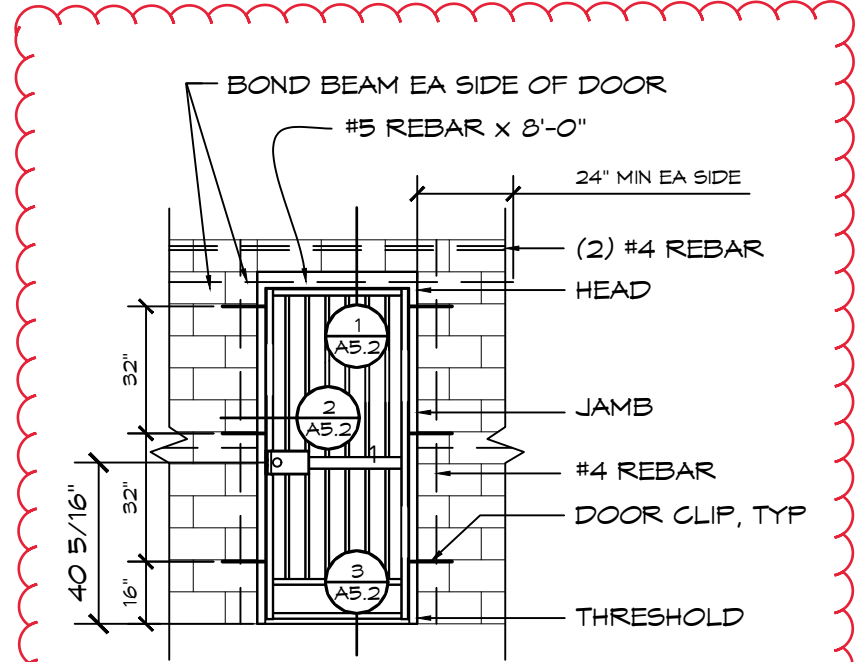


DOOR SCHEDULE						
NO	SIZE (WxHxT)	DOOR	FRAME	SWING - DOOR / FRAME	HARD-WARE GROUP	REMARKS
1	36"x84"x1 3/4"	HSS	F16	INTERIOR RIGHT HAND (REVERSE) SWING OUT / LEFT HAND	DO~ 1	STEEL GATE
2	36"x84"x1 3/4"	HSS	F16	INTERIOR LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 1	STEEL GATE
3	36"x84"x1 3/4"	SL18	F16	INTERIOR LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 2	

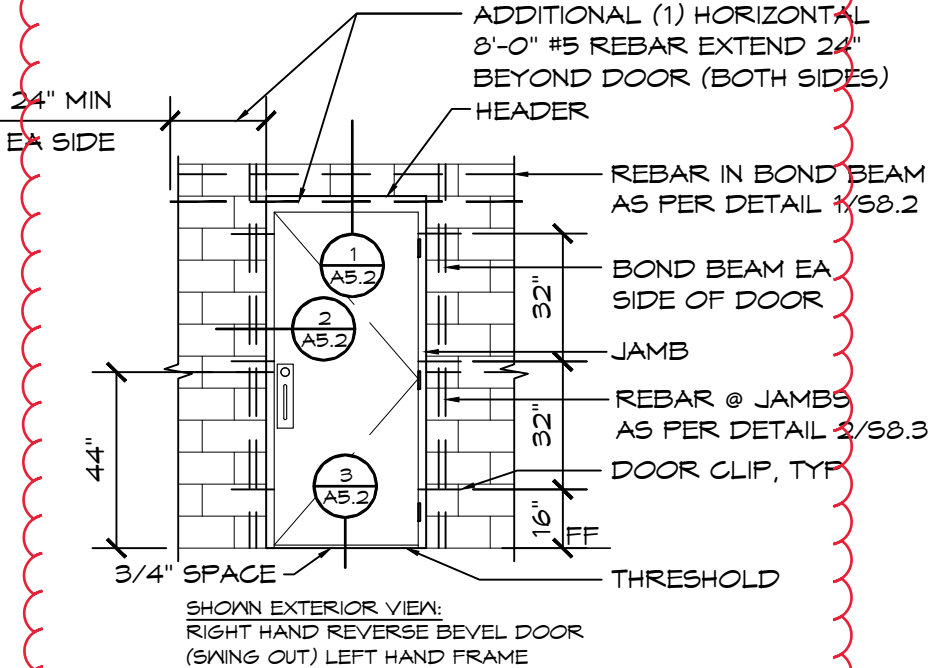
DOOR HARDWARE SCHEDULE (QTYS PER DOOR)

GROUP DO-1	GROUP DO-2	
4	3	EACH HINGE 4.5" X 4.5" S.S., MODEL: #ECBB1101-4 1/2 X 4 1/2-USD32D (NRP) BY HAGER - HINGES ARE ACCESSIBLE FROM THE OUTSIDE WHEN THE DOOR IS CLOSED
1	1	DOOR CLOSER, (USE THRU BOLT ANCHORING OPTION)
1	-	DEADBOLT LOCKSET, SCHLAGE B561 - <u>DOUBLE CYLYNDER</u> , SATIN FINISH - (KEY - OUTSIDE / KEY - INSIDE)
-	1	DEADBOLT LOCKSET, SCHLAGE B660 - <u>CLASSROOM LOCK</u> , SATIN FINISH - (KEY - OUTSIDE / THUMB-TURN - INSIDE RETRACTS ONLY)
-	2	PULL PLATE, 4" X 16"
-	2	PULL HANDLE, 8" CENTER
6	6	WIRE DOOR CLIPS
1	-	EACH POWER DOOR LOCK- ELECTROMAGNETIC LOCK W/ DELAYED ACTION SWITCH, SHARED TIMER

NOTE: THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS, WITH SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. WHEN FIRE DOORS ARE UTILIZED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO NOT EXCEED 15 POUNDS. SECTION 11B-404.2.9.



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



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



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PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: DOOR SCHEDULE

PROJECT #: GAR04
DATE: 12/23/2024

DRAWN BY: JLL

REV. DATE: BY:

1 07/01/2025 JLL

REVISIONS:

A5.1

SHEET NO.

Technical drawing of a rectangular panel. The panel is labeled $7 \frac{3}{4}" \times 4"$. A dimension of $6"$ is indicated for the width of the inset at the bottom left. The drawing includes hatching for different materials and a callout for a detail view.

GROUT SOLID
STEEL DOOR -

1 15/16"

7 3/4" x 4"

SCALE: 3" = 1'-0"

— REBAR @ JAMBS AS
PER DETAIL 1/S8.2
AVOID INTERFERENCE

CAULK _____
GROUT SOLID

NOTE A.
SINGLE DOOR 2" JAMB
DOUBLE DOOR 4" JAMB

SCALE: 3" = 1'-0"



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SHEET TITLE:

DOOR DETAILS

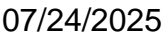
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JOB CREATED: 7/1/2025 - LAST SAVED BY: jorgsdon ON 7/1/2025 - LAST PRINTED: 7/1/2025 - LOCATION: \\data\data\Engineering\RI\Plan Sets\GAR04- Garden Grove Parks (Hester Park RR), CA\GAR04- Garden Grove Parks (Hester Basin RR) 2080, CA 241219.dwg

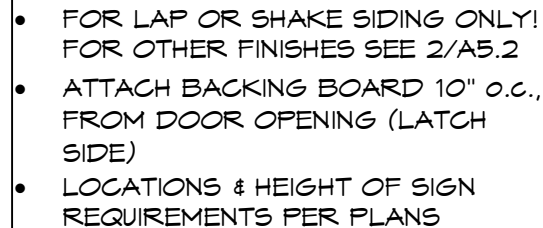
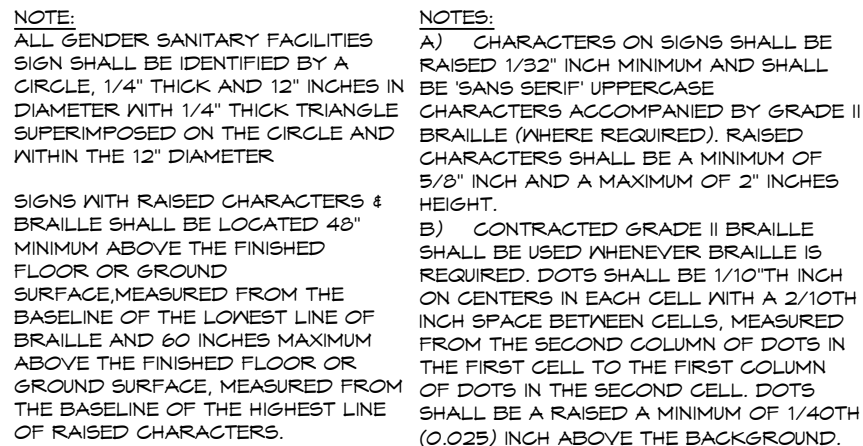
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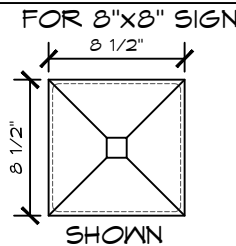


 **ROMTEC #225-077**

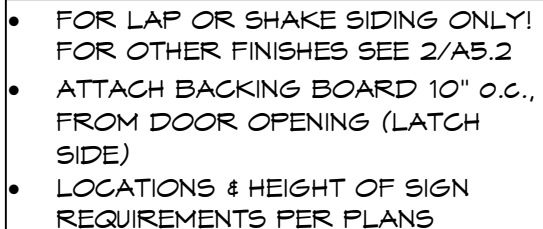
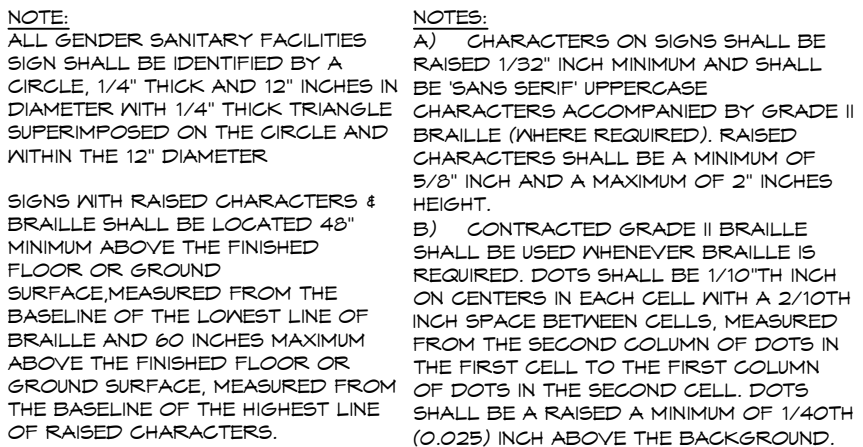
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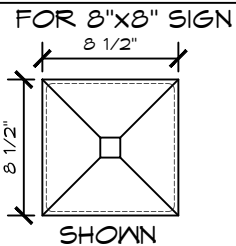
SCALE: 1" = 1'-0"



SIGN FASTENERS: WOOD/FIBER CEMENT/STEEL
(4) #10 3/4" PHILLIPS ROUND HEAD SCREW.



SCALE: 1" = 1'-0"



SIGN FASTENERS: WOOD/FIBER CEMENT/STEEL
(4) #10 3/4" PHILLIPS ROUND HEAD SCREW.

PROJECT: GARDEN GROVE PARKS
GARDEN GROVE (HASTER BASIN RESTROOM)
GARDEN GROVE, CA

SIGN DETAILS

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: JL

REV. _____ DATE: _____ BY: _____

REVISIONS

A5.3

SHEET NO.

JOB CREATED: 1/1/2025 - LAST SAVED BY: logsdon ON 1/1/2025 - LAST PRINTED: 1/1/2025 - LOCATION: \\data\data\Engineering R\Plan Sets\GAR04- Garden Grove Parks (Hester Park RR). CA\GAR04- Garden Grove Parks (Hester Basin RR) 2080 CA 241219.dwg

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VENT AND/OR WINDOW SCHEDULE									
NO	DIMENSIONS	PITCH	INSERT	ROMTEC PRODUCTION #	DIRECTION PER PRODUCTION	FASTENERS			REFERENCE / DETAILS
						SILL	TOP	HYP	
1	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV- 050-1002		5	-	9	SEE SHEET A6.2
2	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV- 050-1002		5	-	9	SEE SHEET A6.2
3	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV- 050-1002		5	-	9	SEE SHEET A6.2
4	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV- 050-1002		5	-	9	SEE SHEET A6.2
5	50 1/4"x19 15/16"x 9 7/16"	5:12	WIRE MESH	XV- 050-1004		4	-	6	SEE SHEET A6.2
6	50 1/4"x19 15/16"x 9 7/16"	5:12	WIRE MESH	XV- 050-1004		4	-	6	SEE SHEET A6.2
HARDWARE (QUANTITY PER SCHEDULE)									
SILL	1/2" x 4"	TITEN HD SCREW (ICC-ES ESR-1056)							
HYP	#12 x 1 1/2"	WOOD SCREW							
					VIEW FROM EXTERIOR				

NOTE: DURING THE CONSTRUCTION PROCESS IT IS COMMON FOR SMALL GAPS TO APPEAR IN ANY NUMBER OF PLACES. ROMTEC DOES NOT PROVIDE CAULK OR ANY OTHER MATERIAL TO FILL THESE SMALL GAPS UNLESS IT IS SPECIFIED IN OUR SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER

RALPH M. HALL

C87047

EXP. 6-30-2027

CIVIL

STATE OF CALIFORNIA

07/24/2025

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PROJECT:

GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

SHEET TITLE:

GARDEN GROVE, CA
VENT/WINDOW SCHEDULE

PROJECT #:

GAR04

DATE:

12/23/2024

DRAWN BY:

JL

REV.	DATE:	BY:

REVISIONS:

SHEET NO.

A6.1

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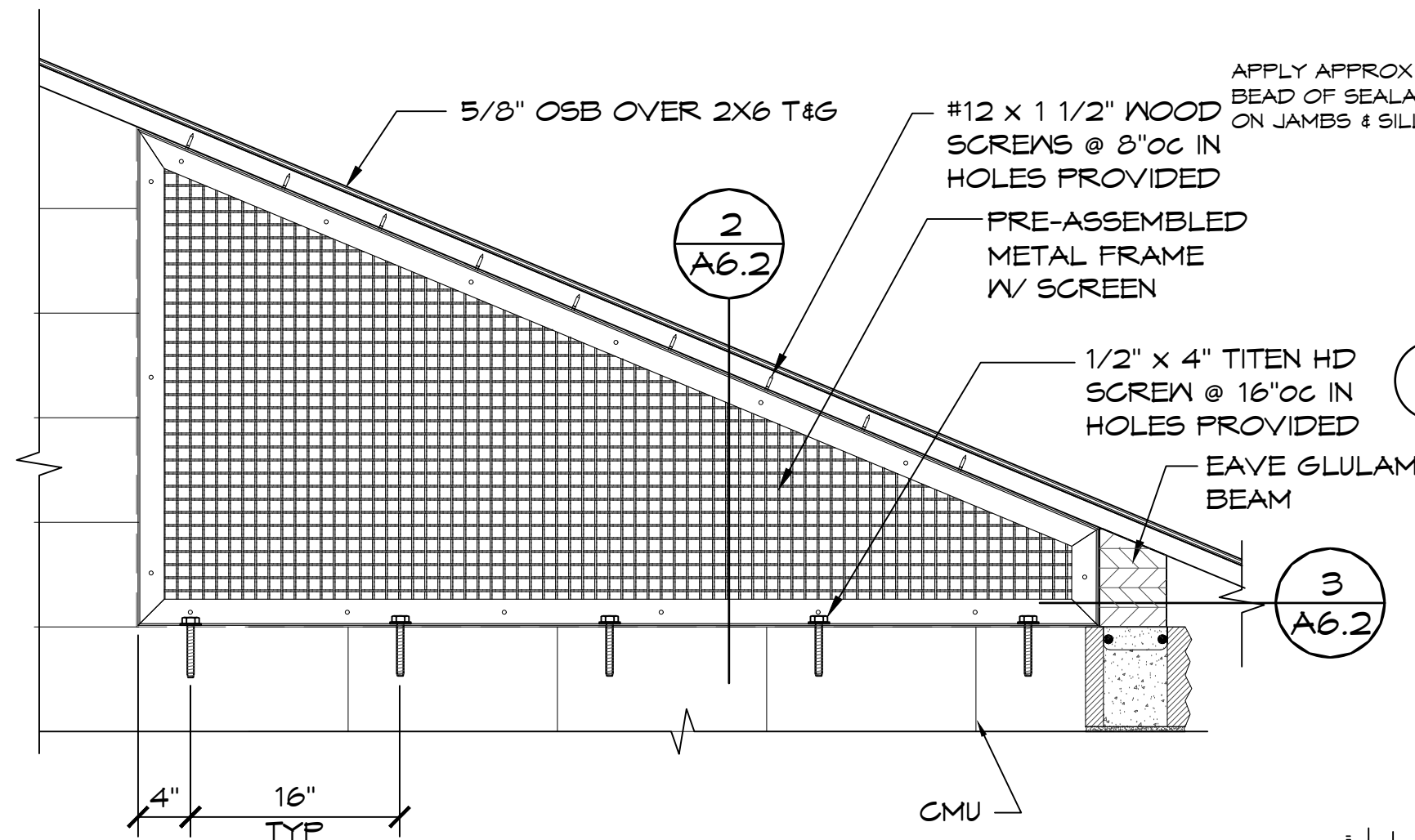


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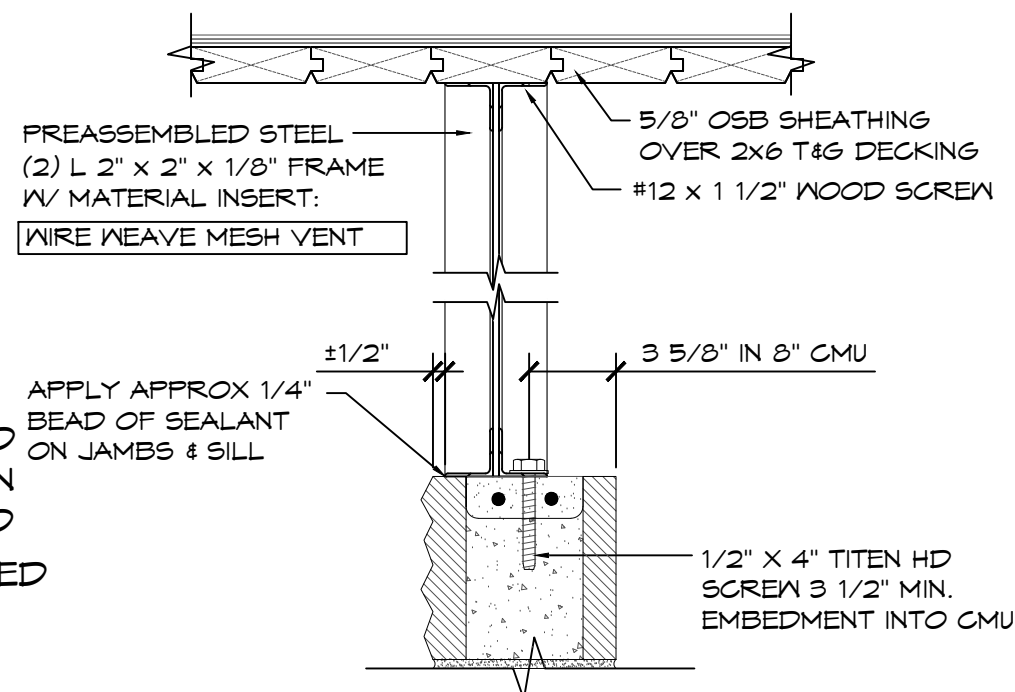
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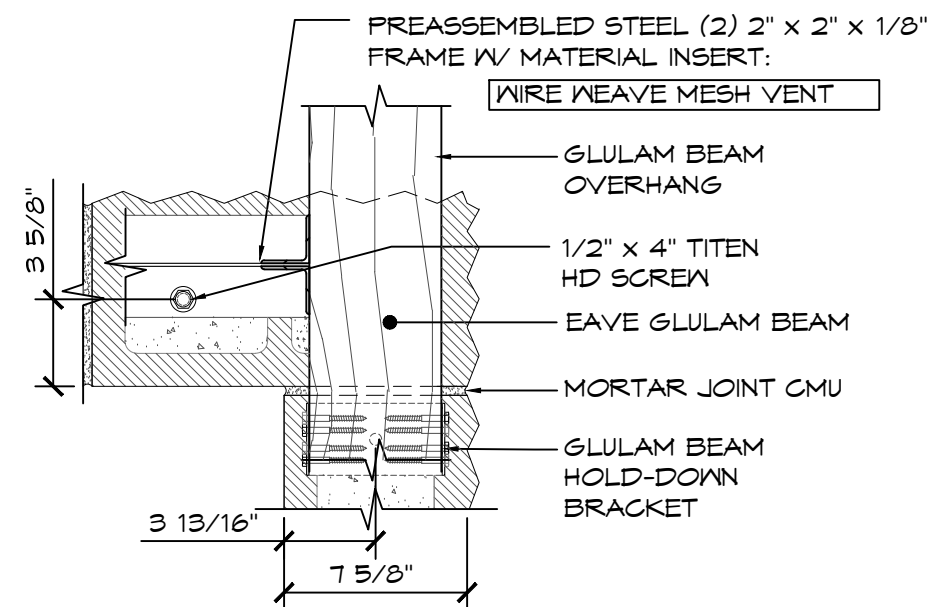
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1 GABLE VENT DETAIL
SCALE: 1" = 1'-0"



2 SECTION VIEW (SIDE)
SCALE: 1 1/2" = 1'-0"

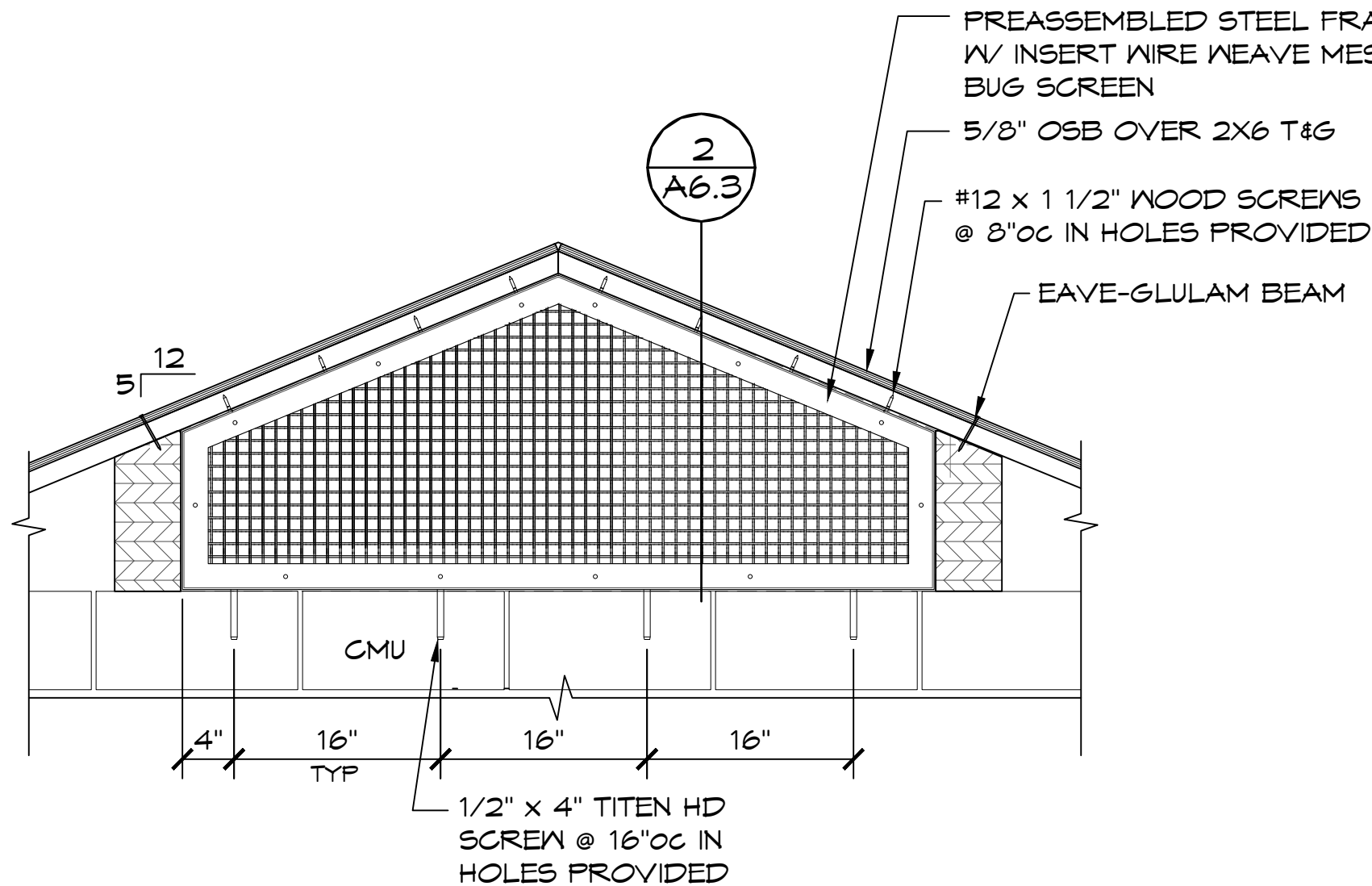


3 SECTION VIEW (TOP)
SCALE: 1 1/2" = 1'-0"

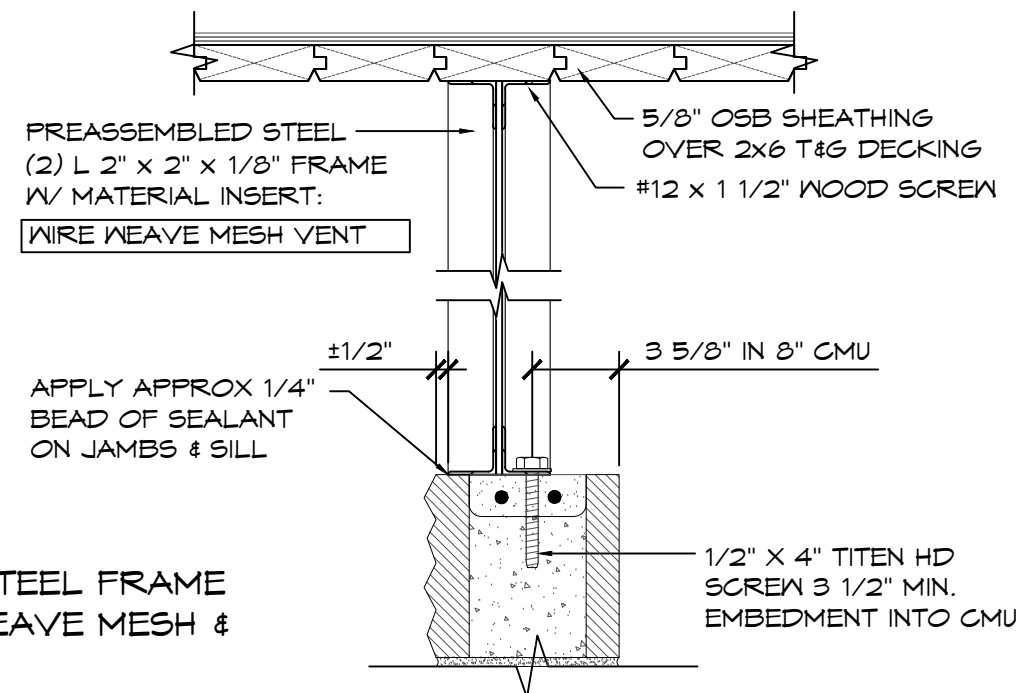
PROJECT: **GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)**
SHEET TITLE: **GARDEN GROVE, CA
VENT/WINDOW DETAILS**

PROJECT #: **GAR04**
DATE: **12/23/2024**
DRAWN BY: **JL**
REV. DATE: BY:
REVISIONS:

SHEET NO. **A6.2**



1 RIDGE VENT DETAIL
SCALE: 1" = 1'-0"



2 SECTION VIEW (SIDE)
SCALE: 1 1/2" = 1'-0"



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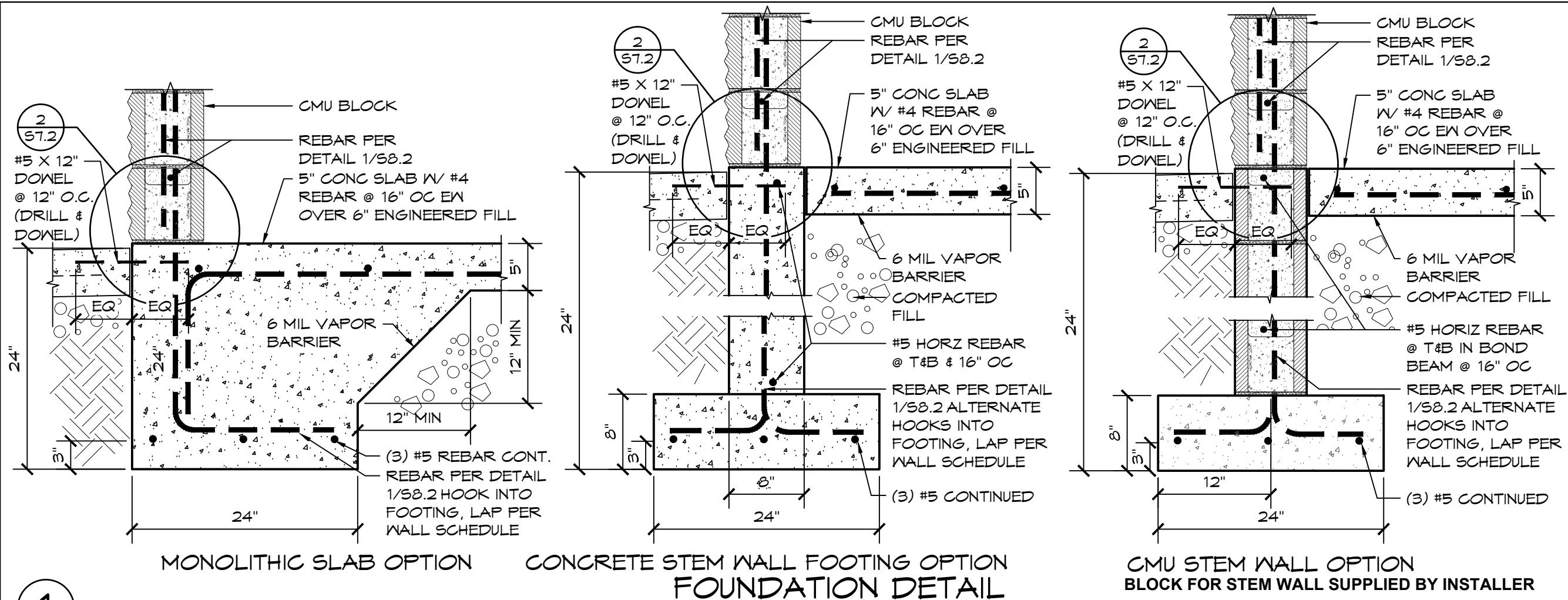
PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: WOOD FILLER WALL SCHEDULE

PROJECT #: GAR04
DATE: 12/23/2024
DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:

A6.3
SHEET NO.



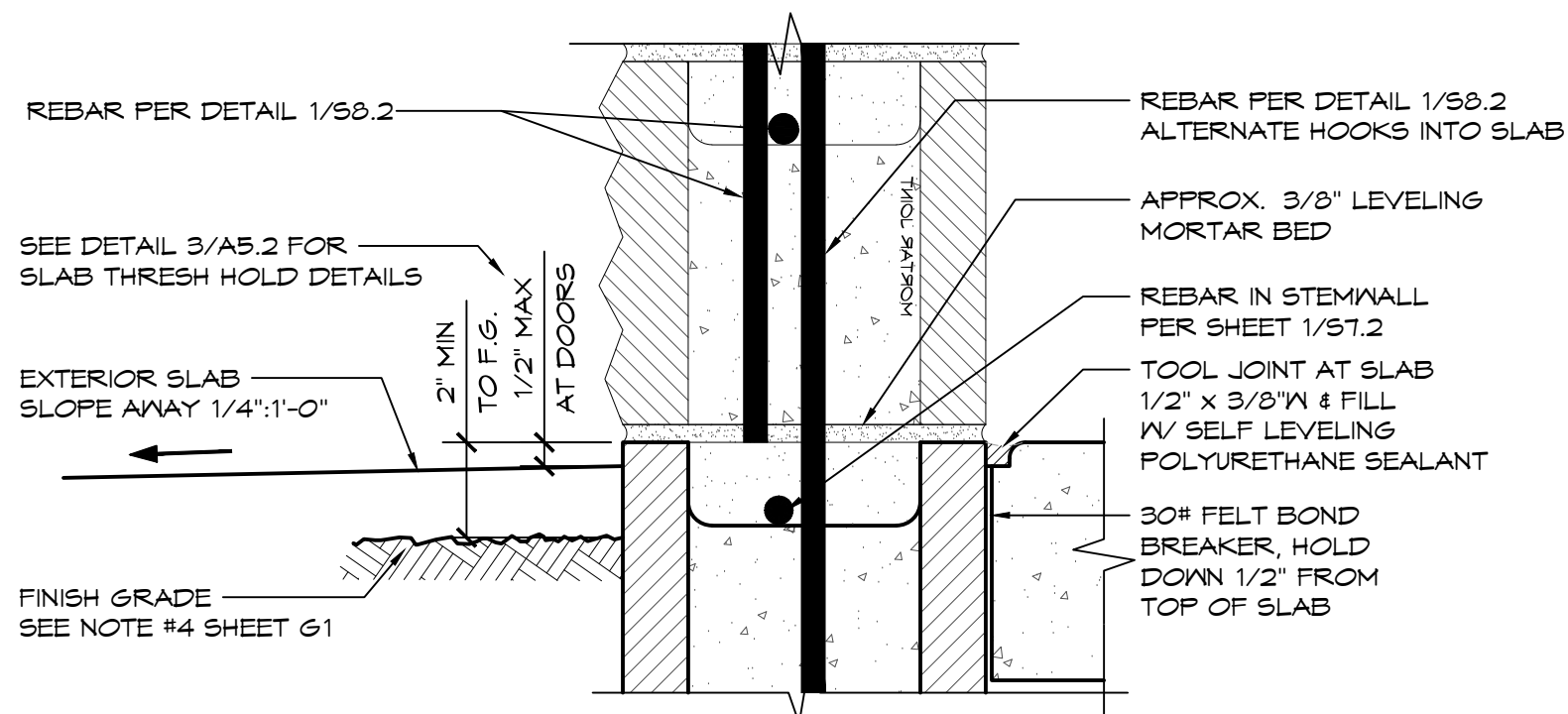
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1



2 WALL-SLAB CONNECTION - CMU STEM

SCALE: 3" = 1'-0"

PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
SHEET TITLE: GARDEN GROVE, CA FOUNDATION DETAILS

PROJECT #: GAR04

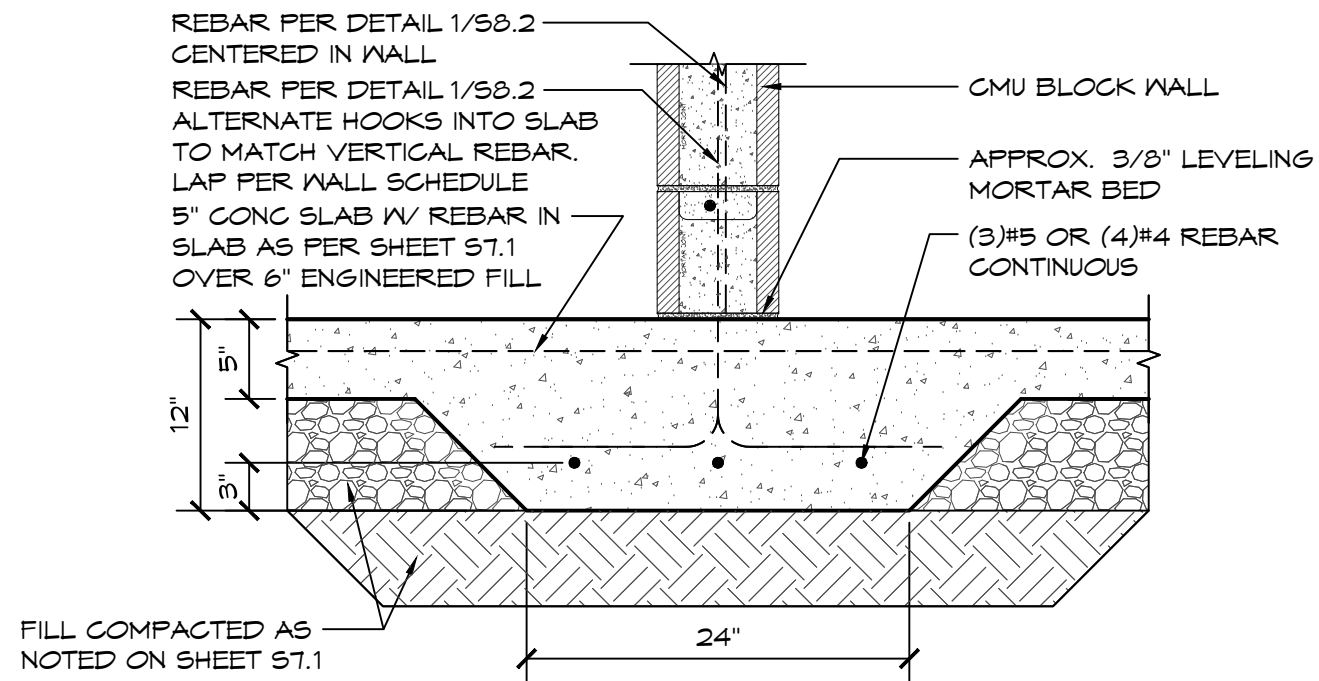
DATE: 12/23/2024

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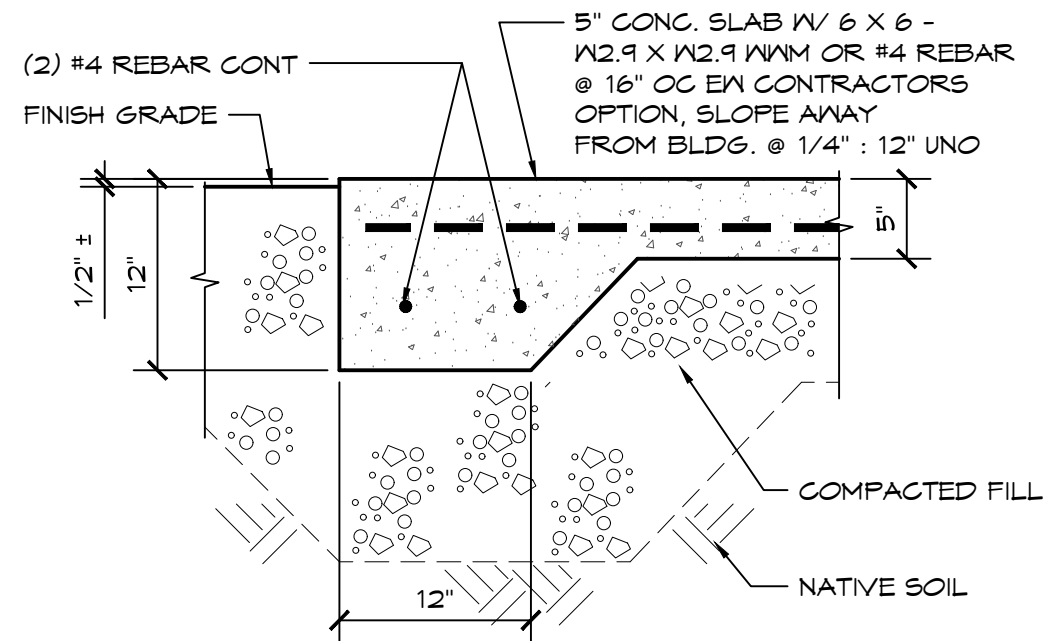
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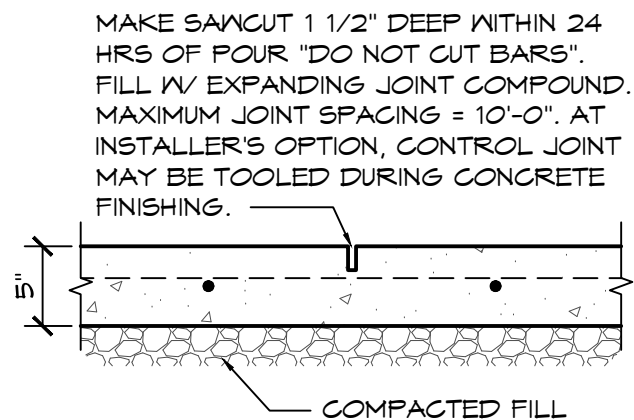
S7.2



1 THICKENED SLAB AT INTERIOR WALL
SCALE: 1" = 1'-0"



2 EDGE OF CONC. WALKWAY
SCALE: 1" = 1'-0"



3 SAWCUT JOINT
SCALE: 1" = 1'-0"



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PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

SHEET TITLE: GARDEN GROVE, CA
FOUNDATION DETAILS

PROJECT #: GAR04

DATE: 12/23/2024

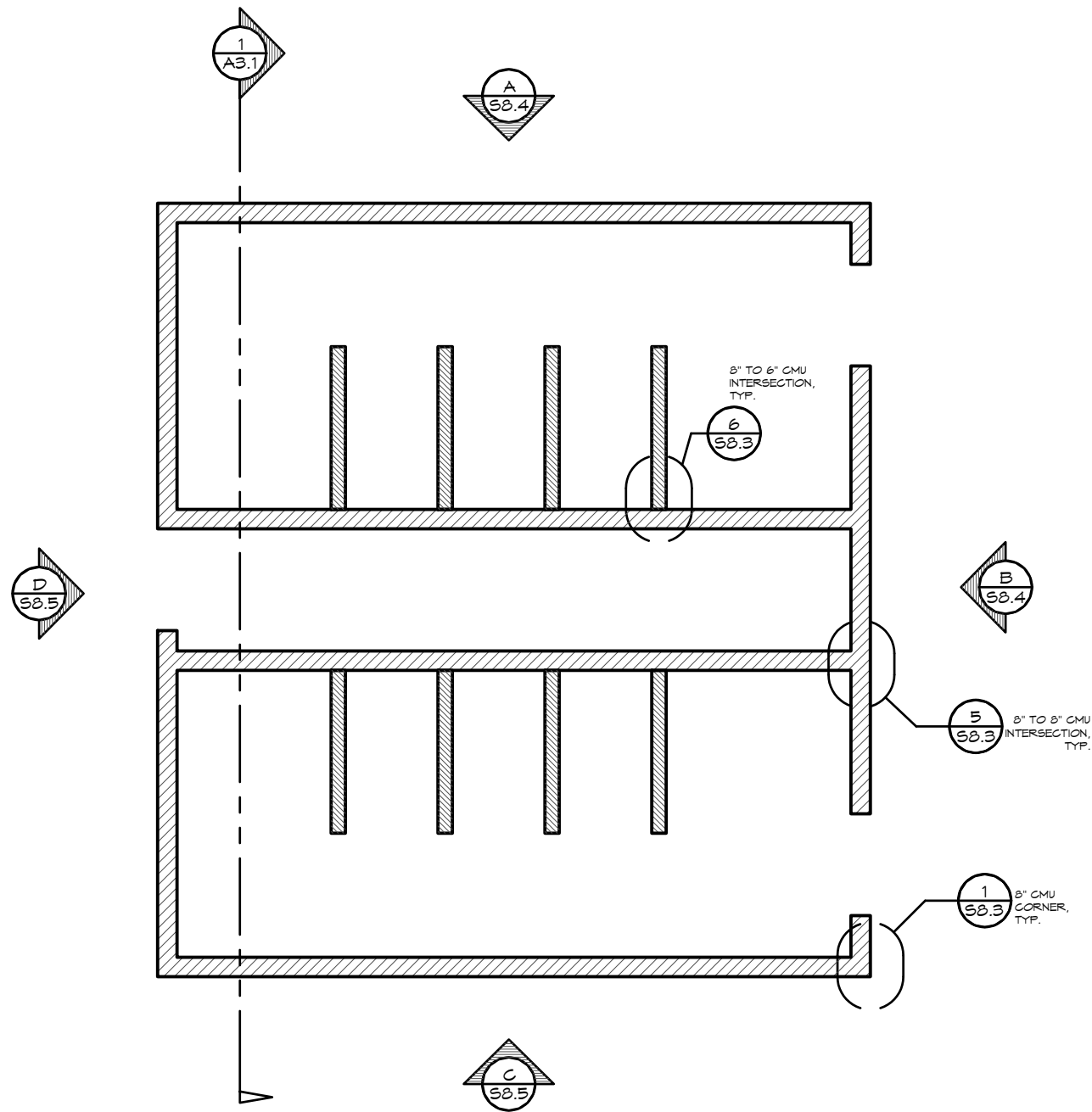
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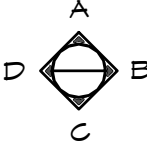
REVISIONS:

SHEET NO.

S7.3



1 STRUCTURAL CMU PLAN
SCALE: 3/16" = 1'-0"



WALL TYPE SCHEDULE	
	8" REINFORCED CONCRETE MASONRY BLOCK WALL WITH MORTAR JOINTS, GROUTED SOLID ALL CELLS RUNNING BOND PATTERN.

THE CMU BLOCK LAYOUT SHALL BE PER THE BLOCK LAYOUT PLANS IN THE:
"FINAL"
ROMTEC SCOPE OF SUPPLY AND DESIGN SUBMITTAL



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PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU PLAN

PROJECT #:		GAR04
DATE:		12/23/2024
DRAWN BY:		JL
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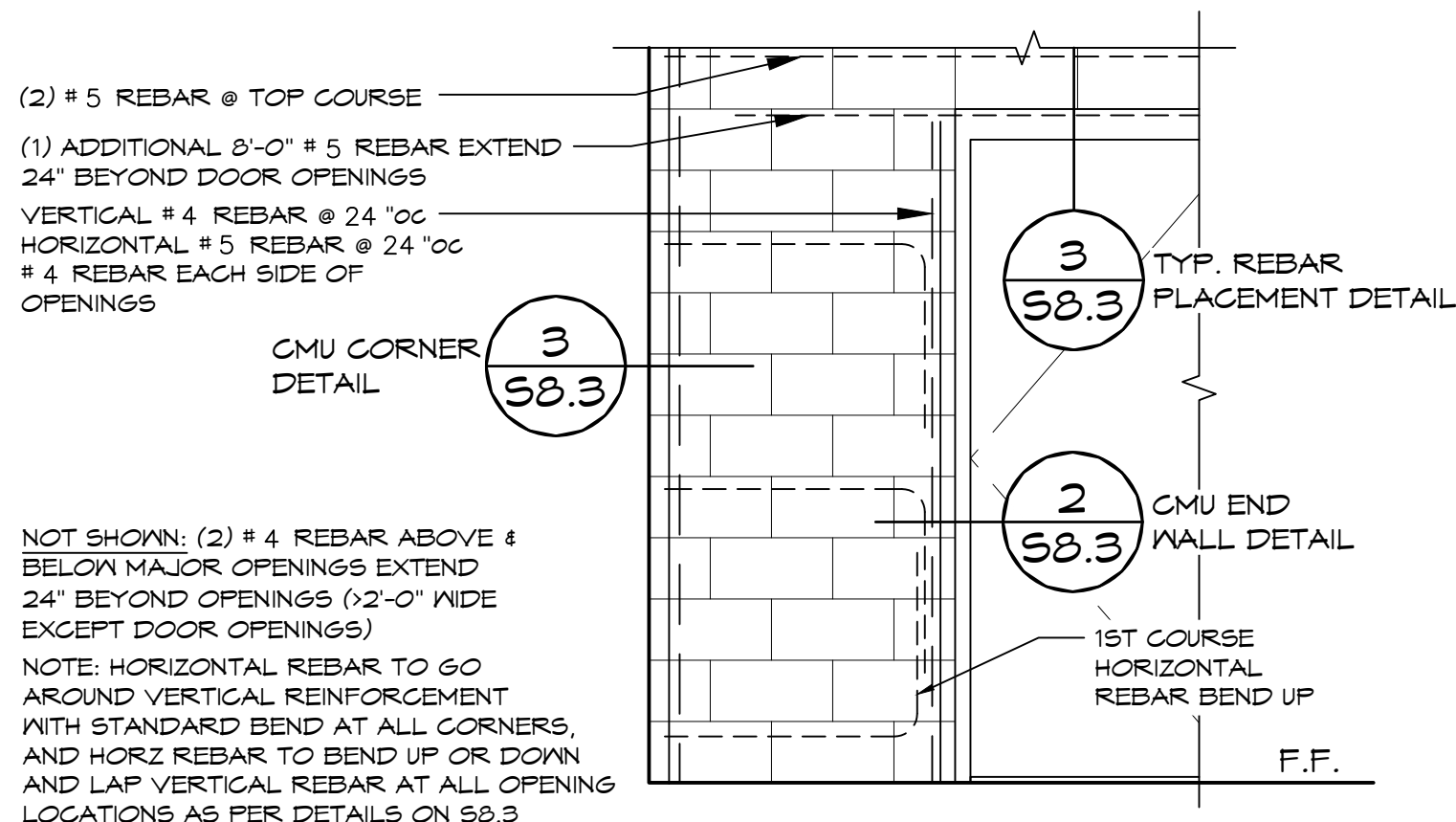
CMU REBAR SCHEDULE		
REBAR	MIN. LAP	BEND DIAMETER
#4	24"	3" MIN.
#5	30"	3-3/4" MIN.

CMU REBAR NOTES:

- BENDS: MIN. INSIDE BEND DIAMETER SHALL BE NOT LESS THAN $6d$ AS PER TMS 402-16 SECTION 6.1.8.2
- SPLICES: LAP SPLICES ARE PERMITTED AS PER TMS 402-16 SECTION 6.1.6.1.1

PIPES INSTALLED THROUGH CMU WALL NOTES:

- SUPPLY: THE FIXTURE SUPPLY LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE AND THE PORTION OF PIPE LOCATED IN CMU WALL SHALL BE WRAPPED WITH 10MIL BLACK TAPE
- WASTE PIPE: THE FIXTURE WASTE LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE.



