

GENERAL CONSTRUCTION NOTES

CODE:
VAULT STRUCTURAL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE PROVISIONS OF THE 2021 IBC AS ADOPTED BY THE CITY OF PUYALLUP, WASHINGTON.

GENERAL DETAILS:
THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL.

DISCREPANCIES:
THE CONTRACTOR SHALL NOTIFY ENGINEER UPON FINDING ANY DISCREPANCY OR OMISSION IN THE DRAWINGS OR SPECIFICATIONS.

SHORING & EXCAVATION:
THE CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES, INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES.

WALL BACKFILL:
PRIOR TO BACKFILLING VAULT WALLS THE CONTRACTOR SHALL HAVE PLACED THE LID PLANKS AND PROVIDED A MINIMUM OF 5 DAYS OF CURE ON THE PLANK VOID FILL.

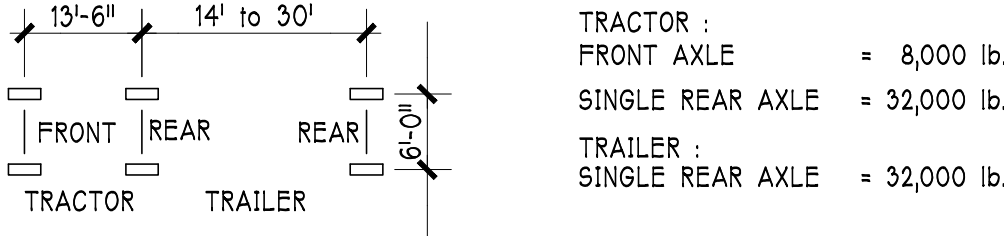
BACKFILL SOIL:
SEE THE GEOTECHNICAL REPORT FOR WALL BACKFILL MATERIAL REQUIREMENTS & PLACEMENT AND COMPACTION REQUIREMENTS. ALL COMPACTION OCCURRING WITHIN 5' OF THE WALL SHALL BE COMPLETED USING HAND OPERATED MACHINERY.

DESIGN CRITERIA

VERTICAL LOADS ON VAULT LID:

UNIFORM LIVE LOAD : = 150PSF

*HS20 TRUCK WHEEL LOADS :



TRACTOR :
FRONT AXLE = 8,000 lb.
SINGLE REAR AXLE = 32,000 lb.
TRAILER :
SINGLE REAR AXLE = 32,000 lb.

* DESIGN UNIFORM LIVE LOAD & TRUCK WHEEL LOADS TO BE APPLIED INDEPENDENTLY AND IN COMBINATION WITH THE SOIL COVER DEAD LOAD.

RAISED METAL GTRATING:

100PSF UNIFORM PEDESTRIAN LIVE LOAD.

IMPACT & FATIGUE:

DUE TO THE LOW SPEEDS OF SERVICE VEHICLES OVER THE LID, AND THE SOIL COVER OVER THE LID, INCREASES IN VEHICLE LOADS TO ACCOUNT FOR IMPACT & FATIGUE ARE NOT REQUIRED.

SOIL COVER FOR SUBSTRUCTURE DESIGN:

THE SUBSTRUCTURE WAS DESIGNED FOR A SOIL COVER OF 15FT TYP OVER THE ENTIRE VAULT RISING TO 4.5FT AT THE WESTERN END OF THE VAULT BELOW THE ACCESS DRIVE.

FOUNDATION DESIGN:
FOUNDATION DESIGN IS BASED ON THE FOLLOWING VALUES PROVIDED BY THE EARTH SOLUTIONS NW IN THEIR GEOTECHNICAL REPORT DATED 11-09-2006, UPDATED 05-03-2022 & E-MAIL CORRESPONDENCE OF 02-06-2026.

ALLOWABLE BEARING PRESSURE: 3,500 PSF ON SELECTED FILL

LATERAL EARTH PRESSURES: DRAINED BACKFILL

AT REST CONDITION: 55 PCF EPD LEVEL BACKFILL

84 PCF EPD UP SLOPED BACKFILL

ACTIVE CONDITION: 35 PCF EPF

SEISMIC PRESSURE COMPONENT: E = 8H PSF UNIF HORZ PRESSURE

TRAFFIC SURCHARGE: 70 PSF UNI HORZ PRESSURE

DESIGN SHORT PERIOD SPECTRAL RESPONSE ACCELERATION S_{ds} = 0.833

SATURATED SOIL DENSITY: 125 PCF

DEFERRED SUBMITTALS

THE FOLLOWING AREAS OF WORK SHALL BE CONSIDERED AS "DEFERRED SUBMITTALS" AS DEFINED IN THE 2021 IBC

a. PRECAST PRESTRESSED HOLLOW CORE PLANK

ALL DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF WASHINGTON WHO HAS CURRENT DESIGN EXPERIENCE IN THE TYPE OF WORK REVIEWED.

THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD.

CONTRACTOR SHALL SUBMIT REVIEWED DWGS & CALCS TO THE BUILDING OFFICIAL PRIOR TO INSTALLATION.

HOLLOW CORE PLANK

SCOPE OF WORK:

THE WORK INCLUDED IS THE DESIGN, MANUFACTURE AND DELIVERY OF PRECAST PRESTRESSED CONCRETE UNITS. DESIGN PLANK FOR THE MOST CRITICAL OF THE LOADING CONDITIONS AS SHOWN WITHIN THE DESIGN CRITERIA NOTE.

THE MANUFACTURER SHALL SUBMIT STRUCTURAL CALCULATIONS AND PLACEMENT DRAWINGS SIGNED BY A WASHINGTON STATE REGISTERED CIVIL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

THE MANUFACTURER SHALL INSTALL ALL BLOCK OUTS REQUIRED FOR STRUCTURAL CONNECTIONS AS INDICATED ON THESE DRAWINGS. NO OTHER PENETRATIONS ARE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE PLANK MANUFACTURER.

ALL HOLLOW CORE JOINTS SHALL BE GROUTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

Approval of submitted plans is not an approval of omissions or oversights by this office or non compliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

SPECIAL INSPECTION PLAN

GENERAL:

SPECIAL INSPECTION BY A QUALIFIED INSPECTOR IS REQUIRED IN ACCORDANCE WITH THE 2021 IBC.

QUALIFICATION:

THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL.

REQUIRED VERIFICATION & INSPECTION:

THE SPECIAL INSPECTOR SHALL PERFORM THE VERIFICATIONS & INSPECTIONS NOTED IN THE SCHEDULE BELOW

INSPECTION & TESTING SCHEDULE		
TYPES OF WORK	FREQ.	2021 IBC SECTION
CAST IN PLACE CONG		
REINFORCING STEEL, PLACEMENT.	P	1705.3
INSTALLATION & FASTENING OF PRECAST PANELS	P	1705.3
PLACEMENT OF CONCRETE	C	1705.3
VERIFYING USE OF REQUIRED DESIGN MIX	P	1705.3
TESTING OF THE CONCRETE FOR SPECIFIED STRENGTH, AIR CONTENT AND SLUMP	C	1705.3
SOILS		
VERIFICATION OF SOIL-BEARING CAPACITY: INSTALLATION OF DRAINAGE SYSTEM:	P	1705.6
PLACEMENT & COMPACTION OF WALL BACKFILL:	P	1705.6
STRUCTURAL STEEL		
STRUCTURAL STEEL (GRATING) FABRICATION	P	1704.2.5

FREQUENCY LEGEND

C = CONTINUOUS P = PERIODIC

SEE REFERENCES AND STANDARDS LISTED WITHIN THE VERIFICATION & INSPECTION SCHEDULE FOR MEANING OF PERIODIC AND CONTINUOUS INSPECTIONS.

CERTIFICATE OF COMPLIANCE:

THE SPECIAL INSPECTION AGENCY SHALL PROVIDE A FINAL LETTER CERTIFICATE OF COMPLIANCE STATING THAT THE REVIEWED WORK WAS COMPLETED IN ACCORDANCE WITH THE PERMITTED DOCUMENTS.

SUBMITTAL OF REPORTS:

ALL SPECIAL INSPECTION REPORTS AND TESTING REPORTS SHALL BE SUBMITTED TO THE OWNER, SITE STRUCTURES AND THE BUILDING OFFICIAL BY THE AGENCY PERFORMING THE INSPECTION OR TESTING.

CONCRETE

CONCRETE REQUIREMENTS:

LOCATION	STRENGTH	MAX W/C RATIO
WALLS & CIP LID AREAS	4000PSI @ 28 DAYS	0.50
FTGS & GRADE SLAB	4000PSI @ 56 DAYS	0.53
PLANK VOID FILL	TO MEET PLANK MFG'S REQUIREMENTS*	
PLANK JOINT GROUT	TO MEET PLANK MFG'S REQUIREMENTS*	
* MINIMUM STRENGTH SHALL BE 3000PSI @ 28 DAYS.		

AIR CONTENT:

CONC. EXPOSED TO WEATHER SHALL CONTAIN 5% +/-1% ENTRAINED AIR.

MIX DESIGN:

SHALL BE BASED ON FIELD EXPERIENCE OR TRIAL MIXTURES IN CONFORMANCE WITH THE SPECIFICATIONS.

SUBMITTALS:

PROVIDE MIX DESIGNS TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT.

EXPOSURE CATEGORIES:

FREEZING THAWING	F0
SULFATE	S0
IN CONTACT w/ WATER	W1
CORROSION PROTECTION	C1

MATERIAL REQUIREMENTS:

CEMENT: ASTM C150.

ADMIXTURES: ACI 301.

AGGREGATES: ASTM C33.

WATER: ASTM C84.

PLACING REQUIREMENTS:

PLACING:

PLACE CONCRETE AS NEARLY AS PRACTICABLE TO ITS FINAL POSITION TO AVOID SEGREGATION.

DEBRIS:

REMOVE ALL DEBRIS FROM FORMS PRIOR TO PLACING CONCRETE.

CONSOLIDATION:

CONSOLIDATE CONCRETE BY SUITABLE MEANS. THOROUGHLY WORK CONCRETE AROUND EMBEDDED ITEMS AND INTO CORNERS OF FORMS.

CURING REQUIREMENTS:

CURING:

CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A SUITABLE PERIOD OF TIME AFTER PLACEMENT.

WEATHER CONDITIONS:

ADEQUATE PRECAUTIONS SHALL BE TAKEN DURING HOT AND COLD WEATHER IN ACCORDANCE WITH THE SPECIFICATIONS.

LID PLANK PLACEMENT:

IN NO CASE SHALL THE LID PLANKS BE PLACED BEFORE THE WALLS HAVE BEEN ALLOWED A MINIMUM OF 3 DAYS OF CURE WHEN AVERAGE AMBIENT TEMPERATURES ARE LESS THAN 50 DEGREES FAHRENHEIT, THE CONTRACTOR MUST ALLOW A MINIMUM CURE TIME OF 7 DAYS OR PROVIDE AN ADDITIONAL SET OF CYLINDERS TO BE BROKEN AT THE TIME OF LID PLACEMENT DEMONSTRATING A MINIMUM CONCRETE STRENGTH OF 1000 PSI HAS BEEN REACHED.

FINISH:

- CONCRETE FINISH TO BE SMOOTH WITH NO FINS, VOIDS, ROCK POCKETS, OR OTHER IRREGULARITIES.
- CONE SNAP TIES OR SIMILAR ARE REQUIRED AND ARE TO BE REMOVED AND SEALED AT ALL INTERIOR WALL SURFACES. NO FLAT TIES ALLOWED.

REINFORCING BAR

MATERIAL REQUIREMENT:

REINFORCING BARS:

USE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, EXCEPT AS NOTED ON THE DRAWINGS.

FABRICATION AND PLACING REQUIREMENTS:

BENDING:

BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS NOTED OR SHOWN OTHERWISE OR AUTHORIZED BY THE ENGINEER.

PLACING:

REINFORCEMENT SHALL BE SUPPORTED AND TIED TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR BY PLACING OF CONCRETE.

CONCRETE COVER:

MINIMUM CONCRETE COVER FOR REINF. SHALL BE AS FOLLOWS:

CONCRETE CAST AGAINST EARTH	3"
CONCRETE CAST AGAINST FORMS AND EXPOSED TO EARTH OR WEATHER	2"
#6 & LARGER	
#5 & SMALLER	1-1/2"

WET SETTINGS:

REINFORCEMENT ANCHOR BOLTS, OR ANY EMBEDDED ITEM WITHIN THE CONCRETE, MAY NOT BE SET INTO THE CONCRETE AFTER IT HAS BEEN POURED WITHIN THE FORMS.

LAP SPLICES:

LAP ALL BARS 28" MIN UNLESS SHOWN OTHERWISE ON THESE DWGS.

SUBMITTALS:

PROVIDE REINFORCING BAR FABRICATION AND PLACEMENT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

60"ø PRECAST CATCH BASIN BASE

SPECIFICATIONS:

PRECAST CATCH BASIN BASE SHALL MEET ASTM C478 AND THE APWA/WSOOT STANDARD SPECIFICATION FOR PRECAST CONCRETE MANHOLE SECTIONS.

MATERIALS:

- REINFORCING STEEL F_y=60KSI MINIMUM
- CONCRETE f'_c=4,000PSI MIN @ 28 DAYS

MINIMUM REQUIREMENTS:

CIRCUMFERENTIAL WALL THICKNESS SHALL BE NO LESS THAN 6" THICK AND SHALL HAVE A MINIMUM OF 0.15 SQ. IN/FT OF REINFORCING STEEL HORZ AND VERT PLACED AT THE CENTER OF THE WALL.

BASE THICKNESS SHALL BE NO LESS THAN 8" THICK AND SHALL HAVE A MINIMUM OF 0.30 SQ. IN/FT OF REINFORCING STEEL IN EACH ORTHOGONAL DIRECTION PLACED AT THE CENTER OF THE SLAB.

WATERSTOP

PVC WATERSTOP

WATERSTOPS SHALL BE 4" RIBBED WITH CENTER BULB AS MANUFACTURED BY GREENSTREAK, INC. - OR EQUIVALENT - AND SHALL BE FORMULATED FROM VIRGIN RAW MATERIAL AND SHALL MEET THE THE ARMY CORPS OF ENGINEERS STANDARD SPECIFICATION CRD-C 572-74. INSTALL WATERSTOP IN ACCORDANCE WITH ALL OF THE MANUFACTURERES RECOMMENDATION. SPLICING OF THE WATERSTOP SHALL BE ACCOMPLISHED WITH A THERMOSTATICALLY CONTROLLEDE SPLICING IRON IN ACCORDANCE WITH THE MANUFACTURERS DIRECTION AND RECOMMENDATIONS.

