLED BY CONTRACTOR
AFG	ABOVE FINISHED GRADE	NF	NON-FUSED
AFU	AMPERE FUSE RATING (FUSE)	NIC	NOT IN CONTRACT
AIC	AMPERE INTERRUPTING CAPACITY	NL	NIGHT LIGHT
AS	AMPERE SWITCH RATING (FUSE)	NO	NUMBER, NORMALLY OPEN
AT	AMPERE TRIP RATING (CIRCUIT BREAKER)	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE	OC	ON CENTER
BKBD	BACKBOARD	OD	OUTSIDE DIAMETER
BLDG	BUILDING	P	POLE
BKR	BREAKER	PB	PULL BOX
C	CONDUIT	PF	POWER FACTOR
CB	CIRCUIT BREAKER	PANL	PANEL
CKT	CIRCUIT	POC	POINT OF CONNECTION
CFSD	COMBINATION FIRE SMOKE DAMPER	PP	POWER POLE
CO	CONDUIT ONLY	PWR	POWER
CT	CURRENT TRANSFORMER	PVC	POLYVINYL CHLORIDE
CJ	COPPER	QUAD	QUADRUPLX
CL	CENTERLINE	QTY	QUANTITY
DISC	DISCONNECT	RGS	RIGID GALVANIZED STEEL
DSBN	DISTRIBUTION SECTION	RMC	RIGID METALLIC CONDUIT
DN	DRAWING	RM	ROOM
DWG	DRAWING	RNC	RIGID NONMETALLIC CONDUIT
EA	EACH	SHT	SHEET
EM	ELECTRICAL CONTRACTOR	SN	SOLID NEUTRAL
EMERGENCY	EMERGENCY	SPEC	SPECIFICATIONS
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EXIST. (E)	EXISTING	SWBD	SWITCHBOARD
EKO	EXTERNAL OPERABLE DISCONNECT	TC	TIME CLOCK
F	FUSE	TEL	TELEPHONE
FA	FIRE ALARM	TERM	TERMINAL
FACP	FIRE ALARM CONTROL PANEL	TP	TEMPORARY POLE
FF	FINISHED FLOOR	TYP	TYPICAL
FG	FINISHED GRADE	UGPS	UNDERGROUND PULL SECTION
FLA	FULL LOAD CURRENT	UL	UNDERWRITERS LABORATORY
GEN	GENERATOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UON	UNLESS OTHERWISE NOTED
GFP	GROUND FUL PROTECTION	V	VOLT, VOLTAGE
GND	GROUND	VA	VOLT-AMPERE
HDA	HAND-OFF AUTOMATIC	VFC	VARIABLE FREQUENCY CONTROLLER
HP	HORSE POWER	VFD	VARIABLE FREQUENCY DRIVE
HV	HIGH VOLTAGE	W	WATT
IDF	INTERMEDIATE DISTRIBUTION FRAME	WH	WATT-HOUR
IG	ISOLATED/INSULATED GROUND	WP	WEATHERPROOF
ISC	SHORT CIRCUIT CURRENT AVAILABLE IN RMS SYMMETRICAL AMPERES	WW	WIREWAY
JUNCTION BOX	JUNCTION BOX	XP	EXPLOSION PROOF
KMIL	THOUSAND CIRCULAR MILS	Z	IMPEDANCE
KV	KILOWATT		
KV	KILO VOLT		
KVA	KILO-VOLT-AMPERE	4W	FOUR-WIRE
LDC	LOCAL DISTRIBUTION CABINET	3W	THREE-WIRE
LDF	LOCAL DISTRIBUTION FRAME	SS	JUNCTION BOX
LCL	LONG CONTINUOUS LOAD	LTD	(4.11M <sup>2</sup> SQUARED X2 1/2 DEEP)
LCTG	LIGHTING	LTO	LIGHTING
LTV	LOW VOLTAGE	Ø	DIAMETER, PHASE
MFR	MANUFACTURER	#	NUMBER
MAX	MAXIMUM	°C	DEGREE CELSIUS
MCC	MOTOR CONTROL CENTER	(E)	EXISTING DEVICE TO REMAIN
MIN	MINIMUM	(R)	REMOVE EXISTING DEVICE AND ASSOCIATED CONDUIT AND WIRE
MH	MANHOLE / METAL HALIDE	(RL)	REMOVE EXISTING DEVICE AND RELOCATE AS SHOWN ON PLAN
MM	METER AND MAIN SECTION	(NL)	NEW LOCATION OF RELOCATED DEVICE
MULTI	MULTI-METER SECTION		
MV	MEDIUM VOLTAGE		
NC	NORMALLY CLOSED		

### NOTE TO CONTRACTOR

**DO NOT SCALE DRAWINGS**  
CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

### ELECTRICAL SHEET INDEX

SHEET NUMBER	SHEET TITLE
E0.1	ELECTRICAL LEGENDS & NOTES
E0.2	LUMINAIRE SCHEDULE
E0.3	TITLE 24 COMPLIANCE DOCUMENTS - INDOOR
E0.4	TITLE 24 COMPLIANCE DOCUMENTS - OUTDOOR
E0.5	SINGLE LINE DIAGRAM & PANEL SCHEDULES
E1.1	ELECTRICAL DEMOLITION SITE PLAN
E1.2	ELECTRICAL REMODEL SITE PLAN
E1.3	LIGHTING PHOTOMETRIC SITE PLAN
E2.1	ELECTRICAL FLOOR PLAN
E3.1	ELECTRICAL DETAILS

### LIGHTING LEGEND AND SYMBOLS

SYMBOL	DESCRIPTION
	2'x4' RECESSED LUMINAIRE. FN INDICATES LUMINAIRE TYPE - REFER TO LUMINAIRE SCHEDULE, TYPICAL.
	SURFACE MOUNTED DOUBLE FACE EXIT SIGN (UNIVERSAL ARROWS INDICATED AS NEEDED)
	SURFACE MOUNTED SINGLE FACE EXIT SIGN (UNIVERSAL ARROWS INDICATED AS NEEDED)
	SWITCH, SINGLE POLE 20A, MOUNTED 48" A.F.F. TO TOP OF DEVICE. SUBSCRIPTS INDICATE THE FOLLOWING: M - MOTOR RATED 3 - THREE WAY 4 - FOUR WAY K - KEY OPERATED D - DIMMER SWITCH T - TIMED SWITCH
	a, b, c, ETC. - DESIGNATES SWITCH-LESS CONTROLLING AND QUANTITY OF SWITCHES AT EACH LOCATION.
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, SURFACE CEILING MOUNTED, WATT STOPPER MODEL #DT-300 OR LEVITON MODEL #0SC20-MDW, PROVIDE WITH POWER PACK(S) AS REQUIRED.
	DUAL TECHNOLOGY LEVITON SENSOR, SURFACE WALL MOUNTED 18" U.O.N. LEVITON MODEL #0SSMT-GD (FOR SINGLE POLE SWITCHING) & LEVITON MODEL #0SSMD-GD FOR DUAL SWITCHING

### SIGNAL LEGEND AND SYMBOLS

SYMBOL	DESCRIPTION
	DATA OUTLET BOX 45" MOUNTED 18" A.F.F. TO BOTTOM OF DEVICE U.O.N. STUB 3/4" C.O. 6" ABOVE CEILING SPACE. PROVIDE 3/4" C.O. 6" ABOVE CEILING SPACE. PROVIDE BUSHING AND PULL WIRE, IF INSTALLED IN AREA WITH EXPOSED STRUCTURE ABOVE OR HARD LID CEILING, PROVIDE 3/4" C.O. BACK TO LOCATION OF NEAREST IDT/DIF.
	COMBINATION TELEPHONE & DATA OUTLET BOX 45" MOUNTED 18" A.F.F. TO BOTTOM OF DEVICE U.O.N. STUB 3/4" C.O. 6" ABOVE CEILING SPACE. PROVIDE BUSHING AND PULL WIRE, IF INSTALLED IN AREA WITH EXPOSED STRUCTURE ABOVE OR HARD LID CEILING, PROVIDE 3/4" C.O. BACK TO LOCATION OF NEAREST IDT/DIF, COMMUNICATIONS CABINET, OR TELEPHONE BACKBOARD.
	NEW KEY-PAD/VIP PHONE NEMA 3R FOR GATE MOTOR CONTROL. VERIFY WIRING REQUIREMENTS WITH GATE MOTOR MANUFACTURER.

### GENERAL DEMOLITION NOTES

- THE DEMOLITION NOTE REFERENCE PERTAIN TO ALL RELATED SHEETS WHERE EXISTING ELECTRICAL WORK IS INDICATED.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND MAKE THEMSELVES COMPLETELY FAMILIAR WITH THE EXISTING INSTALLED CONDITIONS.
- ALL EQUIPMENT OR WORK REQUIRED TO CARRY OUT THE DEMOLITION SCOPE OF WORK IS CONSIDERED TO BE PART OF THE CONTRACTOR SCOPE OF WORK. NO EXTRAS WILL BE CONSIDERED TO PERFORM THE REQUIRED WORK.
- THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE FACILITY DIRECTOR PRIOR TO THE SCHEDULING OF ANY POWER OUTAGE. SUCH PERMISSION MUST BE OBTAINED IN WRITING AND BE GRANTED AT LEAST 7 DAYS PRIOR TO ANY SCHEDULED SHUT DOWN. THE SHUT DOWN SHALL NOT EXCEED A DURATION OF 4 HOURS.
- THE CONTRACTOR SHALL NOT STORE ON SITE ANY ITEMS THAT WERE DEMOLISHED FOR ANY EXTENDED PERIOD OF TIME, WITHOUT THE WRITTEN PERMISSION OF THE CAMPUS FACILITY DIRECTOR.
- ALL ELECTRICAL ITEMS DESIGNATED AS EXISTING TO REMAIN SHALL AS PART OF THIS SCOPE OF WORK BE CLEANED AND TESTED, TO INSURE PROPER OPERATION. ANY ITEMS THAT FAIL TO PASS THE TEST SHALL BE BROUGHT TO THE ATTENTION OF THE FIELD INSPECTOR AND THE ENGINEER OF RECORD FOR RESOLUTION.
- THE CONTRACTOR SHALL REMOVE ALL EXISTING SWITCHBOARDS, DISTRIBUTION BOARDS, PANEL BOARDS, LIGHTING FIXTURES, CONDUITS, WIRES AND OTHER ELECTRICAL APPARATUS DESIGNATED AS EXISTING TO BE REMOVED. DEMOLITION ITEMS, IF NOT REQUIRED TO BE SALVAGED BY OWNER, BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN AN APPROPRIATE MANNER.
- THE CONTRACTOR SHALL REMOVE ALL CONDUITS SERVING DEVICES WHICH ARE DESIGNATED AS EXISTING TO BE REMOVED, BACK TO THE SOURCE WHEN POSSIBLE. IF THE NATURE OF THE EXISTING INSTALLATION WILL NOT ALLOW REMOVAL, THE CONTRACTOR SHALL REMOVE ALL EXPOSED CONDUIT AND ABANDON THE REMAINDER AFTER REMOVING ALL CONDUCTORS.
- DEMOLITION AND/OR REMOVAL OF ELECTRICAL EQUIPMENT IN AREAS TO BE REMODELED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- WHERE OUTLETS ARE REMOVED IN EXISTING WALL, REMOVE DEVICES, OUTLETS AND WIRING BACK TO PANELBOARD OR BACK TO NEAREST OUTLET WITH OTHER EXISTING LOAD TO REMAIN.
- WHERE EXISTING CONDUIT AND CONDUCTORS ARE TO BE REMOVED AND CONDUIT IS INSTALLED IN GROUND OR EMBEDDED IN CONCRETE, REMOVE WIRE AND CUT CONDUIT TO BELOW FLOOR, PLUG CONDUIT, PATCH FLOOR AND ABANDON CONDUIT.
- WHERE ELECTRICAL DEVICES ARE TO BE REMOVED, REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE, TERMINAL CABINETS AND RACKS, PROVIDE BLANK COVER PLATE FOR ABANDONED JUNCTION BOXES.
- REMOVE ALL CONTROL PANELS, EQUIPMENT RACKS, PULL-BOXES, TERMINAL CABINETS, ETC. FOR SYSTEMS TO BE DEMOLISHED EXCEPT WHERE ANY OF THE EXISTING DEVICES, SYSTEMS, CONSOLES, ETC. ARE TO BE REUSED FOR UPGRADE.
- PROVIDE BLANK COVER PLATE FOR ALL EMPTY OUTLET BOXES WHERE DEVICES AND/OR CONDUCTORS HAVE BEEN REMOVED AS PART OF THIS CONTRACT.
- EXISTING CONDUIT CAN BE REUSED PROVIDING IT IS CHECKED FOR CONTINUITY OF GROUND, BLOWN FREE OF DEBRIS, AND DOES NOT INTERFERE WITH NEW CONSTRUCTION.
- REMOVALS AND REPAIRS TO EXISTING ELECTRICAL WORK REQUIRED TO AVOID CONFLICTS WITH NEW CONSTRUCTION TO MEET MINIMUM CODE REQUIREMENTS.
- A FIELD SURVEY VERIFICATION IS MANDATORY IN ORDER TO SUBMIT AN ELECTRICAL BID. FAILURE TO DO SO SHALL NOT RELIEVE THIS CONTRACTOR FROM PERFORMING THE WORK OF THIS CONTRACT.

### SCOPE OF WORK

PROVIDE ELECTRICAL EQUIPMENT AND DEVICES FOR NEW GATE HOUSE. PROVIDE SITE LIGHTING FOR NEW ADA PARKING AND ENTRY CANOPY.

### POWER LEGEND AND SYMBOLS

SYMBOL	DESCRIPTION
A-1	SUBSCRIPT "A-1" REFERS TO PANEL DESIGNATION WITH CIRCUIT NUMBER. TYPICAL OF ALL RECEPTACLE OUTLETS.
	DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	DOUBLE DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS, GFCI TYPE) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) WITH MOUNTING HEIGHT HORIZONTALLY ABOVE COUNTER TOP PER ARCHITECTURAL PLANS OR APPROVAL.
	DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS, GFCI TYPE) WITH MOUNTING HEIGHT HORIZONTALLY ABOVE COUNTER TOP PER ARCHITECTURAL PLANS OR APPROVAL.
	CA TITLE 24 COMPLIANT DUPLEX RECEPTACLE OUTLET, HALF-CONTROLLED, CONVENIENCE, WITH PERMANENT MARKING, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	CA TITLE 24 COMPLIANT DOUBLE DUPLEX RECEPTACLE OUTLET, HALF-CONTROLLED, CONVENIENCE, WITH PERMANENT MARKING, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	SIMPLEX RECEPTACLE OUTLET, CONVENIENCE WITH (2)USB PORTS, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N. LEVITON MODEL #F5832.
	WEATHERPROOF DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	DUPLEX RECEPTACLE OUTLET, SINGLE SPLIT-CIRCUIT SWITCHED, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	SURFACE MOUNTED DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) MOUNTED +15" A.F.F. TO BOTTOM OF DEVICE U.O.N.
	RECESSED CEILING MOUNTED DUPLEX RECEPTACLE OUTLET, CONVENIENCE, (20 AMPS, 125 VOLTS) U.O.N.
	ABOVE CEILING, CONCEALED, JUNCTION BOX, WITH COVER, PER NATIONAL ELECTRICAL CODE (NEC) TABLE 314.16(A)(B), 4" SQUARE DEEP, WITH PLASTER RING.
	RECESSED WALL MOUNTED JUNCTION BOX, WITH COVER, PER NATIONAL ELECTRICAL CODE (NEC) TABLE 314.16(A)(B), 4" SQUARE DEEP, WITH PLASTER RING.
	DUPLEX RECEPTACLE, FLUSH IN FLOOR, WATERTIGHT JUNCTION BOX (HINGED BRASS COVER, 20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U.O.N.
	DOUBLE DUPLEX RECEPTACLE, FLUSH IN FLOOR, WATERTIGHT JUNCTION BOX (20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U.O.N.
	JUNCTION BOX, FLUSH IN FLOOR, WATERTIGHT (HINGED BRASS COVER, 20 AMP, 120 VOLT, 2-POLE, 3-WIRE) U.O.N.
	FLOOR BOX NOTE WHERE INDICATED IN AN EXISTING SLAB, PROVIDE SAWCUTTING OF SLAB AS REQUIRED AND EXTEND CONDUIT AND WIRING TO JUNCTION BOX IN NEAREST ACCESSIBLE WALL, DO NOT SAWCUT THROUGH POST TENSION SLABS.
	SPECIALTY OUTLET. VERIFY NEMA CONFIGURATION AS NOTED ON PLANS.
	BRANCH PANELBOARD, WALL MOUNTED, SEE PLANS AND SCHEDULE. (SURFACE MOUNTED)
	BRANCH PANELBOARD, WALL MOUNTED, SEE PLANS AND SCHEDULE. (RECESSED MOUNTED)
	MAIN SWITCHBOARD, POWER OR LIGHT, FLOOR STANDING ENCLOSURE, (SEE SINGLE LINE DIAGRAM AND LOAD SUMMARY)
	DISCONNECT SWITCH H.P. RATED 600 VOLTS RATED, "R" INDICATES FUSE TYPE. FUSES PER APPROVED MANUFACTURERS SHOP DRAWINGS.
	MAGNETIC MOTOR STARTER H.P. RATED (NUMBER INDICATES NEMA SIZE)
	MOUNTING HEIGHT FROM FINISHED FLOOR TO BOTTOM LINE OF OUTLET OR EQUIPMENT, FOR LIGHT FIXTURES, IT IS TO BOTTOM OF FIXTURE.
	CONDUIT STUBBED AND CAPPED, SIZE AND QUANTITIES PER PLANS.
	CONDUIT CONCEALED IN OR UNDER FLOOR, 3/4" UON, COORDINATE WITH G.C. OR BURIAL CONDUIT UNDERGROUND IN SCHEDULE - 40 PVC UNLESS NOTED OTHERWISE. VERIFY DEPTH AND TRENCHING WITH G.C.
	DETAIL REFERENCE
	EQUIPMENT REFERENCE
	ELECTRICAL UTILITY PRIMARY
	ELECTRICAL UTILITY SECONDARY
	UTILITY TELEPHONE
	TEMPORARY OVERHEAD CABLING
	1' U.O.N. HOMERUN TO CIRCUITS #1 AND #3 IN PANEL "A". (CROSSMARKS INDICATE NUMBER OF PHASES AND NEUTRAL. PROVIDE GROUND WIRE.)
	GROUND WELL
	EXISTING (DASH INDICATES) ELECTRICAL EQUIPMENT
	TELEPHONE BACKBOARD 2'x4'x3/4" PLYWOOD, PROVIDE 2" CONDUIT TO TELEPHONE POC.
	MOLDED CASE CIRCUIT BREAKER
	MOLDED CASE SHUNT TRIP CIRCUIT BREAKER
	MOLDED CASE DRAW OUT TYPE CIRCUIT BREAKER
	REMOTE CONTROLLED, ELECTRONICALLY OPERATED CIRCUIT BREAKER
	SWITCH AND FUSE ASSEMBLY
	UTILITY COMPANY PULL SECTION LUGS
	GROUNDING CONNECTION TO MAIN BUILDING GROUND SYSTEM U.O.N.
	GROUNDING CONNECTION AT SWITCHGEAR/DISTRIBUTION BOARD WITH NEUTRAL BONDING.
	IN-LINE UTILITY COMPANY METER
	UTILITY METER WITH CIRCUIT TRANSFORMERS (CTS) METER
	SOLID STATE DEVICE CONNECTED TO THE POWER DISTRIBUTION SYSTEM
	GROUND FAULT PROTECTION DEVICE CONNECTED TO THE POWER DISTRIBUTION SYSTEM
	SURGE PROTECTION DEVICE
	TRANSFORMER WITH SECONDARY GROUND. REFER TO SINGLE LINE DIAGRAM FOR KVA RATING AND GROUNDING REQUIREMENTS.
	CONDUIT WIRING DESCRIPTION PER FEEDER SCHEDULE ON OTHER PLAN
	CONCRETE ELECTRICAL PULL BOX WITH LID APPROPRIATE FOR INSTALLATION LOCATION. LID SHALL BE LABELED "ELECTRICAL" OR "COMM" ACCORDING TO USE.



CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

### ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

### SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:



### SHEET TITLE:

ELECTRICAL  
LEGENDS &  
NOTES

A: L:\PROJECT\2020\12-132 PRADO REGIONAL PARK ENTRY KIOSK BUILDING\12-132 E-LUMSCHED - 2024-04-16 - SCOTT TEBERT

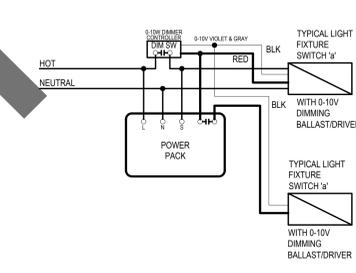
NOT FOR

**LUMINAIRE SCHEDULE**

TYPE	VOLTS	WATTAGE	LUMENS	LAMPS	MOUNTING	FIXTURE DESCRIPTION	MFR.	CATALOG #	NOTES	SYMBOL
F1	120	32.4	4,188	LED 3500K	SURFACE CEILING	1'X4' SURFACE MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER AND INTEGRAL MOTION SENSOR.	LITHONIA	LBL4-4000LM-80CRI-35K-ZT-MVOLT-PIR		
F1E	120	32.4	4,188	LED 3500K	SURFACE CEILING	1'X4' SURFACE MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER AND INTEGRAL MOTION SENSOR, WITH 90-MINUTE EMERGENCY BATTERY BACKUP.	LITHONIA	LBL4-4000LM-80CRI-35K-ZT-MVOLT-EL14L-PIR	PROVIDE 1400 LUMEN, 90 MINUTE BATTERY BACKUP.	
F2	120	9.1	533	LED 4000K	WALL	EXTERIOR SURFACE WALL MOUNTED LED FIXTURE WITH 0-10V DIMMING DRIVER, MOUNTED AT 6'-0" A.F.F.	LITHONIA	OLLWD-LED-P1-40K-MVOLT-DOB	PROVIDE EXTERNAL PHOTOCELL FOR CONTROL.	
F3	120	10.4	950	LED 3500K	RECESSED CEILING	6" LED DOWNLIGHT WITH 0-10V DIMMING DRIVER.	LITHONIA	LDN6-35/10-L06-WR-LD-MVOLT-EZ1		
F3E	120	10.4	950	LED 3500K	RECESSED CEILING	6" LED DOWNLIGHT WITH 0-10V DIMMING DRIVER 90-MINUTE EMERGENCY BATTERY BACKUP.	LITHONIA	LDN6-35/10-L06-WR-LD-MVOLT-EZ1-E10WCP	PROVIDE 1000 LUMEN, 90 MIN. BATTERY BACKUP WITH INTEGRAL TEST SWITCH.	
F4E	120	1	-	LED WITH UNIT	SURFACE CEILING	RECESSED MOUNTED EXIT SIGN WITH 90-MIN. BATTERY BACKUP.	LITHONIA	LOM-S-W-3-R-120277-EL-N-M6		
F5	120	20	-	-	SURFACE CEILING	CEILING FAN (PER ARCHITECTURAL DRAWINGS)	-	-	REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.	
S1	120	14	1,434	LED 4000K	IN-GROUND	6" ROUND IN-GROUND LED FIXTURE WITH 0-10V DIMMING DRIVER.	TARGETTI	KPLM-41HE-FL-L240-1DUZ529K-1DUZ521	PROVIDE EXTERNAL PHOTOCELL FOR CONTROL.	
S2	120	21	1,673	LED 4000K	FLOOD	FLOOD LED FIXTURE WITH 0-10V DIMMING DRIVER, MOUNTED ON FLOOR.	LIGMAN	UOD-50001-21W-W-W40-01-120277V-DIM	PROVIDE EXTERNAL PHOTOCELL FOR CONTROL.	
S3	120	93	11,130	LED 4000K	POLE	POLE TOP LED FIXTURE WITH 0-10V DIMMING DRIVER AND INTEGRAL PHOTOCELL. FIXTURE SHALL BE MOUNTED 20'-0" A.F.G.	LITHONIA	DSXD-LED-P3-40K-70CRI-T3M-MVOLT-SP4-PIR-DBDXTD POLE: SSS-17-6-4C-DM19AS-DBDXTD	PROVIDE WITH INTEGRAL PHOTOCELL AND MOTION SENSOR.	
S4	120	42	5,573	LED 4000K	FLOOD	LED FLOOD LIGHT FIXTURE, SURFACE MOUNTED ON ARM @ 24'-0" A.F.F.	LITHONIA	DSXF1-LED-P2-40K-WFL-MVOLT-IS-PE-DMG-DBDXTD	PROVIDE WITH INTEGRAL PHOTOCELL. PROVIDE 2-3/8" POLE FOR ATTACHMENT TO SLIPFITTER.	
S5	120	51	5,087	LED 4000K	WALL	4" ROUND LED BI-DIRECTIONAL FIXTURE WITH 0-10V DIMMING DRIVER. FIXTURE SHALL BE MOUNTED 16'-0" A.F.G. WITH OPTICAL TILT OF 30°.	LUMINIS	SY602-L2L25-R55-120V-BZT-PH-MS-A360	PROVIDE WITH INTEGRAL PHOTOCELL AND MOTION SENSOR.	
S6	120	21	3,058	LED 4000K	FLOOD	LED FLOOD LIGHT FIXTURE, SURFACE MOUNTED ON ARM @ 16'-0" A.F.F.	LITHONIA	DSXF1-LED-P1-40K-WFL-MVOLT-IS-PE-DMG-DBDXTD	PROVIDE WITH INTEGRAL PHOTOCELL. PROVIDE 2-3/8" POLE FOR ATTACHMENT TO SLIPFITTER.	

**LUMINAIRE SCHEDULE NOTES**

- EQUALS SHALL BE CONSIDERED UPON SUBMITTAL REVIEW AND APPROVAL. PLEASE NOTE THAT IF AN ALTERNATE IS CONSIDERED:
  - THE CONTRACTOR IS COMPLETELY AND SOLELY RESPONSIBLE FOR ALL ASPECTS OF THE SUBSTITUTION INCLUDING UPDATING CONSTRUCTION DOCUMENTS, OBTAINING APPROVALS AND PERMITS FROM LOCAL AUTHORITY, AND COORDINATING WITH ALL TRADES TO ENSURE CHANGES TO AFFECTED BUILDING SYSTEM ARE ACCOUNTED FOR AND ACCEPTABLE TO THE ENGINEERING TEAM. CONTRACTOR SHALL ENSURE SUBSTITUTED EQUIPMENT MEETS OR EXCEEDS DESIGN INTENT REGARDING RATINGS, PERFORMANCE, DIMENSIONAL CLEARANCES, PHYSICAL DIMENSIONS (MAXIMUM WEIGHT LIMITATIONS), AND OTHER ASPECTS. PROVIDING SUBSTITUTION IS SUITABLE TO THE APPLICATION. ENGINEERS WILL REVIEW THE RATING AND PERFORMANCE OF SUBSTITUTED EQUIPMENT ONLY AND WILL NOT ASSUME RESPONSIBILITY FOR SUBSTITUTION AT ANY LEVEL.
  - IF CONTRACTOR CANNOT MAKE SUBSTITUTED EQUIPMENT WORK IN THIS PROJECT, CONTRACTOR SHALL REVERT TO REQUIREMENTS OF PERMITTED CONSTRUCTION DOCUMENTS AT THEIR EXPENSE.
  - IT IS UNDERSTOOD BY ALL PARTIES THAT ANY SUBSTITUTIONS OF SPECIFIED PRODUCTS ARE DONE FOR THE PURPOSE OF COST SAVINGS TO THE OWNER. THEREFORE, ANY MATERIAL SUBSTITUTION OR DEVIATIONS PROPOSED BY THE CONTRACTOR SHALL BE INCLUDED WITH THE INITIAL BID AND SHALL SHOW A LINE ITEM CREDIT TO THE OWNER FOR EACH SUBSTITUTION IN LIEU OF SPECIFIED PRODUCTS.
- THE FIXTURE SCHEDULE INDICATES GENERAL DESCRIPTION OF LIGHTING FIXTURES AND MANUFACTURERS CATALOG NUMBERS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE CORRECT CEILING CONFIGURATION AND PROVIDE THE FIXTURES WITH ALL NECESSARY TRIMS AND MOUNTING HARDWARE SO THAT BOTH THE CEILING SYSTEM AND THE FIXTURE CONSTRUCTION MATCHES. PROVIDE SEISMIC HANGERS AS REQUIRED.
- IT SHALL BE CONTRACTORS RESPONSIBILITY TO VERIFY THE EXACT LOCATION OF ALL LIGHTING FIXTURES AND TYPE OF CEILING WITH ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ANY WORK. SEE ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ANY WORK. SEE ARCHITECTURAL ELEVATION DRAWING FOR MOUNTING HEIGHTS OF WALL MOUNTED FIXTURES.
- A JUNCTION BOX MUST BE PROVIDED WITH ALL EXIT LIGHTS CONNECTED TO MORE THAN ONE SET OF CONDUCTORS UNLESS THE EXIT LIGHT FIXTURE IS FURNISHED WITH AN APPROVED OUTLET BOX FOR THROUGH WIRING.
- A COMPLETE TITLE 24 COMPLIANT LIGHTING CONTROL SYSTEM SHALL BE PROVIDED TO CONTROL ALL INTERIOR AND EXTERIOR LIGHTING SYSTEMS. REFER TO LIGHTING CONTROL DIAGRAMS, SCHEDULES AND DETAILS.
- BATTERY PACK EMERGENCY TEST SWITCHES SHALL BE INTEGRAL TO LIGHT FIXTURE. COORDINATION OF SWITCH LOCATION IS REQUIRED WITH DESIGN TEAM IF INTEGRAL INSTALLATION IS NOT POSSIBLE.
- FIXTURES DESIGNATED AS EMERGENCY SHALL BE SUPPLIED WITH INTEGRAL BATTERY PACK CAPABLE OF POWERING TWO 18 LAMPS FOR 90 MINUTES WITH A TOTAL LIGHT OUTPUT OF 500 LUMENS.
- PROVIDE ALL REQUIRED MOUNTING HARDWARE ANCHORAGE AND SUPPORTS TO INSTALL LIGHTING FIXTURES.
- THE CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERABLE LIGHTING SYSTEM AS PART OF THIS BUILDING CONTRACT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE FIXTURE BALLAST OR DRIVER VOLTAGE MATCHES THE CIRCUIT VOLTAGE SUPPLYING FIXTURE PRIOR TO ORDERING.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY BALLAST/DRIVER DIMMING CONFIGURATION IS COMPATIBLE WITH CONTROLS BEING PROVIDED PRIOR TO ORDERING FIXTURES. EX. 2 WIRE, 3 WIRE, 4 WIRE, 0-10V, CAT 5, ETC.
- LED LIGHT FIXTURES SHALL BE IN ACCORDANCE WITH IES, NFPA, UL, AS SHOWN ON THE DRAWINGS, AND AS SPECIFIED.
- LED LIGHT FIXTURES SHALL BE REDUCTION OF HAZARDOUS SUBSTANCES (ROHS)-COMPLIANT.
- LED DRIVERS SHALL INCLUDE THE FOLLOWING FEATURES UNLESS OTHERWISE INDICATED:
  - MINIMUM EFFICIENCY: 85% AT FULL LOAD.
  - MINIMUM OPERATING AMBIENT TEMPERATURE: -20 DEG C (-4 DEG F.)
  - INPUT VOLTAGE: 120 - 277V (+10%) AT 60 HZ, UNLESS OTHERWISE INDICATED.
  - INTEGRAL SHORT CIRCUIT, OPEN CIRCUIT, AND OVERLOAD PROTECTION.
  - POWER FACTOR: >=0.95
  - TOTAL HARMONIC DISTORTION: <=20%
  - COMPLY WITH FCC 47 CFR PART 15.
- LED MODULES SHALL INCLUDE THE FOLLOWING FEATURES UNLESS OTHERWISE INDICATED:
  - COMPLY WITH IES, NFPA AND UL-85 REQUIREMENTS.
  - MINIMUM CRI 80 AND COLOR TEMPERATURE 4000K UNLESS OTHERWISE SPECIFIED IN LUMINAIRE SCHEDULE.
  - MINIMUM RATED LIFE: 50,000 HOURS PER IES L70.
  - LIGHT OUTPUT LUMENS AS INDICATED IN THE LUMINAIRE SCHEDULE.
- LED DOWNLIGHTS:
  - HOUSING, LED DRIVER, AND LED MODULE SHALL BE PRODUCTS OF THE SAME MANUFACTURER.
- ALL FIXTURES MOUNTED OUTDOORS SHALL BE UL LISTED FOR WET LOCATION.