1 CMU REBAR LAYOUT DETAIL

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

PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU REBAR LAYOUT

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: JL

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REVISIONS:

SHEET NO. **S8.2**



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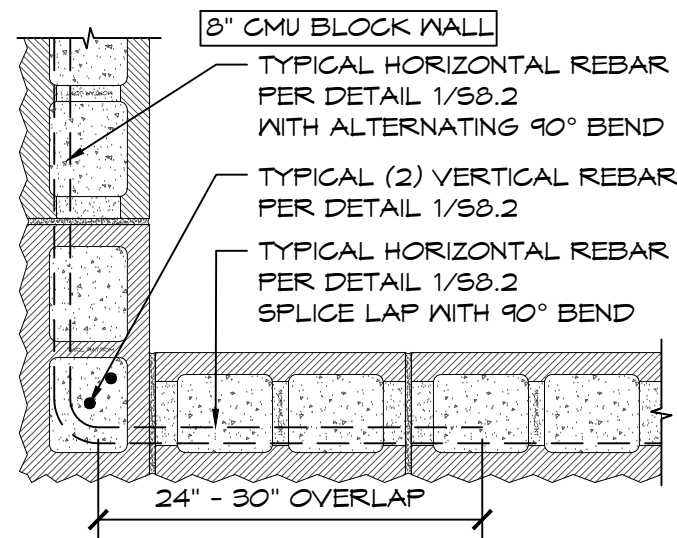
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PROJECT: **GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)**
SHEET TITLE: **GARDEN GROVE, CA
STRUCTURAL CMU DETAILS**

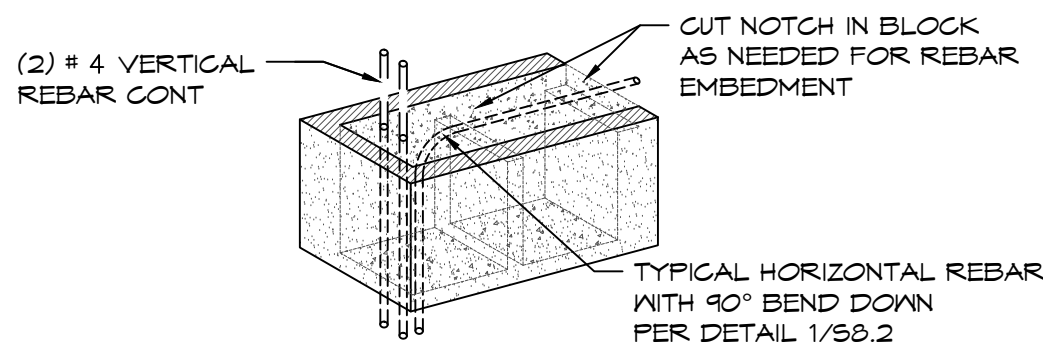
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DATE: **12/23/2024**
DRAWN BY: **JL**
REV. DATE: BY:
REVISIONS:
SHEET NO. **58.3**

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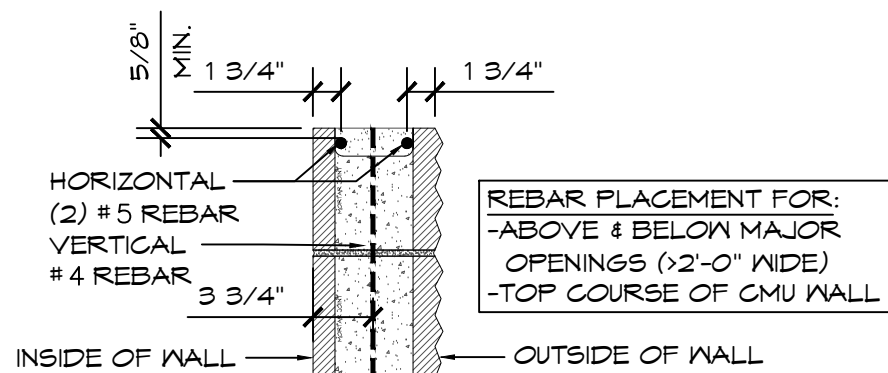
1 MORTAR JOINT CMU CORNER DETAIL

SCALE: 1" = 1'-0"



2 MORTAR JOINT CMU WALL END DETAIL

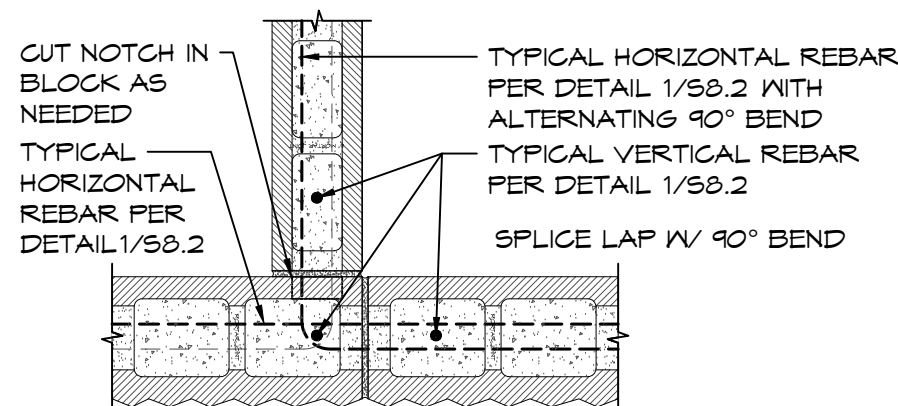
SCALE: 1" = 1'-0"



NOTE: REBAR INSTALLED AS PER
TMS 602-13/ACI 530.1-13/ASCE 6-13

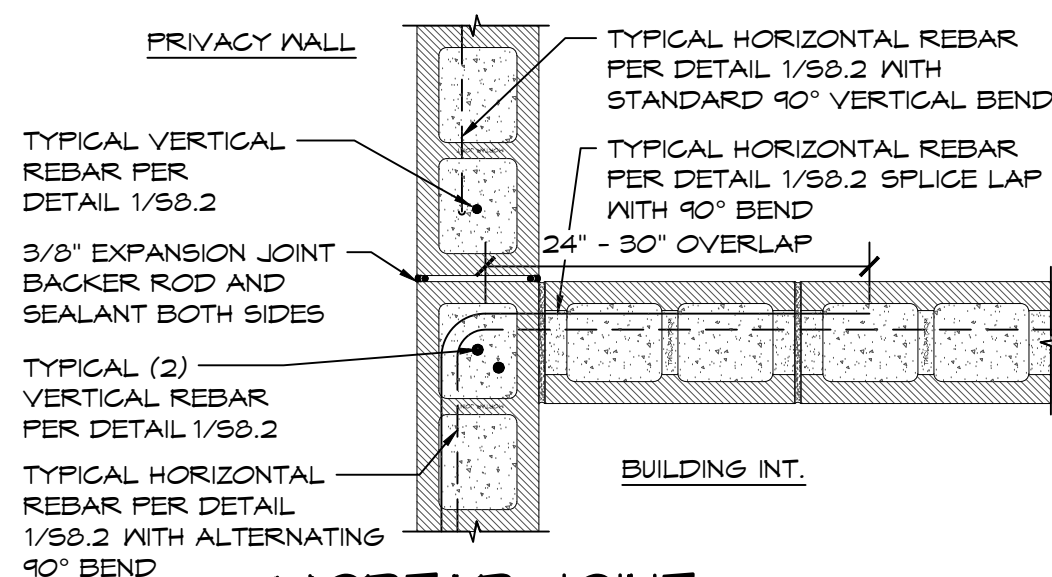
3 8" CMU REBAR PLACEMENT

SCALE: 1" = 1'-0"



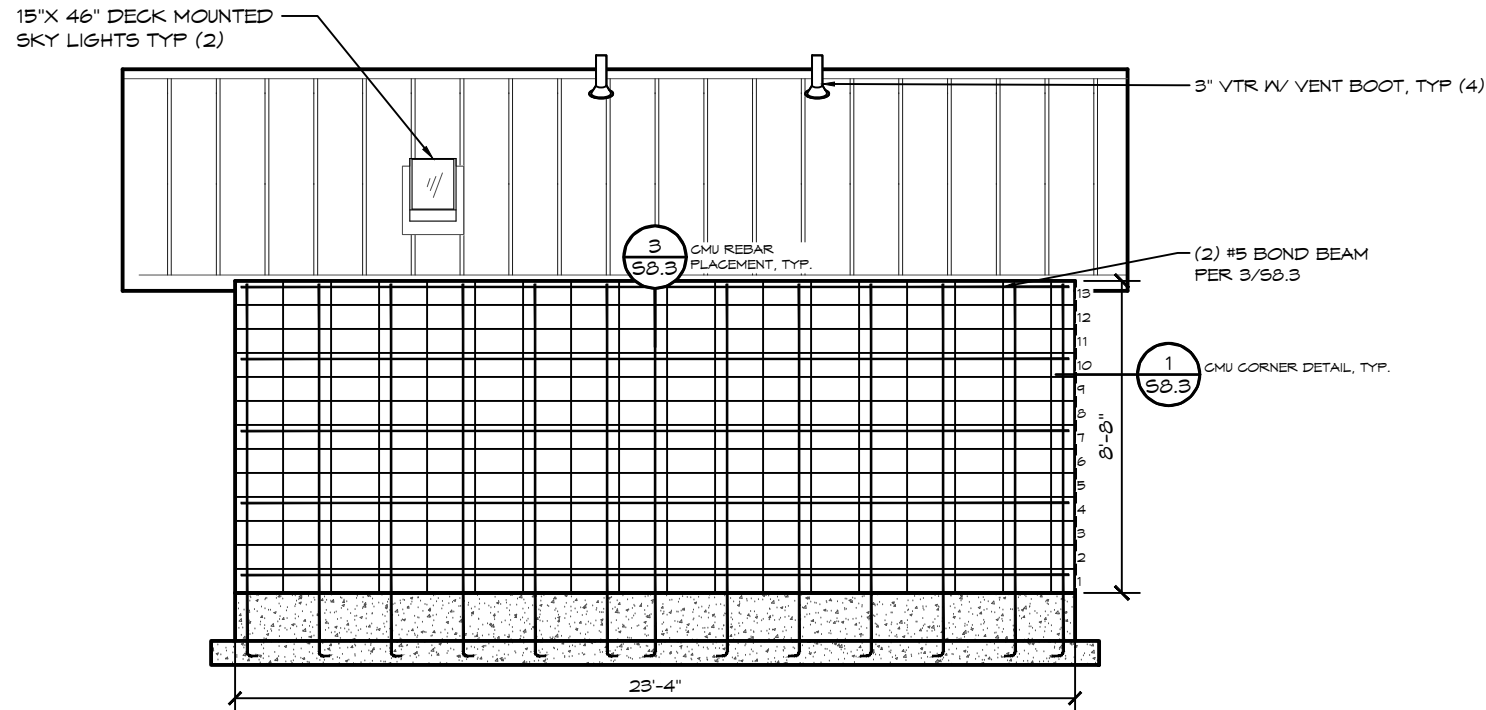
4 6" TO 8" MORTAR JOINT CMU INTERSECTION DETAIL

SCALE: 1" = 1'-0"

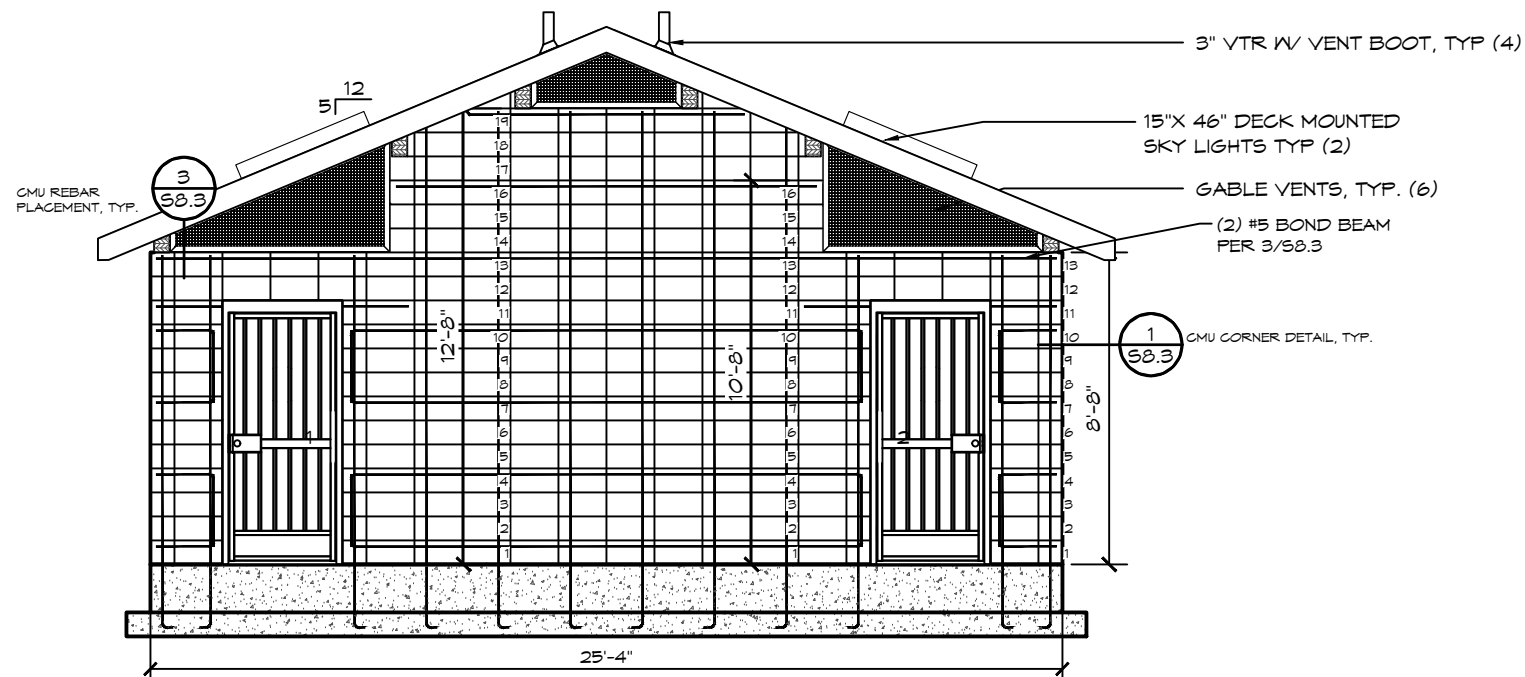


5 MORTAR JOINT CMU CONTROL JOINT DETAIL

SCALE: 1" = 1'-0"



A CMU ELEVATION VIEW
SCALE: 3/16" = 1'-0"



B CMU ELEVATION VIEW
SCALE: 3/16" = 1'-0"



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PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **S8.4**



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ROMTEC #225-977

PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: GAR04

DATE: 12/23/2024

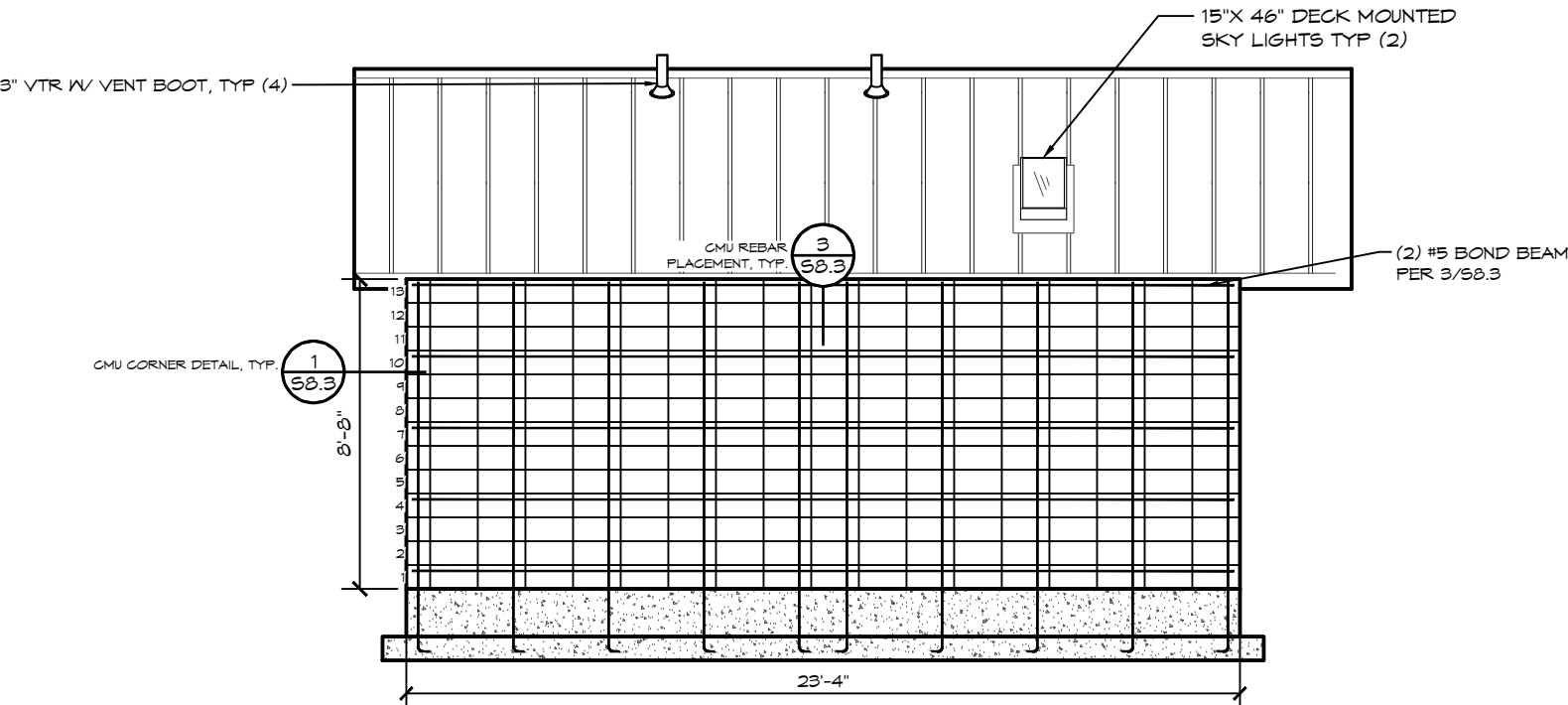
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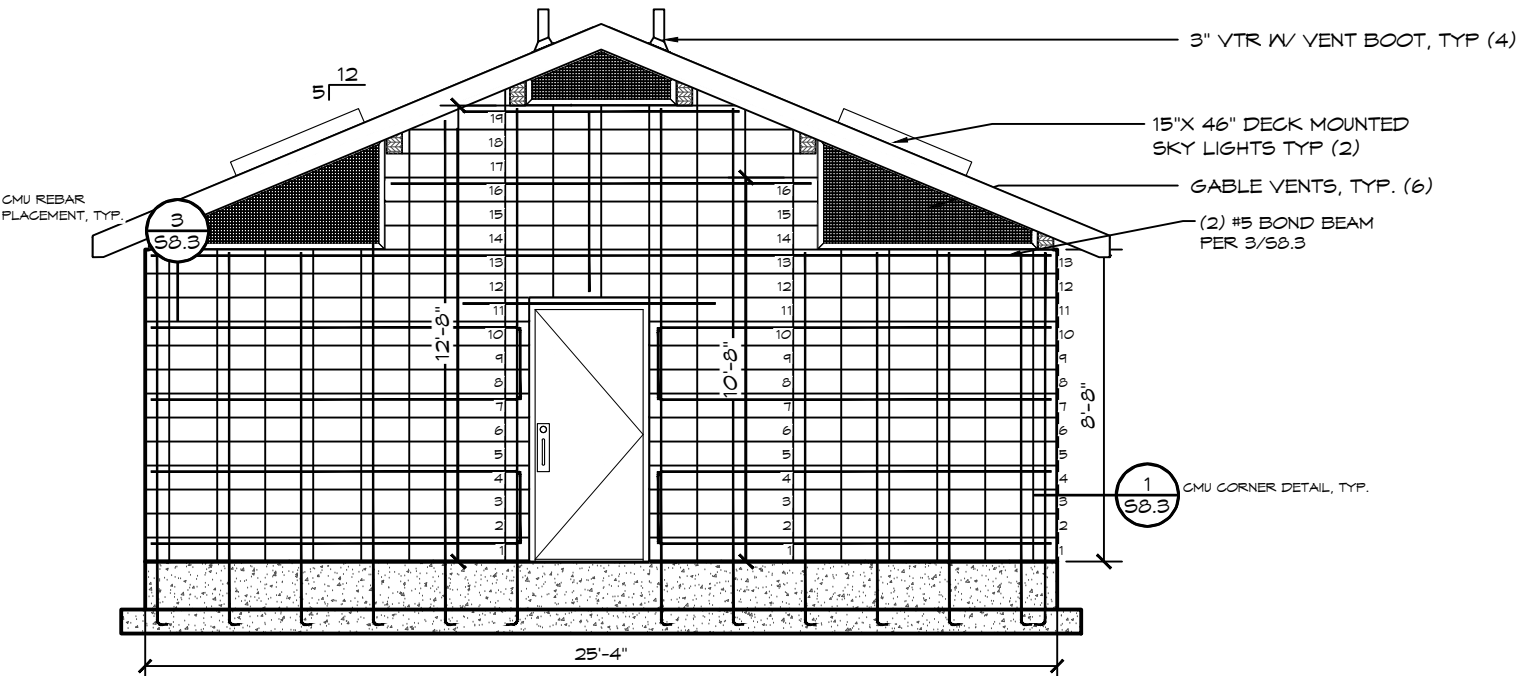
REVISIONS:

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SHEET NO.



C CMU ELEVATION VIEW
SCALE: 3/16" = 1'-0"



D CMU ELEVATION VIEW
SCALE: 3/16" = 1'-0"



07/24/2025

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ROMTEC #225-977

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SHEET TITLE: ROOF FRAMING PLAN

PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)
GARDEN GROVE, CA

PROJECT #: GAR04

DATE: 12/23/2024

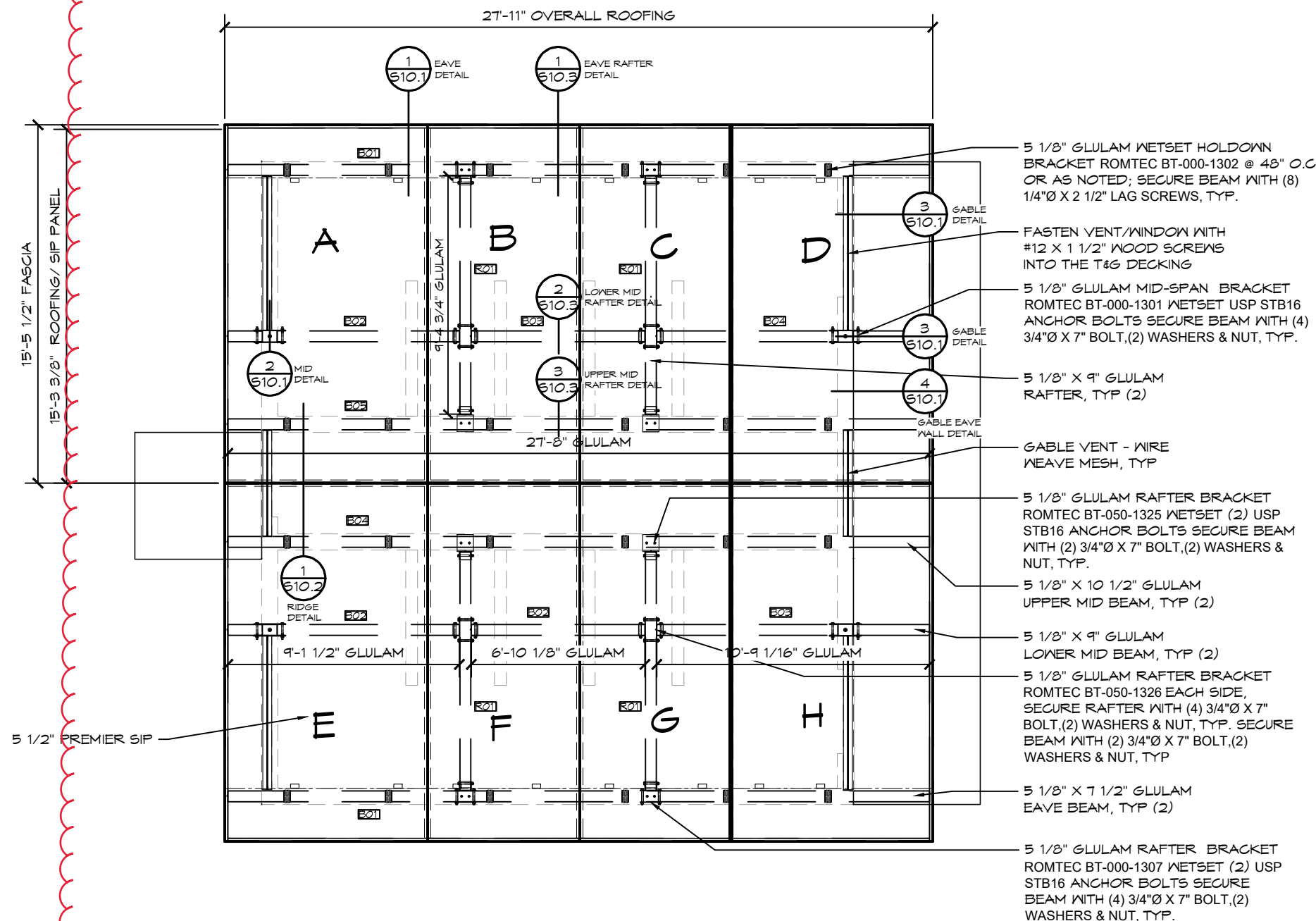
DRAWN BY: JL

REV.	DATE:	BY:
1	07/01/2025	JL

REVISIONS:

SHEET NO.

59.1



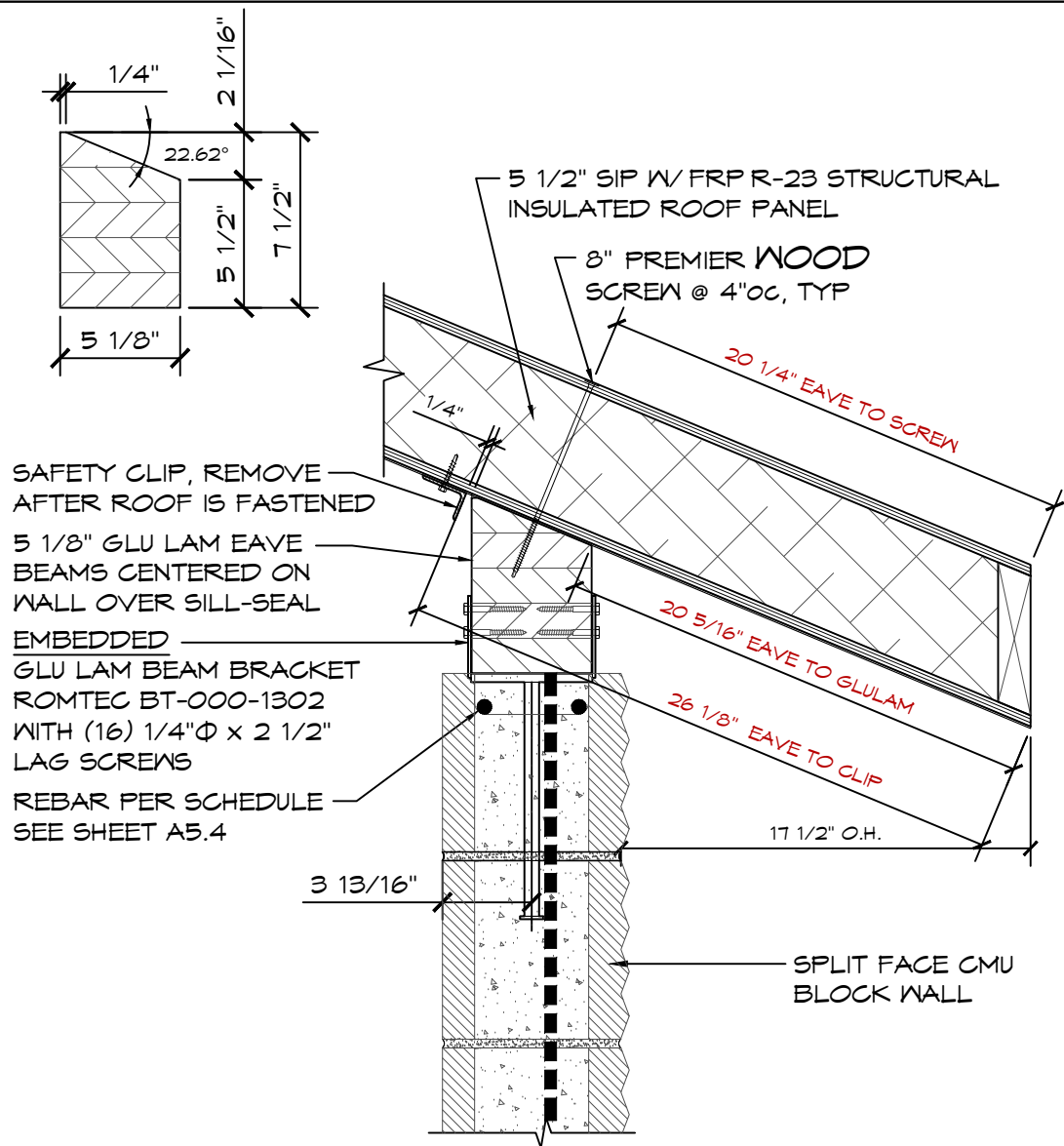
1 ROOF FRAMING PLAN

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

A B C D

NOTE:

- TWO-INCH (51 MM) DECKING SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 15 PERCENT. DECKING SHALL BE MACHINED WITH A SINGLE TONGUE-AND-GROOVE PATTERN. EACH DECKING PIECE SHALL BE NAILED TO EACH SUPPORT.
- EACH PIECE OF DECKING SHALL BE TOENAILED AT EACH SUPPORT WITH ONE 16d COMMON NAIL THROUGH THE TONGUE AND FACE-NAILED WITH ONE 16d COMMON NAIL OR AS NOTED OTHERWISE.
- CONTROLLED RANDOM PATTERN THERE SHALL BE A MINIMUM DISTANCE OF 24 INCHES (610 MM) BETWEEN END JOINTS IN ADJACENT COURSES. THE PIECES IN THE FIRST AND SECOND COURSES SHALL BEAR ON AT LEAST TWO SUPPORTS WITH END JOINTS IN THESE TWO COURSES OCCURRING ON ALTERNATE SUPPORTS. A MAXIMUM OF SEVEN INTERVENING COURSES SHALL BE PERMITTED BEFORE THIS PATTERN IS REPEATED.



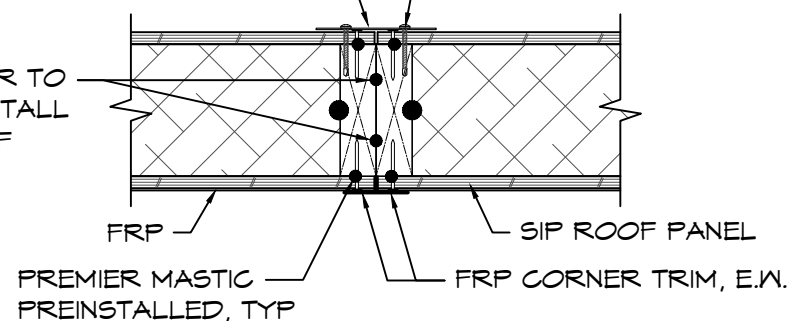
1 EAVE CONNECTION DETAIL

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

18 GA SHEET METAL 4" MIN x PANEL LENGTH CENTERED ON CONNECTION

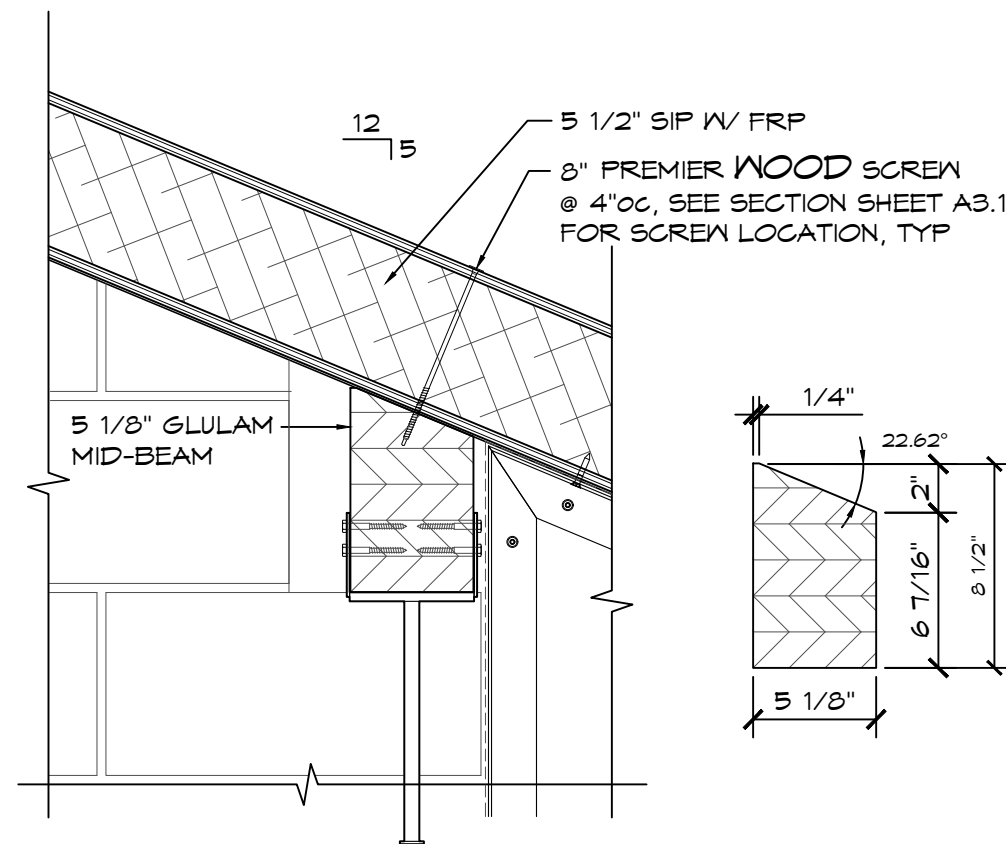
#12 x 2" PHILLIPS HEAD SELF-TAPPING SCREW @ 4"OC

CONTRACTOR TO SUPPLY & INSTALL (2) BEADS OF SEALANT



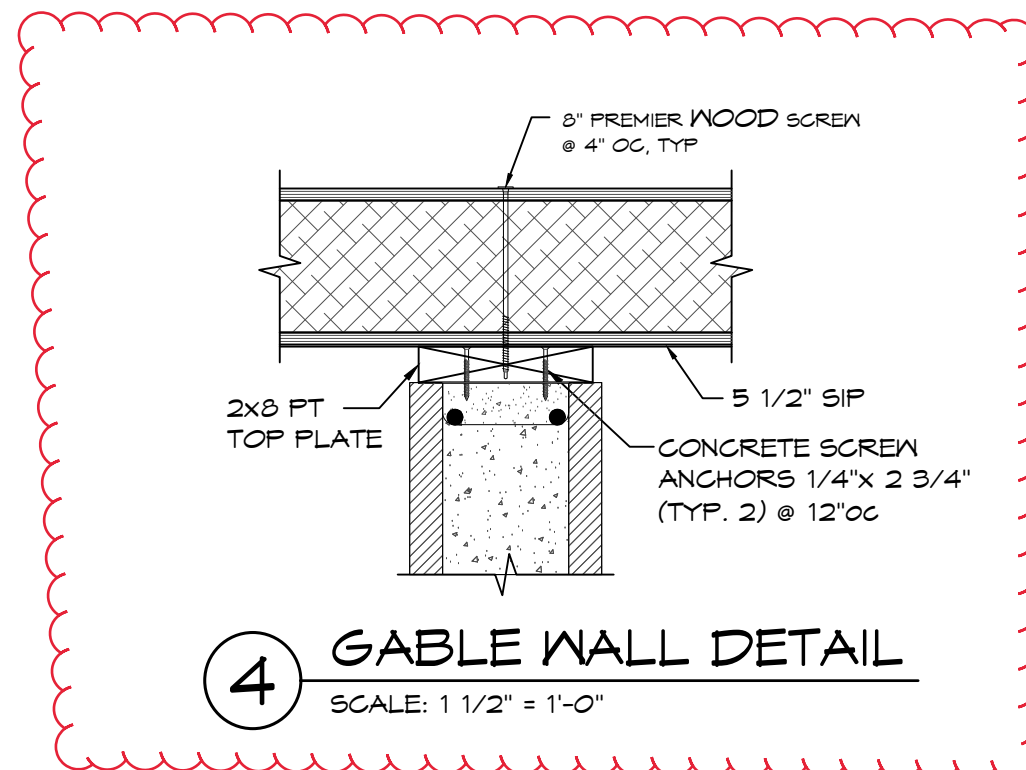
2 SIP ROOF PANEL TO PANEL CONNECTION DETAIL

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



3 MID-BEAM CONNECTION DETAIL

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



4 GABLE WALL DETAIL

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



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PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: ROOF CONNECTION DETAILS

PROJECT #: GAR04

DATE: 12/23/2024

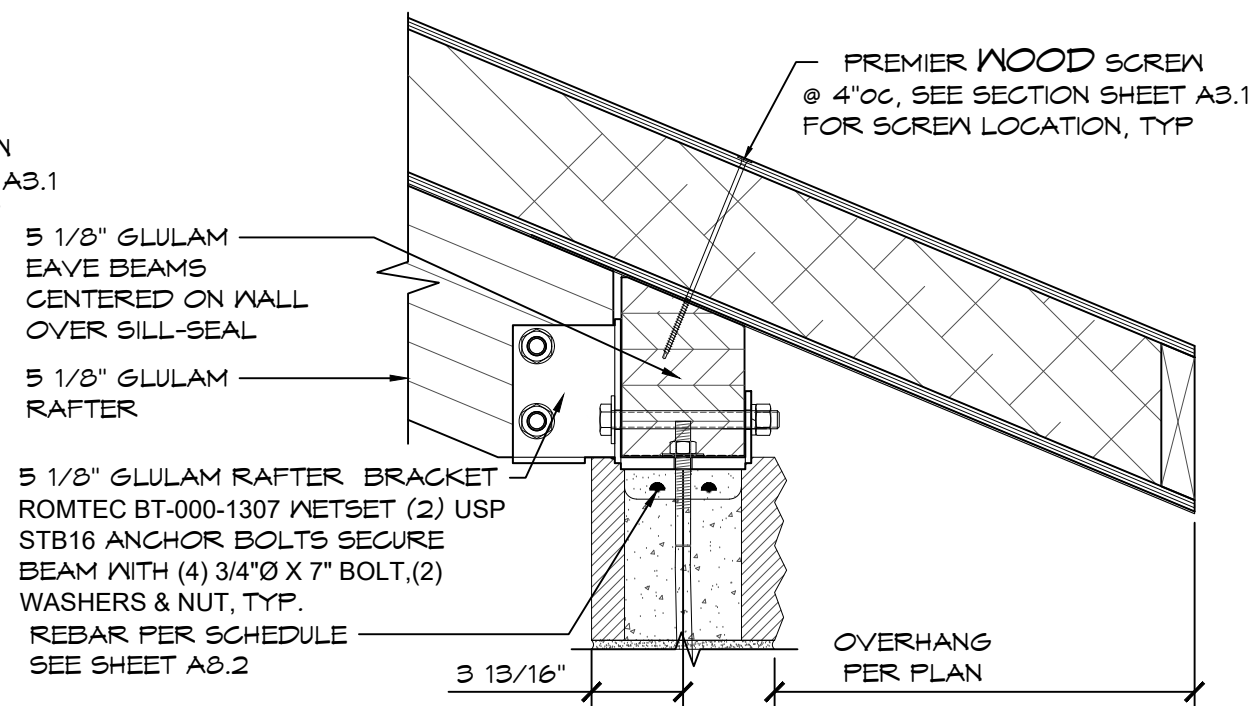
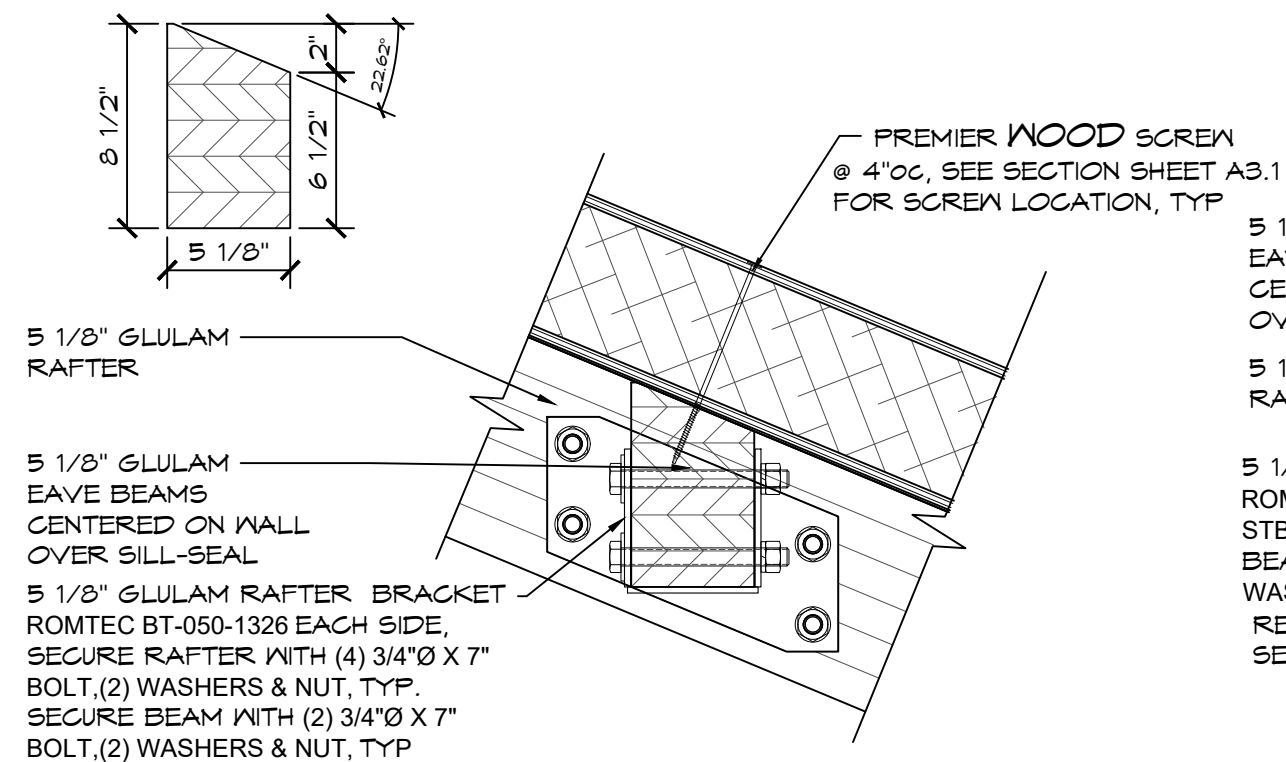
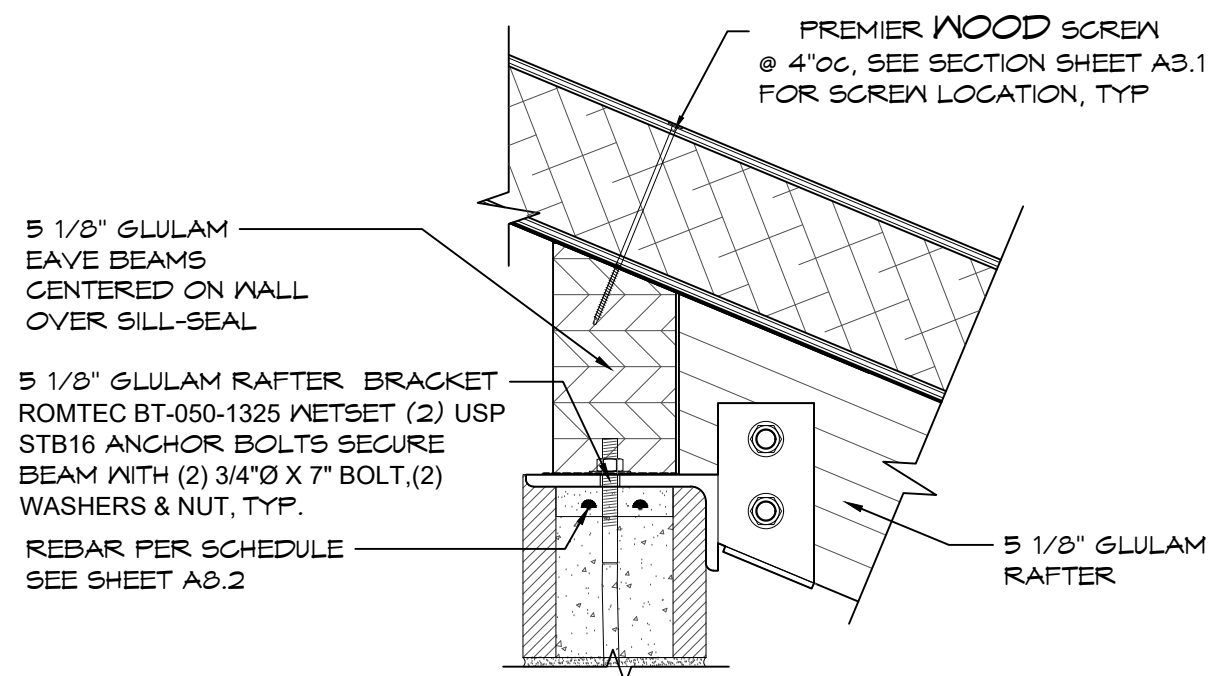
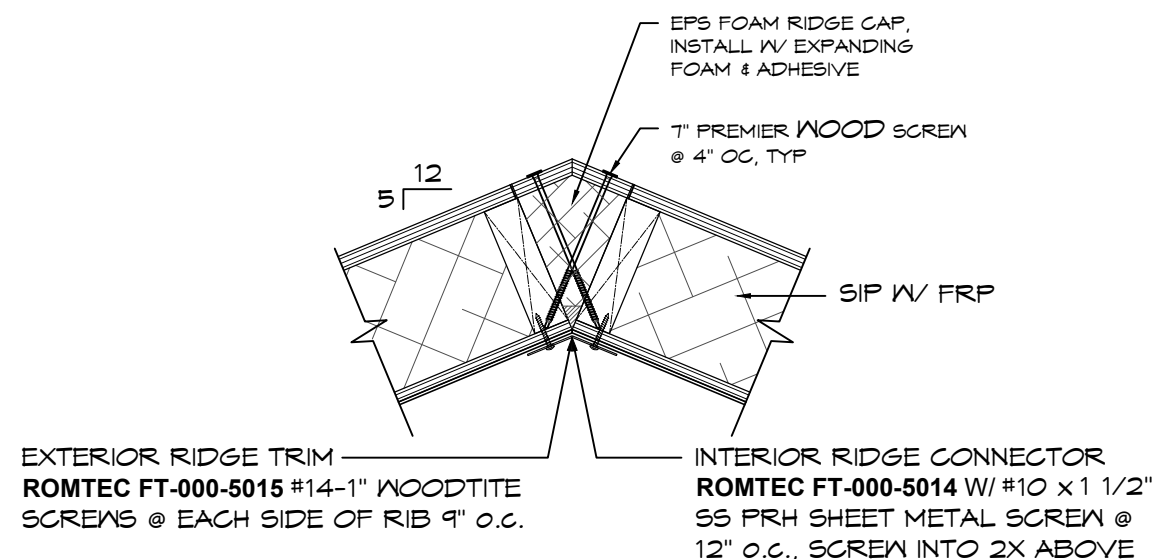
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REV. DATE: BY:

1 07/01/2025 JL

REVISIONS:

SHEET NO. S10.1



PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: _____
ROOF CONNECTION DETAILS

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: JL

REV.	DATE:	BY:
1	07/07/2025	II

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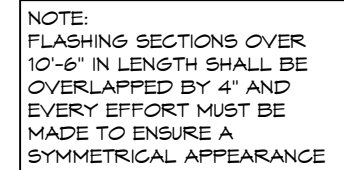
REVISIONS: _____

610

SHEET NO. 510.

JOB CREATED: 7/1/2025 - LAST SAVED BY: logsdon ON 7/1/2025 - LAST PRINTED: 7/1/2025 - LOCATION: \\data\data\Engineering R\Plan Sets\GAR04- Garden Grove Parks (Hester Park RR), CA\GAR04- Garden Grove Parks (Hester Basin RR) 2080, CA 241219.dwg

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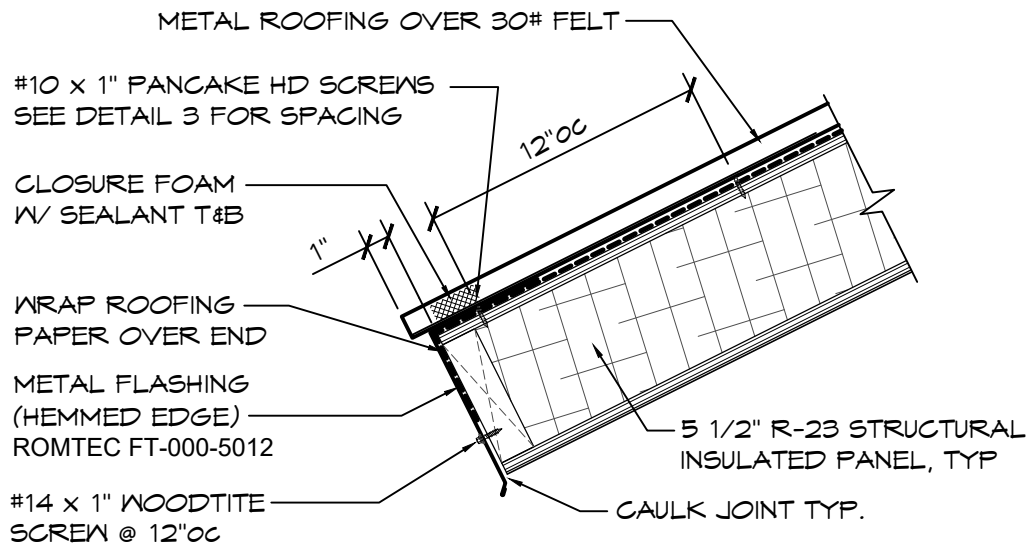
1 ROOFING PLAN

SCALE: $\frac{3}{16}" = 1'-0"$

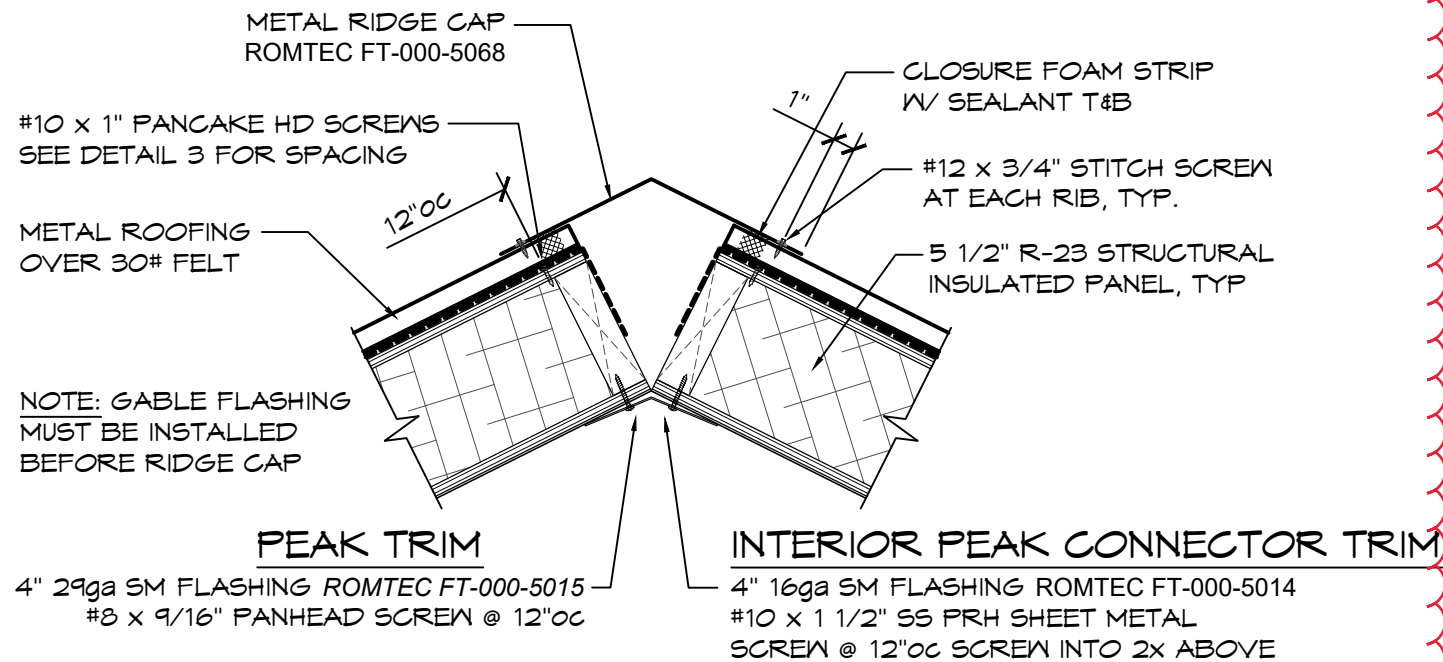


PROJECT #:	GAR04	
DATE:	12/23/2024	
DRAWN BY:	JL	
REV.	DATE:	BY:
REVISIONS:		
R1		
SHEET NO.		