BENTONITE CLAY WATERSTOP

WATERSTOP SHALL BE RX-102 AS MANUFACTURED BY CETCO OR EQUIVALENT. INSTALL WATERSTOP IN ACCORDANCE WITH ALL OF THE MANUFACTURERS RECOMMENDATIONS. WATERSTOP SHALL BE ATTACHED TO THE CONCRETE SURFACE USING A CONTINUOUS BEAD OF CETCO CETSEAL OR SHALL BE MECHANICALLY FASTENED TO THE CONCRETE SURFACE WITH CETCO REVO-FIX AS REQUIRED BY THE TECHNICAL DATA SHEET FOR WATERSTOP-RX.

WATERSTOP SHALL BE PROTECTED AGAINST EXPOSURE TO WATER FROM ANY SOURCE UNTIL THE CONCRETE ENCASING THE WATERSTOP IS PLACED AT THE JOINT.

STRUCTURAL STEEL

MATERIALS:

- STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36.
- HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B, F_y=42,000PSI.

WELDING:

CONFORM TO AWS D11 "STRUCTURAL WELDING CODE - STEEL". WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH WABO REQUIREMENTS. USE E70 ELECTRODES OF TYPE REQUIRED FOR MATERIALS TO BE WELDED.

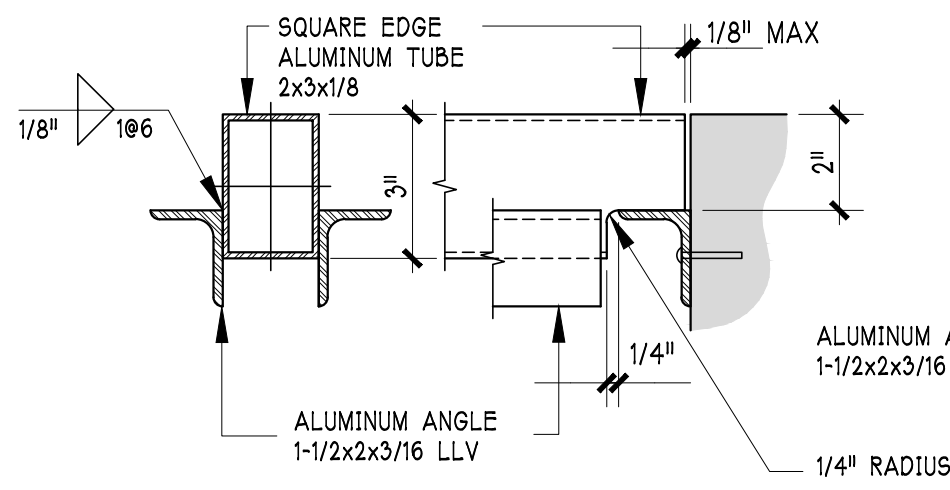
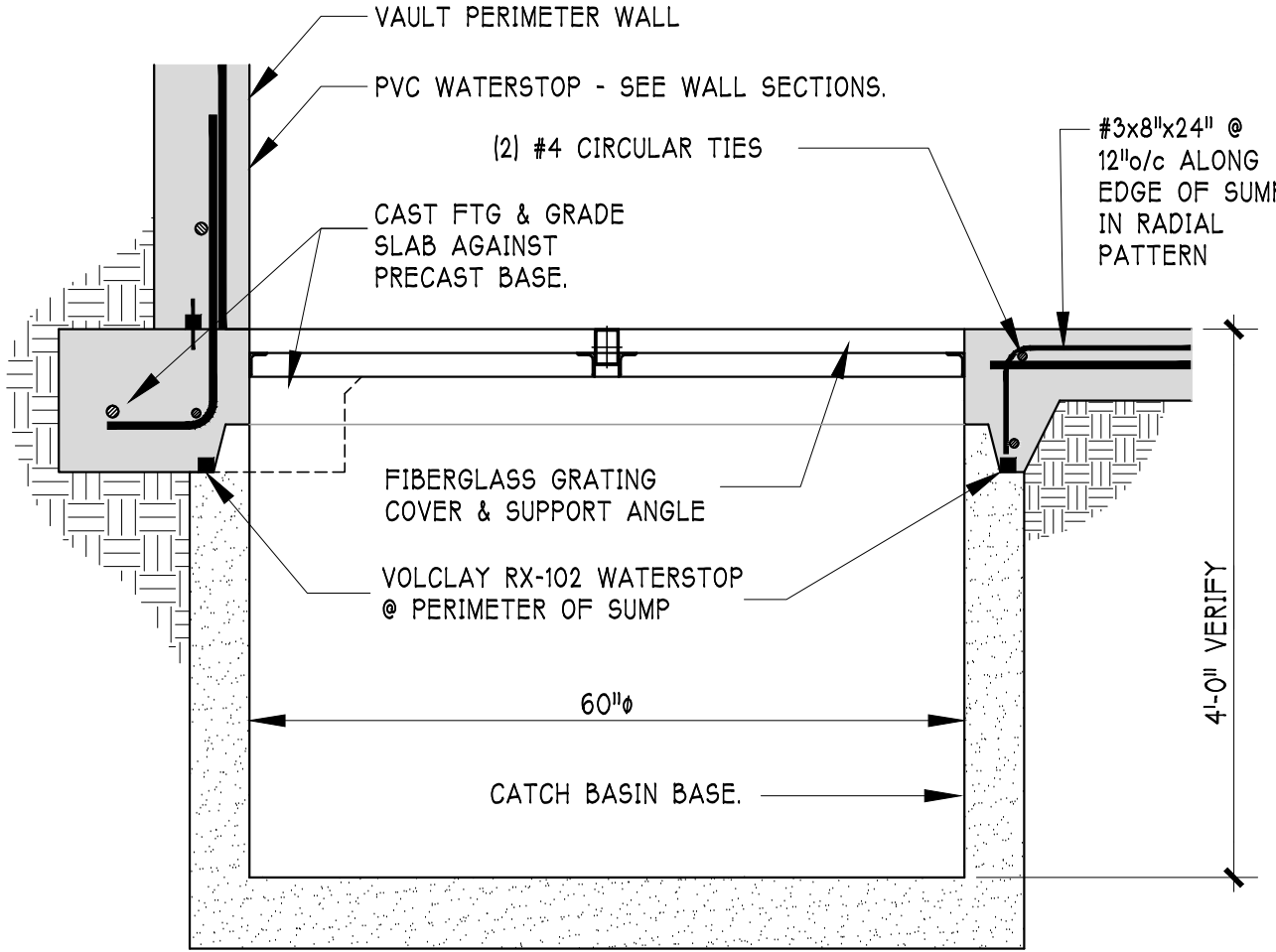
GALVANIZING:

ALL STEEL SECTIONS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION CONFORMING TO ASM A-123. REPAIRS SHALL CONFORM TO ASTM A-780 USING ZINC RICH PAINT. THE COATING THICKNESS FOR THE PAINT MUST BE 50X MORE THAN THE SURROUNDING COATING THICKNESS, BUT NOT GREATER THAN 4.0 MILS.

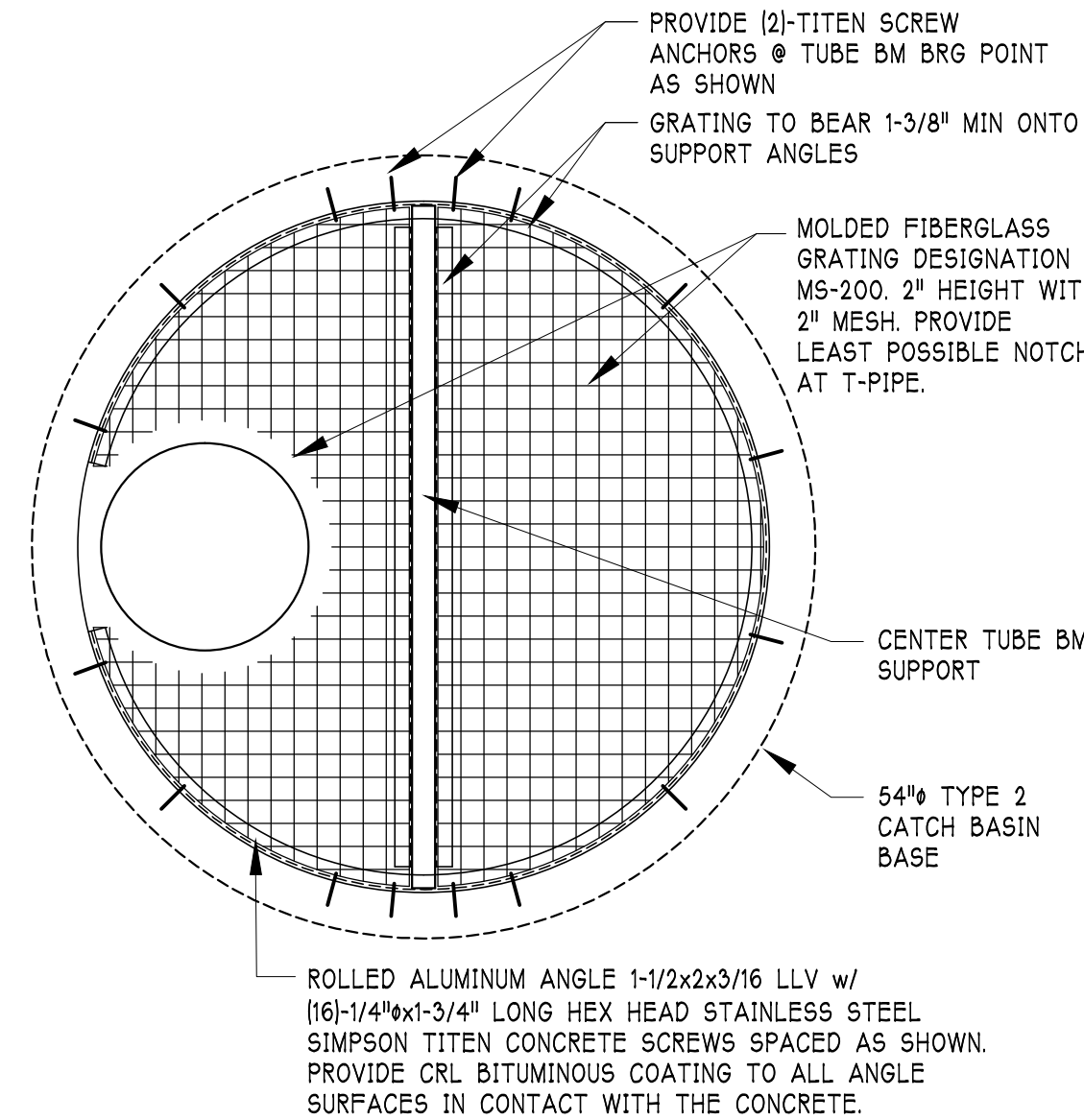
OPEN METAL GRATING

OPEN METAL GRATING SHALL BE WELDED STEEL BAR GRATING AS SPECIFIED ON THE DRAWINGS. ALL STEEL GRATING AND GRATING COMPONENTS INCLUDING ITEMS EMBEDDED WITHIN THE CONCRETE SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. SEE STRUCTURAL STEEL NOTES FOR GALVANIZING REQUIREMENTS.

SUPPLIER SHALL PROVIDE ALL COMPONENTS NECESSARY TO INSTALL AND SECURE THE GRATING IN PLACE & SHALL PROVIDE SHOP DRAWINGS DETAILING ALL COMPONENTS OF THE INSTALLATION.