**0-10V DIMMING BALLAST 1**

**Sequence of Operations**

Lighting controls shall perform as follows:

Zone	Delay to Off (Min)	On/Off Method	Technology	Daylighting	Notes
Restrooms	5	Auto On/Auto Off	Dual	N/A	
Private Office	10	Auto On to 50%/Manual On to 100%/Auto Off	Dual	Dim to allow 30 ft on work surface	Tune for noise, do not locate near air vents
Lobby	15	Auto On/Auto Off	Dual	Dim to allow 20 ft on work surface	
Exterior Lighting	10	Photocontrol/Time clock Off, dim to 50% after delay	Infrared	N/A	N/A

**SEQUENCE OF OPERATIONS 2**



CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



PROJECT ADMINISTERED BY:  
**SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION**

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
**PRADO REGIONAL PARK  
GUARD SHACK**

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: **374-156-22**  
SCALE: AS NOTED  
DATE: **MARCH 2023**  
PLOT DATE:  
DRAWING NAME:



SHEET TITLE:  
**LUMINAIRE  
SCHEDULE**

SHEET NO.:  
**E0.2**

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CALIFORNIA ENERGY COMMISSION  
NRC-474-E  
PRADO REGIONAL PARK GATE HOUSE  
16700 EUCLID AVE  
CHINO, CA 91710

**A. GENERAL INFORMATION**

01 Project Location (city)	Chino	04 Total Conditioned Floor Area (ft²)	402
02 Climate Zone	10	05 Total Unconditioned Floor Area (ft²)	90
03 Occupancy Types Within Project (select all that apply):			
Office		06 # of Stories (Habitable Above Grade)	1

**B. PROJECT SCOPE**

Scope of Work	Conditioned Spaces	Unconditioned Spaces
01	02	03
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)
<input checked="" type="checkbox"/> New Lighting System	Area Category Method	402
<input type="checkbox"/> New Lighting System - Parking Garage	Area Category Method	90
<b>Total Area of Work (ft²)</b>		<b>492</b>

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
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Schema Version: rev 20220101

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CHINO, CA 91710

**C. COMPLIANCE RESULTS**

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b) / 170.2(b) for alterations.

Lighting in conditioned and unconditioned spaces must not be completed for compliance per 140.6(b) / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)					Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)			Compliance Results
	01	02	03	04	05	06	07	08	
Complete Building	261.3	0	0	0	0	261.3	0	0	COMPLIES
Area Category	140.6(c) / 170.2(a)(4)	0	0	0	0	140.6(c) / 170.2(a)(4)	0	0	COMPLIES
Area Category Additional	140.6(c)(2) / 170.2(a)(4)(+)	0	0	0	0	140.6(c)(2) / 170.2(a)(4)(+)	0	0	COMPLIES
Tailored	140.6(c)(3) / 170.2(a)(4)(+)	0	0	0	0	140.6(c)(3) / 170.2(a)(4)(+)	0	0	COMPLIES
Total Allowed (Watts)	261.3	0	0	0	0	261.3	0	0	COMPLIES
Total Adjusted (Watts)	261.3	0	0	0	0	261.3	0	0	COMPLIES

**D. EXCEPTIONAL CONDITIONS**

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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**F. INDOOR LIGHTING FIXTURE SCHEDULE**

This table includes all planned permanent and portable lighting other than dwelling unit / hotel / motel room lighting. Multi-family dwelling unit and hotel/motel room lighting is documented in Table F. If using Table F to document lighting in multi-family common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designated Wattage: Conditioned Spaces	01	02	03	04	05	06	07	08	09	10		
Name or Item Tag	Complete Luminaire Description	Module (Track) Feature	Small Aperture & Color Change	Watts per luminaire²	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)(1) / 170.2(a)(2)	Design Watts	Field Inspector	Pass	Fail	
F1	F1 32W LED 1x4 Surface Mounted Fixture	No	No	32	Mfr. Spec	4	No	128		<input type="checkbox"/>	<input type="checkbox"/>	
F2	F2 32W LED 1x4 Surface Mounted EM Fixture	No	NA	32	Mfr. Spec	1	No	32		<input type="checkbox"/>	<input type="checkbox"/>	
F3	F3 10W LED Recessed Mounted Downlight Fixture	No	NA	10	Mfr. Spec	3	No	30		<input type="checkbox"/>	<input type="checkbox"/>	
F4	F4 10W LED Recessed Mounted Downlight EM Fixture	No	NA	10	Mfr. Spec	1	No	10		<input type="checkbox"/>	<input type="checkbox"/>	
<b>Total Designated Watts: CONDITIONED SPACES</b>										200		

**Designated Wattage: Unconditioned Spaces**

01	02	03	04	05	06	07	08	09	10			
Name or Item Tag	Complete Luminaire Description	Module (Track) Feature	Small Aperture & Color Change	Watts per luminaire²	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)(1) / 170.2(a)(2)	Design Watts	Field Inspector	Pass	Fail	
F5	F5 32W LED 1x4 Surface Mounted Fixture	No	NA	32	Mfr. Spec	1	No	32		<input type="checkbox"/>	<input type="checkbox"/>	
<b>Total Designated Watts: UNCONDITIONED SPACES</b>										32		

**NOTES:**  
1. Design Watts for small aperture and/or changing luminaires which qualify per 140.6(a)(4) / 170.2(a)(2) is adjusted to be 75% / 80% of their rated wattage. Table F customarily includes this adjustment, the permit applicant should enter full rated wattage in column 05.  
2. Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

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16700 EUCLID AVE  
CHINO, CA 91710

**G. MODULAR LIGHTING SYSTEMS**

This section does not apply to this project.

**H. INDOOR LIGHTING CONTROLS (Not including PAFs)**

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls	01	02	03
Mandatory Demand Response 110.12(c)		Shut-off controls 130.1(c) / 160.5(b)(4)	Field Inspector
NA - < 4,000W subject to multilevel		See Area/Space Level Controls	Pass
			Fail

Area Level Controls	04	05	06	07	08	09	10	11	12		
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)(4A)	Multi-Level Controls 130.1(b) / 160.5(b)(4B)	Shut-Off Controls 130.1(c) / 160.5(b)(4C)	Primary/Secondary Daylighting 130.1(d) / 160.5(b)(4D)	NA: General Lic < 120W	NA: General Lic < 120W	Interlocked Systems 140.6(i)(1) / 170.2(e)(2A)	Field Inspector	Pass	Fail
Foyer	All Other Space Types	Ready Accessible	Dimmer	See Building Level	NA: General Lic < 120W	NA: General Lic < 120W	NA: General Lic < 120W	No		<input type="checkbox"/>	<input type="checkbox"/>
Register	Corridor	Ready Accessible	Dimmer	See Building Level	NA: General Lic < 120W	NA: General Lic < 120W	NA: General Lic < 120W	No		<input type="checkbox"/>	<input type="checkbox"/>
Restroom	Restroom	Ready Accessible	Dimmer	See Building Level	NA: General Lic < 120W	NA: General Lic < 120W	NA: General Lic < 120W	No		<input type="checkbox"/>	<input type="checkbox"/>
Office	Office (< 250 square feet)	Ready Accessible	Dimmer	See Building Level	NA: General Lic < 120W	NA: General Lic < 120W	NA: General Lic < 120W	No		<input type="checkbox"/>	<input type="checkbox"/>

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**I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS**

Each area complying using the Complete Building or Area Category Methods per 140.6(a) is included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(i) are being used.

Conditioned Spaces	01	02	03	04	05	06
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment Area Category	PAF
Office	Office (< 250 square feet)	0.65	101	65.6	No	No
Restroom	Restroom	0.65	21	13.6	No	No
Register	Office (< 250 square feet)	0.65	290	189.0	No	No
<b>TOTALS:</b>			<b>402</b>	<b>261.3</b>		

Unconditioned Spaces	01	02	03	04	05	06
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment Area Category	PAF
Foyer	All Other Space Types	0.4	90	36	No	No
<b>TOTALS:</b>			<b>90</b>	<b>36</b>		

**J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM**

This section does not apply to this project.

**K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE**

This section does not apply to this project.

**L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY**

This section does not apply to this project.

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**M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING**

This section does not apply to this project.

**N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE / SPECIAL EFFECTS**

This section does not apply to this project.

**O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE**

This section does not apply to this project.

**P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))**

This section does not apply to this project.

**Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS**

This section does not apply to this project.

**R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS**

This section does not apply to this project.

**S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)**

This section does not apply to this project.

**T. DWELLING UNIT LIGHTING**

This section does not apply to this project.

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**U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Form/Title

NRC-474-E - Must be submitted for all buildings

**V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

There are no NRC-A forms required for this project.

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16700 EUCLID AVE  
CHINO, CA 91710

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Leonard P. Maye  
Signature: [Signature]  
Company: Design West Engineering  
Address: 412 E. Vanderbilt Way, San Bernardino, CA 92408  
City/State/Zip: San Bernardino, CA 92408  
Phone: 909-890-3700

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 9 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
- 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.
- 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.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit issued for the building, and made available to the enforcement agency for all applicable inspections, 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: Leonard P. Maye  
Signature: [Signature]  
Company: Design West Engineering  
Address: 412 E. Vanderbilt Way, San Bernardino, CA 92408  
City/State/Zip: San Bernardino, CA 92408  
Phone: 909-890-3700

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: 2023-01-17 09:17:23  
Compliance ID: EnergyPro-4473-0123-0064  
Report Version: 2022.0.000  
Schema Version: rev 20220101

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CALIFORNIA ENERGY COMMISSION  
NRC-474-E  
PRADO REGIONAL PARK GATE HOUSE  
16700 EUCLID AVE  
CHINO, CA 91710

**DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Form/Title

NRC-474-E - Must be submitted for all buildings

**DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

There are no NRC-A forms required for this project.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: 2023-01-17 09:17:23  
Compliance ID: EnergyPro-4473-0123-0064  
Report Version: 2022.0.000  
Schema Version: rev 20220101



4025 EVANS DRIVE, TEMECULA, CALIFORNIA 92590-3700  
Phone: 951.266.9110 Fax: 951.266.6079 Email: stk@stke.com

CONSULTANT:  
DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance  
Generated Date/Time: 2023-01-17 09:17:23  
Compliance ID: EnergyPro-4473-0123-0064  
Report Version: 2022.0.000  
Schema Version: rev 20220101

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
01-10-2024	BID SET

SHEET INFORMATION:  
STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:  
SEAL:



SHEET TITLE:  
TITLE 24  
COMPLIANCE  
DOCUMENTS -  
INDOOR

SHEET NO.:

E0.3

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 1 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
 NRCC-LD-4  
 (Page 1 of 9)  
 3/13/2023

This document is used to demonstrate compliance with requirements in 140.7, 140.8, 140.9, 140.10, 140.11, and 141.0(b)(2) for outdoor lighting systems using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 140.5, 170.2(a), 180.1(a) and 180.2(b)(4) for outdoor lighting systems using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

**A. GENERAL INFORMATION**

01 Project Location (city) Chino 04 Total Illuminated Hardscape Area (ft²) 2765

02 Climate Zone 10

03 Outdoor Lighting Zone per Title 24 Part 1 10-11.4 or as designated by Authority Having Jurisdiction (AHJ):  
 12.0: Very Low - Undeveloped Parkland  12.2: Moderate - Urban Centers  12.4: High - Must be reviewed by CA Energy Commission for Approval  
 12.1: Low - Rural Areas  12.3: Moderately High - Urban Areas

05 Occupancy Types within Project  
 Office  Support Areas

**B. PROJECT SCOPE**  
 This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(a) or 141.0(b)(2) / 180.2(b)(4) for alterations.

My Project Consists of:

01 New Lighting System Must Comply with Allowances from 140.7 / 170.2(a)6  
 Altered Lighting System Is your alteration increasing the connected lighting load (Watts)?  Yes  No

03 % of Existing Luminaires Being Altered? Sum Total of Luminaires Being Added or Altered Calculation Method  
 < 10%  >= 10% and < 50%  >= 50%

Please refer to Table F, Outdoor Lighting Fixture Schedule to define the project's luminaires.  
 \*FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
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STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 2 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
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**C. COMPLIANCE RESULTS**  
 Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(a) or 141.0(b)(2) / 180.2(b)(4)

01	02	03	04	05	06	07	08	09
General Hardscape Allowance 140.7(a)1 / 170.2(a)6 (See Table I)	Per Application 140.7(a)2 / 170.2(a)6 (See Table J)	Sales Frontage 140.7(a)3 (See Table K)	Ornamental 140.7(a)4 / 170.2(a)6 (See Table L)	Per Specific Area 140.7(a)5 / 170.2(a)6 (See Table M)	Existing Power Allowance 141.0(b)(2) / 180.2(b)(4) (See Table N)	Total Allowed (Watts)	Total Actual (Watts)	07 must be >= 08
411	---	---	---	228.2	---	639	600	COMPLIES

Shielding Compliance (See Table G for Details)  
 Controls Compliance (See Table H for Details)

**D. EXCEPTIONAL CONDITIONS**  
 This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**  
 This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
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**F. OUTDOOR LIGHTING FIXTURE SCHEDULE**  
 For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(a) all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)(2), only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (i.e. existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire (1)	How is Wattage Determined	Total Number Luminaires (2)	Luminaire Status (3)	Excluded per 140.7(a) / 170.2(a)(6)A	Design Watts	Cutoff Req. > 6,200 initial lumen output (350-20) / 160.5(a)(1)	Field Inspector
50	F2 9W LED Surface Wall Mounted Fixture	9	Mfr. Spec.	8	New	<input type="checkbox"/>	72	NA - < 6200 lumens	<input type="checkbox"/>
51	S1 14W LED In-ground Fixture	14	Mfr. Spec.	3	New	<input type="checkbox"/>	42	NA - < 6200 lumens	<input type="checkbox"/>
52	S2 21W LED Flood Light Fixture	21	Mfr. Spec.	3	New	<input type="checkbox"/>	63	NA - < 6200 lumens	<input type="checkbox"/>
53	S3 93W LED Pole Top Fixture	93	Mfr. Spec.	1	New	<input type="checkbox"/>	93	NA - < 6200 lumens	<input type="checkbox"/>
54	S4 2W LED Flood Light Fixture	2	Mfr. Spec.	2	New	<input type="checkbox"/>	84	NA - < 6200 lumens	<input type="checkbox"/>
55	S5 51W LED Wall Mounted Fixture	51	Mfr. Spec.	4	New	<input type="checkbox"/>	204	NA - < 6200 lumens	<input type="checkbox"/>
56	S6 21W LED Flood Light Fixture	21	Mfr. Spec.	2	New	<input type="checkbox"/>	42	NA - < 6200 lumens	<input type="checkbox"/>
							Total Design Watts:	600	

\* NOTES: Selections with a "\*" require a note in the table below explaining how compliance is achieved.  
 (2) Lc: Light is diffused or shielded. EXCEPTION 2 to 36-210  
 (3) FOOTNOTES: Authority Having Jurisdiction may use for Luminaire cut sheets to confirm wattage used for compliance per 135.0(c) / 160.5(b)  
 (4) For linear luminaires, wattage should be indicated as W/ft instead of Watts/Luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
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STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
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 Report Page: (Page 4 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
 NRCC-LD-4  
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 3/13/2023

**F. OUTDOOR LIGHTING FIXTURE SCHEDULE**  
 For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(a) all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)(2), only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (i.e. existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire (1)	How is Wattage Determined	Total Number Luminaires (2)	Luminaire Status (3)	Excluded per 140.7(a) / 170.2(a)(6)A	Design Watts	Cutoff Req. > 6,200 initial lumen output (350-20) / 160.5(a)(1)	Field Inspector

\* Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing to be Removed" for existing luminaires which are being removed and reinstated to part of the project scope.  
 \* Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b) / 160.5(c)

**G. SHIELDING REQUIREMENTS (BUG)**  
 This section does not apply to this project.

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STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 5 of 9)  
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**H. OUTDOOR LIGHTING CONTROLS**  
 This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (or unaltered) and luminaires which are removed and reinstated (using only) do not need to be included in this table even if they are within the spaces covered by the permit application.  
 Outdoor lighting for nonresidential buildings, parking garages and common areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit.  
 Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Area Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 139.9(a)(7) / 160.5(c)	Field Inspector
Building Exterior	Photocontrol	NA: Not permitted by H&LS	NA: Not permitted by H&LS	<input type="checkbox"/>
Park Entry Canopy	Photocontrol	NA: Not permitted by H&LS	NA: Not permitted by H&LS	<input type="checkbox"/>

\* FOOTNOTE: Text has been abbreviated, please refer to Table 140.7-A to confirm compliance with the specific light source technologies listed.  
 \* Authority having jurisdiction may use permit or other jurisdiction to confirm compliance of light source.  
 \* Recessed luminaires marked to be in live-wired installations, and recessed luminaires installed in non-multiple ceilings are exempted from ii and iii.

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-4473-0323-0345 Schema Version: rev 20220301 Report Generated: 2023-03-13 09:25:27

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
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CALIFORNIA ENERGY COMMISSION  
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**I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(a))**  
 This table includes areas using allowance calculations per 140.7 / 170.2(a). General Hardscape Allowance is per Table 140.7-A/ Table 170.2-A while "Use it or lose it" Allowance (select all that apply) (select all that apply) allowances are per Table 140.7-B/ Table 170.2-S. Indicate which allowances are being used to expand sections per area input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

01	02	03	04	05	06	07	08	09
Area Description	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter (Length) (ft)	Allowed Density (W/ft)	Linear Allowance (Watts)	Total Area Allowance (Watts)	Total General Hardscape Allowance (Watts)
Building Exterior	755	0.021	15.9	0.2	175	0.2	35	51
ADA Pathway	2010	0.021	42.2	0.2	340	0.2	68	110
							Initial Wattage Allowance for Entire Site (Watts):	299
							Instances of Initial Wattage Allowance (LZ 0 only):	
							Total General Hardscape Allowance (Watts):	411

**J. LIGHTING ALLOWANCE: PER APPLICATION**  
 This section does not apply to this project.

**K. LIGHTING ALLOWANCE: SALES FRONTAGE**  
 This section does not apply to this project.

**L. LIGHTING ALLOWANCE: ORNAMENTAL**  
 This section does not apply to this project.

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-4473-0323-0345 Schema Version: rev 20220301 Report Generated: 2023-03-13 09:25:27

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 7 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
 NRCC-LD-4  
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**M. LIGHTING ALLOWANCE: PER SPECIFIC AREA**  
 This table includes areas using the wattage allowance per specific area from Table 140.7-B / Table 170.2-S. More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
Area Description	Specific Area Type per Table 140.7-B	Calculated Allowance (Watts)	Allowed Density (W/ft²)	Existing Allowance (Watts)	Luminaire Name or Item Tag	Watts per luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Park Entry Canopy	NonSiteCanopy	845	0.3	228.2	S5	51	4	204	228.2
					S4	42	2	84	
					S6	21	7	42	
							Total Allowance (Watts) All Areas:	228.2	

\* FOOTNOTES: See Table 140.7-B / Table 170.2-S for rules for calculating the specific area allowance.  
 \* For luminaires indicated in Table F as linear, wattage in column 07 is W/ft instead of Watts/Luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

**N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)**  
 This section does not apply to this project.

**O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**  
 Form/Title  
 NRCC-LD-4 - Must be submitted for all buildings

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-4473-0323-0345 Schema Version: rev 20220301 Report Generated: 2023-03-13 09:25:27

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 8 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
 NRCC-LD-4  
 (Page 8 of 9)  
 3/13/2023

**P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**  
 Form/Title  
 NRCC-LD-4 - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-4473-0323-0345 Schema Version: rev 20220301 Report Generated: 2023-03-13 09:25:27

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 CERTIFICATE OF COMPLIANCE  
 Project Name: Prado Regional Park Gate House  
 Project Address: 16700 Euclid Ave  
 Report Page: (Page 9 of 9)  
 Date Prepared: 3/13/2023

CALIFORNIA ENERGY COMMISSION  
 NRCC-LD-4  
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**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
 I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Leonard P. Maya  
 Signature Date: 2023-03-13  
 Address: 412 E. Vanderbilt Way  
 City/State/Zip: San Bernardino CA 92408  
 Phone: 909-890-3700

**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 or approved 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 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: Leonard P. Maya  
 Responsible Designer Signature: [Signature]  
 Date Signed: 2023-03-13  
 Address: 412 E. Vanderbilt Way  
 City/State/Zip: San Bernardino CA 92408  
 Phone: 909-890-3700

Registration Number: Generated Date/Time: Documentation Software: EnergyPro  
 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-4473-0323-0345 Schema Version: rev 20220301 Report Generated: 2023-03-13 09:25:27



CONSULTANT:  
 DESIGN WEST ENGINEERING  
 MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



PROJECT ADMINISTERED BY:  
 SAN BERNARDINO COUNTY  
 REAL ESTATE SERVICES  
 DEPARTMENT -  
 PROJECT MANAGEMENT  
 DIVISION

385 N. ARROWHEAD AVE.  
 SAN BERNARDINO, CA 92415

PROJECT NAME:  
 PRADO REGIONAL PARK  
 GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
 CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
 SCALE: AS NOTED  
 DATE: MARCH 2023  
 PLOT DATE:  
 DRAWING NAME:

SEAL:



SHEET TITLE:  
 TITLE 24  
 COMPLIANCE  
 DOCUMENTS -  
 OUTDOOR

SHEET NO.:

E0.4

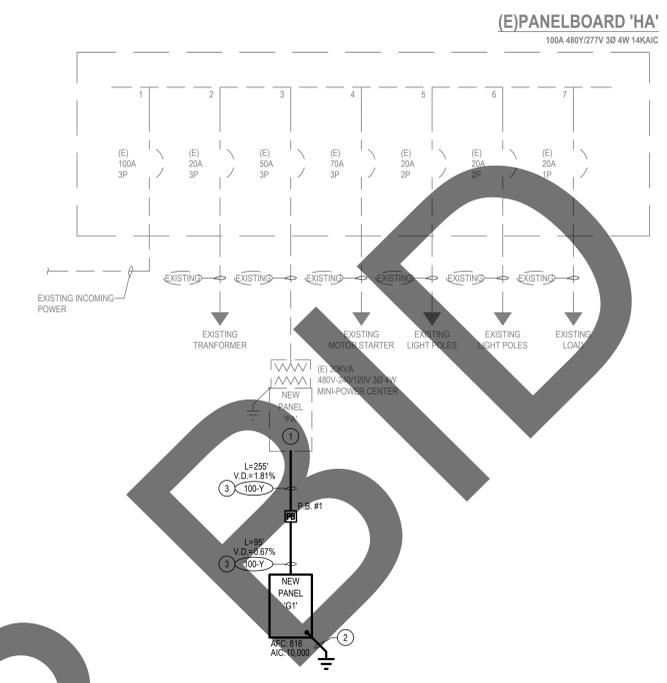
LOAD SUMMARY			
EXISTING PANEL 'HA'	LOAD VA	LOAD AMPS	
1 EXISTING PANEL 'HA'	43628	52	
2 EXISTING PANEL 'PA'	35179	42	
<b>TOTAL LOAD INCLUDING NEC DEMAND FACTORS:</b>	<b>78805</b>	<b>95</b>	
EXISTING SWITCHBOARD RATED:		100	

**LOAD SUMMARY** 3

600V FEEDER SCHEDULE 1Ø 2W						
LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20-S	20A-2W	1	2 # 12	N/A	1 # 12	3/4"
30-S	30A-2W	1	2 # 10	N/A	1 # 10	3/4"
40-S	40A-2W	1	2 # 8	N/A	1 # 10	1"
50-S	50A-2W	1	2 # 6	N/A	1 # 10	1"
60-S	60A-2W	1	2 # 6	N/A	1 # 10	1"
70-S	70A-2W	1	2 # 4	N/A	1 # 8	1-1/4"
80-S	80A-2W	1	2 # 4	N/A	1 # 8	1-1/4"
90-S	90A-2W	1	2 # 2	N/A	1 # 8	1-1/4"
100-S	100A-2W	1	2 # 1	N/A	1 # 8	1-1/4"
125-S	125A-2W	1	2 # 1	N/A	1 # 6	1-1/2"
150-S	150A-2W	1	2 # 1/0	N/A	1 # 6	1-1/2"
175-S	175A-2W	1	2 # 2/0	N/A	1 # 6	2"
200-S	200A-2W	1	2 # 3/0	N/A	1 # 6	2"

600V FEEDER SCHEDULE 3Ø 4W						
LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20-Y	20A-4W	1	3 # 12	1 # 12	1 # 12	3/4"
30-Y	30A-4W	1	3 # 10	1 # 10	1 # 10	3/4"
40-Y	40A-4W	1	3 # 8	1 # 10	1 # 10	1"
50-Y	50A-4W	1	3 # 6	1 # 6	1 # 10	1"
60-Y	60A-4W	1	3 # 6	1 # 6	1 # 10	1"
70-Y	70A-4W	1	3 # 4	1 # 4	1 # 8	1-1/4"
80-Y	80A-4W	1	3 # 4	1 # 4	1 # 8	1-1/4"
90-Y	90A-4W	1	3 # 2	1 # 2	1 # 8	1-1/4"
100-Y	100A-4W	1	3 # 1	1 # 1	1 # 8	1-1/2"
125-Y	125A-4W	1	3 # 1	1 # 1	1 # 6	1-1/2"
150-Y	150A-4W	1	3 # 1/0	1 # 1/0	1 # 6	1-1/2"
175-Y	175A-4W	1	3 # 2/0	1 # 2/0	1 # 6	2"
200-Y	200A-4W	1	3 # 3/0	1 # 3/0	1 # 6	2"
225-Y	225A-4W	1	3 # 4/0	1 # 4/0	1 # 4	2-1/2"
250-Y	250A-4W	1	3 # 250 KCM	1 # 250 KCM	1 # 4	2-1/2"
300-Y	300A-4W	1	3 # 350 KCM	1 # 350 KCM	1 # 4	3"
350-Y	350A-4W	1	3 # 500 KCM	1 # 500 KCM	1 # 2	4"
400-Y	400A-4W	1	3 # 600 KCM	1 # 600 KCM	1 # 2	4"
450-Y	450A-4W	2	3 # 4/0	1 # 4/0	1 # 2	3"
500-Y	500A-4W	2	3 # 250 KCM	1 # 250 KCM	1 # 2	3"
600-Y	600A-4W	2	3 # 350 KCM	1 # 350 KCM	1 # 10	4"
700-Y	700A-4W	2	3 # 500 KCM	1 # 500 KCM	1 # 10	4"
800-Y	800A-4W	2	3 # 600 KCM	1 # 600 KCM	1 # 10	4"
1000-Y	1000A-4W	3	3 # 500 KCM	1 # 500 KCM	1 # 2/0	4"
1200-Y	1200A-4W	3	3 # 600 KCM	1 # 600 KCM	1 # 3/0	4"
1600-Y	1600A-4W	4	3 # 600 KCM	1 # 600 KCM	1 # 4/0	4"
2000-Y	2000A-4W	5	3 # 600 KCM	1 # 600 KCM	1 # 250 KCM	4"
2500-Y	2500A-4W	6	3 # 600 KCM	1 # 600 KCM	1 # 350 KCM	4"
3000-Y	3000A-4W	8	3 # 600 KCM	1 # 600 KCM	1 # 500 KCM	4"
4000-Y	4000A-4W	10	3 # 600 KCM	1 # 600 KCM	1 # 500 KCM	4"

