

STRUCTURAL GENERAL NOTES

1. THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS, AND GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
2. CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, PROCEDURES AND SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR SHORING AND BRACING OF ALL ELEMENTS UNTIL THE STRUCTURE IS COMPLETE.
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH, AND COORDINATED WITH CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION AND OTHER CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL COORDINATE THE LOCATION AND SIZES OF ALL OPENINGS AND PENETRATIONS IN THE STRUCTURAL MEMBERS WITH THE APPLICABLE DISCIPLINES.
5. CONTRACTOR SHALL REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO ENGINEER. CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
6. WIND LOADS FOR MECHANICAL ATTACHMENT SHALL BE CALCULATED USING ASCE 7-10 AND INCORPORATED BY APPLICABLE TRADES. ENGINEER OF RECORD SHALL BE CONTACTED IF MANUFACTURER HAS QUESTIONS ABOUT ATTACHING TO THE STRUCTURAL BUILDING ELEMENTS.

DESIGN INFORMATION

CODES	IBC 2012 / ASCE 7-10	
LIVE LOADS	ROOF	20 psf
	TYPICAL GROUND FLOOR	100 psf
	CONTROL BUILDING ELEVATED FLOOR AND EXTERIOR ELEVATED WALKWAYS	80 psf
	MCC BUILDING FLOOR	275 psf
DEAD LOADS	ACTUAL WEIGHT OF MATERIALS AND EQUIPMENT	
RISK CATEGORY	III (ALL STRUCTURES ON SITE)	
WIND LOADS	WINDSPEED (ULTIMATE) EXPOSURE CATEGORY	145 mph C
	CONTROL BUILDING: ENCLOSURE CLASSIFICATION: ENCLOSED INTERNAL PRESSURE COEFFICIENT: +0.18 q _s (ULTIMATE) 47 psf COMPONENTS AND CLADDING PRESSURES BASED ON 10 ft. ² (ULTIMATE)	
WALLS	ZONE 4	+51 psf, -55 psf
	ZONE 5	+51 psf, -68 psf
ROOF	ZONE 1	+23 psf, -56 psf
	ZONE 2	+23 psf, -94 psf
	ZONE 3	+23 psf, -141 psf
DEWATERING BUILDING (PEMB): AT ENCLOSED PORTION: ENCLOSURE CLASSIFICATION: ENCLOSED INTERNAL PRESSURE COEFFICIENT: +0.18 q _s (ULTIMATE) 43 psf COMPONENTS AND CLADDING PRESSURES BASED ON 10 ft. ² (ULTIMATE)		
WALLS	ZONE 4	+51 psf, -55 psf
	ZONE 5	+51 psf, -68 psf
ROOF	ZONE 1	+25 psf, -64 psf
	ZONE 2	+25 psf, -77 psf
	ZONE 3	+25 psf, -133 psf
SLUDGE DEWATERING DRIVE CANOPY: ENCLOSURE CLASSIFICATION: OPEN INTERNAL PRESSURE COEFFICIENT: 0.0 q _s (ULTIMATE) 43 psf COMPONENTS AND CLADDING PRESSURES BASED ON 9 ft. ² (ULTIMATE)		
ROOF	ZONE 1	+65 psf, -68 psf
	ZONE 2	+98 psf, -103 psf
	ZONE 3	+131 psf, -142 psf
UV DISINFECTION CANOPY (PEMB): ENCLOSURE CLASSIFICATION: OPEN INTERNAL PRESSURE COEFFICIENT: 0.0 q _s (ULTIMATE) 39 psf COMPONENTS AND CLADDING PRESSURES BASED ON 14 ft. ² (ULTIMATE)		
ROOF	ZONE 1	+59 psf, -61 psf
	ZONE 2	+88 psf, -92 psf
	ZONE 3	+117 psf, -127 psf
DISSOLVED OXYGEN CANOPY (PEMB): ENCLOSURE CLASSIFICATION: OPEN INTERNAL PRESSURE COEFFICIENT: 0.0 q _s (ULTIMATE) 39 psf COMPONENTS AND CLADDING PRESSURES BASED ON 9 ft. ² (ULTIMATE)		
ROOF	ZONE 1	+59 psf, -61 psf
	ZONE 2	+88 psf, -92 psf
	ZONE 3	+117 psf, -127 psf
SEISMIC LOAD	SITE CLASS	D
	SEISMIC DESIGN CATEGORY	C
	IMPORTANCE FACTOR, I _s	1.25
	S _{DS}	0.314 g
	S _{D1}	0.183 g
ANALYSIS PROCEDURE		EQUIVALENT LATERAL FORCE
HEADWORKS PLATFORM LATERAL FORCE RESISTING SYSEM		STEEL ORDINARY CONCENTRICALLY BRACED FRAMES
CONTROL BUILDING: LATERAL FORCE RESISTING SYSTEM		SPECIAL REINFORCED CONCRETE SHEARWALLS AND SPECIAL REINFORCED MASONRY SHEARWALLS

EXCAVATION FOR STRUCTURAL ITEMS

1. THE CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY TO PROTECT EXISTING STRUCTURES AND UTILITIES. ANY DAMAGE TO EXISTING STRUCTURES OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR, TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BRACING & SUPPORTS NECESSARY FOR

EXCAVATION AND CONSTRUCTION AND ALL EXCAVATIONS SHALL COMPLY WITH APPLICABLE OSHA REGULATIONS.

FOUNDATIONS

1. REFER TO THE GEOTECHNICAL REPORT BY TERRACON, DATED MARCH 15, 2018, PROJECT NUMBER ES18011, AND SPECIFICATIONS FOR REQUIREMENTS AND RECOMMENDATIONS FOR EXCAVATION AND SUBGRADE PREPARATION PRIOR TO PILE, GRADE BEAM AND SLAB INSTALLATION.
2. WHERE APPLICABLE, ALL EXCAVATIONS, COMPACTED FILL, AND SUBGRADES SHALL BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF GEORGIA TO VERIFY SPECIFIED GEOTECHNICAL CONFORMANCE REQUIREMENTS.
3. PILES SHALL BE 12" SQUARE PRESTRESSED PRECAST CONCRETE PILES. SEE TYPICAL DETAILS, SPECIFICATIONS AND NOTES THIS SHEET FOR REQUIREMENTS.
4. FOUNDATIONS, INCLUDING GRADE BEAMS AND PILE SUPPORTED MAT SLABS, SHALL BE SIDE FORMED.

PRE-CAST PRE-STRESSED PILES

1. PRE-CAST PRE-STRESSED CONCRETE (PSC) PILES SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. PILES SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THESE GENERAL NOTES, "PRESTRESSED CONCRETE", ACI 543R-74 "RECOMMENDATIONS FOR DESIGN, MANUFACTURE, AND INSTALLATION OF CONCRETE PILES", PCI JR-382 "RECOMMENDED PRACTICE FOR DESIGN, MANUFACTURE, AND INSTALLATION OF PRE-STRESSED CONCRETE PILING", AND THESE DRAWINGS.
2. PSC PILES SHALL BE MANUFACTURED BY A PLANT CERTIFIED BY THE PCI PLANT CERTIFICATION PROGRAM.
3. AT LEAST 30 DAYS PRIOR TO DRIVING FIRST PILE, CONTRACTOR SHALL SUBMIT A PILE INSTALLATION PLAN TO ENGINEER FOR ACCEPTANCE. THE PLAN SHALL INCLUDE THE FOLLOWING INFORMATION:
 - A. LIST OF PROPOSED EQUIPMENT INCLUDING CRANES, DRIVING EQUIPMENT, JETTING EQUIPMENT, COMPRESSORS, HAMMERS AND PRE-DRILLING EQUIPMENT. INCLUDE MANUFACTURER'S DATA SHEETS WITH LIST.
 - B. METHODS TO DETERMINE HAMMER ENERGY OR STROKE IN THE FIELD FOR DETERMINATION OF PILE CAPACITY. THE SUBMITTAL SHALL INCLUDE NECESSARY CHARTS AND RECENT CALIBRATIONS FOR ANY PRESSURE MEASURING EQUIPMENT. SUBMITTAL SHALL ALSO INCLUDE THE METHOD FOR MONITORING PILE ADVANCEMENT.
 - C. DRAWINGS OF ANY TEMPLATES AND PROPOSED FOLLOWERS.
 - D. DETAILS OF PROPOSED LOAD TEST EQUIPMENT AND PROCEDURES INCLUDING RECENT CALIBRATIONS OF JACKS AND REQUIRED LOAD CELLS. SEE PILE LOAD TEST SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - E. SEQUENCE OF DRIVING PILES.
 - F. REQUIRED SHOP DRAWINGS FOR PILES.
4. METHODS AND EQUIPMENT PROPOSED TO PREVENT DISPLACEMENT OF PILES DURING PLACEMENT AND COMPACTION OF FILL WITHIN 20 FEET OF PILES.

4. SUBMIT A PILE DRIVING RECORD FOR EACH PILE, AS INSTRUCTED IN THE PILE SPECIFICATION, WITHIN THREE DAYS OF DRIVING.

5. NO PILE SHALL BE DRIVEN WITHIN 20 FEET OF CONCRETE THAT IS LESS THAN 4 DAYS OLD.

6. THERE ARE EXISTING PILES ON THE JOBSITE. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF NEW PILES AROUND EXISTING PILES. PILES LOCATED OUTSIDE OF THE FOLLOWING TOLERANCES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.

- A. LOCATION ALONG THE LENGTH OF A GRADE BEAM: ±1'-0" FROM THE SPECIFIED LOCATION.
- B. LOCATION IN BOTH DIRECTIONS AT MAT SLABS: ±1'-0" FROM THE SPECIFIED LOCATION.
- C. VARIATION IN SPECIFIED BUTT ELEVATION: -1'-0"

7. PILES SHALL BE CAREFULLY LOCATED TO THE LINES AND SPACING INDICATED ON THE DRAWINGS. PILE BUTTS SHALL NOT BE PULLED INTO REQUIRED LOCATION MORE THAN 2 INCHES. EXTREME CARE SHALL BE EXERCISED IN THE LOCATING AND DRIVING OF PILES SO THAT NO OTHER PILES, UTILITIES OR EXISTING STRUCTURES ARE DAMAGED IN THE PROCESS.

8. THE CONTRACTOR IS RESPONSIBLE FOR ALL FIELD ENGINEERING REQUIRED FOR CONSTRUCTION, FURNISHING ALL LINES, GRADES AND CONTROL POINTS.

9. A STEEL DRIVING HEAD SUITABLE FOR THE TYPE AND SIZE OF PILE BEING DRIVEN SHALL BE USED. IT SHALL HOLD PILE IN POSITION, PREVENT DAMAGE TO THE PILE AND TRANSMIT THE HAMMER ENERGY ALONG THE PILE AXIS. THE DRIVING HEAD SHALL FIT LOOSELY ENOUGH AROUND THE PILE HEAD TO ENABLE THE PILE TO ROTATE SLIGHTLY WITHOUT BINDING.

10. SUITABLE CUSHION BLOCKS SHALL BE PROVIDED ABOVE THE DRIVING HEAD AS NECESSARY TO PREVENT DAMAGE TO THE PILE. IT SHALL BE MADE OF A MATERIAL WHICH WILL NOT COMPRESS TO THE EXTENT THAT CUSHION EFFECT IS LOST.

11. PILES ARE TO BE DRIVEN CONTINUOUSLY TO THE MINIMUM TIP ELEVATION AND DESIGN BEARING CAPACITY WITHOUT INTERRUPTION.

12. SPECIFIED PILE LENGTH IS AN ESTIMATE BASED UPON GEOTECHNICAL RECOMMENDATIONS. FIRST PRODUCTION PILE SHALL BE TESTED AND PILE CAPACITY VERIFIED PRIOR TO REMAINING PILE INSTALLATIONS.

13. PRACTICAL REFUSAL SHALL BE DEFINED AS 2.5 TIMES THE DESIGN BEARING CAPACITY WITH A MINIMUM PENETRATION OF 40'-0" BELOW EXISTING GRADE.

14. IN THE EVENT THAT HEAVE OF A PREVIOUSLY DRIVEN PILE OCCURS, THE PILE SHALL BE REDRIVEN TO ITS ORIGINAL LOCATION WITH A DRIVING RESISTANCE AT LEAST AS GREAT AS THE ORIGINAL DRIVING RESISTANCE.

15. THE ALLOWABLE DEVIATION FROM THE INDICATED LOCATIONS SHALL BE 3 INCHES FOR ANY ONE PILE. THE SUM OF DEVIATIONS FOR ANY TWO PILES SHALL NOT EXCEED 6 INCHES. THE ALLOWABLE DEVIATION FROM THE INDICATED PILE CUTOFF ELEVATION SHALL BE 4 INCHES. ALLOWABLE DEVIATION FROM VERTICAL PLUMB IS 1 IN 48.

16. IF A PILE IS INSTALLED THAT EXCEEDS THE ALLOWABLE TOLERANCES SPECIFIED HEREIN, ENGINEER SHALL BE CONTACTED IMMEDIATELY. IF IT IS DETERMINED THAT THE OUT OF TOLERANCE IS CAUSED BY CONTRACTOR'S INSTALLATION, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REDESIGN EFFORTS THAT RESULT.

17. ALL PILES SHALL BE CUT OFF AT THE REQUIRED ELEVATION AT A RIGHT ANGLE TO THE AXIS OF THE PILE. CUTTING SHALL BE PERFORMED IN A MANNER TO AVOID DAMAGE TO THE PILE BELOW THE CUTOFF ELEVATION.

18. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PILE FOUNDATION TO THE ENGINEER BEFORE ANY PILE INSTALLATION.

PILE TESTING PROGRAM

1. ONE PILE SHALL UNDERGO DYNAMIC PILE ANALYSIS DURING INSTALLATION. THIS PILE SHALL BE THE FIRST OF THE PRODUCTION PILES AND SHALL BE DRIVEN AT A LOCATION SELECTED BY THE CONTRACTOR.

2. METHODS AND EQUIPMENT USED FOR INSTALLATION OF TEST PILE SHALL BE SAME METHODS AND EQUIPMENT USED FOR INSTALLATION OF PRODUCTION PILES.
3. ADDITIONAL PILE LOAD TEST REQUIREMENTS ARE PROVIDED IN THE PROJECT SPECIFICATIONS.

REINFORCED CONCRETE

1. UNLESS NOTED OTHERWISE, ALL CONCRETE WORK, DETAILING, FABRICATION, AND PLACING, INCLUDING MIN COVER REQUIREMENTS OF REINFORCING BARS (EXCEPT AS NOTED HEREIN) AND CONCRETE SHALL BE GOVERNED BY THE LATEST REVISIONS OF:
 - A. ACI 301, ACI 315, AND ACI 318
 - B. CRSI RECOMMENDED PRACTICE OF PLACING REINFORCING BARS
 - C. ACI 306 AND ACI 305 FOR COLD AND HOT WEATHER CONCRETING, RESPECTIVELY
2. ALL CONCRETE SHALL BE NORMAL WEIGHT WITH A MAXIMUM UNIT WEIGHT OF 150 pcf, AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 psi UNLESS NOTED OTHERWISE.
3. ALL CONCRETE FOR ELEVATED FLOORS SHALL BE LIGHTWEIGHT WITH A MAXIMUM UNIT WEIGHT OF 150 pcf, AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 psi
4. CONCRETE MIX DESIGNS, IN ACCORDANCE WITH ACI RECOMMENDATIONS, SHALL BE SUBMITTED TO THE ENGINEER AND TESTING AGENCY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE REQUIRED CONCRETE DESIGN STRENGTH.
5. USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
6. THE AIR CONTENT IN ALL CONCRETE EXPOSED TO WEATHER SHALL BE BETWEEN 2% AND 5%.
7. THE TESTING AGENCY SHALL SAMPLE AND TEST EACH 50 CU. YARDS OR FRACTION THEREOF OF EACH CLASS OF CONCRETE PLACED EACH DAY. SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172. PERFORM THE FOLLOWING TESTS IN ACCORDANCE WITH THE INDICATED STANDARD:
 - A. SLUMP: ASTM C143
 - B. AIR CONTENT: ASTM C173
 - C. COMPRESSIVE STRENGTH: ASTM C39, WITH ONE CYLINDER AT 7 DAYS, 2 CYLINDERS AT 28 DAYS, AND ONE SPECIMEN HELD IN RESERVE.
8. DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH ACI 315 "DETAILING MANUAL". SUBMIT SHOP DRAWINGS FOR ACCEPTANCE SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND ACCEPTED.
9. REINFORCING STEEL SHALL CONFORM TO ASTM A615, AND SHALL BE GRADE 60 UNLESS OTHERWISE NOTED.
10. LAP SPLICES SHALL BE AS SHOWN IN THE TABLE PROVIDED IN THESE NOTES, OR DETAILS IN THESE CONSTRUCTION DRAWINGS, AND SHALL CONFORM TO ACI 318. SHOULD CONFLICTS EXIST, THE STRICTEST PROVISION SHALL APPLY.
11. REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
12. WELDING OF REINFORCING STEEL IS NOT PERMITTED.

- A. CONCRETE CAST AGAINST EARTH (NOT FORMED) 3"
- B. CONCRETE EXPOSED TO EARTH OR WEATHER #6-8 1/2"
- C. CONCRETE EXPOSED TO EARTH OR WEATHER #6-18 2"
- D. CONCRETE NOT EXPOSED TO EARTH OR WEATHER, SLABS & WALLS <#11 1"
- E. CONCRETE NOT EXPOSED TO EARTH OR WEATHER, BEAMS & COLUMNS 1/2"

17. CONCRETE SHALL BE DISCHARGED AT THE SITE WITHIN 90 MINUTES AFTER WATER HAS BEEN ADDED TO THE CEMENT AND AGGREGATES. ADDITION OF WATER TO THE MIX AT THE PROJECT SITE WILL NOT BE ALLOWED. ALL WATER MUST BE ADDED AT THE BATCH PLANT.

18. PROVIDE A CONTINUOUS VAPOR BARRIER UNDER ALL CONCRETE SLABS AT INTERIOR SPACES CONFORMING TO ASTM E1745 (15 MIL).

19. REINFORCEMENT SPLICE/LAP LENGTH, HOOK DEVELOPMENT AND HOOK LENGTH TABLE SHOWN IS BASED UPON A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 psi AND 60,000 psi REINFORCEMENT (WITH NO EPOXY COATING).

20. THE MINIMUM SPLICE/LAP LENGTH IS BASED UPON A 6" CENTER TO CENTER BAR SPACING AND A 2" BAR COVER. IF THE SPLICE/LAP CONDITION DOES NOT CONFORM TO THESE PARAMETERS, THE REQUIREMENTS OF ACI 318 SHALL BE CALCULATED (BY REINFORCING DESIGNER) FOR THE SPECIFIC CONDITION. THE STRICTER OF THE TWO (VALUES IN TABLE OR THOSE CALCULATED) SHALL CONTROL.

21. ALL LAP SPLICES SHALL BE CLASS B. IF SPLICES ARE INDICATED BETWEEN BARS OF DIFFERENT SIZES, THE SPLICE LENGTH SHALL BE BASED UPON THE SMALLER BAR SIZE. INCREASE BY 1/3 FOR TOP BARS WITH MORE THAN 12" OF CONCRETE BELOW.

REINFORCEMENT LAP SPLICE, HOOK DEVELOPMENT AND LENGTH FOR REINFORCED CONCRETE

BAR SIZE	BAR DIAMETER, in.	SPLICE LAP LENGTH, in.	HOOK DEVELOPMENT, in.	HOOK LENGTH, in.
#3	0.375	19	8	5
#4	0.50	25	10	6
#5	0.625	31	12	8
#6	0.750	37	15	9
#7	0.875	54	17	11
#8	1.0	62	19	12
#9	1.128	70	22	14

METAL DECK

1. UNLESS NOTED OTHERWISE, THE METAL DECK SHALL BE HOT DIP GALVANIZED, CONFORMING TO THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS, LATEST EDITION.
2. FLOOR DECK AT CONTROL BUILDING SHALL BE 1.5VL x 20 GAUGE METAL DECK, SHALL BE GALVANIZED AND SHALL HAVE THE FOLLOWING MIN SECTION PROPERTIES: S_y = 0.231 in³/ft. AND I_y = 0.195 in⁴/ft. DECK SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM AND SHALL BE ATTACHED TO EACH SUPPORT AT ALTERNATE FLUTES WITH 3/8 INCH DIAMETER PUDDLE WELDS, TO SUPPORTS AT EDGES OF FLOOR PARALLEL TO DECK SPAN WITH 3/8 INCH DIAMETER PUDDLE WELDS AT 6 INCHES ON CENTER, AND AT SIDELAPS WITH 8 NO. 10 SCREWS PER SPAN OF DECK BETWEEN SUPPORTS.
3. ROOF DECK AT CONTROL BUILDING SHALL BE 1.5B x 20 GAUGE METAL DECK, SHALL BE GALVANIZED AND SHALL HAVE THE FOLLOWING MIN SECTION PROPERTIES: S_y = 0.234 in³/ft.

AND I_y = 0.212 in⁴/ft. DECK SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM AND SHALL BE ATTACHED TO EACH SUPPORT AT EACH FLUTE WITH #12 SCREWS, TO SUPPORTS AT EDGES OF ROOF PARALLEL TO DECK SPAN WITH #12 SCREWS AT 6 INCHES ON CENTER, AND AT SIDELAPS WITH 8 NO. 10 SCREWS PER SPAN OF DECK BETWEEN SUPPORTS.

4. SHORE ALL SINGLE SPAN FLOOR METAL DECK (AND ANY OTHER DECK SPAN LOCATIONS NOTED ON THE DRAWINGS AS REQUIRING SHORING) UNTIL CONCRETE HAS BEEN POURED AND HAS REACHED 75 PERCENT OF THE REQUIRED 28 DAY COMPRESSIVE STRENGTH.

5. FRAME OPENINGS IN FLOOR OR ATTIC SLAB, NOT DETAILED ELSEWHERE, AND ALL OPENINGS GREATER THAN 12" x 12", WITH L3/8 x 3/8 x 3/8 AT ALL FOUR SIDES OF OPENING, AT MECHANICAL OR OTHER EQUIPMENT SUPPORTS NOT DETAILED ELSEWHERE, PROVIDE L3/8 x 3/8 x 3/8 BENEATH ALL UNIT CURBS AND AT ALL EDGES OF OPENINGS FOR DUCTWORK. CONNECT ANGLES TO EACH OTHER AND TO STEEL FRAMING WITH A MINIMUM OF 4 INCHES OF 3/8 INCH FILLET WELD. AT MECHANICAL UNITS SUSPENDED FROM ROOF STRUCTURE, SUPPORT UNITS FROM TRUSS PANEL POINTS ONLY. PROVIDE SUPPLEMENTAL FRAMING AS DESIGNED AND DETAILED BY TRUSS MANUFACTURER TO PROVIDE SUPPORT FOR EQUIPMENT.