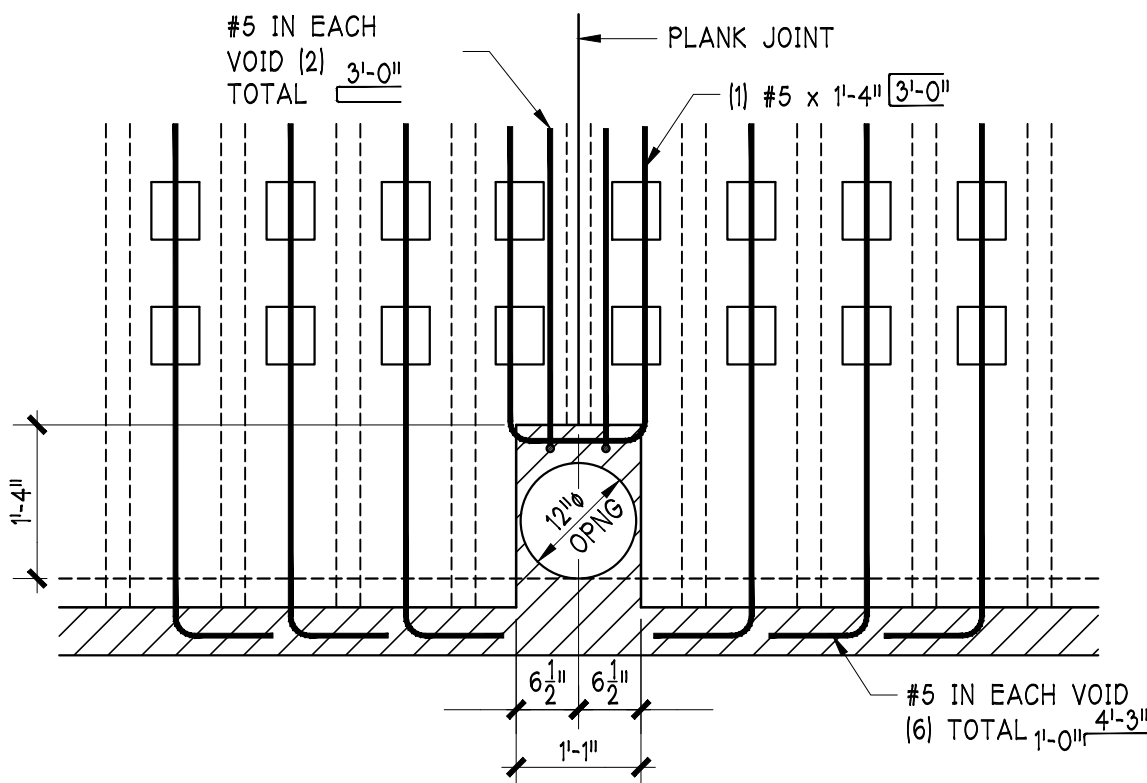


CENTER TUBE SUPPORT DETAIL



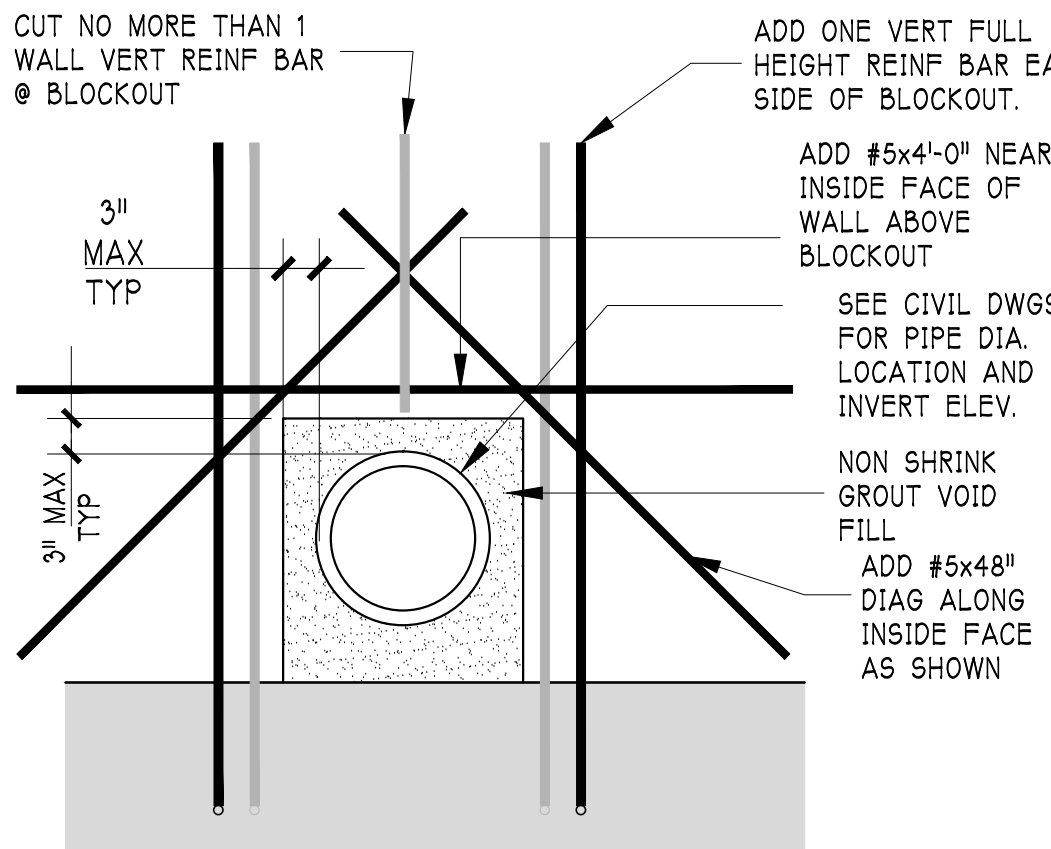
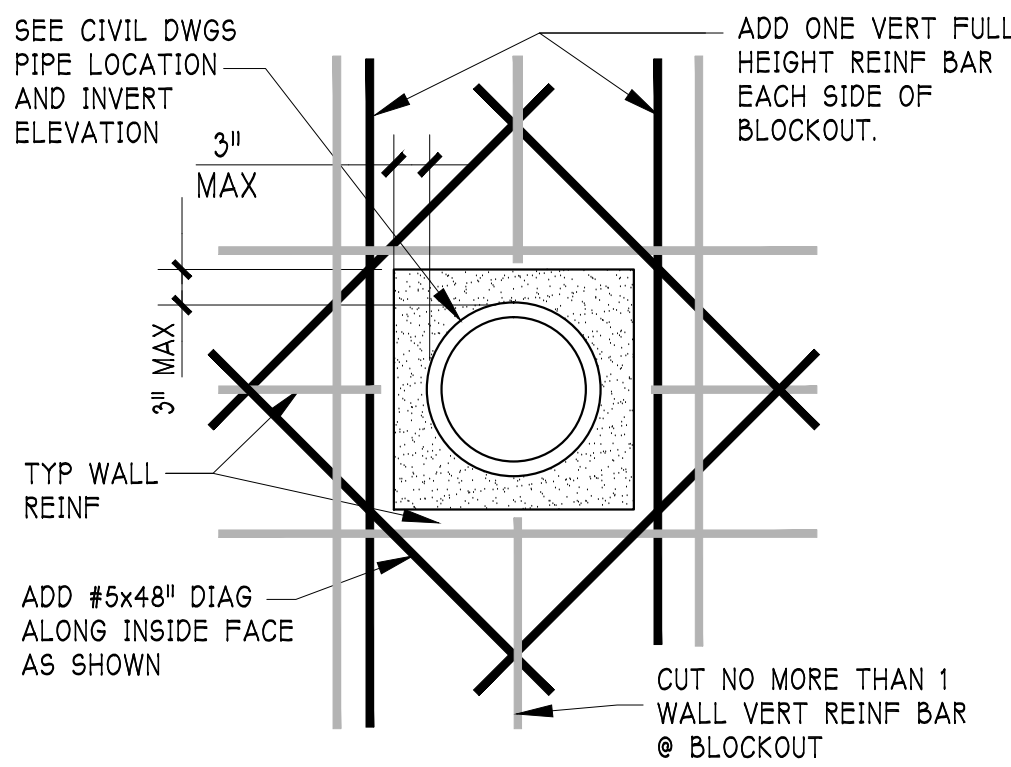
SUMP DETAIL

SCALE 3/4"=1'-0"



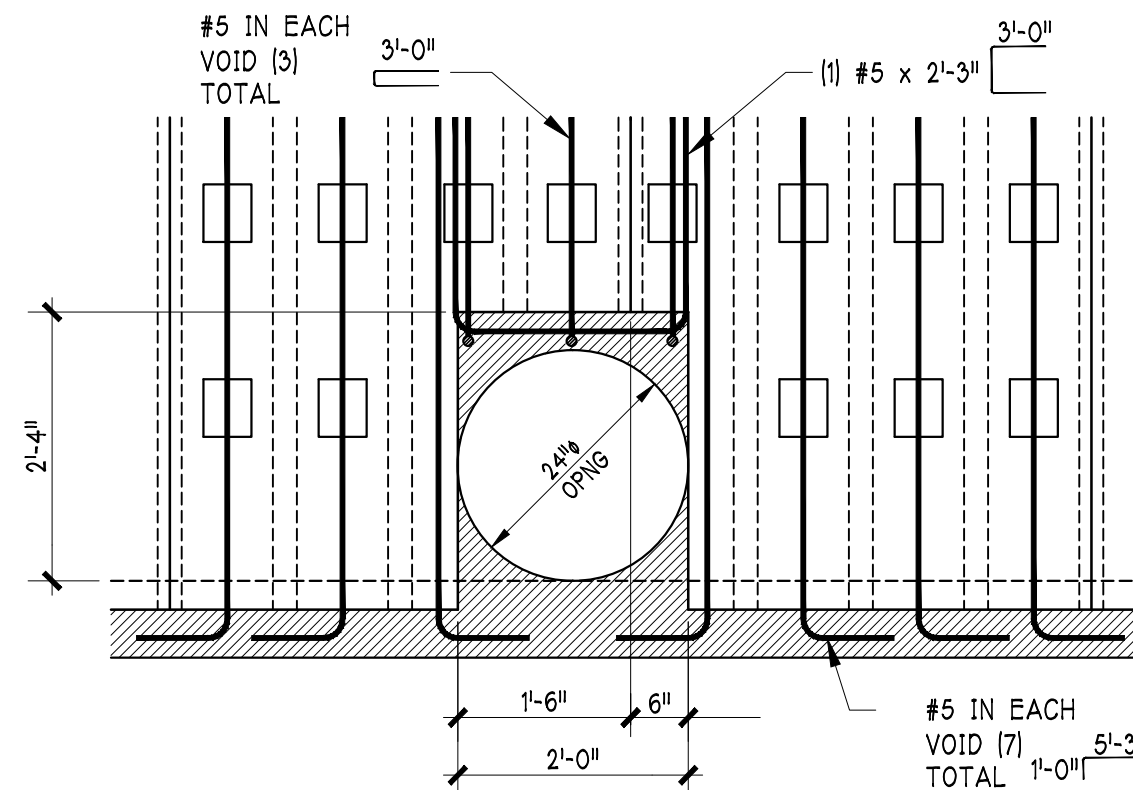
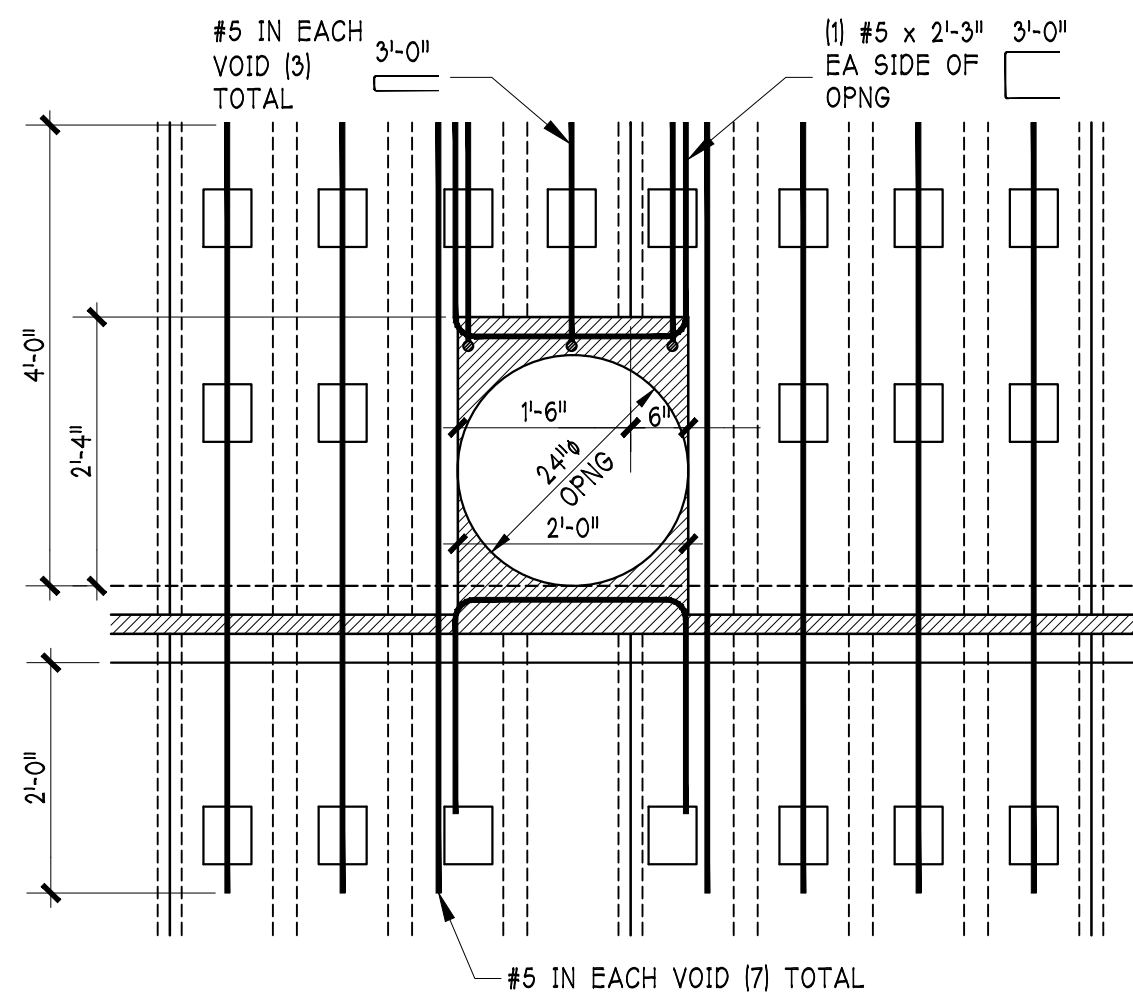
LID REINF @ 12"ø VENT

NTS



WALL REINF @ PIPE PENETRATION

SCALE 3/4"=1'-0"



LID REINF @ MANHOLE

NTS

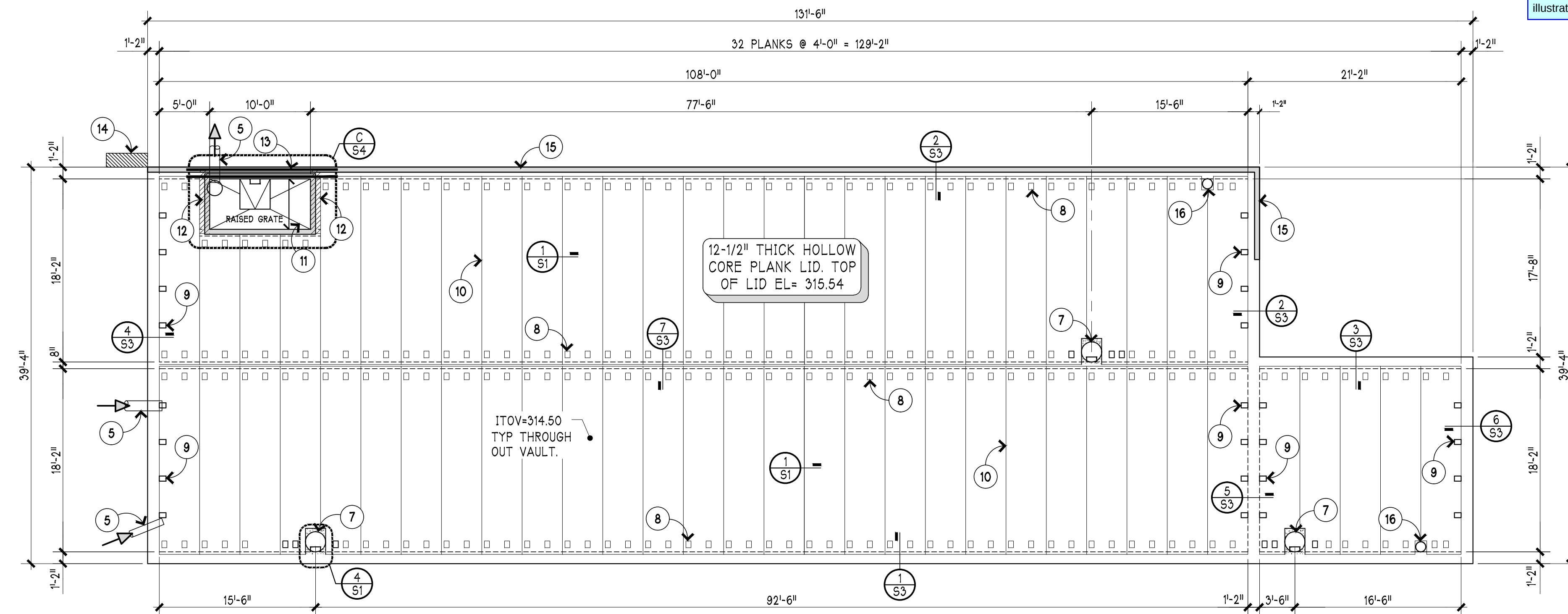
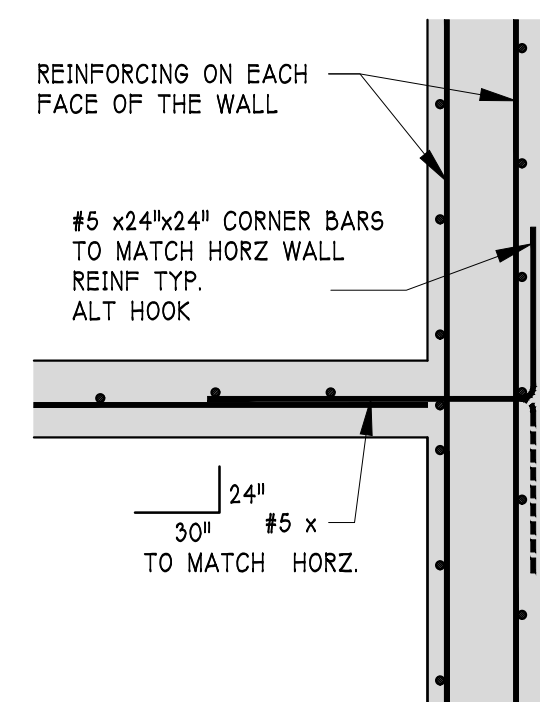
DATE:	DESCRIPTION:	ISSUED FOR CONST PERMIT APPLICATION	INCORP PLAN REVIEW COMMENTS	YES			
02-11-2026							
04-13-2026							