**FEEDER SCHEDULE** 4



**SINGLE LINE DIAGRAM** 1

PANEL PA (EXISTING)										VOLTAGE: 208Y/120V 3PH 4W														
MOUNTING: SURFACE										BUS: 100 A														
FED FROM: EXIST. PANEL 'HA'										MAIN: 100 A 3P														
NEMA: 3R										FEEDER: 100 -Y														
AIC RATING: 10,000										LOCATION: ELECTRICAL SHED														
NOTE	DESCRIPTION	A	B	C	TYPE	POLE	AMP	AWG/PH	LENGTH	V.D. %	PHASE	V.D. %	LENGTH	AWG/PH	AMP	POLE	TYPE	A	B	C	DESCRIPTION	NOTE		
1	EXISTING LIGHTS	600			L	1	20				1	A - -	2		20	2	R	540			EXISTING GUARD SHACK REC.	1		
2	EXISTING GATE ADMIN		1000		N	1	30				3	- B -	4				R		540			EXISTING LIGHTS/RECEP	1	
1	EXISTING LIGHTS			800	N	1	20				5	- - C	6		20	1	R			900		EXISTING IRRIG. CONTROLLER	1	
1	EXISTING LOAD	2880			N	2	40				7	A - -	8		20	1	N	1000				EXISTING LOAD	1	
1	EXISTING CAMERA		2880		N	1	20				8	- B -	10		20	1	N		1000				EXISTING MONUMENT LIGHTING	1
1	EXISTING CAMERA			500	N	1	20				11	- - C	12		20	1	L					EXISTING MONUMENT LIGHTING	1	
1	EXISTING MONUMENT REC.	180			R	1	20				13	A - -	14				L				82	SPACE	1	
2	UNDERDRAIN PUMP STATION		444		N	3	20 #10		300	1.11	15	- B -	16										SPACE	1
				444	N	1	- -				17	- - C	18										SPACE	1
		444			N	1	- -				19	A - -	20		100	3					4205		NEW PANEL 'G1'	2
	SPACE										21	- B -	22								6456		SPACE	1
	SPACE										23	- - C	24										SPACE	1
	SUBTOTALS	4304	4324	1744														5745	7996	8097				
	CEC LOAD CALC:	CONNECTED	DEMAND	DEMAND	DEMAND																			
	LOAD TYPE	VA	FACTOR	VA	AMPS																			
	(L) LIGHTING	3555	1.25	4444	12																			
	(R) RECEPTACLE	5040	NEC 220.44	5040	14																			
	(M) MOTOR	8320	1.25	10400	29																			
	LARGEST MOTOR		0.25	0	0																			
	(C) CONTINUOUS		0	1.25	0																			
	(N) NON-CONTINUOUS	15295	1.00	15295	42																			
	(K) KITCHEN (NEC 220.56)	0	0.65	0	0																			
	(S) SPECIAL DEMAND	0	1.00	0	0																			
	TOTALS	32210		35179																				
	TOTAL AMPS CONNECTED AT 208Y/120V 3PH 4W WITH LCL																							98 A

PANEL G1 (NEW)										VOLTAGE: 208Y/120V 3PH 4W															
MOUNTING: RECESSED										BUS: 125 A															
FED FROM: EXISTING PANELBOARD 'PA'										MAIN: 100 A 3P															
NEMA: 1										FEEDER: 100 -Y															
AIC RATING: 10,000										LOCATION: ENTRY GATE BUILDING															
NOTE	DESCRIPTION	A	B	C	TYPE	POLE	AMP	AWG/PH	LENGTH	V.D. %	PHASE	V.D. %	LENGTH	CONDUIT	AWG/PH	AMP	POLE	TYPE	A	B	C	DESCRIPTION	NOTE		
	INTERIOR RECEPTACLES	1260			R	1	20 #12	3/4"	15	0.53	1	A - -	2	0.13	20	3/4"	#12	20	1	L	232		INTERIOR LIGHTING	2	
	INTERIOR RECEPTACLES		1080		R	1	20 #12	3/4"	20	0.60	3	- B -	4	0.22	45	3/4"	#12	20	1	L		178	EXTERIOR WALL LIGHTING	2	
	EXTERIOR RECEPTACLES			540	- - C	6	1.93	350	1"	#10	20	1	L									330	SITE ENTRY LIGHTING	2	
	CEILING FANS	40			L	1	20 #12	3/4"	15	0.02	7	A - -	8	0.22	145	1"	#10	20	1	L	93		SITE POLE LIGHTING	2	
2	DON'T BACK UP LIG SIGNS		1000		L	1	20 #12	1"	65	1.81	9	- - C	10	0.75	40	1"	#6	50	2	M		4160	CU-IFC-1	1	
	TANK LEVEL ALERT SYSTEM			5	N	1	20 #12	3/4"	40	0.00	11	A - -	14	0.54	65	1"	#10	20	1	N		4160	GATE MOTOR	1	
	SPACE										15	- B -	16	0.01	10	3/4"	#12	20	1	N		38	EF-1	1	
	SPACE										17	- - C	18	0.35	15	3/4"	#10	25	2	N		2080	WH-1	1	
	SPACE										19	A - -	20											SPACE	1
	SPACE										21	- B -	22											SPACE	1
	SPACE										23	- - C	24											SPACE	1
	SUBTOTALS	1300	2080	545															2905	4376	6570				
	CEC LOAD CALC:	CONNECTED	DEMAND	DEMAND	DEMAND																				
	LOAD TYPE	VA	FACTOR	VA	AMPS																				
	(L) LIGHTING	1873	1.25	2341	7																				
	(R) RECEPTACLE	2880	NEC 220.44	2880	8																				
	(M) MOTOR	8320	1.25	10400	29																				
	LARGEST MOTOR		0.25	0	0																				
	(C) CONTINUOUS	0	1.25	0	0																				
	(N) NON-CONTINUOUS	4703	1.00	4703	13																				
	(K) KITCHEN (NEC 220.56)	0	0.65	0	0																				
	(S) SPECIAL DEMAND	0	1.00	0	0																				
	TOTALS	17776		20324																					
	TOTAL AMPS CONNECTED AT 208Y/120V 3PH 4W WITH LCL																								56 A

**PANEL SCHEDULES** 2

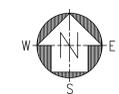
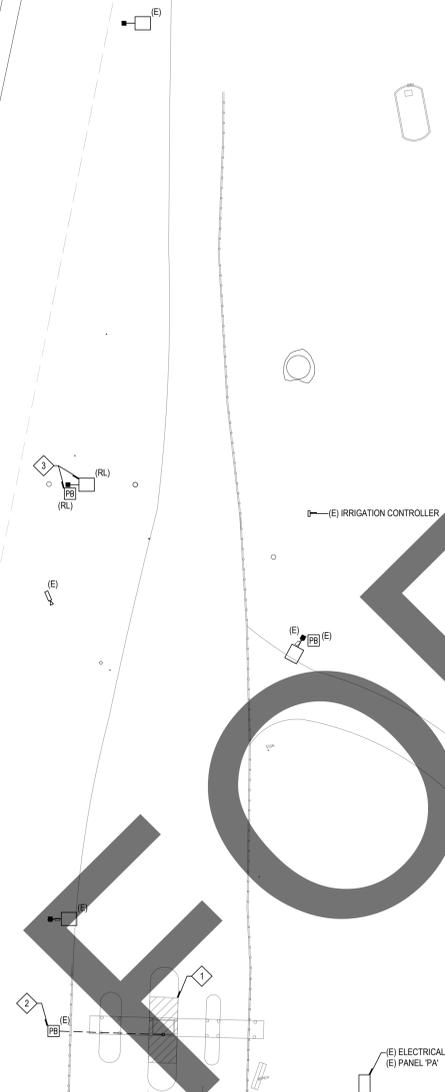
**GENERAL NOTES**

- REFER TO 'GENERAL NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET FOR WIRING METHODS, MATERIALS, AND REQUIREMENTS.
- ALL CIRCUIT BREAKERS, PANELBOARDS AND TRANSFORMERS SHALL BE OF THE SAME MANUFACTURER.
- ALL GROUND CONNECTIONS SHALL BE CADWELDED.
- AVAILABLE FAULT AT SERVICE POINT SHALL BE CONSIDERED AT 65,000 RMS SYM.
- ALL PANELBOARDS SHALL BE FULLY RATED FOR THE AVAILABLE FAULT UNLESS OTHERWISE NOTED.
- THE FEEDER LENGTHS SHOWN ON THESE DRAWINGS ARE FOR CALCULATION PURPOSES ONLY AND ARE NOT VALID FOR BIDDING.
- CONTRACTOR SHALL UPDATE ALL MODIFIED PANEL DIRECTORIES OR CREATE A NEW TYPED DIRECTORY, IF ONE DOES NOT EXIST, IDENTIFYING EACH CIRCUIT AND INSTALLED CIRCUIT LOADS, MOUNTED IN GLASS OR PLASTIC INSIDE DOOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING DIRECTORIES TO INDICATE ALL NEW CIRCUITS AND ACTUAL AREA SERVED WHICH IS NOT NECESSARILY THE DESCRIPTION INDICATED ON THE BID DOCUMENTS. USE A COMPUTER OR TYPEWRITER TO CREATE DIRECTORY; HANDWRITTEN DIRECTORIES ARE NOT ACCEPTABLE.
- EQUIPMENT DATA AND CONFIGURATIONS SHOWN ON THE SINGLE LINE DIAGRAM PROVIDE GENERAL EQUIPMENT INFORMATION. CONTRACTOR SHALL REVIEW ELECTRICAL PLANS AND SPECIFICATIONS TO VERIFY ALL EQUIPMENT ASSOCIATED DESIGN INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COMPONENTS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION. ANY DISCREPANCIES BETWEEN DESCRIPTIONS, SPECIFICATIONS, AND EXISTING CONDITIONS ARE TO BE PRESENTED TO THE ENGINEER OF RECORD PRIOR TO COMPLETION OF THE BID PROCESS FOR CLARIFICATION. NO EQUIPMENT SHALL BE ORDERED UNTIL DISCREPANCIES ARE RESOLVED THROUGH A FORMAL REFERENCE PROCESS.
- ELECTRICAL EQUIPMENT SUBMITTALS SHALL BE ACCOMPANIED BY A 1/2"=1' SCALE DRAWING WHICH REFERENCES ALL ELECTRICAL EQUIPMENT ROOMS AND EQUIPMENT DRAWING SHALL CLEARLY IDENTIFY ADEQUATE SPACE IS PROVIDED IN ELECTRICAL ROOMS TO ACCOMMODATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WHILE MAINTAINING ALL REQUIRED CODE CLEARANCES. ALL SUBMITTALS NOT ACCOMPANIED BY SCALED DRAWING WILL BE REJECTED AS INCOMPLETE.
- GROUND ALL ELECTRICAL EQUIPMENT, BRANCH CIRCUITS, FEEDERS, PANEL AND DISTRIBUTION BOARDS, ELECTRICAL SERVICES, ETC. PER ADOPTED NEC ARTICLES 250.
- ALL ELECTRICAL EQUIPMENT (I.E. SWITCHGEAR, TRANSFORMERS, DISTRIBUTION BOARDS, PANELBOARDS, DISCONNECT SWITCHES, ETC.) SHALL BE PROVIDED WITH A PHENOLIC NAMEPLATE WITH ENGRAVED LETTERS PER SPECIFICATIONS. ALL NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) MACHINE SCREWS. NO SELF ADHESIVE NAMEPLATES ARE ALLOWED.
- ELECTRICAL CONTRACTOR TO INCLUDE IN BID ALL ASSOCIATED COSTS FOR THIRD PARTY TESTING OF ELECTRICAL EQUIPMENT, GROUND FAULT, CONDUCTORS, ETC.

**CON**

# NOT FOR BID

EUCLID



**GENERAL NOTES**

1. REFER TO 'DEMOLITION NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET.

**DEMOLITION NOTES**

- 1. EXISTING KIOSK TO BE REMOVED PER ARCHITECTURAL PLANS. DISCONNECT AND DEMOLISH ALL EXISTING ELECTRICAL EQUIPMENT AND RELATED CONDUITS/CONDUCTORS FROM KIOSK BUILDING BACK TO SOURCE PANEL.
- 2. REMOVE EXISTING DATA/TELEPHONE CIRCUITS FROM KIOSK AND TIE-OFF BACK TO EXISTING UNDERGROUND PULL BOX. EXISTING UNDERGROUND CONDUIT TO BE ABANDONED IN PLACE. DISCONNECTION OF DATA/TELEPHONE CABLING SHALL BE COORDINATED WITH COUNTY ONCE EXISTING ENTRY GATE OFFICE IS DECOMMISSIONED.
- 3. DEMOLISH EXISTING UNDERGROUND PULL BOX AND CONCRETE POLE FOOTING. DISCONNECT EXISTING CONDUCTORS FROM POLE LIGHT AND REMOVE BACK TO NEAREST PULL BOX TO REMAIN. REFER TO REMODEL SITE PLAN FOR NEW LOCATIONS.



4205 ZEVO DR. TEMECULA, CALIFORNIA 92592-3780  
Phone: 951.266.9110 Fax: 951.266.6079 Email: stkg@stkg.com

CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way, San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3702 Email: cadd@designwesteng.com

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
01-10-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:



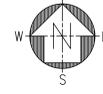
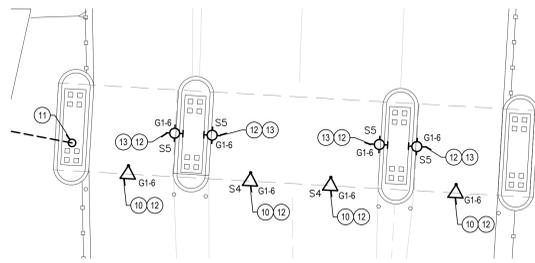
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**ELECTRICAL  
DEMOLITION SITE  
PLAN**

SHEET NO.:

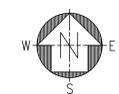
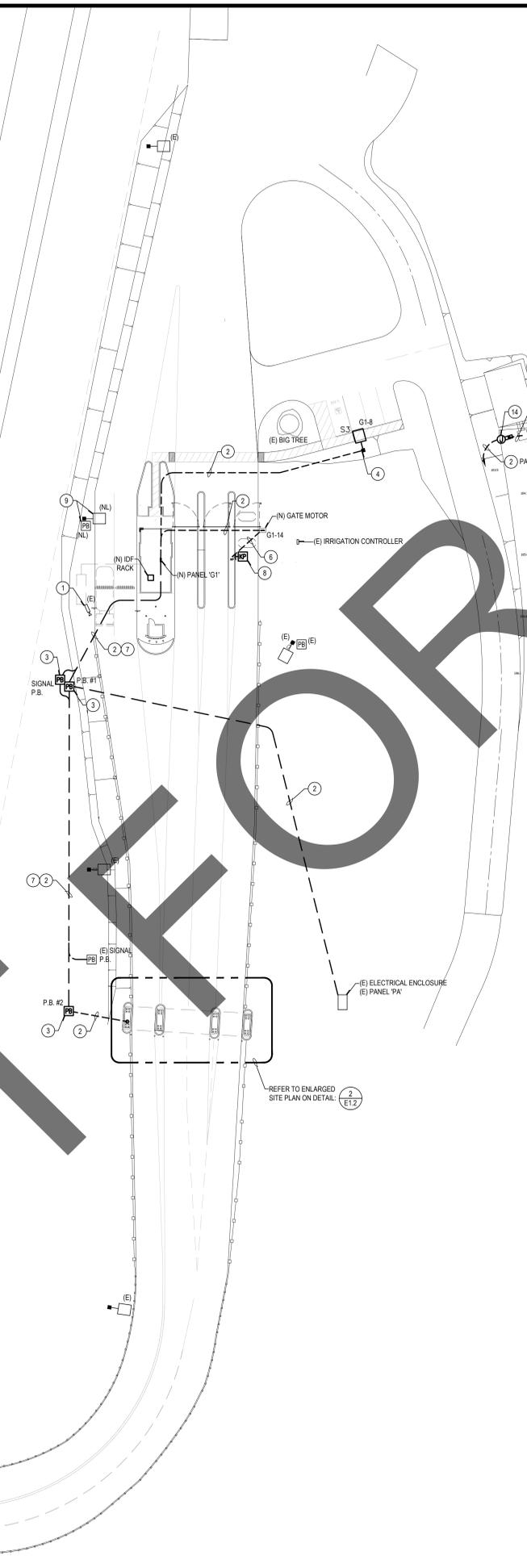
**E1.1**

R: L:\PROJECT\2022\12-182 PRADO REGIONAL PARK ENTRY KIOSK BUILDING\12-182 E - SITE PLAN - 2024-01-16 - 3077.TEDDERY



ENLARGED ELECTRICAL REMODEL SITE PLAN SCALE: 1" = 10'-0" 2

NOT FOR BID



ELECTRICAL REMODEL SITE PLAN SCALE: 1" = 30'-0" 1

**GENERAL NOTES**

1. REFER TO 'GENERAL NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET.
2. COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW WORK.
3. ALL SITE BRANCH CIRCUIT WIRING SHALL BE #10 AWG. OR LARGER.
4. CONTRACTOR SHALL UTILIZE 'GPR' GROUND PENETRATING RADAR TO SURVEY AND TRACE ALL EXISTING UNDERGROUND UTILITY LINES IN AREAS WHERE NEW TRENCHING IS PLANNED. CONTRACTOR TO SUBMIT 'GPR' REPORT TO PROJECT MANAGER FOR REVIEWING PRIOR TO TRENCHING.
5. ALL SITE UNDERGROUND CONDUIT TO BE 1" MIN. UNLESS OTHERWISE NOTED.
6. SURPORT CONDUIT(S) EVERY 10'-0" AND WITHIN 3'-0" OF ANY JUNCTION BOX OR TERMINATION.

**CONSTRUCTION NOTES**

- 1 EXISTING CAMERA SHALL REMAIN OPERATIONAL. RE-CONNECT CAMERA WHEN INTERRUPTION OCCURS. PROVIDE ALL NECESSARY CONDUIT, CONDUCTORS, ETC. FOR A COMPLETED RECONNECTION.
- 2 PROVIDE NEW UNDERGROUND POWER CONDUIT AND CONDUCTORS. REFER TO SINGLE LINE DIAGRAM/PANEL SCHEDULES FOR MORE INFORMATION ON CONDUCTOR AND CONDUIT SIZES.  
REFER TO TRENCHING DETAIL: (1) E3.1
- 3 PROVIDE NEW 11"x17" UNDERGROUND PULL BOX.  
REFER TO DETAIL: (2) E3.1
- 4 PROVIDE NEW LED POLE TOP FIXTURE MOUNTED NEW POLE AND CONCRETE FOOTING.  
REFER TO DETAIL: (18) E3.1
- 5 PROVIDE NEMA 3R SURFACE MOUNTED PULL BOX.  
REFER TO DETAIL: (4) E3.1
- 6 PROVIDE (1) 1" C. BETWEEN GATE MOTOR AND KEYPAD FOR CONTROL CONDUCTORS.  
REFER TO WIRING DETAIL: (5) E3.1
- 7 PROVIDE (2) 2" C. FOR DATA/TELEPHONE FROM EXISTING UNDERGROUND SIGNAL PULL BOX. EXTEND NEW CABLEING FROM SOURCE P.O.E. AS NECESSARY FOR A COMPLETE CONNECTION TO NEW IDF IN GATE HOUSE.
- 8 PROVIDE KEY PAD MOUNTED ON GOOSENECK PEDESTAL.  
REFER TO DETAIL: (11) E3.1
- 9 NEW LOCATION FOR NEW UNDERGROUND PULL BOX AND POLE FOOTING. RECONNECT EXISTING CONDUCTORS TO POLE LIGHT FIXTURE. EXTEND EXISTING CONDUCTORS AND CONDUIT AS NECESSARY FOR A COMPLETE RECONNECTION.
- 10 PROVIDE SIGNAGE FLOOD LIGHT FIXTURE. MOUNTED ON ARM.  
REFER TO DETAIL: (13) E3.1
- 11 PROVIDE CONDUIT TRANSITION AND RISER UP CANOPY STRUCTURE.  
REFER TO DETAIL: (12) E3.1 (14) E3.1
- 12 EXTERIOR LIGHT FIXTURE SHALL BE OPERATED BY INTEGRAL PHOTOCELL.
- 13 PROVIDE BI-DIRECTIONAL FIXTURE MOUNTED ON CANOPY STRUCTURE. REFER TO LUMINAIRE SCHEDULE FOR MORE INFORMATION.
- 14 PROVIDE NEMA 4X S8316 JUNCTION BOX WITH DEDICATED CIRCUIT FOR UNDERDRAIN PUMP STATION CONTROL PANEL (GENSYM 8MM-048-0N-1). REFER TO CIVIL DRAWINGS FOR EXACT LOCATION OF PUMP STATION.  
REFER TO DETAIL: (3) E3.1
- 15 PROVIDE (3) 1" C. FOR PUMP POWER AND CONTROLS.



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DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:	
DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:  
STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:



SHEET TITLE:  
ELECTRICAL  
REMODEL SITE  
PLAN

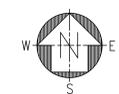
SHEET NO.:  
**E1.2**

# NOT FOR BID

EUCLID

Symbol	Label	QTY	Catalog Number	Description	Lumens per Lamp	LLF	Wattage
	F2	8	OLLWD LED P1 40K MVOLT	OUTDOOR LED WALL CYLINDER DOWN LIGHT & 4000K NICHIA 219C	576	0.75	9.02
	S3	1	DSX3 LED P4 40K 70CRI T3M	D-Series Size 0 Area Luminaire P4 Performance Package 4000K CCT 70 CRI Type 3 Medium	11130	0.75	93.04
	S5	4	S9602-L2L25-R55	Synos Round 6	5320	0.75	51.2

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
ADA PATHWAY	+	0.8 fc	2.1 fc	0.1 fc	21.0:1	8.0:1
ENTRY CANOPY	+	0.1 fc	0.2 fc	1.3 fc	7.1:1	4.7:1
GATE BUILDING EXTERIOR EAST	+	3.2 fc	3.2 fc	3.2 fc	1.0:1	1.0:1
GATE BUILDING EXTERIOR NORTH	+	0.8 fc	0.9 fc	0.7 fc	1.3:1	1.1:1
GATE BUILDING EXTERIOR SOUTH	+	0.7 fc	0.8 fc	0.8 fc	1.3:1	1.2:1
GATE BUILDING EXTERIOR WEST	+	3.1 fc	3.1 fc	3.1 fc	1.0:1	1.0:1



LIGHTING PHOTOMETRIC SITE PLAN

SCALE: 1" = 30'-0" 1



4205 ZEVO DR. TEMECULA, CALIFORNIA 92592-3780  
Phone: 951.266.9110 Fax: 951.266.6079 Email: stkg@stkg.com

CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way, San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3700 Email: cadd@designwesteng.com

PROJECT ADMINISTERED BY:  
SAN BERNARDINO COUNTY  
REAL ESTATE SERVICES  
DEPARTMENT -  
PROJECT MANAGEMENT  
DIVISION

385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
PRADO REGIONAL PARK  
GUARD SHACK

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

ISSUE INFORMATION:

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

SHEET INFORMATION:

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:



SHEET TITLE:

LIGHTING  
PHOTOMETRIC  
SITE PLAN

SHEET NO.:

E1.3

R: L PROJECT 2022 12-132 PRADO REGIONAL PARK ENTRY KIOSK BUILDING 12-132 E - PMPREV - 2024-01-16 - SCOTT REDDERY

**GENERAL NOTES**

1. REFER TO 'GENERAL NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET.



4205 ZEVO DR., TEMECULA, CALIFORNIA 92592-3700  
Phone: 951.296.9110 Fax: 951.296.6079 Email: stkg@stkg.com

CONSULTANT:

DESIGN WEST ENGINEERING  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS



412 E. Vandenberg Way  
San Bernardino, CA 92408  
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385 N. ARROWHEAD AVE.  
SAN BERNARDINO, CA 92415

PROJECT NAME:  
**PRADO REGIONAL PARK  
GUARD SHACK**

PROJECT #10.10.1257

16700 EUCLID AVENUE  
CHINO, CA 91708

**ISSUE INFORMATION:**

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK CDS
01-10-2024	BID SET

**SHEET INFORMATION:**

STK PROJECT NO.: 374-156-22  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:

SEAL:

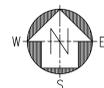
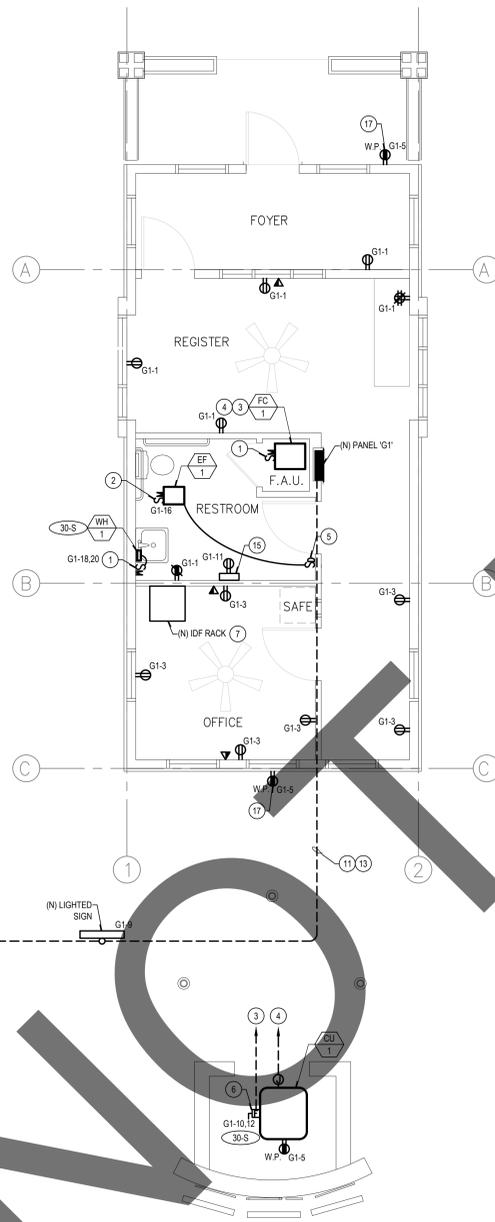


SHEET TITLE:  
**ELECTRICAL  
FLOOR PLAN**

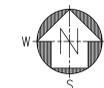
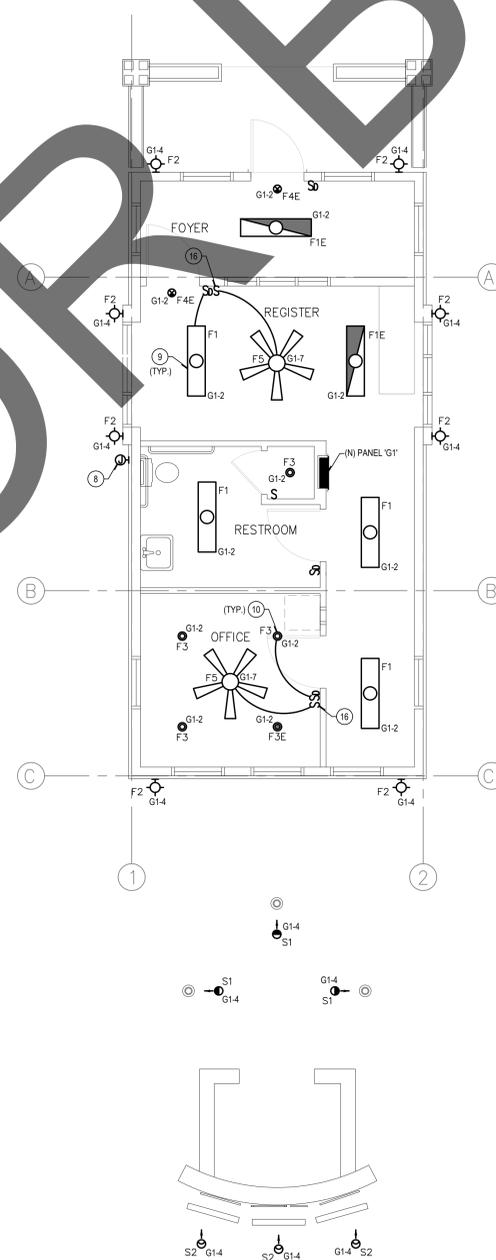
SHEET NO.:

**E2.1**

22-132



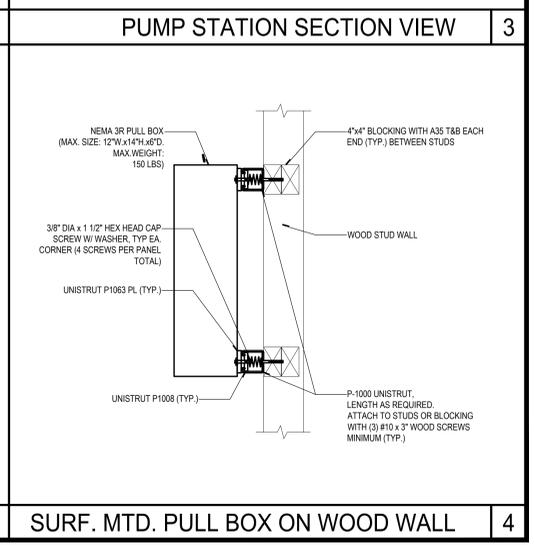
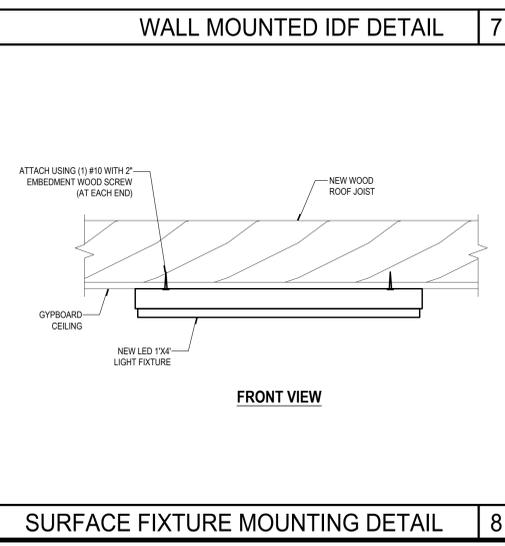
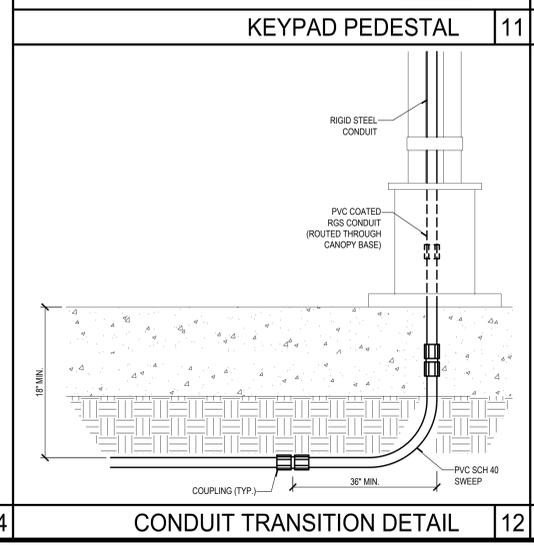
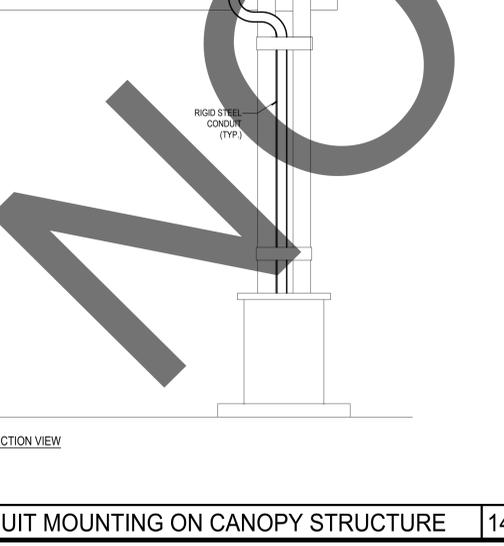
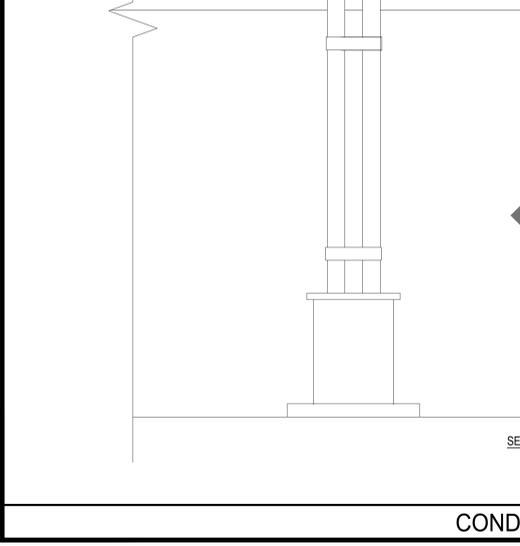
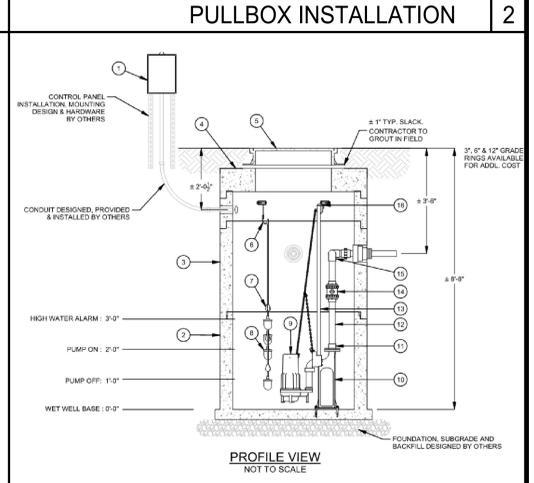
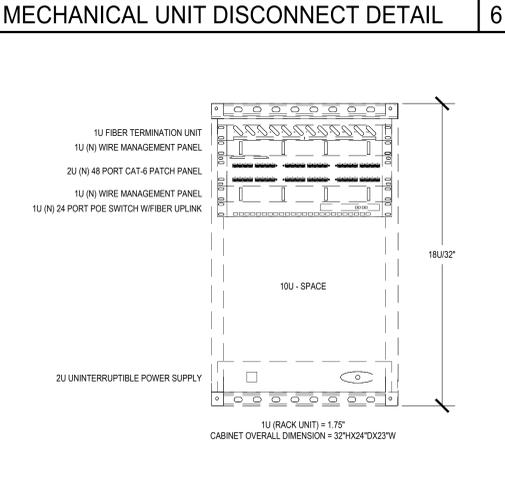
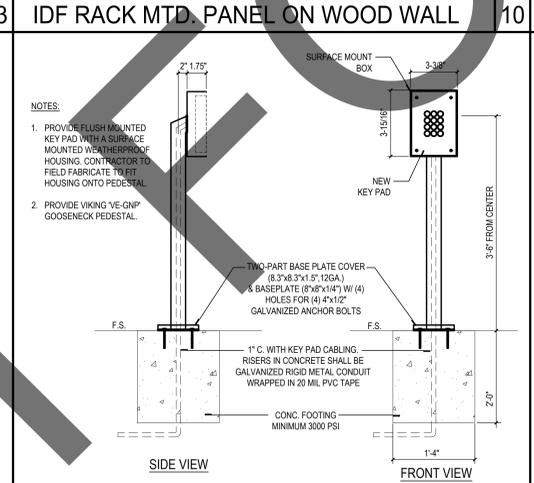
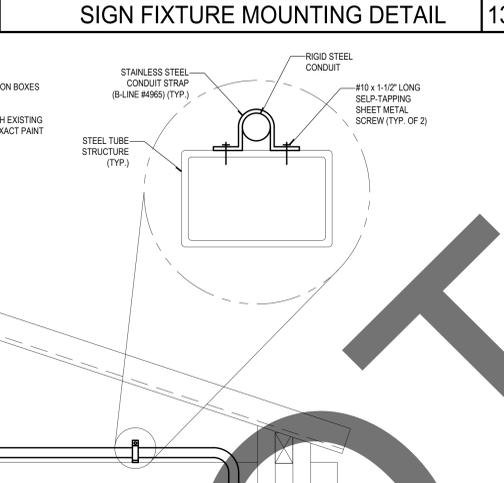
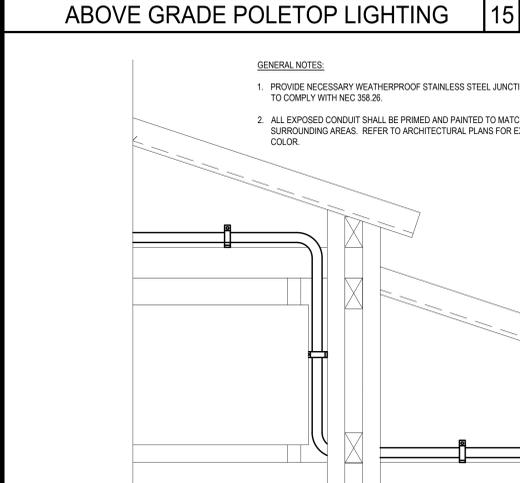
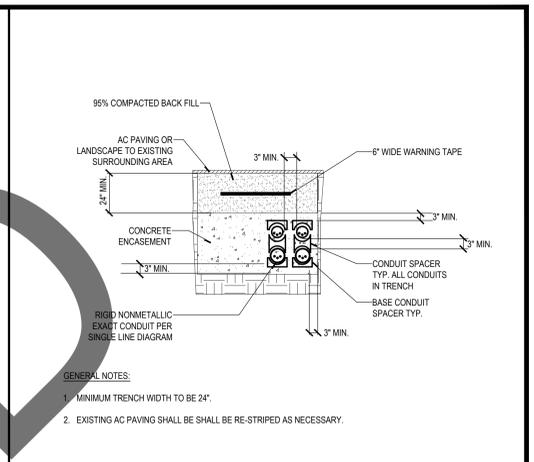
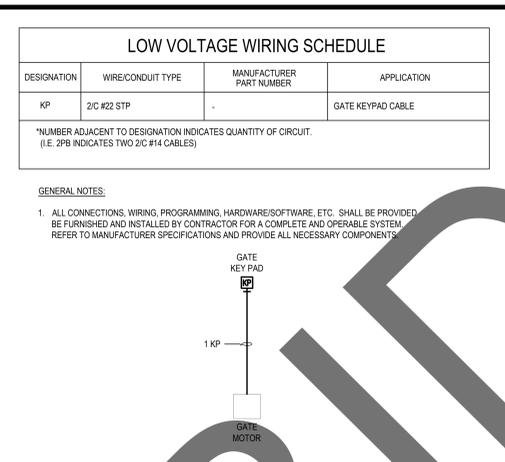
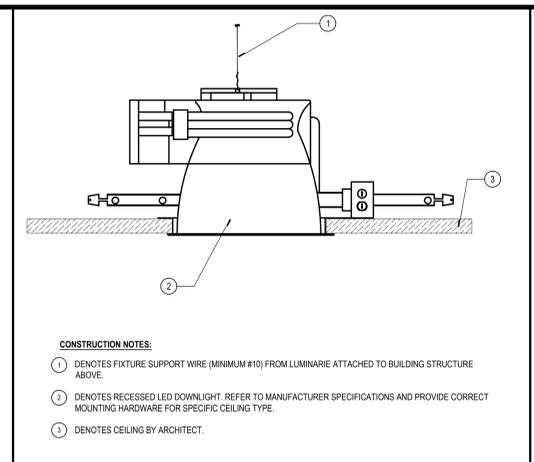
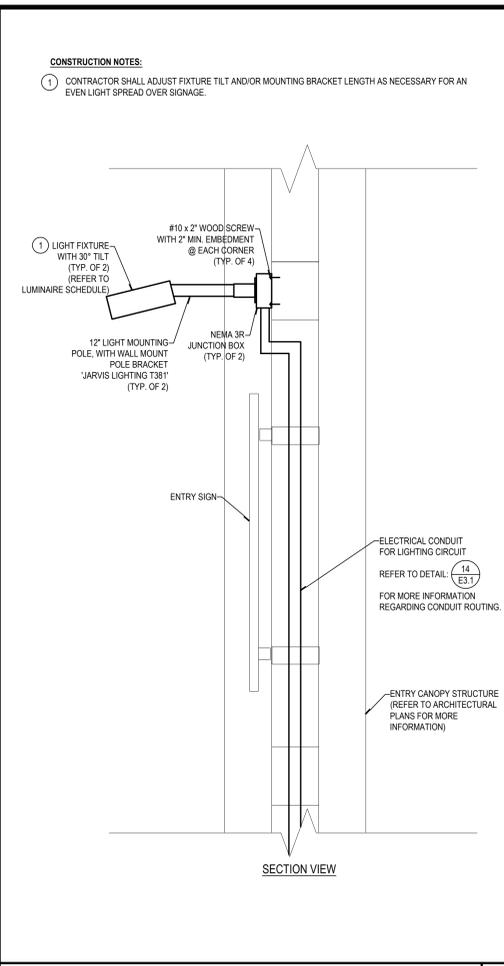
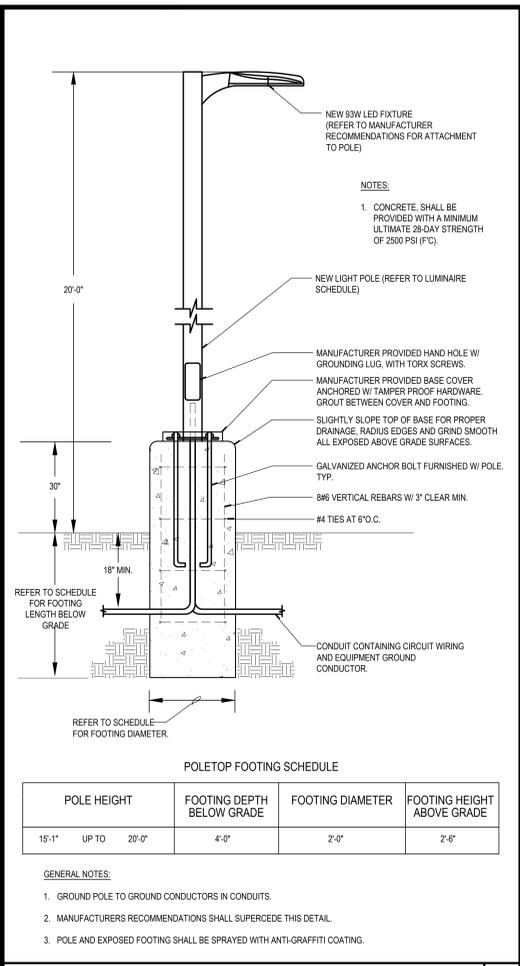
**POWER PLAN** SCALE: 1/4" = 1'-0" **2**



**LIGHTING PLAN** SCALE: 1/4" = 1'-0" **1**

FOR BID

NO



CONDUIT MOUNTING ON CANOPY STRUCTURE 14

CONDUIT TRANSITION DETAIL 12

KEYPAD PEDESTAL 11

SURFACE FIXTURE MOUNTING DETAIL 8

SURF. MTD. PULL BOX ON WOOD WALL 4

**STK**  
4035 ZEVO DR., TEMECULA, CALIFORNIA 92592-3780  
Phone: 951.266.9110 Fax: 951.266.6079 Email: stk@stke.com

CONSULTANT:  
**DESIGN WEST ENGINEERING**  
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

PROJECT ADMINISTERED BY:  
**SAN BERNARDINO COUNTY REAL ESTATE SERVICES DEPARTMENT - PROJECT MANAGEMENT DIVISION**

385 N. ARROWHEAD AVE. SAN BERNARDINO, CA 92415

PROJECT NAME:  
**PRADO REGIONAL PARK GUARD SHACK**

PROJECT #10.10.1257

16700 EUCLID AVENUE CHINO, CA 91708

**ISSUE INFORMATION:**

DATE:	INFORMATION:
12-1-22	50% PROGRESS
1-18-23	85% CDS
1-24-2023	95% CDS
3-17-2023	PLAN CHECK Cds
01-10-2024	BID SET

**SHEET INFORMATION:**

STK PROJECT NO.: 374-156-22 AS NOTED  
SCALE: AS NOTED  
DATE: MARCH 2023  
PLOT DATE:  
DRAWING NAME:  
SEAL:  
**Mr. E. P. 19480**  
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER  
STATE OF CALIFORNIA

**SHEET TITLE:**  
**ELECTRICAL DETAILS**

**SHEET NO.:**  
**E3.1**

22-132

# Structural Calculations for Prado Regional Gate House (Guard Shack)

Chino, CA

City resubmittal  
MI222806.00  
01/08/24

Page:

LD-1  
GH-1 to GH-11  
GC-1 – GC-32

Description:

Design Loading  
Gate House Calculations  
Gate House Canopy Calculations



**List of all code references:**

- ASCE - 7-16 Minimum Design Loads And Associated Criteria For Buildings And Other Structures
- ACI 318-19 Building Code Requirements for Structural Concrete and Commentary
- AISC - 15th Edition American Institute of Steel construction Manual
- ACI -530/530.1-16 Building Code Requirements and Specification for Masonry Structures  
TMS 402/602-16 and Companion Commentaries
- CBC-2022 California Building Code

NOT FOR BID

## Design Loading

### Gate House

<u>Roof</u>		<u>Gravity</u>	
<u>Item</u>			
Roof finish		2.0	
5/8" Sheathing		2.0	
Roof Joist		2.5	
Insulation		1.0	
2x ceiling joist		1.5	
Gypsum bd ceiling		3.2	
Solar (future)		4.0	
Misc		1.8	
<hr/>			
Σ DL		18.0	psf
Beams		2.0	
<hr/>			
Σ DL		20.0	psf
Live Load (Reducible)		20.0	psf
<u>Walls</u>			
Exterior Walls		16	psf
Interior Partition Walls		10	psf

### Entry Gate Structure

<u>Roof</u>		<u>Gravity</u>	
<u>Item</u>			
Roofing		2.0	
Metal Deck		2.0	
Framing		6.0	
<hr/>			
Σ DL		10.0	psf
Live Load (Reducible)		20.0	psf
<u>Walls</u>			
CMU Walls		78	psf

### Structural System

#### Seismic

Site Class : D  
 Importance Factor : I 1.0  
 Occupancy Category: II  
 Seismic Design Category: D  
 Seismic Coefficients:

Ss= 1.841                      S1= 0.625                      Sds= 1.473

Gate House:                      Light Frame Wood Shearwalls

R = 6.5                              Cd = 4.0

Ω<sub>o</sub> = 3.0

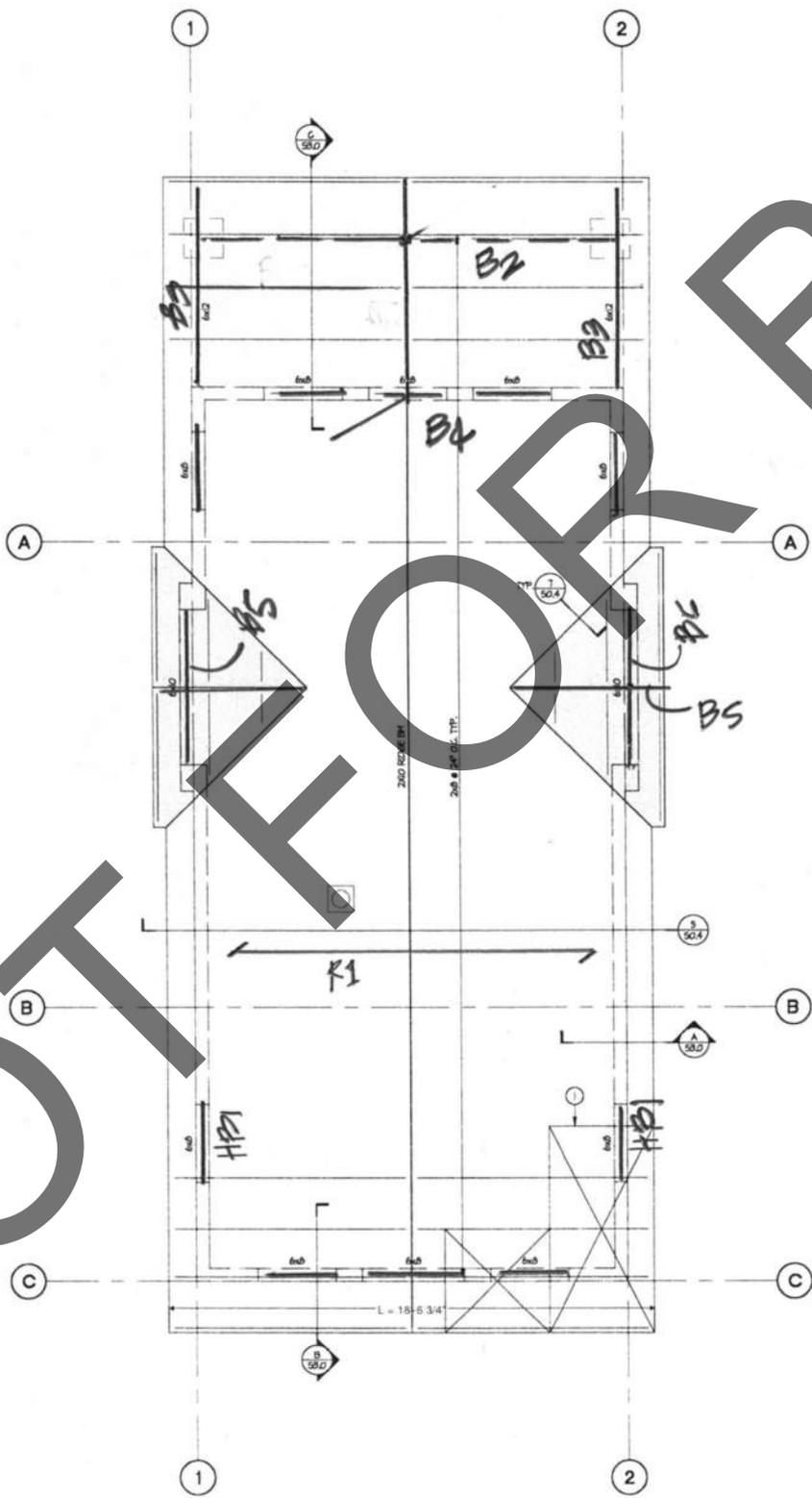
Entry Gate:                      Ordinary Canteliver Column System

R = 1.3                              Cd = 1.3

Ω<sub>o</sub> = 1.3

### Foundation

Conventional pad and continous footing  
 Allowable Soil Bearing Pressure 1500 psf CBC Table 1806.2



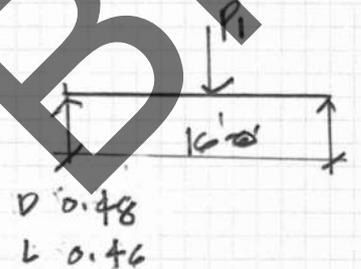
ROOF FRAMING KEY PLAN

B2

$$P_{10} = 0.82 \text{ k}$$

$$L = 0.91 \text{ k}$$

FROM ENERGY USE: 6x8 DEF = 0.84



B3

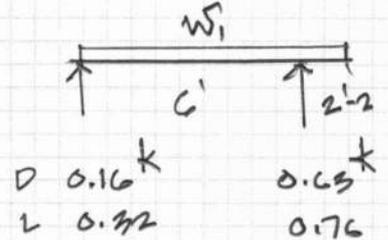
$$W_D = 18 \times (7.75/2 + 1.5) = 70 \text{ #/ft}$$

$$L = 105 \text{ #/ft}$$

FROM ENERGY USE

USE: 4x6 (MID) DEF = 0.95

$$\Delta_{TL} = 0.013 = 1/768$$



HD-1

$$L = 21 \text{ ft}$$

TRUCK

$$W_D = 18 \times (7.75/2 + 1.5) = 97 \text{ #/ft}$$

HEAD

$$L = 20 \times 1.5$$

$$= 107 \text{ #/ft}$$

FROM

$$20 \text{ #/ft}$$

$$M = WL^2/8 = 488 \text{ #-ft}$$

$$P_{6x6} = \frac{488 \times 12}{21} = 212 \text{ psi} \leftarrow \text{USE } 6 \times 6 \text{ OL}$$

B4

$$W_D = 18 \times 2' = 36 \text{ #/ft}$$

$$L = 20 \times 2' = 40 \text{ #/ft}$$

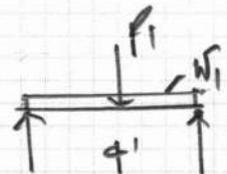
$$P = 0.95 \text{ k}$$

$$= 0.41 \text{ k} \left] 0.182 \text{ k}$$

$$M_T = \frac{76(4)^2}{8} + \frac{0.82 \times 4}{4} = 972 \text{ #-ft}$$

USE: 6x8

$$P_{6x6} = \frac{972 \times 12}{21} = 558 \text{ psi OL}$$

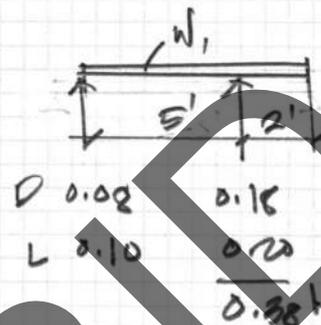


B/S

$$W_{100} = 18^H \times \left[ \frac{5.5'}{2} + 1 \right] \times \frac{1}{2} = 96 \frac{H}{1}$$

$$L = 20 \times 2' = 40 \frac{H}{1}$$

dsb: 2x6 Mid.



PG

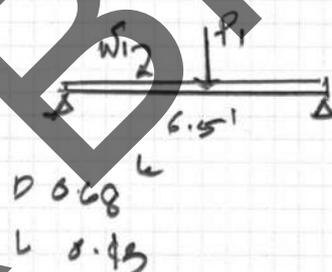
$$W_D = 18^H \times \left[ \frac{8}{2} + 1.5 \right] = 99 \frac{H}{1} + 16(4) = 267 \frac{H}{1}$$

$$L = 20 \times 5.5 = 110$$

$$P_D = 0.18 k$$

$$L = 0.20$$

dsb: 6x8 DCK 0.24



R1 JOINT

$$T = \frac{M}{d} = \frac{(18+20)(1.3)(16)^2}{8} \times \frac{1}{12} = 485 \frac{H}{1}$$

$$T = 485 \frac{H}{1} \quad M_{top} = \frac{485}{91} = 6$$

TOP CHORD

$$M = \frac{(18+20)(8)^2}{8} \times 2 = 608 \frac{H}{1}$$

BOT. CHORD

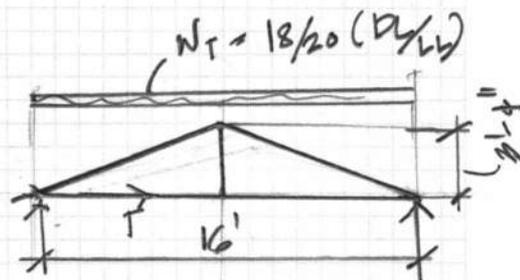
$$M = \frac{(5+10)(1.33)(16)^2}{8} = 640 \frac{H}{1}$$

$$F_{bot} = \frac{640 \times 12}{7.56} = 1012 \text{ psi ok}$$

dsb: 2x8 @ 16" TOP CHORD

2x6 @ 16" BOT. CHORD

w/ 8-16d @. END



$$F_{bot} = 519 \text{ psi}$$

## Static Design Base Shear:

### Notes

- Mapped MCE Spectral Response values are obtained from the ATC Hazard Application
- References below are for ASCE 7-16 except as noted
- Values shown are at Strength Design or LRFD level and may be reduced for ASD

### Structural & Site Specific Information

Project Address	= Prado National Park	Number of stories	= 1
Latitude	= 33.94585	Roof ht abv base $h_n$	= 10 ft
Longitude	= -117.65	Regular structure?	= Yes
Mapped Resp Accel, short periods	$S_s$ = 1.841 g	DSA/OSHPD project?	= No
Mapped Resp Accel, 1s period	$S_1$ = 0.625 g	$\rho = 1.0?$	= No
Long Period Transition	$T_L$ = 8 sec (Figs. 22-14 - 22-17)	Site Class	= D (Table 20.3-1)
Seismic Force Resisting System	= Light Frame Wood	Site Class (for $F_a$ )	= D (Sec 11.4.8)
Response Modification Coefficient	R = 6.5 (Table 12.2-1)	Risk Category	= II (CBC T1604.5)
Building Period Coefficient	$C_t$ = 0.020 (Table 12.8-2)	Importance Factor $I_c$	= 1.00 (Table 1.5-2)
Period Parameter	x = 0.77 (Table 12.8-2)		
Using Site Specific Ground Motion?	= No (sec 21.1)		
Using Default Site Class?	= Yes (Sec 11.4.3 & 11.4.4)		

### Design Spectral Acceleration Parameters

Short Period Site Coefficient	$F_a$ = 1.200 (CBC T1613.2.3(1))
Long Period Site Coefficient	$F_v$ = 1.700 (See ASCE 7 Sec 11.4.8 for Add'l Reqmts)
Design 5% Damped, Spectral Response Acceleration at short periods	$S_{DS}$ = 1.473 g (CBC Eq. 16-36, 16-38)
Design 5% Damped, Spectral Response Acceleration at a period of 1 sec	$S_{D1}$ = 0.750 g (CBC Eq. 16-37, 16-39)
Seismic Design Category Based on Short-Period Response Acceleration	= D (CBC T1613.2.5(1))
Seismic Design Category Based on a 1-Second Period Response Acceleration	= D (CBC T1613.2.5(2))
Seismic Design Category for large $S_1$ and Occupancy Category	= (Sec 11.6)
Minimum Seismic Design Category if DSA/OSHPD	= (CBC 1613A.2.5)

**Seismic Design Category: D** (Sec 11.6)

### Design Period

Approx Fundamental Period	$T_a$ = 0.118 sec (Eq. 12.8-7)
Fundamental Period From Analysis	$T_b$ = 0.000 sec <i>enter 0 if not performed</i>
$T_0$	$0.2(S_{DS}/S_{D1}) = 0.102$ sec (Sec 11.4.6)
$T_s$	$S_{DS}/S_{D1} = 0.509$ sec (Sec 11.4.6)
Coeff for Upper Limit on Period	$C_u = 1.4$ (Table 12.8-1)
Maximum Fundamental Period	$C_u T_a = 0.165$ sec (Sec 12.8.2)
<b>Design Period T = 0.118 sec</b> (Sec 12.8.2) < <i>Approx Period Used</i>	

### Seismic Response Coefficient

$S_{DS}$ value for determination of $C_s$ and $E_v$	= 1.473 (Sec 12.8.1.3)
For $T \leq T_s$ : $C_s =$	$S_{DS} / (R/I_c) = 0.227$ (Eq. 12.8-2) < <i>Short Period Design</i>
For $T_s < T \leq T_L$ : $C_{s,max} =$	$S_{D1} / (T(R/I_c)) = 0.980$ (Eq. 12.8-3)
For $T > T_L$ : $C_{s,max} =$	$S_{D1} T_L / (T^2(R/I_c)) = 66.555$ (Eq. 12.8-4)
Minimum: $C_{s,abs,min} =$	$\max(0.044 S_{DS} I_c, 0.01) = 0.065$ (Eq. 12.8-5)
Where $S_1 \geq 0.6g$ : $C_{s,min} =$	$0.5 S_1 / (R/I_c) = 0.048$ (Eq. 12.8-6)
Where $S_1 \geq 0.2g$ and site class D:	$C_s = 0.227$ (Sec 11.4.8)

**Base Shear:  $V_{base} = 0.227$  W** (Eq. 12.8-1)

⚠ This is a beta release of the new ATC Hazards by Location website. Please [contact us](#) with feedback. GH-5

❗ The ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)



## Hazards by Location

### Search Information

**Address:** 16700 Euclid Ave, Chino, CA 91708, USA  
**Coordinates:** 33.9458498, -117.6500505  
**Elevation:** 541 ft  
**Timestamp:** 2023-01-11T01:24:48.689Z  
**Hazard Type:** Wind



### ASCE 7-16

MRI 10-Year ..... 66 mph  
MRI 25-Year ..... 72 mph  
MRI 50-Year ..... 77 mph  
MRI 100-Year ..... 82 mph  
Risk Category I ..... 89 mph  
Risk Category II ..... 95 mph  
Risk Category III ..... 102 mph  
Risk Category IV ..... 106 mph

### ASCE 7-10

MRI 10-Year ⚠ Special Region ..... mph  
You are in a special wind region. Please contact the Authority Having Jurisdiction.  
MRI 25-Year ⚠ Special Region ..... mph  
You are in a special wind region. Please contact the Authority Having Jurisdiction.  
MRI 50-Year ⚠ Special Region ..... mph  
You are in a special wind region. Please contact the Authority Having Jurisdiction.  
MRI 100-Year ⚠ Special Region ..... mph  
You are in a special wind region. Please contact the Authority Having Jurisdiction.  
Risk Category I ⚠ Special Region ..... mph  
You are in a special wind region. Please contact the Authority Having Jurisdiction.