6. DECKING SHALL BE ERECTED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE.

7. SUBMIT PRODUCT DATA, INCLUDING SPAN TABLES, FOR REVIEW.

8. TOUCH UP AREAS DAMAGED IN HANDLING AND ERECTION WITH COLD GALVANIZING REPAIR PAINT.

9. CHALKLINES OR OTHER METHODS SHALL BE USED TO ENSURE THAT DECK WELDS ARE ALIGNED WITH AND WILL OCCUR OVER THE TOP CHORD OF JOISTS OR TOP FLANGE OF BEAMS. EXCESSIVE BLOWTHROUGH IN THE DECK DUE TO MISALIGNMENT OR EXCESSIVE HEAT WILL NOT BE TOLERATED. IF, IN THE OPINION OF THE ARCHITECT OR HIS REPRESENTATIVE, EXCESSIVE BLOWTHROUGH IN THE DECK HAS OCCURRED, THE CONTRACTOR SHALL REPLACE THE DAMAGED DECK AT HIS EXPENSE.

MASONRY

1. CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI 530 / ASTM 5 / TMS 402 AND SPECIFICATIONS FOR MASONRY STRUCTURES, ACI 530.1 / ASTM 6 / TMS 602.
2. UNLESS NOTED OTHERWISE, PROVIDE HOLLOW, LIGHTWEIGHT, LOAD BEARING CONCRETE MASONRY UNITS (CMU) CONFORMING TO ASTM C90, TYPE I, WITH A DENSITY LESS THAN 105 pcf.
3. PROVIDE CONCRETE MASONRY WITH A MINIMUM COMPRESSIVE STRENGTH, f'_m = 1,900 psi.
4. PROVIDE TYPE "S" MORTAR IN ACCORDANCE WITH ASTM C270 WITH A COMPRESSIVE STRENGTH OF 2,000 psi UNLESS NOTED OTHERWISE.
5. PROVIDE GROUT FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 psi UNLESS NOTED OTHERWISE. GROUT SOLID ALL CELLS CONTAINING REINFORCING.
6. LAP SPLICES SHALL BE AS SHOWN IN THE TABLE PROVIDED IN THESE NOTES AND SHALL CONFORM TO ACI 530. SHOULD CONFLICTS EXIST, THE STRICTEST PROVISION SHALL APPLY:

REINFORCEMENT LAP SPLICE, HOOK DEVELOPMENT AND LENGTH FOR CONCRETE MASONRY UNITS

BAR SIZE	BAR DIAMETER, in.	SPLICE LAP LENGTH, in.	HOOK DEVELOPMENT, in.	HOOK LENGTH, in.
#4	0.50	17	9	6
#5	0.625	27	9	8
#6	0.750	50	10	9
#7	0.875	67	12	11
#8	1.0	88	13	12

7. PROVIDE TRUSS OR LADDER TYPE HORIZONTAL JOINT REINFORCEMENT COMPLYING WITH ASTM A82 AND ZINC COATED, AS SPECIFIED HEREIN.

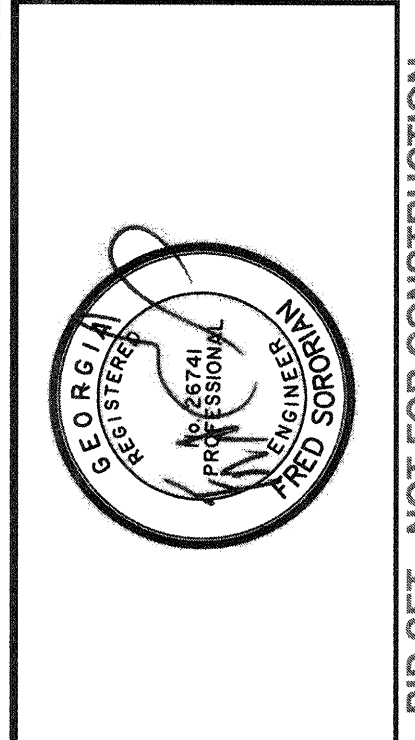
8. LAY MASONRY UNITS IN RUNNING BOND PATTERN UNLESS NOTED OTHERWISE.

9. BOND BEAMS, CMU LINTELS, MASONRY BENEATH STEEL BEAM AND JOIST BEARINGS, AND OTHER STRUCTURAL ELEMENTS SHALL EXTEND UNINTERRUPTED ACROSS CONTROL JOINTS. PROVIDE RAKED JOINTS IN THESE ELEMENTS TO MATCH THE CONTROL JOINTS.

10. INSTALL MASONRY WALLS IN 4'-0" MAXIMUM LIFTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AND AISC 303 "THE CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
2. SHOP DRAWINGS PREPARED IN ACCORDANCE WITH THE LATEST "STRUCTURAL STEEL DETAILING MANUAL" OF THE AISC SHALL BE SUBMITTED FOR APPROVAL. NO FABRICATION SHALL BEGIN UNTIL SHOP DRAWINGS ARE COMPLETED AND APPROVED.
3. STRUCTURAL STEEL WIDE FLANGE SECTIONS (WF) SHALL CONFORM TO ASTM A572 GRADE 50.
4. STRUCTURAL STEEL TUBE SECTIONS (HSS) SHALL CONFORM TO ASTM A500 GRADE B.
5. ALL OTHER STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
6. STRUCTURAL STEEL FRAMING EXPOSED TO THE WEATHER AND EXTERIOR, AND WHERE IN CONTACT WITH MASONRY OR CONCRETE, SHALL BE HOT DIP GALVANIZED. WHERE REQUIRED FOR PAINTING, GALVANIZING SHALL BE NON-QUENCHED. ALL EXTERIOR STEEL SHALL HAVE A 2-COAT PAINT SYSTEM COMPATIBLE WITH GALVANIZED STEEL.
7. WELDING SHALL COMPLY WITH AWS CODE D11 AND SHALL BE PERFORMED BY CERTIFIED WELDERS.
8. WHERE WIDE FLANGE FLOOR BEAMS SPAN PARALLEL TO OPEN WEB JOISTS, WIDE FLANGE BEAMS SHALL BE CAMBERED TO MATCH.
9. BOLTS FOR STEEL TO STEEL CONNECTIONS SHALL CONFORM TO ASTM A325 TYPE N AND SHALL BE TIGHTENED TO MEET SNUG TIGHT REQUIREMENTS PER THE AISC MANUAL OF STEEL CONSTRUCTION.
10. ANCHOR RODS FOR COLUMNS SHALL BE PROVIDED WITH A DOUBLE NUT AND WASHER AT THE EMBEDDED END AND SHALL CONFORM TO ASTM F1544 GRADE 36 (MINIMUM).
11. DO NOT USE GAS CUTTING TORCHES FOR CORRECTING FABRICATION ERRORS IN THE STRUCTURAL FRAMING.
12. PACK UNDER BASE PLATES WITH NON-SHRINK, HIGH STRENGTH GROUT (MINIMUM 6,000 psi) AFTER SETTING AND LEVELING.
13. CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF STEEL FRAMING AGAINST WIND LOADS, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAME.



NO.	ISSUED FOR	REVISIONS	DATE
0	ISSUED FOR BIDS		

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TRAVIS FIELD WATER RECLAMATION FACILITY
STRUCTURAL GENERAL NOTES

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

SO.0

BID SET - NOT FOR CONSTRUCTION

STRUCTURAL GENERAL NOTES CONT.

PRE-ENGINEERED METAL BUILDING (PEMB)

- THE DESIGN OF THE FOLLOWING PRE-ENGINEERED METAL BUILDING SYSTEMS WILL BE THE SOLE RESPONSIBILITY OF THE MANUFACTURER AND SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROJECT STATE.
 - CRANE RAIL CANOPY ADJACENT TO THE CONTROL BUILDING
 - CRANE, GRATING, AND MONORAIL FOR RAS PUMP
 - DE-WATERING BUILDING
 - UV DISINFECTION CANOPY
 - DISSOLVED OXYGEN CANOPY
 - SLUDGE PUMP CANOPY

THE DESIGNS SHALL BE IN COMPLIANCE WITH THE IBC 2015 BUILDING CODE IN ADDITION TO THE LOAD AND DEFLECTION REQUIREMENTS SPECIFIED IN THESE DRAWINGS.

- THE FOUNDATIONS HAVE BEEN DESIGNED BASED ON ASSUMED COLUMN REACTIONS. THE PRE-ENGINEERED METAL BUILDING MANUFACTURER SHALL SUBMIT ACTUAL DESIGN REACTIONS TO THE STRUCTURAL ENGINEER OF RECORD FOR VERIFICATION OF FOUNDATION PRIOR TO CONSTRUCTION.
- THE ANCHOR ROD SIZES, QUANTITIES AND EMBEDMENT DEPTHS SHOWN IN THE DETAILS ARE MINIMUM REQUIREMENTS. FINAL ANCHOR ROD SIZE, TOTAL LENGTH, AND LOCATION TO BE BY METAL BUILDING SUPPLIER.
- METAL BUILDING SUPPLIER TO VERIFY COLUMN LAYOUTS AND LOCATIONS OF TRANSVERSE LATERAL FORCE RESISTING SYSTEMS (ORTHOGONAL TO METAL BUILDING FRAMES) FOR EACH STRUCTURE. ANY CHANGES MUST BE SUBMITTED FOR REVIEW OF FOUNDATION DESIGN BEFORE CONSTRUCTION STARTS.

DEFLECTION LIMITS SHALL BE AS FOLLOWS:

ROOF MEMBERS (PURLINS & FRAMES):	LIVE LOAD	L/360
	DEAD + LIVE LOAD	L/240
WALL MEMBERS (GIRTS & COLUMNS):	SUPPORTING METAL PANELS	L/240
BUILDING DRIFT:	H/240, WHERE H IS THE BUILDING EAVE HEIGHT	

- ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ARE SUBJECT TO THE APPROVAL OF THE PROJECT MANAGER/ARCHITECT AND STRUCTURAL ENGINEER. ALL DEVIATIONS SHALL BE EXPRESSLY LISTED AND DEFINED IN THE SHOP DRAWING SUBMITTAL. PROJECT MANAGER/ARCHITECT AND STRUCTURAL ENGINEER ARE NOT RESPONSIBLE FOR DISCOVERY OF DEVIATIONS NOT LISTED, AND ACCEPTANCE OF UNLISTED DEVIATIONS SHALL NOT BE IMPLIED.

PRE-FABRICATED OPEN WEB STEEL JOISTS (CONTROL BUILDING)

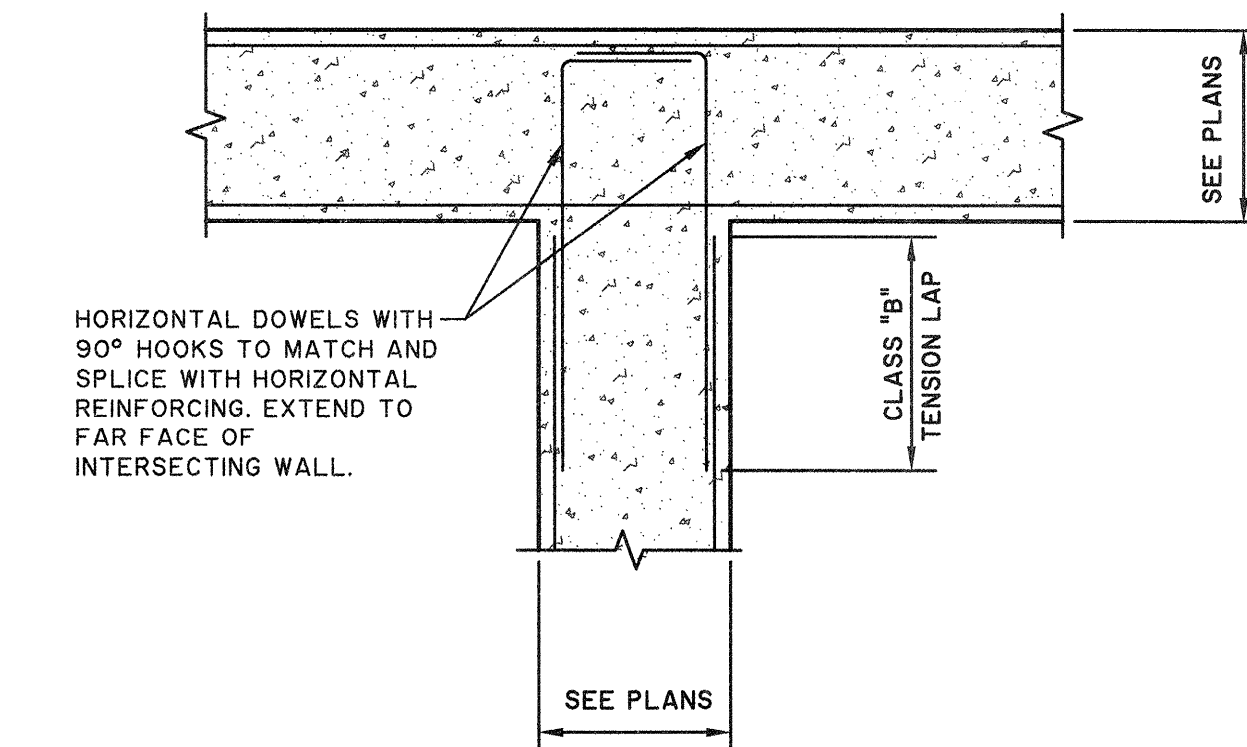
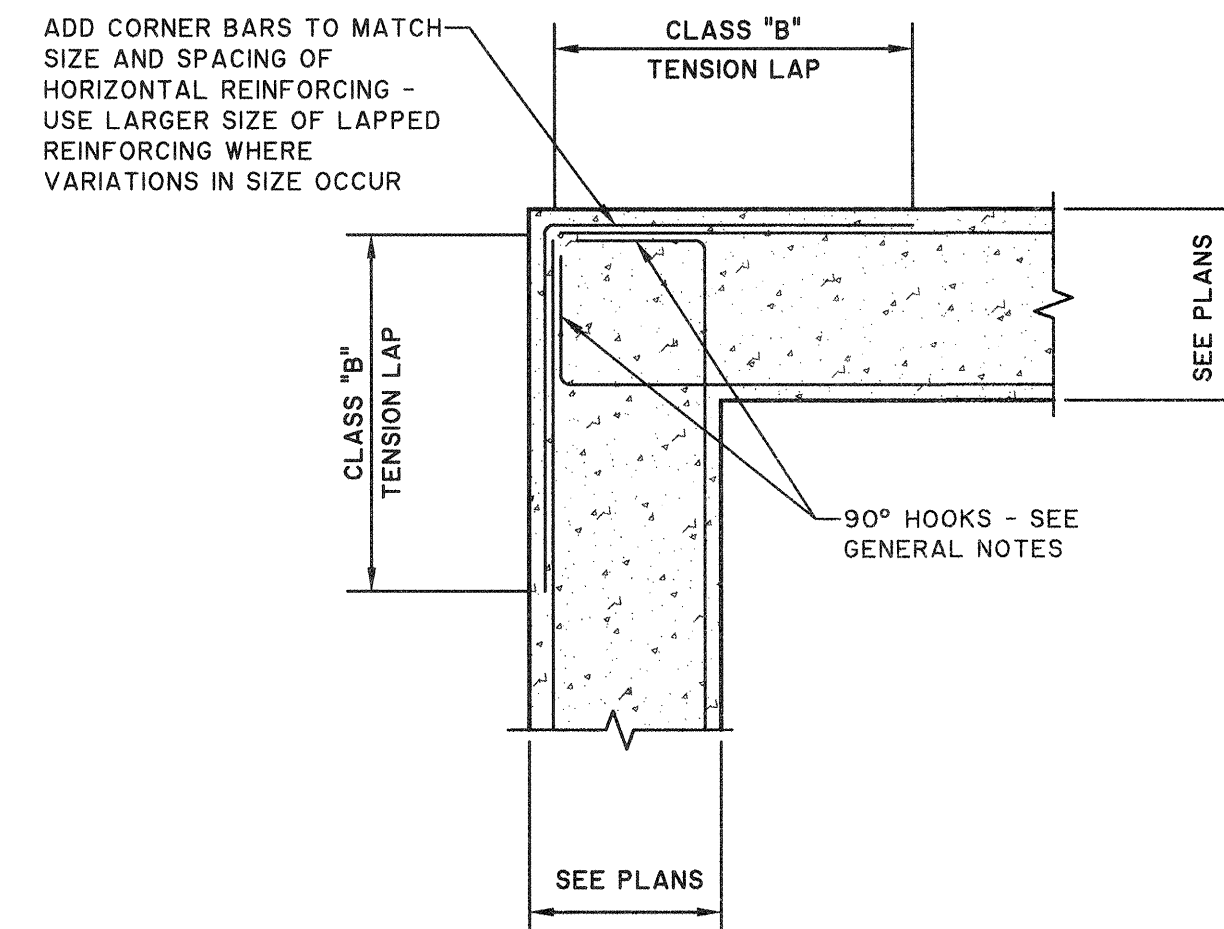
- JOISTS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE AISC AND THE STEEL JOIST INSTITUTE.
- PRIOR TO FABRICATION, SIZES OF ROOF JOISTS SPECIFIED IN THESE STRUCTURAL DRAWINGS MUST BE VERIFIED BY THE JOIST SUPPLIER FOR ACCEPTABILITY WITH THE NET UPLIFT GIVEN IN THE DETAILS.
- PRIOR TO FABRICATION, SIZES OF JOISTS SPECIFIED IN THESE STRUCTURAL DRAWINGS MUST BE VERIFIED BY THE JOIST SUPPLIER FOR ALL POSSIBLE POINT LOADS NOT SHOWN IN THESE STRUCTURAL DRAWINGS THAT MAY OCCUR FROM MECHANICAL EQUIPMENT. COORDINATE WITH MECHANICAL DRAWINGS. ANY REINFORCING AT POINT LOADS THAT MAY BE REQUIRED MUST BE COORDINATED WITH THE REQUIREMENTS OF THE JOIST SUPPLIER.
- PRIOR TO FABRICATION, JOIST SUPPLIER SHALL PROVIDE CALCULATIONS, PRODUCT DATA, MATERIAL PROPERTIES AND CONNECTION DETAILS FOR ALL JOISTS THAT SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- JOISTS SHALL HAVE THE STANDARD SJI CAMBER FOR THE JOIST SIZE AND SPAN.
- BAR JOIST BEARINGS SHALL BE DESIGNED AND DETAILED BY THE BAR JOIST MANUFACTURER SO THAT THE BEARING IS CENTERED OVER THE SUPPORT (WALL OR BEAM), UNLESS DETAILED OTHERWISE.
- LOCATIONS OF JOISTS MAY BE SHIFTED, SUBJECT TO ACCEPTANCE BY THE STRUCTURAL ENGINEER OF RECORD, TO ALLOW FOR PENETRATIONS.

SPECIAL INSPECTIONS

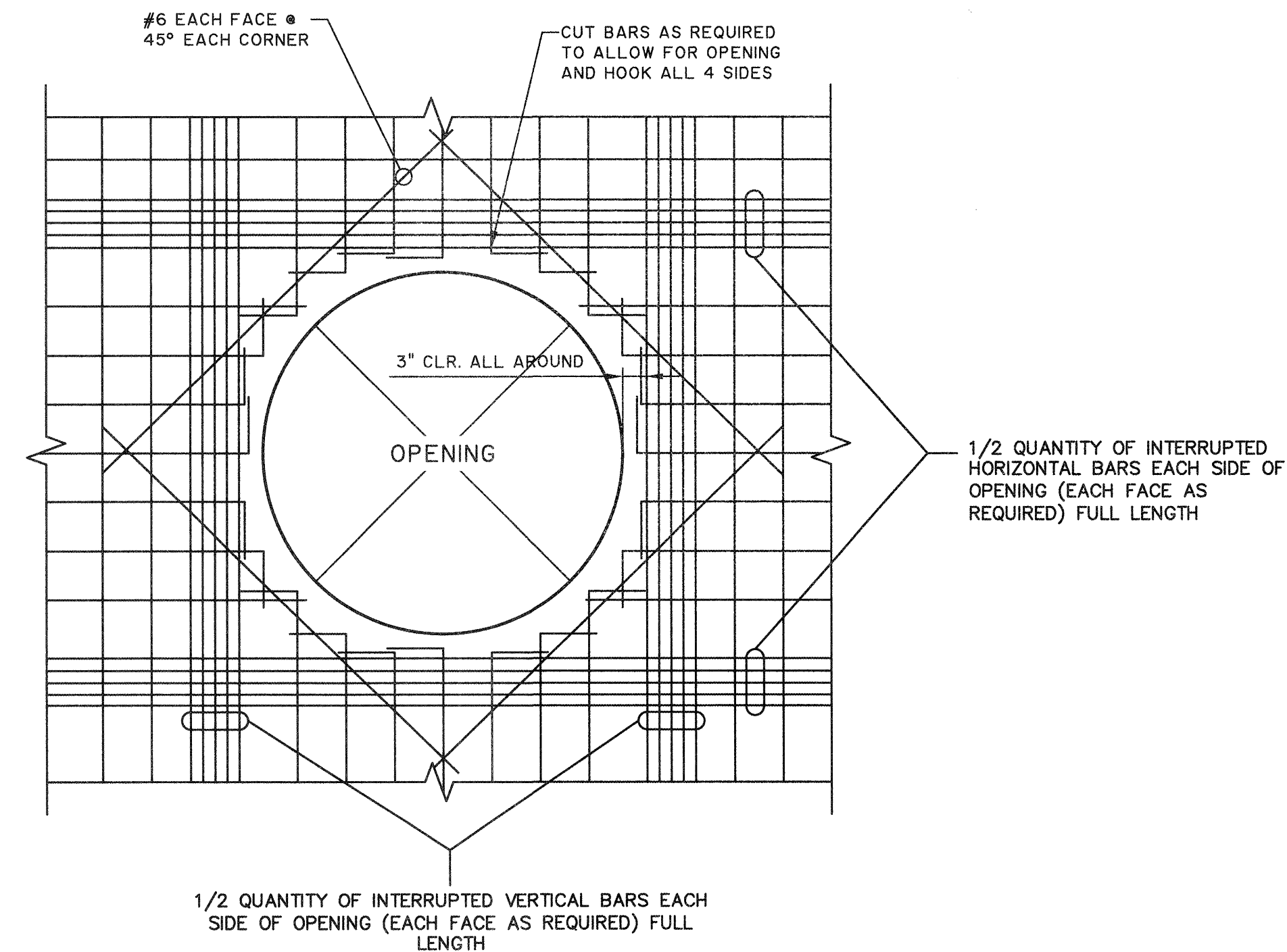
- THE OWNER SHALL EMPLOY SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION AS NOTED HEREIN.
- THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO DEMONSTRATES COMPETENCE. TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR THE INSPECTION OF THE ASSIGNED TYPE OF CONSTRUCTION OR OPERATION.
- SPECIAL INSPECTION PROCEDURES SHALL BE COMPLETED IN ACCORDANCE WITH IBC 2015, CHAPTER 17. AT A MINIMUM, SPECIAL INSPECTIONS SHALL INCLUDE THE ITEMS LISTED ON THIS SHEET. IF CONFLICTS EXIST BETWEEN THE CODE AND THE REQUIREMENTS STATED HEREIN, THE STRICTEST PROVISION SHALL GOVERN.