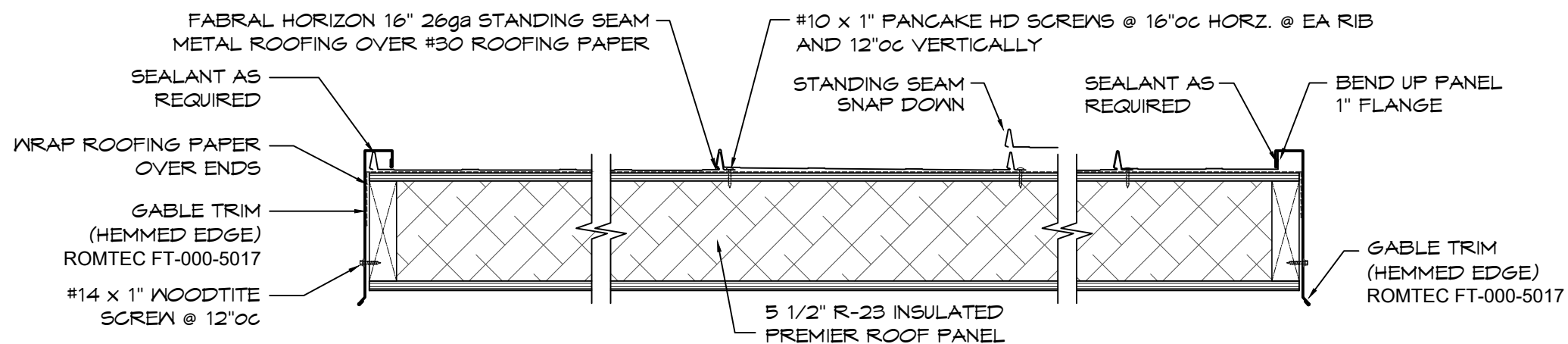
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1 EAVE ROOFING DETAIL
SCALE: 1 1/2" = 1'-0"



2 RIDGE ROOFING DETAIL
SCALE: 1 1/2" = 1'-0"



3 GABLE ROOFING DETAIL
SCALE: 1 1/2" = 1'-0"



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ROMTEC #225-977

PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
SHEET TITLE: ROOFING DETAILS
SHEET NO: R2

PROJECT #: GAR04
DATE: 12/23/2024

DRAWN BY: JL

REV. DATE: BY:

1 07/01/2025 JL

REVISIONS:

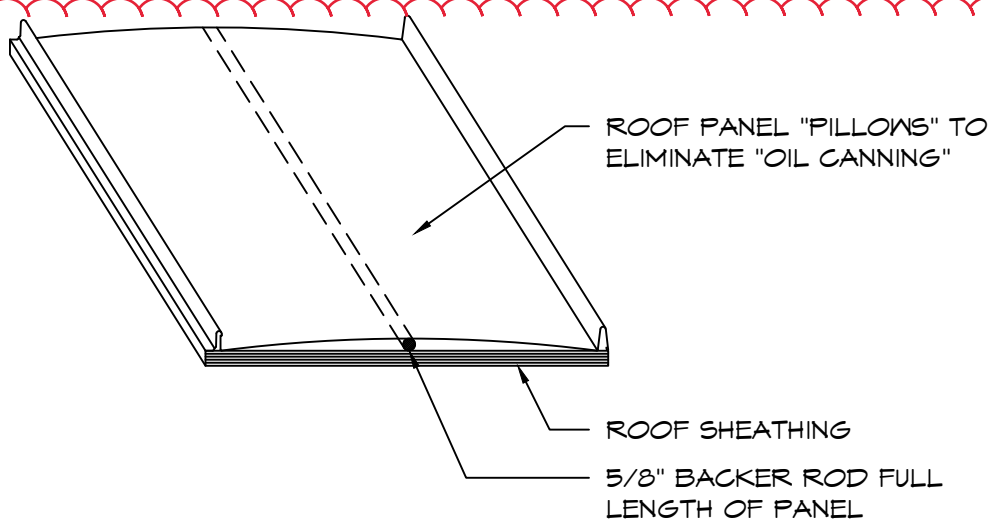
SHEET NO.



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RECOMMENDED METHOD BY FABRAL TO ELIMINATE "OIL CANNING":

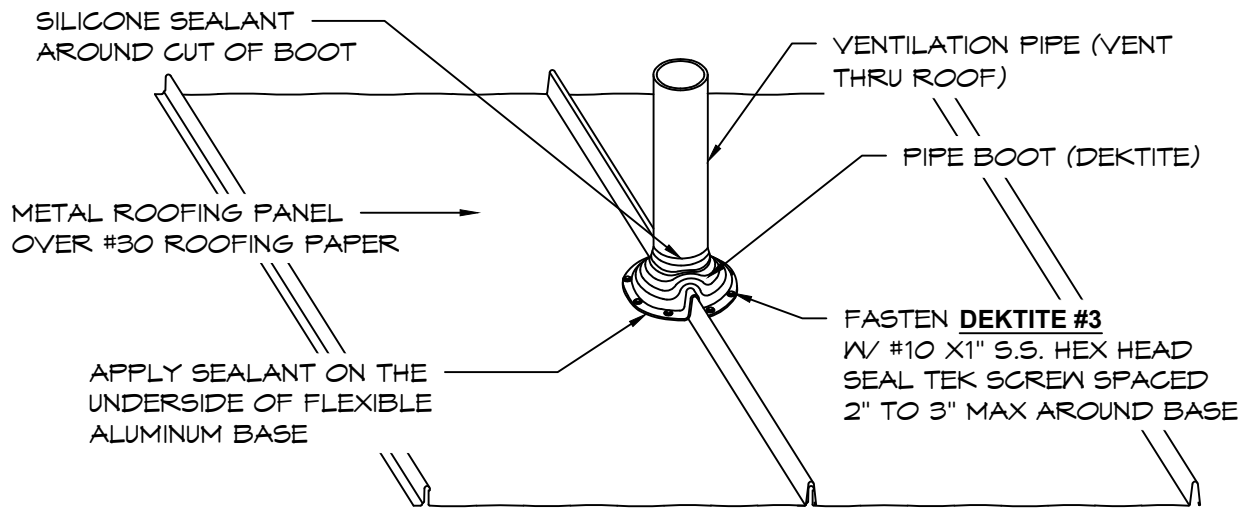
PANELS MAY SHOW SLIGHT WAVINESS COMMONLY REFERRED TO AS "OIL CANNING." THIS IS A CHARACTERISTIC OF ROLL FORMING. SUCH "OIL CANNING" WILL NOT BE ACCEPTED AS CAUSE FOR REJECTION.

THE USE OF BACKER ROD IS AN INDUSTRY ACCEPTED METHOD TO MINIMIZE "OIL CANNING". A RECENT TREND IS TO INSTALL BACKER ROD UNDER THE FLAT OF THE PANELS TO CREATE A SLIGHT "CROWN" IN THE PANEL, THUS REDUCING OR ELIMINATING "OIL CANNING". THIS IS NO LONGER CONSIDERED A "TRASHY" REPAIR. MCA'S OIL CANNING POSITION PAPER RECOMMENDS THIS PRACTICE. (ABOVE)

USES OF BACKER ROD OR OTHER SIMILAR SHIMMING MATERIALS -
WHEN INSTALLATION IS OVER A SOLID SUBSTRATE. BACKER ROD IS A COMPRESSIBLE FOAM STRIP NORMALLY USED IN THE CONCRETE AND MASONRY TRADES IN JOINTS TO SERVE AS A BACKING FOR A CAULK JOINT. FOR CERTAIN TYPES OF METAL PANEL SYSTEMS IT CAUSES THE CENTER OF THE PANEL TO "PILLOW" UNIFORMLY, RELIEVING STRESS AND REDUCING THE VISUAL EFFECTS OF "OIL CANNING".

4 STANDING SEAM OIL CANNING REPAIR

SCALE: N.T.S.



5 STANDING SEAM - 3" VENT BOOT DETAIL

SCALE: N.T.S.

PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: ROOFING DETAILS

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: JL

REV.	DATE:	BY:
1	07/01/2025	JL

REVISIONS:

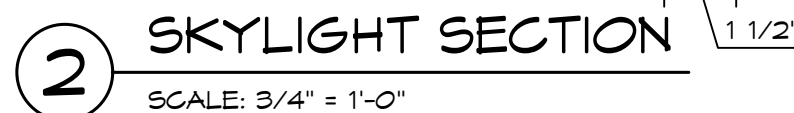
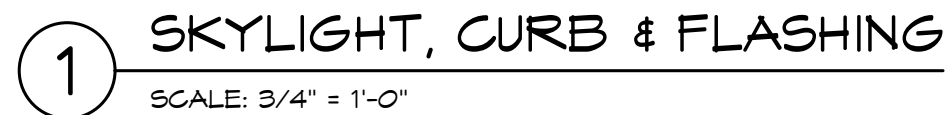
SHEET NO. R3

INSTALLER SHALL LOCATE &
FOLLOW DIRECTIONS PROVIDED
FROM MANUFACTURER



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PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: _____

SKYLIGHT DETAILS

PROJECT #:	GAR04		
DATE:	12/28/2024		
DRAWN BY:	JL		
REV.	DATE:	BY:	
REVISIONS:			
R4			
SHEET NO.			

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CALIFORNIA PLUMBING CODE (BASED OFF UPC)

SYM	FIXTURE TYPE	SEWER	VENT	COLD WATER	HOT WATER	MIXED WATER	NO OF FIXT.	W. FIXT. UNITS/EA	TOTAL W. FIXT. UNITS	DR. FIXT. UNITS	TOTAL DR. FIXT. UNITS
WC-1	ADA TOILET	3"	2"	1"	X	-	6	40,30,20,15,10	125	4	24
UR-1	ADA URINAL	2"	1 1/2"	3/4"	X	-	2	20, 15, 10, 8, 5	35	2	4
LV-1	HAND SINK	1 1/4"	1 1/2"	1/2"	X	-	4	1	4	1	2
HB-1	WALL HYDRANT ANTI-FREEZE	X	X	3/4"	X	-	2	2.5	5	NA	NA
HB-2	WALL FAUCET	X	X	1/2"	X	-	1	1	1	NA	NA
FD-1	FLOOR DRAIN	3"	1 1/2"	X	X	-	1	NA	NA	2	2
FD-2	FLOOR DRAIN (EMERGENCY)	3"	1 1/2"	X	X	-	2	NA	NA	NA	NA
TOTAL									170	TOTAL	32

SIoux CHIEF
(3" W/6" STRAINER)

GENERAL PLUMBING NOTES:

1. ALL PIPE (WATER, SEWER, VENT), JOINTS, AND WORK SHALL CONFORM TO 2022 CALIFORNIA PLUMBING CODE AND LOCAL CODES.
2. CONTRACTOR TO CONFIRM LOCATIONS OF SEWER AND WATER TIE-INS.
3. CONTRACTOR TO SOLIDLY BRACE ALL PIPING TIGHT AGAINST WALLS. FOR LONG OR COMPLICATED RUNS, SECURELY MOUNT USING UNI-STRUT, IN STRAIGHT AND UNIFORM MANNER FOR FINISHED APPEARANCE. PIPING SHOWN IS DIAGRAMMATIC ONLY AND ACTUAL DESIGN TO BE BY CONTRACTOR.
4. CONTRACTOR MAY CHANGE PIPE SIZING IN FIELD TO PROVIDE ADEQUATE WATER PRESSURE TO ALL PLUMBING FIXTURES AS APPROVED BY INSPECTOR. ROMTEC BUILDINGS ARE DESIGNED TO HAVE 40-60 PSI WATER PRESSURE FOR THE PLUMBING FIXTURES. IF THE SITE HAS A PRESSURE OTHER THAN THIS, IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE THE PRESSURE REDUCER OR BOOSTER PUMP NECESSARY.
5. CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR GRAVITY DRAINING ALL PLUMBING FIXTURES TO SEPTIC OR SANITARY SEWER SYSTEM. INSTALLER TO PROVIDE A CLEAN-OUT BENEATH ALL SINKS AND LAVATORY AS REQUIRED BY CODE.
6. CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR SUPPLYING WATER TO ALL PLUMBING FIXTURES AND INSTALL WATER SERVICE SHUTOFF VALVE; TYPICALLY LOCATED WITHIN THE MECHANICAL ROOM.
7. IF THE SITE REQUIRES AN ACCESSIBLE BACK FLOW PREVENTER AND/OR PRESSURE REDUCER OR BOOSTER PUMP IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE.
8. WHEN INCLUDED, HOT WATER TANKS REQUIRE A TEMPERATURE AND PRESSURE RELIEF VALVE AND A DRAIN LINE TO THE EXTERIOR OF THE BUILDING PER 2022 CPC SECTIONS 608.4 & 608.5. CONTRACTOR TO PROVIDE = FURNISH & INSTALL TWO STRAPS TO THE NEAREST WALL, ONE STRAP AT TOP 1/3 OF TANK AND ONE STRAP AT BOTTOM 1/3 OF TANK, IN COMPLIANCE WITH 2022 CPC SECTION 507.2.
9. PLUMBING FIXTURES SHALL BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION, SHALL COMPLY WITH 2022 CALIFORNIA PLUMBING CODE (CPC) SECTIONS 401.3 AND 403, AND SHALL COMPLY WITH 2022 CALIFORNIA GREEN BUILDING CODE (CGBC) SECTION 5.303.3. FLUSHOMETERS ASSOCIATED WITH TOILETS SHALL USE NO MORE THAN 1.28 GALLONS PER FLUSH. FLUSHOMETERS ASSOCIATED WITH URINALS USE NO MORE THAN 0.5 GALLONS PER FLUSH. BOTH FLUSHOMETERS ABOVE SHALL MEET PERFORMANCE STANDARDS BY ANSI A112.19.2 H&S CODE, SECTION 17921.3(B). SINK FAUCET SHALL USE NO MORE THAN 1.8 GPM MEASURED AT 60 PSI.
10. WHEN FIXTURES REQUIRE WALL CARRIERS, THEY SHALL BE SUPPLIED BY CONTRACTOR.
11. NON-REMOVABLE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED ON ALL HOSE BIBBS AND POTABLE WATER OUTLETS WITH HOSE ATTACHMENTS. CPC 603.5.7.
- 12.UNLESS SPECIFIED IN THE ROMTEC SUBMITTAL, ROMTEC DOES NOT SUPPLY INSULATION OR "FREEZE PROTECTION" FOR PLUMBING. "THE OWNER MAY NEED TO WINTERIZE THEIR BUILDING."



07/24/2025



PROJECT:
GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

SHEET TITLE:
PLUMBING SCHEDULE

GARDEN GROVE, CA

PROJECT #: GAR04

DATE: 12/23/2024

DRAWN BY: J.L.

REV. DATE: BY:

1 07/01/2025 J.L.

REVISIONS:

P1

SHEET NO.

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WATER-PLUMBING LEGEND
COLD WATER

SEWER-PLUMBING LEGEND
SANITARY SEWER



07/24/2025

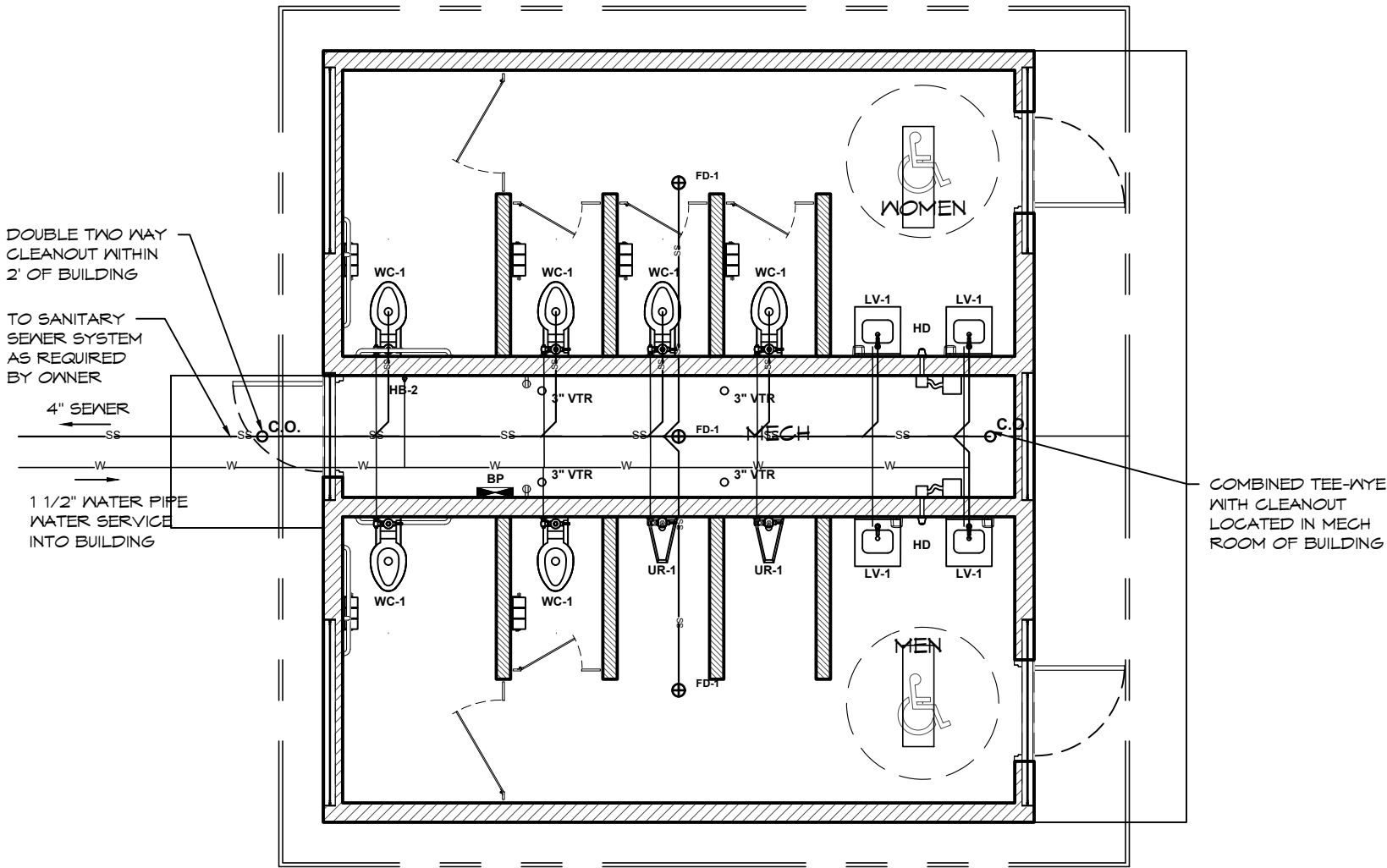


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*FIXTURES ARE SYMBOLIC ONLY,
REFER TO SPECIFICATIONS &
PRODUCT LITERATURE FOR THE
FIXTURE ROUGH-IN MEASUREMENTS &
INSTALLATION DETAILS.

CPC NOTES

- NOTES:
1. WATER PIPE SIZE AND PRESSURE REQUIREMENTS MUST BE CONFIRMED BY PLUMBING CONTRACTOR BASED ON LOCAL SUPPLY.
 2. FIXTURE & FIXTURE CONNECTIONS ARE SYMBOLIC IN NATURE ONLY. REFER TO MANUFACTURER LITERATURE FOR EXACT FIXTURE SPECIFICATIONS.
 3. ALL SANITARY, DRAINAGE, WASTE, AND VENT LINES SCHEDULE 40 PVC OR ABS.
 4. ALL WATER LINES SHALL BE COPPER OR PER LOCAL CODE. NO JOINTS IN OR UNDER THE SLAB.
 5. WATER PIPE SIZING IS A MINIMUM SUGGESTION. PLUMBING CONTRACTOR WILL MAKE THE FINAL DETERMINATION.
 7. ALL FLOOR SINKS AND DRAINS SHALL HAVE TRAP PRIMERS AS NOTED IN PLANS, PER CPC 1007.0



GENERAL ELECTRICAL NOTES:

1.

ALL WORK SHALL COMPLY WITH 2022 CALIFORNIA ELECTRICAL CODE AND LOCAL CODES.
2.

OWNER TO PROVIDE TEMPORARY POWER AS REQUIRED DURING COURSE OF CONSTRUCTION.
3.

ELECTRICAL SERVICE EQUIPMENT SUPPLIED BY OTHERS UNDER SEPARATE SUBMITTAL.
4.

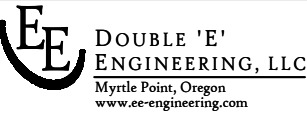
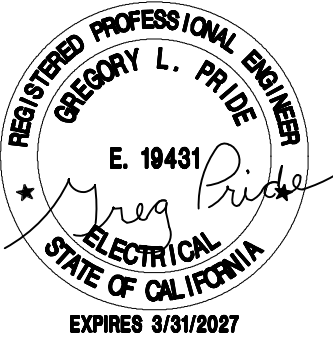
THE AIC VALUES SHOWN ON THESE ROMTEC PLANS ARE TO BE MADE CLEARLY AVAILABLE TO THE ELECTRICAL ENGINEER OF RECORD THAT WILL DESIGN THE MAIN SERVICE.
5.

THE INSTALLER SHALL FURNISH & INSTALL SPECIFICATION GRADE CIRCUIT BREAKERS, WIRING, CONDUIT, SWITCHES AND GFI RECEPTACLES THROUGHOUT. INTERIOR RECEPTACLES & SWITCHES SHALL HAVE STAINLESS STEEL COVERPLATES AND EXTERIOR RECEPTACLES SHALL BE INSTALLED WITH A WEATHERPROOF IN USE COVER.
6.

ELECTRICAL CONDUIT IS TO BE RUN WITHIN THE WALL WHEN POSSIBLE, EXCEPT IN THE MECHANICAL ROOM.
7.

FOR MECHANICAL ROOM ALL EXPOSED CONDUIT IS TO BE SURFACE MOUNTED AND RUN TIGHT TO CEILING AS REQUIRED.
8.

COORDINATE AC OUTLET HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.



ELECTRICAL SCHEDULE & SYMBOL LEGEND:

QTY	SYMBOL	DESCRIPTION			
1		200 AMP BREAKER PANEL	1		POWER SUPPLY FOR MAGNETIC LOCK SYSTEM HAGER: 2903 - (0.9A)
PER PLAN		HOME RUN TO BREAKER PANEL	1		DIGITAL 7 DAY TIMER FOR MAGNETIC LOCK SYSTEM INTERMATIC: ST01
PER PLAN		110 VAC DUPLEX RECEPTACLE, GROUND FAULT PROTECTED MOUNTED MIN OF 15" TO MAX OF 48" ABOVE THE FLOOR CONFIRM EXACT LOCATION & HEIGHT WITH OWNER OR OWNERS REPRESENTATIVE.	2		EXIT SWITCH (MANUAL EXIT SWITCH) HAGER: 2977
1		SWITCH, SINGLE POLE MOUNTED A MAX OF 48" ABOVE THE FLOOR	2		PIR EGRESS SENSOR (AUTOMATIC EXIT SWITCH) HAGER: 2-679-0612
3		LIGHT FIXTURE, WALL MOUNT UL LISTED TO U.S. SAFETY STANDARDS FOR ALL WET LOCATIONS WALL MOUNT, LED DOWN LIGHT, LITHONIA OLLND: (9W) (.08A)	2		MAGNET LOCK HAGER: 2942
6		48" LED VAPOR TIGHT CEILING/WALL MOUNT LIGHT LITHONIA CSVT L48 5000LM 40K 80CRI 4,298LM 40K: (35.3 W) (.2942 A)			
1		PHOTO CELL, w/ WEATHER PROOF COVER			
2		HAND DRYER FASTAIRE, HD-03: (900W) (120V) (7.5A)			
1		24HR AUTOMATIC IN-WALL MULTI-PROGRAM TIMER MOUNTED IN MECH ROOM			

PROJECT:

GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)

SHEET TITLE:

GARDEN GROVE, CA
ELECTRICAL SCHEDULE

PROJECT #:

GAR04

DATE:

12/23/2024

DRAWN BY:

JL

REV.

DATE:

BY:

REVISIONS:

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SHEET NO.

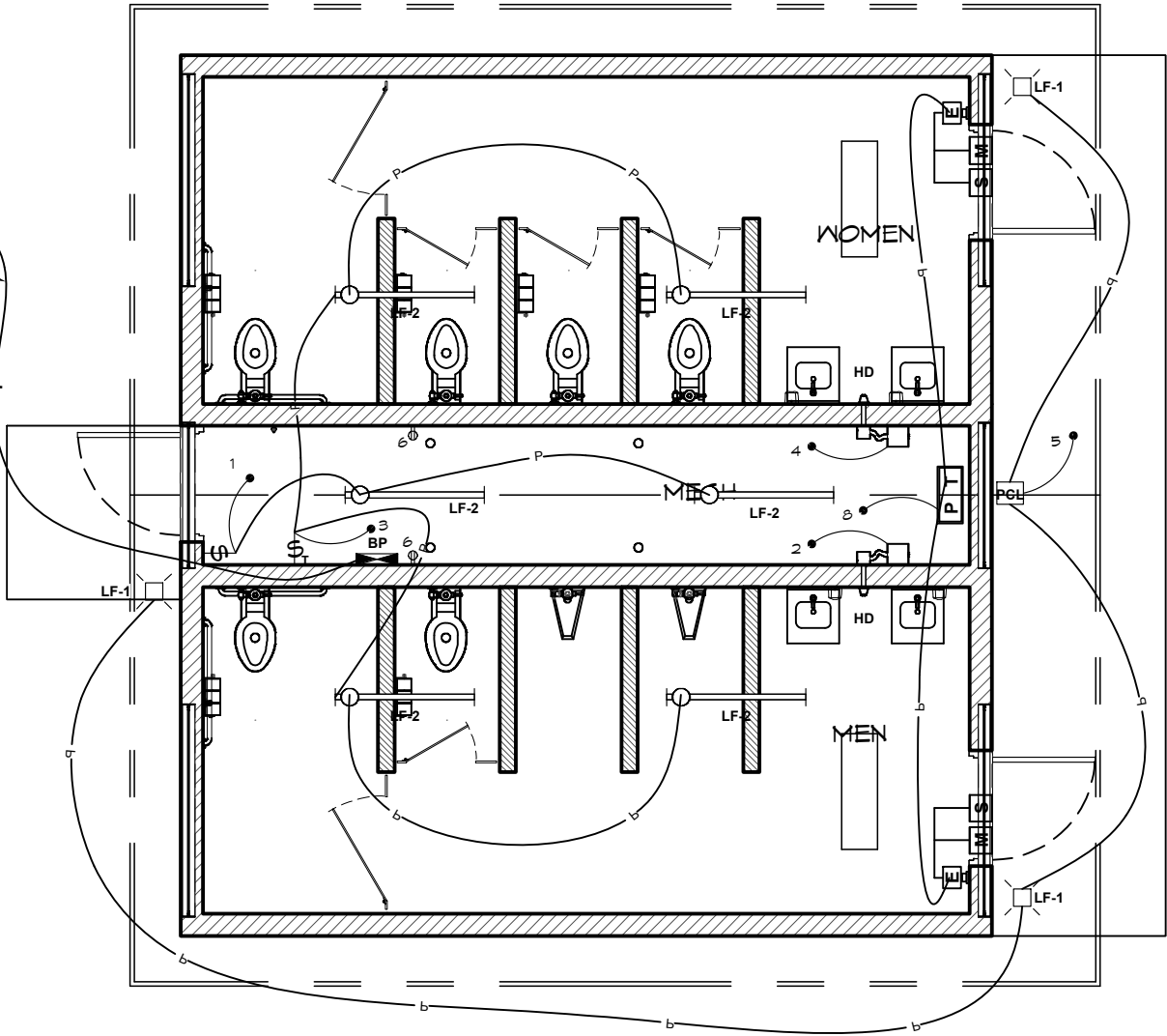
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ROMTEC HAS DESIGNED THIS ELECTRICAL SYSTEM TO MEET THE NEEDS OF THIS SPECIFIC FACILITY. SITE DESIGN AND ENGINEERING BY OTHERS. OWNER IS RESPONSIBLE TO PROVIDE ALL SERVICE AND/OR UTILITY ENTRANCE DESIGN. FIELD VERIFY THAT SERVICE CONDUCTOR SIZE IS ADEQUATE FOR VOLTAGE DROP. ANY ADDITIONAL POWER OR LIGHTING LOADS NOT SHOWN ON THESE PLANS SHALL BE ENGINEERED BY OTHERS.

NOTE:
SEE SHEETS A1.4, A2.1, & A2.2
FOR LOCATIONS - HEIGHTS OF
ELECTRICAL FIXTURES.

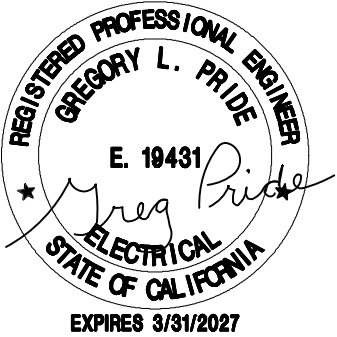
NOTE: BREAKER PANEL MAY BE
RELOCATED AT THE DISCRETION OF THE
INSTALLER, PANEL MUST MAINTAIN ALL
APPLICABLE CODE CLEARANCES.

UNDERGROUND ELECTRICAL
SERVICE VERIFY REQUIREMENTS
FOR TYING INTO SERVICE UTILITY
EQUIPMENT BY OTHERS.



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

A
D B
C



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DOUBLE 'E'
ENGINEERING, LLC
Myrtle Point, Oregon
www.ee-engineering.com

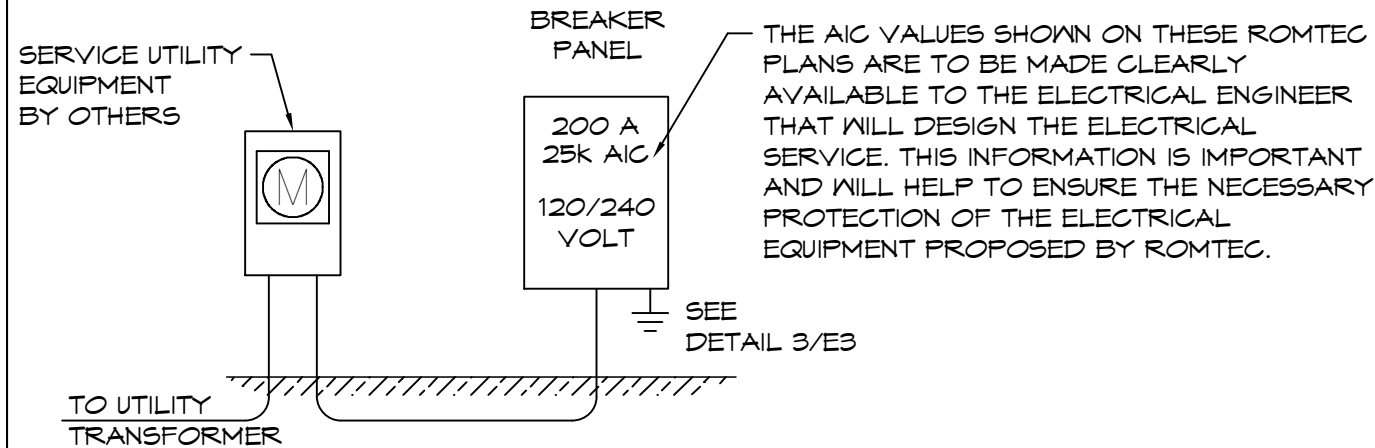
PROJECT: GARDEN GROVE PARKS
(HASTER BASIN RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: ELECTRICAL PLAN

PROJECT #:	GAR04	
DATE:	12/23/2024	
DRAWN BY:	JL	
REV.	DATE:	BY:
REVISIONS:		

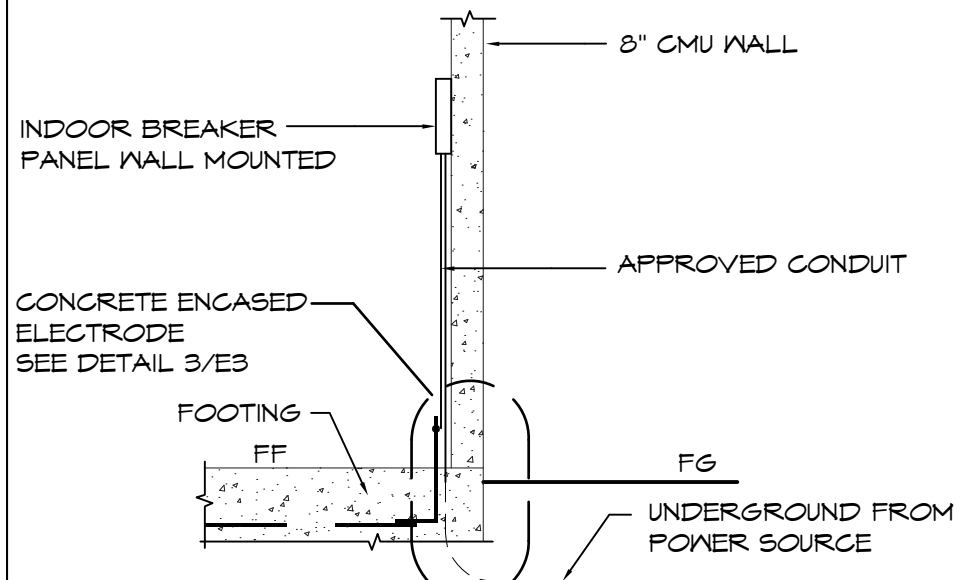
E2

SHEET NO.

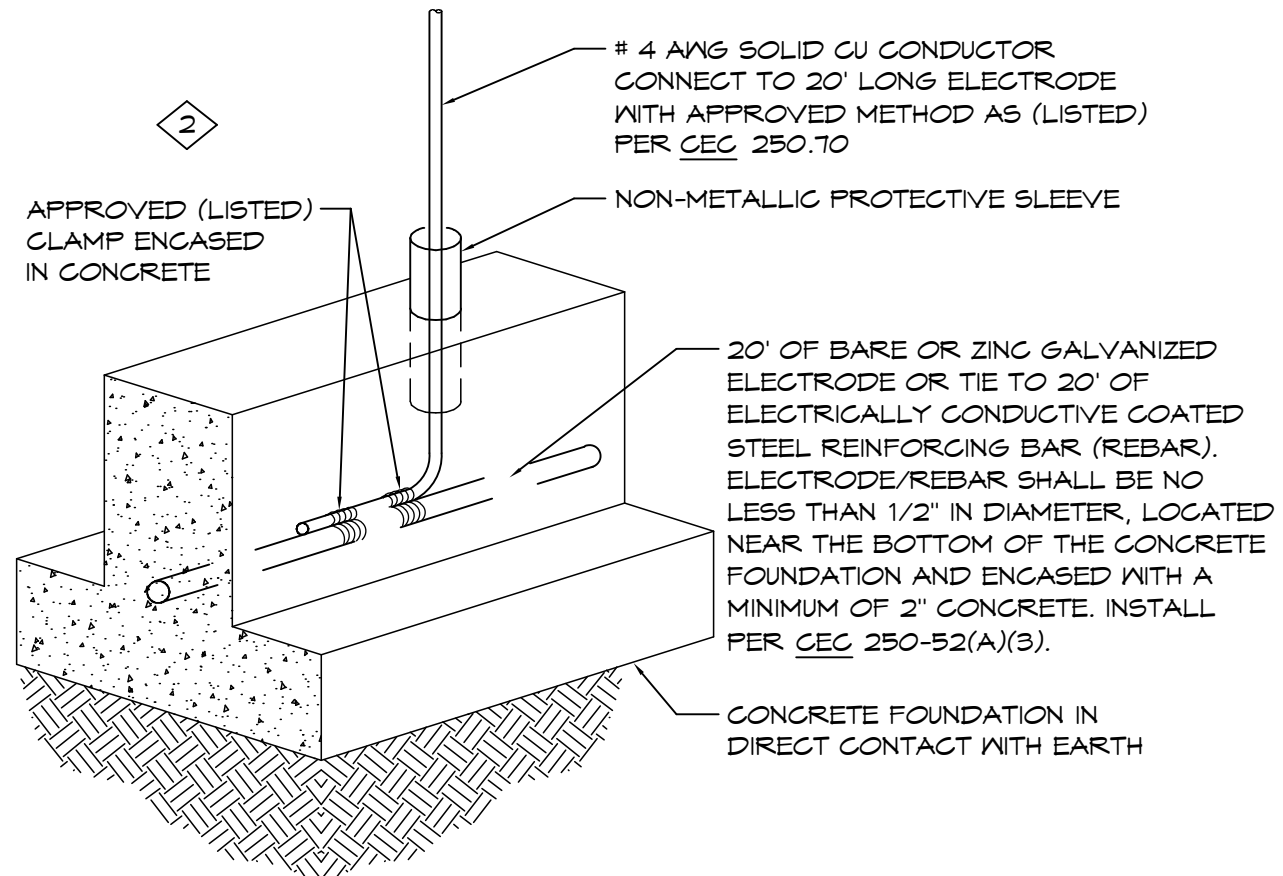
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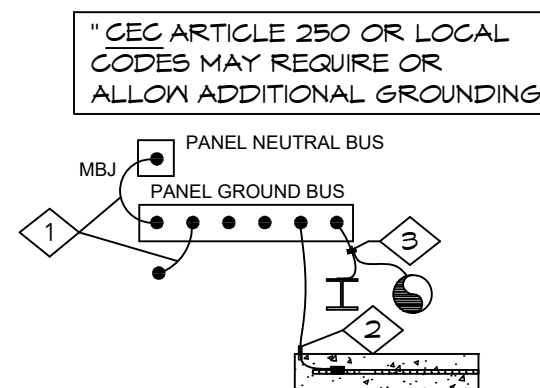
1 ONE-LINE DIAGRAM
SCALE: NONE



2 RISER DIAGRAM
SCALE: NONE



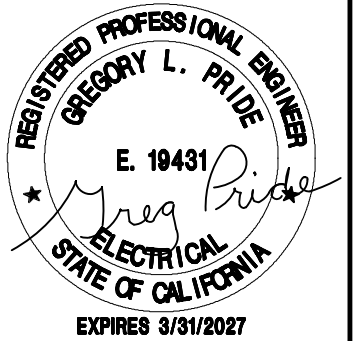
3 CONCRETE ENCASED SERVICE GROUND
SCALE: NONE



4 GROUNDING/BONDING DETAIL
SCALE: NONE

KEYED NOTES

- #4 CU MAIN BONDING JUMPER AND EQUIPMENT BONDING JUMPER PER CEC 250.28(D), 250.102(C) AND TABLE 250.66. DO NOT BOND THE NEUTRAL TO THE GROUND BUS IF THIS IS NOT A SERVICE ENTRANCE
- #4 CU TO CONCRETE ENCASED ELECTRODE PER CEC 250.52(A)(3), 250.66(B) AND 250.70
- WHERE REQUIRED, BOND PIPING SYSTEMS AND EXPOSED STRUCTURAL STEEL PER CEC 250.104



PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
SHEET TITLE: ELECTRICAL RISER DETAILS
PROJECT #: GAR04
DATE: 12/23/2024
DRAWN BY: JL
REV. DATE: BY:

REV.	DATE:	BY:

REVISIONS:

SHEET NO. E3



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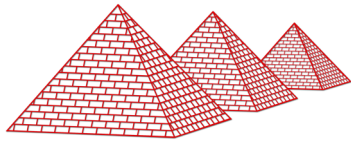


BREAKER PANEL															25K AIC RATING							
200 AMP			MAIN BREAKER					120 / 240 VOLTS							1-PHASE, 3-WIRE							
FEEDER SIZE:			ALUM: 3 #250 PH, #4 GRD, 2" C												SURFACE MOUNTED							
ELECTRICAL WIRING:			GROUNDED & BOND PER - CEC										USE XHHW-2 CU CONDUCTORS									
LOAD DISTRIBUTION			LTG	REC	MOTOR	DATA	HEAT	MISC			PH-A	PH-B	= TOTAL	AMPS		WITH SPARE	25%					
CONNECTED VA			239	360	1800			108			1358	1149	= 2507	11		3134	14					
DIVERSITY FACTOR			125%	100%	100%	100%	100%	100%					=									
DIVERSIFIED VA			299	360	1800			108			1382	1185	= 2567	12		3209	14					
PL	T		LOAD	VA	HP	PHW	GND	CON	BKR		PH		BKR	CON	GND	PHW	HP	VA	LOAD	T	PL	
1	L		LTS: MECH	71		12	12	1/2	20	1	A	1	20	1/2	12	12		900	HAND DRYER	M	2	
3	L		LTS: TOILETS	141		12	12	1/2	20	1	B	1	20	1/2	12	12		900	HAND DRYER	M	4	
5	L		LTS: EXTERIOR	27		12	12	1/2	20	1	A	1	20	1/2	12	12		360	RECEPTACLE	R	6	
7											B	1	20	1/2	12	12		108	ACCESS CONTROL	O	8	
9											A										10	
11											B										12	
13											A										14	
15											B										16	
17											A										18	
19											B										20	
21											A										22	
23											B										24	
25											A										26	
27											B										28	
29											A										30	

ROMTEC HAS DESIGNED THIS ELECTRICAL SYSTEM TO MEET THE NEEDS OF THIS SPECIFIC FACILITY. SITE DESIGN AND ENGINEERING BY OTHERS. OWNER IS RESPONSIBLE TO PROVIDE ALL SERVICE AND/OR UTILITY ENTRANCE DESIGN. FIELD VERIFY THAT SERVICE CONDUCTOR SIZE IS ADEQUATE FOR VOLTAGE DROP. ANY ADDITIONAL POWER OR LIGHTING LOADS NOT SHOWN ON THESE PLANS SHALL BE ENGINEERED BY OTHERS.

PROJECT: GARDEN GROVE PARKS (HASTER BASIN RESTROOM)
SHEET TITLE: GARDEN GROVE, CA ELECTRICAL PANEL SCHEDULE

PROJECT #: GAR04
DATE: 12/23/2024
DRAWN BY: JL
REV. DATE BY:
REVISIONS:



PSE CONSULTING ENGINEERS INC.

STRUCTURAL ENGINEERING CALCULATIONS

**PROJECT: Garden Grove Parks –
Haster Basin Restroom**

**PROJECT LOCATION: 12952 Lampson Ave.
Garden Grove, CA 92840**

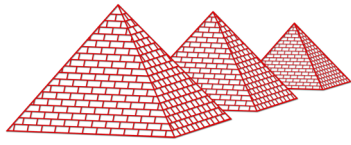
PSE PROJECT NUMBER: Romtec 225-077

DATE: April 30, 2025

BY: Ralph Hall, P.E.



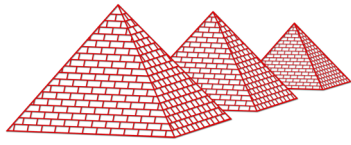
04/30/2025



PSE CONSULTING ENGINEERS INC.
PROJECT #: ROMTEC 225-077

Table of Contents:

Subject:	Page:
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1- References / Software:	3
2- Design Criteria:	4-13
3- Analysis & Design:	15 – 34

**PSE CONSULTING ENGINEERS INC.**PROJECT #: ROMTEC 225-077

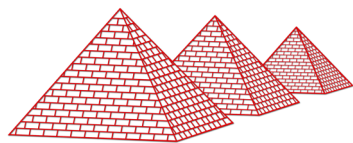
References:

1- Literature:

- a. 2022 California Building Code (CBC),
based on the 2021 International Building Code (IBC)
- b. Design of Wood Structures, Donald E. Breyer 4th ED.
- c. Building Code Requirements for Masonry Structures, TMS 402
- d. Building Code Requirements for Concrete, ACI 318

2- Software:

- a. Wood Works Design Office,
American Forest & Paper Association
- b. Enercalc Structural Engineering Library,
Enercalc Engineering Software
- c. Engineering International Spreadsheets
Daniel T. Li



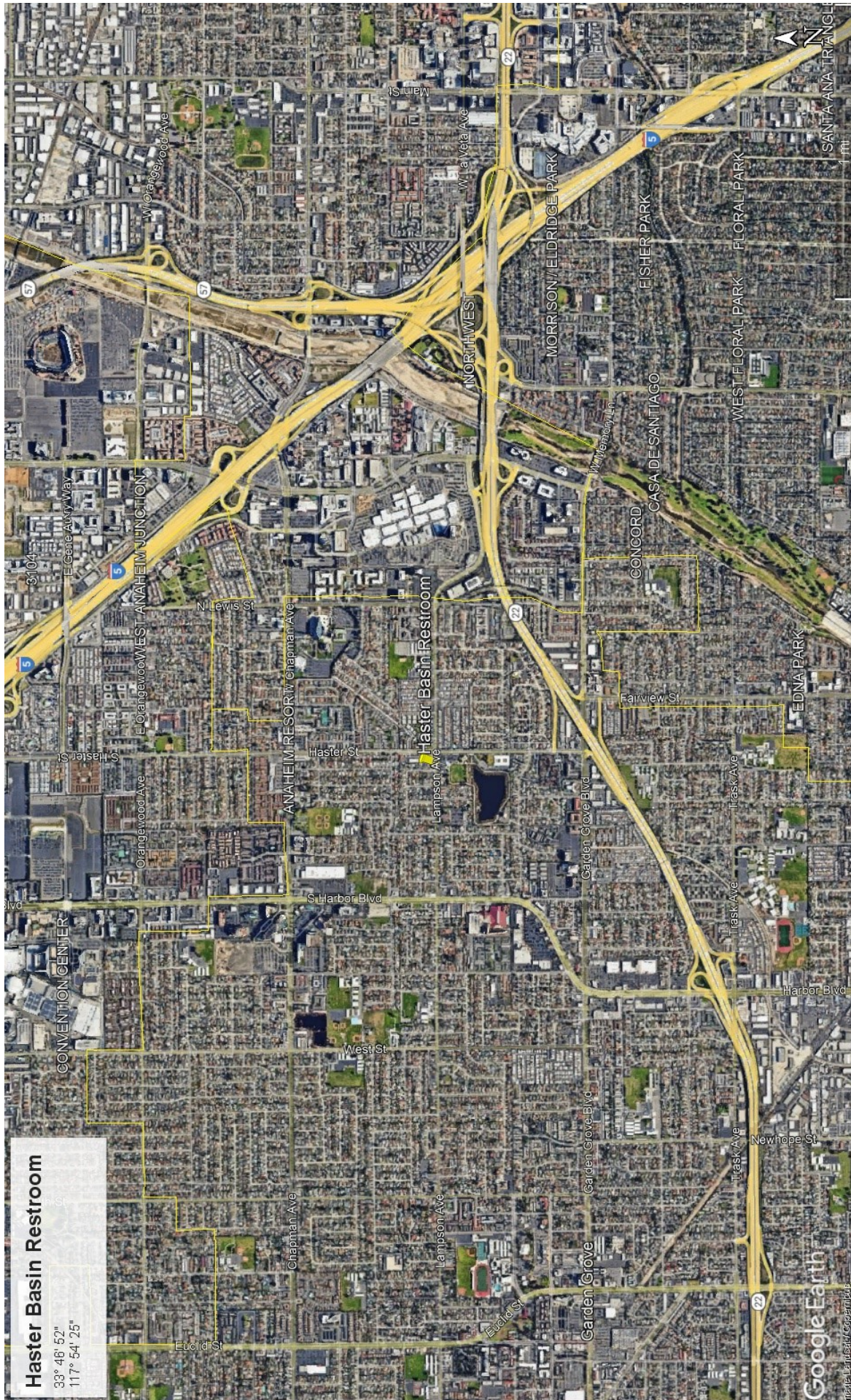
PSE CONSULTING ENGINEERS INC.

PROJECT #: ROMTEC 225-077

Design Criteria:

- 1- Location: 12952 Lampson Ave.
Garden Grove, CA 92840
(Lat. 33° 46' 52" Long. 117° 54' 25")
- 2- Seismic:
- | | |
|------------|-------|
| RC | II |
| SDC | D |
| Site Class | D |
| S_S | 1.362 |
| S_1 | 0.483 |
| S_{DS} | 1.090 |
| S_{D1} | 0.878 |
| I_E | 1.0 |
| R | 5 |
- 3- Wind:
- | | |
|---------------------|---------------------|
| Ultimate wind speed | 100 mph (3 s. gust) |
| Exposure | C |
| RC | II |
- 4- Roof Live: 20 psf
- 5- Soil Bearing Capacity: 1500 psf (presumptive value from IBC)
- 6- Gravity Loads:
- | | |
|------------|--------|
| DL Floor: | 15 psf |
| LL Floor: | 40 psf |
| DL Roof: | 15 psf |
| CMU Walls: | 81 psf |
- 7- Deflection Criteria:
- | | |
|----------------------|-------|
| Floor LL Deflection: | L/480 |
| Roof TL Deflection: | L/180 |

****Other criteria assumed as stated in design calculations.**





ASCE Hazards Report

Address:

12952 Lampson Ave
Garden Grove, California
92840

Standard:

ASCE/SEI 7-16

Risk Category: II

Soil Class:

D - Default (see
Section 11.4.3)

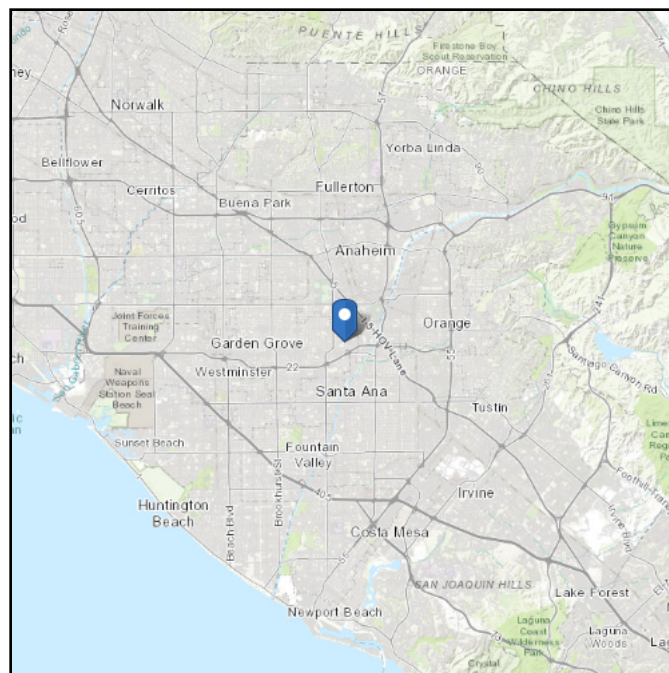
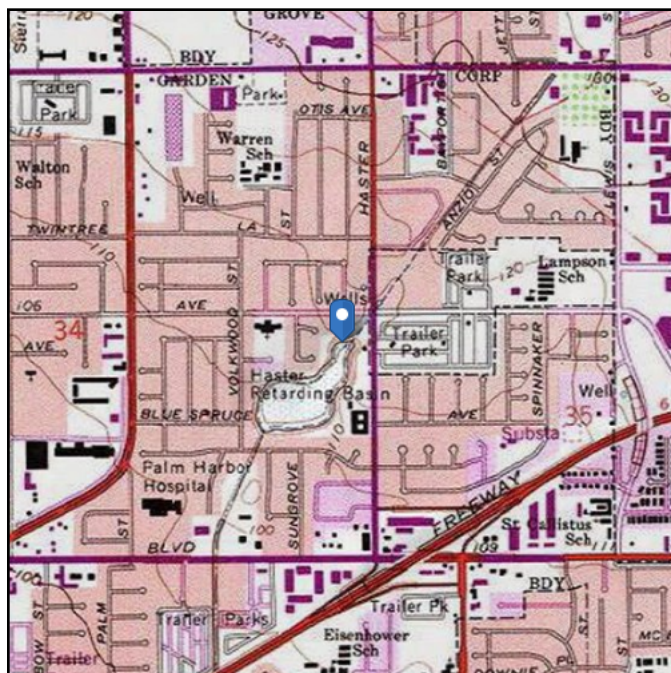
Latitude:

33.78067

Longitude: -117.907186

Elevation:

100.95144830262471 ft
(NAVD 88)



Wind

Results:

Wind Speed	95 Vmph
10-year MRI	66 Vmph
25-year MRI	72 Vmph
50-year MRI	76 Vmph
100-year MRI	81 Vmph

Data Source:

ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed:

Mon Apr 28 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.



Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.362	S_{D1} :	N/A
S_1 :	0.483	T_L :	8
F_a :	1.2	PGA :	0.577
F_v :	N/A	PGA_M :	0.693
S_{MS} :	1.635	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.09	C_v :	1.372

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Apr 28 2025

Date Source: [USGS Seismic Design Maps](https://seismicdesignmaps.org/)



The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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ASCE 7-16 (2018 & 2021 IBC) SEISMIC DESIGN

Last updated April 8, 2025 by Caleb Sale & Ralph Hall

EQUIVALENT LATERAL FORCE PROCEDURE

JOB NUMBER

Romtec 225-077

DESIGNER

RMH

Design Information

DATA	VALUE	SOURCE
Site Class	D-Default	Site conditions, geotech report
S_s	1.362	Seismic Design Parameters (Software)
S_1	0.483	Seismic Design Parameters (Software)
S_{MS}	1.634	Seismic Design Parameters (Calculated)
S_{M1}	1.316	Seismic Design Parameters (Calculated)
I_E	1.0	ASCE 7-16 Table 1.5-2
Risk Category	2	ASCE 7-16 Table 1.5-1
R	5	ASCE 7-16 Table 12.2-1
h_n	12	Height per ASCE 7-16
C_t	0.02	ASCE 7-16 Table 12.8-2
T_L	16	Long-period Transition period (Software)
Diaphragm	Flexible	Rigid or Flexible
L	25	Maximum distance between LFRS Elements

S_{MS} : Max considered spectral response acceleration for short periods

S_{M1} : Max considered spectral response acceleration for 1-second period

I_E : Seismic importance factor

R: Response modification factor

1) Design spectral response acceleration

S_{DS} : 5% Damped spectral response acceleration at short periods

S_{D1} : 5% Damped spectral response acceleration at 1 second period

$$\begin{array}{llll} S_{DS}=2/3(S_{MS}) & S_{DS}= & 2/3 \times 1.6344 & S_{DS}= 1.090 \quad [ASCE 7-16 Eq. 11.4-3] \\ S_{D1}=2/3(S_{M1}) & S_{D1}= & 2/3 \times 1.316417 & S_{D1}= 0.878 \quad [ASCE 7-16 Eq. 11.4-4] \end{array}$$

2) Seismic design category

11.6 EXCEPTIONS:

ALL MUST BE MET TO
USE EXCEPTION

1: $T_a < 0.8T_s$

2: $T < T_s$ for Story Drift

3: Eq 12.8-2 Used for C_s

4: Diaphragm is Rigid or Flexible W/ $L < 40'$

MET

MET

MET

MET

From Table 11.6-1 ASCE 7-16 =

$\frac{D}{D}$

From Table 11.6-2 ASCE 7-16 =

$\frac{D}{D}$

Governing
Design

D

Note: $S_1 < 0.75$ AND all exceptions of ASCE 7-16 11.6 met, SDC is permitted to be determined from Table 1 alone. IRC table 302.2.1.1 is equivalent to IBC Table 1 for alternate SDC Determination

3) Determine design base shear (V)

A. ASCE 7-16, 11.4.8 Exception

$T_s = 0.8054433$

$$T = T_a = C_t (h_n)^x \quad [ASCE 7-16, 12.8.2.1, Eq. 12.8-7]$$

T_a : Approximate Fundamental Period

$$T = 0.020 \times 12^{0.75}$$

$$T = 0.129$$

For Site Class D/D-Default:

$T < 1.5 T_s$

For site class D/-default C_s shall be calculated per Eq. 12.8-2

Equivalent Force Procedure

[ASCE 7-16, 12.8.1]

$$V = C_s \times W$$

C_s : Seismic Response Coefficient

W: Total dead load and other applicable loads

B. [ASCE 7-16, 12.8.1.1, Eq. 12.8-2]

$$C_s = \frac{S_{DS}}{R/I}$$

$$C_s = \frac{1.090}{5} \times 1.0$$

$$C_s = 0.218$$

C. Nor greater than

$$C_s = \frac{S_{D1}}{T(R/I)} \quad [ASCE 7-16, 12.8.1.1, Eq. 12.8-3]$$

OR

$$C_s = \frac{S_{D1} \cdot T_L}{T^2(R/I)} \quad [ASCE 7-16, 12.8.1.1, Eq. 12.8-4]$$

$$C_s = \frac{0.878 \times 1}{0.129 \times 5}$$

$$C_s = 1.361$$

$$C_s = \frac{0.878 \times 16 \times 1}{0.017 \times 5}$$

$$C_s = 168.90$$

D. Nor less than [ASCE 7-16, 12.8.1.1, Eq. 12.8-5]

$$C_s = 0.044 (S_{DS}) (I)$$

$$C_s = 0.044 \times 1.09 \times 1$$

$$C_s = 0.047942$$

OR IF $S_1 > 0.6$

[ASCE 7-16, 12.8.1.1, Eq. 12.8-6]

$$C_s = \frac{0.5 \cdot S_1}{(R/I)}$$

$$C_s = \frac{0.5 \times 0.483}{5}$$

1.0

$$C_s = 0.0483$$

Governing $C_s = 0.218$

$$V = C_s \times W$$

$$V = 0.218 \times W$$

Refer to sheet two for W and Calculated V

IBC SEISMIC DESIGN

VERTICAL FORCE DISTRIBUTION EQUIVALENT LATERAL FORCE PROCEDURE

JOB NUMBER Romtec 225-077DESIGNER RMH

1. Determine dead load at each level of building.

Structural portion	DL (PSF)	Area (SF)	Length (FT)	Height (FT)	Total Weight (LB)
a) Roof	Diaphragm elevation from the base level in ft			8.7	
Roof	15	790	NA	NA	11850
Misc.	0	0	0	0	0
Misc. (LBS)	0	NA	NA	NA	0
c) 5th floor	Diaphragm elevation from the base level in ft			0	
Ext. Walls	15	NA	0	0	0
Int. Walls	10	NA	0	0	0
Floor	15	0	NA	NA	0
Misc.	0	0	0	0	0
Misc. (LBS)	0	NA	NA	NA	0
d) 4th floor	Diaphragm elevation from the base level in ft			0	
Ext. Walls	15	NA	0	0	0
Int. Walls	10	NA	0	0	0
Floor	15	0	NA	NA	0
Misc.	0	0	0	0	0
Misc. (LBS)	0	NA	NA	NA	0
e) 3rd floor	Diaphragm elevation from the base level in ft			0	
Ext. Walls	15	NA	0	0	0
Int. Walls	10	NA	0	0	0
Floor	15	0	NA	NA	0
Misc.	0	0	0	0	0
Misc. (LBS)	0	NA	NA	NA	0
f) 2nd floor	Diaphragm elevation from the base level in ft			0	
Ext. Walls	0	NA	0	0	0
Int. Walls	0	NA	0	0	0
Floor	0	0	NA	NA	0
Misc.	0	0	0	0	0
Misc. (LBS)	0	NA	NA	NA	0
g) 1st floor	Diaphragm elevation from the base level in ft			10.7	
Ext. Walls	81	NA	150	10.7	130005
Int. Walls	10	NA	0	10.7	0
Misc.	0	0	0	0	0
TOTAL DEAD LOAD (LB) =					141855

2) Determine verticle force distribution at each level ASCE 7-16 12.8.3

$$F_x = C_{vx} \times V \quad \text{ASCE 7-16 Eq. 12.8-11}$$

$$C_{vx} = \frac{w_x \times h_x^k}{\sum w_i h_i^k} \quad \text{ASCE 7-16 Eq. 12.8-12}$$

 F_x : Lateral seismic force at any level

V: Seismic base shear (Kips)

 w_x & w_i : The portion of the total gravity load of the structure (W) located or assigned to level i or x h_x & h_i : The height (ft) from the base to level i or x diaphragm. k : An exponent related to the structures period (T) as follows;

$$T \leq 0.5 \text{ sec } k = 1$$

$$T \geq 2.5 \text{ sec } k = 2$$

$$0.5 \leq T \leq 2.5 \text{ Interpolate between 1 \& 2}$$

Refer to sheet one for V

$$V = 0.218 \times XW$$

$$V = 0.218 \times 141855$$

$$V = \frac{(kips)}{30.913}$$

$$T = \frac{0.1289}{k=1}$$

Level (floor)	Wall Height (ft)	Diaphragm Height (Ft)	W_x (kips)	$W_x \times h_x^k$	C_{vx}	F_x (kips)	Allowable F_x (kips)
Roof	10.7	8.7	76.853	669	1.000	30.91	21.64
5	0	0	0.000	0	0.000	0	0.00
4	0	0	0.000	0	0.000	0	0.00
3	0	0	0.000	0	0.000	0	0.00
2	0	0	0.000	0	0.000	0.00	0.00
			76.853	669	1.000	30.91	21.6

Note: The Total Shear shown in the right hand column is an "allowable" load.

MecaWind v2525

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Calculations Prepared by:

Date: Apr 28, 2025

File Location: Current Project Not Saved

General:

Reference Abbreviations: T: Table, F: Figure, E: Equation, S: Section

Wind Load Standard	=	ASCE 7-16	Basic Wind Speed	=	100.0 mph
Exposure Classification	=	C	Risk Category	=	II
Structure Type	=	Building	Basis for Wind Pressures	=	ASD
MWFRS Analysis Method	=	Ch 27 Pt 1	C&C Analysis Method	=	None
Dynamic Type of Structure	=	Rigid	Advanced Options	=	False

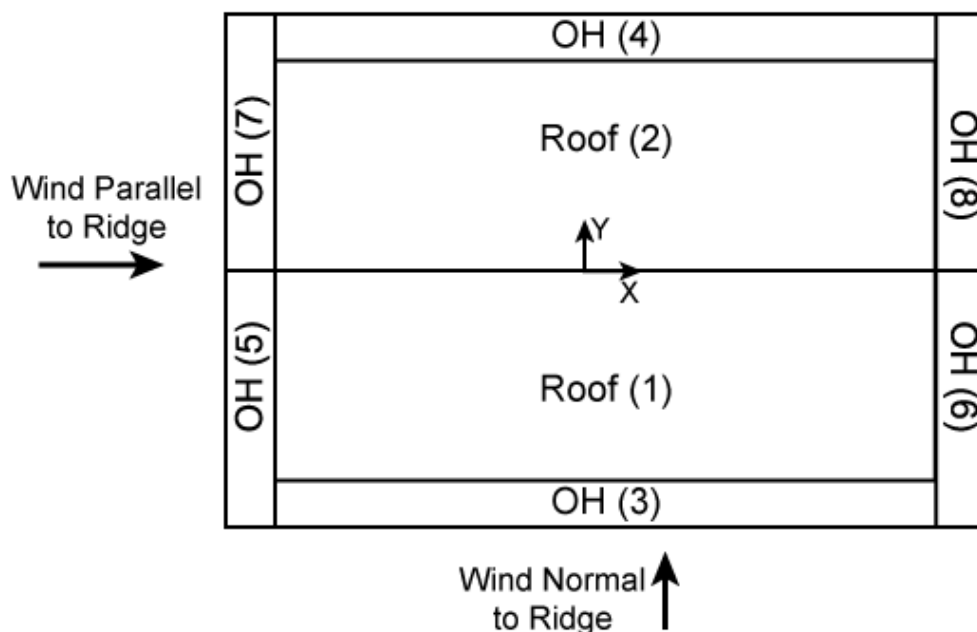
Building:

Roof = Roof Type	=	Gabled	Encl = Enclosure Classification	=	Enclosed
Help = Help on Building Roof Type	=	Help	IsCust = Custom Roof	=	False
W = Building Width	=	25.3000 ft	L = Building Length	=	25.3000 ft
R _{ht} = Ridge Height	=	13.971 ft	E _{ht} = Eave Height	=	8.700 ft
Pitch = Pitch of Roof	=	5.0 :12	θ = Slope of Roof	=	22.62 °
OH = Overhang Configuration	=	All None	Par = Parapet	=	None
z _i = Highest Opening Elevation	=	0.0000 ft	HT _{over} = Override Mean Roof Height	=	False
Ht _{man} = Mean Roof Height	=	11.335 ft	RA _{over} = Override Roof Area	=	False
GC _{pi_o} = Override GC _{pi} value	=	False			

Exposure Constants [T:26.11-1]:

α = 3-s Gust-speed exponent	=	9.500	Z _g = Nominal Ht of Boundary Layer	=	900.000 ft
â = Reciprocal of α	=	0.105	b = 3 sec gust speed factor	=	1.000
α _m = Mean hourly Wind-Speed Exponent	=	0.154	b _m = Mean hourly Windspeed Exponent	=	0.650
c = Turbulence Intensity Factor	=	0.200	ε = Integral Length Scale Exponent	=	0.2000

Main Wind Force Resisting System (MWFRS) Wind Calculations per Ch 27 Pt1



h = Mean structure height	=	11.335 ft	K _h = 2.01 • (15/Z _g) ^{2/α} _{T:26.10-1}	=	0.849
K _{zt} = No Topographic Feature	=	1.000	K _d = Directionality Factor _{T:26.6-1}	=	0.85
GC _{pi} = ± Internal Press Coef _{T:26.13-1}	=	±0.18	LF = ASD Load Factor	=	0.60
K _e = Ground Elev Factor _{T:26.9-1}	=	1.000	q _h = .00256 • K _h • K _{zt} • K _d • K _e • V ² • LF _{E:26.10-1}	=	11.08 psf
q _{in} = Negative Internal Pressure: q _h	=	11.08 psf	q _{lp} = For +GC _{pi} use q _h	=	11.08 psf
A _{roof} = Roof Area	=	693.43 ft ²			

MWFRS Wind Loads [Normal to Ridge]

h = Mean Roof Height of Building	=	11.3354 ft	R _{ht} = Ridge Height Of Roof	=	13.9708 ft
----------------------------------	---	------------	--	---	------------

B = Building Width Normal To Wind	= 25.3000 ft	L = Building Width Parallel To Wind	= 25.3000 ft
L/B = Ratio: L/B	= 1.000	h/L = Ratio: h/L	= 0.448
θ = Slope of Roof	= 22.62 °	Cp _W = Windward Wall Coefficient	= 0.800
Cp _{LW} = Leeward Wall Coefficient	= -0.500	Cp _{SW} = Side Wall Coefficient	= -0.700

Gust Factor Calculation for Wind: [Normal to Ridge]

Gust Factor Category I Rigid Structures - Simplified Method

G₁ = Simplified: For Rigid Structures can use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Z_m = Equiv Struc Height: Max(0.6•h, Z_{min}) = 15.000 ft
 I_{zm} = Turbulence Intensity: c•(33/Z_m)^{1/6} [E:26.11-1] = 0.228
 L_{zm} = Turbulence Integral Length Scale: ℓ•(Z_m/33)^ε [E:26.11-9] = 427.057 ft
 B = Building Width Width Normal to Wind Direction = 25.300 ft
 Q = [1/(1+0.63•[(B+h)/L_{zm}]^{0.63})]^{0.5} [E:26.11-8] = 0.939
 G₂ = Detailed: 0.925•[(1+1.7•g_q•I_{zm}•Q)/(1+1.7•g_v•I_{zm})] [E:26.11-6] = 0.893

Gust Factor Used in Analysis

G = Gust Factor: Min(G₁, G₂) = 0.850

Wall Wind Pressures [Normal to Ridge]

All wind pressures include a Load Factor (LF) of 0.6

Elev	GC _{pi}	q _i	K _z	K _{zt}	q _z	Windward Press	Leeward Press	Side Press	Total Press	Minimum Pressure*
ft		psf			psf	psf	psf	psf	psf	psf
8.700	+0.18	11.08	0.849	1.000	11.08	5.54	-6.71	-8.59	12.25	9.60
8.700	-0.18	11.08	0.849	1.000	11.08	9.53	-2.72	-4.60	12.25	9.60

K_z = 2.01•(15/Z_g)^{2/q_{T:26.10-1}}
 GC_{pi} = +Internal Coef _{T:26.13-1}
 q_{ip} = For +GC_{pi} use q_h
 Side = q_h•G•Cp_{SW}-q_{ip}•(GC_{pi}+) _{E:27.3-1}
 Windward = q_z•G•Cp_{WW}-q_{ip}•(GC_{pi}+) _{E:27.3-1}
 +Press = Pressure Acting Toward Surface
 §27.1.5 = MWFRS Min Wall Pressure = 9.60 psf

K_{zt} = No Topographic Feature
 q_z = .00256•K_z•K_{zt}•K_s•K_e•V²•LF_{E:26.10-1}
 q_{in} = Negative Internal Pressure: q_h
 Leeward = q_h•G•Cp_{LW}-q_{ip}•(GC_{pi}+) _{E:27.3-1}
 Total = Windward - Leeward
 -Press = Pressure Acting Away from Surface

Roof Wind Pressures [Normal to Ridge]

All wind pressures include a Load Factor (LF) of 0.6

Component	Description	Location	Start ft	End ft	θ °	Basis	GC _{pi}	C _{pMin}	C _{pMax}	P _{min} psf	P _{max} psf	P _{min} psf
Roof	Leeward	2	All	All	22.62	N	+0.18	-0.6	-0.6	-7.65	-7.65	4.80
Roof	Windward	1	All	All	22.62	N	+0.18	0.135	-0.327	-0.72	-5.07	4.80
Roof	Leeward	2	All	All	22.62	N	-0.18	-0.6	-0.6	-3.66	-3.66	4.80
Roof	Windward	1	All	All	22.62	N	-0.18	0.135	-0.327	3.27	-1.08	4.80

Roof Pressures based upon Ch 27 Pt1:

Component = The building component for pressures
 Start = Start Dist from Windward Edge
 C_{pMin} = Smallest Coefficient Magnitude
 P_{min} = q_h•G•C_{pMin}-q_{ip}•GC_{piE:27.3-1}
 GC_{pi} = +Internal Coef _{T:26.13-1}
 P_{min} = Min Press projected on vertical plane _{§27.1.5}
 §27.1.5 = MWFRS Min Wall Pressure = 9.60 psf
 -Press = Pressure Acting Away from Surface

Location = Reference Graphic in Output for Values
 End = End Dist from Windward Edge
 C_{pMax} = Largest Coefficient Magnitude
 P_{max} = q_h•G•C_{pMax}-q_{in}•GC_{piE:27.3-1}
 Basis = P=Parallel to Ridge; N=Normal to Ridge
 θ = Roof Slope Relative to Wind
 +Press = Pressure Acting Toward Surface

• The smaller uplift pressures due to C_{pMin} can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7

MWFRS Wind Loads [Parallel to Ridge]

h = Mean Roof Height of Building	= 11.3354 ft	R _{ht} = Ridge Height Of Roof	= 13.9708 ft
B = Building Width Normal To Wind	= 25.3000 ft	L = Building Width Parallel To Wind	= 25.3000 ft
L/B = Ratio: L/B	= 1.000	h/L = Ratio: h/L	= 0.448
θ = Slope of Roof	= 22.62 °	Cp _W = Windward Wall Coefficient	= 0.800
Cp _{LW} = Leeward Wall Coefficient	= -0.500	Cp _{SW} = Side Wall Coefficient	= -0.700

Gust Factor Calculation for Wind: [Parallel to Ridge]

Gust Factor Category I Rigid Structures - Simplified Method

G₁ = Simplified: For Rigid Structures can use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Z_m = Equiv Struc Height: Max(0.6•h, Z_{min}) = 15.000 ft
 I_{zm} = Turbulence Intensity: c•(33/Z_m)^{1/6} [E:26.11-1] = 0.228
 L_{zm} = Turbulence Integral Length Scale: ℓ•(Z_m/33)^ε [E:26.11-9] = 427.057 ft

$B = \text{Building Width Normal to Wind Direction} = 25.300 \text{ ft}$
 $Q = [1/(1+0.63 \cdot [(B+h)/L_{zm}]^{0.63})]^{0.5} [E:26.11-8] = 0.939$
 $G_2 = \text{Detailed: } 0.925 \cdot [(1+1.7 \cdot g_q \cdot I_{zm} \cdot Q)/(1+1.7 \cdot g_v \cdot I_{zm})] [E:26.11-6] = 0.893$
Gust Factor Used in Analysis
 $G = \text{Gust Factor: Min}(G_1, G_2) = 0.850$

Wall Wind Pressures [Parallel to Ridge]
All wind pressures include a Load Factor (LF) of 0.6

Elev ft	GC _{pi}	q _i psf	K _e	K _{zt}	q _e psf	Windward Press psf	Leeward Press psf	Side Press psf	Total Press psf	Minimum Pressure* psf
13.971	+0.18	11.08	0.849	1.000	11.08	5.54	-6.71	-8.59	12.25	9.60
11.335	+0.18	11.08	0.849	1.000	11.08	5.54	-6.71	-8.59	12.25	9.60
8.700	+0.18	11.08	0.849	1.000	11.08	5.54	-6.71	-8.59	12.25	9.60
13.971	-0.18	11.08	0.849	1.000	11.08	9.53	-2.72	-4.60	12.25	9.60
11.335	-0.18	11.08	0.849	1.000	11.08	9.53	-2.72	-4.60	12.25	9.60
8.700	-0.18	11.08	0.849	1.000	11.08	9.53	-2.72	-4.60	12.25	9.60

$K_z = 2.01 \cdot (15/Z_g)^{2/a} [E:26.10-1]$ $GC_{pi} = \text{+Internal Coef } [E:26.13-1]$ $q_{ip} = \text{For } +GC_{pi} \text{ use } q_h$ $\text{Side} = q_h \cdot G \cdot C_{pSW} - q_{ip} \cdot (GC_{pi+}) [E:27.3-1]$ $\text{Windward} = q_z \cdot G \cdot C_{pWW} - q_{ip} \cdot (GC_{pi+}) [E:27.3-1]$ $\text{+Press} = \text{Pressure Acting Toward Surface}$ $\$27.1.5 = \text{MWFRS Min Wall Pressure} = 9.60 \text{ psf}$	$K_{zt} = \text{No Topographic Feature}$ $q_z = .00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot K_e \cdot V^2 \cdot LF [E:26.10-1]$ $q_{in} = \text{Negative Internal Pressure: } q_h$ $\text{Leeward} = q_h \cdot G \cdot C_{pLW} - q_{ip} \cdot (GC_{pi+}) [E:27.3-1]$ $\text{Total} = \text{Windward} - \text{Leeward}$ $\text{-Press} = \text{Pressure Acting Away from Surface}$
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Roof Wind Pressures [Parallel to Ridge]
All wind pressures include a Load Factor (LF) of 0.6

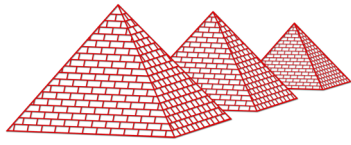
Component	Description	Location	Start ft	End ft	θ °	Basis	GC _{pi}	C _{pMin}	C _{pMax}	P _{min} psf	P _{max} psf	P _{min} psf
Roof	Roof 0 to h	1,2	0.000	11.335	0.0	P	+0.18	-0.9	-0.18	-10.47	-3.69	4.80
Roof	Roof h to 2•h	1,2	11.335	22.671	0.0	P	+0.18	-0.5	-0.18	-6.71	-3.69	4.80
Roof	Roof ≥ 2•h	1,2	22.671	25.300	0.0	P	+0.18	-0.3	-0.18	-4.82	-3.69	4.80
Roof	Roof 0 to h	1,2	0.000	11.335	0.0	P	-0.18	-0.9	-0.18	-6.48	0.30	4.80
Roof	Roof h to 2•h	1,2	11.335	22.671	0.0	P	-0.18	-0.5	-0.18	-2.72	0.30	4.80
Roof	Roof ≥ 2•h	1,2	22.671	25.300	0.0	P	-0.18	-0.3	-0.18	-0.83	0.30	4.80

Roof Pressures based upon Ch 27 Pt1:

Component = The building component for pressures
 Start = Start Dist from Windward Edge
 $C_{pMin} = \text{Smallest Coefficient Magnitude}$
 $P_{min} = q_h \cdot G \cdot C_{pMin} - q_{ip} \cdot GC_{pi} [E:27.3-1]$
 $GC_{pi} = \text{+Internal Coef } [E:26.13-1]$
 $P_{min} = \text{Min Press projected on vertical plane } [E:27.1.5]$
 $\$27.1.5 = \text{MWFRS Min Wall Pressure} = 9.60 \text{ psf}$
 -Press = Pressure Acting Away from Surface

Location = Reference Graphic in Output for Values
 End = End Dist from Windward Edge
 $C_{pMax} = \text{Largest Coefficient Magnitude}$
 $P_{max} = q_h \cdot G \cdot C_{pMax} - q_{in} \cdot GC_{pi} [E:27.3-1]$
 Basis = P=Parallel to Ridge: N=Normal to Ridge
 θ = Roof Slope Relative to Wind
 +Press = Pressure Acting Toward Surface

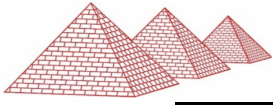
• The smaller uplift pressures due to C_{pMin} can become critical when wind is combined with roof live load or snow load; load combinations are given in ASCE 7



PSE CONSULTING ENGINEERS INC.
PROJECT #: ROMTEC 225-077

ANALYSIS & DESIGN:

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PSE Consulting Engineers Inc.

Project Number: Romtec 225-077
 Project Name: GGP Haster Basin Restroom
 Subject: Analysis

Designed by: RMH
 Checked by:

Date: 4/28/2025
 Date:

Roof Panels

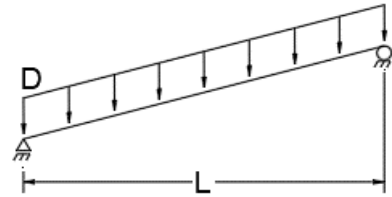
Roof Slope: 5 to 12

L: 7.3 ft

Distributed Load (D):

Dead Load = 10 psf

Roof Live Load = 20 psf



USE: 5.5" Premier SIP Roof Panels

Roof Beams

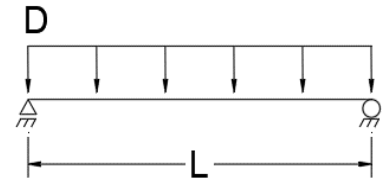
Trib.: 5 ft.

L: 7.75 ft

Distributed Load (D):

Dead Load = 15 psf * 5.00 ft = 75.00 plf

Roof Live Load = 20 psf * 5.00 ft = 100.00 plf



USE: 5 1/8" x 6" Glu-Lam 24F-1.8E WS

Roof Rafters

Roof Slope: 5 to 12

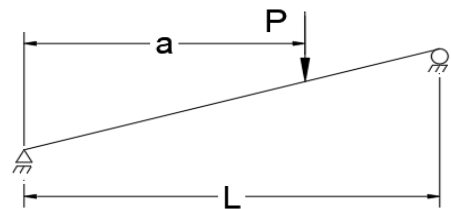
L: 10 ft

a: 6.5 ft

Point Load (P):

Dead Load = 321 x 2 = 642 lb

Snow Load = 392 x 2 = 784 lb



USE: 5 1/8" x 6" Glu-Lam 24F-1.8E WS



Listing Report: PRS032808-3
 Reissued Date: 11/05/2015
 This report is subject to annual review

Table 3: Maximum Allowable Uniform Transverse Load (psf) – Type L Panels^{1,3}

Panel Core Thickness (in)	Deflection Limit ²	Panel Span (ft)									
		4 ⁴	8	10	12	14	16	18	20	22	24
3.5	L/360	103	45	33	24	18	11				
	L/240	225	68	47	34	26	17				
	L/180	297*	91	61	45	34	23				
5.5	L/360	307*	129	57	42	34	25	20	15		
	L/240	307*	182*	87	61	49	37	30	22		
	L/180	307*	182*	112*	80	65	49	39	29		
7.25	L/360	253	171	82	66	54	41	32	23		
	L/240	288*	188*	128	100	81	61	48	35		
	L/180	288*	188*	133*	117*	105	80	63	45		
9.25	L/360	286	188*	117	101	80	58	47	36	32	27
	L/240	326*	188*	147*	134*	120	90	71	52	47	41
	L/180	326*	188*	147*	134*	121	108*	93	68	61	53
11.25	L/360	327*	188*	167*	141	116	91	75	58	47	36
	L/240	327*	188*	167*	153*	132	110*	97	83*	69	53
	L/180	327*	188*	167*	153*	132	110*	97	83*	83	70

¹ Table values assume a simply supported panel with 1.5 in. of continuous bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.25 times the tabulated load. Splines consist of #2 or better, Hem-Fir, 1.5 in. wide with a depth equal to the core thickness, spaced to provide not less than two members for every 48 in. of panel width.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted building code.

³ Tabulated values for 8 ft walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on the strong-axis of the facing material oriented parallel to the span direction.

⁴ Panels spanning 4 ft shall be a minimum of 8 ft long spanning a minimum of two 4 ft spans. No single span condition is allowed.

An asterisk () indicates the value shown is governed by the average peak load divided by 3.

This listing report is intended to indicate that NTA, Inc. has evaluated the product described and found it to be eligible for labeling. Product not labeled as specified herein is not covered by this report. NTA, Inc. makes no warranty, either expressed or implied, regarding the product covered by this report.

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PRS032808-3 Listing Report 2015-11-30
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 FORM ISQA 3.2n Listing Report Template 2015-11-11





COMPANY

PROJECT

Apr. 28, 2025 07:56

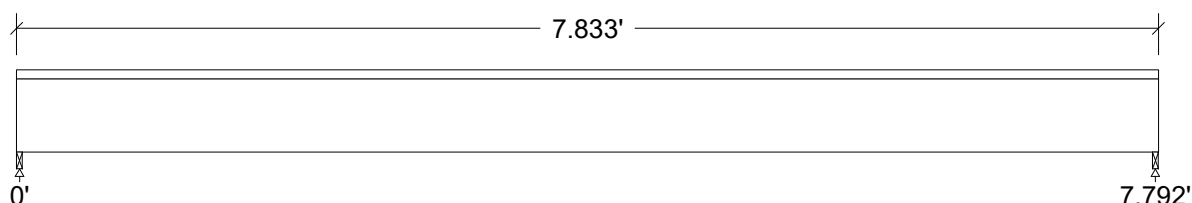
Roof Beam

Design Check Calculation Sheet

WoodWorks Sizer 13.2.1

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			15.00 (5.00')	psf
Load2	Roof live	Full Area			20.00 (5.00')	psf
Self-weight	Dead	Full UDL			7.1	plf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :

Unfactored:			
Dead	321		321
Roof Live	392		392
Factored:			
Total	713		713
Bearing:			
Capacity			
Beam	1666		1666
Support	1719		1719
Des ratio			
Beam	0.43		0.43
Support	0.41		0.41
Load comb	#2		#2
Length	0.50*		0.50*
Min req'd	0.50*		0.50*
Cb	1.00		1.00
Cb min	1.00		1.00
Cb support	1.07		1.07
Fcp sup	625		625

*Minimum bearing length setting used: 1/2" for end supports

Glulam-Unbalan., West Species, 24F-1.8E WS, 5-1/8"x6"

Supports: All - Timber-soft Beam, D.Fir-L No.2

Total length: 7.83'; Clear span: 7.75'; Volume = 1.7 cu.ft.; 4 laminations, 5-1/8" maximum width,

Lateral support: top = continuous, bottom = at supports;

This section PASSES the design code check.**Analysis vs. Allowable Stress and Deflection using NDS 2018 :**

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$f_v = 30$	$F_v' = 265$	psi	$f_v/F_v' = 0.11$
Bending(+)	$f_b = 539$	$F_b' = 2400$	psi	$f_b/F_b' = 0.22$
Live Defl'n	$0.05 = < L/999$	$0.39 = L/240$	in	0.13
Total Defl'n	$0.11 = L/839$	$0.52 = L/180$	in	0.21

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CV	Cfu	Cr	Cfrt	Notes	Cvr	LC#
Fv'	265	1.00	1.00	1.00	-	-	-	-	1.00	1.00	1.00	2
Fb'+	2400	1.00	1.00	1.00	1.000	1.000	-	-	1.00	1.00	-	2
Fcp'	650	-	1.00	1.00	-	-	-	-	1.00	-	-	-
E'	1.8 million	1.00	1.00	1.00	-	-	-	-	1.00	-	-	2
Eminy'	0.85 million	1.00	1.00	1.00	-	-	-	-	1.00	-	-	2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = D + Lr

Bending(+): LC #2 = D + Lr

Deflection: LC #2 = D + Lr (live)

LC #2 = D + Lr (total)

Bearing : Support 1 - LC #2 = D + Lr

Support 2 - LC #2 = D + Lr

Load Types: D=dead Lr=roof live

Load combinations: ASD Basic from ASCE 7-16 2.4; all LC's listed in the Analysis report

CALCULATIONS:

V max = 709, V design = 615 (NDS 3.4.3.1(a)) lbs; M(+) = 1382 lbs-ft

EI = 166.05e06 lb-in²

"Live" deflection is due to all non-dead loads (live, wind, snow...)

Total deflection = 1.50 permanent + "live"

Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2021) and the National Design Specification (NDS 2018), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Glulam design values are for materials conforming to ANSI 117-2015 and manufactured in accordance with ANSI A190.1-2012
4. GLULAM: bxd = actual breadth x actual depth.
5. Glulam Beams shall be laterally supported according to the provisions of NDS Clause 3.3.3.
6. GLULAM: bearing length based on smaller of Fcp(tension), Fcp(comp'n).


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Apr. 28, 2025 07:58

Roof Rafter

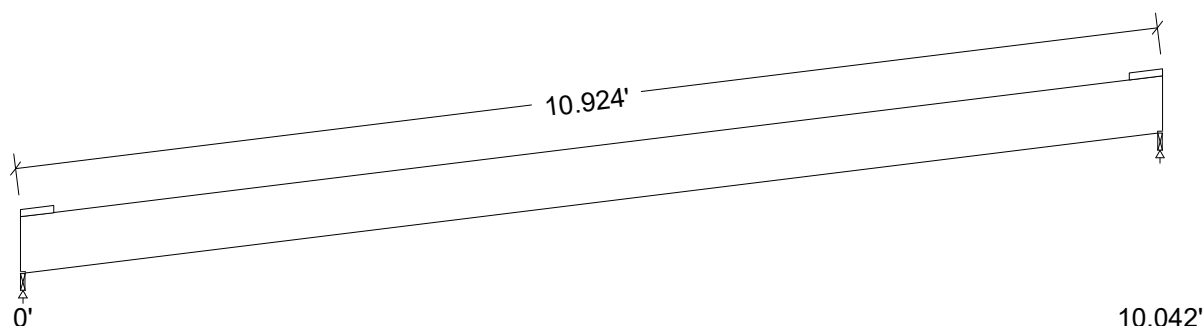
Design Check Calculation Sheet

WoodWorks Sizer 13.2.1

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Point		6.54	642	lbs
Load2	Roof live	Point		6.54	784	lbs
Self-weight	Dead	Full UDL			7.1	plf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	264		455
Roof Live	275		509
Factored:			
Total	538		965
Bearing:			
F'theta	713		713
Capacity			
Beam	1826		1826
Support	1719		1719
Des ratio			
Beam	0.29		0.53
Support	0.31		0.56
Load comb	#2		#2
Length	0.50*		0.50*
Min req'd	0.50*		0.50*
Cb	1.00		1.00
Cb min	1.00		1.00
Cb support	1.07		1.07
Fcp sup	625		625

*Minimum bearing length setting used: 1/2" for end supports

Glulam-Unbalan., West Species, 24F-1.8E WS, 5-1/8"x6"

Supports: All - Timber-soft Beam, D.Fir-L No.2

Total length: 11.13'; Clear span(horz): 10'; Volume = 2.4 cu.ft.; Pitch: 5/12; 4 laminations, 5-1/8" maximum width,

Notches: 1,2 - bottom (depth = 3/16", length = Lb); Lateral support: top = at supports, bottom = at supports;

This section PASSES the design code check.

Analysis vs. Allowable Stress and Deflection using NDS 2018 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$f_v = 43$	$F_v' = 172$	psi	$f_v/F_v' = 0.25$
Bending(+)	$f_b = 1307$	$F_b' = 2382$	psi	$f_b/F_b' = 0.55$
Live Defl'n	$0.18 = L/728$	$0.54 = L/240$	in	0.33
Total Defl'n	$0.42 = L/312$	$0.73 = L/180$	in	0.58

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CV	Cfu	Cr	Cfrt	Notes	Cvr	LC#
F_v'	265	1.00	1.00	1.00	-	-	-	-	1.00	1.00	0.72	2
$F_b'+$	2400	1.00	1.00	1.00	0.993	1.000	-	-	1.00	1.00	-	2
F_{cp}'	650	-	1.00	1.00	-	-	-	-	1.00	-	-	-
E'	1.8 million	1.00	1.00	-	-	-	-	-	1.00	-	-	2
E_{min}'	0.85 million	1.00	1.00	-	-	-	-	-	1.00	-	-	2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = D + Lr

Bending(+): LC #2 = D + Lr

Deflection: LC #2 = D + Lr (live)

LC #2 = D + Lr (total)

Bearing : Support 1 - LC #2 = D + Lr

Support 2 - LC #2 = D + Lr

Load Types: D=dead Lr=roof live

Load combinations: ASD Basic from ASCE 7-16 2.4; all LC's listed in the Analysis report

CALCULATIONS:

$V_{max} = 890$, $V_{design} = 890$ (NDS 3.4.3.1(a)) lbs; $M(+)$ = 3348 lbs-ft

$f_v = 3V / 2bd$; F_v' includes effect of notch $(dn/d)^3 = 0.899$ (NDS 3.4-3)

$EI = 166.05e06$ lb-in²

"Live" deflection is due to all non-dead loads (live, wind, snow...)

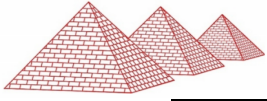
Total deflection = 1.50 permanent + "live"

Bearing: Allowable bearing at an angle $F'\theta$ calculated for each support as per NDS 3.10.3

Lateral stability(+): $L_u = 10.88'$ $L_e = 20.00'$ $RB = 7.4$

Design Notes:

1. Analysis and design are in accordance with the ICC International Building Code (IBC 2021) and the National Design Specification (NDS 2018), using Allowable Stress Design (ASD). Design values are from the NDS Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Glulam design values are for materials conforming to ANSI 117-2015 and manufactured in accordance with ANSI A190.1-2012
4. GLULAM: bxd = actual breadth x actual depth.
5. Glulam Beams shall be laterally supported according to the provisions of NDS Clause 3.3.3.
6. GLULAM: bearing length based on smaller of $F_{cp}(\text{tension})$, $F_{cp}(\text{comp'n})$.
7. SLOPED BEAMS: level bearing is required for all sloped beams.



PSE Consulting Engineers Inc.

Project Number	Romtec 225-077	Designed by	RMH	Date	4/28/2025
Project Name	GGP Haster Basin Restroom	Checked by		Date	
Subject	Analysis				

Masonry Bearing Wall

Trib: 7 ft

L: 12.7 ft

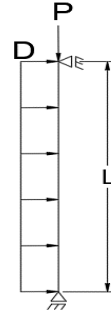
Load (P):

Dead Load = 15 psf * 7.00 ft = 105.00 plf

Roof Live Load = 20 psf * 7.00 ft = 140.00 plf

Distributed Load(D1):

Earthquake Load = 25.4 psf



USE

8" CMU W/ #4 Vert Bars @ 24" O.C.

Continuous Wall Footing

Loads from: Roof

Dead Load = 15 psf * 7 ft = 105 plf

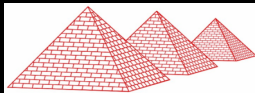
Roof Live Load = 20 psf * 7 ft = 140 plf

Loads from: Wall

Dead Load = 81 psf * 12.7 ft = 1028.7 plf

USE

Cont. x 24" x 8" Footing W/ 3 - #5 Bars



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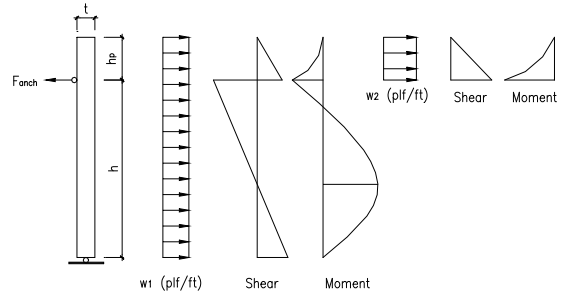
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Lateral Force for One-Story Wall Based on ASCE 7-22 & 2021 IBC

INPUT DATA

WALL THICKNESS $t = 8$ in. (203 mm)
PARAPET HEIGHT $h_p = 0$ ft. (0.0 m)
WALL HEIGHT $h = 12.7$ ft. (3.9 m)
TOTAL WALL DENSITY $\rho = 125$ lbs/ft³ (2001 kg/m³)
SEISMIC PARAMETER $S_{DS} = 1.09$ (ASCE 7 Sec 11.4)
SEISMIC DESIGN CATEGORY SDC = D
DIAPHRAGM FLEXIBLE ? (0=no, 1=yes) 1 Yes
SEISMIC IMPORTANCE FACTOR $I_e = 1$ (ASCE 7 Tab 11.5-1)
WIND IMPORTANCE FACTOR $I_w = 1.0$ (ASCE 7 Tab 1.5-2)
BASIC WIND SPEED $V = 100$ mph, (161 kph), (ASCE 7 Sec 26.5.1)
EXPOSURE CATEGORY (B, C, D) = C
TOPOGRAPHIC FACTOR $K_{zt} = 1$ Flat, (ASCE 7 Tab 26.8-1)



DESIGN SUMMARY

Out-of-plane force for wall design $w_1 = 25.4$ psf (Seismic governs) , (1218 N/m²)
Out-of-plane force for parapet design $w_2 = 78.3$ psf (Seismic governs) , (3751 N/m²)
Out-of-plane force for anchorage design $F_{anch} = 323$ plf (Horizontal direction) , (4711 N/m)
(The governing seismic & wind forces have been reduced by 0.7 & 0.6 for ASD)

WIND ANALYSIS

Out-of-plane wind force for wall design (ASCE 7-22 Eq. 30.3-1)

$$w_{1,wind} = 0.6q_h K_d [(GC_p) - (GC_{pi})] = (0.00256 K_h K_{zt} K_e V^2) K_d [(GC_p) - (GC_{pi})] = 16.6 \text{ psf}$$

Where : $K_h = 0.85$, $K_d = 0.85$, $GC_p = -1.32$, $GC_{pi} = 0.18$
(mean roof h = 12.7 ft, changeable) $K_e = 1.00$ (corner ? Yes , TA = 16.93 ft²) (ASCE 7-22 Tab. 26.13-1)
(ASCE 7-22 26.10-1) (ASCE 7-22 30.3.2)

Out-of-plane wind force for parapet design (ASCE 7-22 Eq. 30.8-1)

$$w_{2,wind} = 0.6q_p K_d [(GC_p) - (GC_{pi})] = (0.00256 K_h K_{zt} K_e V^2) K_d [(GC_p) - (GC_{pi})] = 39.7 \text{ psf, (ASCE 7-22 30.8)}$$

Where : $K_h = 0.85$, $K_d = 0.85$, $GC_p = -1.40$, $GC_p = -2.40$, $GC_{pi} = 0.18$
(ASCE 7-22 26.10-1) (ASCE 7-22 26.10-1) = 1.00 roof, (ASCE 7-22 30.3.2) (ASCE 7-22 Tab. 26.13-1)
(TA = 0 ft²)
wall, (ASCE 7-22 30.3.2)

Out-of-plane wind force for anchorage design

$$F_{anch,wind} = \frac{h}{2} w_{1,wind} + h_p \left(1 + \frac{h_p}{2h} \right) w_{2,wind} = 106 \text{ plf (Horizontal)}$$

SEISMIC ANALYSIS

Out-of-plane seismic force for wall design (ASCE 7, Sec.12.11.1)

$$w_{1,seismic} = MAX(0.4 I S_{DS} W_p , 0.1 W_p) = 0.44 W_p = 36.3 \text{ psf}$$

Where : $W_p = 83.3$ psf , $I_e = 1.0$
(CBC/IBC Tab 1604.5 & ASCE 7 Tab 1.5-2)

Out-of-plane seismic force for parapet design (ASCE 7, Sec. 13.3.1)

$$w_{2,seismic} = MAX \left[0.3 S_{DS} I_p W_p , MIN \left(\frac{1.4 C_{AR} S_{DS} I_p W_p}{R_{po}} , 1.6 S_{DS} I_p W_p \right) \right] = 1.34 W_p = 111.9 \text{ psf}$$

Where : $C_{AR} = 2.2$, $I_p = 1.0$, $R_{po} = 2.5$
(ASCE 7 Tab. 13.5-1) (ASCE 7 Sec. 13.1.3) (ASCE 7 Tab. 13.5-1)

Out-of-plane seismic force for anchorage design

For masonry or concrete under seismic design category A & B, both flexible & rigid diaphragm (ASCE 7 Sec. 12.11.2)

$$F_{anch,seismic} = MAX \left[0.4 S_{DS} I W_p \frac{(h+h_p)^2}{2h} , 0.1 W_p \frac{(h+h_p)^2}{2h} , 400 S_{DS} I , F_{min} \right] = 5.23 W_p = 436 \text{ plf (Horizontal)}$$

(Not applicable)

Where : $F_{min} = 280$ plf
(ASCE 7 Sec. 12.11.2 & 11.7.3)

For seismic design category C and above, flexible diaphragm (ASCE 7 Sec. 12.11.2.1)

$$F_{anch,seismic} = MAX \left[0.8 S_{DS} I W_p \frac{(h+h_p)^2}{2h} , 0.1 W_p \frac{(h+h_p)^2}{2h} , 400 S_{DS} I , F_{min} \right] = 5.54 W_p = 461 \text{ plf (Horizontal)}$$

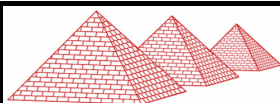
(Applicable)

For seismic design category C and above, rigid diaphragm (ASCE 7 Sec. 12.11.2 & Sec. 13.3.1)

$$F_{anch,seismic} = MAX \left\{ MAX \left[0.4 S_{DS} I_p , MIN \left(\frac{1.4 a_p S_{DS} I_p}{R_{po}} , 1.6 S_{DS} I_p \right) \right] W_p \frac{(h+h_p)^2}{2h} , 400 S_{DS} I , F_{min} \right\}$$

= 11.07 W_p = 923 plf (Horizontal) (Not applicable)

Where : $C_{AR} = 2.2$, $R_{po} = 1.5$
(ASCE 7 Tab. 13.5-1) (1.5, ASCE 7 13.4.2 or 2.5, ASCE 7 Tab 13.5-1)



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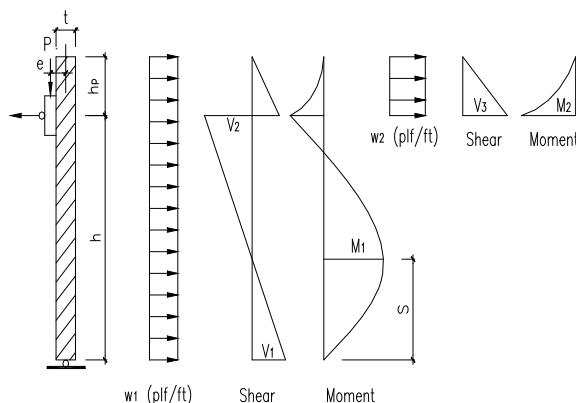
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Allowable Stress Design of Masonry Bearing Wall Based on TMS 402-16/13 & 2021 IBC

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES)	1	Yes
TYPE OF MASONRY (1=CMU, 2=BRICK)	1	CMU
MASONRY STRENGTH f'_m	=	1.5 ksi
REBAR YIELD STRESS f_y	=	60 ksi
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)	No	
SERVICE GRAVITY LOAD P	=	245 lbs / ft
SERVICE LATERAL LOAD w_1	=	25.4 plf / ft
SERVICE PARAPET LOAD w_2	=	0 plf / ft
THICKNESS OF WALL t	=	8 in
PARAPET HEIGHT h_p	=	0 ft
WALL HEIGHT h	=	12.7 ft
ECCENTRICITY e	=	0 in
MASONRY SPECIFIC WEIGHT γ_m	=	125 pcf
WALL HORIZ. REINF.	1 #	4 @ 24 in o.c. (at middle)
WALL VERT. REINF.	1 #	4 @ 24 in o.c. (at middle)



[THE WALL DESIGN IS ADEQUATE.]

ANALYSIS

VERT. REINF. AREA AT EACH SIDE A_s	=	0.10 in ²
EFFECTIVE DEPTH (TMS 402 6.1.3.5) d	=	3.82 in
WIDTH OF SECTION b_w	=	12.00 in
EFFECTIVE THICKNESS t_e	=	7.63 in
MASONRY ELASTICITY MODULUS E_m	=	1350 ksi
STEEL ELASTICITY MODULUS E_s	=	29000 ksi

THE ALLOWABLE STRESS DUE TO FLEXURE IS

$$F_b = (SF)(0.33 f'_m) = 495 \text{ psi}$$

THE DISTANCE FROM BOTTOM TO M_1 IS

$$S = h + h_p - \left[\frac{(h+h_p)^2}{2h} - \frac{Pe}{h w_1} \right] = 6.4 \text{ ft}$$

THE GOVERNING SHEAR FORCES ARE

$$V_1 = (h + h_p) w_1 - \frac{(h+h_p)^2 w_1}{2h} + \frac{Pe}{h} = 161 \text{ lbs / ft}$$

$$V_2 = h w_1 - V_1 = 161 \text{ lbs / ft}$$

$$V_3 = h_p w_2 = 0 \text{ lbs / ft}$$

MODULAR RATIO n	=	21.48
REINFORCEMENT RATIO ρ	=	0.0022
ALLOWABLE STRESS FACTOR SF	=	1.000

THE NEUTRAL AXIS DEPTH FACTOR IS

$$k = \sqrt{2\rho n + (\rho n)^2} - \rho n = 0.26299$$

THE ALLOWABLE REINF. STRESS DUE TO FLEXURE IS

$$F_s = (1.33 \text{ or } 1.0)(20 \text{ or } 32) = 32000 \text{ psi}$$

THE GOVERNING MOMENTS AND AXIAL FORCES ARE

$$M_1 = \frac{1.05}{2 w_1 h^2} \left[P e + \frac{w_1}{2} (h^2 - h_p^2) \right]^2 = 538 \text{ ft-lbs/ft}$$

$$P_1 = P + (\text{wall weight}) = 774 \text{ lbs / ft}$$

$$M_2 = \frac{w_2 h_p^2}{2} = 0 \text{ ft-lbs/ft}$$

$$P_2 = P + (\text{wall weight}) = 245 \text{ lbs / ft}$$

THE GOVERNING SHEAR STRESS IN MASONRY IS

$$f_v = \frac{\text{MAX}(V_1, V_2, V_3)}{t_e b_w} = 1.76 \text{ psi}$$

DETERMINE THE REGION FOR FLEXURE AND AXIAL LOAD (MDG-3 Tab 12.2.1, Fig 12.2-12 & 13, page 12-25).

$$\frac{M}{Pd} \leq \frac{t_e}{6d}$$

$$\frac{M}{Pd} \leq \left(\frac{t_e}{2d} - \frac{1}{3} \right)$$

$$\frac{M}{Pd} > \left(\frac{t_e}{2d} - \frac{1}{3} \right)$$

1. Wall is in compression and not cracked.

2. Wall is cracked but steel is in compression.

3. Wall is cracked and steel is in tension.

REGION 3 APPLICABLE FOR (M1, P1)

REGION 1 APPLICABLE FOR (M2, P2)

(cont'd)

CHECK REGION 1 CAPACITY

$$M_m = \frac{b_w t_e^2}{6} F_b - P \frac{t_e}{6} = \begin{cases} 4721 \text{ ft-lbs / ft} > M_1 & \text{[Not applicable]} \\ 4777 \text{ ft-lbs / ft} > M_2 & \text{[Satisfactory]} \end{cases}$$

CHECK REGION 2 CAPACITY

$$M_m = P \frac{t_e}{2} - \frac{2P^2}{3b_w F_b} = \begin{cases} 241 \text{ ft-lbs / ft} < M_1 & \text{[Not applicable]} \\ 77 \text{ ft-lbs / ft} > M_2 & \text{[Not applicable]} \end{cases}$$

CHECK REGION 3 CAPACITY (The moment maybe limited by either the masonry compression or steel tension, MDG-3 page 12-25).

$$M_m = MIN \left[\frac{1}{2} b_w k d F_b \left(d - \frac{k d}{3} \right) - P \left(d - \frac{t_e}{2} \right), A_s F_s \left(d - \frac{k d}{3} \right) + P \left(\frac{t_e}{2} - \frac{k d}{3} \right) \right]$$

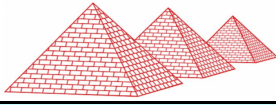
$$= \begin{cases} 864 \text{ ft-lbs / ft} > M_1 & \text{[Satisfactory]} \\ 864 \text{ ft-lbs / ft} > M_2 & \text{[Not applicable]} \end{cases}$$

THE ALLOWABLE SHEAR STRESS IS GIVEN BY (TMS 402 8.2.6)

$$F_v = (SF) 1.125 \left(\sqrt{f'_m} \right) = 43.571 \text{ psi} > f_v \quad \text{[Satisfactory]}$$

Technical References:

1. "Masonry Designers' Guide, Third Edition" (MDG-3), The Masonry Society, 2001.



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Footing Design for Bearing Wall Based on 2021 IBC / ACI 318-19

Wall Footing

INPUT DATA & DESIGN SUMMARY

FOOTING SIZE

A = 24 in
B = 8 in
C = 24 in
D = 8 in
E = 8 in

FOOTING CONCRETE STRENGTH

$f'_c = 2.5$ ksi

AXIAL DEAD LOAD (per linear foot)

$P_{DL} = 1.134$ k / ft

AXIAL LIVE LOAD (per linear foot)

$P_{LL} = 0.14$ k / ft

LATERAL LOAD (0=WIND, 1=SEISMIC)

$P_{LAT} = 1$ Seismic, SD

LATERAL LOAD (per linear foot)

$P_{LAT} = 1.5$ k / ft, SD

(holdown force converted to load per linear foot)

SURCHARGE

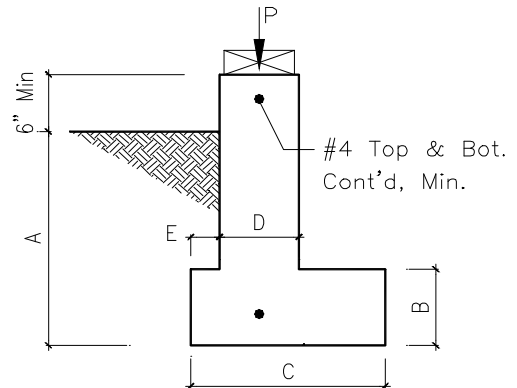
$q_s = 0.1$ ksf

SOIL WEIGHT

$w_s = 0.11$ kcf

ALLOWABLE SOIL PRESSURE

$Q_a = 1.5$ ksf



THE FOOTING DESIGN IS ADEQUATE.