### ASCE 7-05

ASCE 7-05 Wind Speed ⚠ Special Region ..... mph

You are in a special wind region. Please contact the Authority Having Jurisdiction.

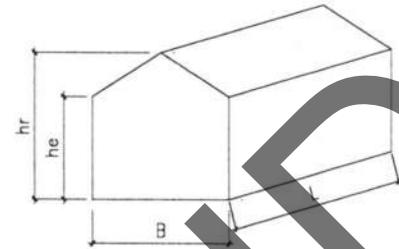
NOT FOR

Wind Analysis for Low-rise Building, Based on ASCE 7-16

Prado Gate House

INPUT DATA

Exposure category (B, C or D, ASCE 7-16 26.7.3)	C	
Importance factor (ASCE 7-16 Table 1.5-2)	$I_w = 1.00$	for all Category
Basic wind speed (ASCE 7-16 26.5.1 or 2015 IBC)	$V = 95$	mph, (152.89 kph)
Topographic factor (ASCE 7-16 26.8 & Table 26.8-1)	$K_{zt} = 1$	Flat
Building height to eave	$h_e = 10$	ft, (3.05 m)
Building height to ridge	$h_r = 14$	ft, (4.27 m)
Building length	$L = 44$	ft, (13.41 m)
Building width	$B = 19$	ft, (5.79 m)
Effective area of components (or Solar Panel area)	$A = 10$	ft <sup>2</sup> , <== Overhang? (Yes or No) No
	( 0.93	m <sup>2</sup> )



DESIGN SUMMARY

Max horizontal force normal to building length, L, face	=	8.45 kips, (38 kN), SD level (LRFD level), Typ.
Max horizontal force normal to building length, B, face	=	3.65 kips, (16 kN)
Max total horizontal torsional load	=	40.32 ft-kips, (55 kN-m)
Max total upward force	=	13.38 kips, (59 kN)

$V = 95 \times 0.6 = 57 \text{ mph} < 60 \text{ mph}$   
SD level (LRFD level), Typ.  
ASCE 7-16 26.2.1  
ASCE 7-16 26.2.2

ANALYSIS

Velocity pressure

$q_h = 0.00256 K_z K_{zt} K_d K_e V^2 = 16.69 \text{ psf}$

- where:  $q_h$  = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 268)
- $K_z$  = velocity pressure exposure coefficient evaluated at height, h. (Tab. 26.10-1, pg 268) = 0.85
- $K_{zt}$  = wind directionality factor. (Tab. 26.6-1, for building, page 266) = 0.85
- h = mean roof height = 12.00 ft
- $K_e$  = ground elevation factor. (1.0 per Sec. 26.9, page 268) < 60 ft, [Satisfactory] (ASCE 7-16 26.2.1)
- < Min (L, B), [Satisfactory] (ASCE 7-16 26.2.2)

Design pressures for MWFRS

$p = q_h [(G C_{pf}) - (G C_{pi})]$

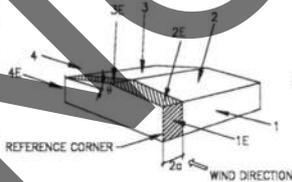
- where: p = pressure in appropriate zone. (Eq. 28.3-1, page 311).  $p_{min} = 16 \text{ psf}$  (ASCE 7-16 28.3.4)
- $G C_{pf}$  = product of gust effect factor and external pressure coefficient, see table below. (Fig. 28.3-1, page 312 & 313)
- $G C_{pi}$  = product of gust effect factor and internal pressure coefficient. (Tab. 26.13-1, Enclosed Building, page 271)
- = 0.18 or -0.18
- a = width of edge strips, Fig 28.3-1, page 312,  $MAX[MIN(0.1B, 0.1L, 0.4h), MIN(0.04B, 0.04L), 3] = 3.00 \text{ ft}$

Net Pressures (psf), Basic Load Cases

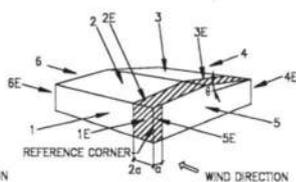
Surface	Roof angle $\theta = 22.83$			Roof angle $\theta = 0.00$		
	$G C_{pf}$	Net Pressure with		$G C_{pf}$	Net Pressure with	
		(+ $G C_{pi}$ )	(- $G C_{pi}$ )		(+ $G C_{pi}$ )	(- $G C_{pi}$ )
1	0.54	5.98	11.99	-0.45	-10.52	-4.51
2	-0.43	-10.27	-4.26	-0.69	-14.52	-8.51
3	-0.47	-10.78	-4.77	-0.37	-9.18	-3.17
4	-0.41	-9.90	-3.89	-0.45	-10.52	-4.51
5				0.40	3.67	9.68
6				-0.29	-7.85	-1.84
1E	0.77	9.83	15.84	-0.48	-11.02	-5.01
2E	-0.69	-14.53	-8.52	-1.07	-20.87	-14.86
3E	-0.64	-13.77	-7.76	-0.53	-11.85	-5.84
4E	-0.59	-12.93	-6.92	-0.48	-11.02	-5.01
5E				0.61	7.18	13.19
6E				-0.43	-10.18	-4.17

Net Pressures (psf), Torsional Load Cases

Surface	Roof angle $\theta = 22.83$		
	$G C_{pf}$	Net Pressure with	
		(+ $G C_{pi}$ )	(- $G C_{pi}$ )
1T	0.54	1.50	3.00
2T	-0.43	-2.57	-1.06
3T	-0.47	-2.70	-1.19
4T	-0.41	-2.47	-0.97
Surface	Roof angle $\theta = 0.00$		
	$G C_{pf}$	Net Pressure with	
		(+ $G C_{pi}$ )	(- $G C_{pi}$ )
5T	0.40	0.92	2.42
6T	-0.29	-1.96	-0.46

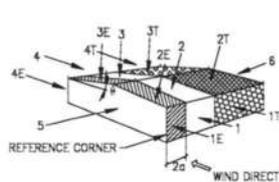


Load Case A (Transverse)

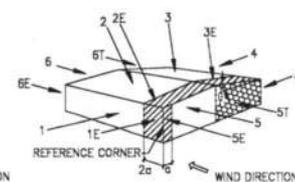


Load Case B (Longitudinal)

Basic Load Cases



Load Case A (Transverse)



Load Case B (Longitudinal)

Torsional Load Cases

# ATC Hazards by Location

## Site Information

**Address:** 16700 Euclid Ave, Chino, CA 91708, USA  
**Coordinates:** 33.9458498, -117.6500505  
**Elevation:** 541 ft  
**Timestamp:** 2023-01-11T01:27:06.778Z  
**Hazard Type:** Seismic  
**Reference Document:** ASCE7-16  
**Risk Category:** II  
**Site Class:** D-default



## Basic Parameters

Name	Value	Description
$S_S$	1.841	$MCE_R$ ground motion (period=0.2s)
$S_1$	0.625	$MCE_R$ ground motion (period=1.0s)
$S_{MS}$	2.209	Site-modified spectral acceleration value
$S_{M1}$	* null	Site-modified spectral acceleration value
$S_{DS}$	1.473	Numeric seismic design value at 0.2s SA
$S_{D1}$	* null	Numeric seismic design value at 1.0s SA

\* See Section 11.4.8

## Additional Information

Name	Value	Description
	* null	Seismic design category
	1.2	Site amplification factor at 0.2s
$F_V$	* null	Site amplification factor at 1.0s
$CR_S$	0.923	Coefficient of risk (0.2s)
$CR_1$	0.914	Coefficient of risk (1.0s)
PGA	0.77	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.2	Site amplification factor at PGA
$PGA_M$	0.924	Site modified peak ground acceleration
$T_L$	8	Long-period transition period (s)
$S_sRT$	1.841	Probabilistic risk-targeted ground motion (0.2s)
$S_sUH$	1.995	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
$S_sD$	1.875	Factored deterministic acceleration value (0.2s)
$S_1RT$	0.653	Probabilistic risk-targeted ground motion (1.0s)
$S_1UH$	0.715	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
$S_1D$	0.625	Factored deterministic acceleration value (1.0s)
PGAd	0.77	Factored deterministic acceleration value (PGA)

\* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)

## Disclaimer

Hazard loads are provided by the U.S. Geological Survey [Seismic Design Web Services](#).

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## LATERAL ANALYSIS

SEISMIC:  $V_E = 0.227 W_p \leftarrow$  STRENGTH

### SEISMIC MASSING

$$K_{OOP} = 20^{\#} \times 47' \times 19' = 1767^k$$

$$\text{EXT. WALLS} = 16^{\#} \times [(36' \times 2 \times 10') + (13' \times 17' \times 2)] = 185$$

$$\text{INT. WALLS} = 10^{\#} \times 10\frac{1}{2}' \times [11'(2) + 16' + 19'] = 2.85$$

$$V_E = 0.227(40) \times 0.7 = 6.5^k$$

$$W = 40^k$$

$\uparrow$  GREATER THAN  $W/V_E = 5^k$

### SHEAR WALLS

E-W WALLS  $L = 13'-0"$  E.B. SIDE

$$\text{LIVE} \rightarrow V_E = 7^k \times \frac{1}{2} = 3.5^k$$

$1\frac{1}{2}$

$$V/L = \frac{4^k \times 1000}{13'} = 30^k \text{ PLF} \leftarrow \text{SHEAR WALL TYPE B}$$

$$\text{D.M.} = 3.5^k \times 10' = 35^k$$

$$\text{U.L.} = \frac{35}{12.5'} = 2.8^k \leftarrow \text{HORIZONTAL HS CAP} = 4.9^k$$

N-S WALLS

$$L_T = 2'-4" + 2'-4" = 4'-8"$$

$$\text{HORIZ WALL} = 2.99 \times 9.5 = 8.15 \text{ } 77\frac{1}{8}" \leftarrow \text{PROVIDES CONT. STRAP OF NARROW HEIGHT}$$

SOUTH WALL

$$V_E = \frac{6,500}{41'} \times 20\frac{1}{2}' = 3.5^k$$

$$V/L = \frac{3,500}{2.99 + 2.99} = 752 \text{ PLF} \leftarrow \text{TYPE D SHEAR WALL W/ CONT. STRAP OVER WINDOWS}$$

$$\text{D.M.} = 3.5^k \times 7' = 24.5^k$$

$$\text{U.L.} = \frac{24,500 \times \frac{1}{2}}{2.0} = 6.12^k \leftarrow \text{HORIZONTAL H7 CAP} = 6.5^k$$

NORTH WALL

$$L_T = 2'-9" + 2'-9" = 5'-6"$$

$$V_E = \frac{6,500}{41} \times [36\frac{1}{2}' + 6'] = 3.8^k$$

$$V/L = \frac{3,800 \times \frac{1}{2}}{2.75'} = 692 \text{ PLF} \leftarrow \text{TYPE D}$$

$$\text{D.M.} = 3.8 \times 7' = 27^k$$

$$\text{U.L.} = \frac{27 \times \frac{1}{2}}{2.17'} = 6.12^k \leftarrow \text{H7}$$

$1\frac{1}{2}$

## LINE 1000 FOUNDATION

LINE C  $OM = \sqrt{6} \times \frac{1}{2} \times 12' = 59 k'$

SOUTH WALL

R.M:

FOOT:  $12'' \times 2' \times 16' = 0.60 k'$

WALL:  $16'' \times 11' \times 16' = 3.1$

FTG:  $150'' \times 2' \times 2' \times 16' = 9.6$

SLAB:  $4 \times \frac{1}{2} \times 2' \times 150'' \times 16' = 1.6$

CONCRETE

$\Sigma W = 15 k'$

$0.60 k' \times 16/2 = 4.7 k'$

$= 25$

$= 77$

$= 15$

$\Sigma PM = 120 k'$

STABILITY =  $\frac{0.9 \Sigma PM}{OM} = \frac{0.9 \times 120}{59} = 2.176 > 1.1$

S.P.  $c = \frac{OM}{\Sigma W} = 2.6 < \frac{1}{6} = 2.125 \therefore$  FULL BARRING

$\frac{p}{b} = \frac{15}{16' \times 2} = 0.46 ksf$

$\frac{m}{n} = \frac{29}{\frac{1}{2} \times 16'} = 0.46$

USE: 24" NIDB CONT. FTG. w/ 5-#5 CONT. MIN

LINE A [NORTH]

NORTH WALL

$OM = 3.8 k' \times 12' = 48 k'$

R.M:

FOOT:  $12'' \times 2' \times 16' = 0.60 k'$

WALL:  $16'' \times 11' \times 16' = 3.1$

FTG:  $150'' \times 2' \times 2' \times 16' = 9.6$

SLAB:  $4 \times \frac{1}{2} \times 2' \times 150'' \times 16' = 1.6$

$= 0.60 \times 16/2 = 4.7$

$= 3.1$

$= 9.6$

$= 1.6$

$\Sigma W = 15 k'$

$= 4.7$

$= 25$

$= 77$

$= 15$

$\Sigma PM = 120 k'$

STABILITY =  $\frac{0.9 \times 120}{48} = 2.25 > 1.1$

S.P.  $c = \frac{OM}{\Sigma W} = 4.7 \frac{1}{6} = 2.125$

$\bar{x} = \frac{\Sigma PM}{\Sigma W} = 8' \therefore 1' < 5[\bar{x} - c] = 12.51$

$q_s = \frac{2 \Sigma W}{\bar{x} \times 2} = \frac{2 \times 15}{8' \times 2} = 1.09 ksf$

USE: 24" NIDB CONT. FOOTING w/ 5-#5 CONT. MIN.

EAST AND WEST WALL (MINIMUM LOADINGS)

$$V_B = 7k \times \frac{1}{2} = 3.5k$$

$$OM = 3.5k \times 10' = 35k'$$

RM: ROOF: $18^H \times 10 \frac{1}{2} \times 34'$	$= 4.9k'$	$\times 10 \frac{1}{2}$	$= 25k'$
WALLS: $16^H \times 10' \times 34'$	$= 5.44k'$	$\times$	$= 27.2k'$
FIG: $1.5' \times 2' \times 34' \times 150^H$	$= 15k'$	$\times$	$= 75k'$
SUB: $\frac{1}{2} \times 1' \times 150^H \times 34'$	$= 1.4k'$	$\times$	$= 7k'$
	$\Sigma WT = 27k'$		$\Sigma EM = 135k'$

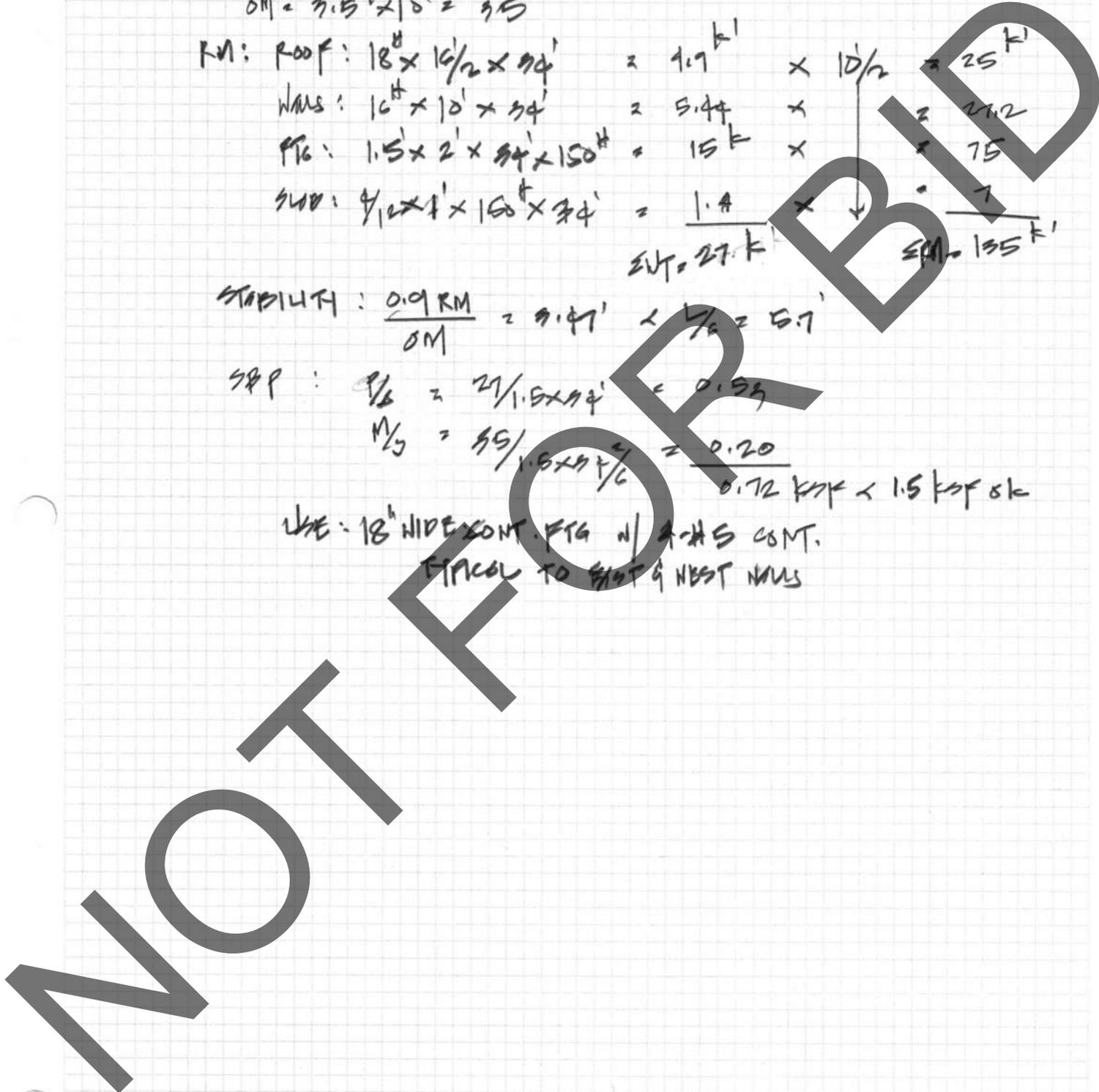
STABILITY:  $\frac{0.09 RM}{OM} = 0.47' < \frac{L}{2} = 5.7'$

SPP:  $\frac{P}{W} = \frac{27}{1.5 \times 34} = 0.52$

$\frac{M}{W} = \frac{35}{1.5 \times 34} = 0.20$

$0.72 ksf < 1.5 ksf ok$

USE: 18<sup>H</sup> NIDEX COM. FIG w/ 4-#5 COM.  
TYPICAL TO EAST & WEST WALLS



CHASE 16" x 16" MASONRY COLUMN / FOOTING

FOOTING

$$FOOTING = [32" + 20"] \times [(16 \frac{1}{2} + 1.17) \times 6 \frac{1}{2}] = 2'k$$

$$CMU = \frac{16 \times 16}{144} \times 150 \times 2.67' = \frac{0.8'k}{\text{EFF} = 2.8'k}$$

$$APPC = \frac{3'k}{1.5} = 2'k$$

USE 2' x 2' x 18" THK PAD  
W/ 3 #5 REINFC  
BOTTOM REINFC

PILASTER: USE: 16" x 16" CMU PILASTER

W/ 4-#5 VERTICAL, #3 TIES @ 8" O.C.

NOT FOR BUILD

ENTRANCE

METAL DECK

$L_{MAX SPAN} = 8'-0"$

$DL_{TL} = 10 PPF + 20 PPF = 30 PPF$

USE: ER2R X 20 GA ESR SHEET 226

AT SINGLE SPAN

$ALLOW DL_{TL} = 86/60 > 10/20$  *OK*

FOR FRAMING STRUCTURE

SEE RISSO DESIGN DETAILS  
PRINT-OUT

NOT FOR BID



# EVALUATION REPORT

Number: 226

Originally Issued: 06/01/2011

Revised: 08/01/2022

Valid Through: 06/30/2023

TABLE 3.7 - ER2R & ER2RA ALLOWABLE UNIFORM LOAD TABLES (psf)

**ER2R**

Span Condition	Gage	Design Thick. (in)	Span Length Center to Center of Supports (ft-in)												
			6-0	6-6	7-0	7-6	8-0	9-0	10-0	11-0	12-0	13-0	14-0	15-0	16-0
1	22	0.0295	120/116	102/91	88/73	77/59	68/49	53/34	43/25	-	-	-	-	-	-
	20	0.0358	151/143	129/112	111/90	97/73	86/60	67/42	54/31	45/23	-	-	-	-	-
	18	0.0474	209/192	178/151	153/121	134/98	118/81	93/57	75/41	62/31	52/24	-	-	-	-
	16	0.0600	262/240	223/189	193/151	168/123	148/101	117/71	94/52	78/39	66/30	56/24	-	-	-
2	22	0.0295	111/278	95/219	82/175	71/142	63/117	49/82	40/60	33/45	28/35	24/27	20/22	-	-
	20	0.0358	138/344	117/271	101/217	88/176	78/145	61/102	50/74	41/56	34/43	29/34	25/27	22/22	-
	18	0.0474	191/400	163/363	140/290	122/236	108/195	85/137	69/100	57/75	48/58	41/45	35/36	31/30	27/23
	16	0.0600	253/400	216/400	186/364	162/296	143/244	113/171	91/125	75/94	63/72	54/57	47/46	41/37	36/29
3 or more	22	0.0295	139/218	118/171	102/137	89/111	78/92	62/64	50/47	41/35	35/27	30/21	-	-	-
	20	0.0358	172/269	147/212	127/170	110/138	97/114	77/80	62/58	51/44	43/34	37/26	32/21	-	-
	18	0.0474	239/361	204/284	176/227	153/185	134/152	106/107	86/78	71/59	60/45	51/35	44/28	38/23	-
	16	0.0600	317/400	270/356	233/285	203/232	178/191	141/134	114/98	94/73	79/57	67/44	58/36	51/29	45/22

**ER2RA**

Span Condition	Gage	Design Thick. (in)	Span Length Center to Center of Supports (ft-in)												
			6-0	6-6	7-0	7-6	8-0	9-0	10-0	11-0	12-0	13-0	14-0	15-0	16-0
1	22	0.0295	116/109	98/86	85/69	74/56	65/46	51/32	42/24	-	-	-	-	-	-
	20	0.0358	147/134	125/105	108/84	94/68	83/56	65/40	53/29	44/22	-	-	-	-	-
	18	0.0474	204/179	174/141	150/113	131/92	115/76	91/53	74/39	61/29	51/22	-	-	-	-
	16	0.0600	258/225	220/177	189/142	165/115	145/95	115/67	93/49	77/37	64/28	55/22	-	-	-
2	22	0.0295	107/263	91/207	78/166	68/135	60/111	47/78	38/57	32/43	27/33	23/26	20/21	-	-
	20	0.0358	129/322	110/253	95/203	82/165	73/136	57/95	46/70	38/52	32/40	27/32	24/25	21/21	-
	18	0.0474	178/460	151/340	131/172	114/221	100/182	79/128	64/93	53/70	44/54	38/42	33/34	28/28	25/21
	16	0.0600	240/400	204/400	176/341	154/277	135/228	107/160	86/117	71/88	60/68	51/53	44/43	38/35	34/27
3 or more	22	0.0295	133/206	114/162	98/130	85/106	75/87	59/61	48/45	40/33	33/26	28/20	-	-	-
	20	0.0358	161/252	137/198	118/159	103/129	91/106	72/75	58/54	48/41	40/31	34/25	30/20	-	-
	18	0.0474	222/338	189/265	163/213	142/173	125/143	99/100	80/73	66/55	56/42	47/33	41/27	36/22	-
	16	0.0600	300/400	256/333	220/267	192/217	169/179	133/126	108/92	89/69	75/53	64/42	55/33	48/27	42/21

- Notes:
- Table 3.7 assumes that all loading is uniform.
  - Loads are based on ASD Design.
  - Uniform load values listed on the left side of the box,  $\frac{100}{75}$ , are governed by strength and the values listed on the right side,  $\frac{100}{75}$ , are governed by deflection.
  - The deflection criteria used for generating Table 3.7 were L/240 or 0.75 inch maximum. The registered design professional shall calculate the allowable uniform load if a different deflection criteria is required.
  - Stress governed values assume a maximum allowable stress of 24 ksi.
  - The tabulated loads are valid where the minimum end bearing length is 1.5 inches and the minimum interior bearing length is 3 inches.

ENTR CONN

$$\text{SEISMIC } V_E = \frac{S_{DS}}{R/I_c} W$$

$$S_{DS} = 1.475$$

$$I_c = 1.0$$

$$R = 1.25$$

← STEEL BRIDGING CONTAINER

$$V_E = \frac{1.475}{\frac{1.25}{1.0}} \times W = 1.18W \text{ (LRFD)}$$

SEISMIC MASS

$$\text{ROOF: } [10' - 8''] \times 13' \times 68' = 7' \text{ k}$$

FRAMING = FROM RISSO

$$W_T = 27' \text{ k}$$

$$W_T: 4 \text{ - HSS } 8 \times 8 \times 1/4 \quad W_T = 25' \times 25' \times 4' = 2.5' \text{ k}$$

$$\text{FRAMING } W_T = 27' \text{ k} - [2.5' \times 8' \times 1/2 \text{ HEIGHT}] = 27' \text{ k}$$

$$\therefore V_E = 1.18 W_T = 1.18 (27' + 1' \text{ k}) = 40' \text{ k}$$

FRAMING LOADS

$$E_{X1} = V_E \times 1/3 = 13' \text{ k} \times 1/3 = 1.62' \text{ k/ft}$$

$$E_{X2} = 1.62' \text{ k/ft}$$

$$E_{X3} = V_E \times 1/6 \times 1/2 = 6.67' \text{ k/ft} \times 1/2 = 0.84' \text{ k/ft}$$

$$E_{Z1} = [40' \text{ k} \times 1/2] \times 1/3 = 6.67' \text{ k}$$

$$E_{Z2} = [40' \text{ k} \times 1/2] \times (1/6 \times 1/2) = 3.33' \text{ k}$$

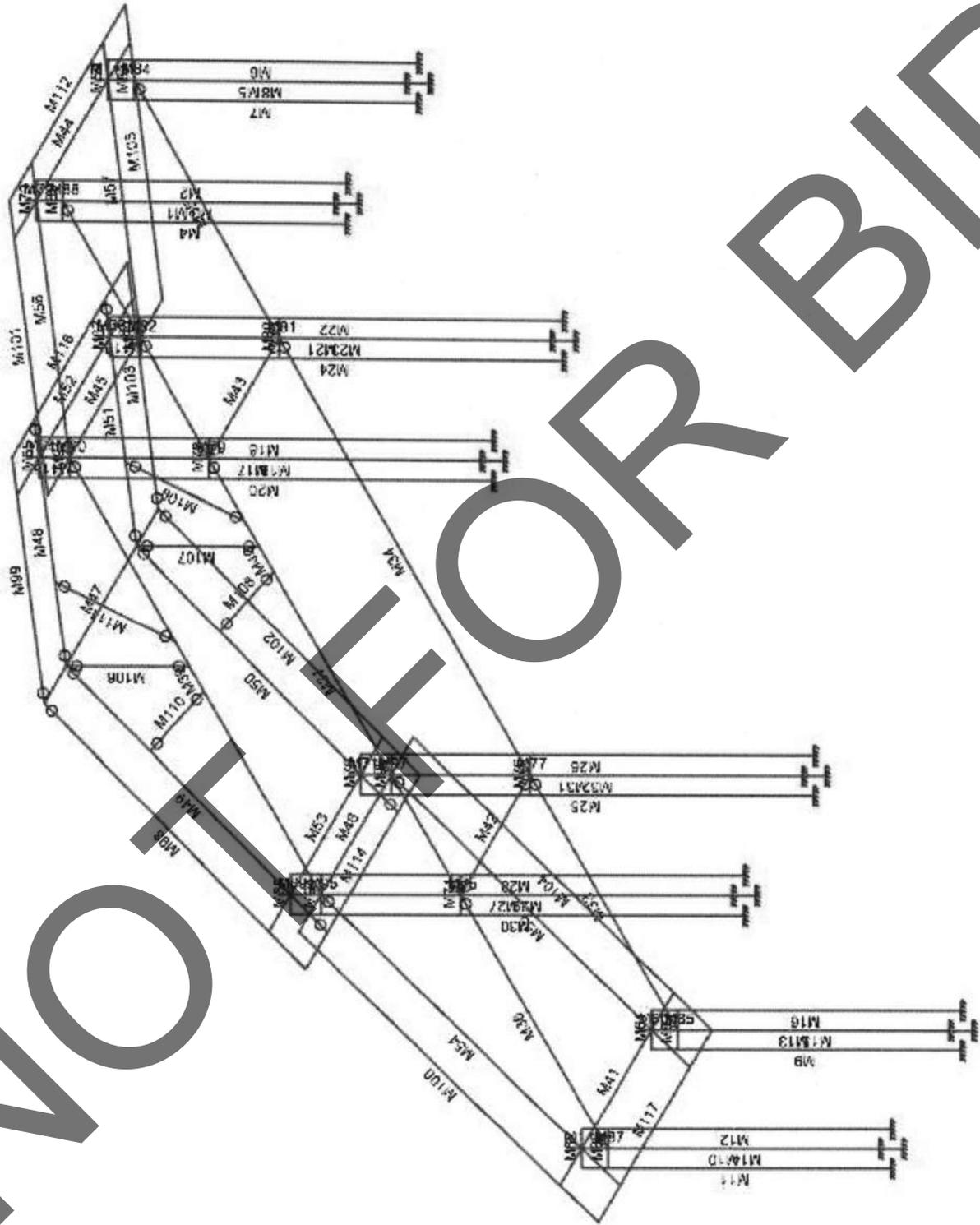
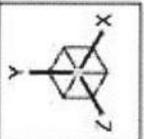