SCHEDULE OF SPECIAL INSPECTIONS

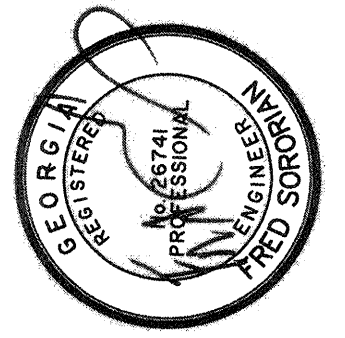
INSPECTION/TESTING	CODE REFERENCE	FREQUENCY
VISUAL STRUCTURAL OBSERVATION OF STRUCTURAL SYSTEM(S) FOR CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF STRUCTURAL SYSTEM(S)	IBC SECTION 1705.6	PERIODIC
COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS	IBC SECTION 1704	PERIODIC
SUBGRADE PREPARATION	IBC TABLE 1705.6	PER REQUIREMENTS OF TABLE 1705.6
DRIVEN PILES - VERIFY MATERIALS, SIZES AND LENGTHS	IBC TABLE 1705.7	CONTINUOUS
DRIVEN PILES - DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS AS REQUIRED	IBC TABLE 1705.7	CONTINUOUS
DRIVEN PILES - INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	IBC TABLE 1705.7	CONTINUOUS
DRIVEN PILES - VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT	IBC TABLE 1705.7	CONTINUOUS
DRIVEN PILES - PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS PER IBC INSPECTION REQUIREMENTS FOR CONCRETE ELEMENTS	IBC TABLE 1705.7, IBC SECTION 1705.3	-
CONCRETE REINFORCEMENT	IBC TABLE 1705.3	PERIODIC - PRIOR TO EACH POUR
ANCHORS CAST IN CONCRETE	IBC TABLE 1705.3	PERIODIC - PRIOR TO EACH POUR
CONCRETE CURING	IBC TABLE 1705.3	PERIODIC - AFTER EACH POUR
CONCRETE TESTING	IBC TABLE 1705.3	CONTINUOUS - WITH EACH POUR
VERIFICATION OF THE USE OF REQUIRED MIX DESIGN	IBC TABLE 1705.3	PERIODIC - PRIOR TO EACH POUR
INSPECTION OF CONCRETE PLACEMENT TECHNIQUES	IBC TABLE 1705.3	CONTINUOUS - WITH EACH POUR
INSPECTION OF CONCRETE FORMWORK	IBC TABLE 1705.3	PERIODIC - PRIOR TO EACH POUR
VERIFY COMPLIANCE OF GROUT, MORTAR AND MASONRY SPECIMENS WITH APPROVED SUBMITTALS	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC
MASONRY MORTAR AND CONSTRUCTION OF MORTAR JOINTS	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - PRIOR TO AND DURING CONSTRUCTION
LOCATION OF REINFORCEMENT, CONNECTORS AND ANCHORAGES FOR MASONRY	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - PRIOR TO GROUTING
GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHORAGES FOR MASONRY	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - PRIOR TO GROUTING
GROUT SPACE FOR MASONRY	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - PRIOR TO GROUTING
PROPORTIONS OF SITE-PREPARED GROUT FOR MASONRY	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - PRIOR TO GROUTING
PLACEMENT OF GROUT FOR MASONRY	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	CONTINUOUS - DURING CONSTRUCTION
VERIFY SIZE AND LOCATION OF STRUCTURAL ELEMENTS	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - DURING CONSTRUCTION
PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING HOT AND COLD WEATHER	IBC SECTION 1705.4, ACI 530 TABLE 3.1.2	PERIODIC - DURING CONSTRUCTION
STRUCTURAL STEEL MATERIAL	IBC SECTION 1705.2, AISC 360	PERIODIC - DURING CONSTRUCTION
WELDING OF STRUCTURAL STEEL	IBC SECTION 1705.2, AISC 360, AWS D1.1/01.1M	PERIODIC - DURING CONSTRUCTION
BOLTING OF STRUCTURAL STEEL	IBC SECTION 1705.2, AISC 360	PERIODIC - DURING CONSTRUCTION
STRUCTURAL STEEL CONSTRUCTION, GENERAL	IBC SECTION 1705.2, AISC 360	PERIODIC - DURING CONSTRUCTION
INSTALLATION OF OPEN-WEB STEEL JOISTS - BEARING CONNECTIONS	IBC TABLE 1705.2.3	PERIODIC - DURING CONSTRUCTION
INSTALLATION OF OPEN-WEB STEEL JOISTS - BRIDGING	IBC TABLE 1705.2.3	PERIODIC - DURING CONSTRUCTION
INSTALLATION OF STEEL DECK	IBC SECTION 1705.2.2, SDI QA/QC	PERIODIC - DURING CONSTRUCTION



1 CONCRETE R/F AT CORNERS & INTERSECTIONS
3/4" = 1'-0"



2 REINFORCING AROUND OPENINGS
3/4" = 1'-0"



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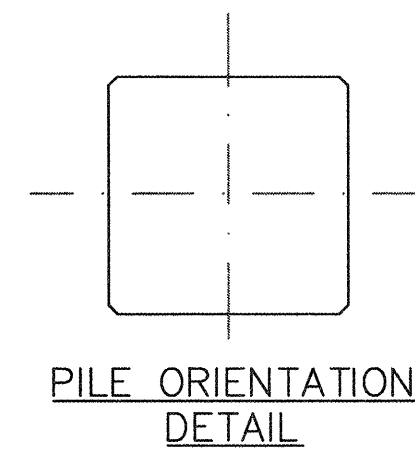
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TRAVIS FIELD WATER RECLAMATION FACILITY
STRUCTURAL NOTES AND TYPICAL DETAILS

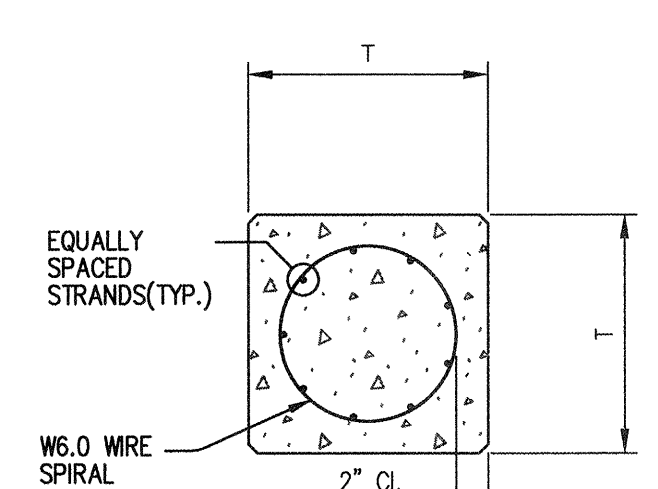
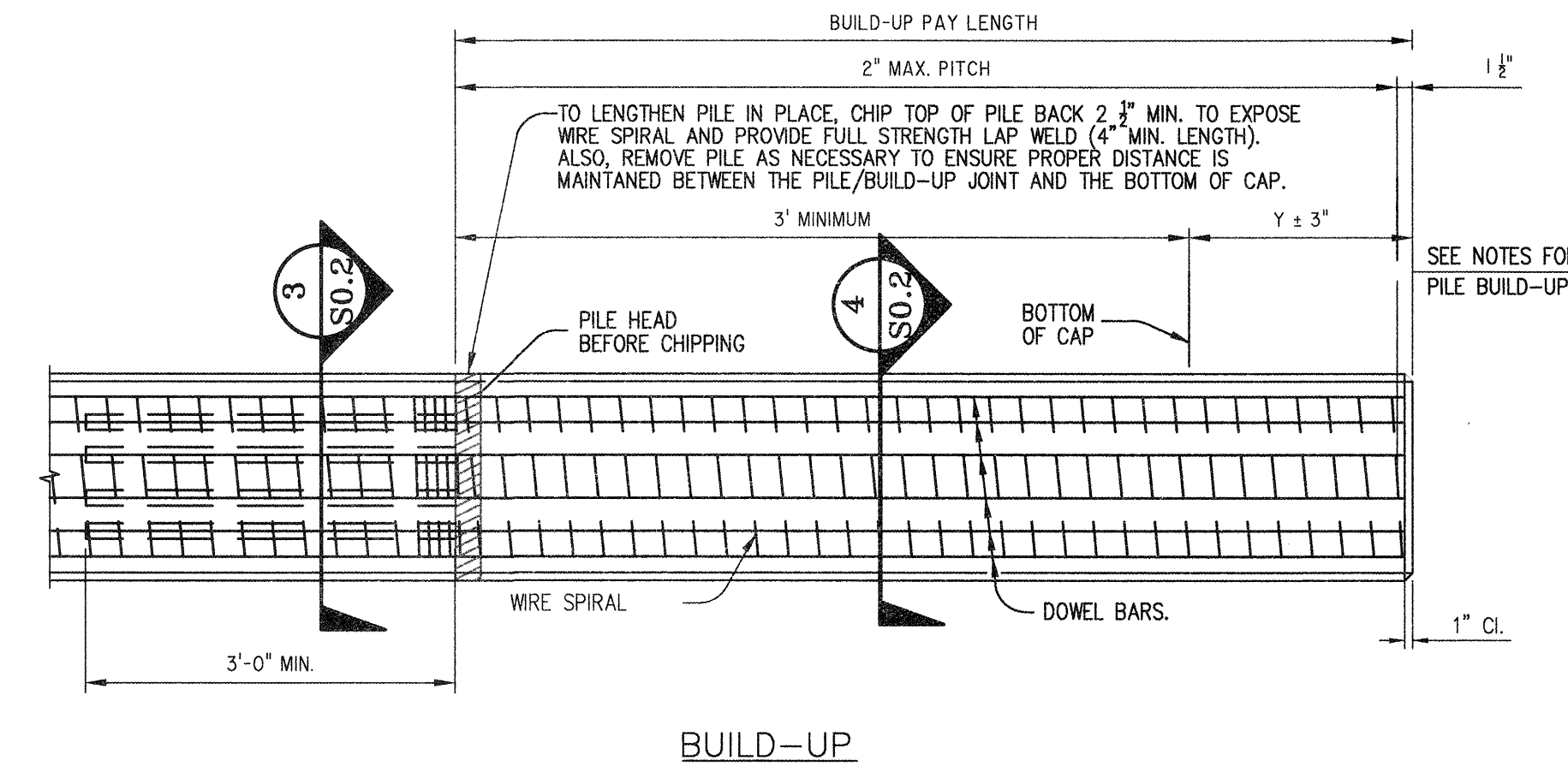
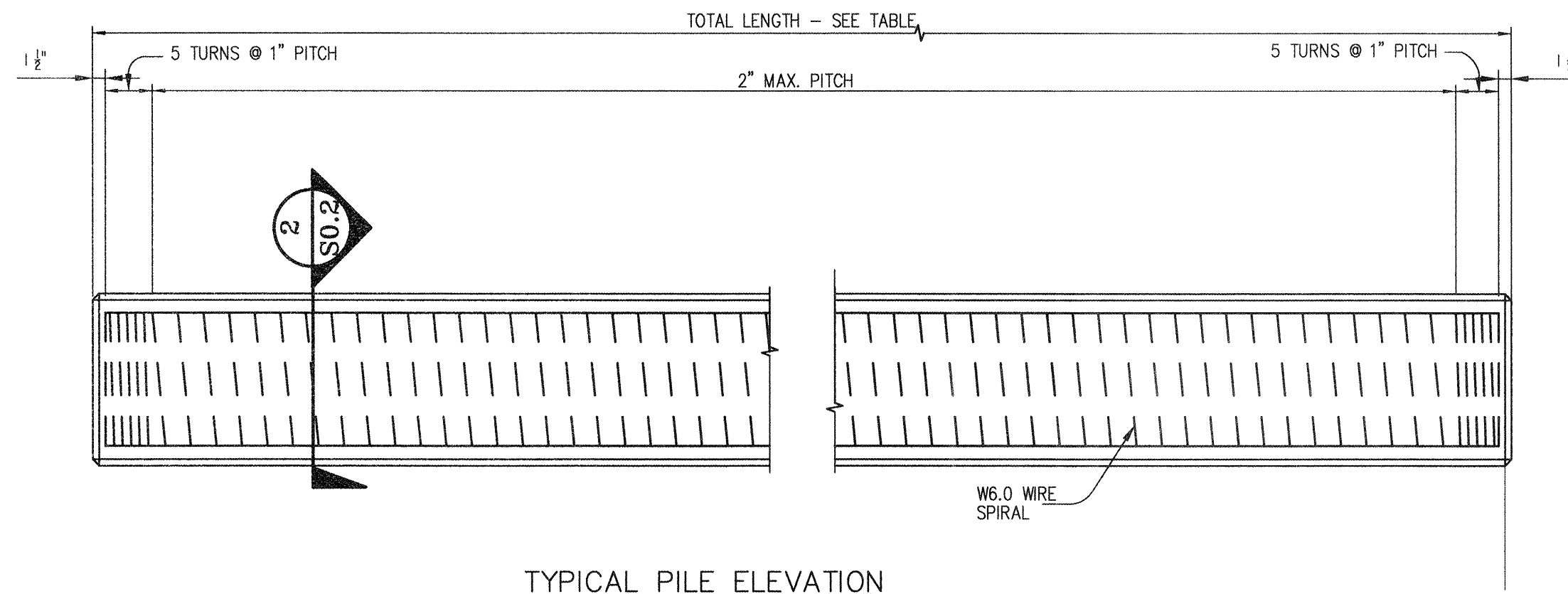
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REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S0.1

BID SET - NOT FOR CONSTRUCTION

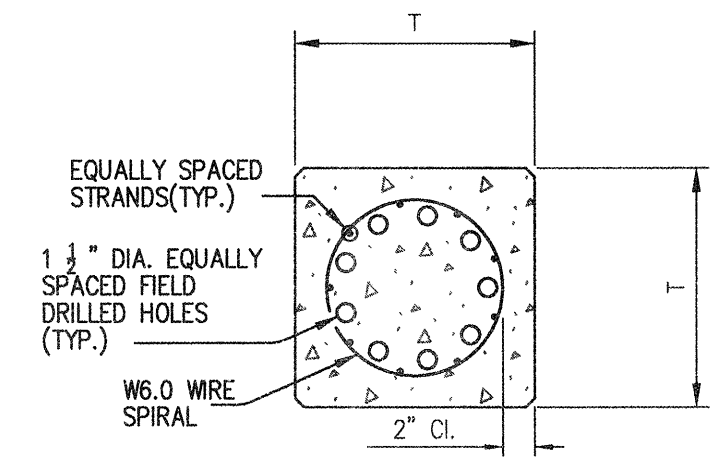


PILE ORIENTATION DETAIL
 "TOP SIDE" IS THE TOP SURFACE OF THE PILE WHEN IT WAS POURED IN THE CASTING BED.
 SPECIFIC PILE ORIENTATION NOT APPLICABLE THIS PROJECT



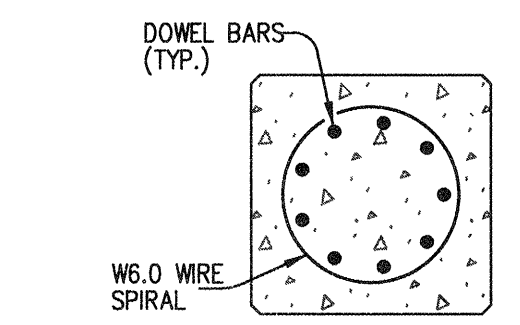
2 PILE CROSS SECTION
 S0.2 N.T.S.

- SEE TABLE FOR NUMBER OF STRANDS AND DOWELS.



3 PILE CROSS SECTION - BUILD UP
 S0.2 N.T.S.

- FIELD DRILL DOWEL HOLES. LOCATE DOWEL HOLES TO PROVIDE 1/2" CL. TO WIRE SPIRAL.
- SEE TABLE FOR NUMBER OF STRANDS AND DOWELS - THIS DETAIL NOT TO BE USED FOR PROVIDING NUMBER OF STRANDS AND DOWELS.



4 PILE CROSS SECTION - BUILD UP
 S0.2 N.T.S.

- SEE TABLE FOR NUMBER OF STRANDS AND DOWELS - THIS DETAIL NOT TO BE USED FOR PROVIDING NUMBER OF STRANDS AND DOWELS.

PILE DATA: VERTICAL									
LOCATION	TOTAL LENGTH	PILE SIZE	PILE EMBEDMENT	STRAND	STRESS (ksi)	DOWEL BARS	MAXIMUM L		PILE POINT SIZE
							1 PICK-UP POINT	2 PICK-UP POINTS	
MBR BASINS	55'-0"	12"	6"	8 - .5"	1,734	6 - #6	66'	94'	N/A
MBR BLDG	55'-0"	12"	6"	8 - .5"	1,734	6 - #6	66'	94'	N/A
MCC BLDG	45'-0"	12"	6"	8 - .5"	1,734	6 - #6	66'	94'	N/A
ALL OTHER	45'-0"	12"	6"	8 - .5"	1,734	6 - #6	66'	94'	N/A

STRAND DATA		
DIAMETER	AREA (in ²)	TENSIONING LOAD
0.5"	0.153	31 kips

NOTES FOR BUILD-UP
 CHIP BACK TOP OF PILES AND FIELD DRILL HOLES AS SHOWN. GROUT DOWEL BARS IN THE HOLES USING AN APPROVED NON-SHRINK GROUT WITH F_C = 5 KSI. TERMINATE DOWEL BARS 1" CLEAR FROM THE TOP OF PILE. SUBMIT DOWEL BAR LENGTHS TO THE ROE FOR APPROVAL. INCLUDE ALL COSTS ASSOCIATED WITH PREPARATION OF THE PILE FOR BUILD-UP IN THE UNIT PRICE BID FOR PILE BUILD-UP PREPARATION.

BUILD UP ALL PILES THAT HAVE AN EMBEDMENT LENGTH LESS THAN THE MINIMUM SHOWN IN THE PLANS. USE THE BUILD-UP DETAILS SHOWN ON THIS SHEET. THE OPTION IS AVAILABLE TO CAST BUILD-UPS WITH BENT CAPS PROVIDED REBAR AND WIRE SPIRAL ARE CONTINUED A DISTANCE EQUAL TO "Y" INTO THE CAP AND THE CAP IS CAST WITH CLASS 5000 CONCRETE. PAY FOR CAP CONCRETE AS CLASS 4000 CONCRETE REGARDLESS OF THE ACTUAL CLASS USED. INCLUDE AN EMBEDMENT LENGTH OF "Y" IN THE PILE BUILD-UP LENGTH MEASURED FOR PAYMENT. PAY FOR THE PILE BUILD-UP INCLUDING ALL COSTS FOR DOWEL BARS, WIRE SPIRALS, AND BUILD-UP CONCRETE AS AN ADDITIONAL LENGTH OF PRESTRESSED CONCRETE PILING EQUAL TO THE BUILD-UP PAY LENGTH SHOWN IN THE BUILD-UP DETAIL.

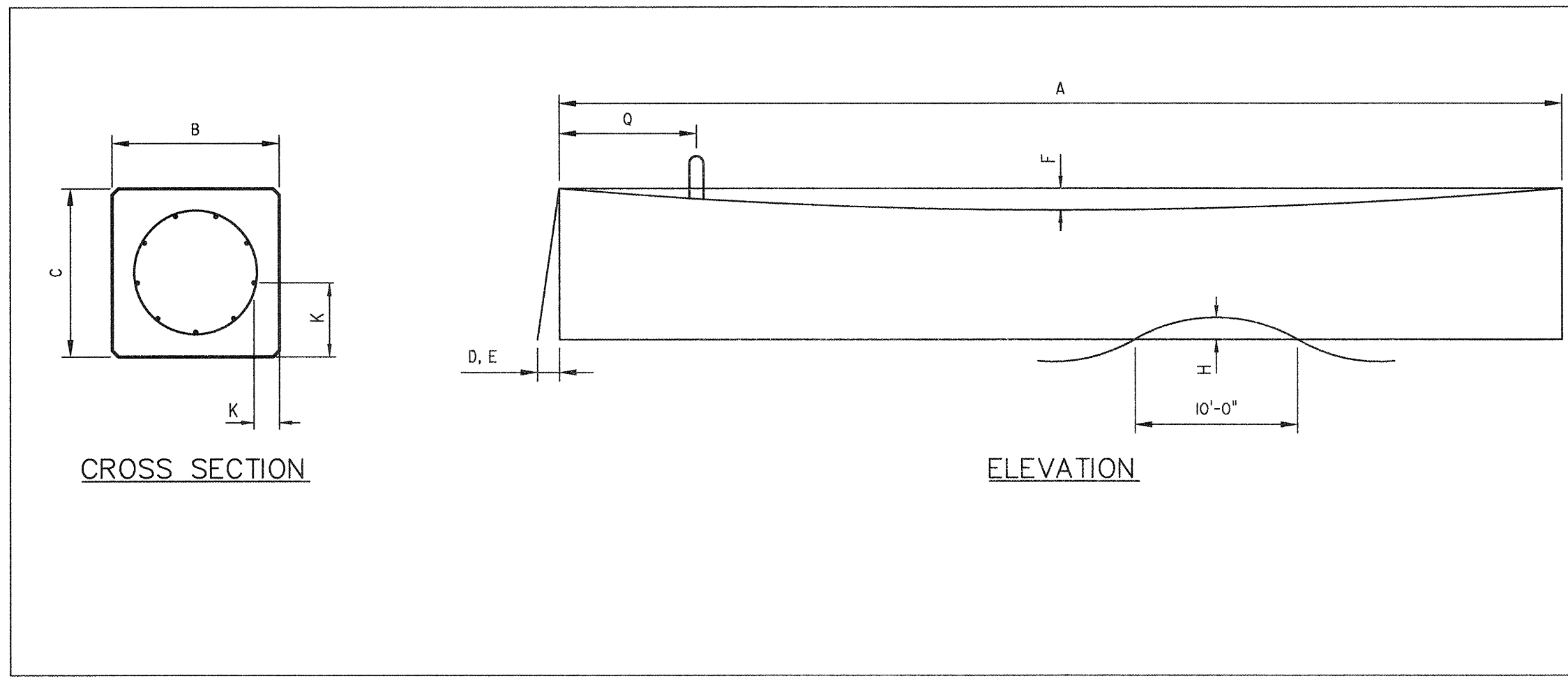
GENERAL NOTES
 CHAMFER ALL EXPOSED EDGES 1/4" UNLESS NOTED OTHERWISE.
 ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERS OF BARS (EXCEPT AS NOTED).