ite structures
A Division of Koelnik Engineering PC
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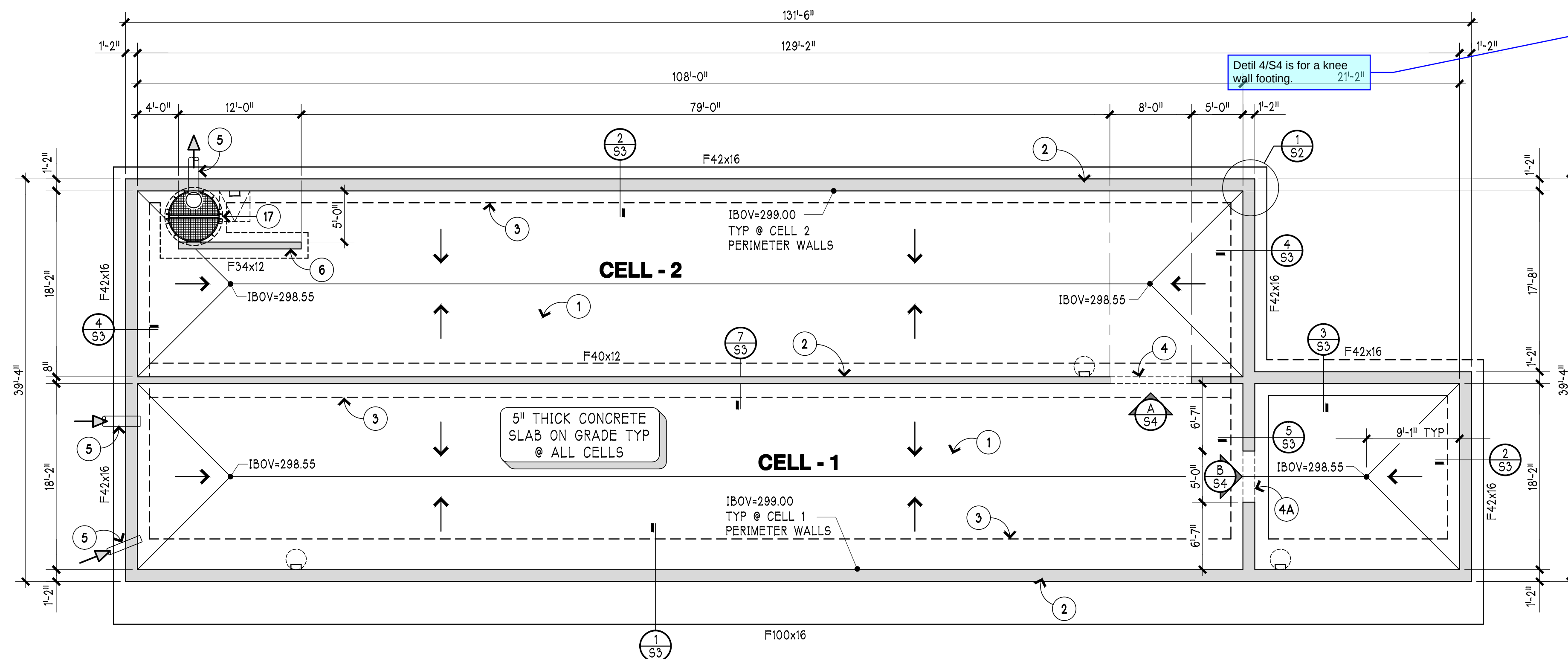
NORMANDY HEIGHTS - PRD
STORM WATER DETENTION VAULT
WASHINGTON
CITY OF PUYALLUP
PRRWF20260365

STRUCTURAL NOTES & TYPICAL DETAILS
SHEET:
S1 OF 4
S-26-009



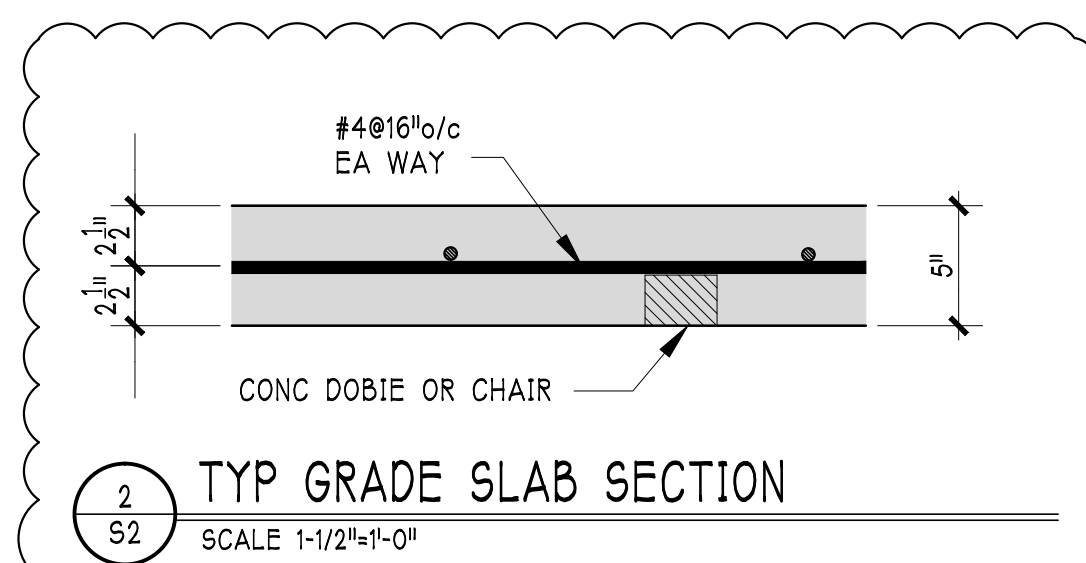
VAULT LID PLAN

SCALE 1/8" = 1'-0"



VAULT FOUNDATION PLAN

SCALE 1/8" = 1'-0"



1
S2

TYP WALL CORNER REINF.

NTS

2 TYP GRADE SLAB SECTION

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

Detail 2/S1 is for reinf placement in the lid around a 12 inch opening. Provide detail for slab reinf placement or specify that this detail illustrates both.

PLAN KEYNOTES

1. 5" THICK CONCRETE SLAB ON GRADE REIN. WITH #4@16" o/c EA WAY. PLACE ALL REIN. AT MID-DEPTH OF THE SLAB. SEE 2/52 FOR REIN. PLACEMENT DETAIL. CAST GRADE SLAB IN A SINGLE POUR.
2. CAST IN PLACE CONCRETE WALLS TYPICAL AT THE PERIMETER & INTERIOR OF THE VAULT. SEE WALL SECTIONS FOR REINFORCING. PROVIDE ADDED REIN. AT PIPE PENETRATIONS AS SHOWN IN 3/51. PROVIDE REIN. @ ALL WALL CORNERS AS SHOWN IN 1/52.
3. THICKENED SLAB FOOTINGS TO BE CAST WITH THE GRADE SLAB. SEE WALL SECTIONS FOR SIZE & REIN. UNO.
4. 8'-0" WIDE OPENING WITHIN THE INTERIOR WALL. SEE A/54 FOR WALL REINFORCING @ THE OPENING.
- 4A. 9'-0" WIDE OPENING WITHIN THE INTERIOR WALL. SEE B/54 FOR WALL REINFORCING @ THE OPENING.
5. PIPE INLET OR OUTLET TO VAULT. SEE CIVIL DWGS FOR PIPE DIAMETER & LOCATION. VERIFY INVERT ELEVATION w/ THE CIVIL DWGS. SEE 3/51 FOR WALL REIN. @ PIPE PENETRATION. ADDITIONAL REINFORCING IS NOT REQUIRED FOR PIPES WITH AN O.D. LESS THAN 8" PROVIDED THEY ARE PLACED BETWEEN THE TYPICAL WALL VERTICAL AND HORIZ REIN.
6. 8" THICK KNEE-WALL. REIN. w/ #5@12" o/c HORIZ & VERT. PLACE VERT. REIN. AT THE CENTER OF THE WALL AND EXTEND 10' ABOVE THE TOP OF WALL INTO THE LID CLOSURE. PROVIDE (2) #5@4" o/c VERT. AT THE FREE ENDS OF THE WALL AND (2) #5 HORIZ AT THE TOP OF THE WALL. SEE 4/54 FOR FTG INFORMATION. PROVIDE (2) #5 HORIZ IN LID CLOSURE POUR ABOVE WALL.
7. 24" DIAMETER OPENING THRU LID TO ACCEPT RISERS, LADDER, RING AND LOCKING MANHOLE COVER PER CIVIL DRAWINGS. SEE 4/51 FOR LID REIN. @ MANHOLE.
8. POUR SLOTS IN THE TOP OF THE PLANK. MANUFACTURER TO PROVIDE A MINIMUM OF 2 SLOTS @ EACH END OF EACH PLANK AS SHOWN. PLANK MANUFACTURER MAY REQUIRE GROUTING OF ADDITIONAL CELLS BEYOND THE MINIMUM SHOWN. THE GENERAL CONTRACTOR SHALL INCLUDE GROUTING OF THESE ADDED CELLS IN HIS BID. SEE WALL SECTIONS FOR REIN.
9. PROVIDE BLOCKOUTS IN THE EDGE CELL OF THE PLANK PARALLEL TO THE PERIMETER VAULT WALLS. LOCATE BLOCKOUTS APPROXIMATELY AS SHOWN ON THIS PLAN. SEE WALL SECTIONS & DETAILS FOR REIN.
10. 12'-1/2" THICK 4'-0" WIDE PRECAST HOLLOW CORE PLANK. SEE DESIGN CRITERIA NOTES ON SHEET #1 FOR PLANK LOADING REQUIREMENTS.
11. 5'-0"x10'-0" OPENING TO RECEIVE OPEN METAL BAR GRATING w/ INTEGRAL 36" x 36" HINGED ACCESS HATCH. SET TOP OF GRATING 9" MIN ABOVE THE HIGHEST ADJACENT FINISHED GRADE. SEE C/54 FOR GRATING ASSEMBLY INFORMATION.
12. HATCHED AREA REPRESENTS 12" WIDE x 12'-1/2" THICK CAST IN PLACE CONCRETE SLAB BEAM. SEE (10/54) FOR REIN.
13. ADD (3) #6x15'-0" @ 3'-0" o/c EA FACE WITHIN THE WALL & AT THE TOP OF THE WALL. PLACE BAR AS SHOWN ON THE PLAN.
14. RETAINING WALL BY OTHERS, ADJACENT TO THE VAULT. SEE CIVIL DWGS FOR ALL INFORMATION.
15. 6" THICK CURB AT THE PERIMETER OF THE LID AS SHOWN. SEE 9/53, 9/54 & 10/54 FOR CURB REIN. VERIFY EXTENT WITH THE CIVIL DWGS.
16. 12" OPNG THRU LID FOR ACTIVE VENTILATION DURING VAULT SERVICING. SEE 2/51 FOR LID REINFORCING AT THE OPENING.
17. 60% CATCH BASIN BASE TO ACT AS SUMP. SEE 1/51 FOR SUMP INSTALLATION DETAIL.

Call out all 3 details for reinf for 6 inch thick curb.

LEGEND

IBOV	INSIDE BOTTOM OF VAULT (TOP OF GRADE SLAB)
ITOV	INSIDE TOP OF VAULT LID BOTTOM OF LID, TOP OF WALL
	CIP CONCRETE WALL.
	
	THICKENED SLAB FOOTING
	DIRECTION OF DOWNWARD SLOPE
F42x16	42" WIDE x 16" THICK FTG SEE 2 3, 4, 5 & 6/53
F40x12	40" WIDE x 12" THICK FTG SEE 7/53
F34x12	34" WIDE x 12" THICK FTG SEE 4/54
F100x16	100" WIDE x 16" THICK FTG SEE 1/53

CONSTRUCTION LOADS

THE VAULT LID HAS BEEN DESIGNED TO CARRY THE "DESIGN LOADS" ONLY AFTER VAULT CONSTRUCTION IS COMPLETE, ALL DESIGN CONCRETE AND GROUT STRENGTHS HAVE BEEN ACHIEVED, AND ALL COVER HAS BEEN PLACED OVER THE VAULT WITHIN THE LIMITS SPECIFIED ON THIS DRAWING.

DIMENSIONS & ELEVATIONS

THE CONTRACTOR AND HIS SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS WITH THE CURRENT PERMITTED SET OF CIVIL DRAWINGS, AND SHALL NOTIFY BOTH THE CIVIL & STRUCTURAL ENGINEERS IN WRITING OF ALL DISCREPANCIES BETWEEN THE CIVIL DWGS AND THESE DWGS PRIOR TO CONSTRUCTION.