Company : RM Byrd/Miyamoto International, Inc  
 Designer : mcabral  
 Job Number :  
 Model Name :

1/23/2023  
 11:45:26 AM  
 Checked By : RMB

**Material Takeoff**

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General Members				
2	RIGID	RE4X4	40	75.4	0
3	Total General		40	75.4	0
4					
5	Hot Rolled Steel				
6	A500 Gr.B RECT	HSS10X2X4	14	211.5	4.055
7	A500 Gr.B RECT	HSS12X8X4	17	291	9.542
8	A500 Gr.B RECT	HSS6X6X4	6	39.7	0.761
9	A500 Gr.B RECT	HSS8X8X4	40	855.9	22.24
10	Total HR Steel		77	1398.1	36.599



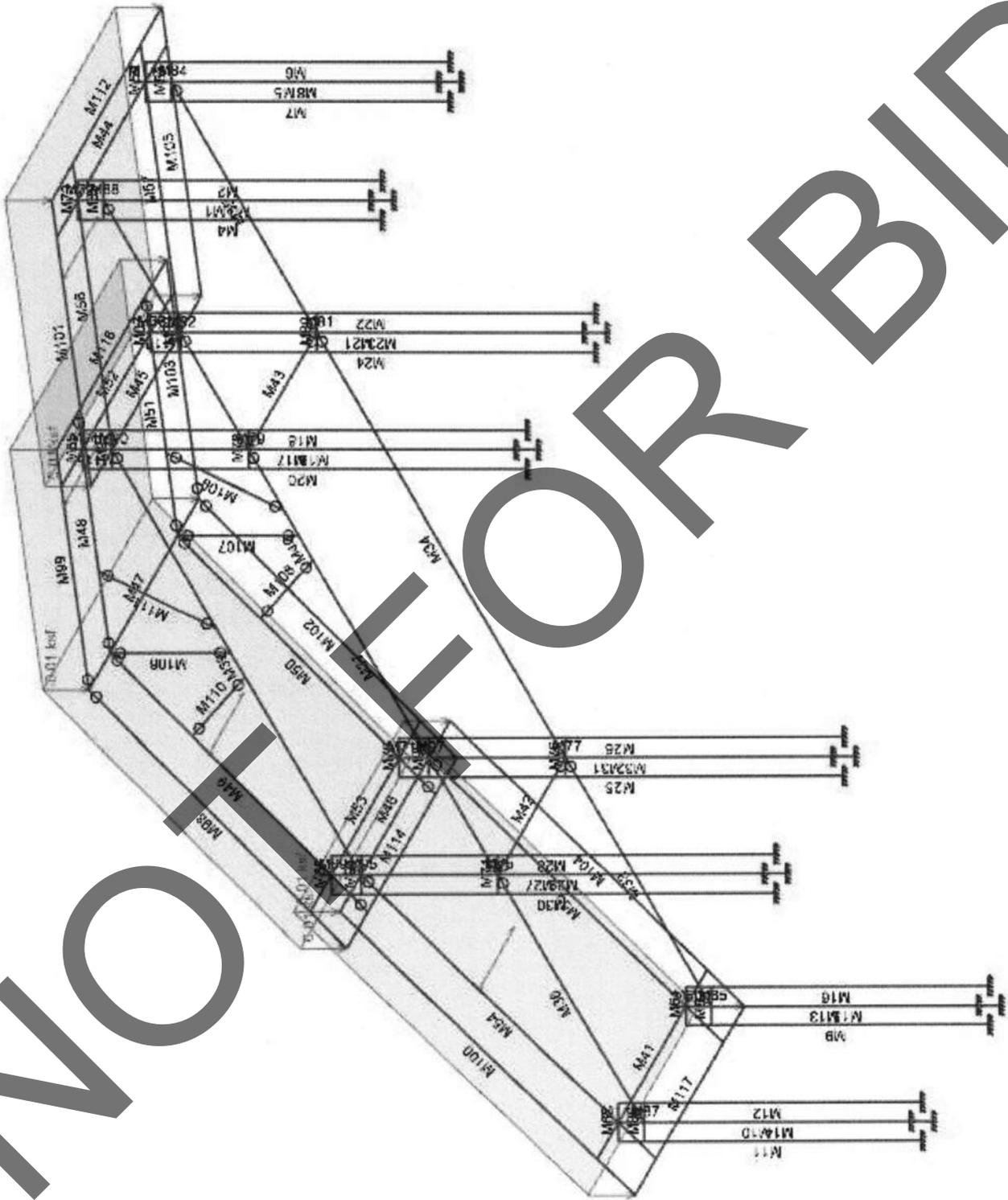
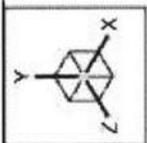
NO FOR BID

Jan 23, 2023

Prado Park Gate House-3b.r3d

RM Byrd/Miyamoto International, Inc

mcabral



NO FOR BID

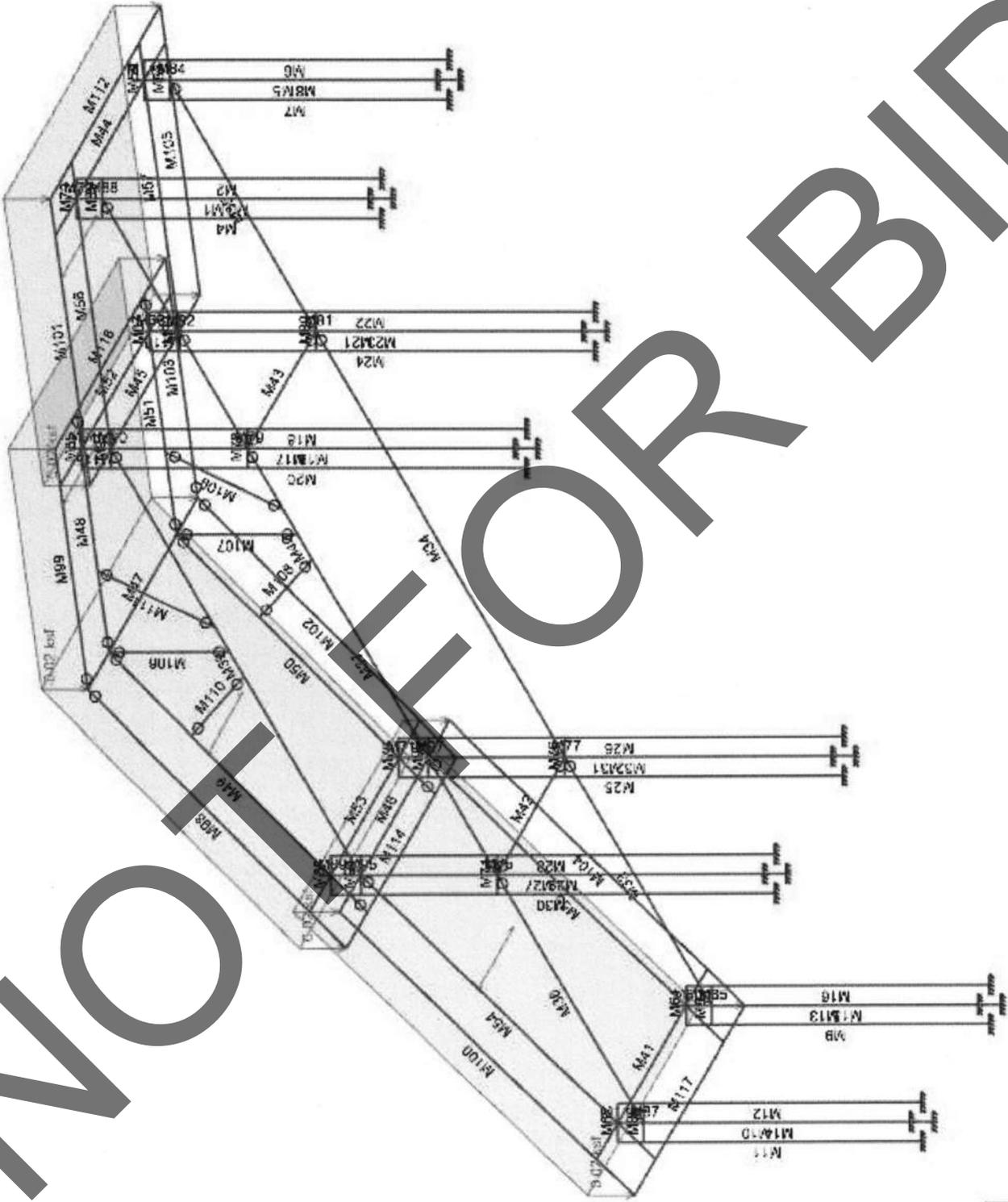
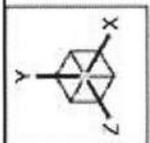
Locals BLC 1 DL

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Jan 23, 2023

Prado Park Gate House-3b.r3d



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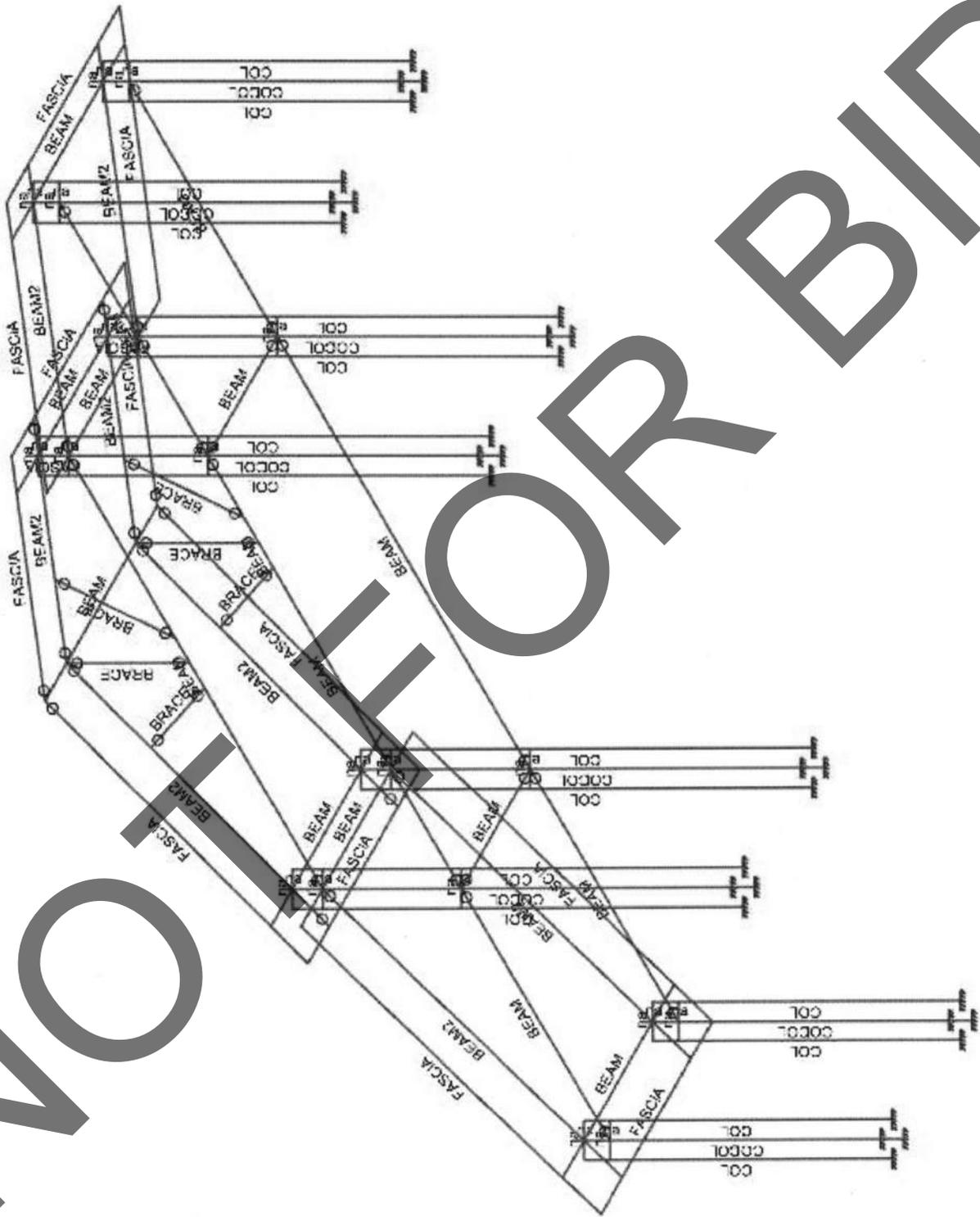
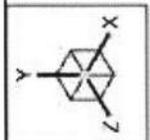
Level: BLC.2 RLL

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Jan 23, 2023

Prado Park Gate House-3b.r3d



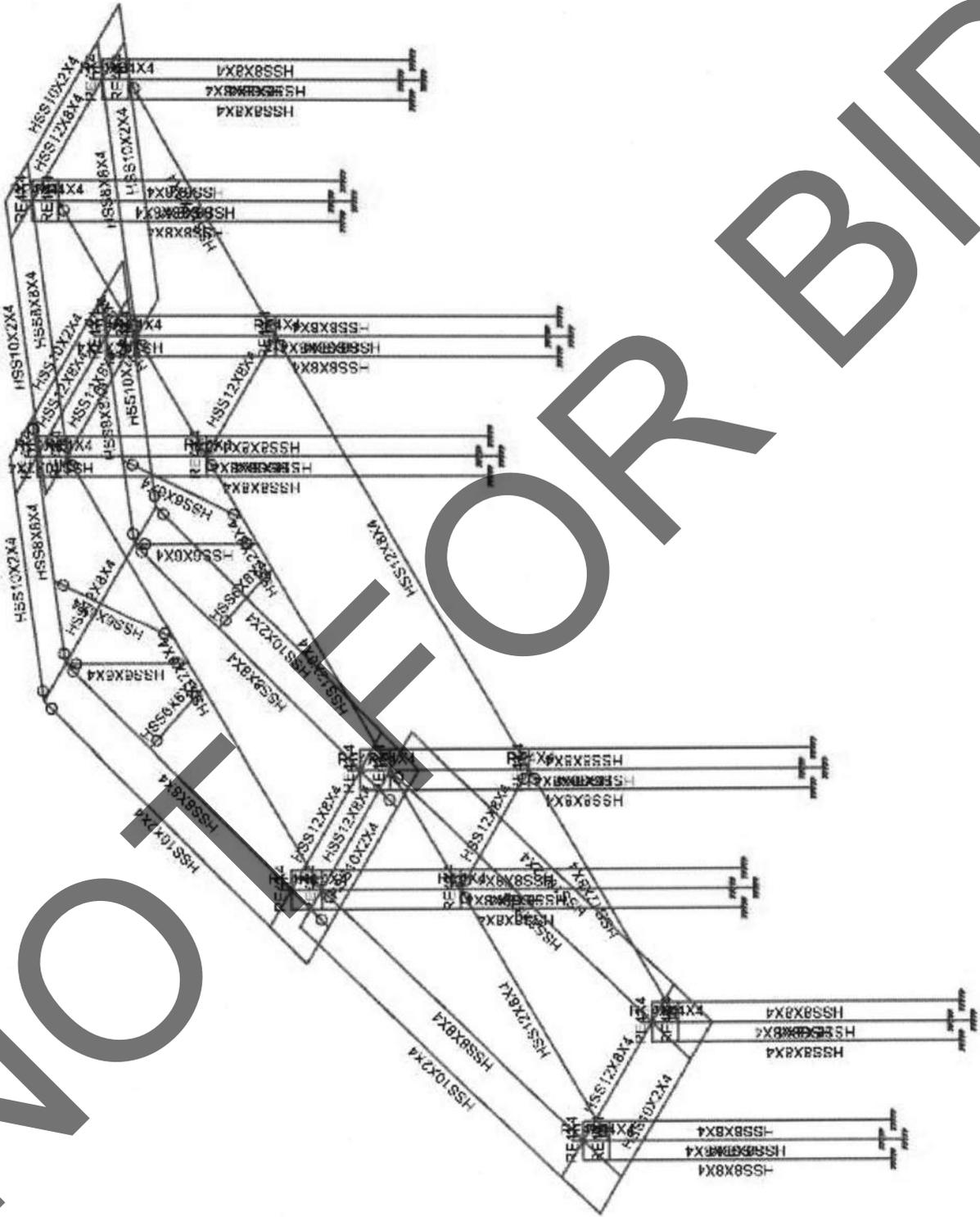
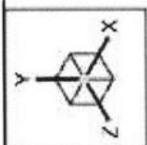
NO FOR BID

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Jan 23, 2023

Prado Park Gate House-3b.r3d

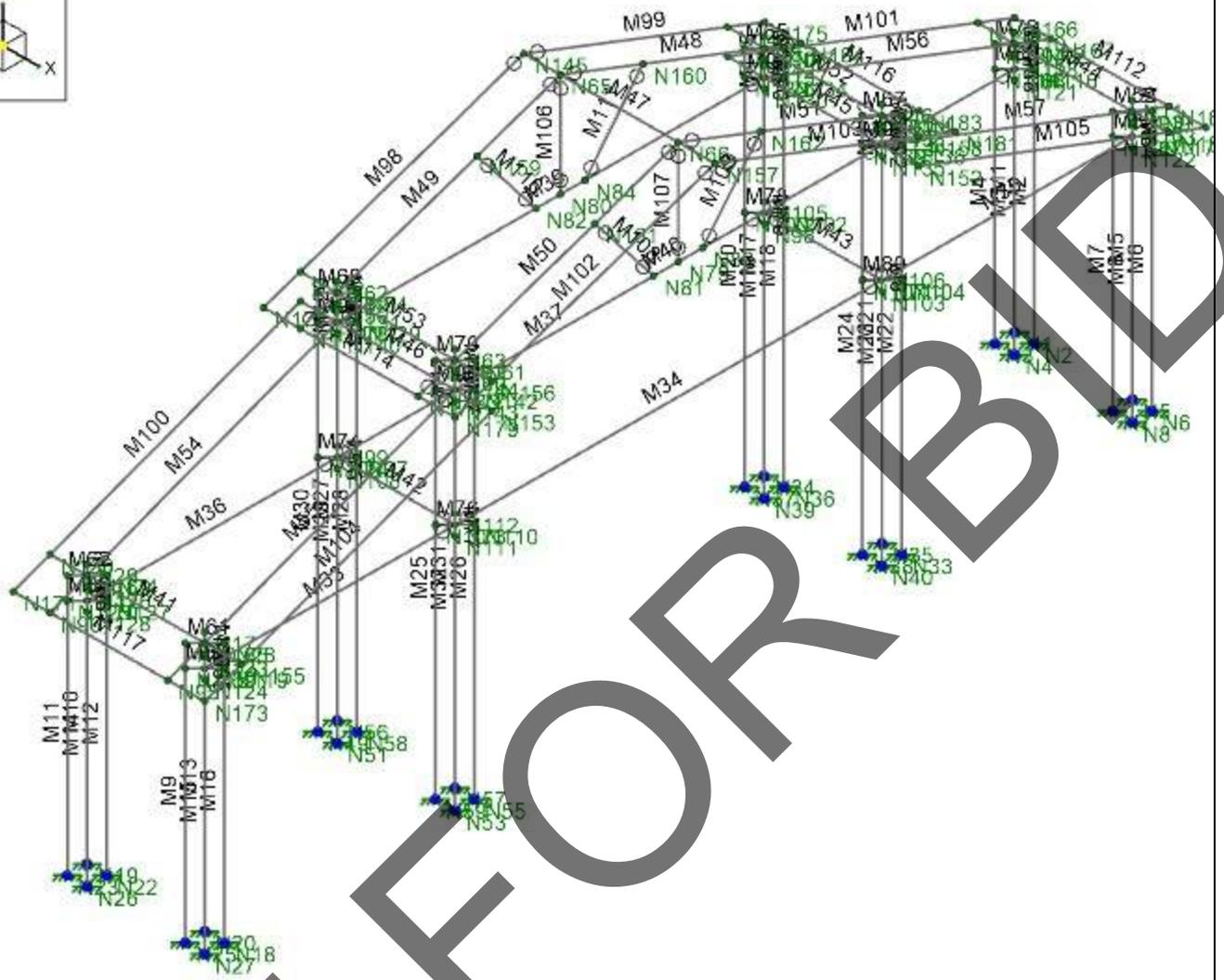


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Jan 23, 2023

Prado Park Gate House-3b.r3d



RM Byrd/Miyamoto International, ...  
erejuso

Jan 24, 2023  
Prado Park Gate House-3b.r3d

**Model Settings**

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in <sup>2</sup> )	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes
Approximate Mesh Size (in)	24
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3
Single	No
Multiple (Optimum)	Yes
Maximum	No
Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes
Default Global Plane for z-axis	XZ
Plate Local Axis Orientation	Global
Hot Rolled Steel	AISC 15th (360-16): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 15th (360-16): LRFD
Cold Formed Steel	AISI S100-16: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AWC NDS-18: LRFD
Temperature	< 100F
Concrete	ACI 318-19
Masonry	TMS 402-16: Strength
Aluminum	AA ADM1-15: LRFD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
List forces which were ignored for design in the Detail Report	Yes
Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No
Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4
Code	ASCE 7-16
Risk Category	I or II
Drift Cat	Other

**Model Settings (Continued)**

Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes
S <sub>1</sub> (g)	0.625
SD <sub>1</sub> (g)	1
SD <sub>s</sub> (g)	1.473
T <sub>1</sub> (sec)	8
T Z (sec)	
T X (sec)	
C <sub>z</sub>	0.02
C <sub>x</sub>	0.02
C <sub>Exp. Z</sub>	0.75
C <sub>Exp. X</sub>	0.75
R Z	1.25
R X	1.25
Ω <sub>z</sub>	1.25
Ω <sub>x</sub>	1.25
C <sub>z</sub>	1.25
C <sub>x</sub>	1.25
ρ Z	1
ρ X	1

NOT FOR BID

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>6</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

**General Materials Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>6</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Plate Methodology
1	gen Conc3NW	3155	1372	0.15	0.6	0.145	Isotropic
2	gen Conc4NW	3644	1584	0.15	0.6	0.145	Isotropic
3	gen Conc3LW	2085	906	0.15	0.6	0.11	Isotropic
4	gen Conc4LW	2408	1047	0.15	0.6	0.11	Isotropic
5	gen Alum	10100	4077	0.3	1.29	0.173	Isotropic
6	gen Steel	29000	11154	0.3	0.65	0.49	Isotropic
7	gen Plywood	1800	38	0	0.3	0.035	Isotropic
8	RIGID	1e+6		0.3	0	0	Isotropic
9	gen Ortho	N/A	N/A	N/A	0.65	0.49	Orthotropic

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	COL	HSS8X8X4	Column	SquareTube	A500 Gr.B RECT	Typical	7.1	70.7	70.7	111
2	BEAM	HSS12X8X4	Beam	RECT	A500 Gr.B RECT	Typical	8.96	98.8	184	202
3	BRACE	HSS6X6X4	VBrace	Tube	A500 Gr.B RECT	Typical	5.24	28.6	28.6	45.6
4	FASCIA	HSS10X2X4	Beam	RECT	A500 Gr.B RECT	Typical	5.24	3.67	52.5	12.2
5	BEAM2	HSS8X8X4	Beam	Tube	A500 Gr.B RECT	Typical	7.1	70.7	70.7	111
6	BEAM3	HSS8X6X4	Beam	Tube	A500 Gr.B RECT	Typical	6.17	36.4	56.6	70.3

**Deflection Design**

	Label	LC	Ratio	LC	Ratio	LC	Ratio
1	Typical	1	240	2	360	3	240
2	DR1	1	240	2	360	3	240

**Frame / HR Seismic Design Rule**

	Label	Frame Type	Column Ductility	Column Overstrength	Beam Ductility	Connection	Beam Overstrength	Z Factor	Hinge Location [in]	Brace Ductility	Brace Overstrength	KL/r
1	OCBF	OCBF	Minimal	Yes	Minimal	Other/None		N/A	N/A	Minimal		
2	SCBF	SCBF	High	Yes	High	Other/None	Yes	N/A	N/A	High		Yes
3	OMF	OMF	Minimal	Yes	Minimal	BUEEP			12	N/A		
4	IMF	IMF	Moderate	Yes	Moderate	BFP			12	N/A		
5	SMF-RBS	SMF	High	Yes	High	RBS		0.685	14.625	N/A		
6	SMF-KaiserB	SMF	High	Yes	High	KBB-B			12	N/A		
7	SMF-KaiserW	SMF	High	Yes	High	KBB-W			12	N/A		
8	SMF-BSEEP	SMF	High	Yes	High	BSEEP			12	N/A		
9	SMF-WUF-W	SMF	High	Yes	High	WUF-W				N/A		

**Node Coordinates**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N184	0.66661	25.032815	15.16667	
2	N183	8.66661	25.032815	15.16667	
3	N176	8.666616	25.11755	49.16667	
4	N177	0.666616	25.11755	49.16667	
5	N167	0.666666	16.794118	-1.83333	
6	N168	8.666666	16.794118	-1.83333	
7	N173	11.166666	16.794118	66.16667	
8	N171	-1.833334	16.794118	66.16667	
9	N1	0	0	0	
10	N2	1.333	0	0	
11	N3	0	0	1.33	
12	N4	1.333	0	1.333	
13	N5	8	0	0	
14	N6	9.333	0	0	
15	N7	8	0	1.33	
16	N8	9.333	0	1.333	
17	N9	9.333	17.75	0	
18	N10	0	17.75	0	
19	N11	8	17.75	0	
20	N12	1.333	17.75	0	
21	N13	0	17.75	1.33	
22	N14	8	17.75	1.33	
23	N15	1.333	17.75	1.333	
24	N16	9.333	17.75	1.333	
25	N17	8	17.75	63	
26	N18	9.333	0	63	
27	N19	0	0	63	
28	N20	8	0	63	
29	N21	0	17.75	64.33	
30	N22	1.333	0	63	
31	N23	0	0	64.33	
32	N24	1.333	17.75	63	
33	N25	8	0	64.33	
34	N26	1.333	0	64.333	
35	N27	9.333	0	64.333	
36	N28	9.333	17.75	63	
37	N29	0	17.75	63	
38	N30	8	17.75	64.33	
39	N31	1.333	17.75	64.333	
40	N32	9.333	17.75	64.333	
41	N33	9.333	0	17	
42	N34	0	0	17	
43	N35	8	0	17	
44	N36	1.333	0	17	
45	N37	0	0	18.33	
46	N38	8	0	18.33	
47	N39	1.333	0	18.333	
48	N40	9.333	0	18.333	
49	N41	0	25.99667	18.33	
50	N42	1.333	25.99667	18.333	
51	N43	9.333	25.99667	18.333	
52	N44	9.333	25.99667	17	
53	N45	0	25.99667	17	
54	N46	8	25.99667	17	
55	N47	1.333	25.99667	17	

**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	N48	8	25.99667	18.33	
57	N49	0	0	47.33	
58	N50	1.333	25.99667	47.333	
59	N51	1.333	0	47.333	
60	N52	0	25.99667	47.33	
61	N53	9.333	0	47.333	
62	N54	1.333	25.99667	46	
63	N55	9.333	0	46	
64	N56	0	0	46	
65	N57	8	0	46	
66	N58	1.333	0	46	
67	N59	8	0	47.33	
68	N60	9.333	25.99667	47.333	
69	N61	9.333	25.99667	46	
70	N62	0	25.99667	46	
71	N63	8	25.99667	46	
72	N64	8	25.99667	47.33	
73	N65	0.667	31.33	31.5	
74	N66	8.667	31.33	31.5	
75	N67	8.6667	16.25	0.66667	
76	N68	0.6667	16.25	0.66667	
77	N69	8.6667	16.25	63.66667	
78	N70	0.6667	16.25	63.66667	
79	N71	8.6667	16.25	17.66667	
80	N72	0.6667	16.25	17.66667	
81	N73	8.6667	16.25	46.66667	
82	N74	0.6667	16.25	46.66667	
83	N75	8.6667	24.25	17.66667	
84	N76	0.6667	24.25	17.66667	
85	N77	8.6667	24.25	46.66667	
86	N78	0.6667	24.25	46.66667	
87	N79	8.6667	24.25	31.500003	
88	N80	0.6667	24.25	31.500003	
89	N81	8.6667	24.25	33.170003	
90	N82	0.6667	24.25	33.170003	
91	N83	8.6667	24.25	29.830003	
92	N84	0.6667	24.25	29.830003	
93	N89	0.66667	25.99667	46.66667	
94	N90	0.66667	25.99667	17.66667	
95	N91	8.66667	25.99667	17.66667	
96	N92	8.66667	25.99667	46.66667	
97	N93	8.66667	17.75	0.66667	
98	N94	0.66667	17.75	0.66667	
99	N95	8.666666	16.794118	66.16667	
100	N96	0.666666	16.794118	66.16667	
101	N97	1.333	16.24667	46	
102	N98	1.333	16.24667	18.333	
103	N99	0	16.24667	46	
104	N100	0	16.24667	18.33	
105	N101	8	16.24667	47.33	
106	N102	1.333	16.24667	17	
107	N103	9.333	16.24667	18.333	
108	N104	9.333	16.24667	17	
109	N105	0	16.24667	17	
110	N106	8	16.24667	17	