ANALYSIS

DESIGN LOADS (IBC 1605.2 & ACI 318 5.3)

CASE 1:	DL + LL	P = 1.27	k / ft	1.2 DL + 1.6 LL	$P_u = 1.58$	k / ft
CASE 2:	DL + LL + E / 1.4	P = 2.35	k / ft	1.2 DL + 1.0 LL + 1.0 E	$P_u = 3.00$	k / ft
CASE 3:	0.9 DL + E / 1.4	P = 2.09	k / ft	0.9 DL + 1.0 E	$P_u = 2.52$	k / ft

CHECK SOIL BEARING CAPACITY (ACI 318 13.3.1.1)

Service Loads	CASE 1	CASE 2	CASE 3	
P	1.27	2.35	2.09	k / ft
e	0.0	0.0	0.0	in (from center of footing)
$q_s C$	0.20	0.20	0.20	k / ft, (surcharge load)
(0.15- w_s) Area	0.10	0.10	0.10	k / ft, (footing increased)
ΣP	1.6	2.6	2.4	k / ft
e	0.0	0.0	0.0	in
q_{max}	0.79	1.32	1.20	ksf
Q_a	1.50	1.50	1.50	ksf

Where

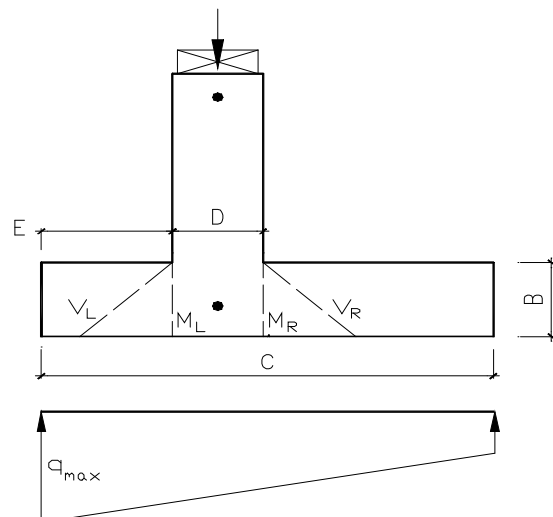
$$q_{max} = \begin{cases} \frac{(\Sigma P) \left(1 + \frac{6e}{C}\right)}{C}, & \text{for } e \leq \frac{C}{6} \\ \frac{2(\Sigma P)}{3(0.5C - e)}, & \text{for } e > \frac{C}{6} \end{cases}$$

[Satisfactory]

DESIGN FOR FLEXURE (ACI 318 14.5)

$$\phi M_n = \min \left(5\lambda\phi\sqrt{f'_c}S, 0.85\phi f'_c S \right) = 1.60 \text{ ft-kips / ft}$$

where $\lambda = 1.0$ (ACI 318 19.2.4)
 $\phi = 0.6$ (ACI 318 21.2)
 $S =$ elastic section modulus of section
 $= 128 \text{ in}^3 / \text{ft}$



(cont'd)

FACTORED SOIL PRESSURE

Factored Loads	CASE 1	CASE 2	CASE 3	
P_u	1.6	3.0	2.5	k / ft
e_u	0.0	0.0	0.0	in (from center of footing)
$\gamma q_s C$	0.32	0.32	0.32	k / ft, (factored surcharge load)
$\gamma [0.15AC - (0.15Ws) (C-D) (A-B)]$	0.63	0.63	0.48	k / ft, (factored footing & backfill loads)
ΣP_u	2.54	3.96	3.32	k / ft
e_u	0.0	0.0	0.0	in
E	8.0	8.0	8.0	in
$q_{u, \max}$	1.27	1.98	1.66	ksf
$q_{u, VL}$	1.27	1.98	1.66	ksf
$q_{u, ML}$	1.27	1.98	1.66	ksf
$q_{u, MR}$	1.27	1.98	1.66	ksf
$q_{u, VR}$	1.27	1.98	1.66	ksf
$q_{u, \min}$	1.27	1.98	1.66	ksf
$M_{u, L}$	0.19	0.35	0.28	ft-k / ft
$M_{u, R}$	0.19	0.35	0.28	ft-k / ft
$V_{u, L}$	0.00	0.00	0.00	k / ft
$V_{u, R}$	0.00	0.00	0.00	k / ft

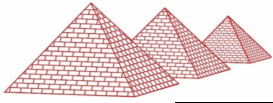
$$M_{u, \max} = 0.35 \text{ ft-k / ft} < \phi M_n \quad [\text{Satisfactory}]$$

CHECK FLEXURE SHEAR (ACI 318 14.5)

$$\phi V_n = \frac{4}{3} \lambda \phi \sqrt{f'_c} B = 3.84 \text{ k / ft}$$

$$\text{where } \phi = 0.6 \quad (\text{ACI 318 21.2})$$

$$V_{u, \max} = 0.00 \text{ k / ft} < \phi V_n \quad [\text{Satisfactory}]$$



PSE Consulting Engineers Inc.

Project Number: Romtec 225-077
 Project Name: GGP Haster Basin Restroom
 Subject: Analysis

Designed by: RMH
 Checked by:

Date: 4/28/2025
 Date:

Longitudinal Shearwalls

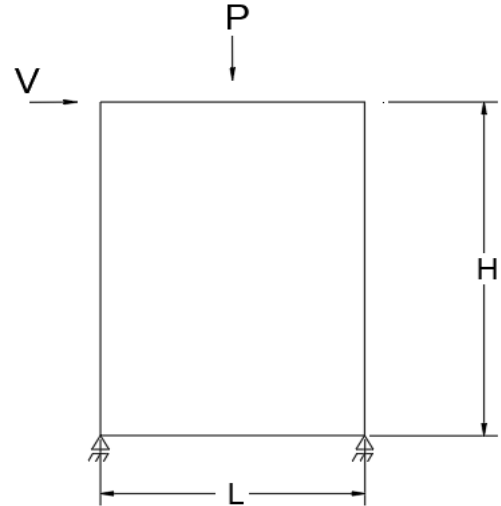
P: Dead Load = 105 plf H: 8.7 ft.
 Roof Live Load = 140 plf L: 23.3 ft.

V: Wind
 Roof Load: 13 psf
 Pitch: 0 Degrees
 Load Area: 0.00 Sq.Ft.
 Wall Load: 13 psf
 Load Area: 156.00 Sq.Ft.

Seismic
 Total: 21640 Lbs
 Building Length: 25.3
 Trib. Width: 12.7
 # of Wall Panels: 1

WL = 2028 Lbs
 EL = 16230 Lbs

USE: 8" CMU W/ #4 Vert Bars @ 24" O.C. & #5 Horz Bars @ 24" O.C.



Transverse Shearwalls

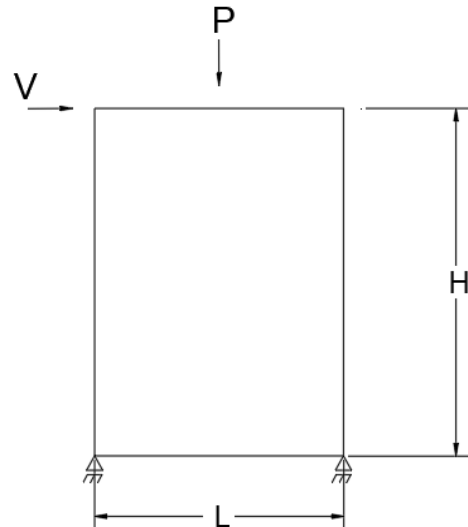
P: Dead Load = 105 plf H: 12.7 ft.
 Roof Live Load = 140 plf L: 8.7 ft.

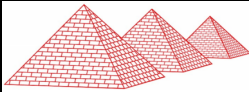
V: Wind
 Roof Load: 8 psf
 Pitch: 23 Degrees
 Load Area: 104.00 Sq.Ft.
 Wall Load: 13 psf
 Load Area: 102.00 Sq.Ft.

Seismic
 Total: 21640 Lbs
 Building Length: 23.3
 Trib. Width: 11.7
 # of Wall Panels: 1

WL = 1651 Lbs
 EL = 16230 Lbs

USE: 8" CMU W/ #4 Vert Bars @ 24" O.C. & #5 Horz Bars @ 24" O.C.





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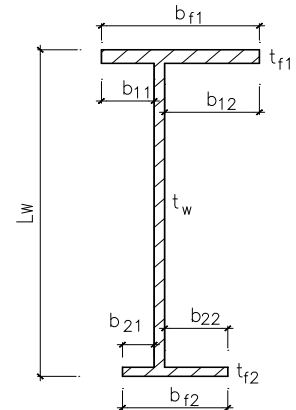
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Masonry Shear Wall Design Based on TMS 402-16/13 & 2021 IBC (both ASD and SD)

Longitudinal Shearwalls

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES) **1** Yes
(This option only for local jurisdiction amendments to the code, not part of TMS.)
TYPE OF MASONRY (1=CMU, 2=BRICK) **1** CMU
MASONRY STRENGTH $f'_m =$ **1.5** ksi
REBAR YIELD STRESS $f_y =$ **60** ksi
ALLOWABLE 30% INCREASING ? (Yes or No, IBC 1605.2) **No**
SEISMIC PERFORMANCE CATEGORY **D** Seismic D
(C,D,E, 0=WIND, 5=GRAVITY)
MASONRY LAID IN RUNNING BOND ? (TMS 402 7.3.2.6) **No**
SERVICE AXIAL LOAD $P =$ **5.7** kips, at middle of L_w
SERVICE SHEAR LOAD $V_x =$ **16.23** kips, (in-plane force)
SERVICE MOMENT LOAD $M_x =$ **94.134** ft-kips, (top flange, bf1, compression)
 $M_y =$ **0.2** ft-kips, (out-of-plane, left b11 & b21, compression)



EFFECTIVE HEIGHT OF WALL $h_w =$ **8.7** ft
LENGTH OF SHEAR WALL $L_w =$ **23.3** ft, (within vertical control joints)

THE WALL DESIGN IS ADEQUATE.

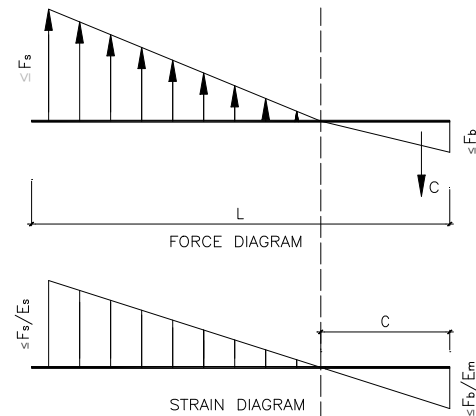
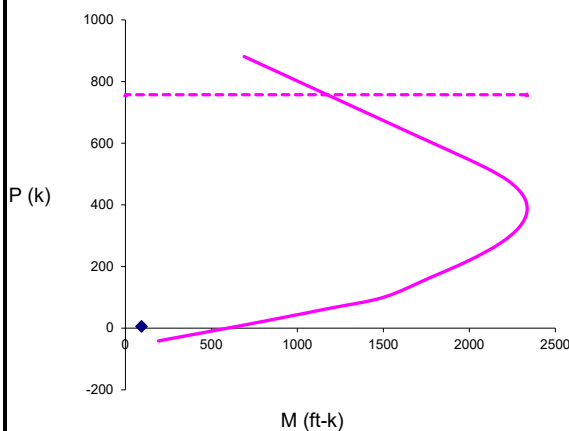
THICKNESS OF WALL $t_w =$ **8** in
REINFORCING OF WALL
 A_{sh} , Horizontal **1** # **5** @ **24** in o.c.
 A_{sv} , Vertical **1** # **4** @ **24** in o.c.

TOP FLANGE (COMPRESSION) $b_{11} =$ **0** in , $b_{12} =$ **0** in , $b_{f1} =$ **8** in ,(TMS 402 5.1.1.2.3)
 $t_{f1} =$ **8** in , **1** # **4** @ **24** in o.c., Vertical

BOTTOM FLANGE $b_{21} =$ **0** in , $b_{22} =$ **0** in , $b_{f2} =$ **8** in ,(TMS 402 5.1.1.2.3)
 $t_{f2} =$ **8** in , **1** # **4** @ **24** in o.c., Vertical

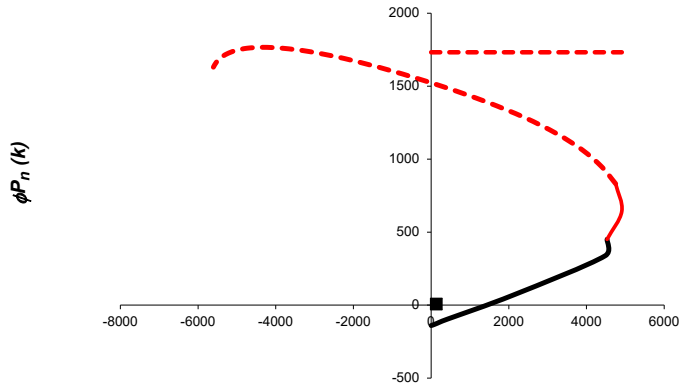
ANALYSIS

CHECK FLEXURAL & AXIAL CAPACITY BY ALLOWABLE STRESS DESIGN (ASD)

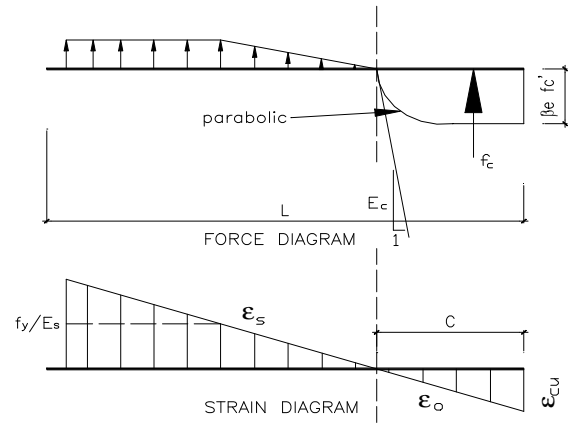


P (load) = **5.7** kips < P (allowable) = $P_a =$ **757.524** kips
 M (resultant) = $(M_x^2 + M_y^2)^{0.5} =$ **94.1342** ft-kips < M (allowable) = **646.927** ft-kips [Satisfactory]
Where $E_m =$ **1350** ksi, (TMS 402 4.2.2.2.1) $A_n =$ **2138** in²
 $E_s =$ **29000** ksi, (TMS 402 4.2.2.1) $A_{st} =$ **2.60** in²
Scale Factor = **1.000** , (TMS 402-11 2.1.2) $f_s \geq$ **0** ksi, (TMS 402 8.3.3.3)
 $F_b =$ **0.495** ksi, (TMS 402 8-18) $h / r =$ **47** , neglected conservatively flanges.
 $F_s =$ **32.00** ksi, (TMS 402 8.3.3.1) $P_a =$ **757.524** kips, (TMS 402 8.3.4.2.1)

(cont'd)

CHECK FLEXURAL & AXIAL CAPACITY BY STRENGTH DESIGN (SD)

ϕM_n (ft-k) Solid Black Line - Tension Controlled
Solid Red Line - Transition
Dash Line - Compression Controlled



$$\begin{aligned}
 P_u &= 1.2 P = 6.84 \text{ kips} < \phi P_n = 1732.49 \text{ kips, (TMS 402 9.3.4.1.1)} \\
 M_u &= (1/0.7) (M_x^2 + M_y^2)^{0.5} = 134.477 \text{ ft-kips} < \phi M_n = 1614.22 \text{ ft-kips, at } P_u \text{ level.} \\
 & \text{[Satisfactory]} \\
 \text{Where } \epsilon_{mu} &= 0.0025, \text{ (TMS 402 9.3.2.c)} & d &= 279 \text{ in} \\
 \phi &= 0.9, \text{ (TMS 402 9.1.4.1)} & f'_m &= 1.5 \text{ ksi}
 \end{aligned}$$

CHECK SHEAR CAPACITY (ASD), (TMS 402 8.3.6)

$$\begin{aligned}
 F_v &= MAX \left\{ (SF) \left[\frac{1}{4} \left(4 - 1.75 MIN \left(1, \frac{M_r}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] + 0.5 \frac{A_v F_v d}{A_n s}, (SF) \left[\frac{1}{2} \left(4 - 1.75 MIN \left(1, \frac{M_r}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] \right\} \\
 &= 70 \text{ psi} > 1.5 f_v = 11 \text{ psi} \text{ [Satisfactory]} \\
 & \text{(factor 1.5 from TMS 402 7.3.2.6.1.2)}
 \end{aligned}$$

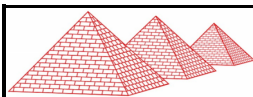
$$F_{v, \text{Maximum}} = (SF) MIN \left[3, MAX \left(2, 2 + \frac{4}{3} \left(1 - \frac{M_r}{Vd} \right) \right) \right] \sqrt{f'_m} = 116 \text{ psi} > 1.5 f_v \text{ [Satisfactory]}$$

CHECK MINIMUM REINFORCEMENTS

$$\begin{aligned}
 A_{sh, \min} &= 0.137 \text{ in}^2/\text{ft} < A_{sh, \text{actual}} = 0.155 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 S_{sh, \max} &= 24 \text{ in} > S_{sh, \text{actual}} = 24 \text{ in} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 A_{sv, \min} &= 0.064 \text{ in}^2/\text{ft} < A_{sv, \text{actual}} = 0.100 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 S_{sv, \max} &= 24 \text{ in} > S_{sv, \text{actual}} = 24 \text{ in} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 A_{total, \min} &= 0.183 \text{ in}^2/\text{ft} < A_{total, \text{actual}} = 0.255 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)}
 \end{aligned}$$

CHECK MAXIMUM REINFORCEMENT PERCENTAGE

$$\rho_{\max} = \frac{n f'_m}{2 f_y \left(n + \frac{f_y}{f'_m} \right)} = 0.0044 > \rho = 0.0001 \text{ [Satisfactory]} \\
 \text{(TMS 402 8.3.4.4)}$$



PROJECT :
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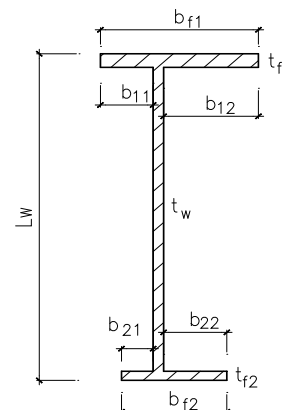
PAGE :
DESIGN BY :
REVIEW BY :

Masonry Shear Wall Design Based on TMS 402-16/13 & 2021 IBC (both ASD and SD)

Transverse Shearwalls

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES) **1** Yes
(This option only for local jurisdiction amendments to the code, not part of TMS.)
TYPE OF MASONRY (1=CMU, 2=BRICK) **1** CMU
MASONRY STRENGTH $f_m' =$ **1.5** ksi
REBAR YIELD STRESS $f_y =$ **60** ksi
ALLOWABLE 30% INCREASING ? (Yes or No, IBC 1605.2) **No**
SEISMIC PERFORMANCE CATEGORY **D** Seismic D
(C,D,E, 0=WIND, 5=GRAVITY)
MASONRY LAID IN RUNNING BOND ? (TMS 402 7.3.2.6) **No**
SERVICE AXIAL LOAD $P =$ **5.7** kips, at middle of L_w
SERVICE SHEAR LOAD $V_x =$ **16.23** kips, (in-plane force)
SERVICE MOMENT LOAD $M_x =$ **137.414** ft-kips, (top flange, b_{f1} , compression)
 $M_y =$ **0.2** ft-kips, (out-of-plane, left b_{11} & b_{21} , compression)



EFFECTIVE HEIGHT OF WALL $h_w =$ **12.7** ft
LENGTH OF SHEAR WALL $L_w =$ **8.7** ft, (within vertical control joints)

THE WALL DESIGN IS ADEQUATE.

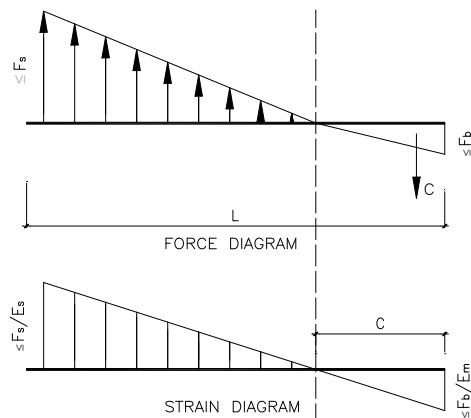
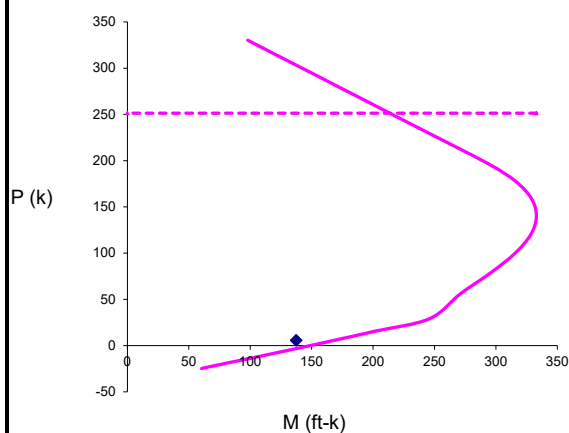
THICKNESS OF WALL $t_w =$ **8** in
REINFORCING OF WALL $t_w =$ **2** # **4** at each ends, with **4** in center to edge.
 A_{sh} , Horizontal **1** # **5** @ **24** in o.c.
 A_{sv} , Vertical **1** # **4** @ **24** in o.c.

TOP FLANGE (COMPRESSION) $b_{11} =$ **0** in , $b_{12} =$ **0** in , $b_{f1} =$ **8** in ,(TMS 402 5.1.1.2.3)
 $t_{f1} =$ **8** in , **1** # **4** @ **24** in o.c., Vertical

BOTTOM FLANGE $b_{21} =$ **0** in , $b_{22} =$ **0** in , $b_{f2} =$ **8** in ,(TMS 402 5.1.1.2.3)
 $t_{f2} =$ **8** in , **1** # **4** @ **24** in o.c., Vertical

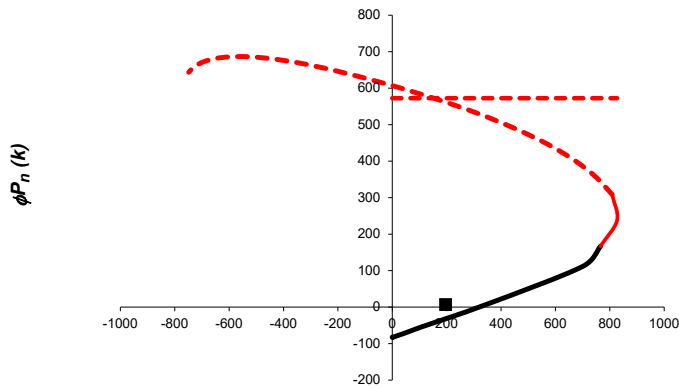
ANALYSIS

CHECK FLEXURAL & AXIAL CAPACITY BY ALLOWABLE STRESS DESIGN (ASD)

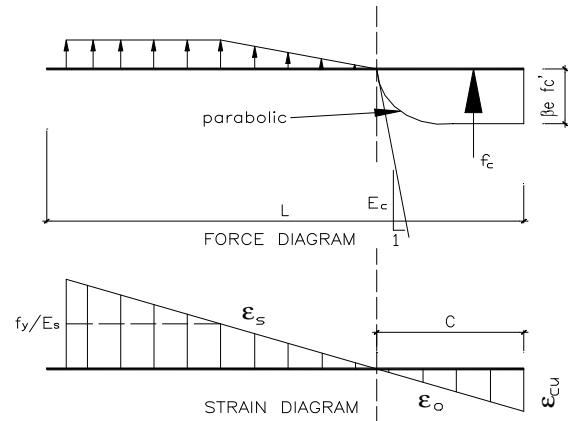


P (load) = **5.7** kips $<$ P (allowable) = $P_a =$ **251.353** kips
 M (resultant) = $(M_x^2 + M_y^2)^{0.5} =$ **137.414** ft-kips $<$ M (allowable) = **168.398** ft-kips [Satisfactory]
Where $E_m =$ **1350** ksi, (TMS 402 4.2.2.2.1) $A_n =$ **802** in²
 $E_s =$ **29000** ksi, (TMS 402 4.2.2.1) $A_{st} =$ **1.54** in²
Scale Factor = **1.000** , (TMS 402-11 2.1.2) $f_s \geq$ **0** ksi, (TMS 402 8.3.3.3)
 $F_b =$ **0.495** ksi, (TMS 402 8-18) $h / r =$ **69** , neglected conservatively flanges.
 $F_s =$ **32.00** ksi, (TMS 402 8.3.3.1) $P_a =$ **251.353** kips, (TMS 402 8.3.4.2.1)

(cont'd)

CHECK FLEXURAL & AXIAL CAPACITY BY STRENGTH DESIGN (SD)

ϕM_n (ft-k) Solid Black Line - **Tension Controlled**
 Solid Red Line - **Transition**
 Dash Line - **Compression Controlled**



$$\begin{aligned}
 P_u &= 1.2 P = 6.84 \text{ kips} < \phi P_n = 572.632 \text{ kips, (TMS 402 9.3.4.1.1)} \\
 M_u &= (1/0.7) (M_x^2 + M_y^2)^{0.5} = 196.306 \text{ ft-kips} < \phi M_n = 358.33 \text{ ft-kips, at } P_u \text{ level.} \\
 & \text{[Satisfactory]} \\
 \text{Where } \epsilon_{mu} &= 0.0025, \text{ (TMS 402 9.3.2.c)} & d &= 103 \text{ in} \\
 \phi &= 0.9, \text{ (TMS 402 9.1.4.1)} & f'_m &= 1.5 \text{ ksi}
 \end{aligned}$$

CHECK SHEAR CAPACITY (ASD), (TMS 402 8.3.6)

$$\begin{aligned}
 F_v &= MAX \left\{ (SF) \left[\frac{1}{4} \left(4 - 1.75 MIN \left(1, \frac{M_r}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] + 0.5 \frac{A_v F_v d}{A_n s}, (SF) \left[\frac{1}{2} \left(4 - 1.75 MIN \left(1, \frac{M_r}{Vd} \right) \right) \sqrt{f'_m} + 0.25 \frac{P}{A_n} \right] \right\} \\
 &= 51 \text{ psi} > 1.5 f_v = 31 \text{ psi} \text{ [Satisfactory]} \\
 & \text{(factor 1.5 from TMS 402 7.3.2.6.1.2)}
 \end{aligned}$$

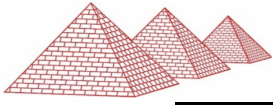
$$F_{v, \text{Maximum}} = (SF) MIN \left[3, MAX \left(2, 2 + \frac{4}{3} \left(1 - \frac{M_r}{Vd} \right) \right) \right] \sqrt{f'_m} = 78 \text{ psi} > 1.5 f_v \text{ [Satisfactory]}$$

CHECK MINIMUM REINFORCEMENTS

$$\begin{aligned}
 A_{sh, \min} &= 0.137 \text{ in}^2/\text{ft} < A_{sh, \text{actual}} = 0.155 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 S_{sh, \max} &= 24 \text{ in} > S_{sh, \text{actual}} = 24 \text{ in} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 A_{sv, \min} &= 0.064 \text{ in}^2/\text{ft} < A_{sv, \text{actual}} = 0.100 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 S_{sv, \max} &= 24 \text{ in} > S_{sv, \text{actual}} = 24 \text{ in} \text{ [Satisfactory] (TMS 402 7.3.2.6)} \\
 A_{total, \min} &= 0.183 \text{ in}^2/\text{ft} < A_{total, \text{actual}} = 0.255 \text{ in}^2/\text{ft} \text{ [Satisfactory] (TMS 402 7.3.2.6)}
 \end{aligned}$$

CHECK MAXIMUM REINFORCEMENT PERCENTAGE

$$\rho_{\max} = \frac{n f'_m}{2 f_y \left(n + \frac{f_y}{f'_m} \right)} = 0.0044 > \rho = 0.0005 \text{ [Satisfactory]} \\
 \text{(TMS 402 8.3.4.4)}$$



PSE Consulting Engineers Inc.

Project Number **Romtec 225-077**
 Project Name **GGP Haster Basin Restroom**
 Subject **Analysis**

Designed by **RMH**
 Checked by _____

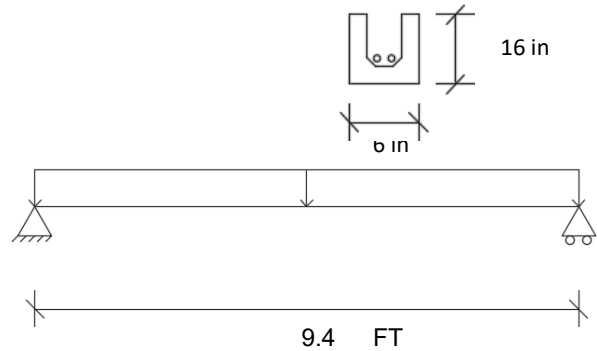
Date **4/28/2025**
 Date _____

Wall Bond Beam

F= 323 PLF

V: 1,518 $V = \frac{WL}{2}$

M: 3,568 $M = \frac{WL^2}{8}$

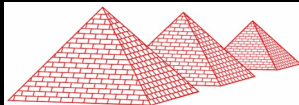


USE **8" x 16" CMU W/ 1 - #5 Tension Bar**

Wall to Rafter Anchorage

P= 3,036 LBS
 SHEAR LOAD= 323.00 PLF
 SPACING= 112.8 IN

USE **ROMTEC BEAM BRACKET W/ (2) 1/2" DIA. ANCHOR**



PROJECT :
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JOB NO. :

DATE :

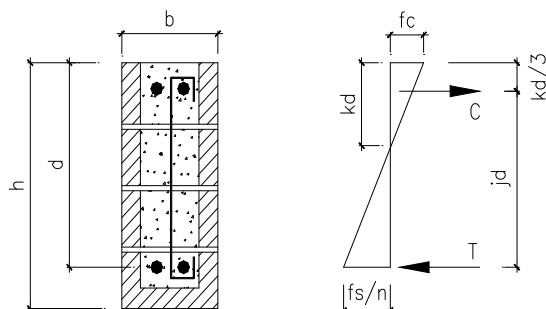
PAGE :
DESIGN BY :
REVIEW BY :

Masonry Beam Design Based on TMS 402-16/13

Wall Bond Beam

INPUT DATA & DESIGN SUMMARY

SPECIAL INSPECTION (0=NO, 1=YES)	1	Yes
TYPE OF MASONRY (1=CMU, 2=BRICK)	1	CMU
MASONRY STRENGTH f_m' =	1.5	ksi
REBAR YIELD STRESS f_y =	60	ksi
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)	Yes	
SERVICE SHEAR LOAD V =	1.518	k
SERVICE MOMENT LOAD M =	3.568	ft-k
WIDTH b =	16	in
EFFECTIVE DEPTH d =	6	in
CLEAR SPAN L_c =	9.4	ft
LOAD TYPE (1=SEISMIC, 0=WIND, 5=GRAVITY)	1	Seismic
VERTICAL REINF. 0 #	4	@ 32 in o.c.
TENSION REINFORCEMENT	1	# 5



[THE BEAM DESIGN IS ADEQUATE.]

ANALYSIS

ALLOWABLE STRESS FACTOR	SF	=	1.333	
ALLOWABLE REINF. STRESS	(1.33 or 1.0) F_s	=	32	ksi
ALLOWABLE MASONRY STRESS	$F_b = (SF)(0.33f_m')$	=	0.66	ksi
MASONRY ELASTICITY MODULUS	E_m	=	1350	ksi, (TMS 402 4.2.2)
STEEL ELASTICITY MODULUS	E_s	=	29000	ksi, (TMS 402 4.2.2)
EFFECTIVE WIDTH	b_w	=	15.63	in [Satisfactory, $L_c < 32 b_w$]
MODULAR RATIO	n	=	21.48	
TENSION REINFORCEMENT RATIO	ρ	=	0.003	

THE NEUTRAL AXIS DEPTH FACTOR IS

$$k = \sqrt{2\rho n + (\rho n)^2} - \rho n = 0.312$$

THE LEVER-ARM FACTOR IS

$$j = 1 - \frac{k}{3} = 0.896$$

THE TENSILE STRESS IN REINFORCEMENT DUE TO FLEXURE IS

$$f_s = \frac{M}{A_s j d} = 25.7 \text{ ksi} < F_s \quad \text{[SATISFACTORY]}$$

THE COMPRESSIVE STRESS IN THE EXTREME FIBER DUE TO FLEXURE IS

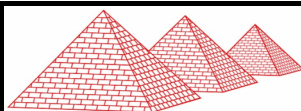
$$f_b = \frac{2M}{j k b_w d^2} = 0.54 \text{ ksi} < F_b \quad \text{[SATISFACTORY]}$$

THE SHEAR STRESS IN MASONRY IS

$$f_v = \frac{V}{b_w d} = 16.2 \text{ psi} < F_v = \text{MIN} \left[(SF) 1.125 \sqrt{f_m'} + 0.5 \left(\frac{A_v F_s d}{A_n S} \right), (SF) 2 \sqrt{f_m'} \right]$$

(TMS 402 8.3.5)

$$= 58.0948 \text{ psi} \quad \text{[SATISFACTORY]}$$



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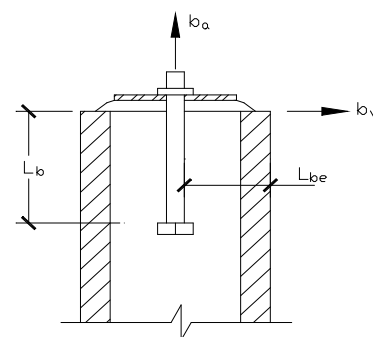
PAGE :
DESIGN BY :
REVIEW BY :

Double Fastener Anchorage in Tension & Shear Based on TMS 402-16/13

Wall to Rafter Anchor

INPUT DATA & DESIGN SUMMARY

MASONRY STRENGTH	f_m'	=	1.9	ksi
FASTENER YIELD STRESS	f_y	=	60	ksi
SERVICE TENSION LOAD	b_a	=	0	kips / 2 fasteners
SERVICE SHEAR LOAD	b_v	=	3.036	kips / 2 fasteners
WALL THICKNESS	b	=	8	in
FASTENER DIAMETER	ϕ	=	1/2	in
EFFECTIVE EMBEDMENT	L_b	=	6	in
FASTENER SPACING	S	=	3	in
ALLOWABLE INCREASING ? (IBC/CBC 1605.2)			Yes	



[THE ANCHORAGE DESIGN IS ADEQUATE.]

ANALYSIS

CHECK MIN. EMBEDMENT (TMS 402-16/13 6.3.6/6.2.6)

$$L_{b,min} = \text{MIN}[4\phi, 2] = 2.00 \text{ in} < L_b \text{ [SATISFACTORY]}$$

CHECK TENSION CAPACITY (TMS 402 8.1.3.3.1)

$$B_a = 2 \text{ MIN}[1.25A_{pt}(f_m')^{0.5}, 0.6A_b f_y] = 3.31 \text{ kips / 2 fasteners}$$

$$> k b_a \text{ [SATISFACTORY]}$$

Where $L_{be} = 3.57 \text{ in}$

$$L = \text{MIN}[L_b, L_{be}] = 3.57 \text{ in, conservative value}$$

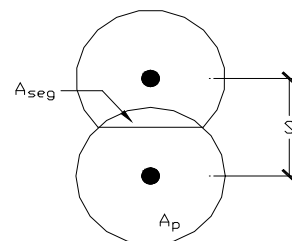
$$\theta = \cos^{-1}(0.5S / L) = 1.14 \text{ rad}$$

$$A_{seg} = L^2 [\theta - 0.5 \sin(2\theta)] = 9.59 \text{ in}^2$$

$$A_{pt} = \pi L^2 - A_{seg} = 30.33 \text{ in}^2 \text{ (TMS 402-16/13 6.3.2/6.2.2)}$$

$$A_b = \pi \phi^2 / 4 = 0.20 \text{ in}^2$$

$$k = 3/4$$



CHECK SHEAR CAPACITY (TMS 402 8.1.3.3.2)

$$B_v = \text{MIN}[1.25A_{pv}(f_m')^{0.5}, 350(A_b f_m')^{1/4}, 2.5A_{pt}(f_m')^{0.5}, 0.36A_b f_y] = 3.08 \text{ kips / 2 fasteners}$$

$$> k b_v \text{ [SATISFACTORY]}$$

(Equation 8-7, 350 in TMS 402-13 increased to 580 in TMS 402-16)

Where $A_{pv} = A_{pt} = 30.33 \text{ in}^2$, since $L = \text{MIN}[L_b, L_{be}]$ used above, (TMS 402-16/13 6.3.3/6.2.3)

CHECK COMBINED SHEAR AND TENSION CAPACITY (TMS 402 8.1.3.3.3)

$$(b_a / B_a)^{(5/3)} + (b_v / B_v)^{(5/3)} = 0.98 < 1.33 \text{ [SATISFACTORY]}$$

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

2504-014 Garden Grove Parks, Haster Basin RR
12952 Lampson Ave
Garden Grove, CA 92840

Project Designer:

PSE Consulting Engineers, Inc.
250 Main St. , Ste. A
Klamath Falls, Oregon 97601
541-850-6300

Report Prepared by:

Matthew Weldon
Regerfour LLC dba 5 Star Energy
1878 Saltu
Redding, Ca 96002
530-275-3350

Job Number:

2504-014

Date:

4/17/2025

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2022 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC – www.energysoft.com.

TABLE OF CONTENTS

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Form NRCC-LTI-E Indoor Lighting	3
Form NRCC-LTO-E Outdoor Lighting	10

Indoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E	
<i>This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.</i>			
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page: (Page 1 of 7)	
Project Address: 12952 Lampson Ave		Date Prepared: 4/17/2025	

A. GENERAL INFORMATION					
01	Project Location (city)	Garden Grove	04	Total Conditioned Floor Area (ft²)	0
02	Climate Zone	8	05	Total Unconditioned Floor Area (ft²)	590
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1
• Support Areas					

B. PROJECT SCOPE					
<i>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)2 / 180.2(b)4 for alterations.</i>					
Scope of Work		Conditioned Spaces		Unconditioned Spaces	
01		02	03	04	05
My Project Consists of (check all that apply):		Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
<input checked="" type="checkbox"/> New Lighting System		Area Category Method	0	Area Category Method	590
<input type="checkbox"/> New Lighting System - Parking Garage					
Total Area of Work (ft²)		0		590	

Indoor Lighting

CERTIFICATE OF COMPLIANCE					NRCC-LTI-E				
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR					Report Page: (Page 2 of 7)				
					Date Prepared: 4/17/2025				

C. COMPLIANCE RESULTS												
If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.												
Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 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	09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 / 170.2(e)4	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)		Total Allowed (Watts)		Total Designed (Watts)	Adjustments		Total Adjusted (Watts) *Includes Adjustments	05 must be >= 08 140.6 / 170.2(e)
									PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-)			
									(See Table I)			
Conditioned					=		≥			=		
Unconditioned		383.5	0		=	384	≥	212	0	=	212	COMPLIES
Controls Compliance (See Table H for Details)												COMPLIES
Rated Power Reduction Compliance (See Table Q 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.

Indoor Lighting

CERTIFICATE OF COMPLIANCE					NRCC-LTI-E				
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR					Report Page: (Page 3 of 7)				
					Date Prepared: 4/17/2025				

F. INDOOR LIGHTING FIXTURE SCHEDULE										
This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.										
Designed Wattage: Unconditioned Spaces										
01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change ¹	Watts per luminaire ²	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
LF-2	Lithonia CSVT L48 35.3w (LF-2)	No	NA	35.3	Mfr. Spec	6	No	211.8	<input type="checkbox"/>	<input type="checkbox"/>
Total Designed Watts: UNCONDITIONED SPACES								212		

¹FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

²Authority 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.

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)4C	Field Inspector	
		Pass	Fail
NA < 4,000W subject to multilevel	See Area/Space Level Controls	<input type="checkbox"/>	<input type="checkbox"/>

Indoor Lighting

CERTIFICATE OF COMPLIANCE					NRCC-LTI-E				
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR					Report Page: (Page 4 of 7)				
					Date Prepared: 4/17/2025				

H. INDOOR LIGHTING CONTROLS (Not including PAFs)									
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/Sky lit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1/ 170.2(e)2A	Field Inspector	
								Pass	Fail
Restroom Lighting	Restroom	Readily Accessible	Dimmer	See Building Level	Included	Included	No	<input type="checkbox"/>	<input type="checkbox"/>
					13				
					Plan Sheet Showing Daylit Zones:				

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS						
Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used .						
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
Zone 1 - RR/Mech	Restroom	0.65	590	383.5	No	No
TOTALS:			590	383.5	See Tables J, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This section does not apply to this project.

Indoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E	
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page:	(Page 5 of 7)
		Date Prepared:	4/17/2025

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
<i>This section does not apply to this project.</i>

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
<i>This section does not apply to this project.</i>

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
<i>This section does not apply to this project.</i>

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS
<i>This section does not apply to this project.</i>

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
<i>This section does not apply to this project.</i>

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
<i>This section does not apply to this project.</i>

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS
<i>This section does not apply to this project.</i>

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS
<i>This section does not apply to this project.</i>

Indoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name:	2504-014 Garden Grove Parks, Haster Basin RR	Report Page: (Page 6 of 7)
		Date Prepared: 4/17/2025

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
<i>This section does not apply to this project.</i>

T. DWELLING UNIT LIGHTING
<i>This section does not apply to this project.</i>

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
<i>Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online</i>
Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE	
<i>Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html</i>	
Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	Restroom Lighting;

Indoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E	
Project Name:	2504-014 Garden Grove Parks, Haster Basin RR	Report Page:	(Page 7 of 7)
Project Address:	12952 Lampson Ave	Date Prepared:	4/17/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Matthew Weldon	Documentation Author Signature: <i>Matthew Weldon</i>
Company: Regerfour LLC dba 5 Star Energy	Signature Date: 2025-04-17
Address: 1878 Saltu	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Redding Ca 96002	Phone: 530-275-3350

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: Ralph Hall	Responsible Designer Signature: <i>R Hall</i>
Company: PSE Consulting Engineers, Inc.	Date Signed: 2025-04-28
Address: 250 Main St.	License: C87047
City/State/Zip: Klamath Falls OR 97601	Phone: 541-850-6300

Generated Date/Time:

Documentation Software: EnergyPro

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E	
<i>This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.</i>			
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page: (Page 1 of 7)	
Project Address: 12952 Lampson Ave		Date Prepared: 4/17/2025	

A. GENERAL INFORMATION						
01	Project Location (city)	Garden Grove		04	Total Illuminated Hardscape Area (ft²)	693
02	Climate Zone	8				
03 Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):						
<input type="checkbox"/>	LZ-0: Very Low - Undeveloped Parkland	<input type="checkbox"/>	LZ-2: Moderate - Urban Clusters		<input type="checkbox"/>	LZ-4: High - Must be reviewed by CA Energy Commission for Approval
<input type="checkbox"/>	LZ-1: Low - Rural Areas	<input checked="" type="checkbox"/>	LZ-3: Moderately High - Urban Areas			
05 Occupancy Types within Project						
• Support Areas						

B. PROJECT SCOPE					
<i>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(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.</i>					
My Project Consists of:					
01		02			
<input checked="" type="checkbox"/>	New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6			
<input type="checkbox"/>	Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?		<input type="radio"/> Yes	<input type="radio"/> No
03		04		05	
% of Existing Luminaires Being Altered ¹		Sum Total of Luminaires Being Added or Altered		Calculation Method	
<input type="checkbox"/> < 10%	<input type="checkbox"/> >= 10% and < 50%	<input type="checkbox"/> >= 50%			
Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.					
¹ 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.					

Outdoor Lighting

CERTIFICATE OF COMPLIANCE										NRCC-LTO-E			
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR										Report Page: (Page 2 of 7)			
										Date Prepared: 4/17/2025			

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(e)6 or 141.0(b)2L / 180.2(b)4Bv												Compliance Results			
01		02		03		04		05		06		07		08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	07 must be >= 08
280	+	---	+	---	+	---	+	---	OR	---	=	280	≥	27	COMPLIES
Shielding Compliance (See Table G for Details)												N/A			
Controls Compliance (See Table H for Details)												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.

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E	
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page: (Page 3 of 7)	
		Date Prepared: 4/17/2025	

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 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)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, 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, 2}	How is Wattage determined	Total Number Luminaires ²	Luminaire Status ³	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1 ⁴	Field Inspector	
										Pass	Fail
LF-1	Lithonia OLLWD 9w (LF-1)	<input type="checkbox"/> Linear	9	Mfr. Spec	3	New	<input type="checkbox"/>	27	NA: < 6200 lumens	<input type="checkbox"/>	<input type="checkbox"/>
Total Design Watts:								27			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

¹FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)

² For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.

³ 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 Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.

⁴ 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.

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E	
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page: (Page 4 of 7)	
		Date Prepared: 4/17/2025	

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 (ie untouched) and luminaires which are removed and reinstalled (wiring 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 service 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)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
Entry Lighting	Photocontrol	Provided	Provided	<input type="checkbox"/>	<input type="checkbox"/>

¹FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.

²Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.

³Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E	
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR		Report Page: (Page 5 of 7)	
		Date Prepared: 4/17/2025	

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))							
<i>This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user 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.</i>				01			
				"Use it or lose it" Allowance (select all that apply) (select all that apply)			
				<input checked="" type="checkbox"/> General Hardscape Allowance Table I (below)	<input type="checkbox"/> Per Application Table J	<input type="checkbox"/> Sales Frontage Table K	<input type="checkbox"/> Ornamental Table L
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel							
02	03	04	05	06	07	08	09
Area Description	Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			Total General AWA + LWA (Watts)
	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
Walkway	693	0.021	14.6	77	0.2	15.4	30
Initial Wattage Allowance for Entire Site (Watts):							250
Instances of Initial Wattage Allowance (LZ 0 only) ¹							
Total General Hardscape Allowance (Watts):							280

J. LIGHTING ALLOWANCE: PER APPLICATION
<i>This section does not apply to this project.</i>

K. LIGHTING ALLOWANCE: SALES FRONTAGE
<i>This section does not apply to this project.</i>

L. LIGHTING ALLOWANCE: ORNAMENTAL
<i>This section does not apply to this project.</i>

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: 2504-014 Garden Grove Parks, Haster Basin RR	Report Page:	(Page 6 of 7)
	Date Prepared:	4/17/2025

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

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Form/Title

NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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Form/Title

Systems/Spaces To Be Field
Verified

NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.

Entry Lighting;

Outdoor Lighting

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E	
Project Name:	2504-014 Garden Grove Parks, Haster Basin RR	Report Page:	(Page 7 of 7)
Project Address:	12952 Lampson Ave	Date Prepared:	4/17/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Matthew Weldon	Documentation Author Signature: <i>Matthew Weldon</i>
Company: Regerfour LLC dba 5 Star Energy	Signature Date: 2025-04-17
Address: 1878 Saltu	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Redding Ca 96002	Phone: 530-275-3350

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: Ralph Hall	Responsible Designer Signature: <i>R Hall</i>
Company: PSE Consulting Engineers, Inc.	Date Signed: 2025-04-28
Address: 250 Main St.	License: C87047
City/State/Zip: Klamath Falls OR 97601	Phone: 541-850-6300

Generated Date/Time:

Documentation Software: EnergyPro

PROJECT INFORMATION

PROJECT NAME: GARDEN GROVE PARKS (WESTHAVEN PARK)
PROJECT I.D. : GAR03
SITE ADDRESS: 12252 WEST ST
CITY / STATE: GARDEN GROVE, CA 92840

SHEET SCHEDULE			
SHEET	CONTENTS		
G0	TITLE PAGE, SHEET & REVISION SCHEDULE		
G1	GENERAL NOTES / SYMBOL LEGEND		
G2	DESIGN CRITERIA AND CODE SUMMARY		
A1.1	FLOOR PLAN		
A1.2	ADA CLEARANCES		
A1.3	ADA RESTROOM FIXTURE DETAILS		
A1.4	INTERIOR ELEVATIONS VIEWS		
A2.1	EXTERIOR ELEVATION VIEWS		
A2.2	EXTERIOR ELEVATION VIEWS		
A3.1	SECTION VIEWS		
A4.1	WALL FINISH SCHEDULE (INTERIOR/EXTERIOR)		
A5.1	DOOR SCHEDULE		
A5.2	DOOR DETAILS		
A5.3	DOOR DETAILS		
A6.1	VENT/WINDOW SCHEDULE		
A6.2	VENT/WINDOW DETAILS		
A6.3	WOOD FILLER WALL SCHEDULE		
S7.1	FOUNDATION PLAN		
S7.2	FOUNDATION DETAILS		
S7.3	FOUNDATION DETAILS		
S8.1	STRUCTURAL CMU PLAN		
S8.2	STRUCTURAL CMU REBAR LAYOUT		
S8.3	STRUCTURAL CMU DETAILS		
S8.4	STRUCTURAL CMU ELEVATION VIEWS		
S8.5	STRUCTURAL CMU ELEVATION VIEWS		
S9.1	ROOF FRAMING PLAN		
S10.1	ROOF CONNECTION DETAILS		
S10.2	ROOF CONNECTION DETAILS		
R1	ROOFING PLAN		
R2	ROOFING DETAILS		
R3	SKYLIGHT DETAILS		
P1	PLUMBING SCHEDULE		
P2	PLUMBING PLAN		
E1	ELECTRICAL SCHEDULE		
E2	ELECTRICAL PLAN		
E3	ELECTRICAL RISER DETAILS		
E4	ELECTRICAL PANEL SCHEDULE		
REVISION SCHEDULE			
REV.	DATE	BY	DESCRIPTION
1	04/29/2025	JL	G1,G2,A2.1,A2.2,A3.1,S7.2,S8.4,S8.5,S9.1,S10.1,S10.2
2	07/17/2025	JL	A1.1,A1.3,A1.4,A5.1,A6.2,A6.3,S9.1,R2,R3

REGISTERED PROFESSIONAL ENGINEER

RALPH M. HALL

C87047

EXP. 6-30-2027

CIVIL

STATE OF CALIFORNIA

07/24/2025

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Phone: (541) 850-6300 Fax: (541) 850-6233

info@structure1.com

ROMTEC #225-976

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: TITLE SHEET REVISION & SHEET SCHEDULE

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:

GO

SHEET NO.