DATE	DESCRIPTION	CLOUD
02-11-2026	ISSUED FOR CONST PERMIT APPLICATION	N/A
04-13-2026	INCORP PLAN REVIEW COMMENTS	YES



NORMANDY HEIGHTS - PRD
STORM WATER DETENTION VAULT
PRRWF20260365
CITY OF PUYALLUP
WASHINGTON

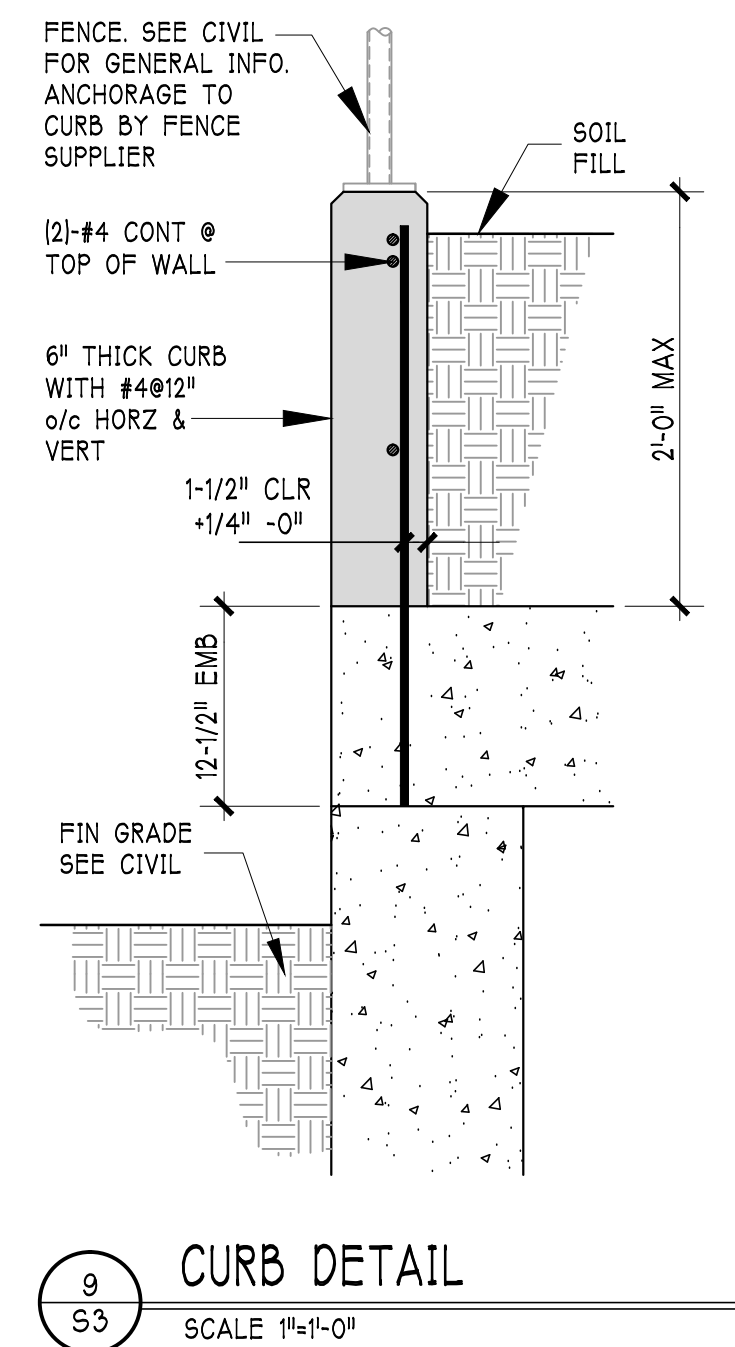
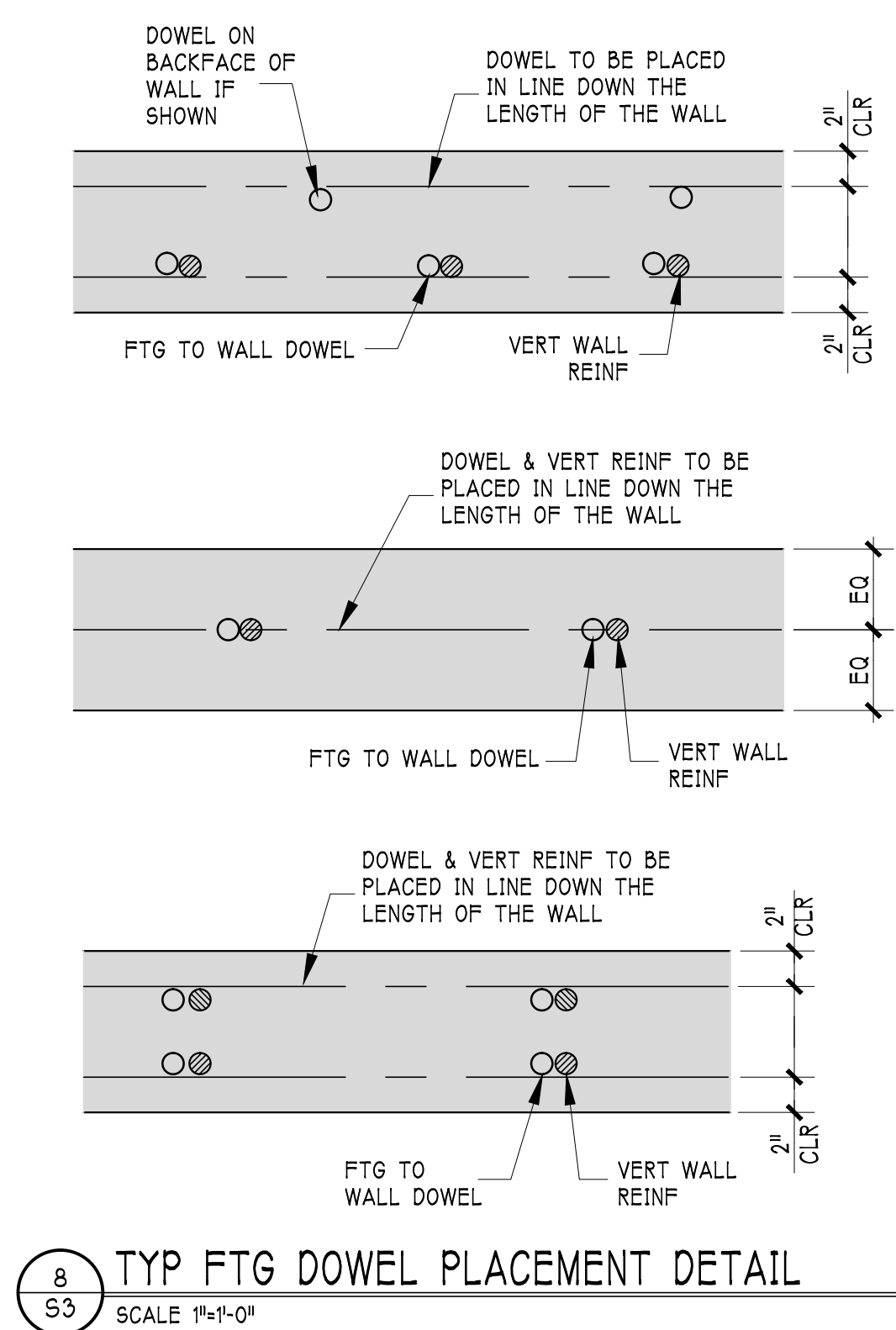
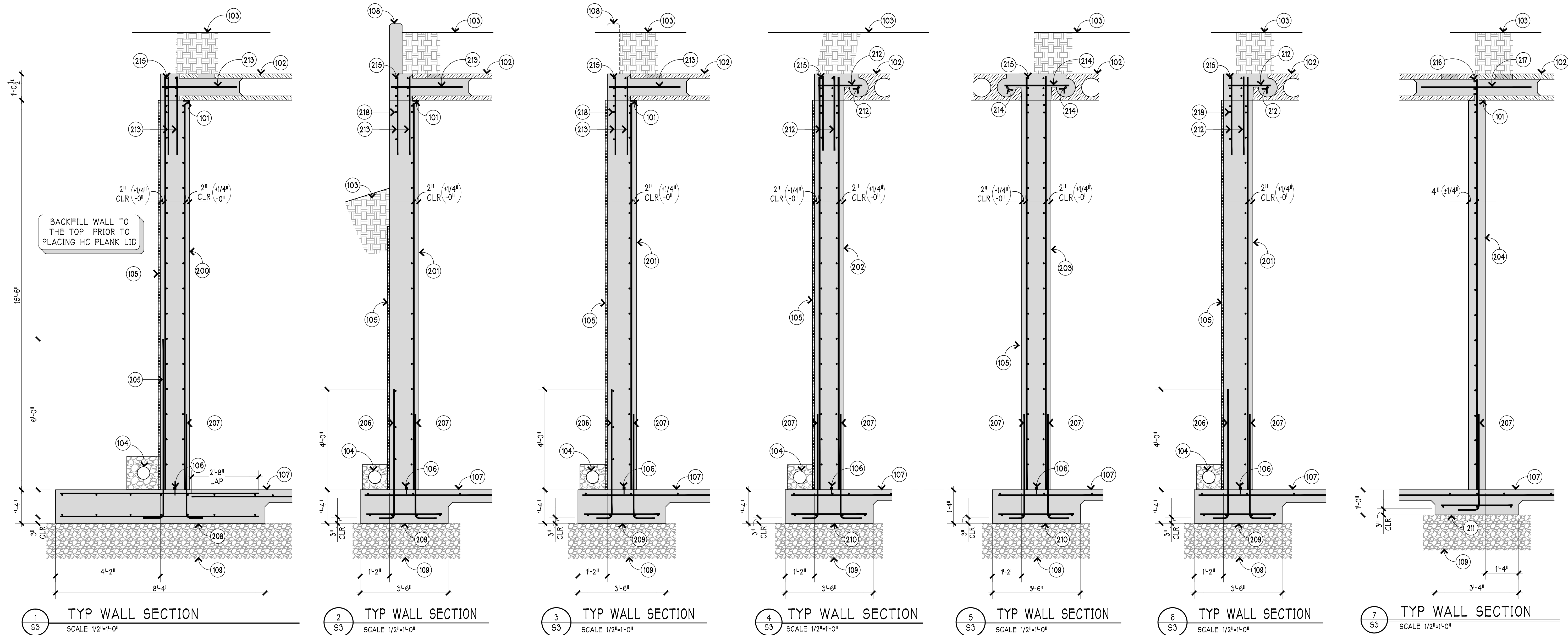
CITY OF PUYALLUP

VAULT LID & FOUNDATION PLANS & DETAILS

SHEET:

S2 OF 4

S-26-009



WALL GENERAL KEYNOTES

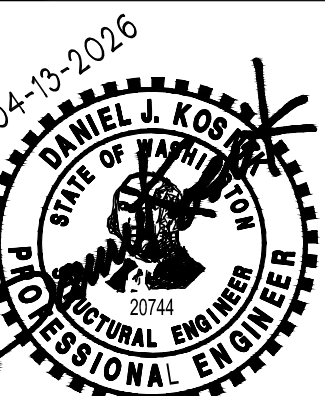
101. PLANK TO BEAR 3" MINIMUM ONTO THE TOP OF THE CONCRETE WALL. SEE PLANK MANUFACTURER'S DRAWINGS FOR FINAL BEARING LENGTH. INSTALL BEARING PAD AS DETAILED ON THE PRECAST PLANK PLACEMENT DRAWINGS.
102. 12-1/2" THICK PRECAST HOLLOW CORE PLANK.
103. FINISHED GRADE OVER THE LID. ELEVATION VARIES. SEE DESIGN CRITERIA ON SHEET S1 FOR APPROXIMATE SOIL DEPTHS OVER THE VAULT LID IN ADDITION TO THE CIVIL DWGS FOR FINAL GRADE ELEVATIONS.
104. 6" PERFORATED PVC FOOTING DRAIN SET IE=299.50 WRAPPED IN 18" SQ GRAVEL BED AND FILTER FABRIC. ROUTE DRAIN TO DISCHARGE POINT AS SHOWN ON THE CIVIL DWGS.
105. APPLY PREFABRICATED DRAINAGE PANEL TO ALL PERIMETER VAULT WALLS. EXTEND DRAINAGE PANEL FROM THE FOOTING DRAIN TO THE TOP OF THE WALL OR TO WITHIN 12" OF THE FINISHED GRADE AT EXPOSED WALLS. SEE GEOTECHNICAL REPORT FOR ALL MATERIAL SPECIFICATIONS.
106. 4" PVC RIBBED WATERSTOP w/ CENTER BULB AT ALL PERIMETER WALLS OF THE VAULT. INSTALL AT THE CENTER OF THE WALL, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
107. SEE FOUNDATION PLAN FOR GRADE SLAB REINFORCING.
108. 6" THICK CURB AS OCCURS. SEE LID PLAN FOR EXTENT. SEE 9/53 FOR REINFORCING.
109. PROVIDE SELECTED FILL BELOW ALL FOOTINGS. FILL TO EXTEND 24" BELOW FTG AND 24" BEYOND EACH EDGE OF THE FOOTING. SEE GEOTECHNICAL REPORT FOR FILL MATERIAL AND COMPACTION REQUIREMENTS.