RELEASE ALTERNATE STRANDS SIMULTANEOUSLY AT OPPOSITE ENDS WITHOUT SHOCK.
 THE WIRE SPIRAL TO CABLES AND REINFORCING BARS AS REQUIRED TO MAINTAIN PITCH OF THE SPIRAL. SPLICE WIRE SPIRAL USING FULL STRENGTH LAP WELDS.
 ANCHOR THE PILES INTO THE BENT CAPS USING THE DETAILS SHOWN ON THIS SHEET. INCLUDE ALL COSTS FOR THIS WORK IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE PILING.

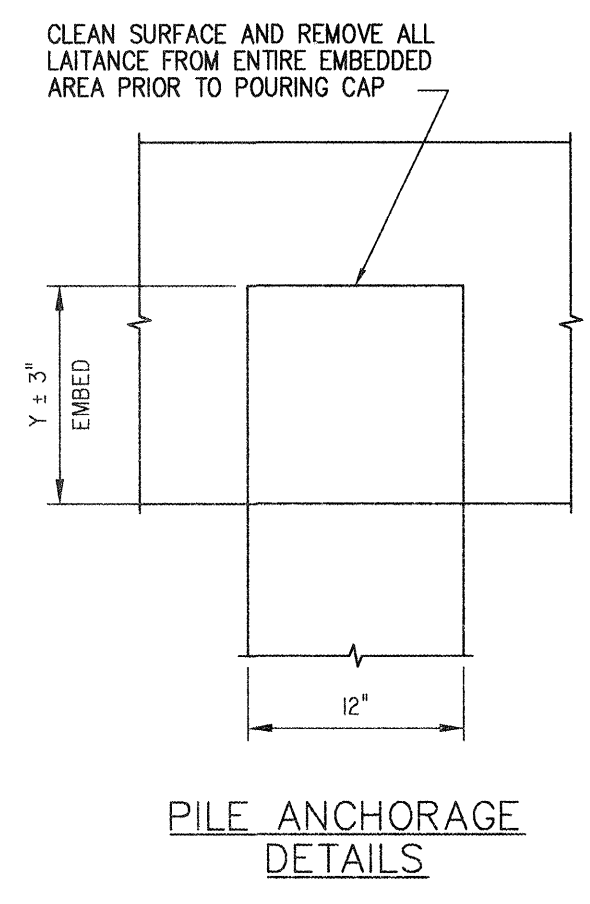
MATERIALS
 PRESTRESSING STRAND: GRADE 270, LOW RELAXATION AASHTO M 203
 WIRE SPIRAL: AASHTO M 52, M 225
 REINFORCING STEEL: GRADE 60 ASTM A 706
 CONCRETE: CLASS 5000 STANDARD SPEC. SECT. 701
 W OR HP PILE POINT: GRADE 50 AASHTO M 270
 STUDS: GRADE 1015, 1018, OR 1020 AASHTO M 169

- EXTENSION MAY BE ATTACHED TO EMBEDDED PORTION OF PILE POINT PRIOR TO HANDLING, TRANSPORTING, AND ERECTING THE COMPOSITE PILE.
- DETERMINE PICK-UP POINTS USING THE FOLLOWING:
 - DETERMINE MAXIMUM LENGTHS FOR PICK-UP OF THE COMPOSITE PILE (AS A UNIT OR IN PARTS) USING THE FOLLOWING LOAD ASSUMPTION AND ALLOWABLE STRESSES.
 - A. LOADING: 1) TIMES THE FULL DEAD LOAD
 - B. ALLOWABLE TENSILE STRESS IN PRECAST, PRESTRESSED CONCRETE PORTION OF THE PILE: 0.159 F_C (KSI)
 - C. ALLOWABLE BENDING STRESS IN PILE POINT SECTION: 20 KSI.
 - STRESS AND LOADING CRITERIA ARE BASED ON NORMAL CARE IN HANDLING THE PILE. IF HANDLING IS SUCH THAT DAMAGE IN THE PILE BECOMES EVIDENT, THE ENGINEER MAY REQUIRE A HIGHER LOAD FACTOR OR LOWER ALLOWABLE STRESS AS NECESSARY TO INSURE NO DAMAGE TO PILES.
 - MARK PILES AT PICK-UP POINTS TO INDICATE PROPER POINTS FOR ATTACHING HANDLING LINES.

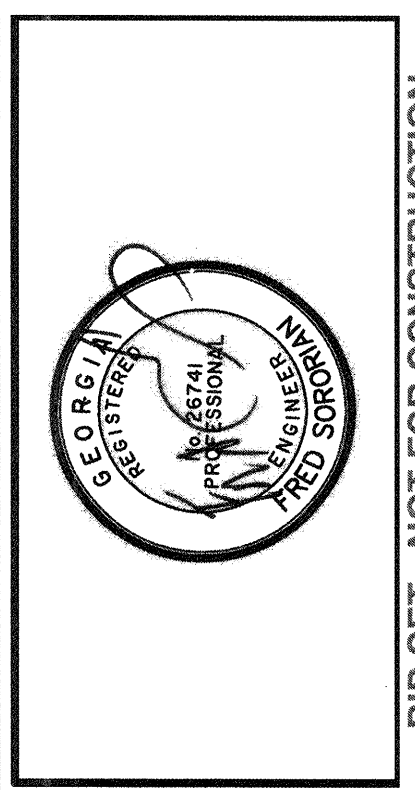
DESIGN DATA	
LOW RELAXATION STRANDS	
TENSILE STRENGTH (f _{pu})	= 270 ksi
INITIAL PRESTRESS (0.75 f _{pu})	= 202.5 ksi
CLASS 5000 CONCRETE	
f _c	= 6.0 ksi
f _{ci}	= 4.0 ksi



TOLERANCES	
A. LENGTH	± 1"
B. WIDTH OR DIAMETER	± 1/8" + 1/8" (INCLUDING FORM DRAFT)
C. DEPTH	± 1/8"
D. VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± 1/2" PER 12", ± " MAXIMUM
E. VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	± 1/2" PER 12", ± " MAXIMUM
F. SWEEP (VARIATION FROM STRAIGHT LINE PARALLEL TO CENTERLINE OF MEMBER) (CONSIDERED TO BE A FORM TOLERANCE)	± 1/8" PER 10'
G. LOCAL SMOOTHNESS OF ANY SURFACE	1/4" IN 10'
H. PROJECTION OF STEEL PILE POINT FROM END OF PILE	± 1"
I. POSITION OF STEEL PILE POINT	± 1/2"
J. ALIGNMENT OF STEEL PILE POINT	± 1/2"
K. LENGTH OF STEEL PILE POINT	- 3", + 6"
L. LOCATION OF STRAND	± 1/4"
M. LOCATION OF HANDLING DEVICE	± 6"
N. LONGITUDINAL SPACING OF STIRRUPS OR SPIRAL REINFORCEMENT	± 1/2"



1 12" CONCRETE PILING
 S0.2 N.T.S.



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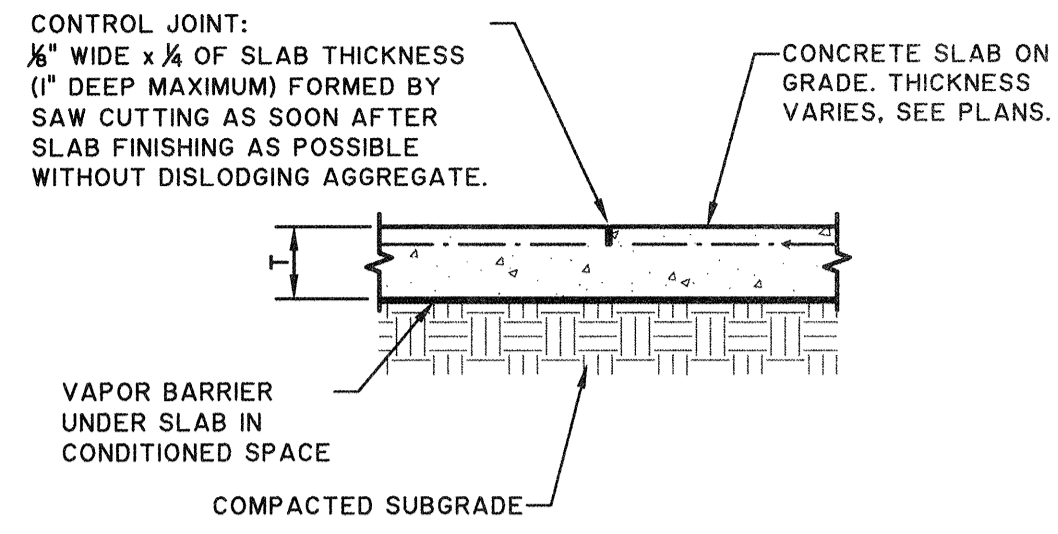
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 TRAVIS FIELD WATER RECLAMATION FACILITY
 PRECAST CONCRETE PILE DESIGN AND NOTES

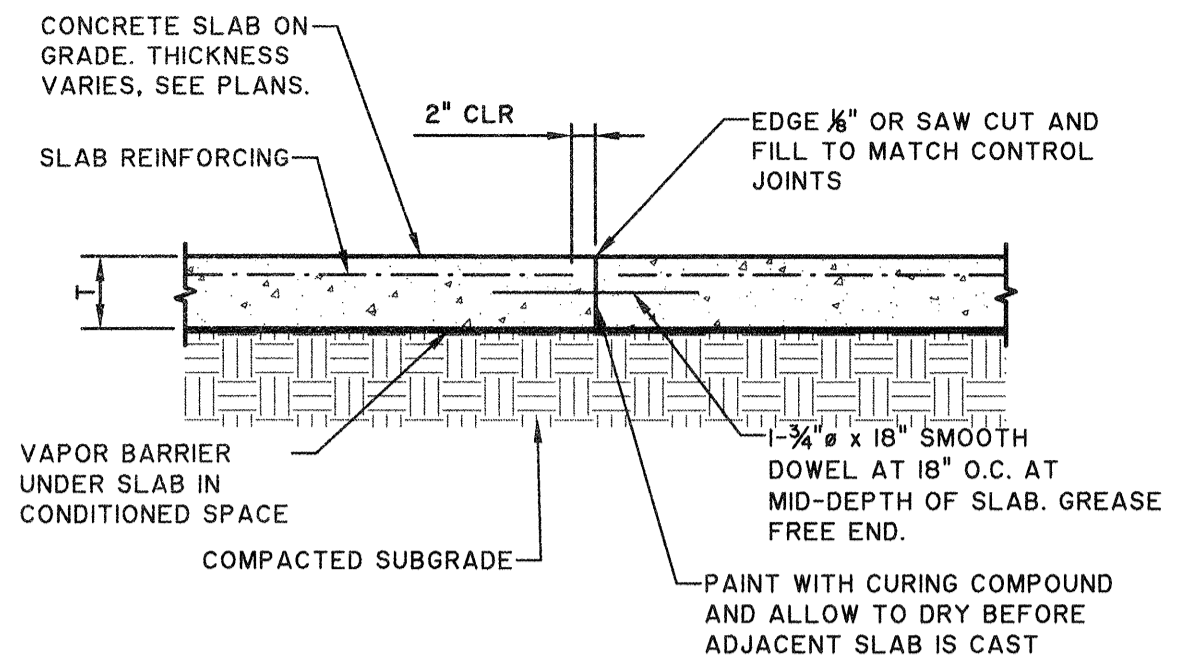
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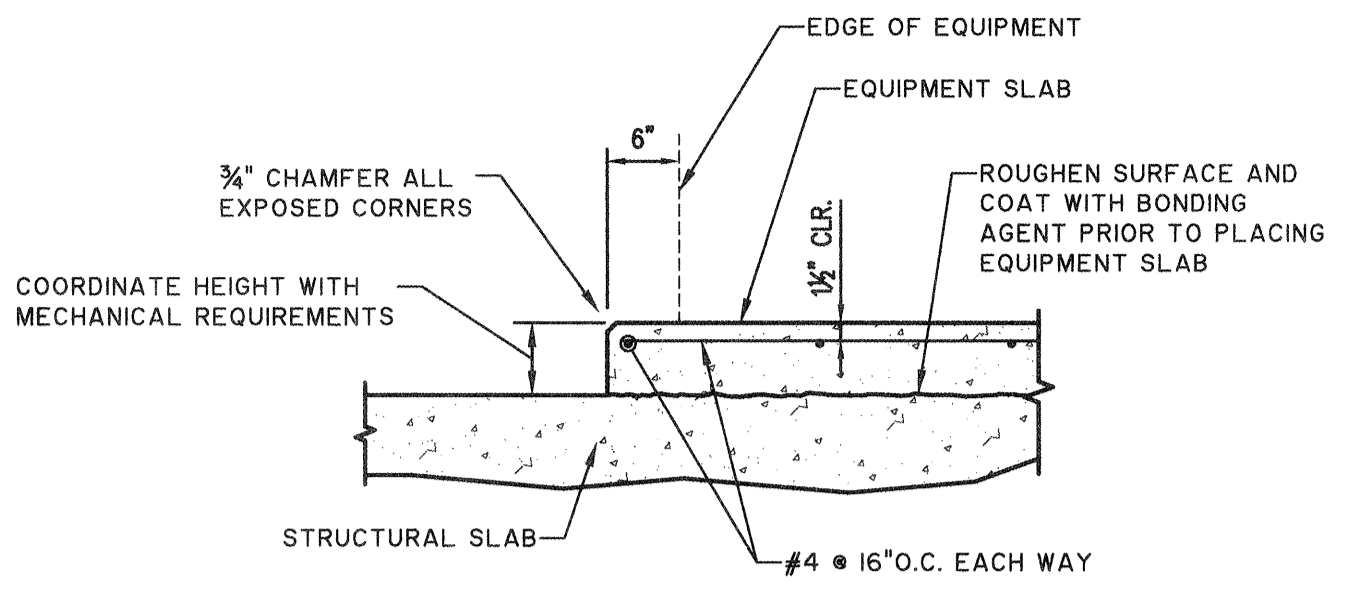
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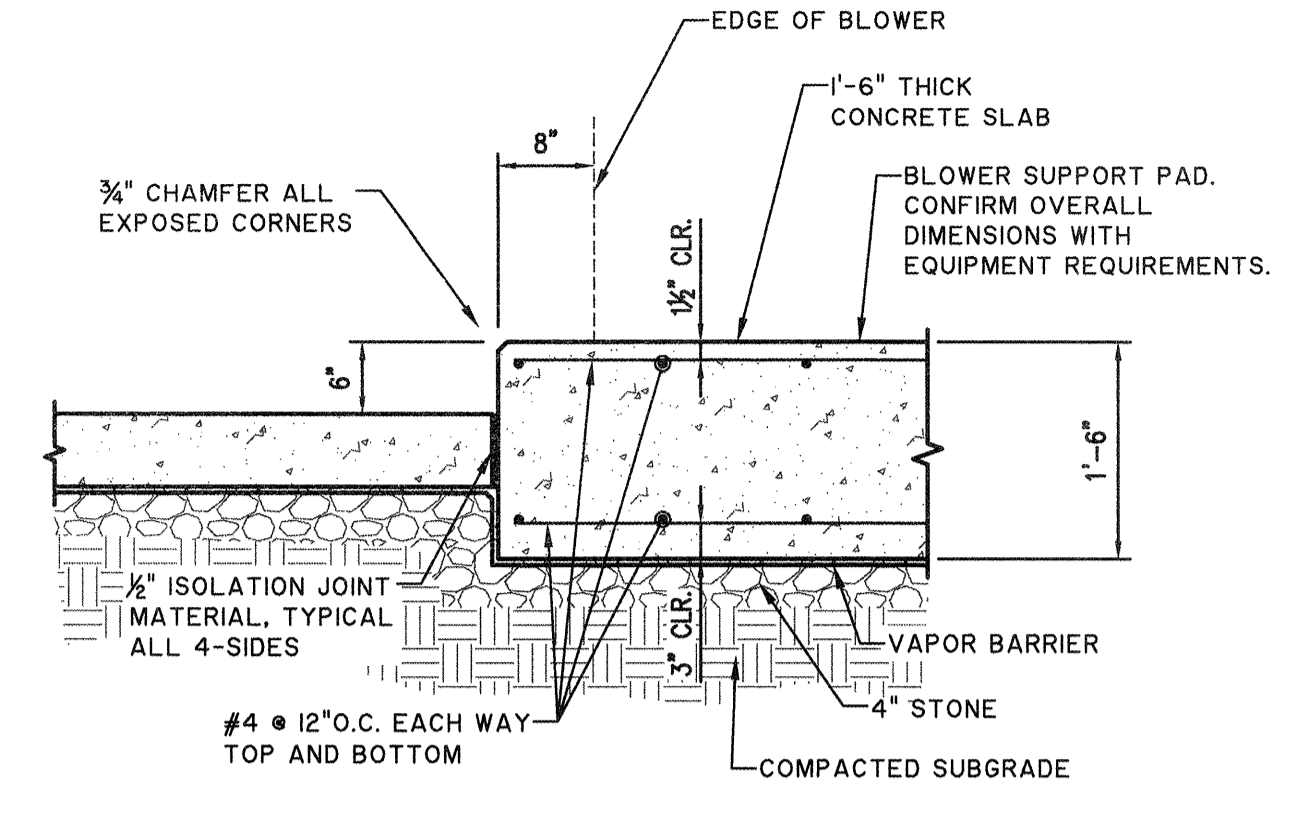
1 CONTROL JOINT DETAIL - SLAB ON GRADE
S0.3 3/4" = 1'-0"



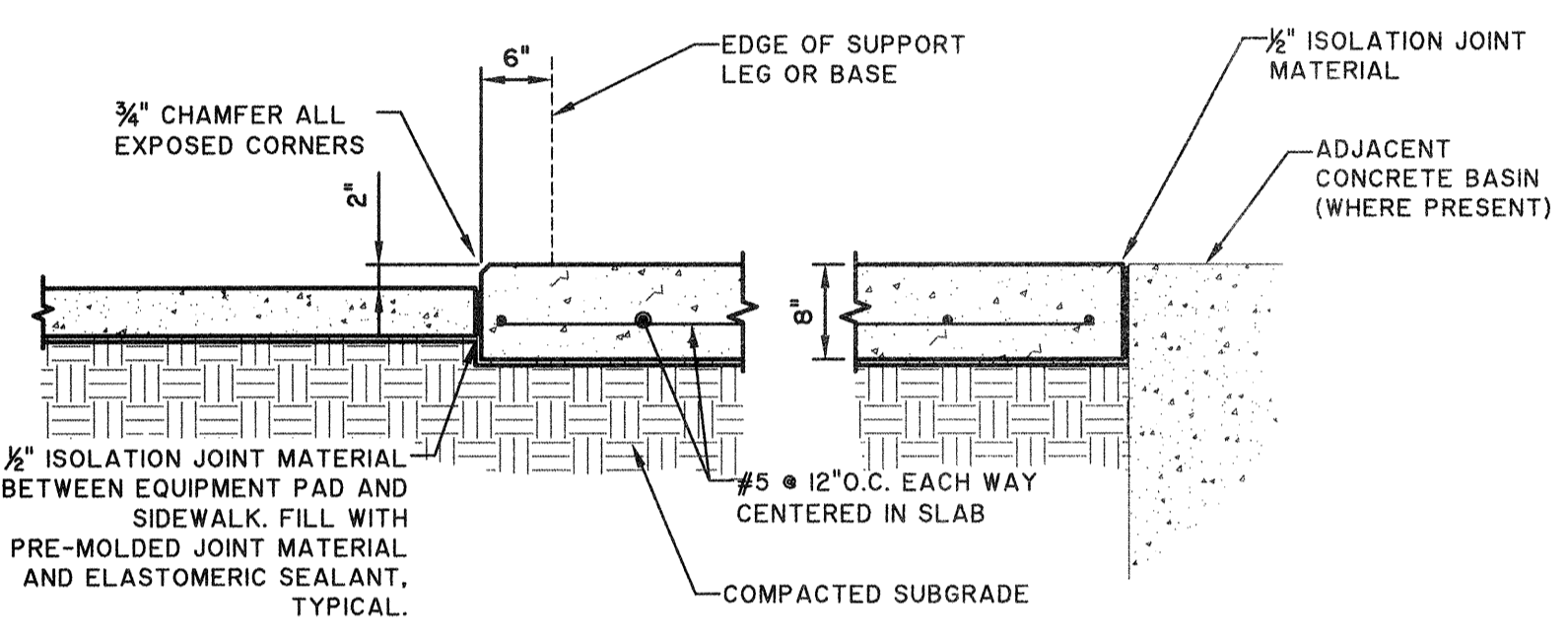
2 CONSTRUCTION JOINT DETAIL - SLAB ON GRADE
S0.3 3/4" = 1'-0"