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JOB CREATED: 7/17/2025 - LAST SAVED BY: jlogsdon ON 7/17/2025 - LAST PRINTED: 7/17/2025 - LOCATION: \\data\data\Engineering R\Plan Sets\GAR03- Garden Grove Parks (Westhaven Park RR), CA\GAR03- Garden Grove Parks (Westhaven Park RR) 2061, CA 241219.dwg

DOOR NUMBER - SEE APPLICABLE SCHEDULE

VENT NUMBER OR WINDOW NUMBER - SEE APPLICABLE SCHEDULE

WOOD FILLER WALL - SEE APPLICABLE SCHEDULE

DETAIL NAME

INTERIOR ELEVATION REFERENCE

DETAIL REFERENCE

ELEVATION VIEW

BUILDING SECTION

1

A1.4

1

S10.1

1

A2.1

1

A3.1

ABBREVIATIONS			
AB	ANCHOR BOLT	MO	MASONRY OPENING
ACT	ADULT CHANGING TABLE	MR	METAL ROOFING
AFF	ABOVE FINISHED FLOOR	MS	MILD STEEL
ATS	AUTOMATIC TRANSFER SWITCH	ND	NAPKIN DISPOSAL
BN	BOUNDARY NAIL	NTS	NOT TO SCALE
BOT	BOTTOM	OC	ON CENTER
BP	BREAKER PANEL	OCEW	ON CENTER EACH WAY
CJ	CONTROL JOINT	OSB	ORIENTED STRAND BOARD
CL	CENTER LINE	P	PHOTO EYE
CO	CLEAN OUT	PCC	PORTLAND CEMENT COMPANY
CMU	CONCRETE MASONRY UNIT	PEN	PANEL EDGE NAILING
db	NOMINAL BAR DIAMETER	PL	PLATE
DD	DIAPER DECK	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DISC	DISCONNECT	PT	PRESSURE TREATED
EM	ELECTRIC METER	PTD	PAPER TOWEL DISPENSER
EN	END NAIL	PV	PHOTO VOLTAGE
EW	EACH WAY	R4S	ROUGH FOUR SIDES
FA	FREE AIR	REQD	REQUIRED
FD	FLOOR DRAIN	RO	ROUGH OPENING
FF	FINISHED FLOOR	S4S	SURFACED FOUR SIDES
FG	FINISHED GRADE	SCH	SCHEDULE
FN	FIELD NAIL	SD	SOAP DISPENSER
FRP	FIBERGLASS REINFORCED PANEL	SIP	STRUCTURAL INSULATED PANEL
GB	GRAB BAR	SJ	SAW JOINT
GLB	GLUE LAMINATED BEAM	SM	SHEET METAL
HB	HOSE BIBB	SN	SHEAR NAILING
HD	HAND DRYER	SS	STAINLESS STEEL
HM	HOLLOW METAL (DOOR)	TBD	TO BE DETERMINED
HSS	HOLLOW STRUCTURAL SECTIONS	T&B	TOP & BOTTOM
HTR	HEATER	T&G	TONGUE & GROOVE
HYP	HYPOTENUSE	TLT	TOILET
I.S.	INSTALLER SUPPLIED	TP	TOILET PAPER DISPENSER
KSI	KIPS PER SQUARE INCH	TS	TIMER SWITCH
L	STRUCTURAL STEEL ANGLE	TSCD	TOILET SEAT COVER DISPENSER
LAV	LAVATORY	TYP	TYPICAL
LF	LIGHT FIXTURE	UNO	UNLESS NOTED OTHERWISE
MBP	MAIN BREAKER PANEL	VB	VAPOR BARRIER
MD	MAIN DISCONNECT	VTR	VENT THROUGH ROOF
MIN	MINIMUM	WH	WATER HEATER
MIR	MIRROR	WWM	WOVEN WIRE MESH
		W/	WITH

- GENERAL NOTES
1. THIS PROJECT SHALL COMPLY WITH ALL 2022 CALIFORNIA BUILDING CODES AND STANDARDS IDENTIFIED ON SHEET G2. ALL WORK SHALL MEET OR EXCEED INDUSTRY STANDARDS FOR MATERIALS, WORKMANSHIP, ETC.

2. CONTRACTOR SHALL REVIEW THE DRAWINGS THOROUGHLY BEFORE PROCEEDING WITH ANY WORK. ANY DISCREPANCIES FOUND WITHIN THESE DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ROMTEC. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK HE KNOWS TO BE IN CONFLICT WITH OTHER WORK, OR IS NOT APPROVED BY CODE, UNTIL RESOLVED BY ROMTEC OR THE ENGINEER/ARCHITECT.

3. CONTRACTOR SHALL MAINTAIN GENERAL LIABILITY INSURANCE AND WORKER'S COMP. INSURANCE AS PER SPECIFIC STATE MINIMUM REQUIREMENTS.

4. FOOTINGS SHALL BE CONSTRUCTED ON UNDISTURBED NATIVE SOIL OR ENGINEER APPROVED FILL. CONTRACTOR TO VERIFY ASSUMED SOIL BEARING CAPACITY NOTED ON SHEET G2. SHOULD SOIL NOT MEET OR EXCEED THE ASSUMED SOIL BEARING CAPACITY, CONTRACTOR TO MODIFY SOIL CONDITIONS TO SATISFY CRITERIA OR NOTIFY THE STRUCTURAL ENGINEER TO REVISE DESIGN PER CONDITIONS ENCOUNTERED. BACKFILL AROUND BUILDING TO PROVIDE SLOPE AWAY FROM BUILDING NOT LESS THAN A 5% SLOPE FOR A MINIMUM DISTANCE OF 10' FROM THE BUILDING, PER 2022 CBC 1804.3.

5. A. CAST-IN-PLACE CONCRETE: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS 4" +/- 1" SLUMP, WITH MAX 1" AGGREGATE, AND ALL MATERIALS IN ACCORDANCE WITH ACI 318 STANDARD. FINE BROOM FINISH INTERIOR SURFACES AND EXTERIOR SLABS. JOINTS REQUIRED IN FLAT WORK, SEE FOUNDATION DETAILS FOR REQUIREMENTS. B. CMU BLOCKS "MEDIUM WEIGHT DENSITY" ARE MANUFACTURED TO ASTM C90-02 STANDARDS WITH A MIN COMPRESSIVE STRENGTH f_m = 1500 PSI. ALL CMU BLOCKS MUST BE FULLY GROUTED IN 5 FT MAXIMUM LIFTS (EXCEPTION - HIGH LIFT GROUTING FOR 8'-8" WALLS MAYBE USED AS LONG AS CLEANOUT OPENINGS ARE PROVIDED AT THE BOTTOM OF EVERY CELL FOR EACH POUR ABOVE 5 FT). THE MORTAR TO BE USED SHALL BE TYPE S 1800 PSI MORTAR CONFORMING TO ASTM C270. MASONRY (CONCRETE) GROUT: 2500 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS 9" +/- 1" SLUMP, WITH MAX 1/2" AGGREGATE, AND TESTED IN ACCORDANCE TO MEET ACI 318. FINE OR COURSE GROUT MAY BE USED IN ACCORDANCE WITH 2022 CBC. CONSOLIDATE GROUT AT THE TIME OF PLACEMENT. CONSOLIDATE POURS EXCEEDING 12 IN. IN HEIGHT BY MECHANICAL VIBRATION, AND RECONSOLIDATE BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED. CONSOLIDATION AND RECONSOLIDATION ARE NORMALLY ACHIEVED WITH A MECHANICAL VIBRATOR. A LOW VELOCITY VIBRATOR WITH A 3/4 IN. HEAD IS USED.

6. ANCHOR AND MACHINE BOLTS SHALL BE ASTM A307, UNLESS NOTED OTHERWISE BOLTS SHALL BE INSTALLED PER TURN-OF-NUT INSTALLATION METHOD, REQUIRED TURNS FOR PRE-TENSIONING FROM SNUG-TIGHT, U.N.O. IN THIS PLAN SET OR BY ANCHOR BOLT OR FASTENER MANUFACTURER. SCREWS AND MACHINE BOLT CALLOUTS ARE MINIMUM SIZE SIZE ALLOWED, ACTUAL SIZE MAY VARY. HOLLOW STRUCTURAL SECTION (HSS) SHALL BE ASTM A500 GRADE B, F_y = 46 ksi. WIDE FLANGE BEAMS SHALL BE ASTM A992, F_y = 50 ksi. STEEL PLATES & SHAPES SHALL BE ASTM A36, F_y = 36 ksi. CONCRETE REINFORCING STEEL (REBAR): 60 ksi. (GRADE 60). WOOD FRAMING SHALL BE #2 & BETTER DOUGLAS FIR, UNO. GLU-LAM BEAMS SHALL BE GRADE 24F-V4.

7. QUESTIONS CONCERNING MATERIALS OR CONSTRUCTION CONTACT ROMTEC TECHNICAL ASSISTANCE AT: 541-496-3541

8. ROMTEC SCOPE SUPPLY AND DESIGN SUBMITTAL (SSDS) IDENTIFY SPECIFIC MODEL, MANUFACTURER & BRAND OF ALL PLUMBING AND ELECTRICAL FIXTURES AND ACCESSORIES. REFER TO THE SSDS FOR SPECIFIC LIST OF ITEMS SUPPLIED BY ROMTEC, ANY ITEMS NOT LISTED IN THE SSDS IS ASSUMED SUPPLIED BY THE INSTALLER.

9. THE OWNER / CONTRACTOR MAY EXERCISE DISCRETION IN SELECTING THE FINAL LOCATION FOR NON-DIMENSIONED ACCESSORIES AND FIXTURES (E.G., LIGHTS, COMFORT HEATERS, ETC.)

NOTE: ARCHITECT/ENGINEER IS NOT RESPONSIBLE FOR ANY SITE DESIGN OR ENGINEERING AND WILL NOT BE HELD ACCOUNTABLE OR LIABLE FOR ANY ISSUES RELATED TO THIS SITE. IT IS THE OWNER'S RESPONSIBILITY TO ACCURATELY LOCATE THIS BUILDING, SET FLOOR AND ADJACENT ELEVATIONS, DETERMINE SITE IS SUITABLE FOR CONSTRUCTION, VERIFY ALL UTILITIES, ETC.

RECYCLE

RECYCLE ALL USED SHIPPING MATERIALS AND LEFT OVER BUILDING MATERIALS

07/24/2025

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PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

SHEET TITLE: GARDEN GROVE, CA

GENERAL NOTES SYMBOL LEGEND

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE BY:

REVISIONS:

SHEET NO. G1

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JOB CREATED: 7/17/2025 - LAST SAVED BY: jlogsdon ON 7/17/2025 - LAST PRINTED: 7/17/2025 - LOCATION: \\data\data\Engineering R\Plan Sets\GAR03- Garden Grove Parks (Westhaven Park RR), CA\GAR03- Garden Grove Parks (Westhaven Park RR) 2061, CA 241219.dwg

CODES AND STANDARDS

2022 CALIFORNIA BUILDING CODE (CBC), TITLE 24 PART 2 (BASED ON 2021 IBC)
2022 CALIFORNIA ELECTRICAL CODE, TITLE 24 PART 3 (BASED ON 2020 NFPA, NEC)
2022 CALIFORNIA MECHANICAL CODE, TITLE 24 PART 4 (BASED ON 2021 UMC)
2022 CALIFORNIA PLUMBING CODE, TITLE 24 PART 5 (BASED ON 2021 UPC)
2022 CALIFORNIA BUILDING ENERGY CODE, TITLE 24 PART 6
2022 CALIFORNIA FIRE CODE, TITLE 24 PART 9, (BASED ON 2021 IFC)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

ACI AMERICAN CONCRETE INSTITUTE, ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"

TMS THE MASONRY SOCIETY, TMS 402, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"

CODE SUMMARY:

OCCUPANCY CLASS.: U
CONSTRUCTION: VB
AREA: 322 FT²
AREA ALLOWABLE: 5500 FT²
HEIGHT: 1 STORY
HEIGHT ALLOWABLE: 1 STORY
OCCUPANT LOAD: 6

DESIGN LOADS

ROOF: LIVE LOAD 20 PSF
ROOF: DEAD LOAD 15 PSF
WALL DEAD LOAD 81 PSF
IBC SEISMIC DESIGN CATEGORY D
DESIGN WIND SPEED (ULTIMATE) 100 MPH
EXPOSURE C

ALLOWABLE SOIL BEARING 1500 PSF

SEISMIC DESIGN DATA:

RISK CATEGORY: II

IMPORTANCE FACTOR: 1.0

SS: 1.377
S1: 0.488

SITE CLASS: D

SMS: 1.652
SM1: 1.326
SDS: 1.102
SD1: 0.884

SEISMIC DESIGN CATEGORY: D

R = 5

BASE SHEAR: V = 0.220 W

WIND DESIGN :

RISK CATEGORY: II

WIND SPEED = 100 MPH

EXPOSURE: C

INTERNAL PRESSURE COEFE = ± 0.18

BEARING WALL SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALL

ANALYSIS METHOD: EQUIVALENT STATIC FORCE METHOD

SPECIAL INSPECTIONS

CONCRETE SPECIAL INSPECTION NOT REQUIRED PER IBC 1705.3
EXCEPTION 2.3 [FOOTINGS]
EXCEPTION 3 [SLAB]

SPECIAL INSPECTIONS (TMS 402-16)

TABLE 3 -- MINIMUM VERIFICATION REQUIREMENTS				
MINIMUM VERIFICATION	REQUIRED FOR QUALITY ASSURANCE (a)			REFERENCE FOR CRITERIA
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 602
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS		R		ART. 1.5
PRIOR TO CONSTRUCTION, VERIFICATION OF f_m AND f_{AAC} , EXCEPT WHERE SPECIFICALLY EXEMPT BY THE CODE.		R		ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE.		R		ART. 1.5 & 1.6.3
DURING CONSTRUCTION, VERIFICATION OF f_m AND f_{AAC} FOR EVERY 5,000 sq. ft. (465 sq.m).		NR		ART. 1.4 B
DURING CONSTRUCTION, VERIFICATION OF PORPORTIONS OF MATERIALS AS DELIVERED TO THE PROJECT SITE FOR PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT.		NR		ART. 1.4 B

(a) R=REQUIRED, NR=NOT REQUIRED

TABLE 4 -- MINIMUM SPECIAL INSPECTION REQUIREMENTS					
MINIMUM SPECIAL INSPECTION	REQUIRED FOR QUALITY ASSURANCE (a)			REFERENCE FOR CRITERIA	
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 402	TMS 602
1. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. PROPORTION OF SITE-PREPARED MORTAR		P			ART. 2.1 , 2.6 A, & 2.6 C
B. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		P			ART. 2.4 B & 2.4 H
C. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES		P			ART. 3.4 & 3.6 A
D. PRESTRESSING TECHNIQUE		P			ART. 3.6 B
E. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY		C(b)P(c)			ART. 2.1 C.1
F. SAMPLE PANEL CONSTRUCTION		P			ART. 2.1 C.1
2. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. GROUT SPACE		P			ART. 3.2 D & 3.2 F
B. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES		P		SEC. 10.8 & 10.9	ART. 2.4 & 3.6
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS		P		SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7	ART. 2.4 & 3.6
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		P			ART. 2.6 B & 2.4 G.1.b
3. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:					
A. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		P			ART. 1.5
B. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		P			ART. 3.3 B
C. SIZE AND LOCATION OF STRUCTURAL MEMBERS		P			ART. 3.3 F
D. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.		P		SEC. 1.2.1(e), 6.2.1 & 6.3.1	
E. WELDING OF REINFORCEMENT		C		SEC. 6.1.6.1.2	
F. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F(4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F(32.2°C))		P			ART. 1.8 C & 1.8 D
G. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE		C			ART. 3.6 B
H. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE		C			ART. 3.5 & 3.6 C
I. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS		C(b)P(c)			ART. 3.3 B.9 & 3.3 F.1.b
4. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		P			ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, & 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE LISTED TASK OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE.
NR=NOT REQUIRED, P=PERIODIC, C=CONTINUOUS

(b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

(c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.



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ROMTEC #225-976

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)
SHEET TITLE: GARDEN GROVE, CA
DESIGN CRITERIA & CODE SUMMARY

PROJECT #:	GAR03	
DATE:	12/20/24	
DRAWN BY:	JL	
REV.	DATE:	BY:

REVISIONS:

SHEET NO.

G2

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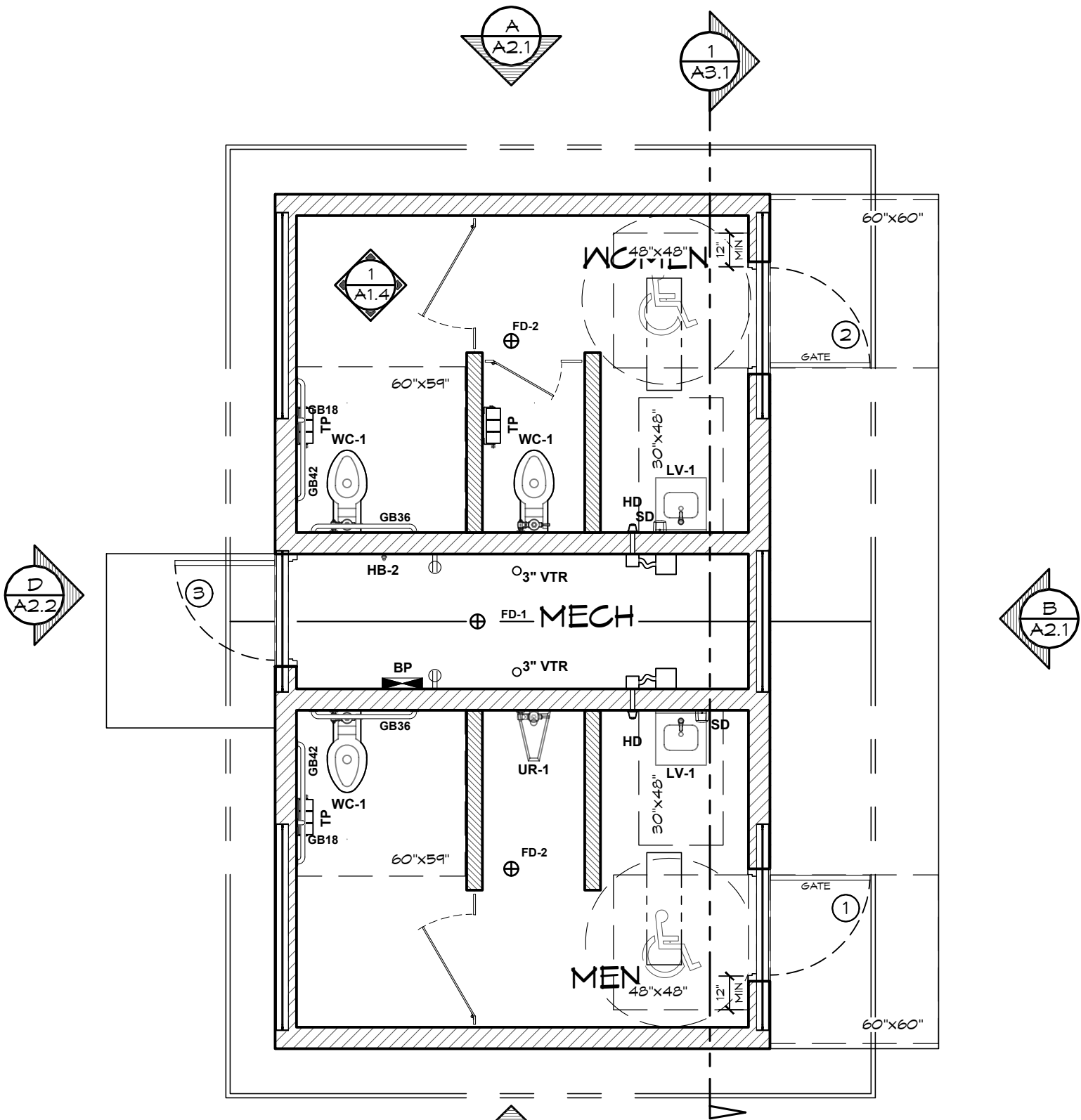
WALL TYPE SCHEDULE



07/24/2025



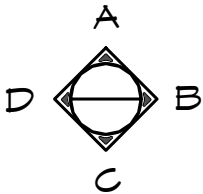
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1

ADA RESTROOM FIXTURE CLEAR FLOOR AREA

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



PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: ADA CLEARANCES

PROJECT #: GAR03
DATE: 12/20/24
DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:

SHEET NO. A1.2

WOMEN

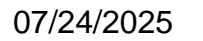


VIEW A



Technical drawing of a bathroom floor plan. The plan shows a toilet (labeled TP) and a sink (labeled WC-1) enclosed in a red cloud-like outline. Above the toilet is a bathtub (labeled GB42). To the left of the bathtub is a shower area (labeled GB36). To the right of the bathtub is a window (labeled GB18). A dimension line at the bottom indicates a width of 9 inches.

VIEW D



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PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

HEET TITLE: _____

ADA RESTROOM FIXTURE DETAILS

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV.	DATE:	BY:
2	07/17/2025	JL

REVISIONS: _____

A14

SHEET NO.

3" VTR W/ VENT BOOT, TYP (2)

METAL ROOFING

GUTTERS & DOWNSPOUTS,
BY OTHERS, TYP

17 1/2"
O.H.

8"x16" CMU SPLIT FACE
BLOCK WALL W/
ANTI-GRAFFITI COATING

CONCRETE WALK
(BY INSTALLER)

FG

14'-8"

15"x 46" DECK MOUNTED
SKY LIGHTS TYP (2)

37 1/2"
O.H.

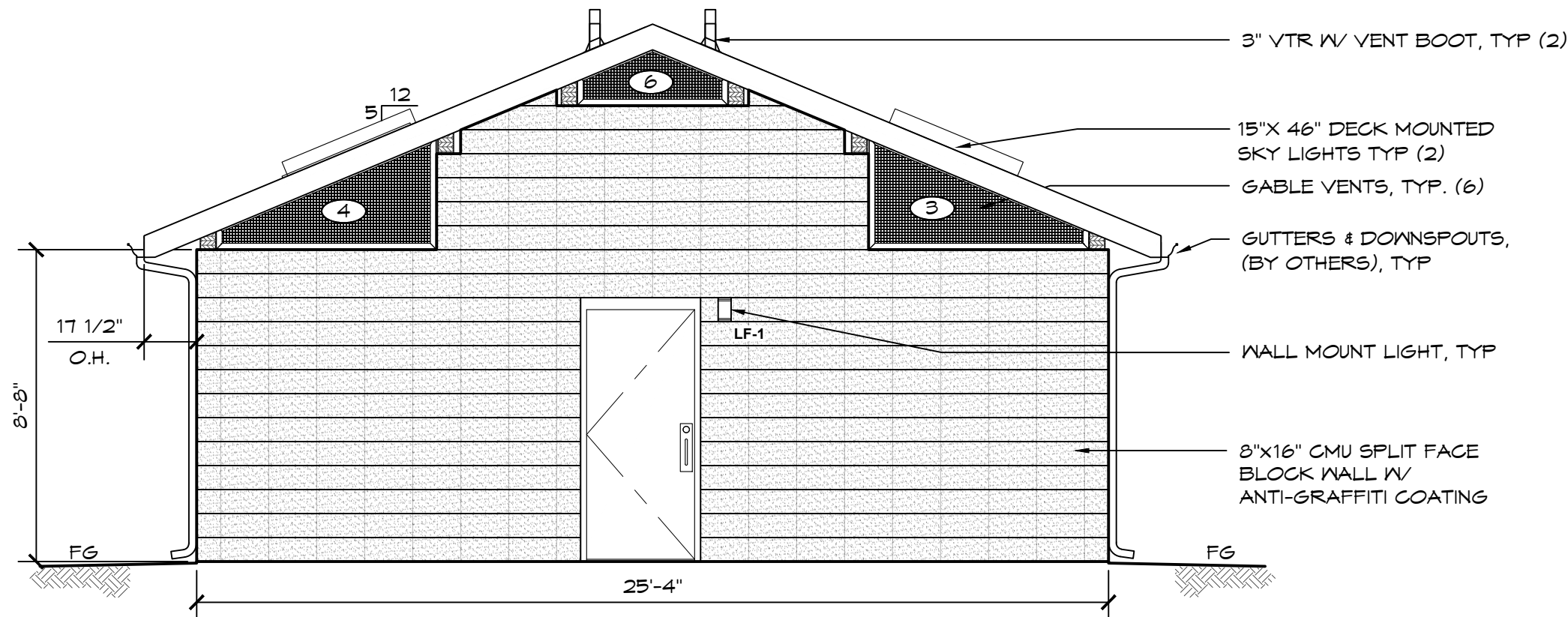
CANTILEVER ROOF
EXTENTION

FG

C

ELEVATION VIEW

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



D

ELEVATION VIEW

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



07/24/2025

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PROJECT:
GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

SHEET TITLE:
GARDEN GROVE, CA
EXTERIOR ELEVATION VIEWS

PROJECT #: GAR03

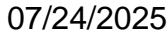
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SHEET NO. **A2.2**



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 **ROMTEC #225-076**



GARDEN GROVE, CA

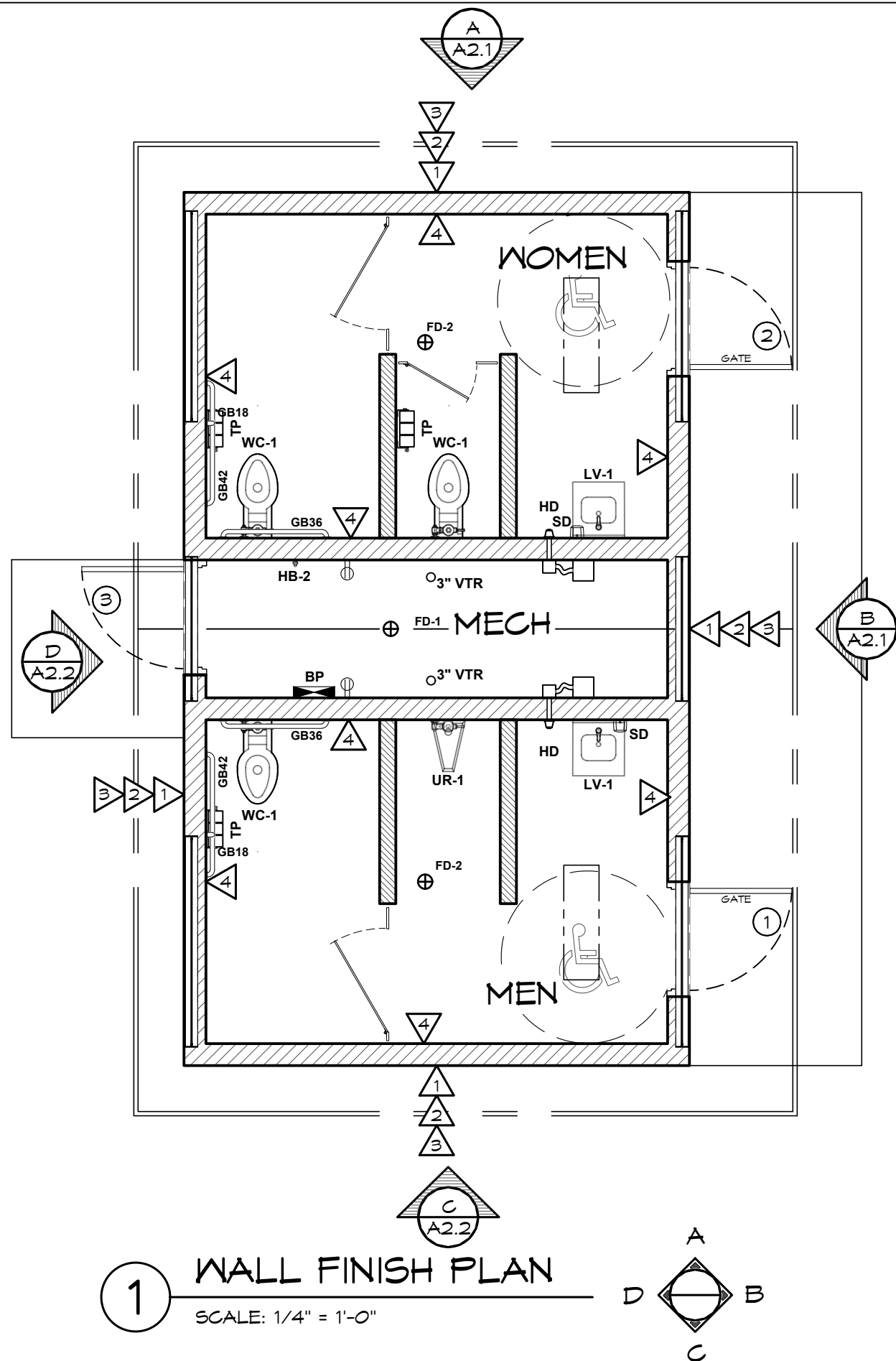
SHEET TITLE:

SECTION VIEWS

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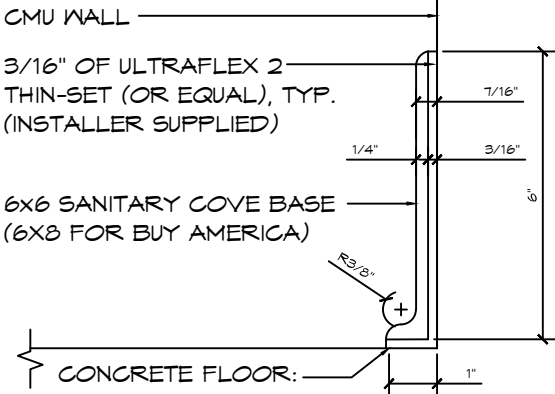
REVISIONS:

A3.1



FINISH SCHEDULE			
NO.	LOCATION	FINISH	DETAIL
1	EXTERIOR WALL	8" SPLIT FACE REINFORCED CONCRETE MASONRY BLOCK WALL W/ MORTAR JOINTS, GROUTED SOLID ALL CELLS RUNNING BOND PATTERN.	
2	EXTERIOR SIDE OF CMU	APPLY BLOCK SEALER TO CMU SURFACES. INSTALLER TO APPLY 2 COATS OF RAIN GUARD BLOK LOK OR EQUAL PER MANUFACTURE'S INSTALL INSTRUCTIONS (INSTALLER SUPPLIED)	
3	EXTERIOR ANTI-GRAFFITI ON CMU	APPLY BLOCK SEALER TO CMU SURFACES. INSTALLER TO APPLY 2 COATS OF RAIN GUARD BLOK LOK W/ GRAFITI CONROL, OR EQUAL PER MANUFACTURE'S INSTALL INSTRUCTIONS	
4	INTERIOR WALL	PRIMED & (2) COATS OF EPOXY PAINT CMU WALLS FLOOR TO CEILING (INSTALLER SUPPLIED)	
	CEILING	SIP PANEL W/ FRP	
	EXPOSED WOOD	ALL T&G, FASCIA, SUB FASCIA, AND GLULAM BEAMS AND COLUMNS TO BE SEALED WITH INSTALLER SUPPLIED CLEAR COAT FINISH APPLIED ONSITE BY INSTALLER	
	FLOOR	CONCRETE WITH A WATER BASED WET CURE SEALER CURE-N-SEAL OR EQUAL (INSTALLER SUPPLIED)	
	COVE BASE IN RESTROOMS ONLY	SANITARY TILE COVE BASE	DETAIL 2/A4.1

NOTE: GROUT TO BE INSTALLER SUPPLIED (1/8" GROUT LINES RECOMMENDED)
* AT INSIDE CORNER JOINT USE SILICONE CAULK TO FINISH



SANITARY TILE COVE BASE W/ CMU WALL & CONCRETE FLOOR

2 COVE BASE DETAIL
SCALE: 3" = 1'-0"



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PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

SHEET TITLE: GARDEN GROVE, CA

WALL FINISH SCHEDULE (INTERIOR/EXTERIOR)

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

REVISIONS:

SHEET NO.

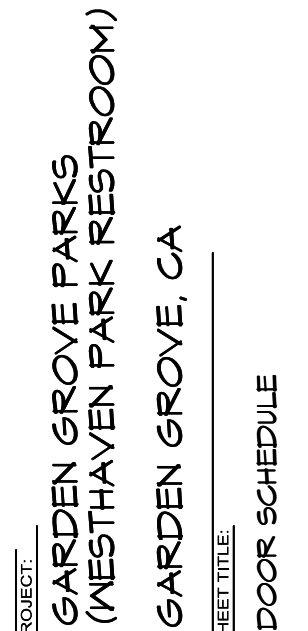
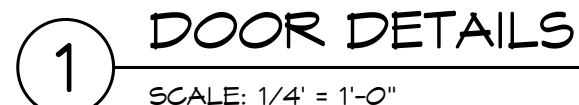
A4.1

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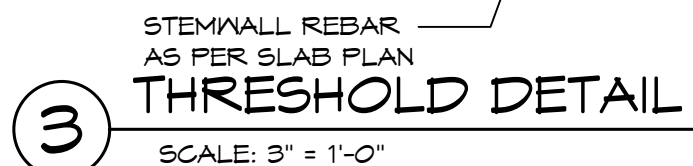
DOOR SCHEDULE							
NO	SIZE (WxHxT)	DOOR	FRAME	SWING - DOOR / FRAME		HARDWARE GROUP	REMARKS
1	36"x84"x1 3/4"	HSS	F16	INTERIOR ↙	RIGHT HAND (REVERSE) SWING OUT / LEFT HAND	DO~ 1	STEEL GATE
2	36"x84"x1 3/4"	HSS	F16	INTERIOR ↗	LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 1	STEEL GATE
3	36"x84"x1 3/4"	SL18	F16	INTERIOR ↗	LEFT HAND (REVERSE) SWING OUT / RIGHT HAND	DO~ 2	

GROUP DO-1	GROUP DO-2	
4	3	EACH HINGE 4.5" X 4.5" S.S., MODEL: #ECBB1101-4 1/2 X 4 1/2-USD32D (NRP) BY HAGER - HINGES ARE ACCESSIBLE FROM THE OUTSIDE WHEN THE DOOR IS CLOSED
1	1	DOOR CLOSER, (USE THRU BOLT ANCHORING OPTION)
1	-	ROMTEC #DG-0004-5002 GATE HASP
1	-	DEADBOLT LOCKSET, SCHLAGE B561 - <u>DOUBLE CYLYNDER</u> , SATIN FINISH - (KEY - OUTSIDE / KEY - INSIDE)
-	1	DEADBOLT LOCKSET, SCHLAGE B660 - <u>CLASSROOM LOCK</u> , SATIN FINISH - (KEY - OUTSIDE / THUMB-TURN - INSIDE RETRACTS ONLY)
-	2	PULL PLATE, 4" X 16"
-	2	PULL HANDLE, 8" CENTER
6	6	WIRE DOOR CLIPS
1	-	EACH POWER DOOR LOCK- ELECTROMAGNETIC LOCK W/ DELAYED ACTION SWITCH, SHARED TIMER

NOTE: THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS, WITH SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. WHEN FIRE DOORS ARE UTILIZED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO NOT EXCEED 15 POUNDS. SECTION 11B-404.2.9.

 $\Delta E = 1$

A5.1



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PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: **DOOR DETAILS**

PROJECT #: GAR03

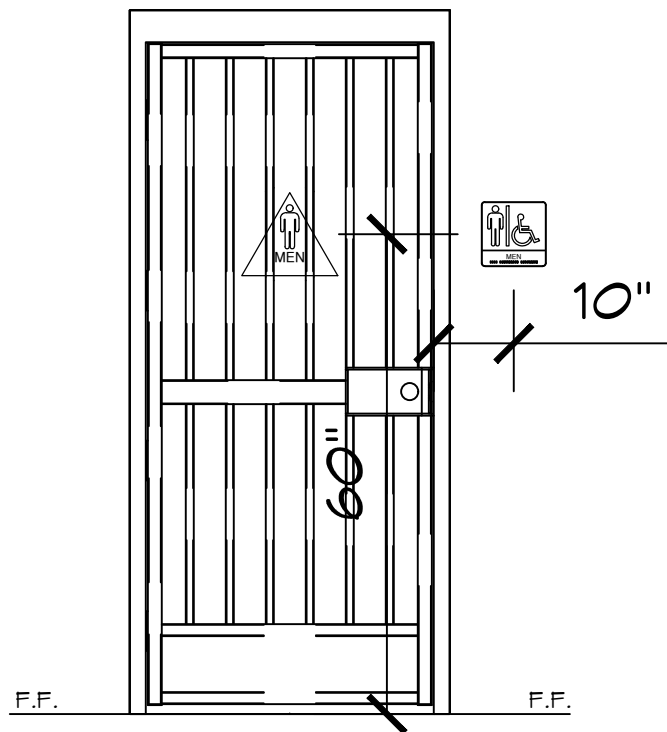
DATE: 12/20/24

DRAWN BY: JL

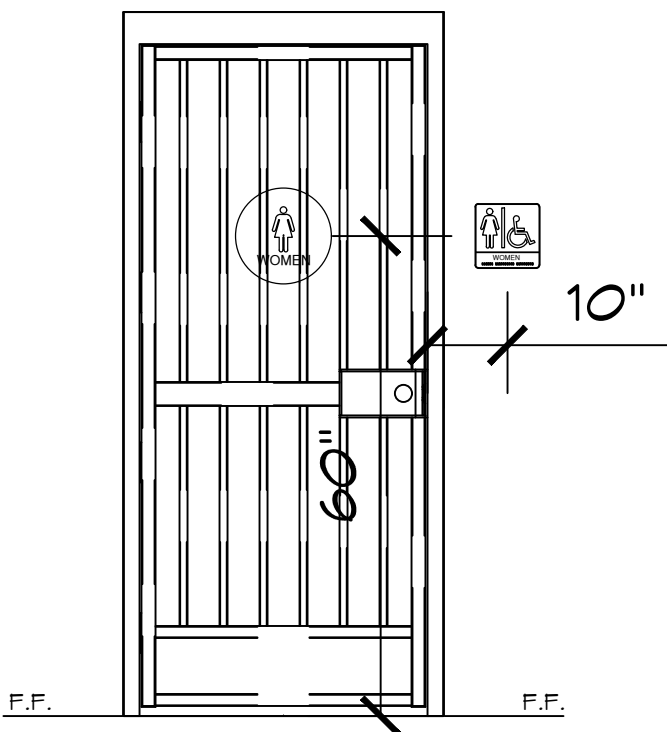
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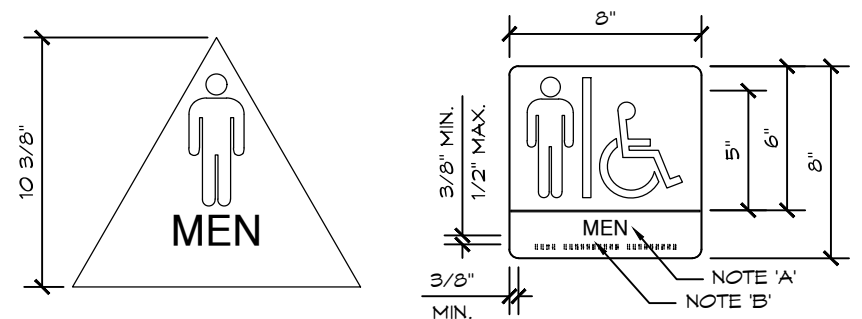
SHEET NO **A5.2**



1 ADA SIGN ELEVATIONS
SCALE: 1/2" = 1'-0"



1 ADA SIGN ELEVATIONS
SCALE: 1/2" = 1'-0"

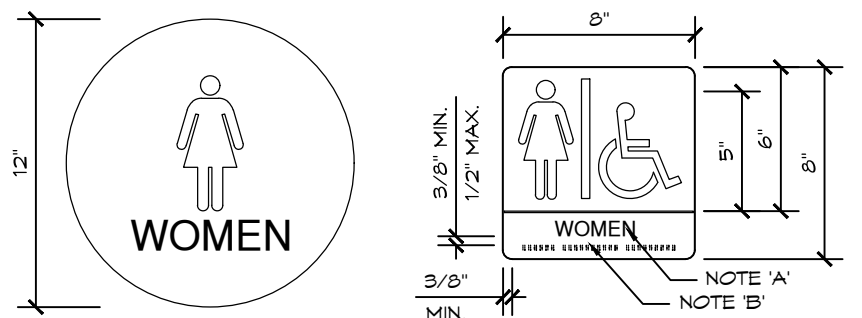


NOTE:
ALL GENDER SANITARY FACILITIES SIGN SHALL BE IDENTIFIED BY A CIRCLE, 1/4" THICK AND 12" INCHES IN DIAMETER WITH 1/4" THICK TRIANGLE SUPERIMPOSED ON THE CIRCLE AND WITHIN THE 12" DIAMETER

SIGNS WITH RAISED CHARACTERS & BRAILLE SHALL BE LOCATED 48" MINIMUM ABOVE THE FINISHED FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST LINE OF BRAILLE AND 60 INCHES MAXIMUM ABOVE THE FINISHED FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS.

NOTES:
A) CHARACTERS ON SIGNS SHALL BE RAISED 1/32" INCH MINIMUM AND SHALL BE 'SANS SERIF' UPPERCASE CHARACTERS ACCOMPANIED BY GRADE II BRAILLE (WHERE REQUIRED). RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8" INCH AND A MAXIMUM OF 2" INCHES HEIGHT.
B) CONTRACTED GRADE II BRAILLE SHALL BE USED WHENEVER BRAILLE IS REQUIRED. DOTS SHALL BE 1/10"TH INCH ON CENTERS IN EACH CELL WITH A 2/10TH INCH SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL. DOTS SHALL BE A RAISED A MINIMUM OF 1/40TH (0.025) INCH ABOVE THE BACKGROUND.

2 ADA SIGNS DETAIL
SCALE: 1 1/2" = 1'-0"



NOTE:
ALL GENDER SANITARY FACILITIES SIGN SHALL BE IDENTIFIED BY A CIRCLE, 1/4" THICK AND 12" INCHES IN DIAMETER WITH 1/4" THICK TRIANGLE SUPERIMPOSED ON THE CIRCLE AND WITHIN THE 12" DIAMETER

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2 ADA SIGNS DETAIL
SCALE: 1 1/2" = 1'-0"

3 WHEN A SIGN IS REQUIRED
BACKING BOARD - FIELD CUT
(5/4" X 4" FIBER CEMENT)

- FOR LAP OR SHAKE SIDING ONLY!
FOR OTHER FINISHES SEE 2/A5.2
- ATTACH BACKING BOARD 10" o.c.,
FROM DOOR OPENING (LATCH
SIDE)
- LOCATIONS & HEIGHT OF SIGN
REQUIREMENTS PER PLANS

SCALE: 1" = 1'-0"

FOR 6"x9" SIGN

FOR 8"x8" SIGN

SHOWN

SIGN FASTENERS: WOOD/FIBER CEMENT/STEEL
(4) #10 3/4" PHILLIPS ROUND HEAD SCREW.

3 WHEN A SIGN IS REQUIRED
BACKING BOARD - FIELD CUT
(5/4" X 4" FIBER CEMENT)

- FOR LAP OR SHAKE SIDING ONLY!
FOR OTHER FINISHES SEE 2/A5.2
- ATTACH BACKING BOARD 10" o.c.,
FROM DOOR OPENING (LATCH
SIDE)
- LOCATIONS & HEIGHT OF SIGN
REQUIREMENTS PER PLANS

SCALE: 1" = 1'-0"

FOR 6"x9" SIGN

FOR 8"x8" SIGN

SHOWN

SIGN FASTENERS: WOOD/FIBER CEMENT/STEEL
(4) #10 3/4" PHILLIPS ROUND HEAD SCREW.

REGISTERED PROFESSIONAL ENGINEER
RALPH M. HALL
C87047
EXP. 6-30-2027
CIVIL
STATE OF CALIFORNIA

07/24/2025

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PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: DOOR DETAILS

PROJECT #: GAR03

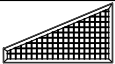





DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

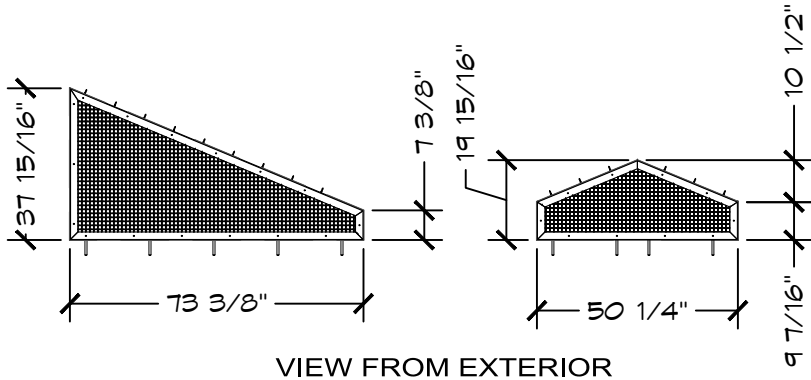
REVISIONS:

SHEET NO. A5.3

VENT AND/OR WINDOW SCHEDULE									
NO	DIMENSIONS	PITCH	INSERT	ROMTEC PRODUCTION #	DIRECTION PER PRODUCTION	FASTENERS			REFERENCE / DETAILS
						SILL	TOP	HYP	
1	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV-050-1002		5	-	9	SEE SHEET A6.2
2	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV-050-1002		5	-	9	SEE SHEET A6.2
3	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV-050-1002		5	-	9	SEE SHEET A6.2
4	73 3/8"x37 15/16"x7 3/8"	5:12	WIRE MESH	XV-050-1002		5	-	9	SEE SHEET A6.2
5	50 1/4"x19 15/16"x 9 7/16"	5:12	WIRE MESH	XV-050-1004		4	-	6	SEE SHEET A6.2
6	50 1/4"x19 15/16"x 9 7/16"	5:12	WIRE MESH	XV-050-1004		4	-	6	SEE SHEET A6.2

HARDWARE (QUANTITY PER SCHEDULE)

SILL	1/2" x 4"	TITEN HD SCREW (ICC-ES ESR-1056)
HYP	#12 x 1 1/2"	WOOD SCREW



NOTE: DURING THE CONSTRUCTION PROCESS IT IS COMMON FOR SMALL GAPS TO APPEAR IN ANY NUMBER OF PLACES. ROMTEC DOES NOT PROVIDE CAULK OR ANY OTHER MATERIAL TO FILL THESE SMALL GAPS UNLESS IT IS SPECIFIED IN OUR SUBMITTAL



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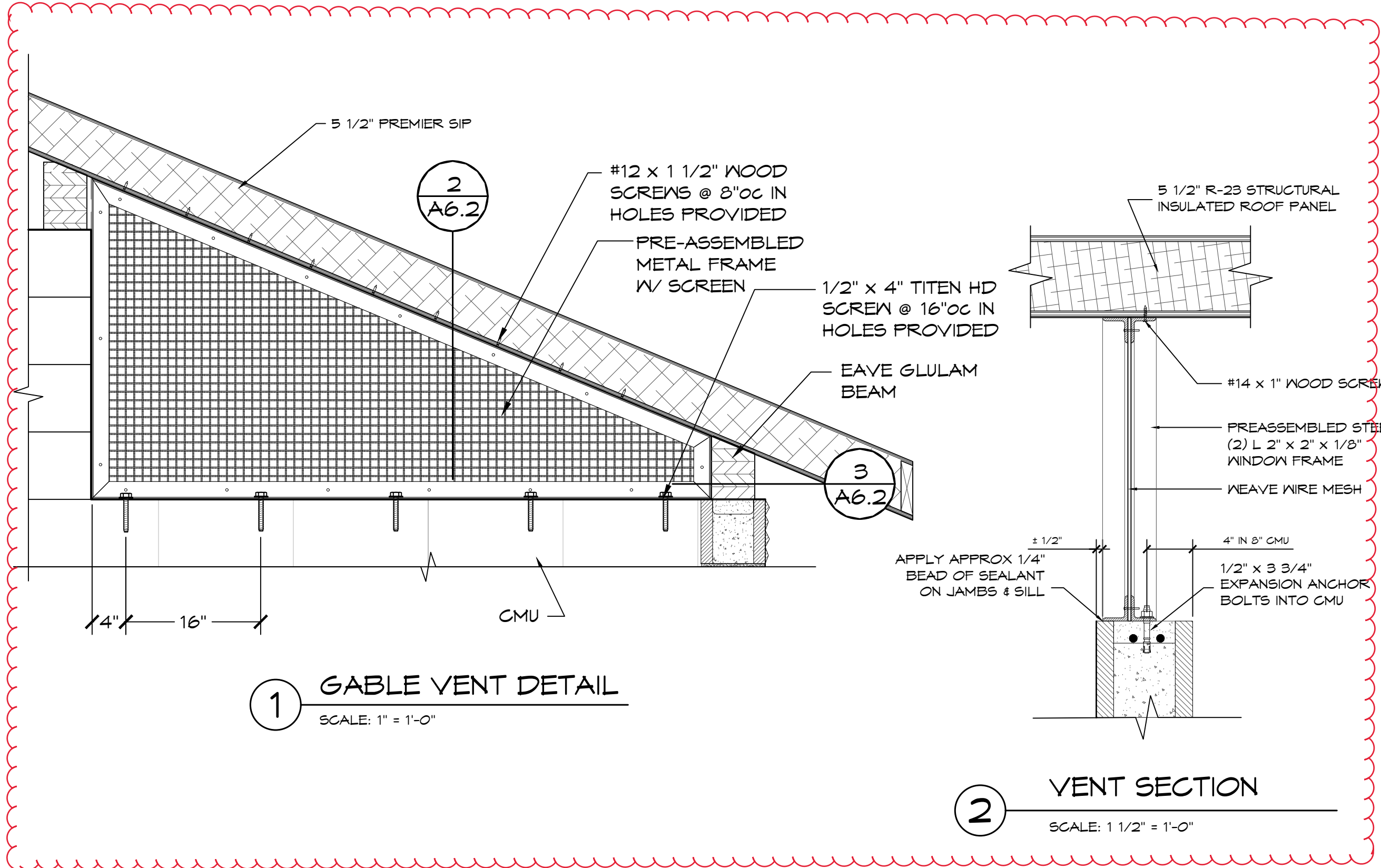
PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: VENT/WINDOW SCHEDULE

PROJECT #:		GAR03
DATE:		12/20/24
DRAWN BY:		JL
REV.	DATE:	BY:
REVISIONS:		

SHEET NO. A6.1



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ROMTEC #225-976

PROJECT: **GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)**
SHEET TITLE: **GARDEN GROVE, CA
VENT/WINDOW DETAILS**

PROJECT #:	GAR03	
DATE:	12/20/24	
DRAWN BY:	JL	
REV.	DATE:	BY:
2	07/17/2025	JL
REVISIONS:		

A6.2

SHEET NO.