WALL REINFORCING KEYNOTES

200. 14" THICK CONCRETE WALL REINF w/ #5@12"/c HORZ & #6@8"/c VERT. EACH FACE OF THE WALL. PROVIDE (2)-#5 CONT HORZ BARS EA FACE @ THE TOP OF THE WALL. EXTEND VERT REINF 10" INTO THE LID CLOSURE WHERE POSSIBLE. LAP HORZ REINF 28" AT ALL SPLICE LOCATIONS.
201. 14" THICK CONCRETE WALL REINF w/ #5@12"/c HORZ & #7@10"/c VERT PLACED NEAR THE INSIDE FACE OF THE WALL. PROVIDE (2)-#5 CONT HORZ BARS @ THE TOP OF THE WALL. EXTEND VERT REINF 10" INTO THE LID CLOSURE WHERE POSSIBLE. LAP HORZ REINF 28" AT ALL SPLICE LOCATIONS.
202. 14" THICK CONCRETE WALL REINF w/ #5@12"/c HORZ & #6@12"/c VERT EACH FACE. PROVIDE (2)-#5 CONT HORZ BARS EA FACE @ THE TOP OF THE WALL. EXTEND VERT REINF 10" INTO THE LID CLOSURE. LAP HORZ REINF 28" AT ALL SPLICE LOCATIONS.
203. 14" THICK CONCRETE WALL REINF w/ #5@12"/c HORZ & VERT EACH FACE. PROVIDE (2)-#5 CONT HORZ BARS EA FACE @ THE TOP OF THE WALL. EXTEND VERT REINF 10" INTO THE LID CLOSURE. LAP HORZ REINF 28" AT ALL SPLICE LOCATIONS.
204. 8" THICK CONCRETE WALL REINF w/ #5@12"/c HORZ & VERT PLACED AT THE CENTER OF THE WALL. PROVIDE (2)-#5 CONT HORZ BARS EA FACE @ THE TOP OF THE WALL. EXTEND VERT REINF 10" INTO THE LID CLOSURE POUR. LAP HORZ REINF 28" AT ALL SPLICE LOCATIONS.
205. #7@8"/c FOOTING TO WALL DOWELS. PROVIDE STD HOOK @ END OF BAR CAST INTO FOOTING. DOWELS SHALL BE EMBEDDED A MINIMUM OF 13" INTO 16" THICK FTG. & SHALL EXTEND INTO THE WALL 6.0FT MIN. SEE 8/53 FOR DOWEL PLACEMENT DETAIL.
206. #5@15"/c WALL TO FOOTING DOWELS. EXTEND 48" INTO THE WALL AND 13" INTO THE 16" THK FTG. PROVIDE STD HOOK AT END OF BAR EMBEDDED WITHIN FTG. PROVIDE (3)-#5 CONT HORZ BARS AS SHOWN. SET DOWELS 2" CLR FROM THE BACKFILLED FACE OF THE WALL. SEE 8/53 FOR PLACEMENT DETAIL.
207. #5 FOOTING TO WALL DOWELS TO MATCH WALL VERTICAL REINFORCING SPACING. PROVIDE STD HOOK @ END OF BAR CAST INTO FOOTING. DOWELS SHALL BE EMBEDDED A MINIMUM OF 13" INTO 16" THICK FTG. & 9" INTO THE 12" THICK FTG. EXTEND INTO THE WALL 36" MIN. SEE 8/53 FOR PLACEMENT REQUIREMENTS.
208. REINF FTG w/ (7)-#5 LONGITUDINAL TOP & BOT & #6@12"/c TRANSVERSE BOT. & #6@8"/c TRANSVERSE TOP.
209. REINF FTG w/ (3)-#5 LONGITUDINAL & #5@15"/c TRANSVERSE BOT.
210. REINF FTG w/ (4)-#5 LONGITUDINAL & #5@12"/c TRANSVERSE BOT.
211. REINF FTG w/ (3)-#5 LONGITUDINAL & #5@12"/c TRANSVERSE BOT.
212. LID & WALL TO CLOSURE REINF @ VOID BLOCKOUTS. SEE 1/54.
213. LID & WALL TO CLOSURE REINF @ VOID END FILL. SEE 2/54.
214. LID & WALL TO CLOSURE REINF @ VOID BLOCKOUTS @ INTERIOR WALL. SEE 3/54.
215. (3)-#6 EA FACE CONT IN CLOSURE POUR. LAP 48" AT ALL SPLICE LOCATIONS.
216. (3)-#5 CONT IN CLOSURE POUR. LAP 36" AT ALL SPLICE LOCATIONS.
217. #5x4'-0" @ INTERIOR BRG WALL PLACED SUCH THAT EACH 48" WIDE PLANK RECEIVES (2) BARS. LOCATE BARS IN VOIDS WITH POUR SLOTS AS SHOWN ON THE PRECAST PLANK PLACEMENT DWGS. PROVIDE ADDITIONAL BARS @ EACH PLANK IF REQD AND SHOWN ON THE PRECAST PLANK SHOP DWGS.
218. PROVIDE (3)-#5 HORZ AT WALL TO CLOSURE DOWEL AS SHOWN.

DATE	DESCRIPTION	ISSUED FOR CONST PERMIT APPLICATION	INCORP PLAN REVIEW COMMENTS
02-11-2026	CLOUD	N/A	YES
04-13-2026			

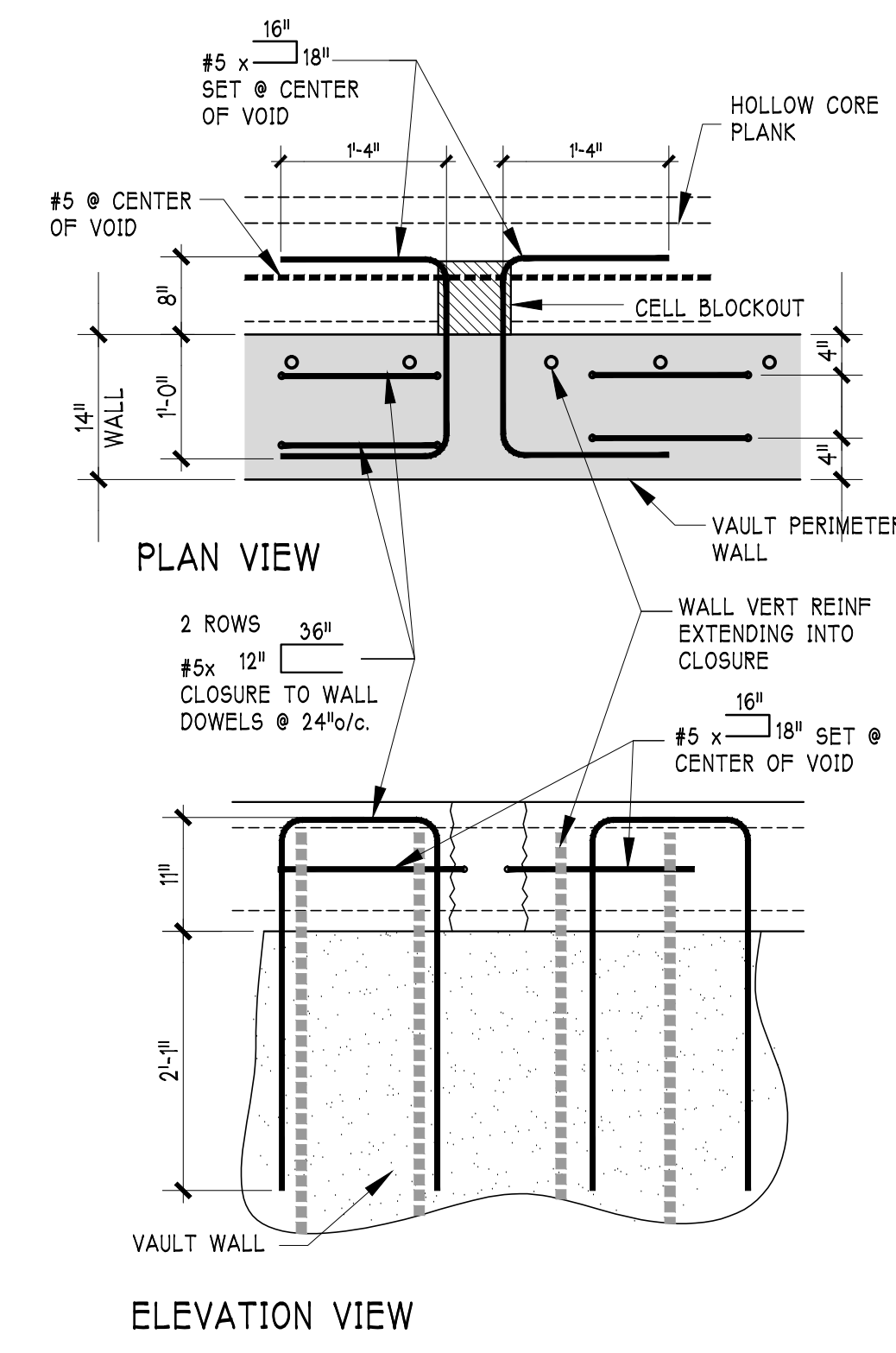
Site Structures
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10505 18th AVE SE SUITE D
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NORMANDY HEIGHTS - PRD
STORM WATER DETENTION VAULT
PRRWF20260365
CITY OF RUYALLUP
WASHINGTON

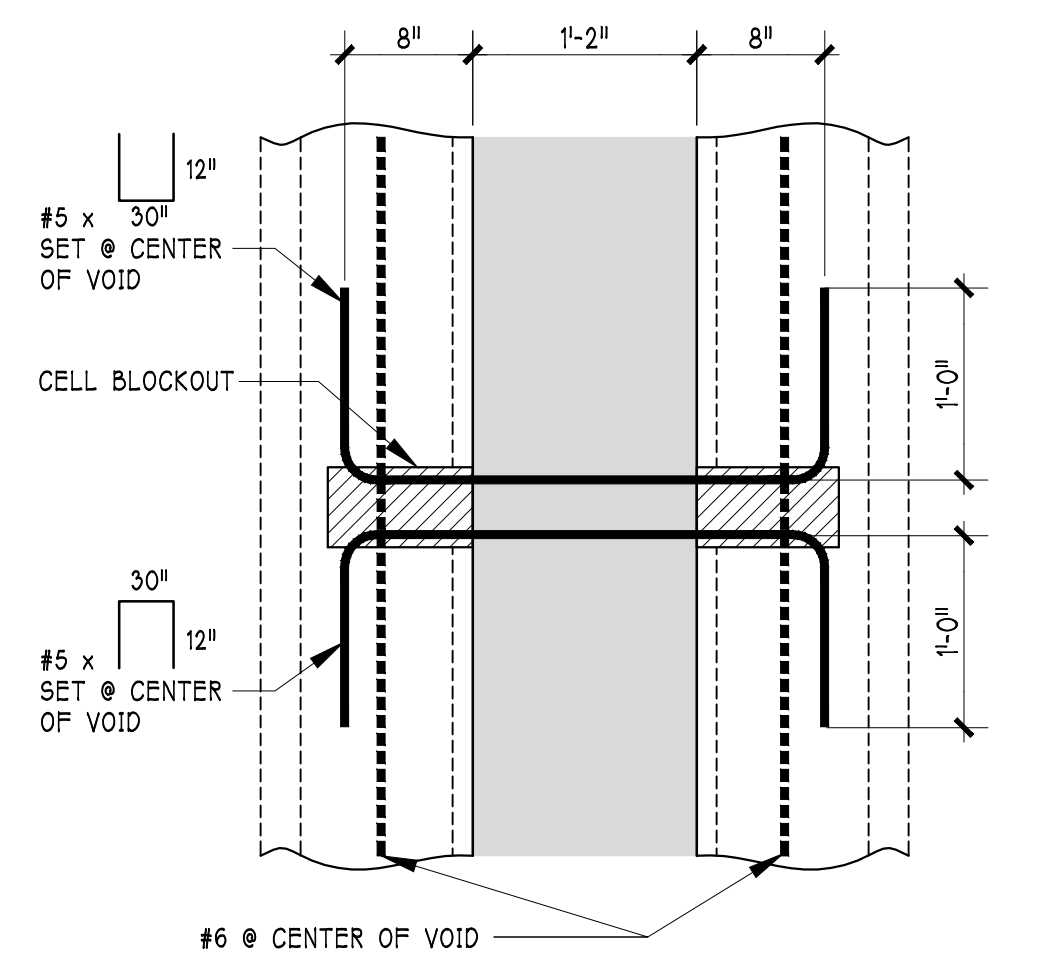
WALL SECTIONS & DETAILS

SHEET:
S3 OF 4
S-26-009



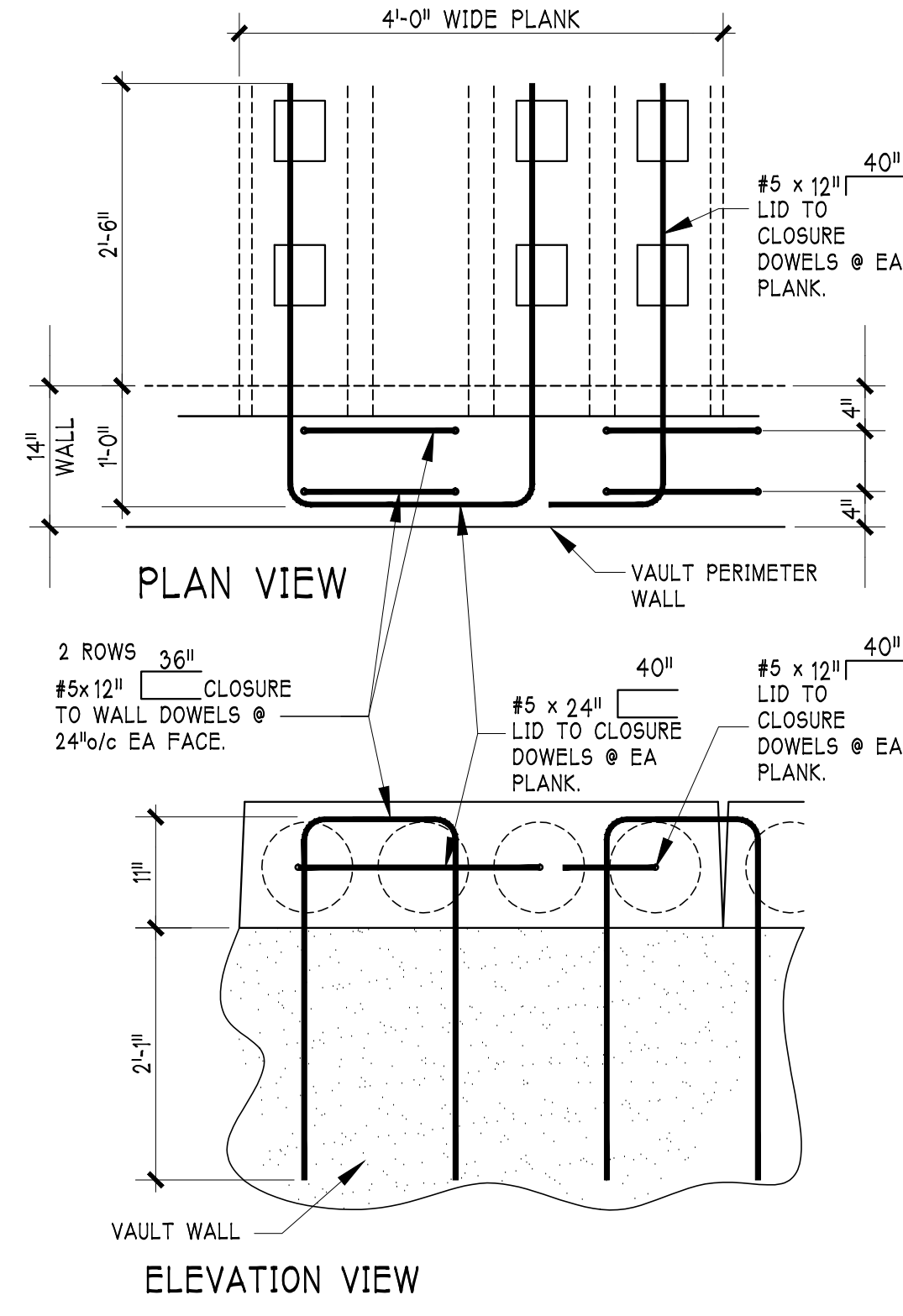
LID & WALL TO CLOSURE DOWELS
AT VOID BLOCKOUTS - 14" WALL