**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	N107	8	16.24667	18.33	
112	N108	1.333	16.24667	47.333	
113	N109	0	16.24667	47.33	
114	N110	9.333	16.24667	46	
115	N111	9.333	16.24667	47.333	
116	N112	8	16.24667	46	
117	N113	8	16.25	0	
118	N114	0	16.25	1.33	
119	N115	8	16.25	64.33	
120	N116	1.333	16.25	0	
121	N117	9.333	16.25	0	
122	N118	0	16.25	0	
123	N119	9.333	16.25	63	
124	N120	8	16.25	1.33	
125	N121	1.333	16.25	1.333	
126	N122	9.333	16.25	1.333	
127	N123	8	16.25	63	
128	N124	9.333	16.25	64.333	
129	N125	0	16.25	64.33	
130	N126	0	16.25	63	
131	N127	1.333	16.25	63	
132	N129	1.333	24.24967	46	
133	N128	1.333	16.25	64.333	
134	N130	1.333	24.24967	18.333	
135	N131	0	24.24967	46	
136	N132	0	24.24967	18.33	
137	N133	8	24.24967	47.33	
138	N134	1.333	24.24967	17	
139	N135	9.333	24.24967	18.333	
140	N136	9.333	24.24967	17	
141	N137	0	24.24967	17	
142	N138	8	24.24967	17	
143	N139	8	24.24967	18.33	
144	N140	1.333	24.24967	47.333	
145	N141	0	24.24967	47.33	
146	N142	9.333	24.24967	46	
147	N143	9.333	24.24967	47.333	
148	N144	8	24.24967	46	
149	N145	-1.833	31.33	31.5	
150	N146	-1.83333	25.99667	46.66667	
151	N147	-1.8333	24.25	17.66667	
152	N148	-1.83333	25.99667	17.66667	
153	N149	-1.83333	17.75	0.66667	
154	N150	-1.83333	17.75	63.66667	
155	N151	-1.8333	24.25	46.66667	
156	N152	11.1667	24.25	17.66667	
157	N153	11.1667	24.25	46.66667	
158	N154	11.16667	17.75	0.66667	
159	N155	11.16667	17.75	63.66667	
160	N156	11.16667	25.99667	46.66667	
161	N157	11.167	31.33	31.5	
162	N158	11.16667	25.99667	17.66667	
163	N159	0.666877	29.339589	37.160235	
164	N160	0.666866	29.171607	25.901666	
165	N161	8.666877	29.339589	37.160235	

**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
166	N162	8.666866	29.171607	25.901666	
167	N164	11.166666	16.794118	-1.833333	
168	N166	-1.833334	16.794118	-1.833333	
169	N165	8.66667	17.75	63.66667	
170	N169	0.66667	17.75	63.66667	
171	N178	-1.833384	25.11755	49.16667	
172	N179	11.166616	25.11755	49.16667	
173	N175	-1.83339	25.032815	15.16667	
174	N181	11.16661	25.032815	15.16667	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N59	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N27	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N49	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N55	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N56	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N39	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N34	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N58	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N40	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
16	N37	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
17	N36	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18	N25	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
19	N38	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
20	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
21	N8	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
22	N20	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
23	N26	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
24	N51	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
25	N18	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
26	N35	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
27	N22	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
29	N7	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
30	N57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
31	N23	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
32	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

**Node Loads and Enforced Displacements (BLC 4 : ELZ)**

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]
1	N69	L	Z	3.5
2	N67	L	Z	3.5
3	N73	L	Z	6.5
4	N71	L	Z	6.5
5	N74	L	Z	6.5
6	N72	L	Z	6.5

**Node Loads and Enforced Displacements (BLC 4 : ELZ) (Continued)**

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]	
7	N70	L	Z	3.5
8	N68	L	Z	3.5

**Member Distributed Loads (BLC 3 : ELX)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M42	X	2.38	1.62	0 %100
2	M43	X	2.38	1.62	0 %100
3	M41	X	1.2	0.82	0 %100
4	M44	X	1.2	0.82	0 %100

**Member Distributed Loads (BLC 5 : BLC 1 Transient Area Loads)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M49	Y	-0.05	-0.05	0 2.081
2	M49	Y	-0.05	-0.05	2.081 4.162
3	M49	Y	-0.05	-0.05	4.162 6.242
4	M49	Y	-0.05	-0.05	6.242 8.323
5	M49	Y	-0.05	-0.05	8.323 10.404
6	M49	Y	-0.05	-0.05	10.404 12.485
7	M49	Y	-0.05	-0.05	12.485 14.566
8	M49	Y	-0.05	-0.058	14.566 16.646
9	M49	Y	-0.058	-0.074	16.646 18.727
10	M50	Y	-0.05	-0.05	0 2.081
11	M50	Y	-0.05	-0.05	2.081 4.162
12	M50	Y	-0.05	-0.05	4.162 6.242
13	M50	Y	-0.05	-0.05	6.242 8.323
14	M50	Y	-0.05	-0.05	8.323 10.404
15	M50	Y	-0.05	-0.05	10.404 12.485
16	M50	Y	-0.05	-0.05	12.485 14.566
17	M50	Y	-0.05	-0.058	14.566 16.646
18	M50	Y	-0.058	-0.074	16.646 18.727
19	M98	Y	-0.018	-0.014	0 2.081
20	M98	Y	-0.014	-0.012	2.081 4.162
21	M98	Y	-0.012	-0.012	4.162 6.242
22	M98	Y	-0.012	-0.012	6.242 8.323
23	M98	Y	-0.012	-0.012	8.323 10.404
24	M98	Y	-0.012	-0.012	10.404 12.485
25	M98	Y	-0.012	-0.012	12.485 14.566
26	M98	Y	-0.012	-0.012	14.566 16.646
27	M98	Y	-0.012	-0.012	16.646 18.727
28	M102	Y	-0.018	-0.014	0 2.081
29	M102	Y	-0.014	-0.012	2.081 4.162
30	M102	Y	-0.012	-0.012	4.162 6.242
31	M102	Y	-0.012	-0.012	6.242 8.323
32	M102	Y	-0.012	-0.012	8.323 10.404
33	M102	Y	-0.012	-0.012	10.404 12.485
34	M102	Y	-0.012	-0.012	12.485 14.566
35	M102	Y	-0.012	-0.012	14.566 16.646
36	M102	Y	-0.012	-0.012	16.646 18.727
37	M48	Y	-0.05	-0.05	0 2.188
38	M48	Y	-0.05	-0.05	2.188 4.376
39	M48	Y	-0.05	-0.05	4.376 6.564
40	M48	Y	-0.05	-0.05	6.564 8.753
41	M48	Y	-0.05	-0.05	8.753 10.941

**Member Distributed Loads (BLC 5 : BLC 1 Transient Area Loads) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
42	M48	Y	-0.05	-0.05	10.941	13.129
43	M48	Y	-0.05	-0.057	13.129	15.317
44	M48	Y	-0.057	-0.071	15.317	17.505
45	M51	Y	-0.05	-0.05	0	2.188
46	M51	Y	-0.05	-0.05	2.188	4.376
47	M51	Y	-0.05	-0.05	4.376	6.564
48	M51	Y	-0.05	-0.05	6.564	8.753
49	M51	Y	-0.05	-0.05	8.753	10.941
50	M51	Y	-0.05	-0.05	10.941	13.129
51	M51	Y	-0.05	-0.057	13.129	15.317
52	M51	Y	-0.057	-0.071	15.317	17.505
53	M99	Y	-0.012	-0.012	0	2.188
54	M99	Y	-0.012	-0.012	2.188	4.376
55	M99	Y	-0.012	-0.012	4.376	6.564
56	M99	Y	-0.012	-0.012	6.564	8.753
57	M99	Y	-0.012	-0.012	8.753	10.941
58	M99	Y	-0.012	-0.012	10.941	13.129
59	M99	Y	-0.012	-0.014	13.129	15.317
60	M99	Y	-0.014	-0.017	15.317	17.505
61	M103	Y	-0.012	-0.012	0	2.188
62	M103	Y	-0.012	-0.012	2.188	4.376
63	M103	Y	-0.012	-0.012	4.376	6.564
64	M103	Y	-0.012	-0.012	6.564	8.753
65	M103	Y	-0.012	-0.012	8.753	10.941
66	M103	Y	-0.012	-0.012	10.941	13.129
67	M103	Y	-0.012	-0.014	13.129	15.317
68	M103	Y	-0.014	-0.017	15.317	17.505
69	M56	Y	-0.05	-0.05	0	2.088
70	M56	Y	-0.05	-0.05	2.088	4.175
71	M56	Y	-0.05	-0.05	4.175	6.263
72	M56	Y	-0.05	-0.05	6.263	8.351
73	M56	Y	-0.05	-0.05	8.351	10.438
74	M56	Y	-0.05	-0.05	10.438	12.526
75	M56	Y	-0.05	-0.063	12.526	14.614
76	M56	Y	-0.063	-0.05	14.614	16.701
77	M56	Y	-0.05	-0.045	16.701	18.789
78	M56	Y	-0.045	-0.087	18.789	20.877
79	M57	Y	-0.05	-0.05	0	2.088
80	M57	Y	-0.05	-0.05	2.088	4.175
81	M57	Y	-0.05	-0.05	4.175	6.263
82	M57	Y	-0.05	-0.05	6.263	8.351
83	M57	Y	-0.05	-0.05	8.351	10.438
84	M57	Y	-0.05	-0.05	10.438	12.526
85	M57	Y	-0.05	-0.063	12.526	14.614
86	M57	Y	-0.063	-0.05	14.614	16.701
87	M57	Y	-0.05	-0.045	16.701	18.789
88	M57	Y	-0.045	-0.087	18.789	20.877
89	M101	Y	-0.012	-0.012	0	2.088
90	M101	Y	-0.012	-0.012	2.088	4.175
91	M101	Y	-0.012	-0.012	4.175	6.263
92	M101	Y	-0.012	-0.012	6.263	8.351
93	M101	Y	-0.012	-0.012	8.351	10.438
94	M101	Y	-0.012	-0.012	10.438	12.526
95	M101	Y	-0.012	-0.015	12.526	14.614
96	M101	Y	-0.015	-0.012	14.614	16.701

**Member Distributed Loads (BLC 5 : BLC 1 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
97	M101	Y	-0.012	-0.011	16.701 18.789
98	M101	Y	-0.011	-0.021	18.789 20.877
99	M105	Y	-0.012	-0.012	0 2.088
100	M105	Y	-0.012	-0.012	2.088 4.175
101	M105	Y	-0.012	-0.012	4.175 6.263
102	M105	Y	-0.012	-0.012	6.263 8.351
103	M105	Y	-0.012	-0.012	8.351 10.438
104	M105	Y	-0.012	-0.012	10.438 12.526
105	M105	Y	-0.012	-0.015	12.526 14.614
106	M105	Y	-0.015	-0.012	14.614 16.701
107	M105	Y	-0.012	-0.011	16.701 18.789
108	M105	Y	-0.011	-0.021	18.789 20.877
109	M54	Y	-0.05	-0.05	0 2.088
110	M54	Y	-0.05	-0.05	2.088 4.175
111	M54	Y	-0.05	-0.05	4.175 6.263
112	M54	Y	-0.05	-0.05	6.263 8.351
113	M54	Y	-0.05	-0.05	8.351 10.438
114	M54	Y	-0.05	-0.05	10.438 12.526
115	M54	Y	-0.05	-0.063	12.526 14.614
116	M54	Y	-0.063	-0.05	14.614 16.701
117	M54	Y	-0.05	-0.045	16.701 18.789
118	M54	Y	-0.045	-0.087	18.789 20.877
119	M55	Y	-0.05	-0.05	0 2.088
120	M55	Y	-0.05	-0.05	2.088 4.175
121	M55	Y	-0.05	-0.05	4.175 6.263
122	M55	Y	-0.05	-0.05	6.263 8.351
123	M55	Y	-0.05	-0.05	8.351 10.438
124	M55	Y	-0.05	-0.05	10.438 12.526
125	M55	Y	-0.05	-0.063	12.526 14.614
126	M55	Y	-0.063	-0.05	14.614 16.701
127	M55	Y	-0.05	-0.045	16.701 18.789
128	M55	Y	-0.045	-0.087	18.789 20.877
129	M100	Y	-0.021	-0.011	0 2.088
130	M100	Y	-0.011	-0.012	2.088 4.175
131	M100	Y	-0.012	-0.015	4.175 6.263
132	M100	Y	-0.015	-0.012	6.263 8.351
133	M100	Y	-0.012	-0.012	8.351 10.438
134	M100	Y	-0.012	-0.012	10.438 12.526
135	M100	Y	-0.012	-0.012	12.526 14.614
136	M100	Y	-0.012	-0.012	14.614 16.701
137	M100	Y	-0.012	-0.012	16.701 18.789
138	M100	Y	-0.012	-0.012	18.789 20.877
139	M104	Y	-0.021	-0.011	0 2.088
140	M104	Y	-0.011	-0.012	2.088 4.175
141	M104	Y	-0.012	-0.015	4.175 6.263
142	M104	Y	-0.015	-0.012	6.263 8.351
143	M104	Y	-0.012	-0.012	8.351 10.438
144	M104	Y	-0.012	-0.012	10.438 12.526
145	M104	Y	-0.012	-0.012	12.526 14.614
146	M104	Y	-0.012	-0.012	14.614 16.701
147	M104	Y	-0.012	-0.012	16.701 18.789
148	M104	Y	-0.012	-0.012	18.789 20.877

**Member Distributed Loads (BLC 6 : BLC 2 Transient Area Loads)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M57	Y	-0.125	-0.1	14.614 16.701
2	M57	Y	-0.1	-0.091	16.701 18.789
3	M57	Y	-0.091	-0.174	18.789 20.877
4	M101	Y	-0.024	-0.024	0 2.088
5	M101	Y	-0.024	-0.024	2.088 4.175
6	M101	Y	-0.024	-0.024	4.175 6.263
7	M101	Y	-0.024	-0.024	6.263 8.351
8	M101	Y	-0.024	-0.024	8.351 10.438
9	M101	Y	-0.024	-0.024	10.438 12.526
10	M101	Y	-0.024	-0.03	12.526 14.614
11	M101	Y	-0.03	-0.024	14.614 16.701
12	M101	Y	-0.024	-0.022	16.701 18.789
13	M101	Y	-0.022	-0.042	18.789 20.877
14	M105	Y	-0.024	-0.024	0 2.088
15	M105	Y	-0.024	-0.024	2.088 4.175
16	M105	Y	-0.024	-0.024	4.175 6.263
17	M105	Y	-0.024	-0.024	6.263 8.351
18	M105	Y	-0.024	-0.024	8.351 10.438
19	M105	Y	-0.024	-0.024	10.438 12.526
20	M105	Y	-0.024	-0.03	12.526 14.614
21	M105	Y	-0.03	-0.024	14.614 16.701
22	M105	Y	-0.024	-0.022	16.701 18.789
23	M105	Y	-0.022	-0.042	18.789 20.877
24	M54	Y	-0.1	-0.1	0 2.088
25	M54	Y	-0.1	-0.1	2.088 4.175
26	M54	Y	-0.1	-0.1	4.175 6.263
27	M54	Y	-0.1	-0.1	6.263 8.351
28	M54	Y	-0.1	-0.1	8.351 10.438
29	M54	Y	-0.1	-0.1	10.438 12.526
30	M54	Y	-0.1	-0.125	12.526 14.614
31	M54	Y	-0.125	-0.1	14.614 16.701
32	M54	Y	-0.1	-0.091	16.701 18.789
33	M54	Y	-0.091	-0.174	18.789 20.877
34	M55	Y	-0.1	-0.1	0 2.088
35	M55	Y	-0.1	-0.1	2.088 4.175
36	M55	Y	-0.1	-0.1	4.175 6.263
37	M55	Y	-0.1	-0.1	6.263 8.351
38	M55	Y	-0.1	-0.1	8.351 10.438
39	M55	Y	-0.1	-0.1	10.438 12.526
40	M55	Y	-0.1	-0.125	12.526 14.614
41	M55	Y	-0.125	-0.1	14.614 16.701
42	M55	Y	-0.1	-0.091	16.701 18.789
43	M55	Y	-0.091	-0.174	18.789 20.877
44	M100	Y	-0.042	-0.022	0 2.088
45	M100	Y	-0.022	-0.024	2.088 4.175
46	M100	Y	-0.024	-0.03	4.175 6.263
47	M100	Y	-0.03	-0.024	6.263 8.351
48	M100	Y	-0.024	-0.024	8.351 10.438
49	M100	Y	-0.024	-0.024	10.438 12.526
50	M100	Y	-0.024	-0.024	12.526 14.614
51	M100	Y	-0.024	-0.024	14.614 16.701
52	M100	Y	-0.024	-0.024	16.701 18.789
53	M100	Y	-0.024	-0.024	18.789 20.877
54	M104	Y	-0.042	-0.022	0 2.088
55	M104	Y	-0.022	-0.024	2.088 4.175



Company : RM Byrd/Miyamoto International, ...  
 Designer : erejuso  
 Job Number :  
 Model Name :

GC-22  
 1/23/2023  
 4:20:46 PM  
 Checked By : RMB

**Member Distributed Loads (BLC 6 : BLC 2 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	M104	Y	-0.024	-0.03	4.175 6.263
57	M104	Y	-0.03	-0.024	6.263 8.351
58	M104	Y	-0.024	-0.024	8.351 10.438
59	M104	Y	-0.024	-0.024	10.438 12.526
60	M104	Y	-0.024	-0.024	12.526 14.614
61	M104	Y	-0.024	-0.024	14.614 16.701
62	M104	Y	-0.024	-0.024	16.701 18.789
63	M104	Y	-0.024	-0.024	18.789 20.877
64	M49	Y	-0.101	-0.101	0 2.081
65	M49	Y	-0.101	-0.101	2.081 4.162
66	M49	Y	-0.101	-0.101	4.162 6.242
67	M49	Y	-0.101	-0.101	6.242 8.323
68	M49	Y	-0.101	-0.101	8.323 10.404
69	M49	Y	-0.101	-0.101	10.404 12.485
70	M49	Y	-0.101	-0.101	12.485 14.566
71	M49	Y	-0.101	-0.117	14.566 16.646
72	M49	Y	-0.117	-0.149	16.646 18.727
73	M50	Y	-0.101	-0.101	0 2.081
74	M50	Y	-0.101	-0.101	2.081 4.162
75	M50	Y	-0.101	-0.101	4.162 6.242
76	M50	Y	-0.101	-0.101	6.242 8.323
77	M50	Y	-0.101	-0.101	8.323 10.404
78	M50	Y	-0.101	-0.101	10.404 12.485
79	M50	Y	-0.101	-0.101	12.485 14.566
80	M50	Y	-0.101	-0.117	14.566 16.646
81	M50	Y	-0.117	-0.149	16.646 18.727
82	M98	Y	-0.035	-0.028	0 2.081
83	M98	Y	-0.028	-0.024	2.081 4.162
84	M98	Y	-0.024	-0.024	4.162 6.242
85	M98	Y	-0.024	-0.024	6.242 8.323
86	M98	Y	-0.024	-0.024	8.323 10.404
87	M98	Y	-0.024	-0.024	10.404 12.485
88	M98	Y	-0.024	-0.024	12.485 14.566
89	M98	Y	-0.024	-0.024	14.566 16.646
90	M98	Y	-0.024	-0.024	16.646 18.727
91	M102	Y	-0.035	-0.028	0 2.081
92	M102	Y	-0.028	-0.024	2.081 4.162
93	M102	Y	-0.024	-0.024	4.162 6.242
94	M102	Y	-0.024	-0.024	6.242 8.323
95	M102	Y	-0.024	-0.024	8.323 10.404
96	M102	Y	-0.024	-0.024	10.404 12.485
97	M102	Y	-0.024	-0.024	12.485 14.566
98	M102	Y	-0.024	-0.024	14.566 16.646
99	M102	Y	-0.024	-0.024	16.646 18.727
100	M48	Y	-0.101	-0.101	0 2.188
101	M48	Y	-0.101	-0.101	2.188 4.376
102	M48	Y	-0.101	-0.101	4.376 6.564
103	M48	Y	-0.101	-0.101	6.564 8.753
104	M48	Y	-0.101	-0.101	8.753 10.941
105	M48	Y	-0.101	-0.101	10.941 13.129
106	M48	Y	-0.101	-0.114	13.129 15.317
107	M48	Y	-0.114	-0.141	15.317 17.505
108	M51	Y	-0.101	-0.101	0 2.188
109	M51	Y	-0.101	-0.101	2.188 4.376
110	M51	Y	-0.101	-0.101	4.376 6.564

**Member Distributed Loads (BLC 6 : BLC 2 Transient Area Loads) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
111	M51	Y	-0.101	-0.101	6.564 8.753
112	M51	Y	-0.101	-0.101	8.753 10.941
113	M51	Y	-0.101	-0.101	10.941 13.129
114	M51	Y	-0.101	-0.114	13.129 15.317
115	M51	Y	-0.114	-0.141	15.317 17.505
116	M99	Y	-0.024	-0.024	0 2.188
117	M99	Y	-0.024	-0.024	2.188 4.376
118	M99	Y	-0.024	-0.024	4.376 6.564
119	M99	Y	-0.024	-0.024	6.564 8.753
120	M99	Y	-0.024	-0.024	8.753 10.941
121	M99	Y	-0.024	-0.024	10.941 13.129
122	M99	Y	-0.024	-0.027	13.129 15.317
123	M99	Y	-0.027	-0.034	15.317 17.505
124	M103	Y	-0.024	-0.024	0 2.188
125	M103	Y	-0.024	-0.024	2.188 4.376
126	M103	Y	-0.024	-0.024	4.376 6.564
127	M103	Y	-0.024	-0.024	6.564 8.753
128	M103	Y	-0.024	-0.024	8.753 10.941
129	M103	Y	-0.024	-0.024	10.941 13.129
130	M103	Y	-0.024	-0.027	13.129 15.317
131	M103	Y	-0.027	-0.034	15.317 17.505
132	M56	Y	-0.1	-0.1	0 2.088
133	M56	Y	-0.1	-0.1	2.088 4.175
134	M56	Y	-0.1	-0.1	4.175 6.263
135	M56	Y	-0.1	-0.1	6.263 8.351
136	M56	Y	-0.1	-0.1	8.351 10.438
137	M56	Y	-0.1	-0.1	10.438 12.526
138	M56	Y	-0.1	-0.125	12.526 14.614
139	M56	Y	-0.125	-0.1	14.614 16.701
140	M56	Y	-0.1	-0.091	16.701 18.789
141	M56	Y	-0.091	-0.174	18.789 20.877
142	M57	Y	-0.1	-0.1	0 2.088
143	M57	Y	-0.1	-0.1	2.088 4.175
144	M57	Y	-0.1	-0.1	4.175 6.263
145	M57	Y	-0.1	-0.1	6.263 8.351
146	M57	Y	-0.1	-0.1	8.351 10.438
147	M57	Y	-0.1	-0.1	10.438 12.526
148	M57	Y	-0.1	-0.125	12.526 14.614

**Basic Load Cases**

BLC Description	Category	Y Gravity	Nodal	Distributed	Area(Member)
1 DL	DL	-1			4
2 RLL	RLL				4
3 ELX	ELX			4	
4 ELZ	ELZ		8		
5 BLC 1 Transient Area Loads	None			148	
6 BLC 2 Transient Area Loads	None			148	

**Load Combinations**

Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1 ASCE Strength 6 (a)	Yes	Y	DL	1.2	ELX	1	LL	0.5	LLS	1
2 ASCE Strength 6 (b)	Yes	Y	DL	1.2	ELZ	1	LL	0.5	LLS	1
3 ASCE Strength 7 (a)	Yes	Y	DL	0.9	ELX	1				

**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
4	ASCE Strength 7 (b)	Yes	Y	DL	0.9	ELZ	1				
5	ASCE Strength 6 (os-a)	Yes	Y	DL	1.2	Om*ELX	1	LL	0.5	LLS	1
6	ASCE Strength 6 (os-b)	Yes	Y	DL	1.2	Om*ELZ	1	LL	0.5	LLS	1
7	ASCE Strength 7 (os-a)	Yes	Y	DL	0.9	Om*ELX	1				
8	ASCE Strength 7 (os-b)	Yes	Y	DL	0.9	Om*ELZ	1				
9											
10	Deflection 1	Yes	Y	DL	1						
11	Deflection 2	Yes	Y	LL	1						
12	Deflection 3	Yes	Y	DL	1	LL	1				
13	ASCE Strength 1	Yes	Y	DL	1.4						
14	ASCE Strength 2 (a)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6	RLL	0.5
15	ASCE Strength 2 (b)	Yes	Y	DL	1.2	LL	1.6	LLS	1.6		
16	ASCE Strength 3 (a)	Yes	Y	DL	1.2	RLL	1.6	LL	0.5	LLS	1

**Envelope Node Reactions**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N59	max	0.01	2	8.026	2	0.03	1	0.162	1	0.021	16	17.353	1
2		min	-2.023	3	-6.674	3	-1.329	4	-11.642	2	0	11	-0.057	2
3	N27	max	0.016	16	13.939	1	0	11	0	11	0.015	2	14.603	3
4		min	-1.6	3	0	11	-1.126	2	-10.676	2	0	11	-0.094	16
5	N4	max	0	11	12.695	2	0.051	16	0.302	16	0.012	16	14.686	1
6		min	-1.627	1	0	11	-1.099	4	-10.482	4	-0.004	4	0	11
7	N49	max	0.009	4	8.042	2	0.023	1	0.119	1	0.001	4	17.361	1
8		min	-2.044	1	-10.847	3	-1.329	4	-11.646	2	-0.02	16	-0.048	4
9	N55	max	0.01	4	14.498	1	0.03	1	0.154	1	0.02	16	17.364	1
10		min	-1.926	1	-4.737	4	-1.367	4	-11.644	2	0	11	-0.053	4
11	N1	max	0	11	1.469	16	0.052	16	0.31	16	0.013	16	14.687	1
12		min	-1.717	1	-11.882	3	-1.172	4	-10.483	4	-0.001	4	0	11
13	N5	max	0.018	16	0.971	13	0.051	16	0.304	16	0.005	4	14.604	3
14		min	-1.686	3	-11.045	4	-1.171	4	-10.482	4	-0.012	1	-0.105	16
15	N56	max	0	13	2.832	16	0.014	16	0.062	16	0.001	4	17.354	1
16		min	-2.044	1	-11.125	3	-1.367	4	-11.646	2	-0.02	16	-0.002	13
17	N39	max	0	11	10.65	1	0	11	0	11	0.014	16	17.379	1
18		min	-1.945	1	0	11	-1.344	2	-11.729	2	0	3	0	11
19	N53	max	0.004	16	15.209	1	0.015	16	0.064	16	0.02	16	17.346	1
20		min	-1.921	3	0	11	-1.329	4	-11.645	2	0	11	-0.024	16
21	N2	max	0.01	4	9.122	1	0.051	16	0.304	16	0.012	16	14.693	1
22		min	-1.633	1	-11.027	4	-1.171	4	-10.482	4	-0.004	4	-0.054	4
23	N34	max	0	11	3.965	16	0	11	0	11	0.017	2	17.377	1
24		min	-2.045	1	-10.902	3	-1.377	2	-11.718	2	-0.005	3	0	11
25	N58	max	0.009	4	10.547	1	0.024	1	0.123	1	0	11	17.36	1
26		min	-1.945	1	-4.769	4	-1.367	4	-11.643	2	-0.02	16	-0.048	4
27	N40	max	0.001	16	14.602	1	0	11	0	11	0	11	17.378	1
28		min	-1.926	1	0	11	-1.342	2	-11.719	2	-0.017	2	-0.002	16
29	N3	max	0.01	4	12.754	2	0.052	16	0.311	16	0.013	16	14.691	1
30		min	-1.712	1	-10.739	3	-1.099	4	-10.484	4	-0.001	4	-0.052	4
31	N37	max	0.01	4	8.105	2	0.015	3	0.087	3	0.017	2	17.373	1
32		min	-2.046	1	-11.196	3	-1.342	2	-11.718	2	0	3	-0.053	4
33	N36	max	0.008	4	11.113	1	0.015	3	0.09	3	0.014	16	17.374	1
34		min	-1.943	3	-3.739	4	-1.378	2	-11.726	2	-0.005	3	-0.044	4
35	N25	max	0.025	2	12.505	2	0.017	3	0.083	3	0.017	2	14.601	3

**Envelope Node Reactions (Continued)**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
36		min	-1.686	3	-7.618	3	-1.127	2	-10.667	2	0	11	-0.144	2
37	N38	max	0.011	2	8.029	2	0.009	3	0.05	3	0	11	17.37	1
38		min	-2.026	1	-7.352	3	-1.344	2	-11.73	2	-0.013	16	-0.06	2
39	N19	max	0	11	3.658	16	0	11	0	11	0	11	14.695	1
40		min	-1.713	1	-10.715	3	-1.199	2	-10.691	2	-0.015	16	0	11
41	N8	max	0.017	16	13.875	1	0.052	16	0.311	16	0.002	4	14.611	3
42		min	-1.602	3	0	11	-1.099	4	-10.484	4	-0.013	16	-0.097	16
43	N20	max	0.015	16	2.916	16	0	11	0	11	0.017	2	14.606	3
44		min	-1.688	3	-10.143	4	-1.197	2	-10.665	2	0	11	-0.086	16
45	N26	max	0	11	12.446	2	0	11	0	11	0	11	14.698	1
46		min	-1.634	1	0	11	-1.13	2	-10.683	2	-0.015	2	0	11
47	N51	max	0	11	10.943	1	0.016	16	0.073	16	0.001	3	17.358	1
48		min	-1.943	3	0	11	-1.329	4	-11.645	2	-0.02	16	0	11
49	N18	max	0.024	2	13.889	1	0.016	3	0.08	3	0.015	2	14.605	3
50		min	-1.601	3	-9.606	4	-1.196	2	-10.677	2	0	11	-0.134	2
51	N35	max	0.002	16	3.823	16	0	11	0	11	0	11	17.368	1
52		min	-2.024	3	-6.799	3	-1.378	2	-11.727	2	-0.018	1	-0.012	16
53	N22	max	0	11	10.43	1	0	11	0	11	0	11	14.69	1
54		min	-1.627	1	-10.064	4	-1.199	2	-10.681	2	-0.015	2	0	11
55	N6	max	0.016	16	13.975	1	0.052	16	0.31	16	0.002	4	14.606	3
56		min	-1.6	3	-11.044	4	-1.172	4	-10.484	4	-0.013	16	-0.094	16
57	N7	max	0.015	16	12.675	2	0.051	16	0.302	16	0.005	4	14.612	3
58		min	-1.688	3	-7.86	3	-1.099	4	-10.482	4	-0.012	16	-0.087	16
59	N57	max	0.003	16	2.708	16	0.016	16	0.077	16	0.02	16	17.354	1
60		min	-2.025	1	-7.265	3	-1.366	4	-11.64	2	0	11	-0.013	16
61	N23	max	0	11	13.084	2	0	11	0	11	0	11	14.692	1
62		min	-1.717	1	-11.891	3	-1.129	2	-10.69	2	-0.015	16	0	11
63	N33	max	0.012	2	15.324	1	0.01	3	0.06	3	0	11	17.361	1
64		min	-1.921	3	-3.675	4	-1.377	2	-11.719	2	-0.018	1	-0.068	2
65	N66	max	NC		NC		NC		LOCKED		NC		NC	
66		min	NC		NC		NC		LOCKED		NC		NC	
67	Totals:	max	0	4	88.526	16	0	16						
68		min	-58.26	1	0	11	-40	4						