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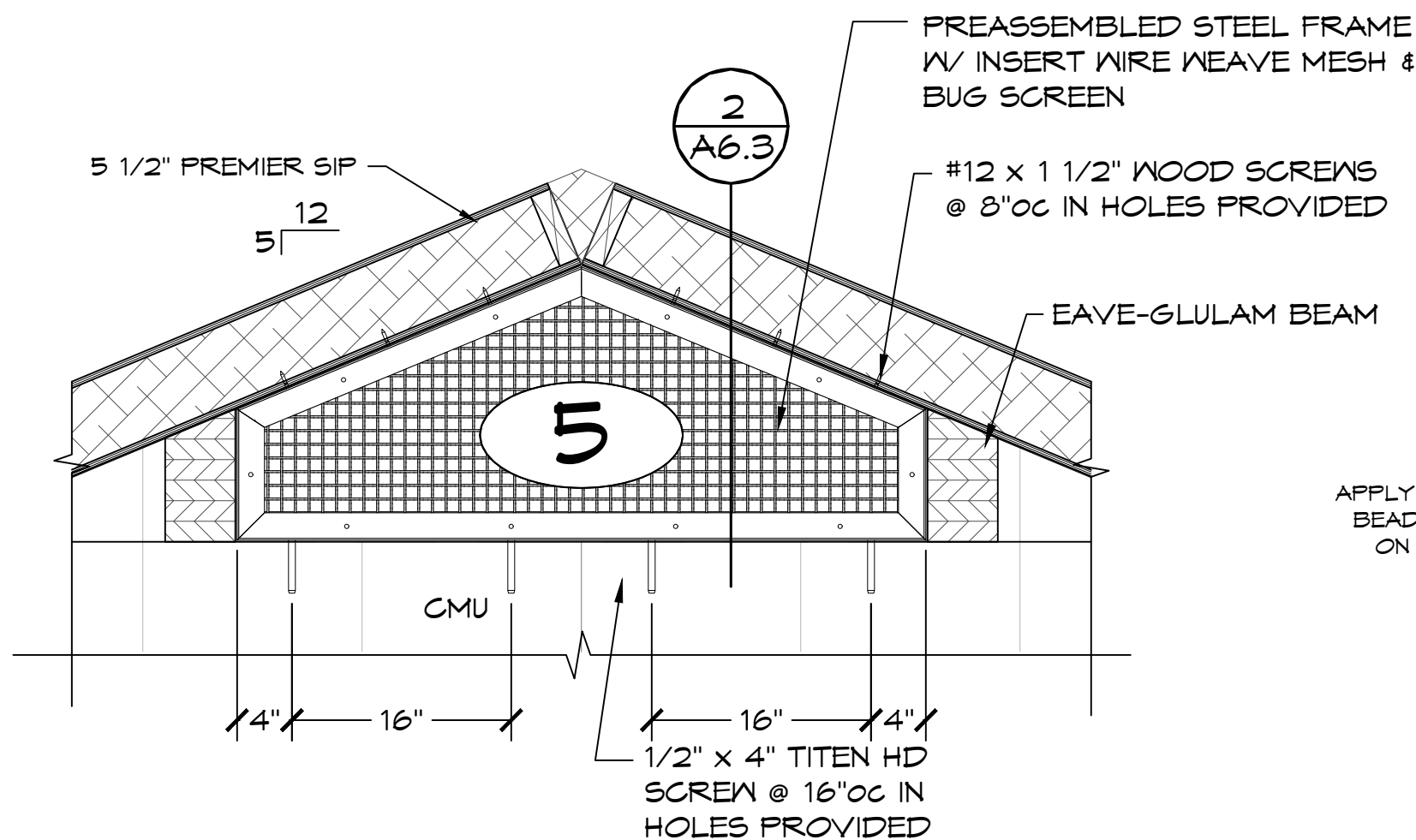


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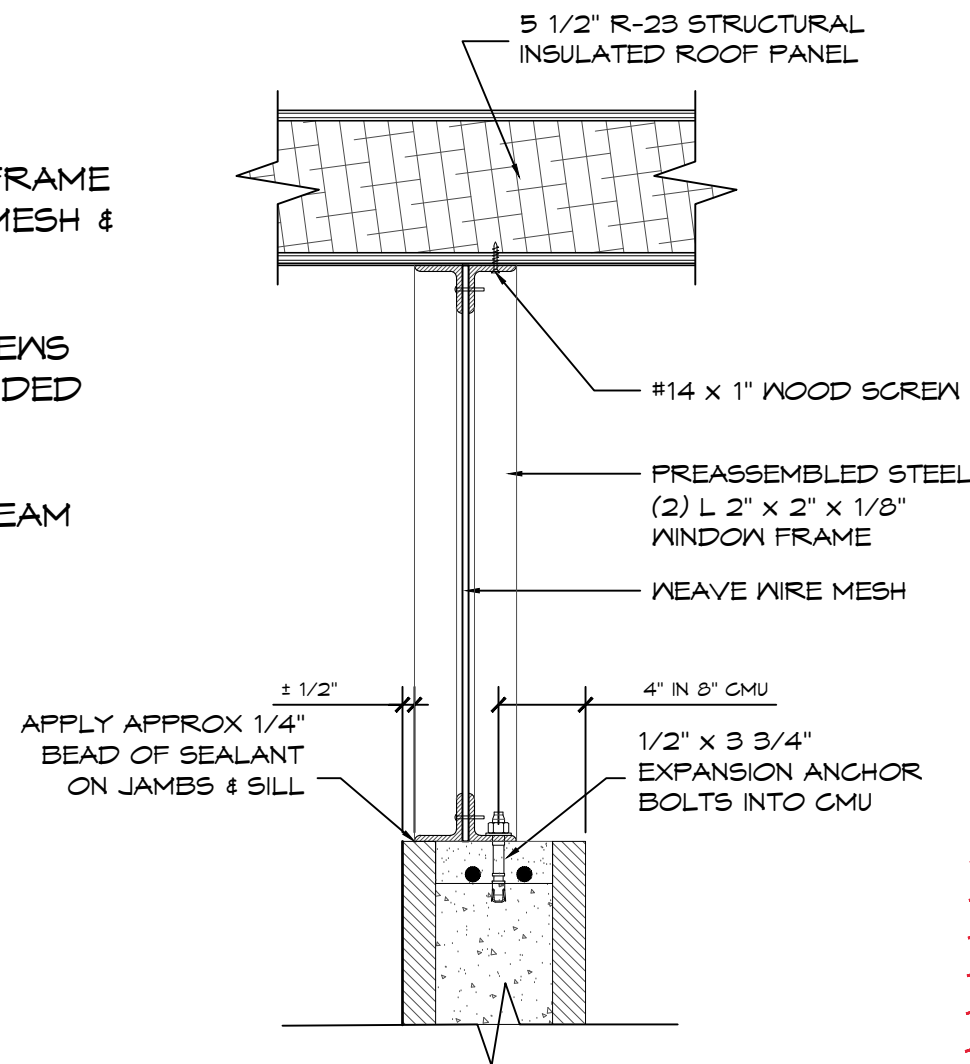
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1 RIDGE VENT DETAIL
SCALE: 1" = 1'-0"



2 VENT SECTION
SCALE: 1 1/2" = 1'-0"

PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: WOOD FILLER WALL SCHEDULE

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE BY:

2 07/17/2025 JL

REVISIONS:

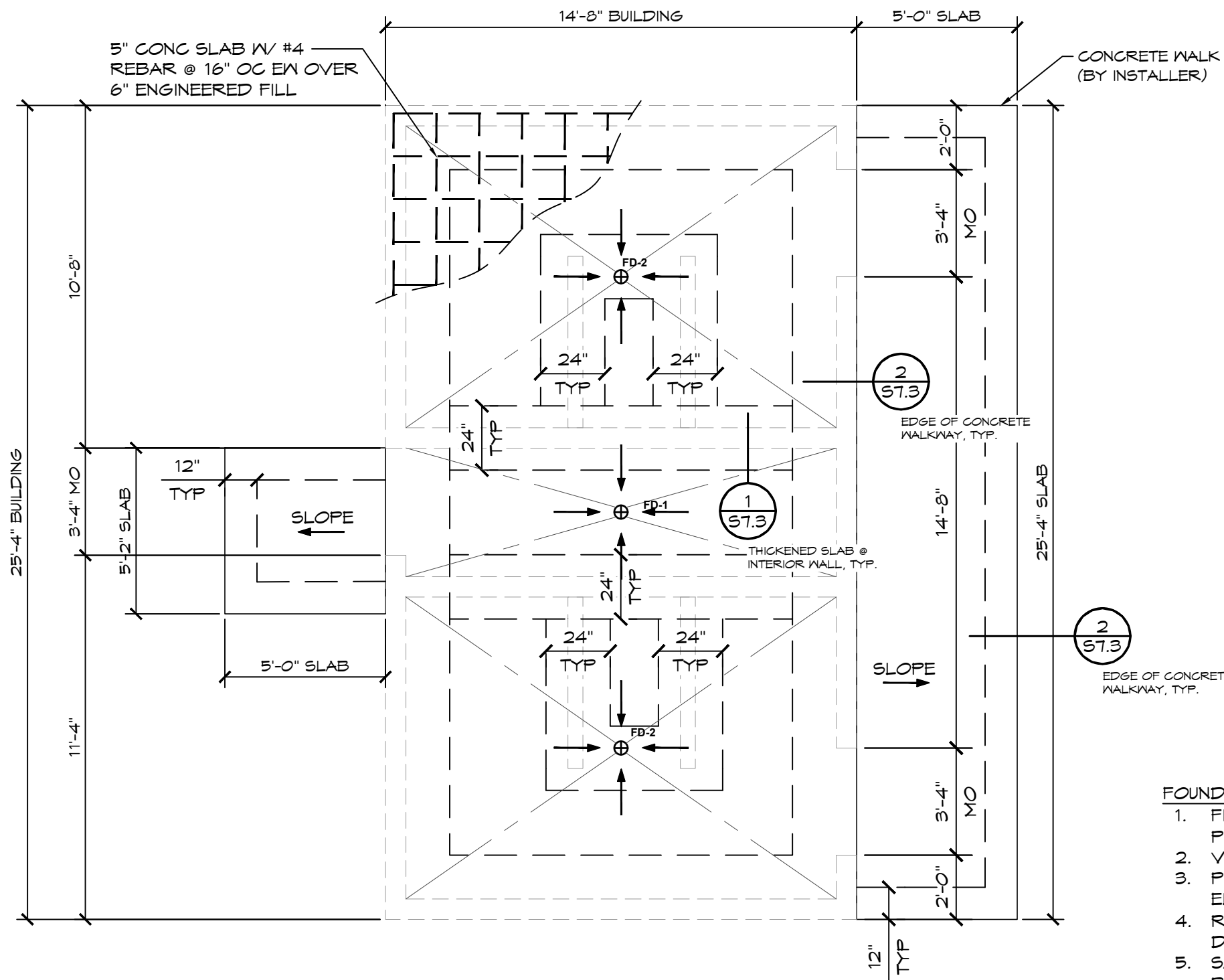
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RECYCLE

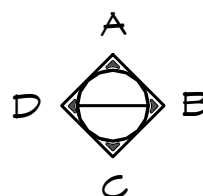
RECYCLE ALL USED SHIPPING
MATERIALS AND LEFT OVER
BUILDING MATERIALS

FOUNDATION NOTES:

1. FINISH FLOOR SLOPE IS 2% (1/4" PER FT) MAX & 1% (1/8" PER FT) MIN
2. VERIFY SIDEWALKS W/ OWNER
3. PROVIDE BLOCK-OUTS FOR PLUMBING, MECHANICAL, & ELECTRICAL AS REQD. CO-ORDINATE W/ SUBS.
4. REBAR MIN. BEND SHALL BE NOT LESS THAN 6db INSIDE DIA. AS PER TMS TMS 402-16 SECTION 6.1.8.2.
5. SAW JOINTS BY CONTRACTOR. SLAB APPEARANCE IS A PRIORITY. LOCATE JOINTS AT 10' O.C. MAX. SEE 4/S7.3.
6. MAXIMUM SLOPE OF EXCAVATION MAY BE LIMITED BY LOCAL SOIL CONDITIONS. INCREASE DEPTH OF FORMED CONCRETE AS REQD.
7. CONCRETE SLAB BENEATH FLOOR MOUNTED FIXTURES ARE TO BE GROUTED LEVEL AND SMOOTH.
8. UNDER FOOTINGS: UNDISTURBED NATIVE SOIL OR 12" FILL COMPACTED TO 90% ASTM D 1557 TO MEET OR EXCEED ALLOWABLE BEAR PRESSURE ON SHEET G2. UNDER SLAB: 6" FILL COMPACTED TO 90% ASTM D 1557 TO MEET OR EXCEED ALLOWABLE BEAR PRESSURE ON SHEET G2.

1 FOUNDATION PLAN

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



PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
SHEET TITLE: GARDEN GROVE, CA
FOUNDATION PLAN

PROJECT #: GAR03

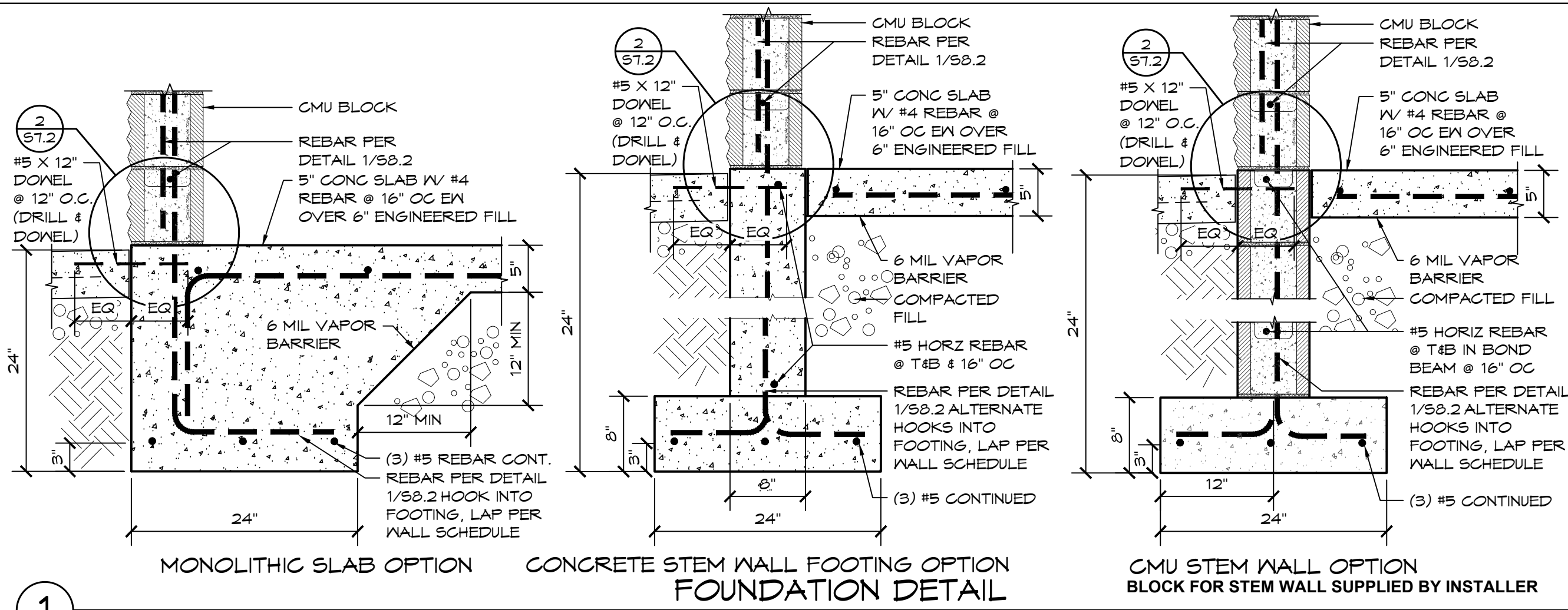
DATE: 12/20/24

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REVISIONS:

SHEET NO. S7.1



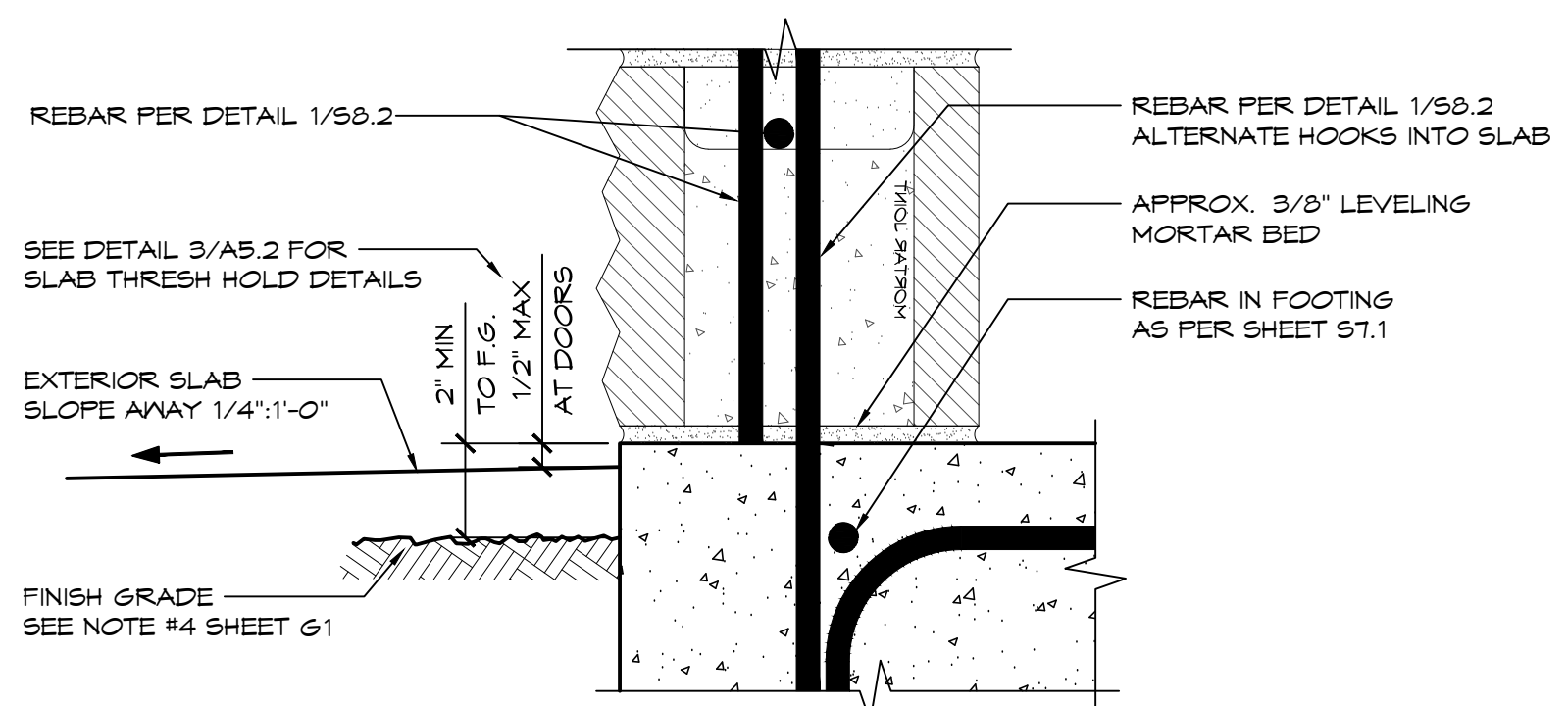
REGISTERED PROFESSIONAL ENGINEER
RALPH M. HALL
C87047
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ROMTEC #225-976

1



2 WALL-SLAB CONNECTION - MONO

SCALE: 3" = 1'-0"

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: FOUNDATION DETAILS

PROJECT #: GAR03

DATE: 12/20/24

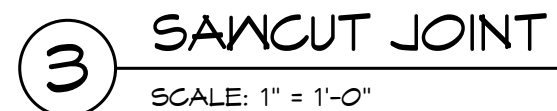
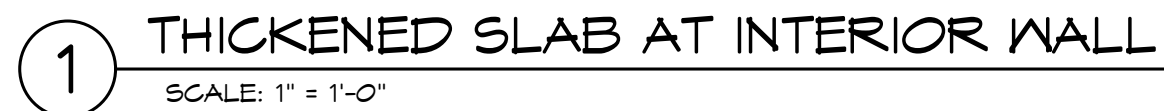
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REV.	DATE	BY

REVISIONS:

SHEET NO. **S7.2**

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PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE:

FOUNDATION DETAILS

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

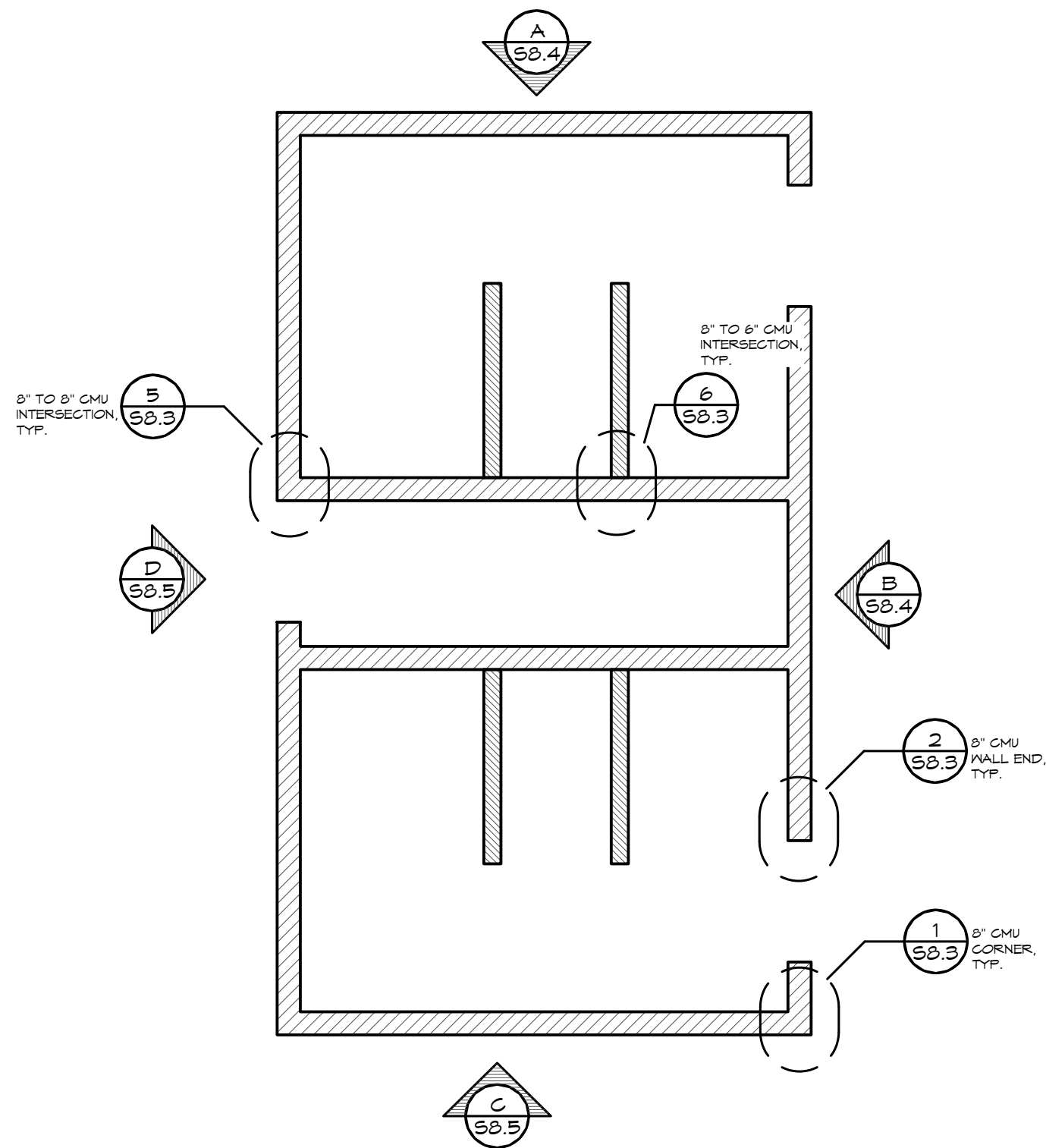
REV. _____ DATE: _____ BY: _____

REVISIONS:

SHEET NO.

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1 STRUCTURAL CMU PLAN
SCALE: 1/4" = 1'-0"

A
D B
C

WALL TYPE SCHEDULE	
	8" REINFORCED CONCRETE MASONRY BLOCK WALL WITH MORTAR JOINTS, GROUTED SOLID ALL CELLS STACKED BOND PATTERN.
	6" REINFORCED CONCRETE MASONRY BLOCK WALL WITH MORTAR JOINTS, GROUTED SOLID ALL CELLS RUNNING BOND PATTERN.

THE CMU BLOCK LAYOUT SHALL BE PER THE BLOCK LAYOUT PLANS IN THE:
"FINAL"
ROMTEC SCOPE OF SUPPLY AND DESIGN SUBMITTAL

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ROMTEC #225-976

PROJECT: **GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)**
SHEET TITLE: **STRUCTURAL CMU PLAN**

PROJECT #: **GAR03**
DATE: **12/20/24**
DRAWN BY: **JL**

REV.	DATE:	BY:

REVISIONS:

SHEET NO. **S8.1**

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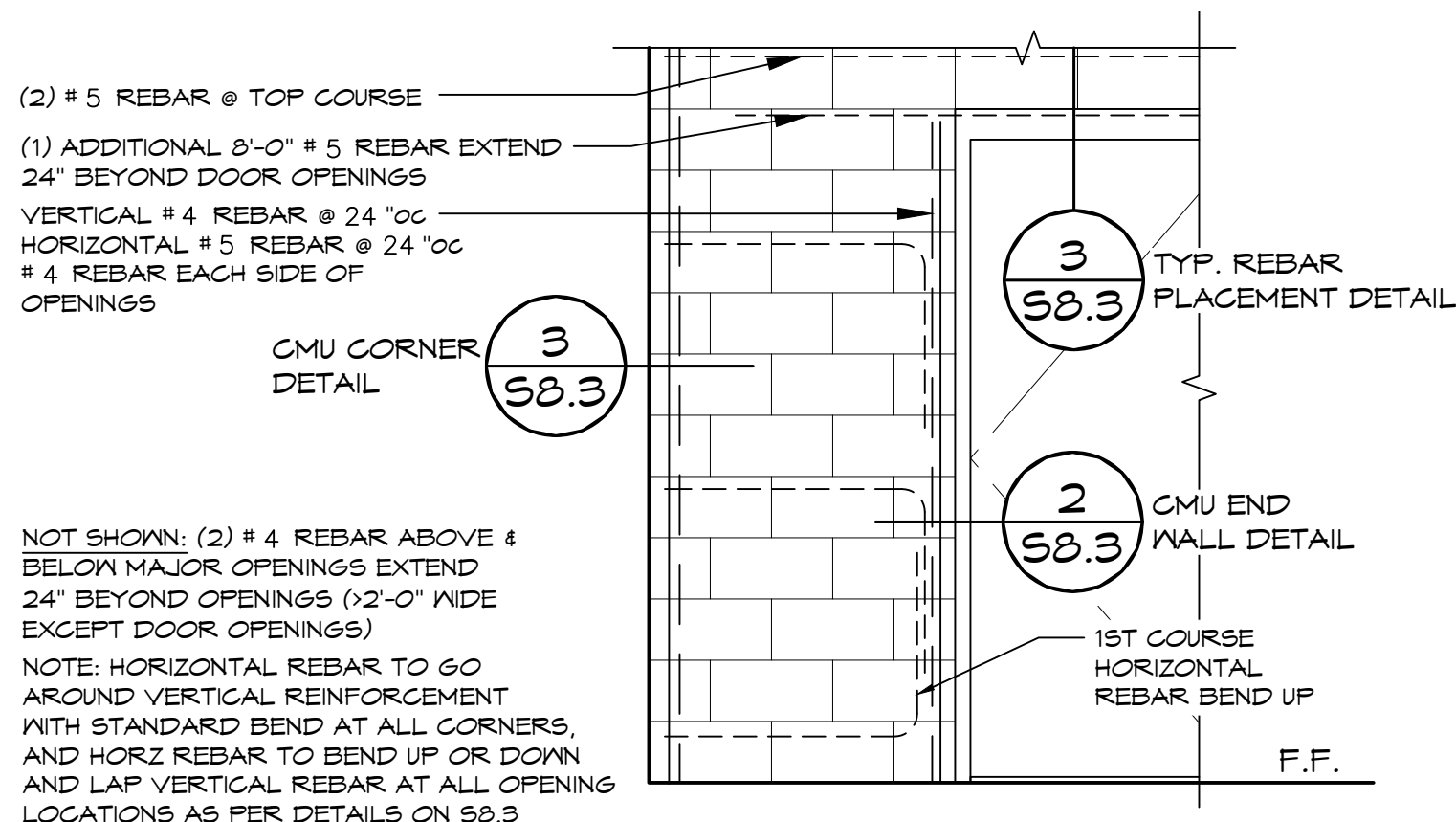
CMU REBAR SCHEDULE		
REBAR	MIN. LAP	BEND DIAMETER
#4	24"	3" MIN.
#5	30"	3-3/4" MIN.

CMU REBAR NOTES:

- BENDS: MIN. INSIDE BEND DIAMETER SHALL BE NOT LESS THAN $6d$ AS PER TMS 402-16 SECTION 6.1.8.2
- SPLICES: LAP SPLICES ARE PERMITTED AS PER TMS 402-16 SECTION 6.1.6.1.1

PIPES INSTALLED THROUGH CMU WALL NOTES:

- SUPPLY: THE FIXTURE SUPPLY LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE AND THE PORTION OF PIPE LOCATED IN CMU WALL SHALL BE WRAPPED WITH 10MIL BLACK TAPE
- WASTE PIPE: THE FIXTURE WASTE LINE SHOULD BE BORED A 1/2" LARGER THAN REQUIRED LINE SIZE.



1 CMU REBAR LAYOUT DETAIL

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

PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU REBAR LAYOUT

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

REVISIONS:

SHEET NO. S8.2



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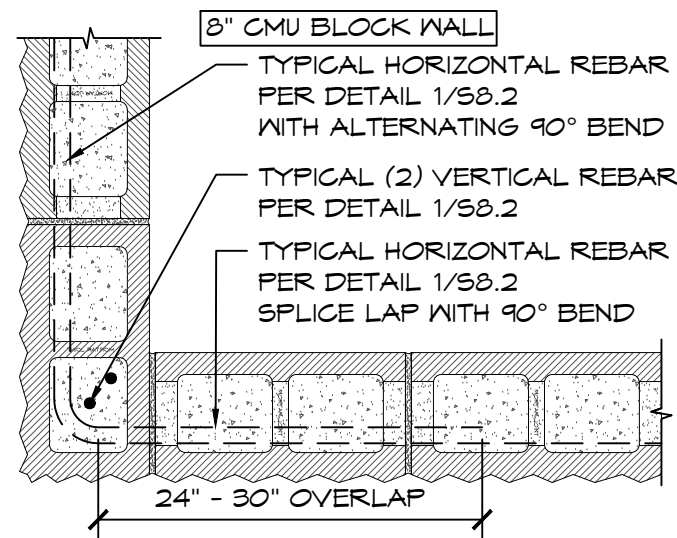
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PROJECT: **GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)**
SHEET TITLE: **GARDEN GROVE, CA
STRUCTURAL CMU DETAILS**

PROJECT #: **GAR03**
DATE: **12/20/24**
DRAWN BY: **JL**
REV. DATE: BY:
REVISIONS:

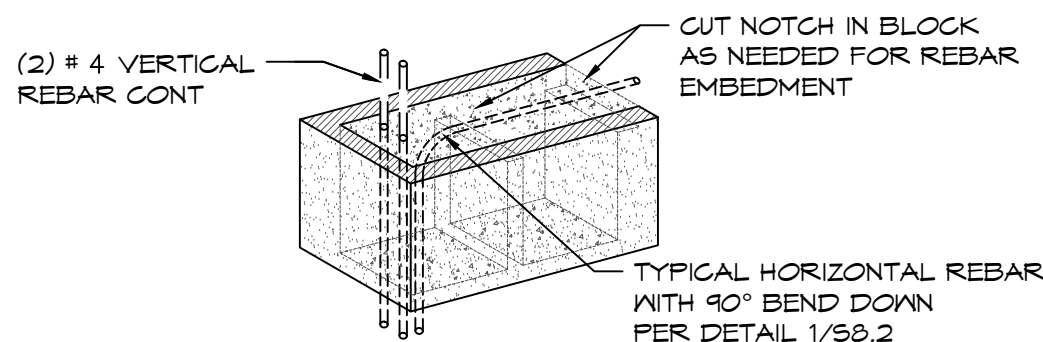
SHEET NO. **58.3**

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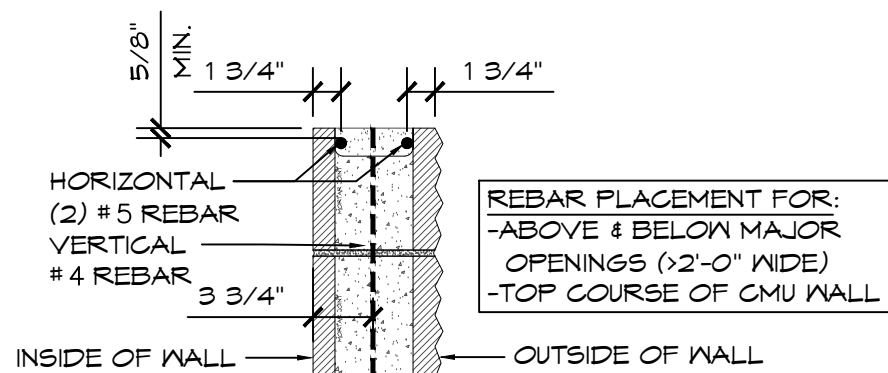
1 MORTAR JOINT CMU CORNER DETAIL

SCALE: 1" = 1'-0"



2 MORTAR JOINT CMU WALL END DETAIL

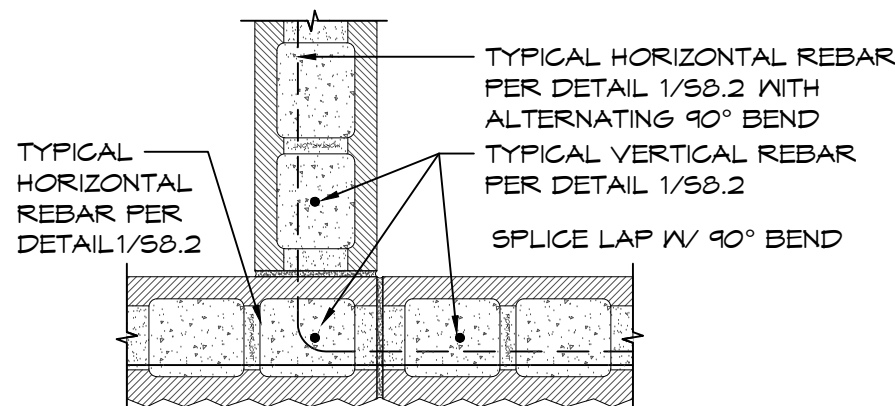
SCALE: 1" = 1'-0"



NOTE: REBAR INSTALLED AS PER
TMS 602-13/ACI 530.1-13/ASCE 6-13

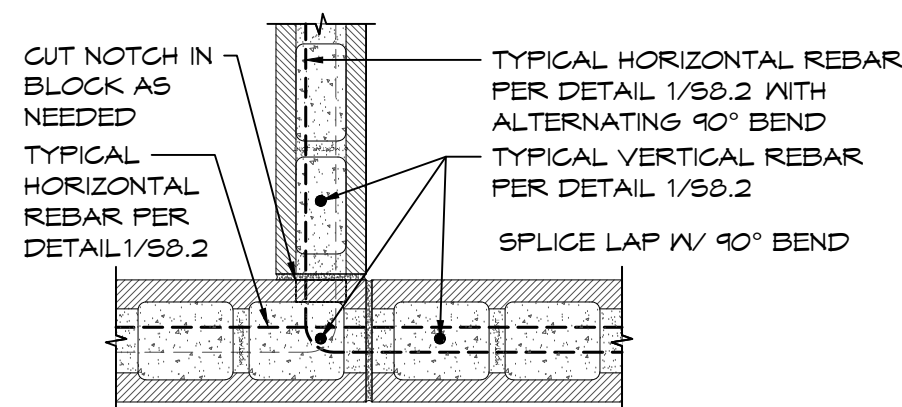
3 8" CMU REBAR PLACEMENT

SCALE: 1" = 1'-0"



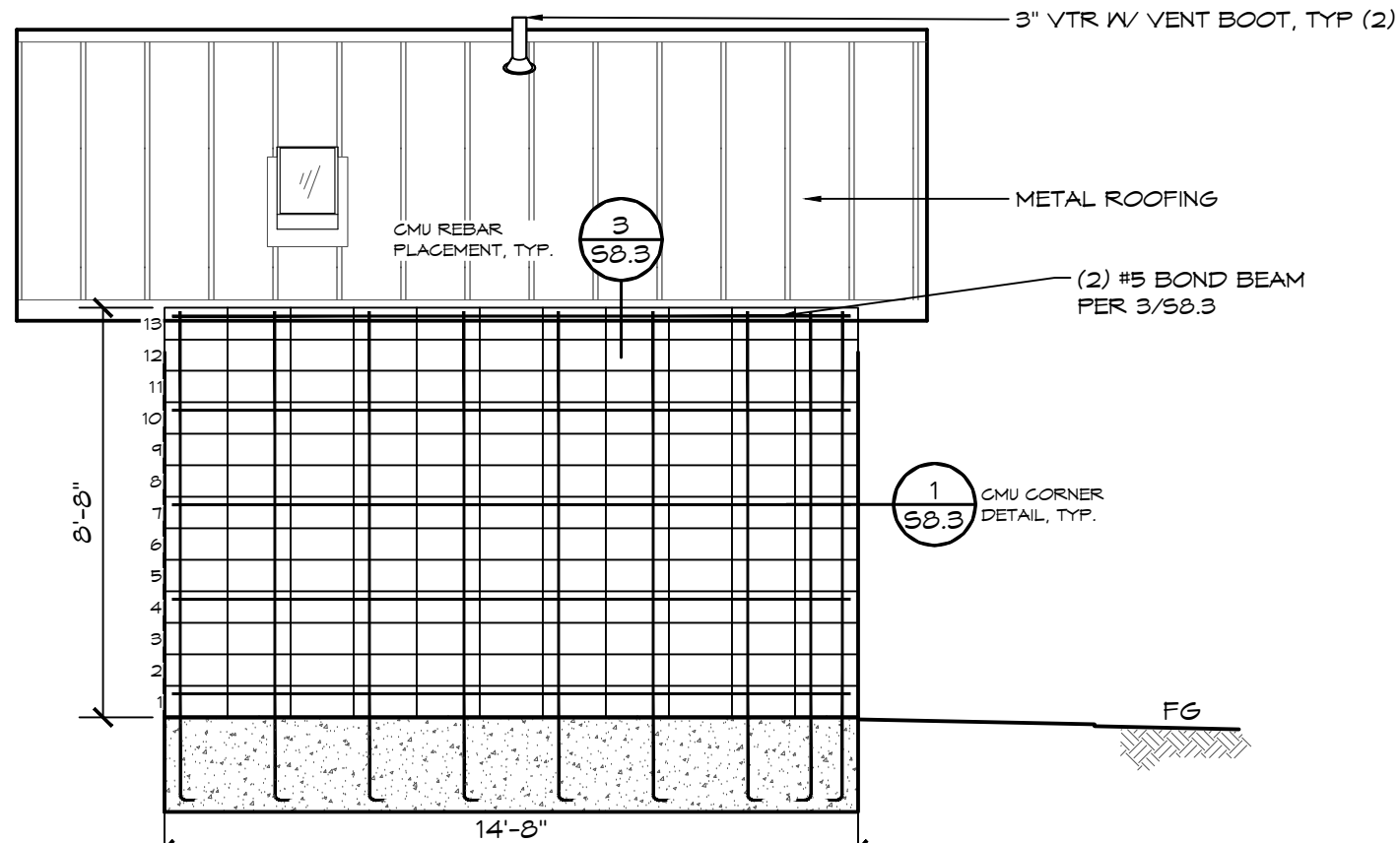
4 8" TO 8" MORTAR JOINT CMU INTERSECTION DETAIL

SCALE: 1" = 1'-0"

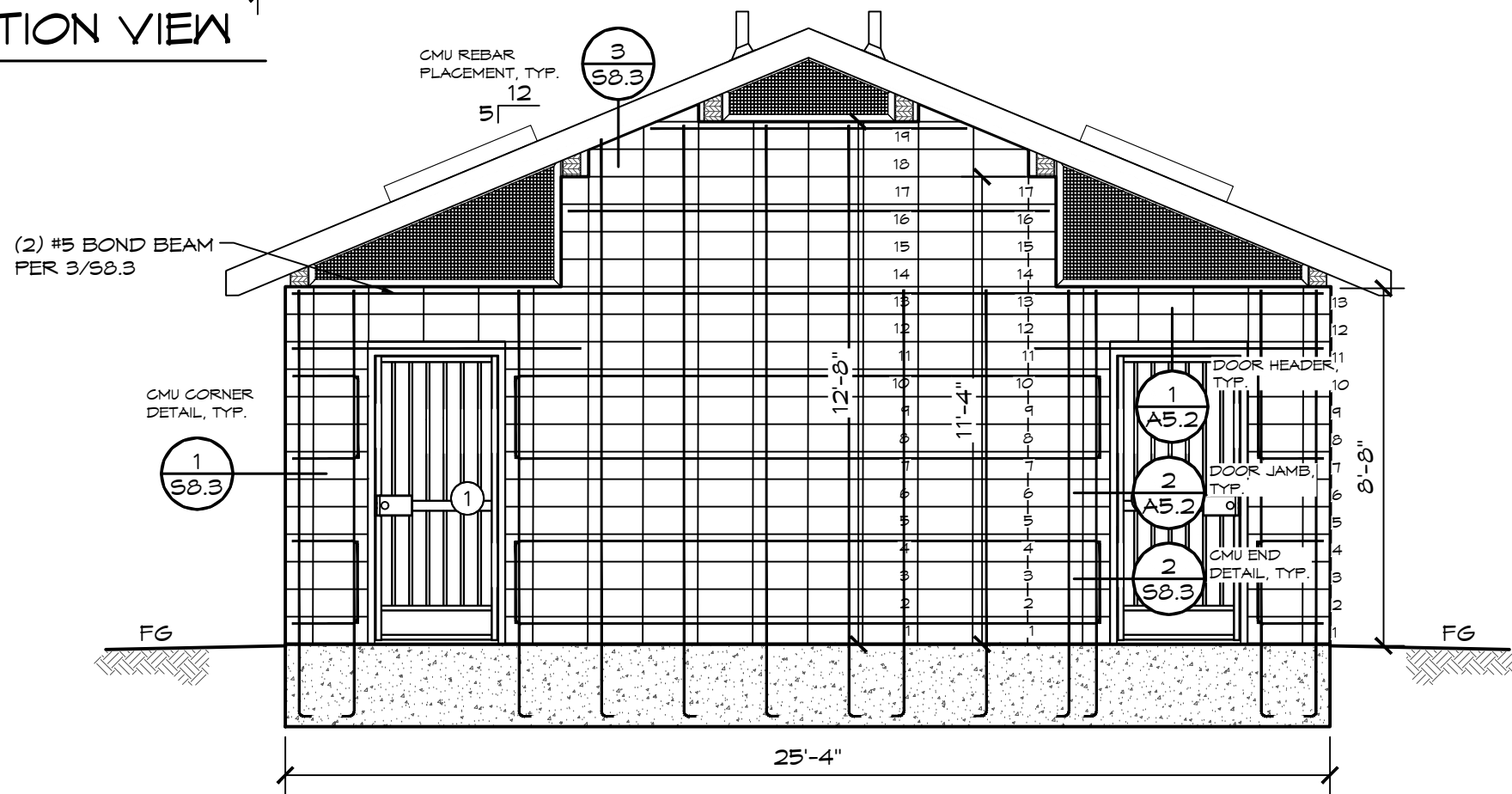


5 6" TO 8" MORTAR JOINT CMU INTERSECTION DETAIL

SCALE: 1" = 1'-0"



A CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"



B CMU ELEVATION VIEW
SCALE: 1/4" = 1'-0"



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ROMTEC #225-976

PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: GAR03
DATE: 12/20/24
DRAWN BY: JL
REV. DATE: BY:
REVISIONS:

SHEET NO. S8.4

3" VTR W/ VENT BOOT, TYP (2)

METAL ROOFING

(2) #5 BOND BEAM
PER 3/S8.3

CMU CORNER
DETAIL, TYP.

FG

CMU REBAR
PLACEMENT, TYP.

CMU ELEVATION VIEW

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

(2) #5 BOND BEAM
PER 3/S8.3

CMU REBAR
PLACEMENT, TYP.

CMU CORNER
DETAIL, TYP.

FG

DOOR HEADER,
TYP.

DOOR JAMB,
TYP.

CMU END
DETAIL, TYP.

CMU ELEVATION VIEW

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



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ROMTEC #225-976

PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE: STRUCTURAL CMU ELEVATION VIEWS

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

REVISIONS:

SHEET NO.

S8.5



07/24/2025

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ROMTEC #225-976

PROJECT:
**GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)**

GARDEN GROVE, CA

SHEET TITLE:
ROOF FRAMING PLAN

PROJECT #: **GAR03**

DATE: **12/20/24**

DRAWN BY: **JL**

REV. DATE BY:

2 07/17/2025 JL

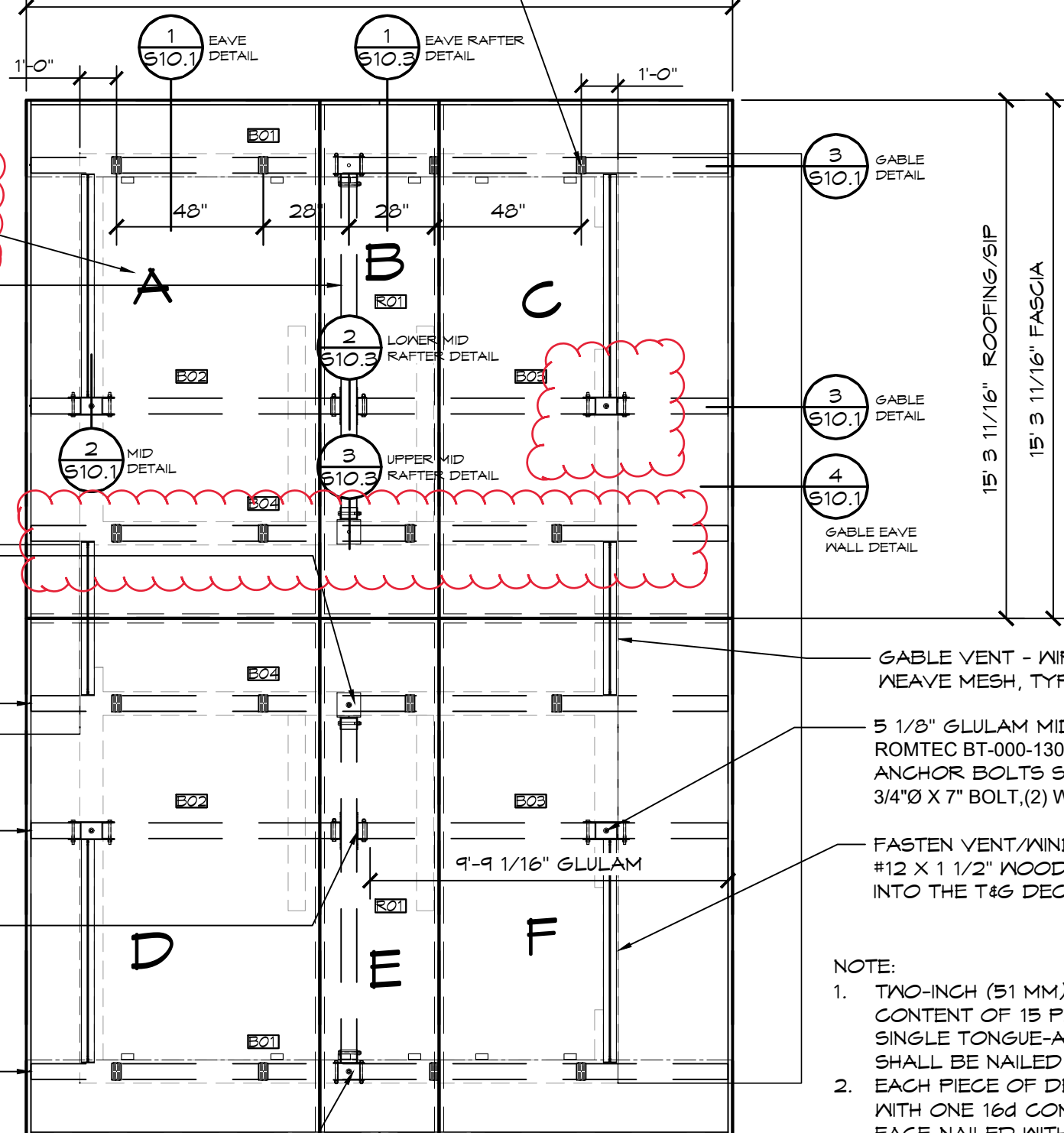
REVISIONS:

SHEET NO.

S9.1

5 1/8" GLULAM WETSET HOLDOWN
BRACKET ROMTEC BT-000-1302 @ 48" O.C
OR AS NOTED; SECURE BEAM WITH (8)
1/4"Ø X 2 1/2" LAG SCREWS, TYP.

19'-3" OVERALL ROOFING



5 1/2" PREMIER SIP

5 1/8" X 9" GLULAM
RAFTER, TYP (2)

5 1/8" GLULAM RAFTER BRACKET
ROMTEC BT-050-1325 WETSET (2) USP
STB16 ANCHOR BOLTS SECURE BEAM
WITH (2) 3/4"Ø X 7" BOLT, (2) WASHERS &
NUT, TYP.

5 1/8" X 10 1/2" GLULAM
UPPER MID BEAM, TYP (2)

5 1/8" X 9" GLULAM
LOWER MID BEAM, TYP (2)

5 1/8" GLULAM RAFTER BRACKET
ROMTEC BT-050-1326 EACH SIDE,
SECURE RAFTER WITH (4) 3/4"Ø X 7"
BOLT, (2) WASHERS & NUT, TYP. SECURE
BEAM WITH (2) 3/4"Ø X 7" BOLT, (2)
WASHERS & NUT, TYP

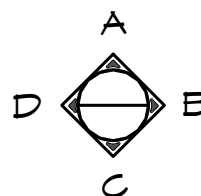
5 1/8" X 7 1/2" GLULAM
EAVE BEAM, TYP (2)

5 1/8" GLULAM RAFTER BRACKET
ROMTEC BT-000-1307 WETSET (2) USP
STB16 ANCHOR BOLTS SECURE
BEAM WITH (4) 3/4"Ø X 7" BOLT, (2)
WASHERS & NUT, TYP.

1

ROOF FRAMING PLAN

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



NOTE:

- TWO-INCH (51 MM) DECKING SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 15 PERCENT. DECKING SHALL BE MACHINED WITH A SINGLE TONGUE-AND-GROOVE PATTERN. EACH DECKING PIECE SHALL BE NAILED TO EACH SUPPORT.
- EACH PIECE OF DECKING SHALL BE TOENAILED AT EACH SUPPORT WITH ONE 16d COMMON NAIL THROUGH THE TONGUE AND FACE-NAILED WITH ONE 16d COMMON NAIL OR AS NOTED OTHERWISE.
- CONTROLLED RANDOM PATTERN THERE SHALL BE A MINIMUM DISTANCE OF 24 INCHES (610 MM) BETWEEN END JOINTS IN ADJACENT COURSES. THE PIECES IN THE FIRST AND SECOND COURSES SHALL BEAR ON AT LEAST TWO SUPPORTS WITH END JOINTS IN THESE TWO COURSES OCCURRING ON ALTERNATE SUPPORTS. A MAXIMUM OF SEVEN INTERVENING COURSES SHALL BE PERMITTED BEFORE THIS PATTERN IS REPEATED.