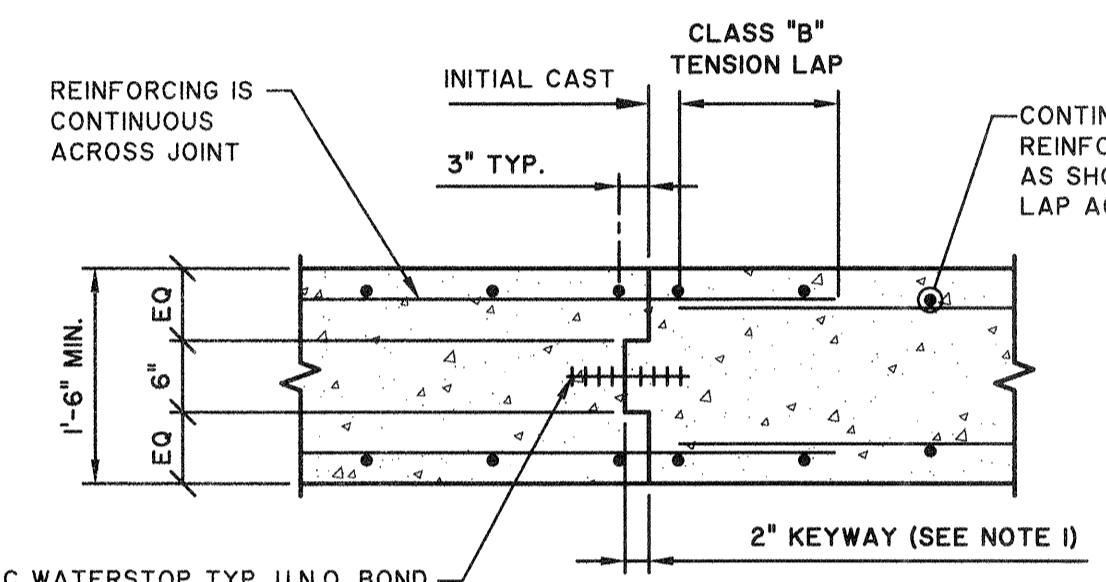
3 HOUSEKEEPING PAD DETAIL
S0.3 3/4" = 1'-0"



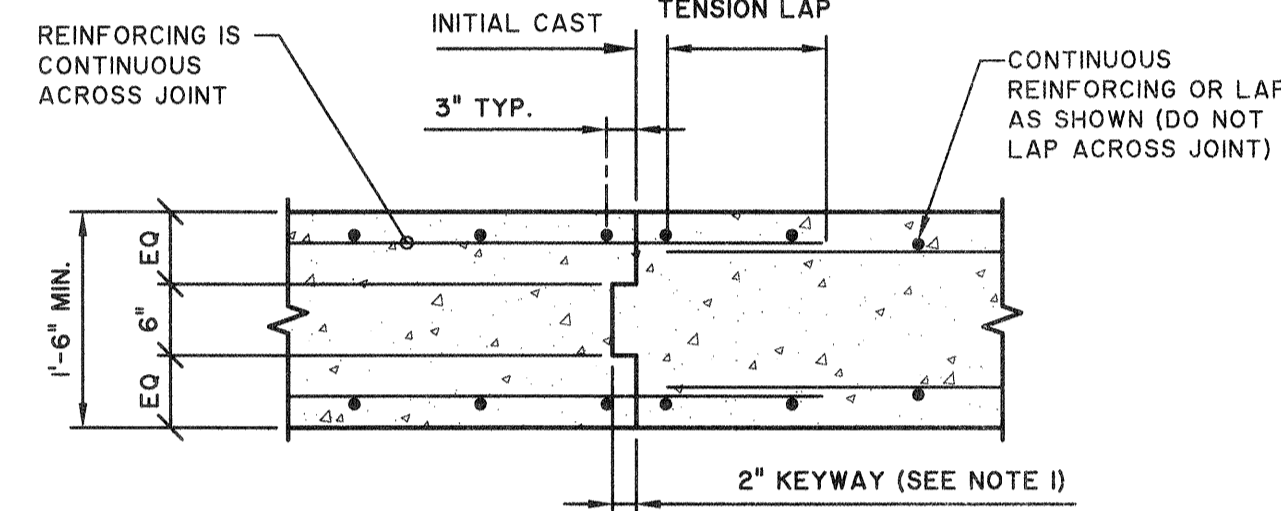
4 BLOWER PAD DETAIL
S0.3 3/4" = 1'-0"



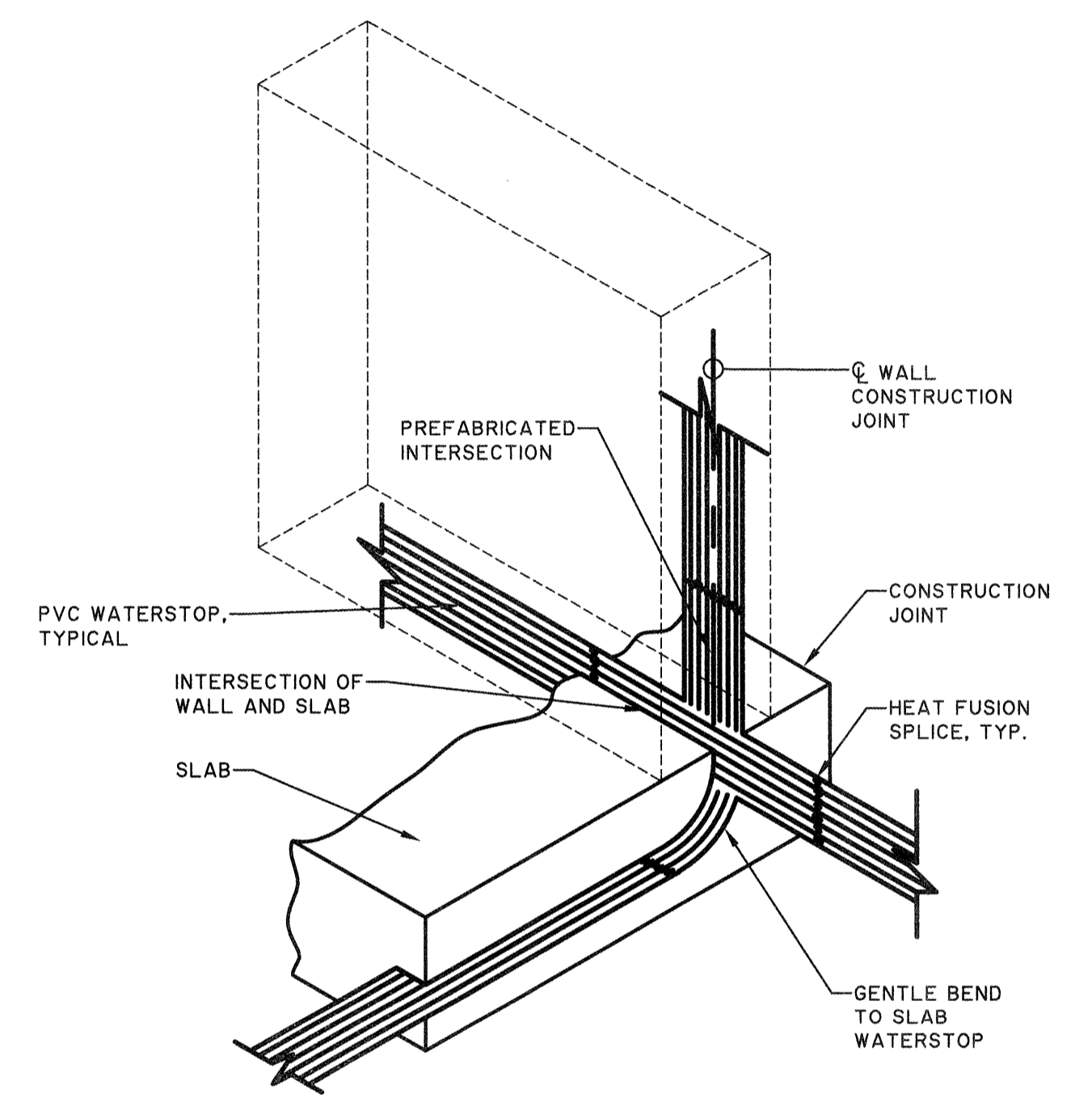
5 EXTERIOR EQUIPMENT PAD DETAIL
S0.3 3/4" = 1'-0"



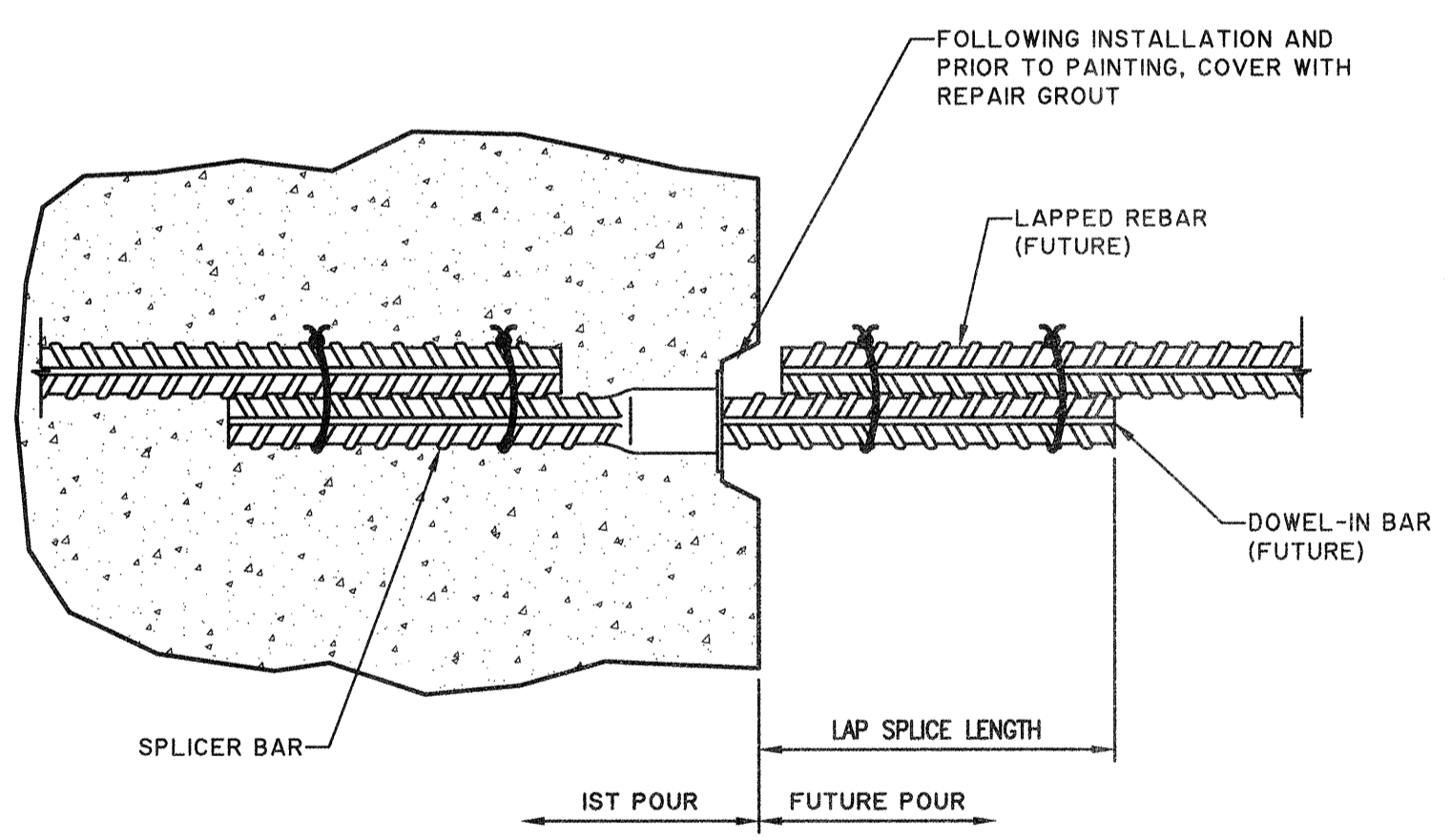
6 CONSTRUCTION JOINT W/ WATERSTOP
S0.3 3/4" = 1'-0"



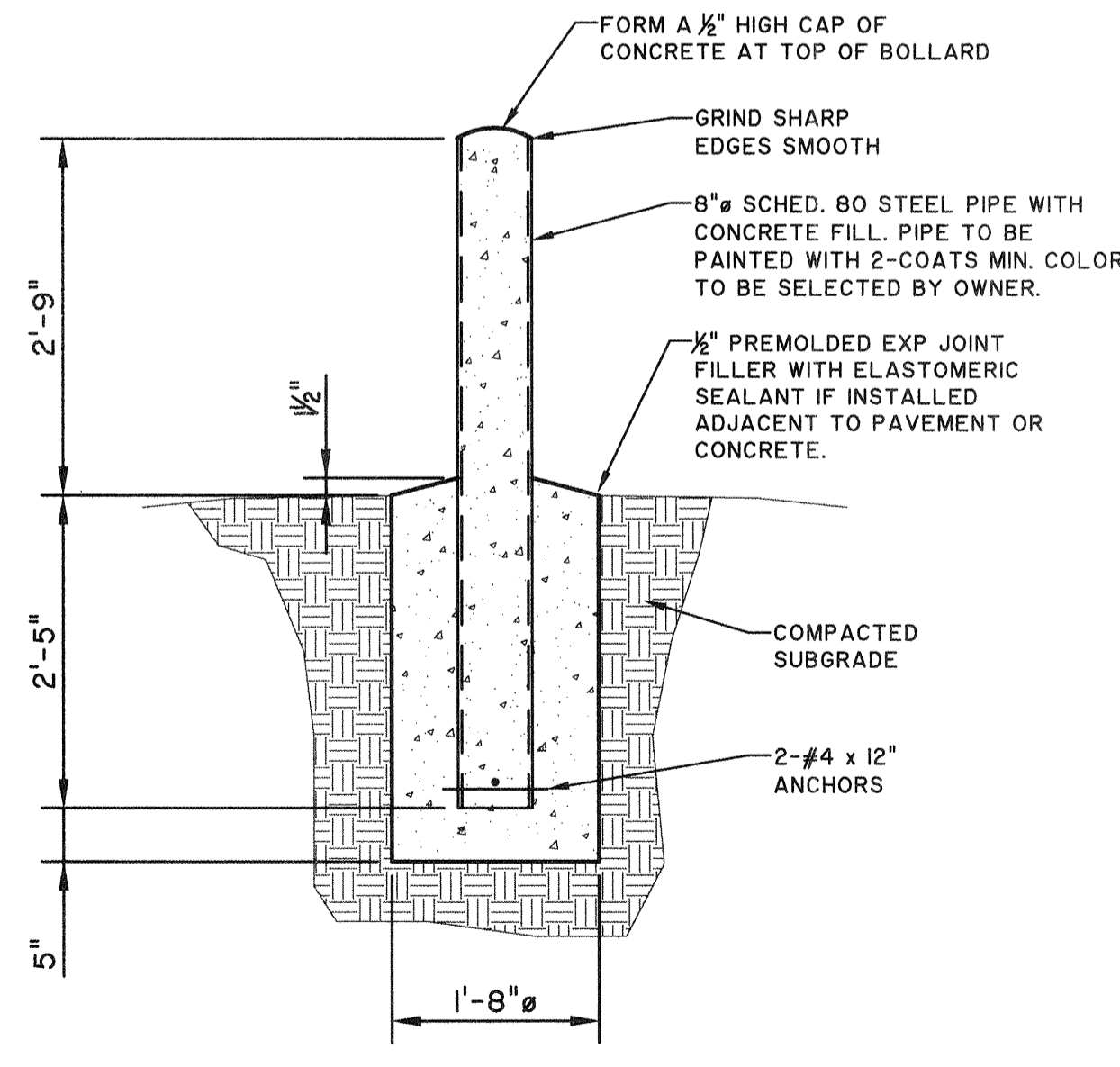
7 CONSTRUCTION JOINT W/O WATERSTOP
S0.3 3/4" = 1'-0"



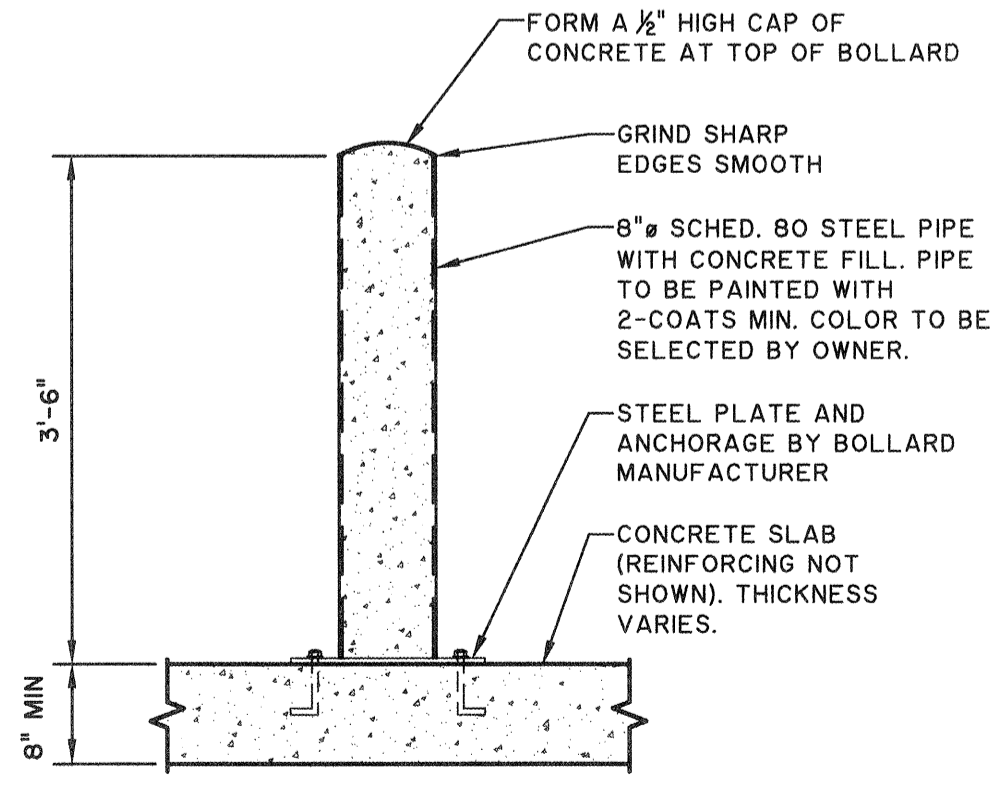
8 WATERSTOP JOINT DETAIL
S0.3 3/4" = 1'-0"



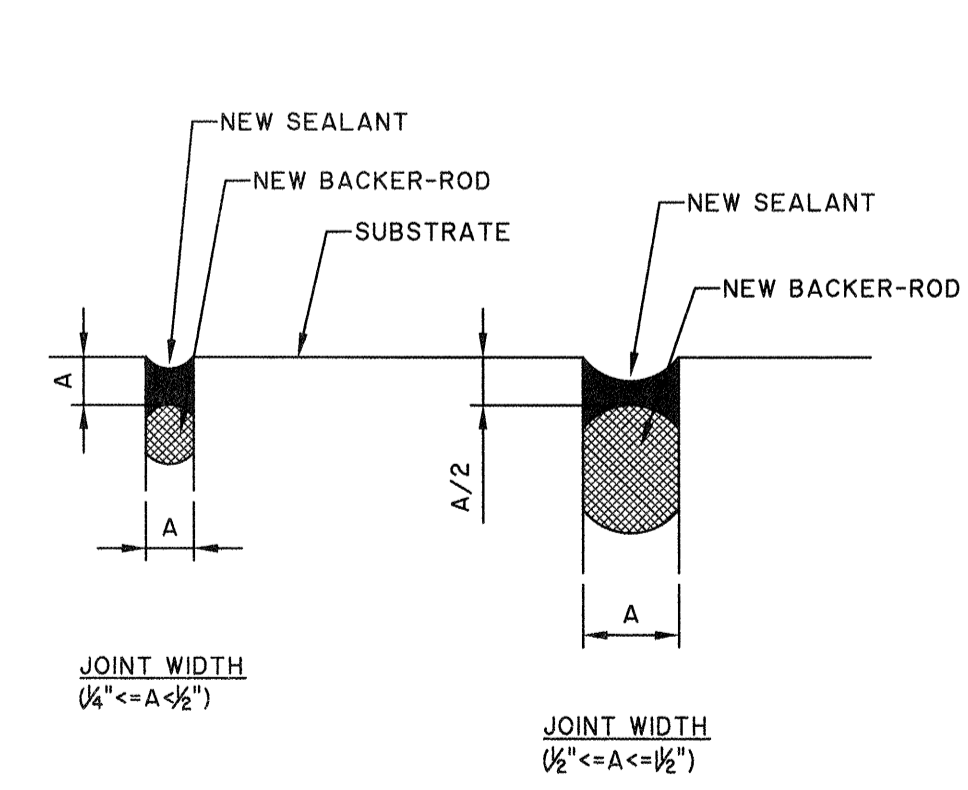
9 SPLICER BAR DETAIL AT FUTURE EXPANSION
S0.3 3/4" = 1'-0"



10 SITE BOLLARD DETAIL
S0.3 3/4" = 1'-0"



11 BOLLARD ON CONCRETE SLAB DETAIL
S0.3 3/4" = 1'-0"



12 TYPICAL JOINT DETAIL
S0.3 6" = 1'-0"

BACKER-ROD SIZE TO JOINT WIDTH TABLE

JOINT WIDTH	BACKER-ROD SIZE
1/4"	3/8"
1/2"	1/2"
3/4"	3/4"
1"	1"
1 1/2"	1 1/4"
2"	2"

- JOINT SEALANT REQUIREMENTS:
- NO JOINT SEALANTS SMALLER THAN 1/4".
 - NO JOINT SEALANTS LARGER THAN 1/2".
 - SEALANT THICKNESS NO LESS THAN 1/4".
 - SEALANT THICKNESS NO GREATER THAN 1/2".
 - BACKER-ROD = CLOSED-CELL PRE-FORMED JOINT FILLER. SIZE SEE TABLE.
 - JOINTS OVER 1/2" CAN BE PREFORMED WITH CLOSED CELL RIGID FOAM INSULATION.
 - BACKER-ROD/JOINT FILLER AND SEALANT PRODUCTS AS DEFINED IN CONCRETE SPECIFICATION.