1
S4
SCALE 3/4"=1'-0"



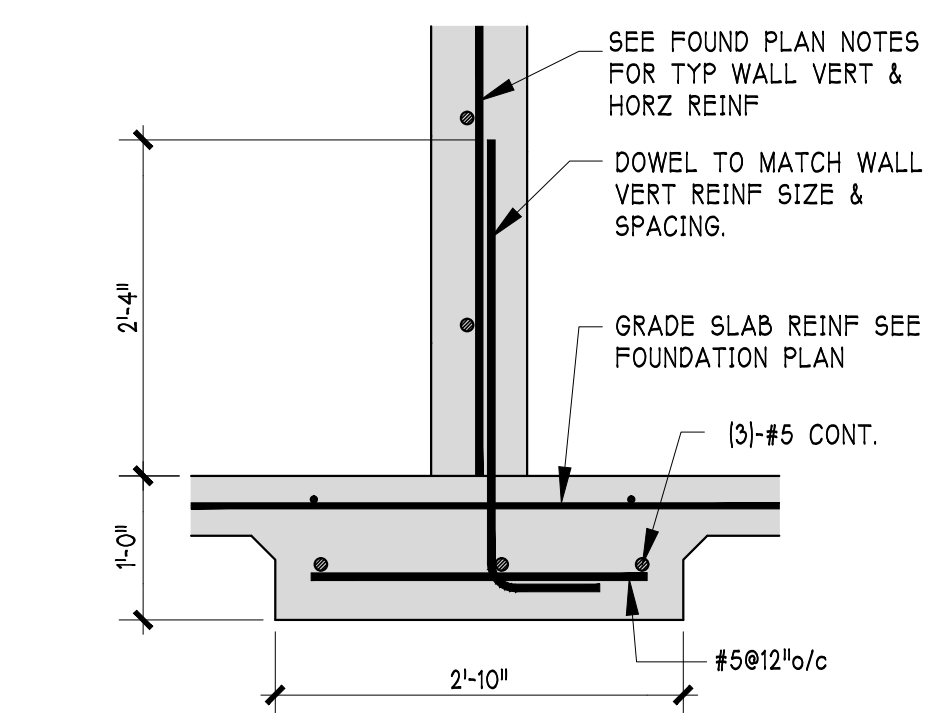
REINF @ BLOCKOUT

3
S4
SCALE 1"=1'-0"



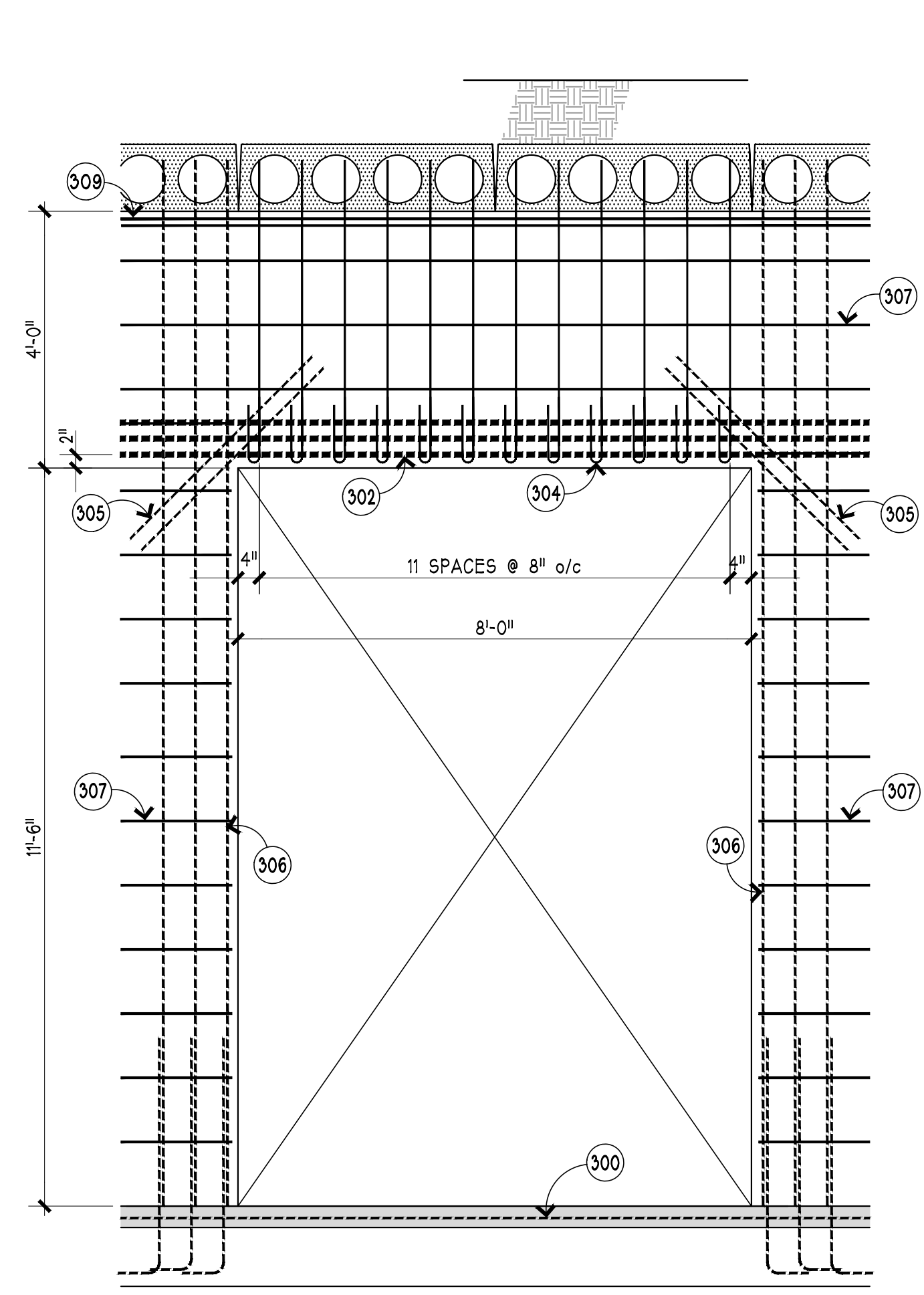
LID & WALL TO CLOSURE DOWELS
AT PLANK VOID FILL - 14" WALL

2
S4
SCALE 3/4"=1'-0"



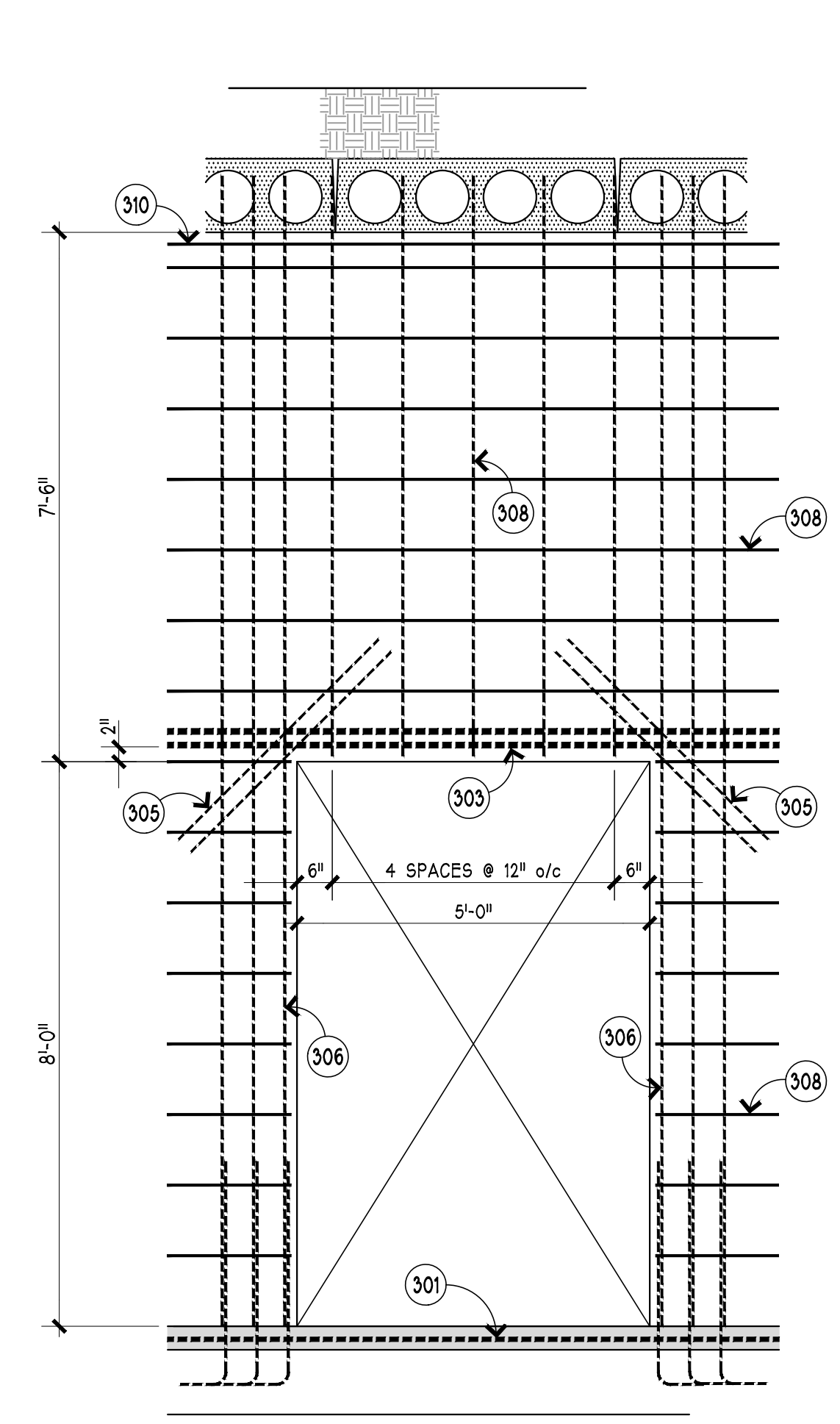
KNEEWALL FTG DETAIL

4
S4
SCALE 3/4"=1'-0"



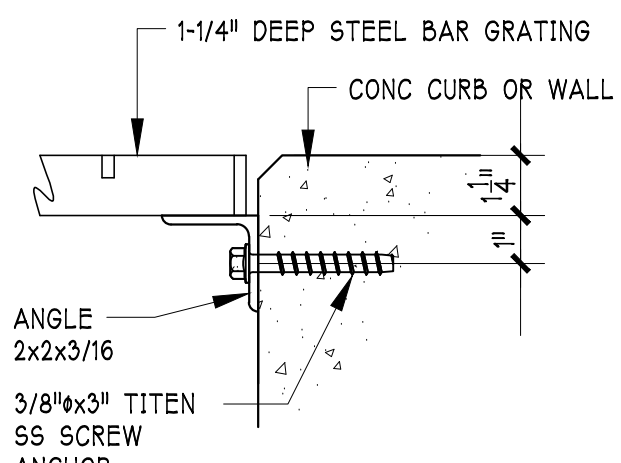
WALL REINF @ OPENING

A
S4
SCALE 1/2"=1'-0"



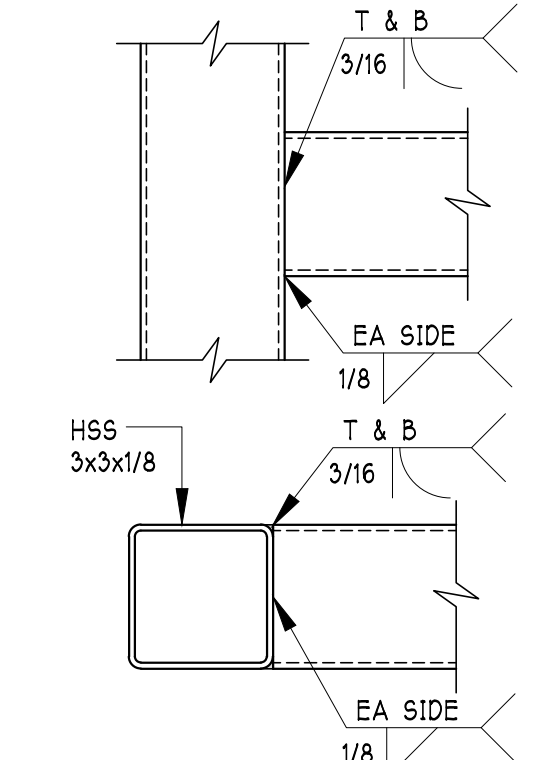
WALL REINF @ OPENING

B
S4
SCALE 1/2"=1'-0"