**Envelope Node Reactions - Overstrength or Capacity Limit**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N59	max	0.013	6*	9.423	6*	0.036	5*	0.193	5*	0.02	5*	21.692	5*
2		min	-2.541	7*	-8.8	7*	-1.657	8*	-14.563	6*	0.004	8*	-0.069	6*
3	N27	max	0.003	6*	17.126	5*	-0.014	7*	-0.081	7*	0.017	6*	18.263	5*
4		min	-1.985	7*	15.827	8*	-1.392	6*	-13.319	6*	0.007	7*	-0.029	6*
5	N4	max	-0.011	8*	15.505	6*	0.014	5*	0.096	5*	0.002	5*	18.347	5*
6		min	-2.02	5*	12.262	7*	-1.365	8*	-13.121	8*	-0.006	8*	0.058	8*
7	N49	max	0.011	8*	9.429	6*	0.027	5*	0.139	5*	0.003	8*	21.699	5*
8		min	-2.573	5*	-14.026	7*	-1.657	8*	-14.567	6*	0.001	5*	-0.062	8*
9	N55	max	0.012	8*	17.644	5*	0.035	5*	0.184	5*	0.014	5*	21.704	5*
10		min	-2.389	5*	-6.28	8*	-1.716	8*	-14.564	6*	-0.002	8*	-0.066	8*
11	N1	max	-0.011	8*	-13.737	6*	0.015	5*	0.098	5*	0.001	5*	18.347	5*
12		min	-2.16	5*	-15.076	7*	-1.479	8*	-13.123	8*	-0.003	8*	0.055	8*
13	N5	max	-0.012	6*	-9.494	5*	-0.02	5*	-0.097	5*	0.007	8*	18.265	5*
14		min	-2.12	7*	-13.962	8*	-1.479	8*	-13.121	8*	-0.013	5*	0.064	6*
15	N56	max	-0.012	6*	-5.822	6*	-0.019	5*	-0.109	5*	0.003	8*	21.693	5*

**Envelope Node Reactions - Overstrength or Capacity Limit (Continued)**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
16		min	5*	-2.574	5*	-14.265	7*	-1.716	8*	-14.566	6*	-0.005	5*	0.064	6*
17	N39	max	8*	-0.013	8*	12.841	5*	-0.026	7*	-0.13	7*	0.014	6*	21.721	5*
18		min	5*	-2.418	5*	9.092	8*	-1.672	6*	-14.651	6*	-0.002	7*	0.07	8*
19	N53	max	6*	-0.011	6*	18.387	5*	-0.011	5*	-0.065	5*	0.02	5*	21.685	5*
20		min	7*	-2.383	7*	8.856	8*	-1.657	8*	-14.565	6*	-0.002	8*	0.057	6*
21	N2	max	8*	0.014	8*	11.196	5*	0.052	5*	0.299	5*	0.001	5*	18.354	5*
22		min	5*	-2.029	5*	-13.94	8*	-1.479	8*	-13.121	8*	-0.006	8*	-0.077	8*
23	N34	max	8*	-0.014	8*	-4.442	6*	-0.026	7*	-0.132	7*	0.02	6*	21.718	5*
24		min	5*	-2.574	5*	-14.098	7*	-1.725	6*	-14.639	6*	-0.007	7*	0.079	8*
25	N58	max	8*	0.011	8*	12.72	5*	0.028	5*	0.143	5*	-0.002	8*	21.699	5*
26		min	5*	-2.418	5*	-6.31	8*	-1.716	8*	-14.564	6*	-0.005	5*	-0.061	8*
27	N40	max	6*	-0.012	6*	17.766	5*	-0.032	7*	-0.167	7*	-0.013	7*	21.723	5*
28		min	5*	-2.389	5*	9.169	8*	-1.67	6*	-14.64	6*	-0.019	6*	0.066	8*
29	N3	max	8*	0.014	8*	15.492	6*	0.052	5*	0.299	5*	0.003	5*	18.352	5*
30		min	5*	-2.154	5*	-13.763	7*	-1.366	8*	-13.124	8*	-0.003	8*	-0.074	8*
31	N37	max	8*	0.012	8*	9.644	6*	0.02	7*	-0.116	7*	0.02	6*	21.716	5*
32		min	5*	-2.576	5*	-14.361	7*	-1.67	6*	-14.639	6*	-0.002	7*	-0.066	6*
33	N36	max	8*	0.011	8*	13.279	5*	0.021	7*	0.12	7*	0.014	6*	21.716	5*
34		min	7*	-2.415	7*	-5.133	8*	-1.726	6*	-14.648	6*	-0.007	7*	-0.056	8*
35	N25	max	6*	0.029	6*	15.422	6*	0.024	7*	0.123	7*	0.019	6*	18.261	5*
36		min	7*	-2.12	7*	-9.678	7*	-1.393	6*	-13.309	6*	0.006	7*	-0.168	6*
37	N38	max	6*	0.014	6*	9.565	6*	0.013	7*	0.07	7*	-0.012	8*	21.714	5*
38		min	5*	-2.547	5*	-9.543	7*	-1.672	6*	-14.651	6*	-0.015	5*	-0.073	6*
39	N19	max	8*	-0.026	8*	-11.772	6*	-0.049	7*	-0.276	7*	-0.003	7*	18.357	5*
40		min	5*	-2.154	5*	-13.732	7*	-1.505	6*	-13.338	6*	-0.015	6*	0.142	8*
41	N8	max	6*	-0.012	6*	16.892	5*	-0.019	5*	-0.089	5*	0.004	8*	18.273	5*
42		min	7*	-1.988	7*	15.062	8*	-1.366	8*	-13.125	8*	-0.012	5*	0.062	6*
43	N20	max	6*	0.002	6*	-9.726	5*	-0.013	7*	-0.078	7*	0.019	6*	18.268	5*
44		min	7*	-2.122	7*	-12.951	8*	-1.503	6*	-13.307	6*	0.005	7*	-0.018	6*
45	N26	max	8*	-0.027	8*	15.349	6*	-0.049	7*	-0.275	7*	-0.001	7*	18.359	5*
46		min	5*	-2.03	5*	10.916	7*	-1.397	6*	-13.329	6*	-0.017	6*	0.151	8*
47	N51	max	8*	-0.012	8*	13.07	5*	-0.019	5*	-0.108	5*	0.003	7*	21.696	5*
48		min	7*	-2.416	7*	8.793	8*	-1.658	8*	-14.566	6*	-0.005	6*	0.065	8*
49	N18	max	6*	0.028	6*	16.91	5*	0.024	7*	0.12	7*	0.017	6*	18.266	5*
50		min	7*	-1.987	7*	-12.345	8*	-1.502	6*	-13.32	6*	0.005	7*	-0.157	6*
51	N35	max	6*	-0.011	6*	-4.532	6*	-0.033	7*	-0.176	7*	-0.012	8*	21.711	5*
52		min	7*	-2.543	7*	-8.958	7*	-1.726	6*	-14.648	6*	-0.021	5*	0.055	6*
53	N22	max	8*	0	8*	12.677	5*	-0.011	7*	-0.072	7*	-0.003	7*	18.351	5*
54		min	5*	-2.021	5*	-12.852	8*	-1.506	6*	-13.326	6*	-0.017	6*	0.004	8*
55	N6	max	6*	0.012	6*	17.172	5*	0.018	5*	0.112	5*	0.004	8*	18.268	5*
56		min	7*	-1.985	7*	-14.026	8*	-1.479	8*	-13.124	8*	-0.014	5*	-0.066	6*
57	N7	max	6*	0.013	6*	15.48	6*	0.017	5*	0.103	5*	0.007	8*	18.275	5*
58		min	7*	-2.123	7*	-10.096	7*	-1.365	8*	-13.121	8*	-0.012	5*	-0.069	6*
59	N57	max	6*	-0.011	6*	-5.862	6*	-0.01	5*	-0.053	5*	0.014	5*	21.694	5*
60		min	5*	-2.545	5*	-9.43	7*	-1.716	8*	-14.561	6*	0.004	8*	0.058	6*
61	N23	max	8*	-0.001	8*	16.057	6*	-0.012	7*	-0.074	7*	-0.002	7*	18.353	5*
62		min	5*	-2.161	5*	-15.089	7*	-1.396	6*	-13.337	6*	-0.015	6*	0.013	8*
63	N33	max	6*	0.015	6*	18.526	5*	0.014	7*	0.081	7*	-0.017	8*	21.705	5*
64		min	7*	-2.383	7*	-5.065	8*	-1.725	6*	-14.64	6*	-0.02	5*	-0.082	6*
65	N66	max		NC		NC		NC	LOCKED		NC		NC		
66		min		NC		NC		NC	LOCKED		NC		NC		
67	Totals:	max	8*	0	8*	56.084	6*	0	5*						
68		min	5*	-72.825	5*	42.063	7*	-50	8*						

**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks**

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LcPhi	Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M1	HSS8X8X4	0.243	0	1	0.02	17.75	y	3	216.349	293.94	293.94	66.288	66.288	2.249	H1-1b
2	M2	HSS8X8X4	0.247	0	1	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.249	H1-1b
3	M3	HSS8X8X4	0.247	0	1	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.249	H1-1b
4	M4	HSS8X8X4	0.243	0	3	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.25	H1-1b
5	M5	HSS8X8X4	0.235	0	3	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.257	H1-1b
6	M6	HSS8X8X4	0.254	0	1	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.258	H1-1b
7	M7	HSS8X8X4	0.235	0	3	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.257	H1-1b
8	M8	HSS8X8X4	0.253	0	1	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.258	H1-1b
9	M9	HSS8X8X4	0.234	0	3	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.257	H1-1b
10	M10	HSS8X8X4	0.243	0	3	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.25	H1-1b
11	M11	HSS8X8X4	0.243	0	1	0.02	17.75	y	3	216.349	293.94	293.94	66.288	66.288	2.249	H1-1b
12	M12	HSS8X8X4	0.247	0	1	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.249	H1-1b
13	M13	HSS8X8X4	0.235	0	3	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.257	H1-1b
14	M14	HSS8X8X4	0.247	0	1	0.02	16.086	y	1	216.349	293.94	293.94	66.288	66.288	2.248	H1-1b
15	M15	HSS8X8X4	0.254	0	1	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.258	H1-1b
16	M16	HSS8X8X4	0.253	0	1	0.02	17.75	y	1	216.349	293.94	293.94	66.288	66.288	2.258	H1-1b
17	M17	HSS8X8X4	0.282	0	3	0.026	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
18	M18	HSS8X8X4	0.3	0	1	0.024	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
19	M19	HSS8X8X4	0.299	0	1	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
20	M20	HSS8X8X4	0.282	0	3	0.025	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.3	H1-1b
21	M21	HSS8X8X4	0.276	0	3	0.024	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
22	M22	HSS8X8X4	0.313	0	1	0.026	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
23	M23	HSS8X8X4	0.312	0	1	0.025	25.997	z	16	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
24	M24	HSS8X8X4	0.275	0	3	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.301	H1-1b
25	M25	HSS8X8X4	0.275	0	3	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
26	M26	HSS8X8X4	0.312	0	1	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
27	M27	HSS8X8X4	0.282	0	3	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
28	M28	HSS8X8X4	0.298	0	1	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
29	M29	HSS8X8X4	0.299	0	1	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
30	M30	HSS8X8X4	0.282	0	3	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
31	M31	HSS8X8X4	0.275	0	3	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.299	H1-1b
32	M32	HSS8X8X4	0.312	0	1	0.024	15.977	y	1	152.315	293.94	293.94	66.288	66.288	2.298	H1-1b
33	M33	HSS12X8X4	0.016	8.5	13	0.003	17	y	13	267.227	370.944	370.944	73.797	116.951	1.136	H1-1b
34	M34	HSS12X8X4	0.043	14.5	13	0.005	29	y	13	177.198	370.944	370.944	73.797	116.951	1.136	H1-1b
35	M35	HSS12X8X4	0.016	8.5	13	0.003	17	y	13	267.227	370.944	370.944	73.797	116.951	1.136	H1-1b
36	M36	HSS12X8X4	0.016	8.5	13	0.003	17	y	13	267.227	370.944	370.944	73.797	116.951	1.136	H1-1b
37	M37	HSS12X8X4	0.043	14.5	13	0.005	29	y	13	177.198	370.944	370.944	73.797	116.951	1.136	H1-1b
38	M38	HSS12X8X4	0.016	8.5	13	0.003	17	y	13	267.227	370.944	370.944	73.797	116.951	1.136	H1-1b
39	M39	HSS12X8X4	0.025	9.969	16	0.01	15.104	y	16	177.198	370.944	370.944	73.797	116.951	1.516	H1-1b
40	M40	HSS12X8X4	0.025	9.969	16	0.01	15.104	y	16	177.198	370.944	370.944	73.797	116.951	1.515	H1-1b
41	M41	HSS12X8X4	0.243	10.427	1	0.057	10.427	y	1	290.825	370.944	370.944	73.797	116.951	1.688	H1-1b
42	M42	HSS12X8X4	0.026	0	1	0.002	8	y	1	313.132	370.944	370.944	73.797	116.951	1.136	H1-1b*
43	M43	HSS12X8X4	0.026	0	1	0.002	8	y	1	313.132	370.944	370.944	73.797	116.951	1.136	H1-1b*
44	M44	HSS12X8X4	0.242	2.573	1	0.057	2.573	y	1	290.825	370.944	370.944	73.797	116.951	1.688	H1-1b
45	M45	HSS12X8X4	0.137	2.573	1	0.032	2.573	y	1	290.825	370.944	370.944	73.797	116.951	1.696	H1-1b
46	M46	HSS12X8X4	0.131	2.573	1	0.031	2.573	y	1	290.825	370.944	370.944	73.797	116.951	1.697	H1-1b
47	M47	HSS12X8X4	0.016	2.573	1	0.004	2.438	y	1	290.825	370.944	370.944	73.797	116.951	1.778	H1-1b
48	M48	HSS8X8X4	0.102	14.77	16	0.021	14.77	y	16	218.173	293.94	293.94	66.288	66.288	2.245	H1-1b
49	M49	HSS8X8X4	0.103	15.996	16	0.021	15.996	y	16	208.976	293.94	293.94	66.288	66.288	2.363	H1-1b
50	M50	HSS8X8X4	0.104	15.996	16	0.029	16.191	y	1	208.976	293.94	293.94	66.288	66.288	2.363	H1-1b
51	M51	HSS8X8X4	0.102	14.77	16	0.026	14.952	y	1	218.173	293.94	293.94	66.288	66.288	2.245	H1-1b
52	M52	HSS12X8X4	0.122	2.573	1	0.03	2.438	y	16	290.825	370.944	370.944	73.797	116.951	1.7	H1-1b

**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)**

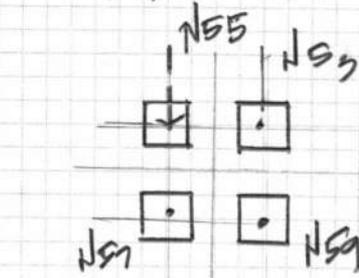
Member	Shape	Code Check	Loc [ft]	LC	Shear Check	Loc [ft]	Dir	Lc	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
53	M53	HSS12X8X4	0.129	2.573	1	0.033	2.438	y	16	290.825	370.944	73.797	116.951	1.697	H1-1b
54	M54	HSS8X8X4	0.15	18.05	16	0.045	20.877	z	3	192.367	293.94	66.288	66.288	3	H1-1b
55	M55	HSS8X8X4	0.15	18.05	16	0.054	18.267	z	1	192.367	293.94	66.288	66.288	3	H1-1b
56	M56	HSS8X8X4	0.15	18.05	16	0.045	20.877	z	3	192.367	293.94	66.288	66.288	3	H1-1b
57	M57	HSS8X8X4	0.15	18.05	16	0.054	18.267	z	1	192.367	293.94	66.288	66.288	3	H1-1b
58	M98	HSS10X2X4	0.095	2.731	16	0.014	2.536	z	16	16.417	216.936	11.824	49.68	1.948	H1-1b
59	M99	HSS10X2X4	0.085	14.77	16	0.013	17.505	z	16	18.789	216.936	11.824	49.68	2.021	H1-1b
60	M100	HSS10X2X4	0.103	2.827	2	0.012	2.61	z	2	13.21	216.936	11.824	49.68	2.26	H1-1b
61	M101	HSS10X2X4	0.061	18.05	1	0.011	18.267	y	3	13.21	216.936	11.824	49.68	1.933	H1-1b
62	M102	HSS10X2X4	0.095	2.731	16	0.014	2.536	z	16	16.417	216.936	11.824	49.68	1.949	H1-1b
63	M103	HSS10X2X4	0.085	14.77	16	0.013	17.505	z	16	18.789	216.936	11.824	49.68	2.022	H1-1b
64	M104	HSS10X2X4	0.094	2.827	2	0.013	0	y	1	13.21	216.936	11.824	49.68	2.315	H1-1b
65	M105	HSS10X2X4	0.058	18.05	16	0.013	20.877	y	1	13.21	216.936	11.824	49.68	1.617	H1-1b
66	M106	HSS6X6X4	0.012	7.08	16	0	7.08	y	2	198.471	216.936	38.64	38.64	1	H1-1b*
67	M107	HSS6X6X4	0.012	7.08	16	0	7.08	y	1	198.471	216.936	38.64	38.64	1	H1-1b*
68	M108	HSS6X6X4	0.007	0	16	0.002	6.467	y	1	201.416	216.936	38.64	38.64	1.136	H1-1b*
69	M109	HSS6X6X4	0.005	0	16	0.002	6.297	y	1	202.194	216.936	38.64	38.64	1.136	H1-1b*
70	M110	HSS6X6X4	0.007	0	16	0.002	6.467	y	1	201.416	216.936	38.64	38.64	1.136	H1-1b*
71	M111	HSS6X6X4	0.005	0	16	0.002	6.297	y	1	202.194	216.936	38.64	38.64	1.136	H1-1b*
72	M117	HSS10X2X4	0.073	10.427	1	0.019	13	z	1	34.069	216.936	11.824	49.68	1.673	H1-1b
73	M112	HSS10X2X4	0.073	10.427	1	0.019	13	z	1	34.069	216.936	11.824	49.68	1.678	H1-1b
74	M114	HSS10X2X4	0.042	2.573	1	0.01	13	z	1	34.069	216.936	11.824	49.68	1.628	H1-1b
75	M113	HSS10X2X4	0.021	1.747	16	0.012	1.747	z	16	196.608	216.936	11.824	49.68	2.203	H1-1b
76	M115	HSS10X2X4	0.021	1.747	16	0.012	1.747	z	16	196.608	216.936	11.824	49.68	2.203	H1-1b
77	M116	HSS10X2X4	0.04	2.573	1	0.01	2.437	z	1	34.069	216.936	11.824	49.68	1.651	H1-1b

**Material Take-Off**

	Material	Size	Pieces	Length [ft]	Weight [K]
1	General Members				
2	RIGID	RE4X4	40	75.4	0
3	RIGID		2	3.5	0
4	Total General		42	78.9	0
5					
6	Hot Rolled Steel				
7	A500 Gr.B RECT	HSS10X2X4	14	211.5	4.055
8	A500 Gr.B RECT	HSS12X8X4	17	291	9.542
9	A500 Gr.B RECT	HSS6X6X4	6	39.7	0.761
10	A500 Gr.B RECT	HSS8X8X4	40	855.9	22.24
11	Total HR Steel		77	1398.1	36.599

PIER DESIGN

FROM RISK-OUT PRINT-OUT NODE LOADS



RISK LOADS

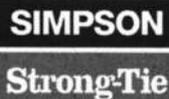
	X	Y	Z	M <sub>x</sub>	M <sub>y</sub>
N57	2k	3	1.4	11.64	17.4
N53	1.92	3	1.4	11.64	17.4
N55	1.92	3	1.4	11.64	17.4
N59	2.0	3	1.4	11.64	17.4
	8k	12k	5.6k	46.6k'	69.6k'

$M_x = 47k'$      $x = 8k$   
 $M_y = 70k'$      $z = 5.6k$

FROM SIMPSON DESIGNER

USE: 1 1/4" Ø FIBER GLASS SS  
x 36" EMBEDMENT

USE: 36" x 36" CONC. PIER  
W/ 8-#7 VERT. BARS  
3-#4 TIES @ 3" O.C.  
#4 TIES @ 12" O.C.



Anchor Designer™  
Software  
Version 3.1.2301.3

Company:		Date:	1/23/2023
Engineer:		Page:	1/6
Project:			
Address:			
Phone:			
E-mail:			

### 1. Project information

Customer company:  
Customer contact name:  
Customer e-mail:  
Comment:

Project description:  
Location:  
Fastening description:

### 2. Input Data & Anchor Parameters

#### General

Design method: ACI 318-19  
Units: Imperial units

#### Anchor Information:

Anchor type: Cast-in-place  
Material: F1554 Grade 55  
Diameter (inch): 1.250  
Effective Embedment depth,  $h_{ef}$  (inch): 36.000  
Anchor category: -  
Anchor ductility: Yes  
 $h_{min}$  (inch): 38.00  
 $C_{min}$  (inch): 1.65  
 $S_{min}$  (inch): 5.00

#### Base Material

Concrete: Normal-weight  
Concrete thickness,  $h$  (inch): 84.00  
State: Cracked  
Compressive strength,  $f_c$  (psi): 4000  
 $\Psi_{c,v}$ : 1.0  
Reinforcement condition: Supplementary reinforcement present  
Supplemental edge reinforcement: Not applicable  
Reinforcement provided at corners: Yes  
Ignore concrete breakout in tension: Yes  
Ignore concrete breakout in shear: No  
Ignore 6d<sub>s</sub> requirement: Yes  
Build-up grout pad: Yes

#### Base Plate

Length x Width x Thickness (inch): 26.00 x 26.00 x 0.50

#### Recommended Anchor

Anchor Name: Heavy Hex Bolt - 1 1/4"Ø Heavy Hex Bolt, F1554 Gr. 55



Company:		Date:	1/23/2023
Engineer:		Page:	2/6
Project:			
Address:			
Phone:			
E-mail:			

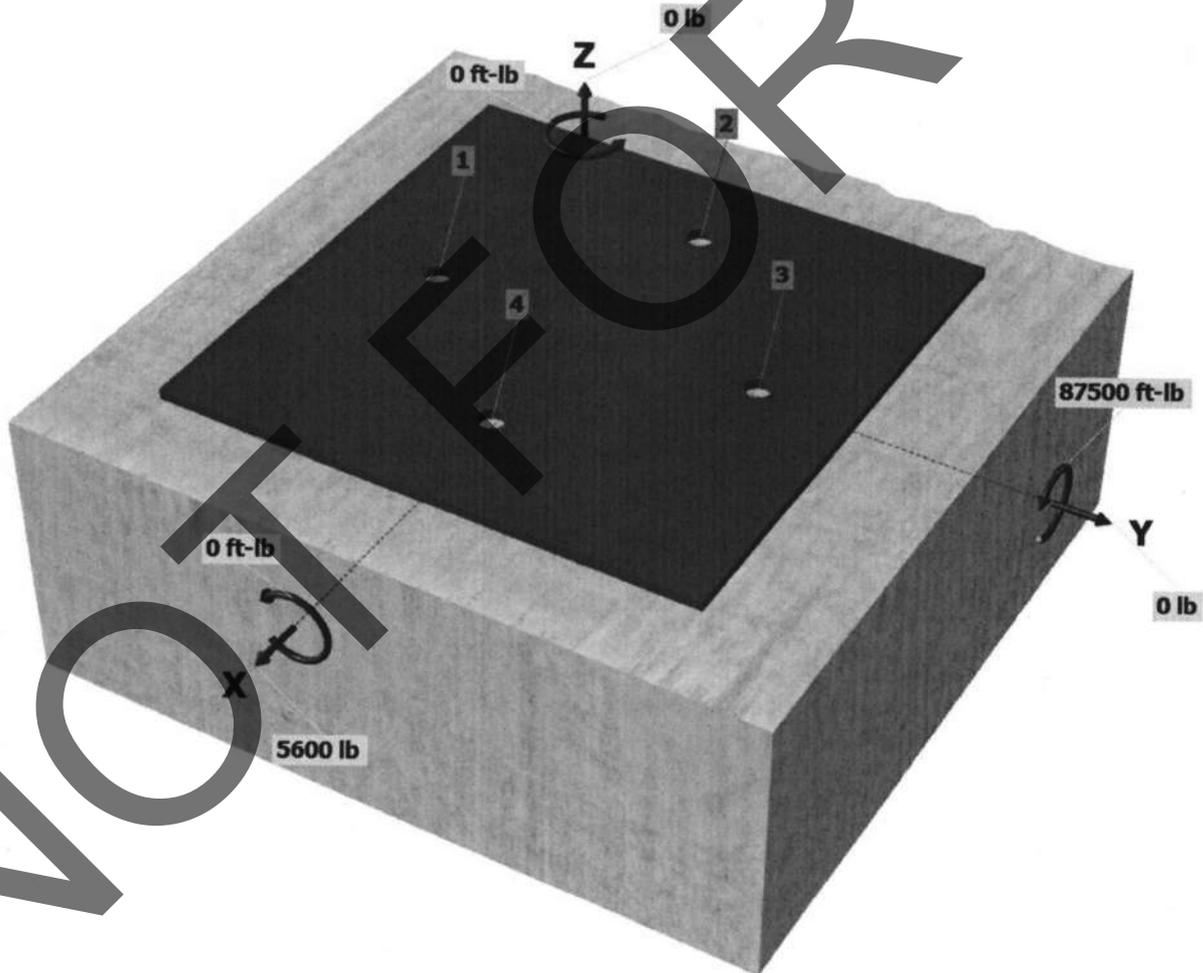
**Load and Geometry**

Load factor source: ACI 318 Section 5.3  
 Load combination: not set  
 Seismic design: No  
 Anchors subjected to sustained tension: Not applicable  
 Apply entire shear load at front row: No  
 Anchors only resisting wind and/or seismic loads: No

**Strength level loads:**

$N_{us}$  [lb]: 0  
 $V_{uax}$  [lb]: 5600  
 $V_{uay}$  [lb]: 0  
 $M_{ux}$  [ft-lb]: 0  
 $M_{uy}$  [ft-lb]: 87500  
 $M_{uz}$  [ft-lb]: 0

<Figure 1>



## CHECK FOUNDATION

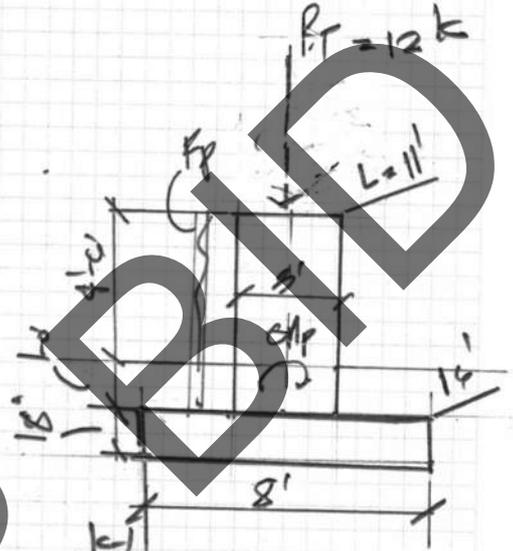
$$F_p = 0.5 w_p \quad w_p = 150 \frac{\text{lb}}{\text{ft}} \times 3' = 450 \frac{\text{lb}}{\text{ft}}$$

$$= 0.5(450) = 225 \text{ psf}$$

$$V_T = 40 \text{ k} \times 0.7 = 28 \text{ k} \times \frac{1}{4} = 7 \text{ k}$$

$$OM_p = 7 \text{ k} \times [10.5' + 7']$$

$$(M_{TOT}) = 165 \text{ k-ft}$$



RM:

$$P_T = 12 \text{ k} \quad = 12 \text{ k} \times 8' = 96 \text{ k-ft}$$

$$P_{SEIL} = 9' \times 11' \times 9.5' \times 150 = 27 \text{ k} \times 4' = 108 \text{ k-ft}$$

$$P_{TC} = 1.5' \times 8' \times 14' \times 150 = 28.8 \text{ k} \times 4' = 116 \text{ k-ft}$$

$$\text{Total } = 272 \text{ k-ft} \quad Z_{WT} = 68 \text{ k-ft}$$

$$SFO = \frac{0.9 RM}{OM} = \frac{272}{165} = 1.48 > 1.0$$

SOIL BEARING

$$e = \frac{M}{P} = \frac{165}{68} = 2.42' \quad \frac{b}{6} = 1.33'$$

$$x' = \frac{RM}{P_T} = \frac{272}{68} = 4'$$

$$L' = 3[x' - e] = 4.75'$$

$$q_s = \frac{Z_{WT}}{L' \times 16'} = \frac{68}{4.75' \times 16'} = 1.78 \text{ ksf} < 1.5 \times 1.195 = 2 \text{ ksf}$$

18" THK x 8'-0" WIDE

W/ #6 @ 12" O.C. TRANSVERSE

W/ 8 - #6 CONT. BARS