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TRAVIS FIELD WATER RECLAMATION FACILITY
TYPICAL CONCRETE DETAILS

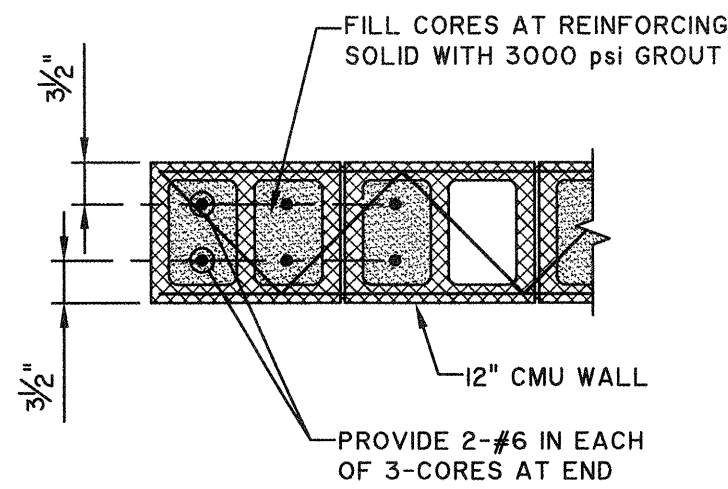
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DESIGNED: JEP
REVIEWED: FS
APPROVED: JAH
SCALE: AS NOTED

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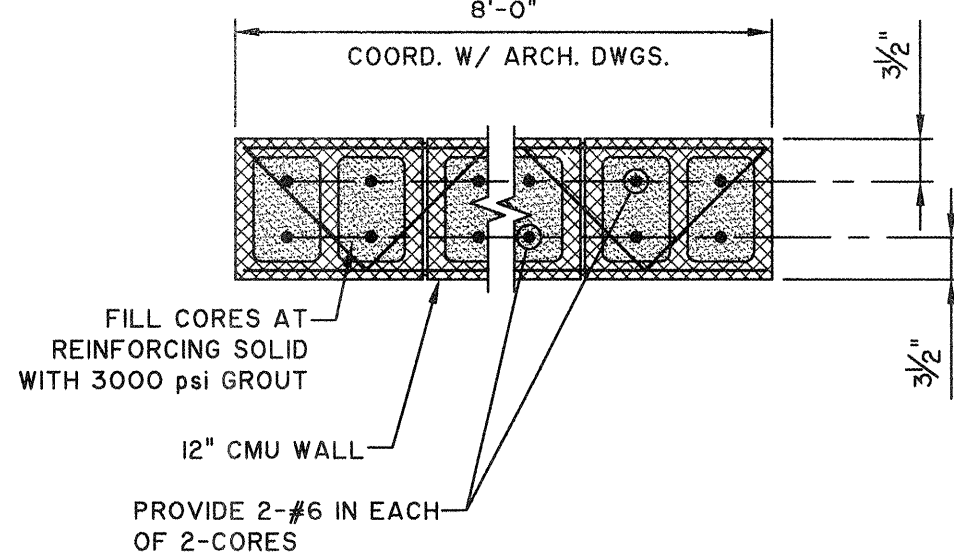
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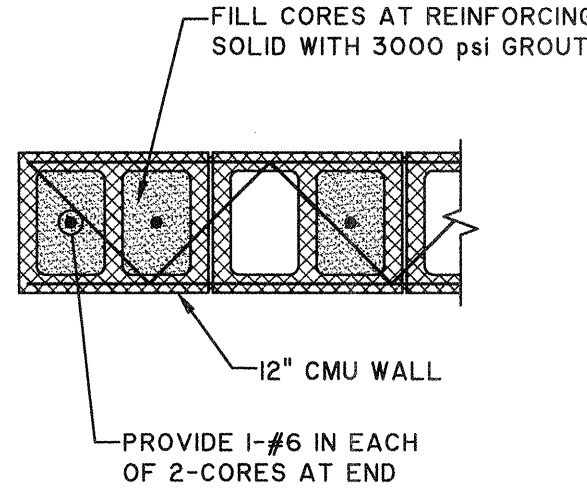
BID SET - NOT FOR CONSTRUCTION



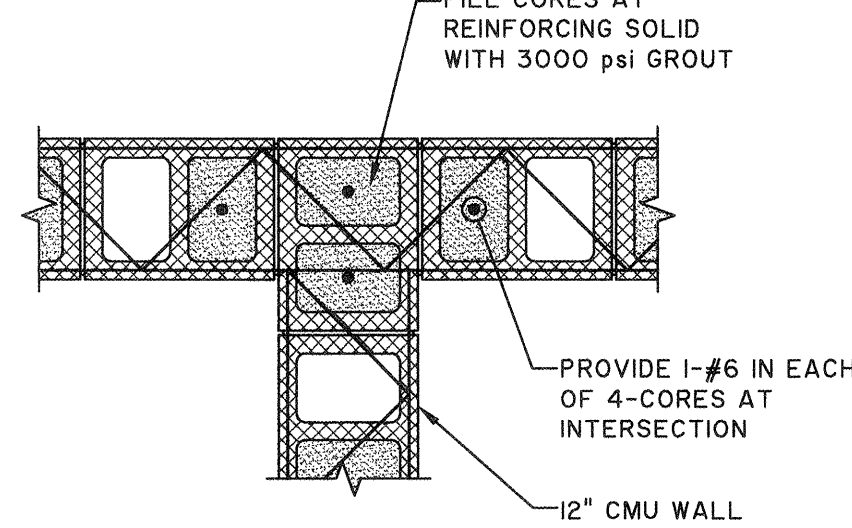
1 CMU REINFORCING AT 10'-0" WIDE ROLL-UP DOOR JAMB
S0.4 3/4" = 1'-0"



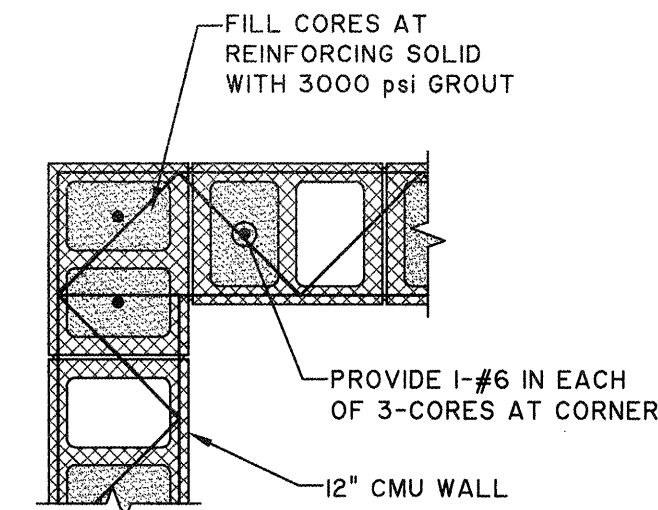
2 CMU REINFORCING BETWEEN 10'-0" WIDE ROLL-UP DOORS
S0.4 3/4" = 1'-0"



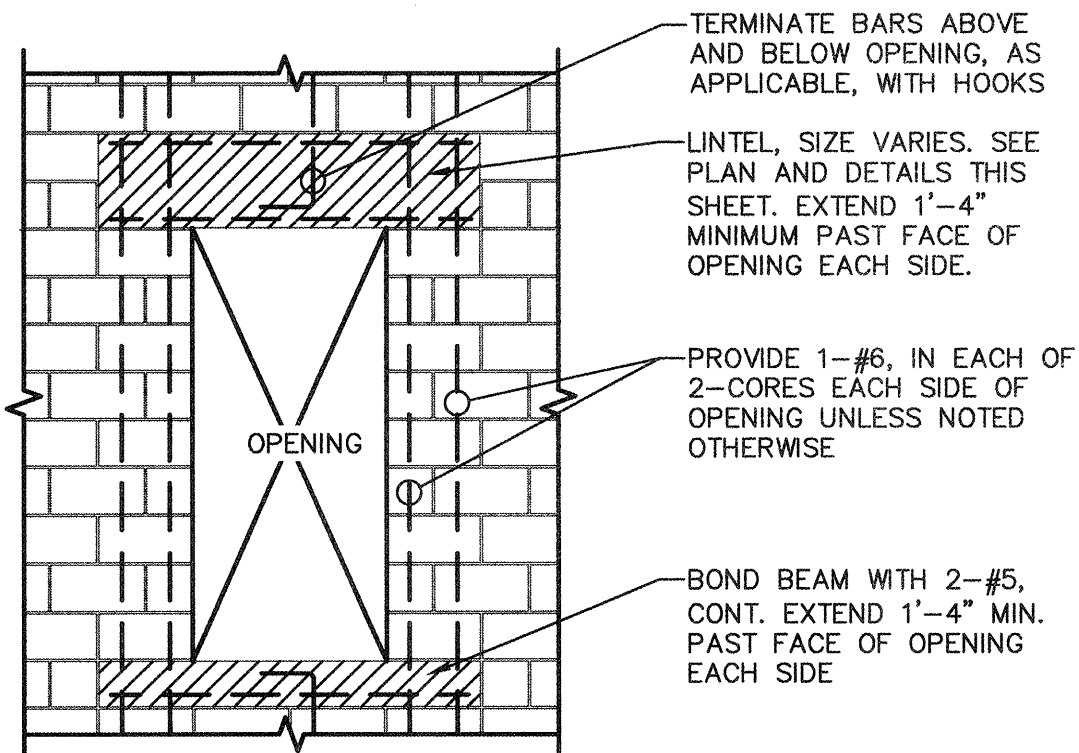
3 CMU REINFORCING AT JAMBS OF OPENINGS LESS THAN 10'-0" WIDE
S0.4 3/4" = 1'-0"



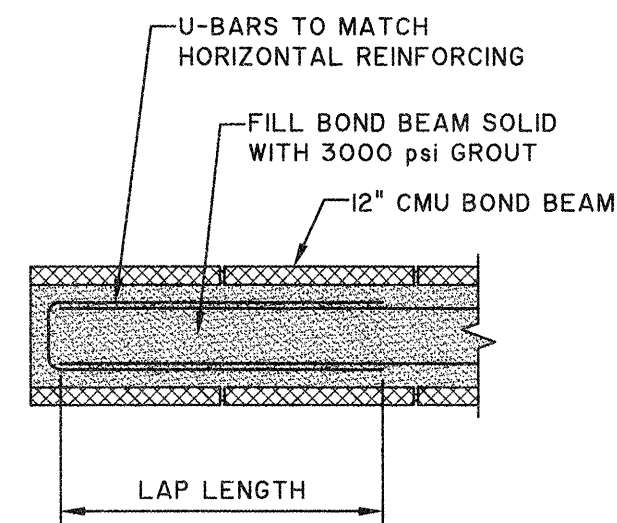
4 CMU REINFORCING AT INTERSECTIONS
S0.4 3/4" = 1'-0"



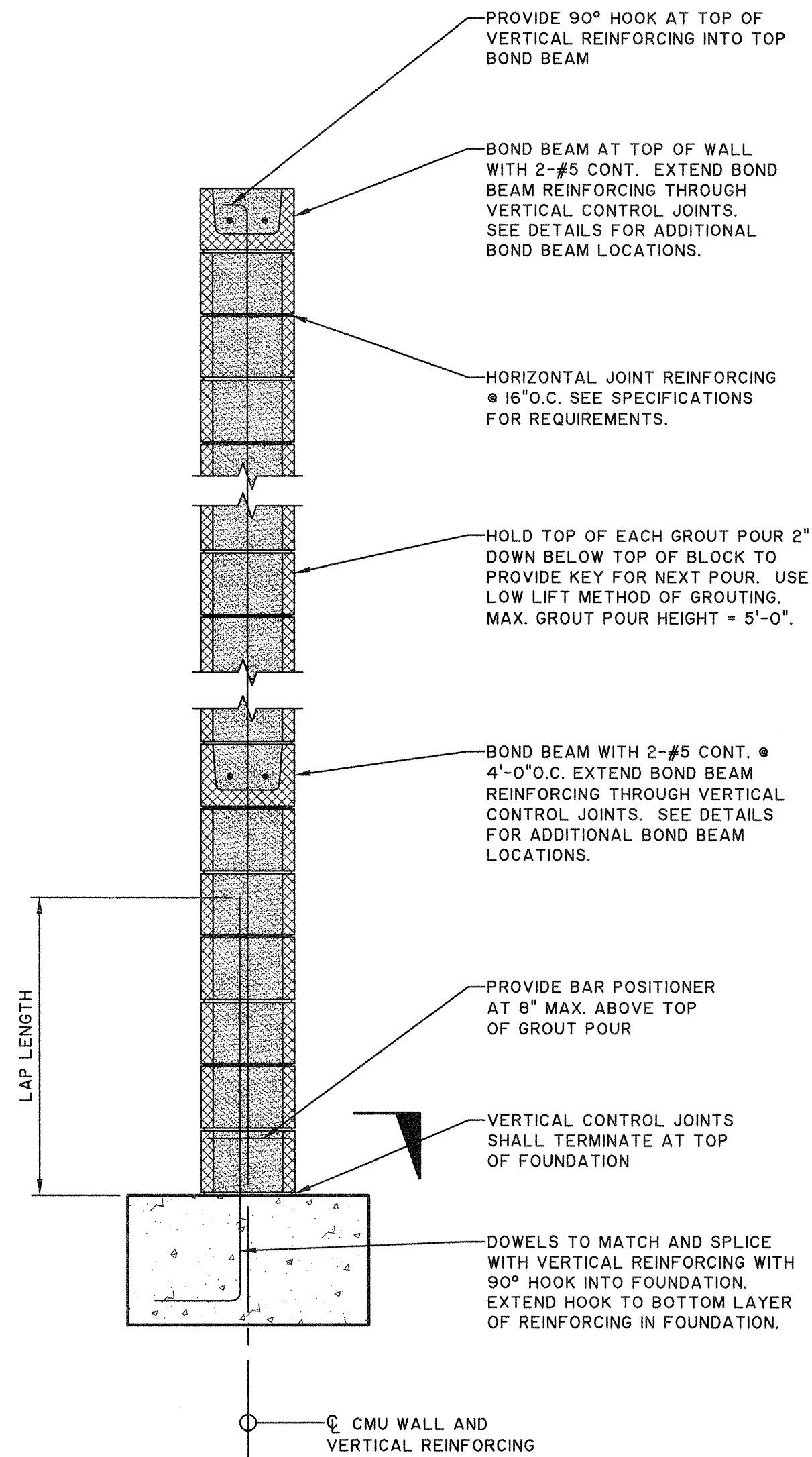
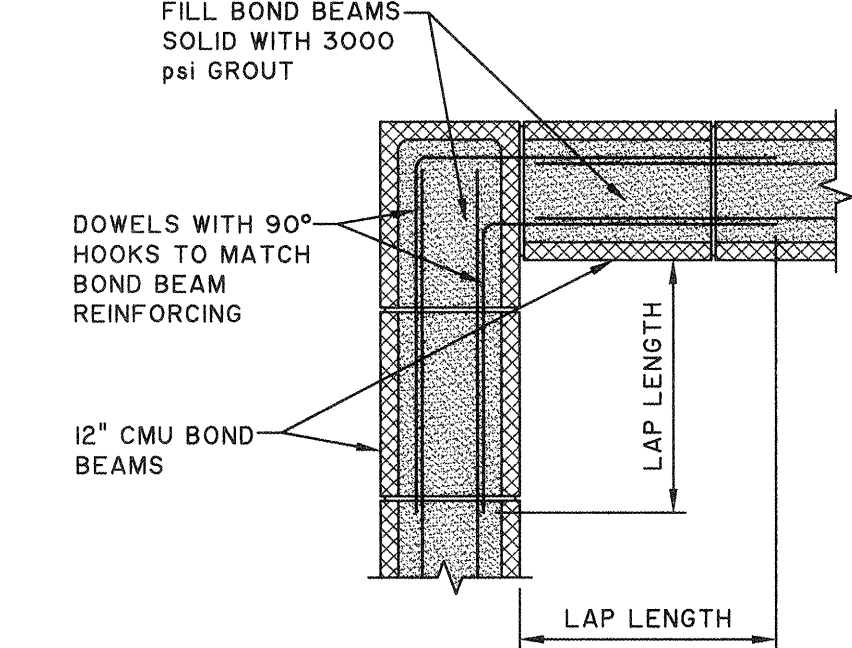
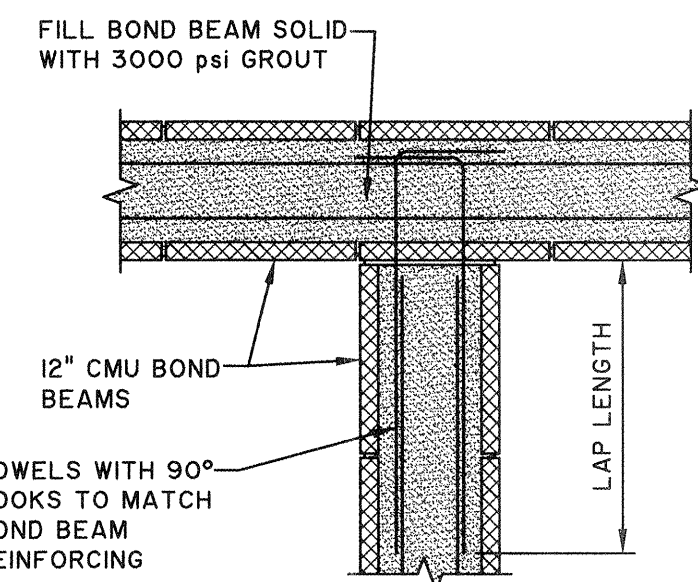
4 CMU REINFORCING AT CORNERS
S0.4 3/4" = 1'-0"



7 CMU R/F AT OPENING
S0.4 3/4" = 1'-0"

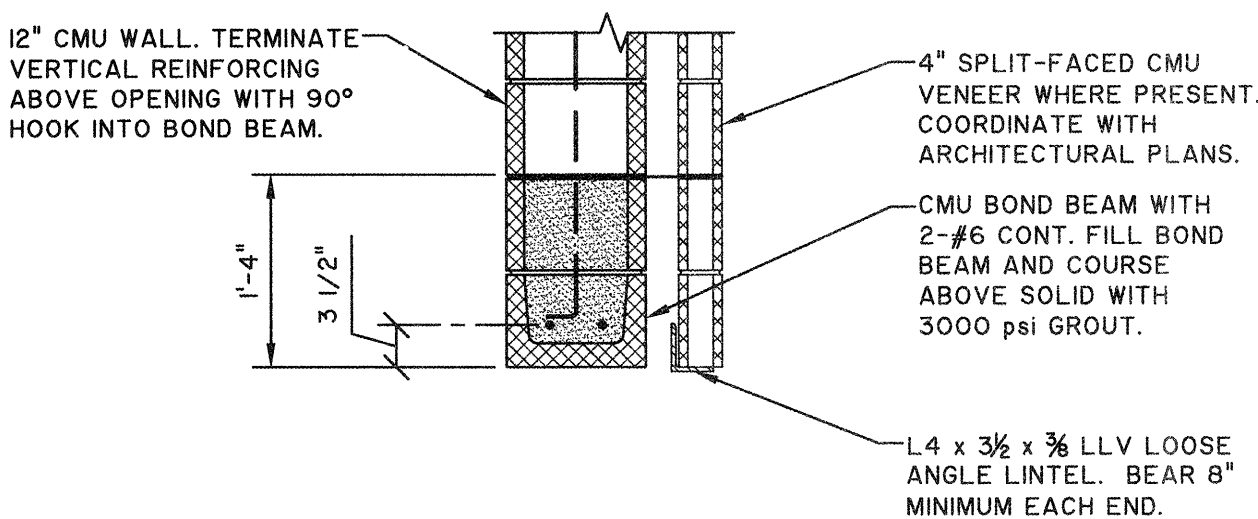


6 CMU BOND BEAM R/F
S0.4 3/4" = 1'-0"

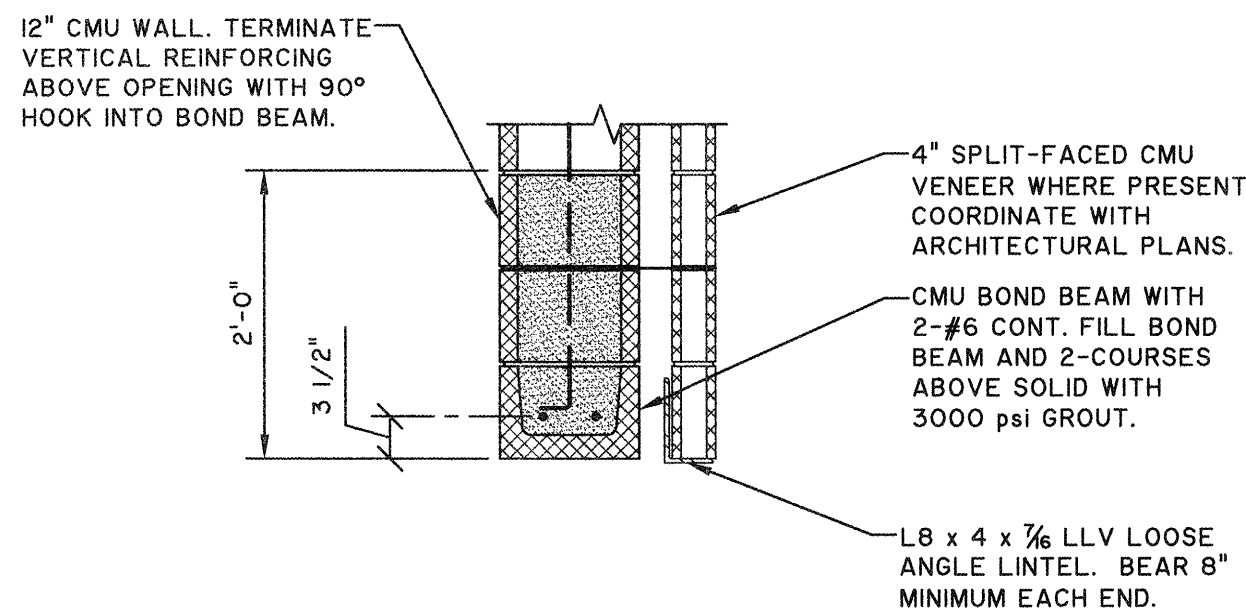


- NOTES:
1. THE END OF EACH HORIZ BAR SHALL BE ANCHORED TO VERTICAL BARS WITH HOOKS PER ACI.
 2. BOND BEAM FOR INTERIOR 8" CMU WALLS SHALL HAVE (2) #4 CONT. FOR HORIZ. R/F.