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PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE:

ROOF CONNECTION DETAILS

PROJECT #: GAR03

DATE: 12/20/24

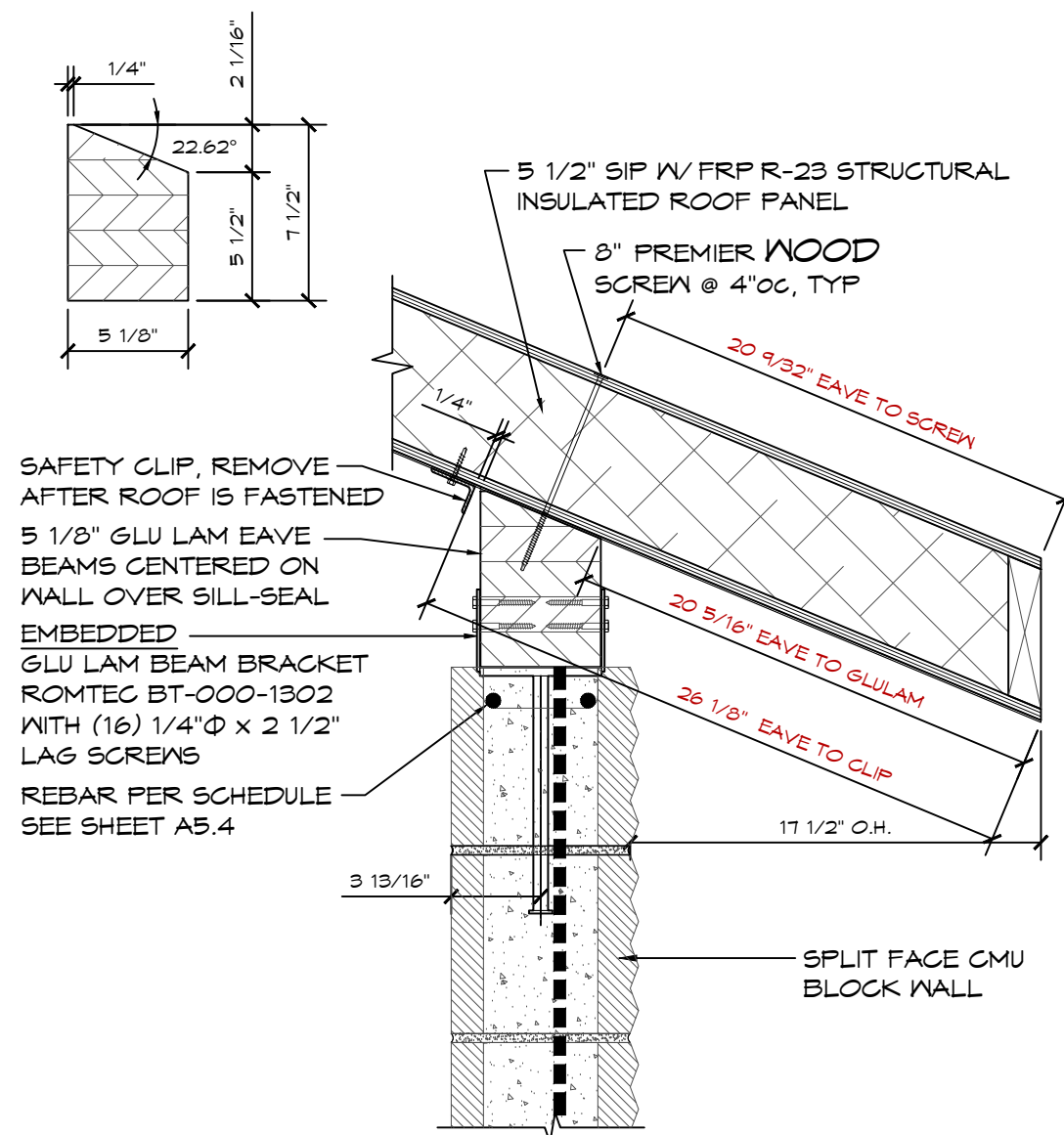
DRAWN BY: JL

REV. DATE: BY:

2 07/17/2025 JL

REVISIONS:

SHEET NO. **S10.1**



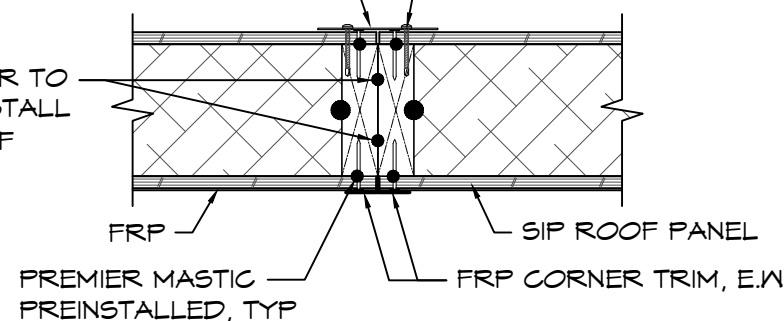
1 EAVE CONNECTION DETAIL

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

18 GA SHEET METAL 4" MIN X PANEL LENGTH CENTERED ON CONNECTION

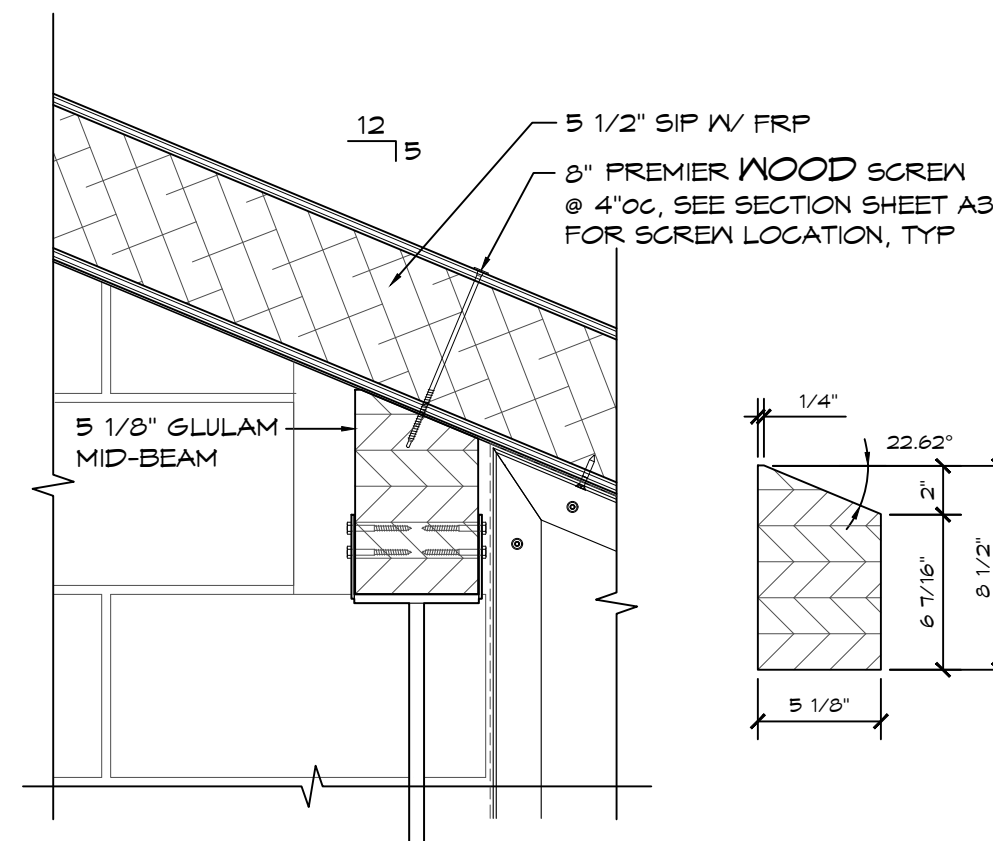
#12 x 2" PHILLIPS HEAD SELF-TAPPING SCREW @ 4" OC

CONTRACTOR TO SUPPLY & INSTALL (2) BEADS OF SEALANT



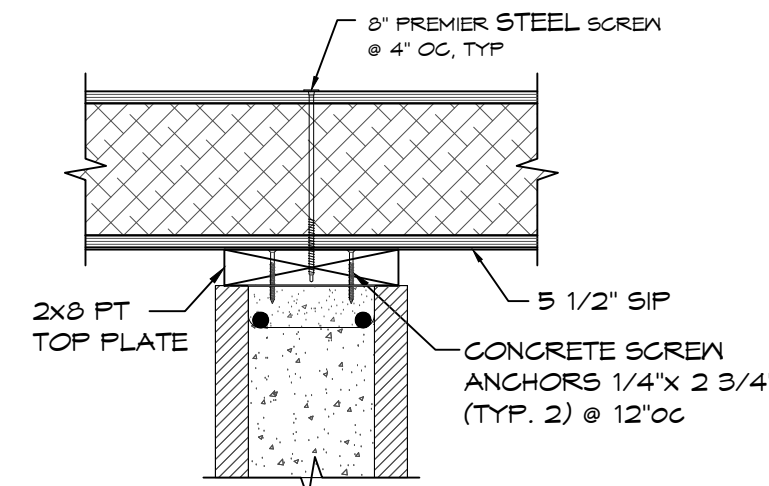
2 SIP ROOF PANEL TO PANEL CONNECTION DETAIL

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



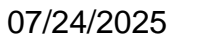
3 MID-BEAM CONNECTION DETAIL

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

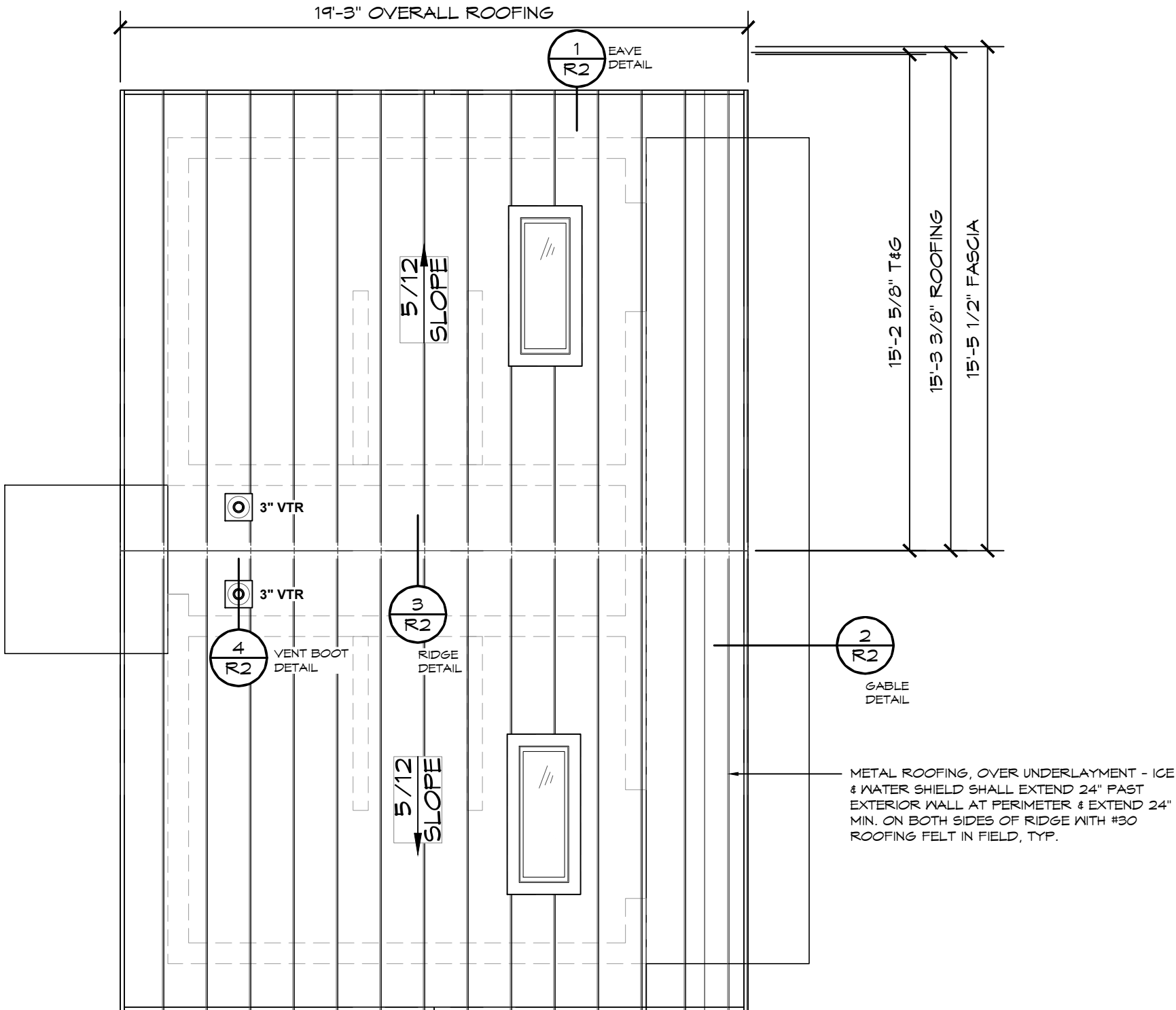


4 GABLE WALL DETAIL

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

[illegible]

SHEET NO. S10.2



NOTE:
FLASHING SECTIONS OVER
10'-6" IN LENGTH SHALL BE
OVERLAPPED BY 4" AND
EVERY EFFORT MUST BE
MADE TO ENSURE A
SYMMETRICAL APPEARANCE

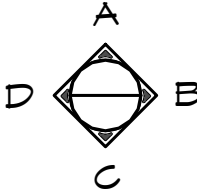


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1 ROOFING PLAN
SCALE: 1/4" = 1'-0"



PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: ROOFING PLAN

PROJECT #: GAR03
DATE: 12/20/24

DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:
R1

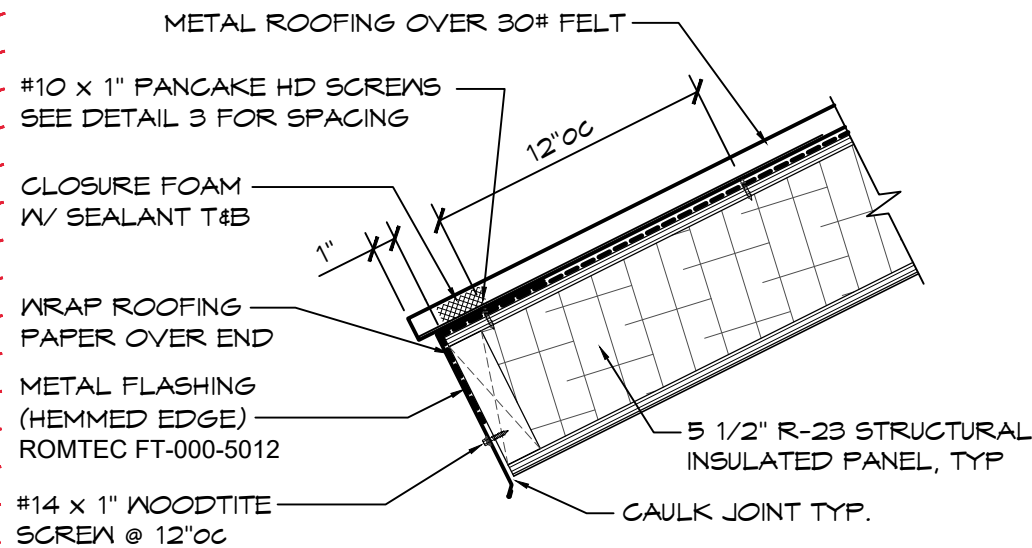
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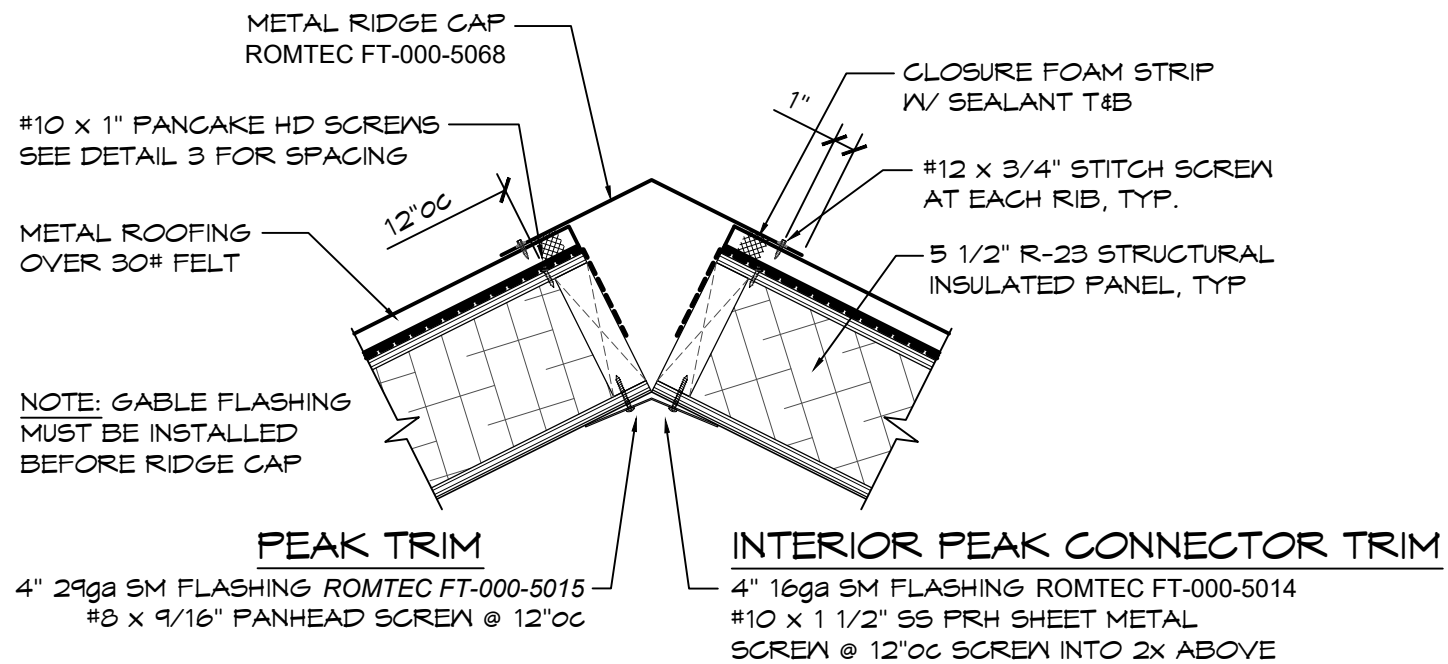


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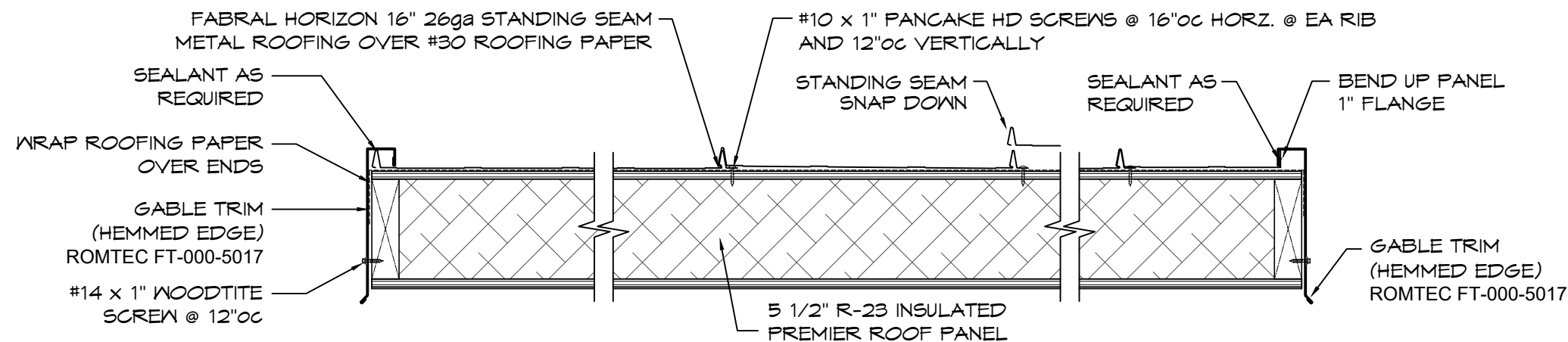
1 EAVE ROOFING DETAIL

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



2 RIDGE ROOFING DETAIL

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



3 GABLE ROOFING DETAIL

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

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)
SHEET TITLE: ROOFING DETAILS
PROJECT #: GAR03
DATE: 12/20/24
DRAWN BY: JL
REV. DATE: BY:
2 07/17/2025 JL
REVISIONS:

SHEET NO.

R2



CONTRACTOR SHALL INSTALL SKYLIGHT IN STRICT ACCORDANCE WITH INSTALLATION REQUIREMENTS OF SKYLIGHT MANUFACTURER.

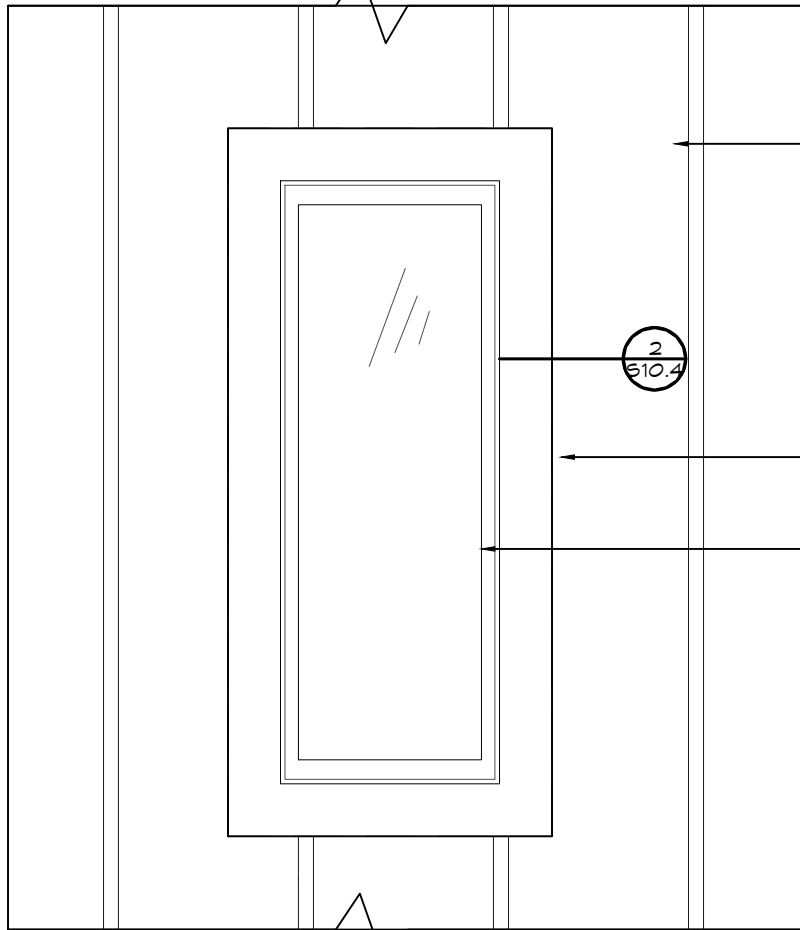
INSTALLER SHALL LOCATE & FOLLOW DIRECTIONS PROVIDED FROM MANUFACTURER



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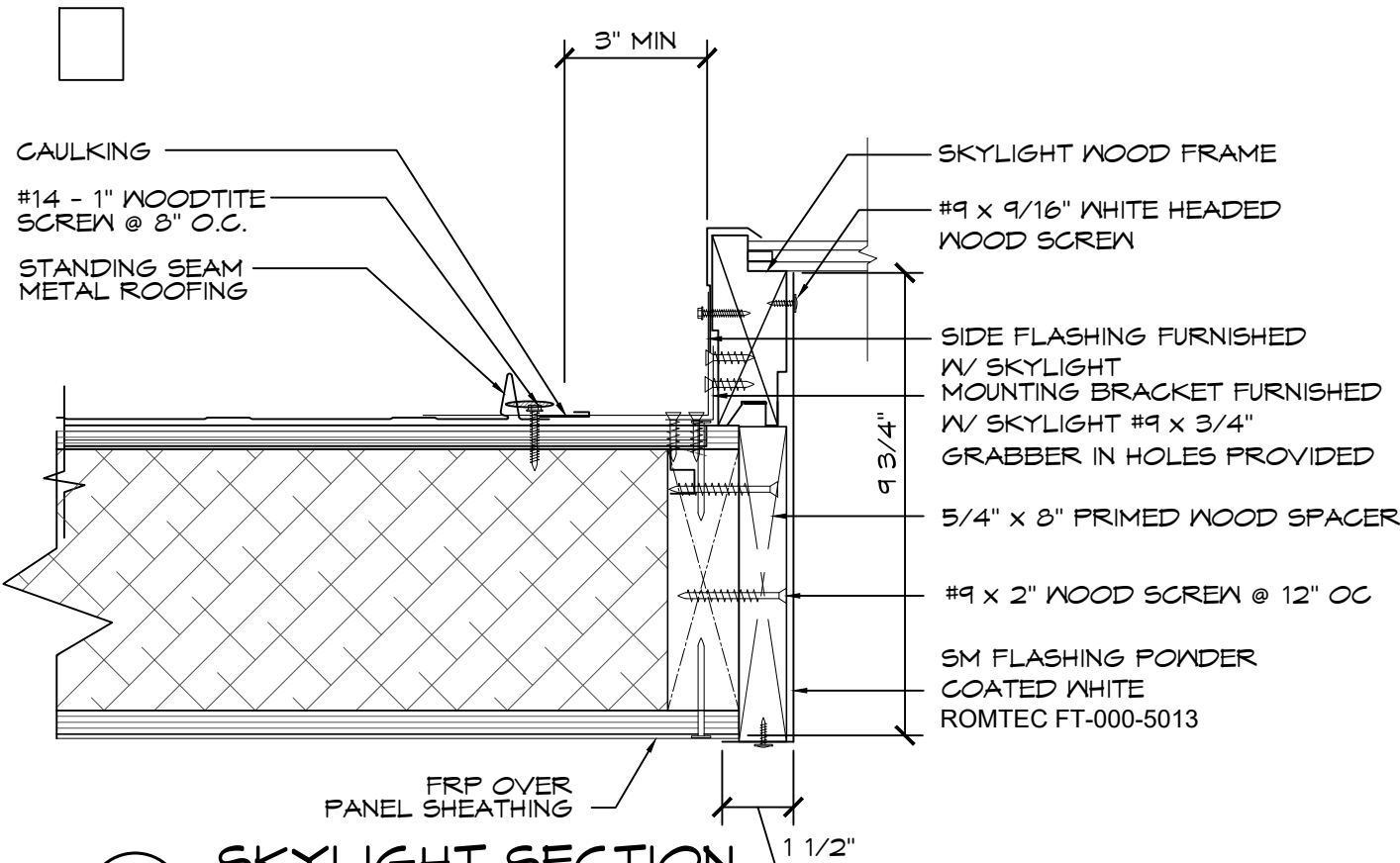


STANDING SEAM METAL ROOFING

SIDE FLASHING, TYP

15" x 46" VELUX FS-A06-2004 SKYLIGHT

1 SKYLIGHT, CURB & FLASHING
SCALE: 3/4" = 1'-0"



2 SKYLIGHT SECTION
SCALE: 3/4" = 1'-0"

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: SKYLIGHT DETAILS

PROJECT #:	GAR03		
DATE:	12/20/24		
DRAWN BY:	JL		
REV.	DATE	BY:	
2	07/17/2025	JL	

REVISIONS:
R3

SHEET NO.

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CALIFORNIA PLUMBING CODE (BASED OFF UPC)

FIXTURE TYPE		SEWER	VENT	COLD WATER	HOT WATER	MIXED WATER	NO OF FIXT.	W. FIXT. UNITS/EA	TOTAL W. FIXT UNITS	DR. FIXT UNITS	
WC-1	ADA TOILET	3"	2"	1"	X	-	2	40,30,20,15,10	70	4	8
UR-1	ADA URINAL	2"	1 1/2"	3/4"	X	-	2	20, 15, 10, 8, 5	35	2	4
LV-1	HAND SINK	1 1/4"	1 1/2"	1/2"	X	-	2	1	2	1	2
HB-1	WALL HYDRANT ANTI-FREEZE	X	X	3/4"	X	-	2	2.5	5	NA	NA
HB-2	WALL FAUCET	X	X	1/2"	X	-	1	1	1	NA	NA
FD-1	FLOOR DRAIN	3"	1 1/2"	X	X	-	1	NA	NA	2	2
FD-2	FLOOR DRAIN (EMERGENCY)	3"	1 1/2"	X	X	-	2	NA	NA	NA	NA
TOTAL									113	TOTAL	16

SIOUX CHIEF
(3" W/6" STRAINER)

GENERAL PLUMBING NOTES:

1. ALL PIPE (WATER, SEWER, VENT), JOINTS, AND WORK SHALL CONFORM TO INTERNATIONAL PLUMBING CODE, STATE CODES, COUNTY AND LOCAL CODES AND ORDINANCES.
2. CONTRACTOR TO CONFIRM LOCATIONS OF SEWER AND WATER TIE-INS
3. CONTRACTOR TO SOLIDLY BRACE ALL PIPING TIGHT AGAINST WALLS. FOR LONG OR COMPLICATED RUNS, SECURELY MOUNT USING UNISTRUT, IN STRAIGHT AND UNIFORM MANNER FOR FINISHED APPEARANCE. PIPING SHOWN IS DIAGRAMMATIC ONLY AND ACTUAL DESIGN BY CONTRACTOR.
4. CONTRACTOR MAY CHANGE PIPE SIZING IN FIELD TO PROVIDE ADEQUATE WATER PRESSURE TO ALL PLUMBING FIXTURES AS APPROVED BY INSPECTOR. ROMTEC BUILDINGS ARE DESIGNED TO HAVE 40-60 PSI WATER PRESSURE FOR THE PLUMBING FIXTURES. IF THE SITE HAS A PRESSURE OTHER THAN THIS, IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE THE PRESSURE REDUCER OR BOOSTER PUMP NECESSARY.
5. CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR GRAVITY DRAINING ALL PLUMBING FIXTURES TO SEPTIC OR SANITARY SEWER SYSTEM. INSTALLER TO PROVIDE A CLEAN-OUT BENEATH ALL SINKS AND LAVATORY AS REQUIRED BY CODE.
6. CONTRACTOR TO DETERMINE AND PROVIDE MEANS FOR SUPPLYING WATER TO ALL PLUMBING FIXTURES AND INSTALL WATER SERVICE SHUTOFF VALVE; TYPICALLY LOCATED WITHIN THE MECHANICAL ROOM.
7. IF THE SITE REQUIRES AN ACCESSIBLE BACK FLOW PREVENTER AND/OR PRESSURE REDUCER OR BOOSTER PUMP IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE.
8. WHEN INCLUDED WATER HEATERS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ALL STATE, COUNTY, AND LOCAL CODES AND ORDINANCES.
9. FLUSHOMETERS ASSOCIATED WITH TOILETS USE NO MORE THAN 1.6 GALLONS PER FLUSH. FLUSHOMETERS ASSOCIATED WITH URINALS USE NO MORE THAN 1.0 GALLON PER FLUSH. BOTH OF THE ABOVE SHALL MEET PERFORMANCE STANDARDS BY ANSI A112.19.2 H&S CODE, SECTION 17921.3(B)
10. WHEN FIXTURES REQUIRE WALL CARRIERS THE WALL CARRIER SHALL BE SUPPLIED BY CONTRACTOR.
11. UNLESS SPECIFIED IN THE ROMTEC SUBMITTAL, ROMTEC DOES NOT SUPPLY INSULATION OR "FREEZE PROTECTION" FOR PLUMBING. "THE OWNER MAY NEED TO WINTERIZE THEIR BUILDING."



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ROMTEC #225-976

PROJECT:
GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

SHEET TITLE:
GARDEN GROVE, CA
PLUMBING SCHEDULE

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

REVISIONS:

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SHEET NO.

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WATER-PLUMBING LEGEND

—W— COLD WATER

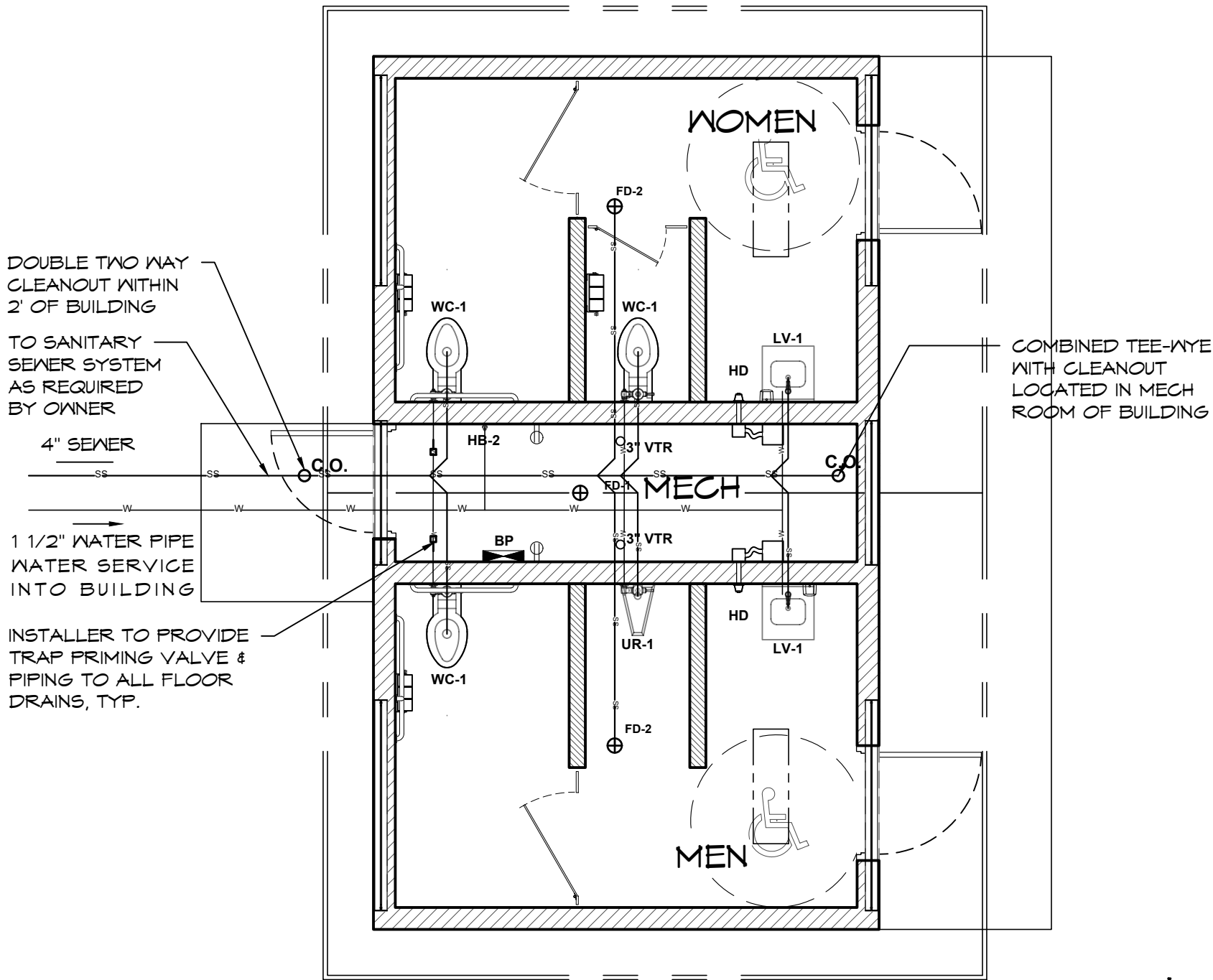
SEWER-PLUMBING LEGEND

—SS— SANITARY SEWER

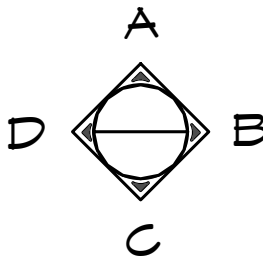
*FIXTURES ARE SYMBOLIC ONLY,
REFER TO SPECIFICATIONS &
PRODUCT LITERATURE FOR THE
FIXTURE ROUGH-IN MEASUREMENTS &
INSTALLATION DETAILS.

CPC NOTES

- NOTES:
1. WATER PIPE SIZE AND PRESSURE REQUIREMENTS MUST BE CONFIRMED BY PLUMBING CONTRACTOR BASED ON LOCAL SUPPLY.
 2. FIXTURE & FIXTURE CONNECTIONS ARE SYMBOLIC IN NATURE ONLY. REFER TO MANUFACTURER LITERATURE FOR EXACT FIXTURE SPECIFICATIONS.
 3. ALL SANITARY, DRAINAGE, WASTE, AND VENT LINES SCHEDULE 40 PVC OR ABS.
 4. ALL WATER LINES SHALL BE COPPER OR PER LOCAL CODE. NO JOINTS IN OR UNDER THE SLAB.
 5. WATER PIPE SIZING IS A MINIMUM SUGGESTION. PLUMBING CONTRACTOR WILL MAKE THE FINAL DETERMINATION.
 7. ALL FLOOR SINKS AND DRAINS SHALL HAVE TRAP PRIMERS AS NOTED IN PLANS, PER CPC 1007.0



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



PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)
GARDEN GROVE, CA
SHEET TITLE: PLUMBING WATER PLAN

PROJECT #: GARO

DATE: 12/20/25

DRAWN BY: JL

REV.	DATE:	BY:

REVISIONS:

SHEET NO. P2

GENERAL ELECTRICAL NOTES:






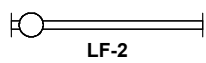

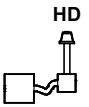

- 1. ALL WORK SHALL COMPLY WITH 2022 CALIFORNIA ELECTRICAL CODE AND LOCAL CODES.
- 2. OWNER TO PROVIDE TEMPORARY POWER AS REQUIRED DURING COURSE OF CONSTRUCTION.
- 3. ELECTRICAL SERVICE EQUIPMENT SUPPLIED BY OTHERS UNDER SEPARATE SUBMITTAL.
- 4. THE AIC VALUES SHOWN ON THESE ROMTEC PLANS ARE TO BE MADE CLEARLY AVAILABLE TO THE ELECTRICAL ENGINEER OF RECORD THAT WILL DESIGN THE MAIN SERVICE.
- 5. THE INSTALLER SHALL FURNISH & INSTALL SPECIFICATION GRADE CIRCUIT BREAKERS, WIRING, CONDUIT, SWITCHES AND GFI RECEPTACLES THROUGHOUT. INTERIOR RECEPTACLES & SWITCHES SHALL HAVE STAINLESS STEEL COVERPLATES AND EXTERIOR RECEPTACLES SHALL BE INSTALLED WITH A WEATHERPROOF IN USE COVER.
- 6. ELECTRICAL CONDUIT IS TO BE RUN WITHIN THE WALL WHEN POSSIBLE, EXCEPT IN THE MECHANICAL ROOM.
- 7. FOR MECHANICAL ROOM ALL EXPOSED CONDUIT IS TO BE SURFACE MOUNTED AND RUN TIGHT TO CEILING AS REQUIRED.
- 8. COORDINATE AC OUTLET HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.



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DOUBLE 'E' ENGINEERING, LLC
Myrtle Point, Oregon
www.ee-engineering.com

ELECTRICAL SCHEDULE & SYMBOL LEGEND:

QTY	SYMBOL	DESCRIPTION			
1		200 AMP BREAKER PANEL	1	P	POWER SUPPLY FOR MAGNETIC LOCK SYSTEM HAGER: 2903 - (0.9A)
PER PLAN		HOME RUN TO BREAKER PANEL	1	T	DIGITAL 7 DAY TIMER FOR MAGNETIC LOCK SYSTEM INTERMATIC: ST01
PER PLAN		110 VAC DUPLEX RECEPTACLE, GROUND FAULT PROTECTED MOUNTED MIN OF 15" TO MAX OF 48" ABOVE THE FLOOR CONFIRM EXACT LOCATION & HEIGHT WITH OWNER OR OWNERS REPRESENTATIVE.	2	E	EXIT SWITCH (MANUAL EXIT SWITCH) HAGER: 2977
1		SWITCH, SINGLE POLE MOUNTED A MAX OF 48" ABOVE THE FLOOR	2	S	PIR EGRESS SENSOR (AUTOMATIC EXIT SWITCH) HAGER: 2-679-0612
3		LIGHT FIXTURE, WALL MOUNT UL LISTED TO U.S. SAFETY STANDARDS FOR ALL WET LOCATIONS WALL MOUNT, LED DOWN LIGHT, LITHONIA OLLND: (9W) (.08A)	2	M	MAGNET LOCK HAGER: 2942
5		48" LED VAPOR TIGHT CEILING/WALL MOUNT LIGHT LITHONIA CSVT L48 5000LM 40K 80CRI 4,298LM 40K: (35.3 W) (.2942 A)			
1		PHOTO CELL, w/ WEATHER PROOF COVER			
2		HAND DRYER FASTAIRE, HD-03: (900W) (120V) (7.5A)			
1		24HR AUTOMATIC IN-WALL MULTI-PROGRAM TIMER MOUNTED IN MECH ROOM			

PROJECT: GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

SHEET TITLE: GARDEN GROVE, CA
ELECTRICAL SCHEDULE

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

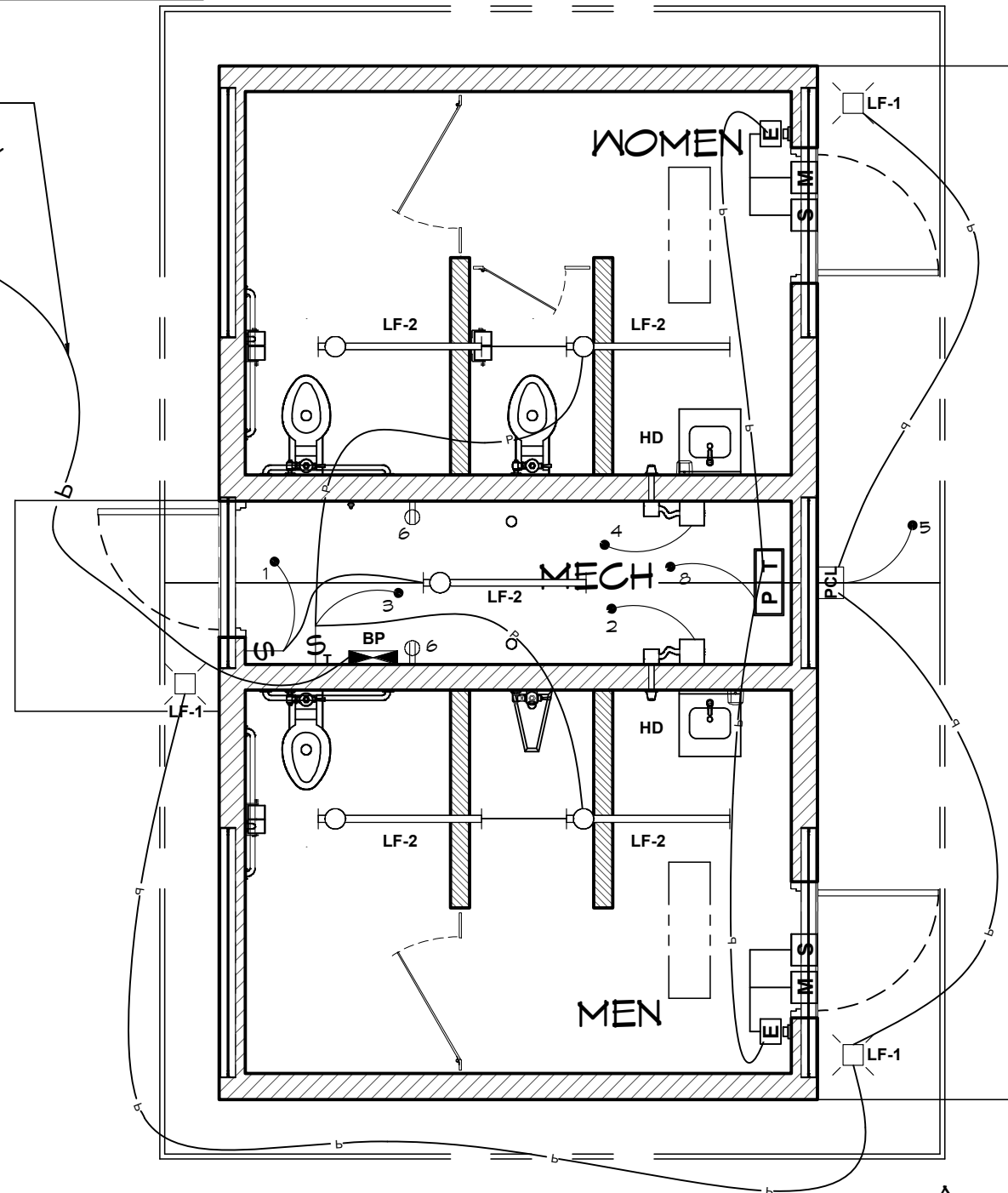
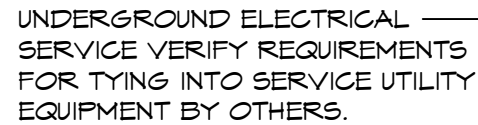
REVISIONS:

E1

SHEET NO.

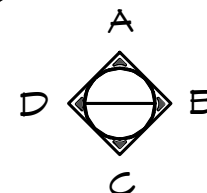
NOTE:
SEE SHEETS A1.4, A2.1, & A2.2
FOR LOCATIONS - HEIGHTS OF
ELECTRICAL FIXTURES.

NOTE: BREAKER PANEL MAY BE RELOCATED AT THE DISCRETION OF THE INSTALLER, PANEL MUST MAINTAIN ALL APPLICABLE CODE CLEARANCES.



1 ELECTRICAL PLAN

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



PROJECT:

GARDEN GROVE PARKS
(WESTHAVEN PARK RESTROOM)

GARDEN GROVE, CA

SHEET TITLE:

ELECTRICAL PLAN

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

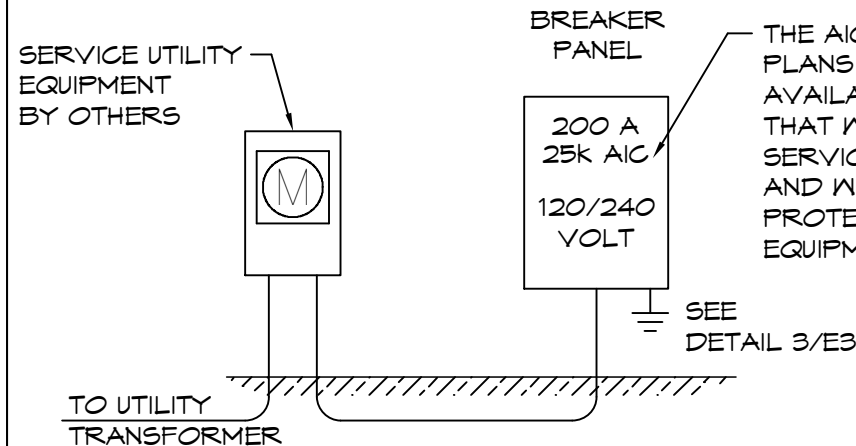
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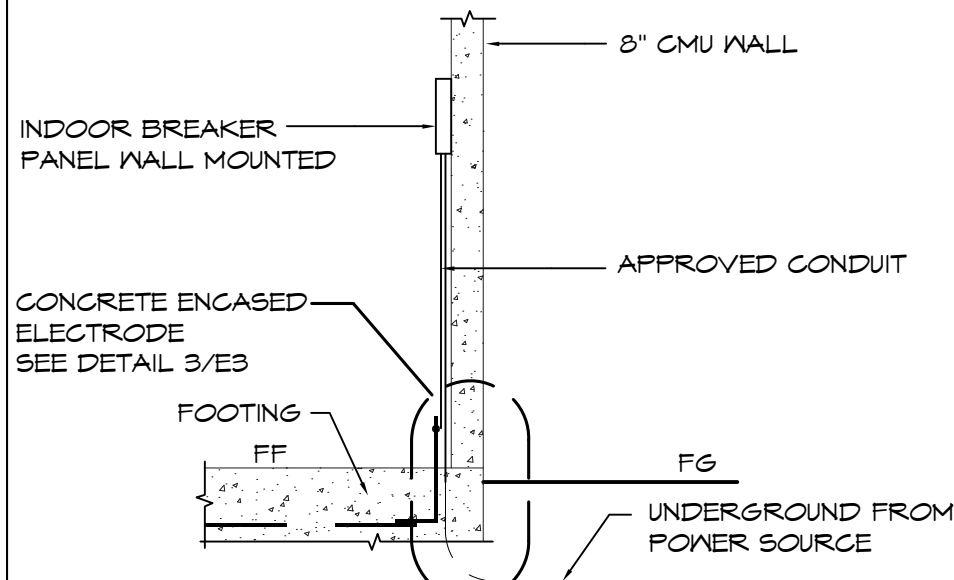
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SHEET NO.

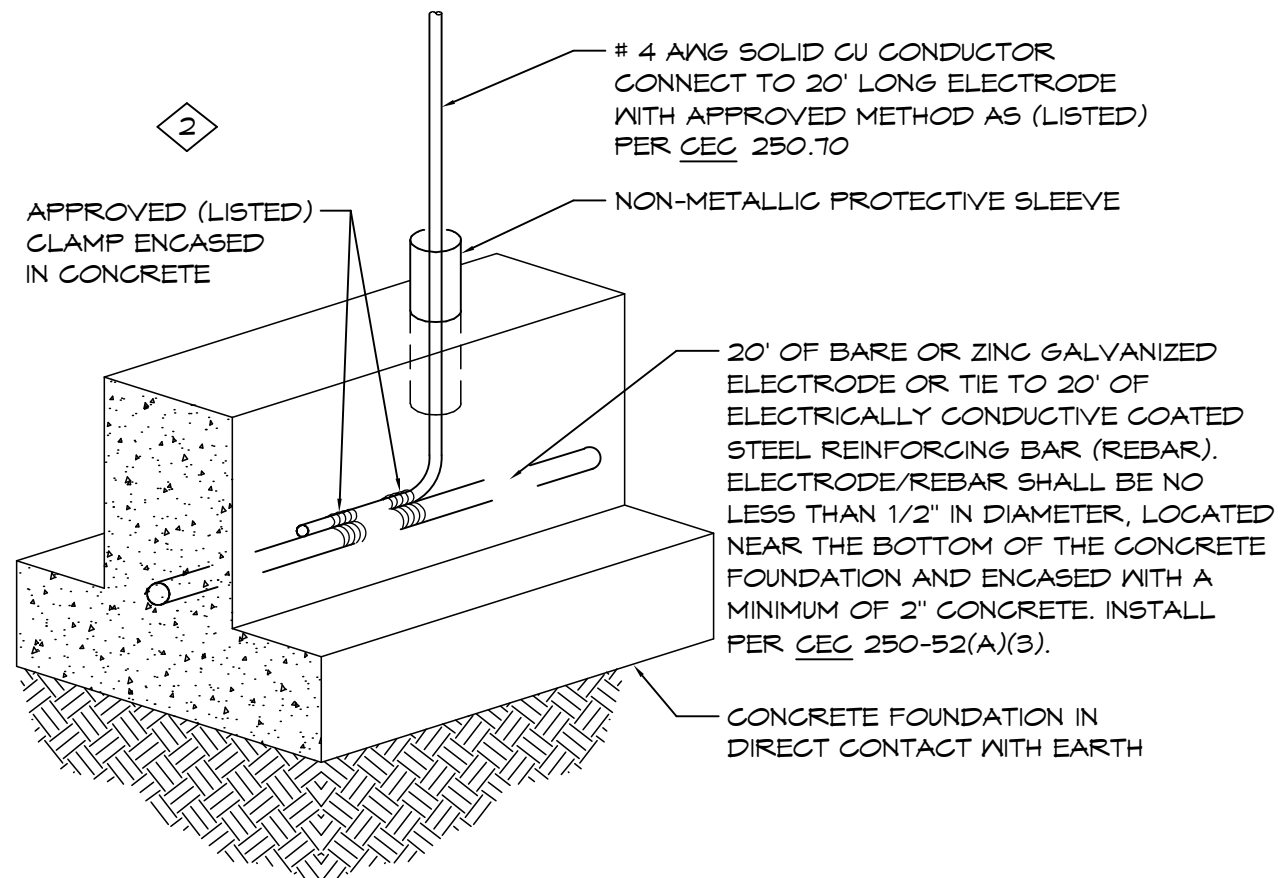
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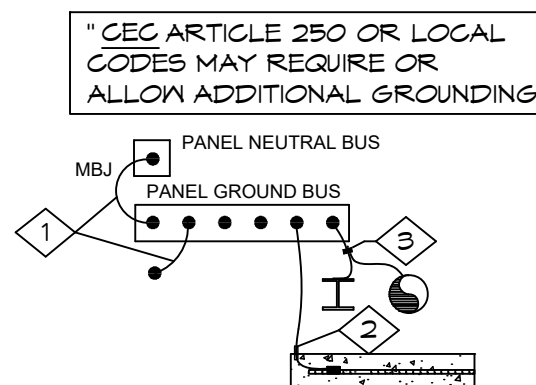
1 ONE-LINE DIAGRAM
SCALE: NONE



2 RISER DIAGRAM
SCALE: NONE



3 CONCRETE ENCASED SERVICE GROUND
SCALE: NONE



4 GROUNDING/BONDING DETAIL
SCALE: NONE

KEYED NOTES

- #4 CU MAIN BONDING JUMPER AND EQUIPMENT BONDING JUMPER PER CEC 250.28(D), 250.102(C) AND TABLE 250.66. DO NOT BOND THE NEUTRAL TO THE GROUND BUS IF THIS IS NOT A SERVICE ENTRANCE
- #4 CU TO CONCRETE ENCASED ELECTRODE PER CEC 250.52(A)(3), 250.66(B) AND 250.70
- WHERE REQUIRED, BOND PIPING SYSTEMS AND EXPOSED STRUCTURAL STEEL PER CEC 250.104



PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)
SHEET TITLE: ELECTRICAL RISER DETAILS
PROJECT #: GAR03
DATE: 12/20/24
DRAWN BY: JL
REV. DATE: BY:

REV.	DATE:	BY:

REVISIONS:

SHEET NO. E3



ROMTEC
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DOUBLE 'E' ENGINEERING, LLC
Myrtle Point, Oregon
www.ee-engineering.com

BREAKER PANEL																25K AIC RATING					
200 AMP				MAIN BREAKER				120 / 240 VOLTS								1-PHASE, 3-WIRE					
FEEDER SIZE:				ALUM: 3 #250 PH, #4 GRD, 2" C												SURFACE MOUNTED					
ELECTRICAL WIRING:				GROUNDED & BOND PER - CEC								USE XHHW-2 CU CONDUCTORS									
LOAD DISTRIBUTION				LTG	REC	MOTOR	DATA	HEAT	MISC		PH-A	PH-B	= TOTAL	AMPS		WITH SPARE	25%				
CONNECTED VA				239	360	1800			108		1358	1149	= 2507	11		3134	14				
DIVERSITY FACTOR				125%	100%	100%	100%	100%	100%				=								
DIVERSIFIED VA				299	360	1800			108		1382	1185	= 2567	12		3209	14				
PL	T		LOAD	VA	HP	PHW	GND	CON	BKR		PH		BKR	CON	GND	PHW	HP	VA	LOAD	T	PL
1	L		LTS: MECH	71		12	12	1/2	20	1	A	1	20	1/2	12	12		900	HAND DRYER	M	2
3	L		LTS: TOILETS	141		12	12	1/2	20	1	B	1	20	1/2	12	12		900	HAND DRYER	M	4
5	L		LTS: EXTERIOR	27		12	12	1/2	20	1	A	1	20	1/2	12	12		360	RECEPTACLE	R	6
7											B	1	20	1/2	12	12		108	ACCESS CONTROL	O	8
9											A										10
11											B										12
13											A										14
15											B										16
17											A										18
19											B										20
21											A										22
23											B										24
25											A										26
27											B										28
29											A										30

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ELECTRICAL PANEL SCHEDULE

SCALE: NONE

ROMTEC HAS DESIGNED THIS ELECTRICAL SYSTEM TO MEET THE NEEDS OF THIS SPECIFIC FACILITY. SITE DESIGN AND ENGINEERING BY OTHERS. OWNER IS RESPONSIBLE TO PROVIDE ALL SERVICE AND/OR UTILITY ENTRANCE DESIGN. FIELD VERIFY THAT SERVICE CONDUCTOR SIZE IS ADEQUATE FOR VOLTAGE DROP. ANY ADDITIONAL POWER OR LIGHTING LOADS NOT SHOWN ON THESE PLANS SHALL BE ENGINEERED BY OTHERS.

PROJECT: GARDEN GROVE PARKS (WESTHAVEN PARK RESTROOM)

SHEET TITLE: GARDEN GROVE, CA ELECTRICAL PANEL SCHEDULE

PROJECT #: GAR03

DATE: 12/20/24

DRAWN BY: JL

REV. DATE: BY:

REVISIONS:

E4

SHEET NO.