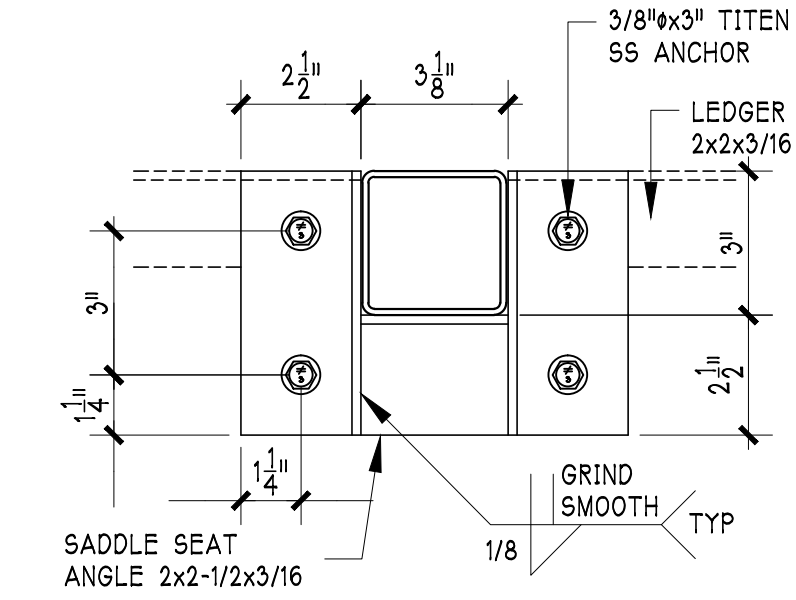
LEDGER ANGLE DETAILS

5
S4
SCALE 3/4"=1'-0"



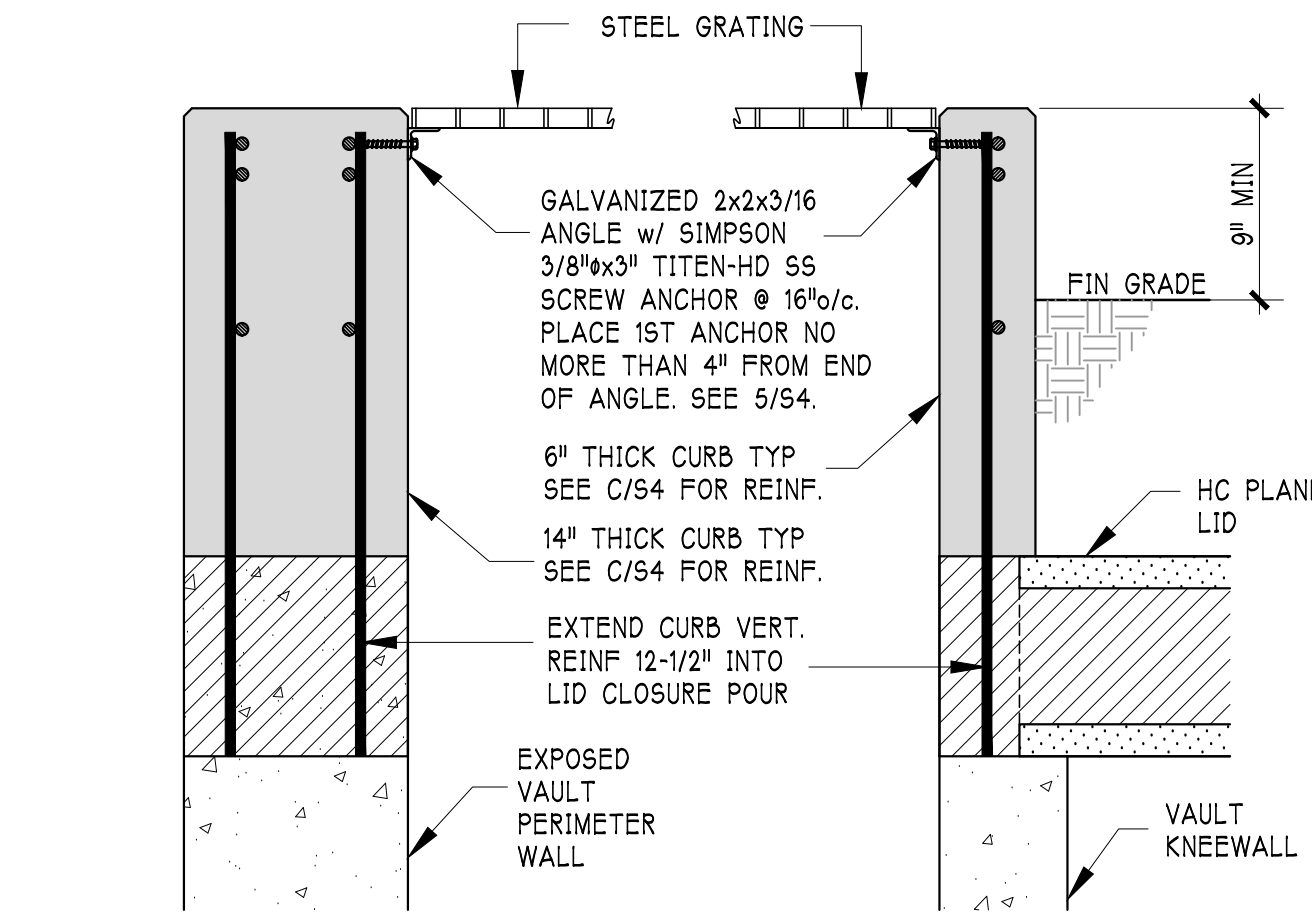
HSS CONN DETAIL

6
S4
SCALE 3/4"=1'-0"



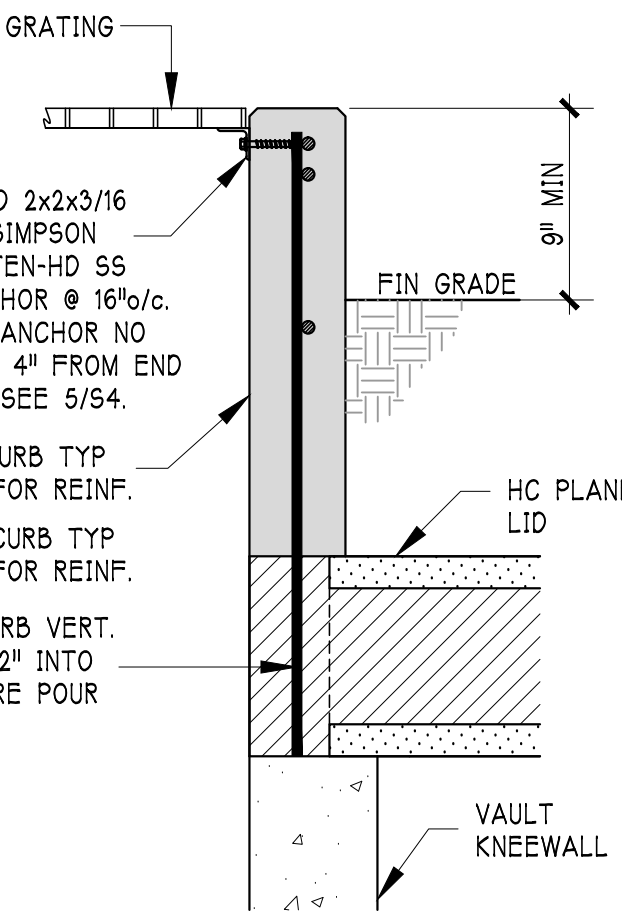
TYP HSS SEAT DETAIL

7
S4
SCALE 3/4"=1'-0"



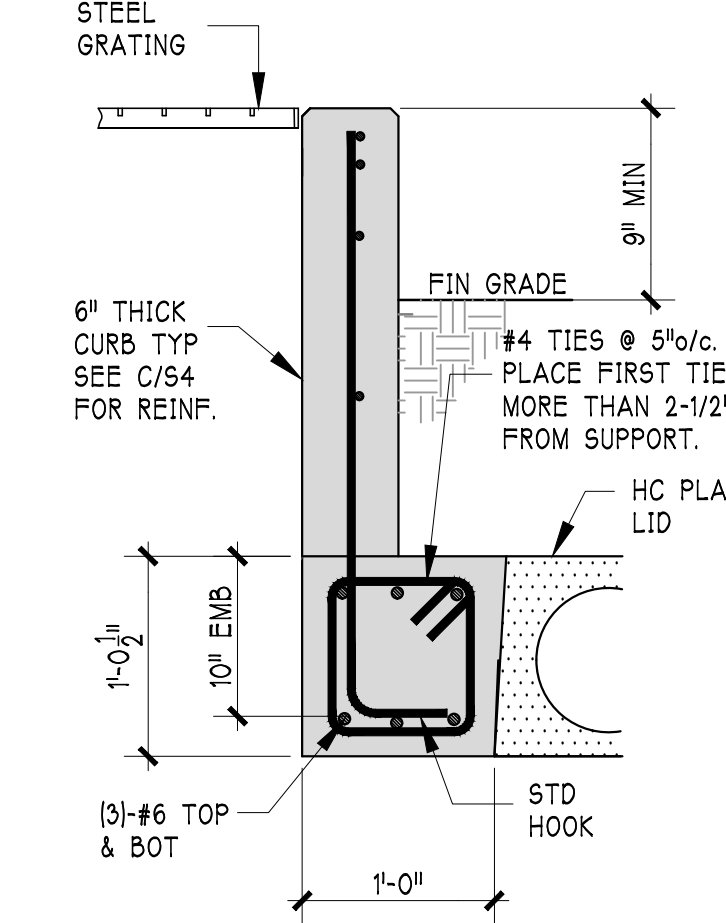
CURB @ OPNG

8
S4
SCALE 1"=1'-0"



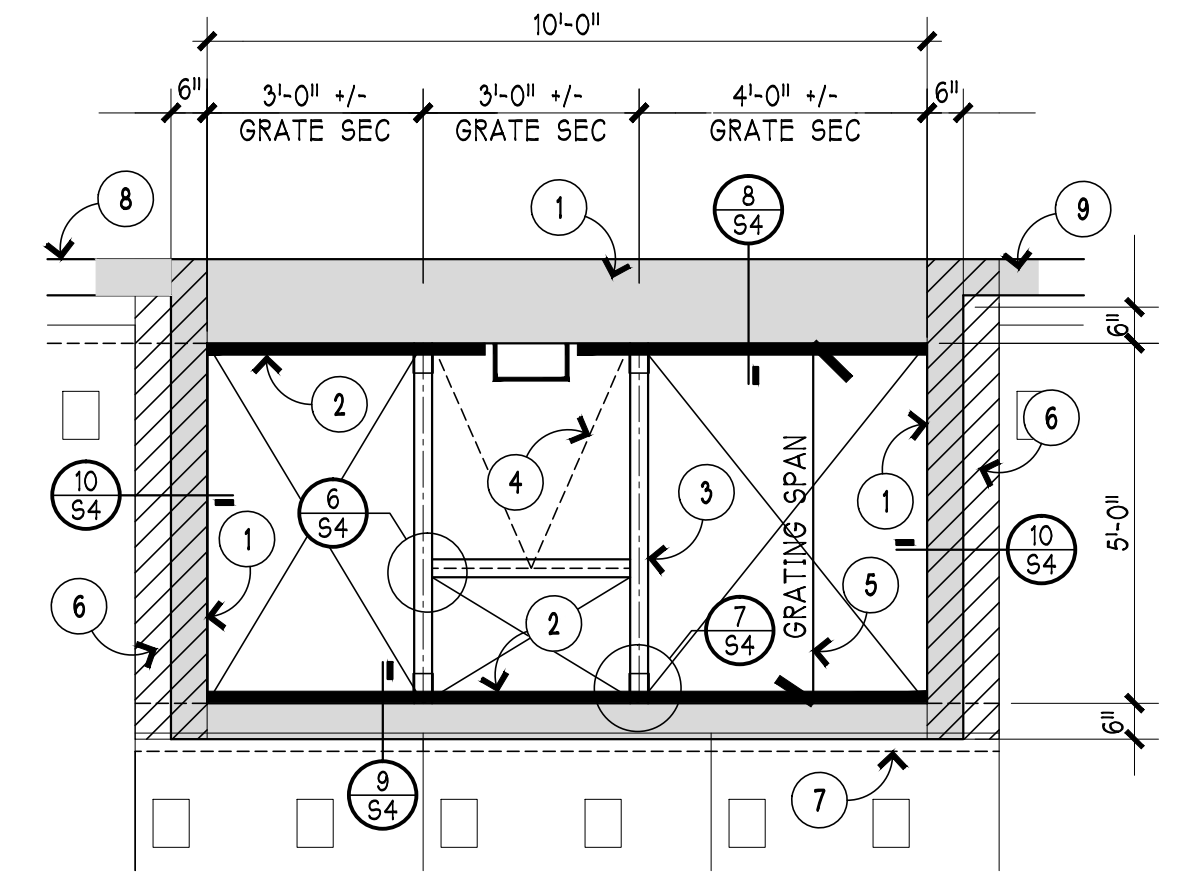
CURB @ OPNG

9
S4
SCALE 1"=1'-0"



CURB & SLAB BM

10
S4
SCALE 1"=1'-0"



GRATED OPNG KEYNOTES

- 6" THICK CURB TYP @ THE PERIMETER OF THE OPENING, INCREASE TO 14" THK AT THE EXPOSED PERIMETER WALL. REINF W/ #4@12" o/c HORZ & VERT AT THE CENTER OF THE CURB FOR THE 6" THICK SECTION AND #4@12" o/c HORZ & VERT EA FACE FOR THE 14" THICK SECTION. PROVIDE #4x18"x18" CORNER BARS AT ALL HORZ REINF.
- GALVANIZED STEEL ANGLE SEAT 2x2-3/16. COPE HORZ LEG AT LADDER. SEE 5/S4 FOR ANGLE ATTACHMENT TO CURB.
- HSS 3x3x1/8 REMOVABLE STEEL FRAME @ PERIMETER OF HINGED GRATE SECTION
- PROVIDE 36"x36" HINGED SECTION OF GRATING @ ACCESS LADDER.
- GALVANIZED STEEL GRATING W-19-4 w/ 1-1/4"x3/16" BRG BARS.
- HATCHED AREA REPRESENTS EXTENT OF 12" WIDE SLAB BM. SEE 10/S4 FOR REINFORCING.
- KNEEWALL BELOW.
- VAULT PERIMETER WALL.
- 6" THK CURB AT EXPOSED WALL. SEE 8/S3.

GRATING & CURB @ 5'x10' OPNG

C
S4
SCALE 3/8"=1'-0"

KEYNOTES OPNG IN CELL DIVIDER WALL

- ADDED (4)-#6x15'-0" TOP BARS WITHIN THE FOOTING. CENTER ON OPNG.
- ADDED (4)-#6x10'-0" TOP BARS WITHIN THE FOOTING. CENTER ON OPNG.
- (3)-#6@3" o/c. EXTEND 30" INTO WALL EA JAMB OF OPENING.
- (2)-#6@3" o/c. EXTEND 30" INTO WALL EA JAMB OF OPENING.
- #4 VERT w/ 180 HOOK @ HEAD OF OPNG, SPACED AS SHOWN.
- (2)-#5 x 4'-0" @ 4" o/c DIAGONAL BARS AT THE CENTER OF THE WALL.
- (3)-#6@6" o/c VERT EACH FREE EDGE JAMB OF OPENING.
- #5@12" o/c AT THE CENTER OF THE WALL TYP CELL DIVIDER WALL HORZ REINF.
- #5@12" o/c HORZ AND VERT EA FACE. TYP WALL REINF.
- (2)-#5 HORZ @ THE TOP OF THE WALL.
- (2)-#5 HORZ EA FACE @ THE TOP OF THE WALL.

DATE:	02-11-2026	ISSUED FOR CONST PERMIT APPLICATION	N/A
	04-13-2026	INCORP PLAN REVIEW COMMENTS	YES
DESCRIPTION:	CLOUD:		
	N/A		

ite structures

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04-13-2026

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WASHINGTON

PRRWF20260365

DETAILS

SHEET:

S4 OF 4

S-26-009