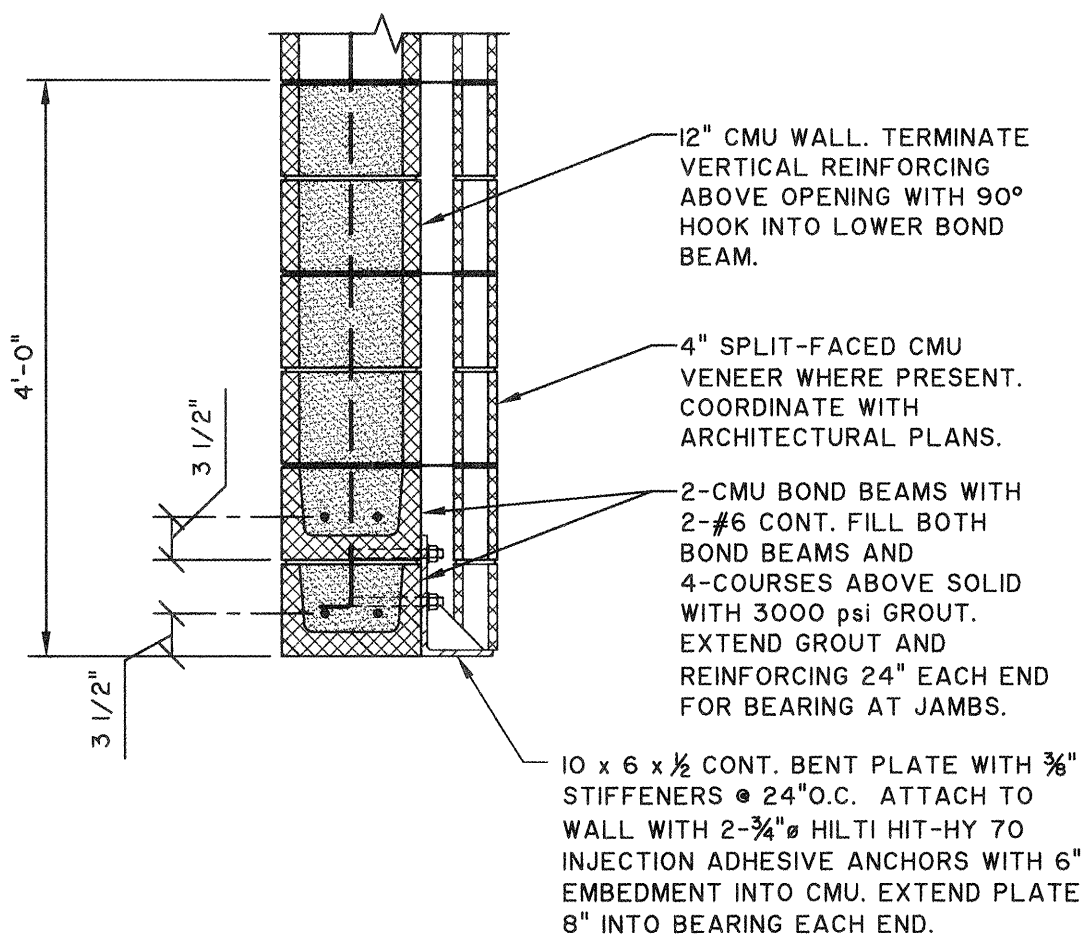
9 TYP CMU WALL SECTION - POUR DETAIL
S0.4 3/4" = 1'-0"



FOR OPENINGS UP TO AND INCLUDING 3'-0" WIDE

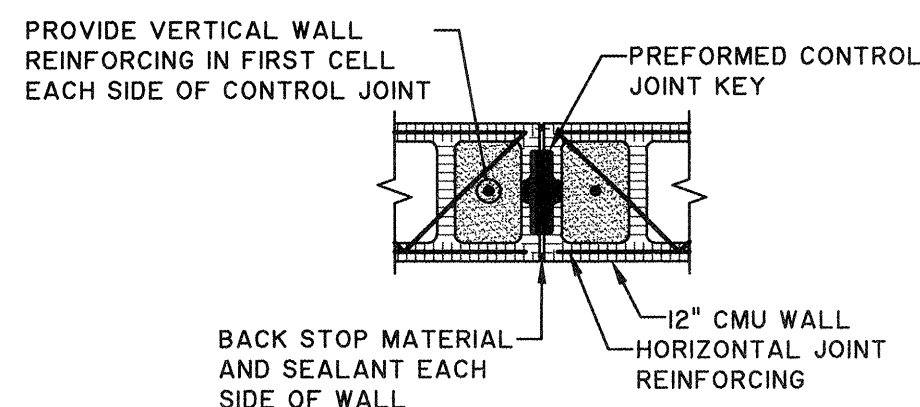


FOR OPENINGS UP TO AND INCLUDING 8'-0" WIDE



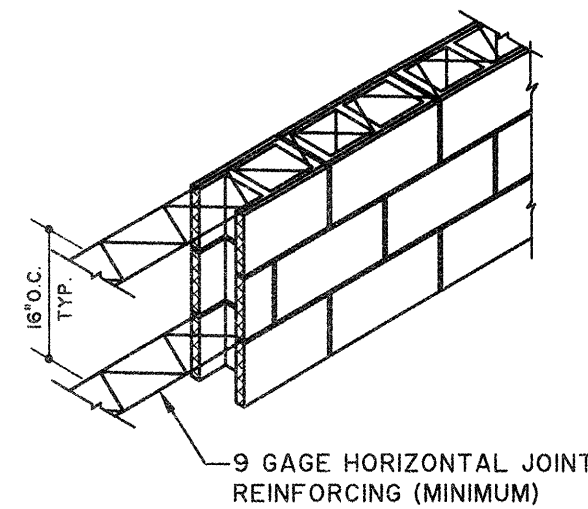
FOR OPENINGS UP TO AND INCLUDING 10'-0" WIDE

NOTE:
AT ROLL-UP DOORS, MAKE LINTEL CONTINUOUS ACROSS THE TOPS OF BOTH OPENINGS - DO NOT BREAK LINTEL AT 8'-0" WIDE WALL PIER.

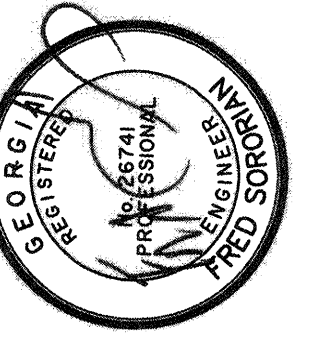


NOTE:
GROUT, CONCRETE, REINF. BARS, JOINT REINF., AND BOND BEAMS SHALL BE DISCONTINUOUS DOWN TO TOP OF FOOTING AT CONTROL JOINTS EXCEPT AT ROOF AND FLOOR LEVELS AND TOP OF WALLS. SEE PLANS FOR CONTROL JOINT LOCATIONS. DO NOT LOCATE CONTROL JOINTS WITHIN 2'-0" OF OPENINGS.

10 TYP CMU CONTROL JOINT
S0.4 3/4" = 1'-0"



11 TYP CMU HORIZ R/F DETAIL
S0.4 3/4" = 1'-0"



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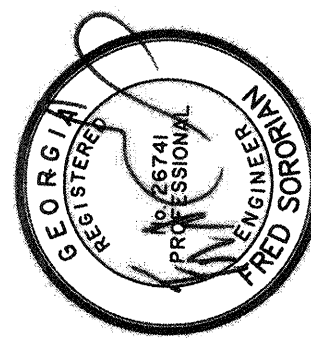
NO.	ISSUED FOR BIDS	REVISIONS	DATE

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TYPICAL CMU DETAILS

JOB NO:	J-26963-0000
DATE:	1-15-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S0.4



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0				

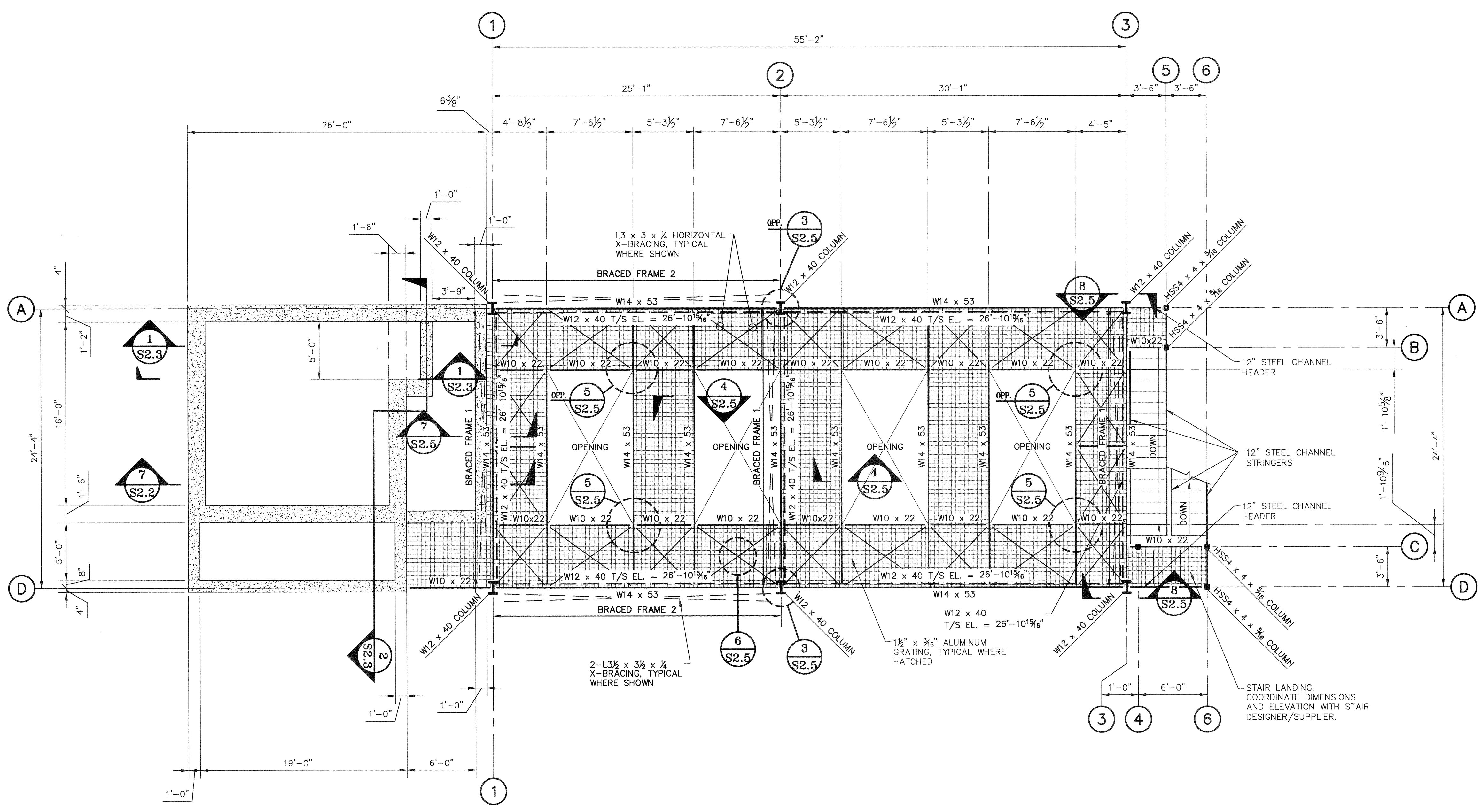
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TRAVIS FIELD WATER RECLAMATION FACILITY
HEADWORKS FRAMING PLAN

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	

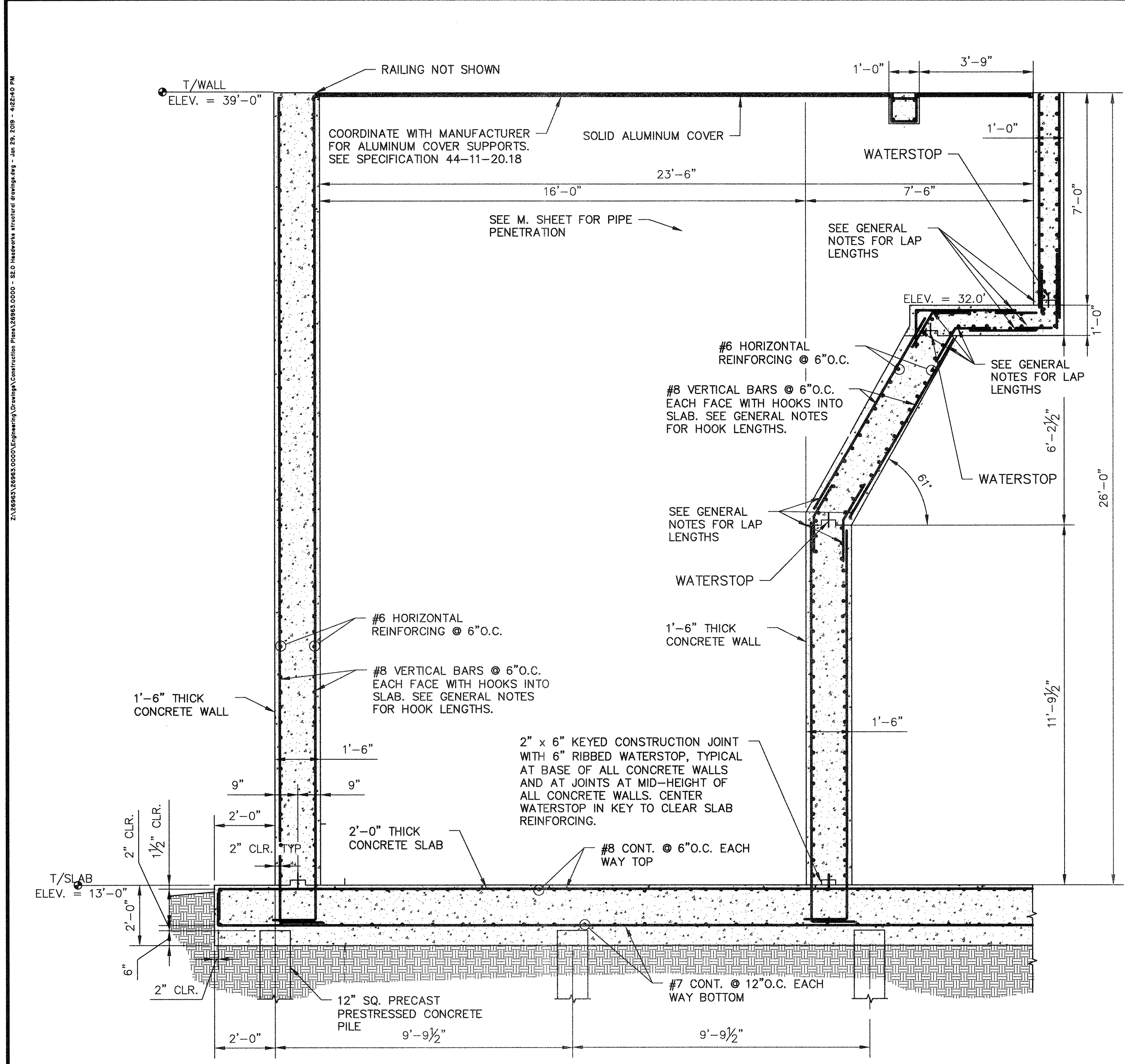
S2.1



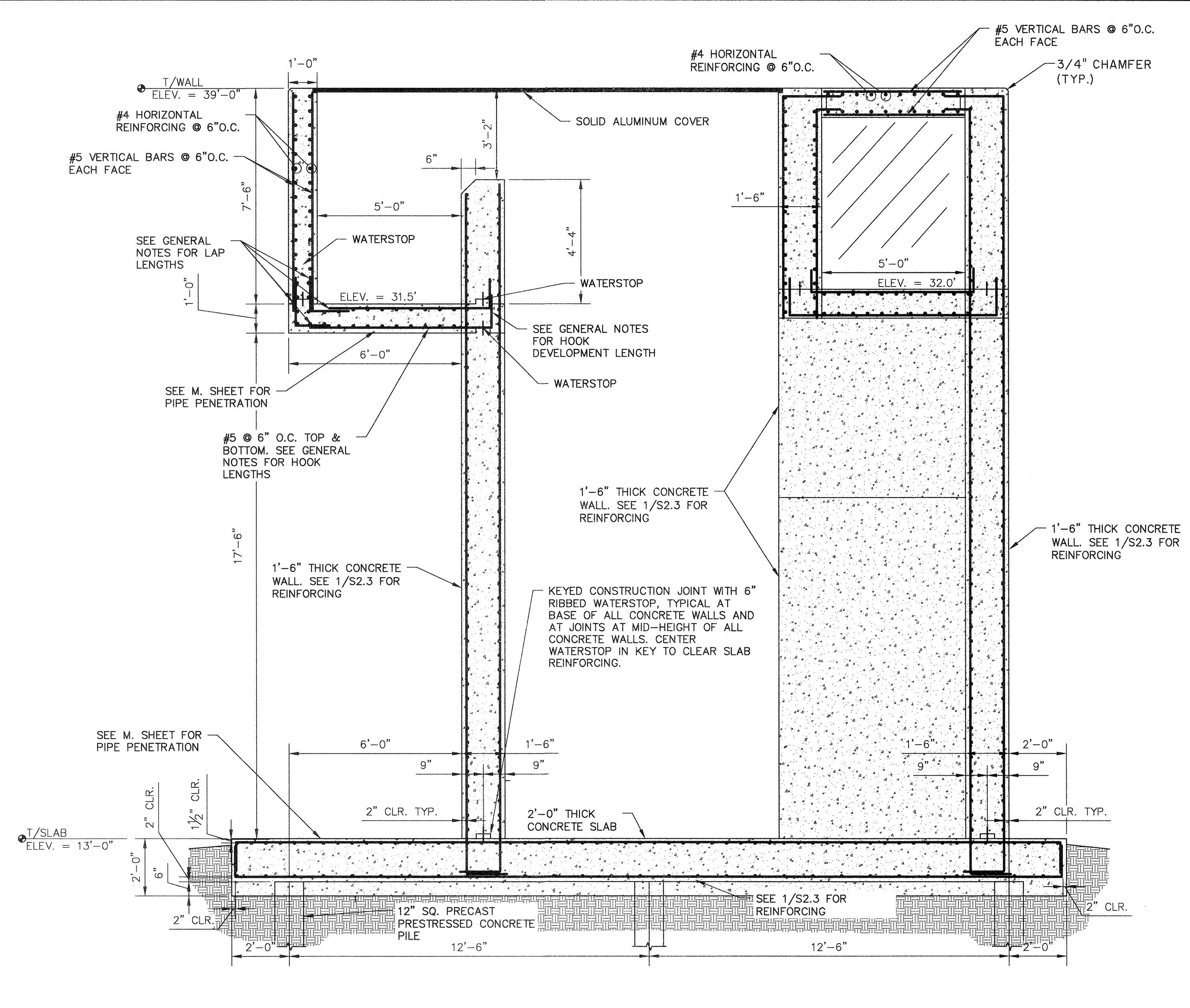
1
S2.1 **FRAMING PLAN**
 3/16" = 1'-0"

- NOTES:
- TOP OF STEEL ELEVATION = 38'-10 1/2" UNLESS NOTED OTHERWISE.
 - COORDINATE ALL DIMENSIONS WITH MECHANICAL DRAWINGS.
 - COORDINATE EQUIPMENT ATTACHMENT REQUIREMENTS AND EXACT LOCATIONS WITH MECHANICAL DRAWINGS.
 - COORDINATE STAIR SUPPORT FRAMING WITH STAIR DESIGNER/SUPPLIER.
 - CONTRACTOR TO COORDINATE GRIT SYSTEM CONCRETE WORK WITH MANUFACTURERS SHOP DRAWINGS
 - ALL STRUCTURAL STEEL FRAMING SHALL BE HOT DIP GALVANIZED

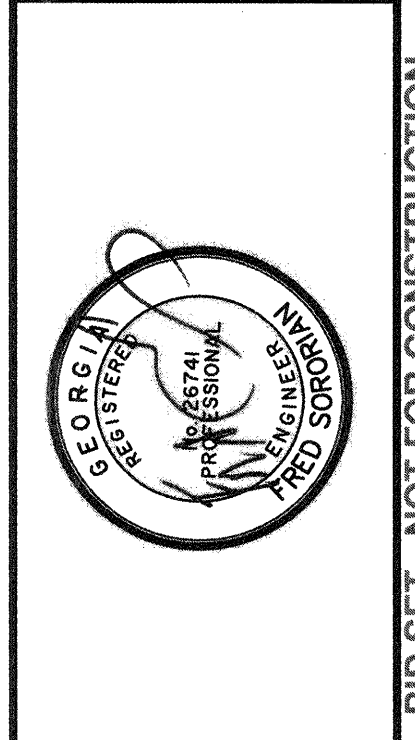
2:18863.1883.000000\PROJECT\DWG\CONSTR\CONSTR\FRAMEWORK\FRAMEWORK.dwg - 1/16/19 10:25:42 AM



1 SECTION AT VORTEX WALL
 S2.3 3/8" = 1'-0"



2 SECTION AT VORTEX WALL
 S2.3 3/8" = 1'-0"



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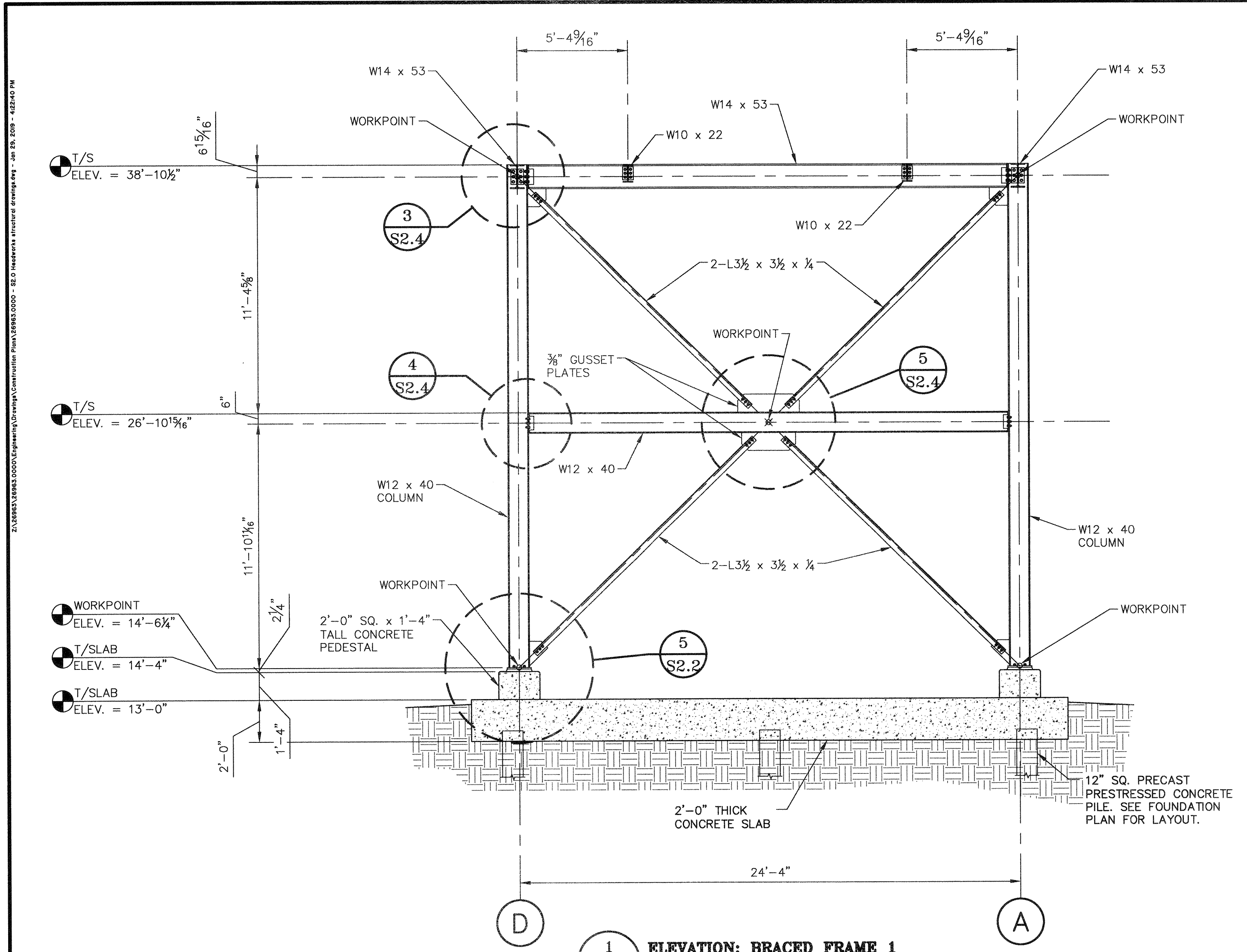
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TRAVIS FIELD WATER RECLAMATION FACILITY
 HEADWORKS FOUNDATION SECTIONS AND DETAILS

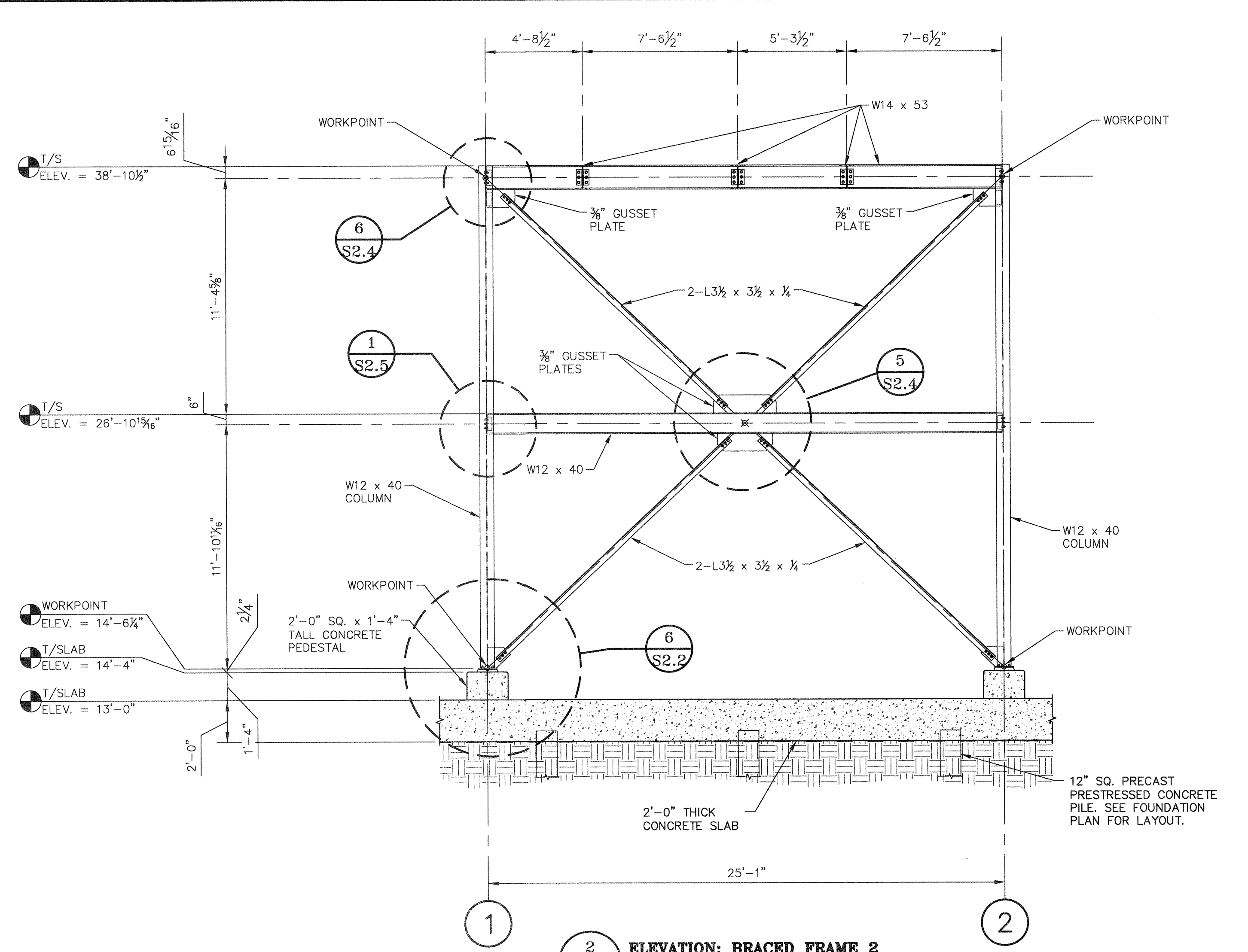
JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	

S2.3

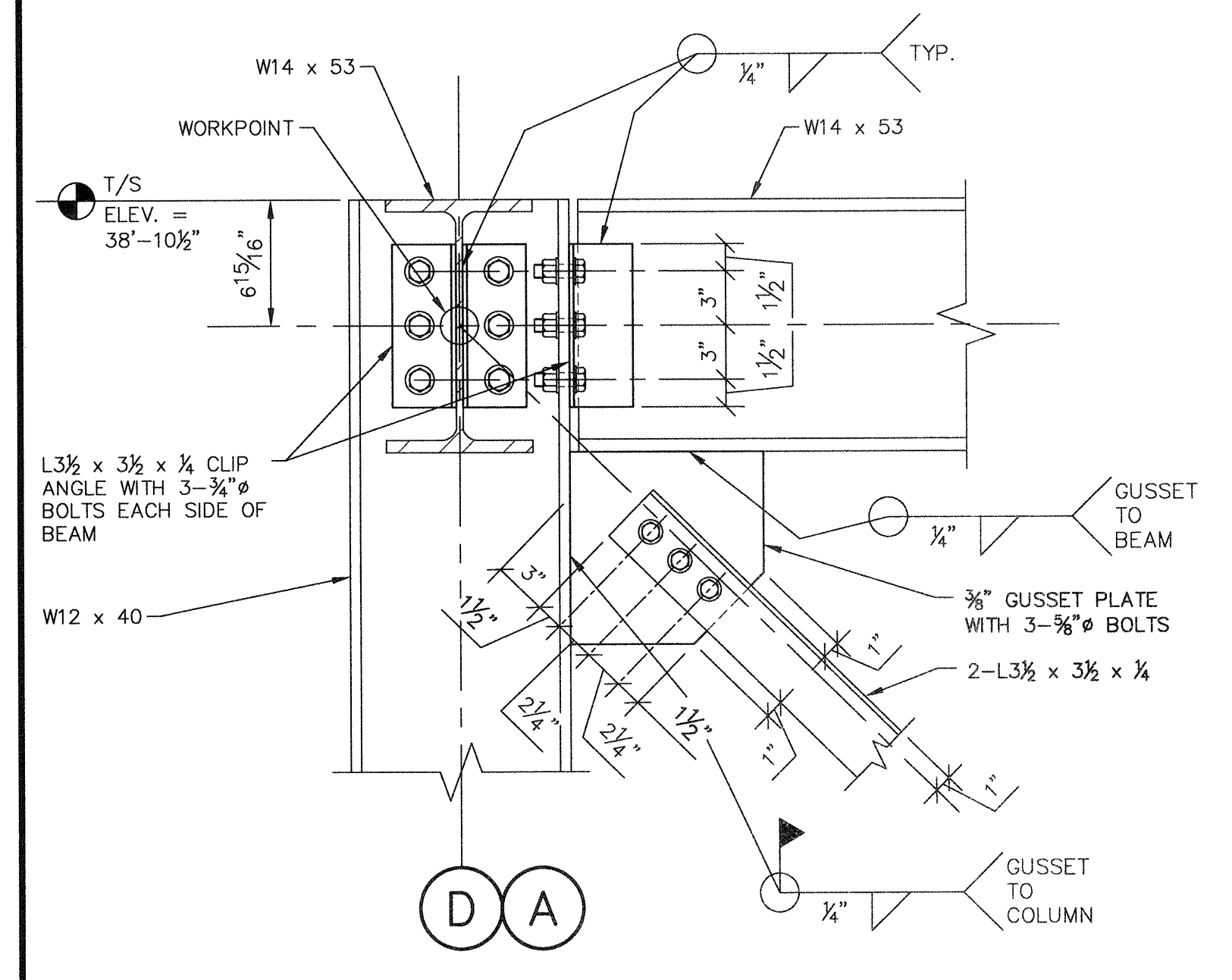
BID SET - NOT FOR CONSTRUCTION



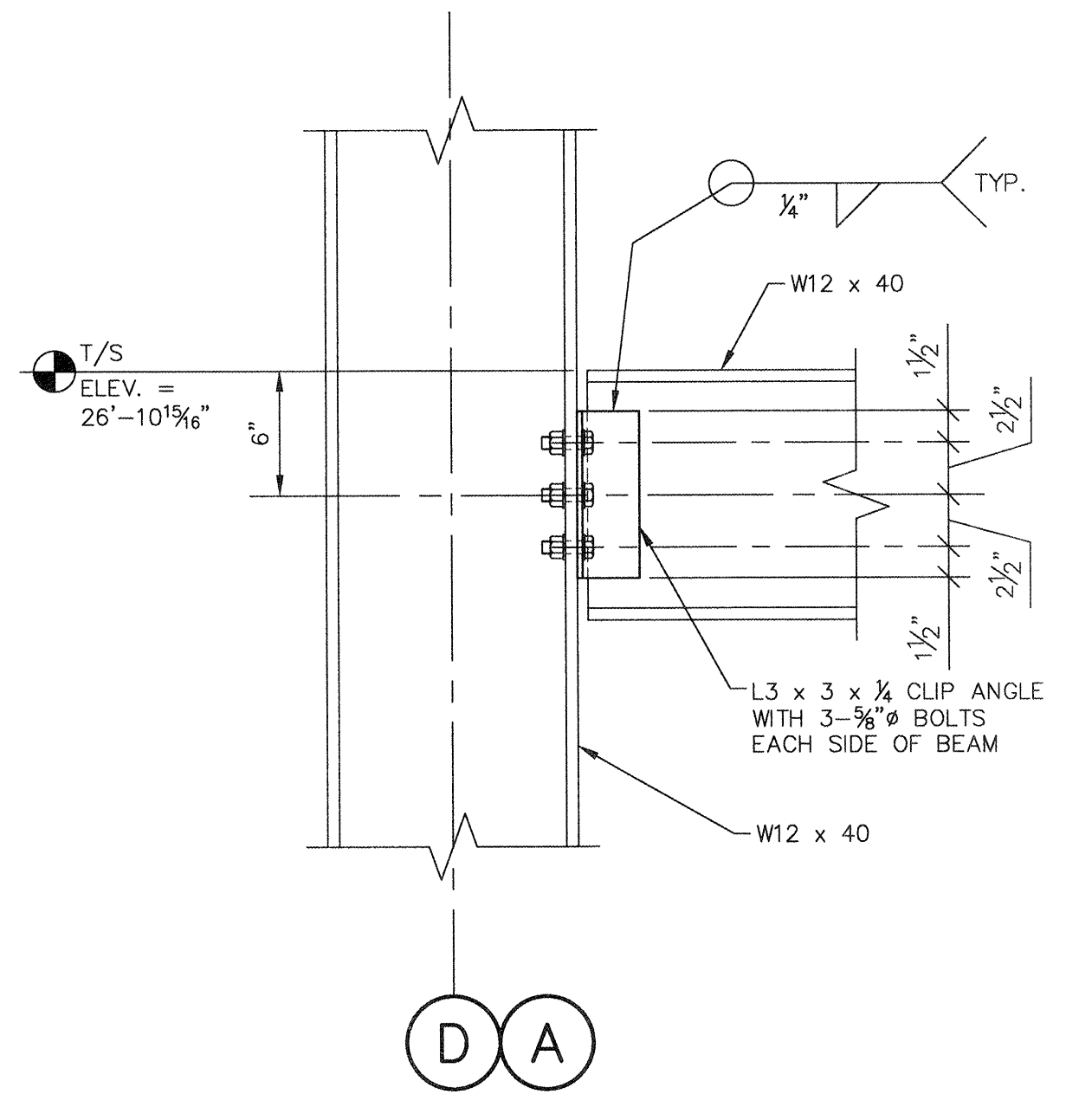
1 ELEVATION: BRACED FRAME 1
 S2.4 1/4" = 1'-0"
 NOTES:
 1. COORDINATE ALL DIMENSIONS WITH MECHANICAL DRAWINGS.
 2. ALL STRUCTURAL STEEL FRAMING SHALL BE HOT DIP GALVANIZED



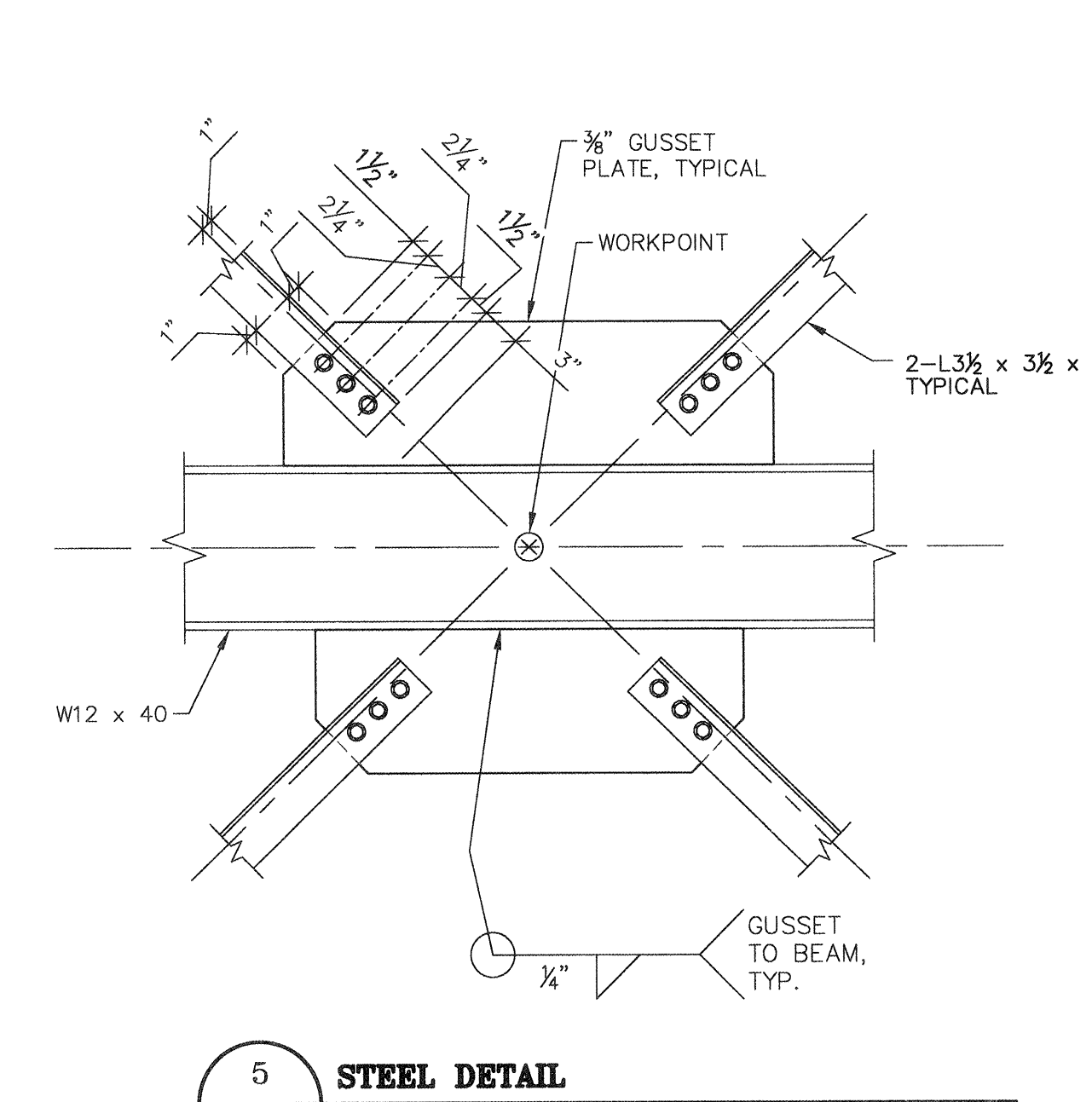
2 ELEVATION: BRACED FRAME 2
 S2.4 1/4" = 1'-0"
 NOTES:
 1. COORDINATE ALL DIMENSIONS WITH MECHANICAL DRAWINGS.
 2. ALL STRUCTURAL STEEL FRAMING SHALL BE HOT DIP GALVANIZED



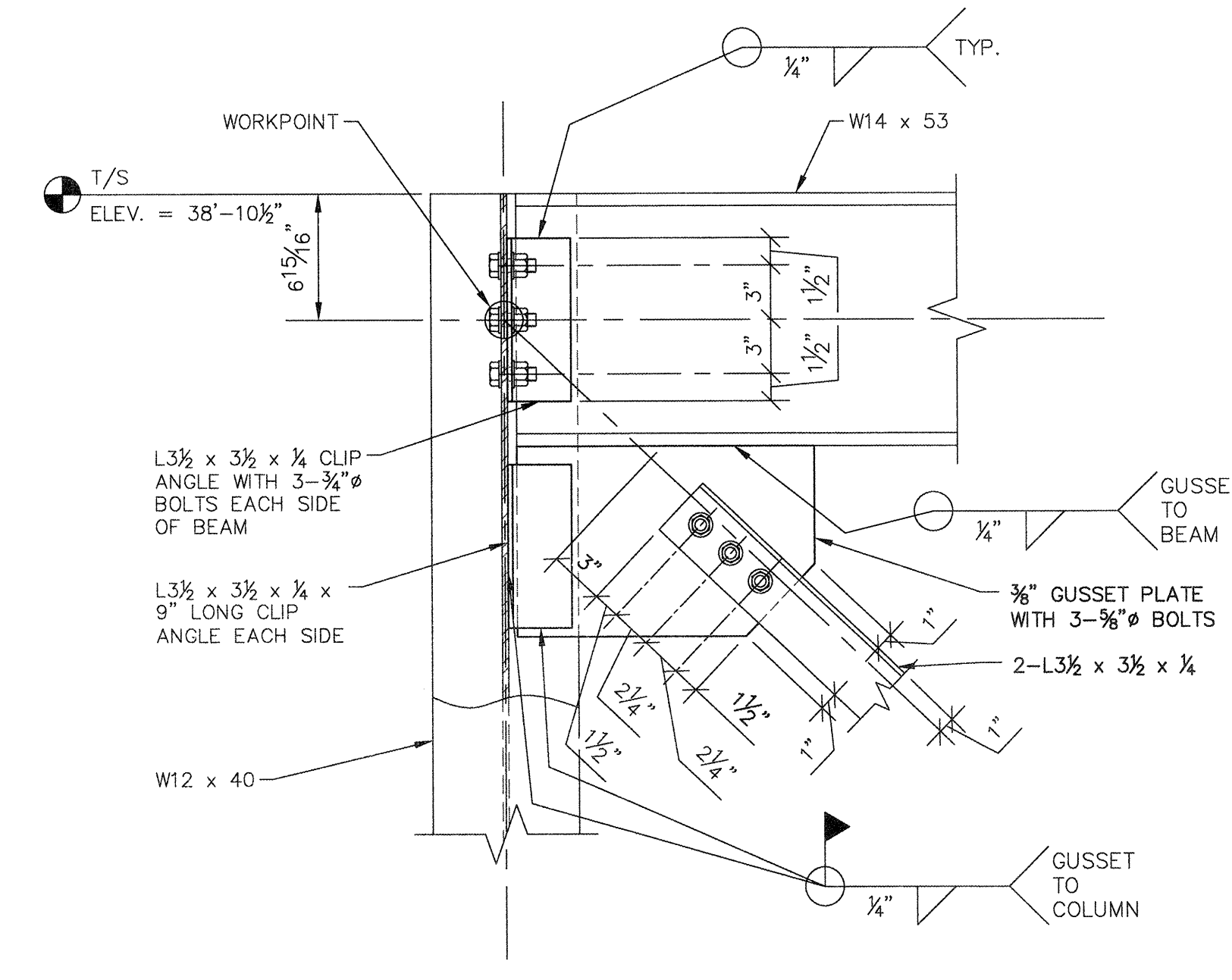
3 STEEL DETAIL
 S2.4 1 1/2" = 1'-0"



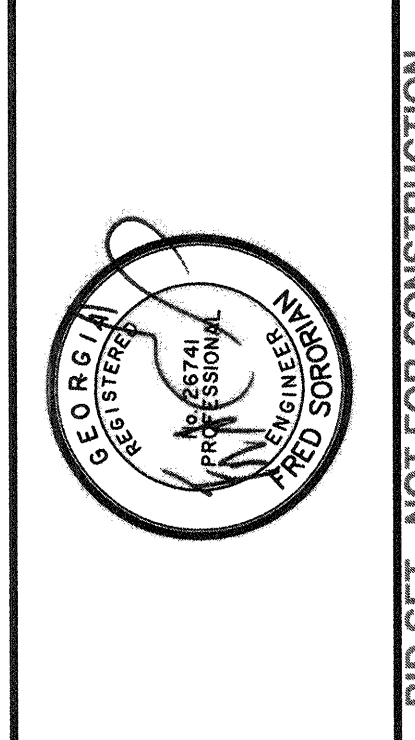
4 STEEL DETAIL
 S2.4 1 1/2" = 1'-0"



5 STEEL DETAIL
 S2.4 1" = 1'-0"



6 STEEL DETAIL
 S2.4 1 1/2" = 1'-0"



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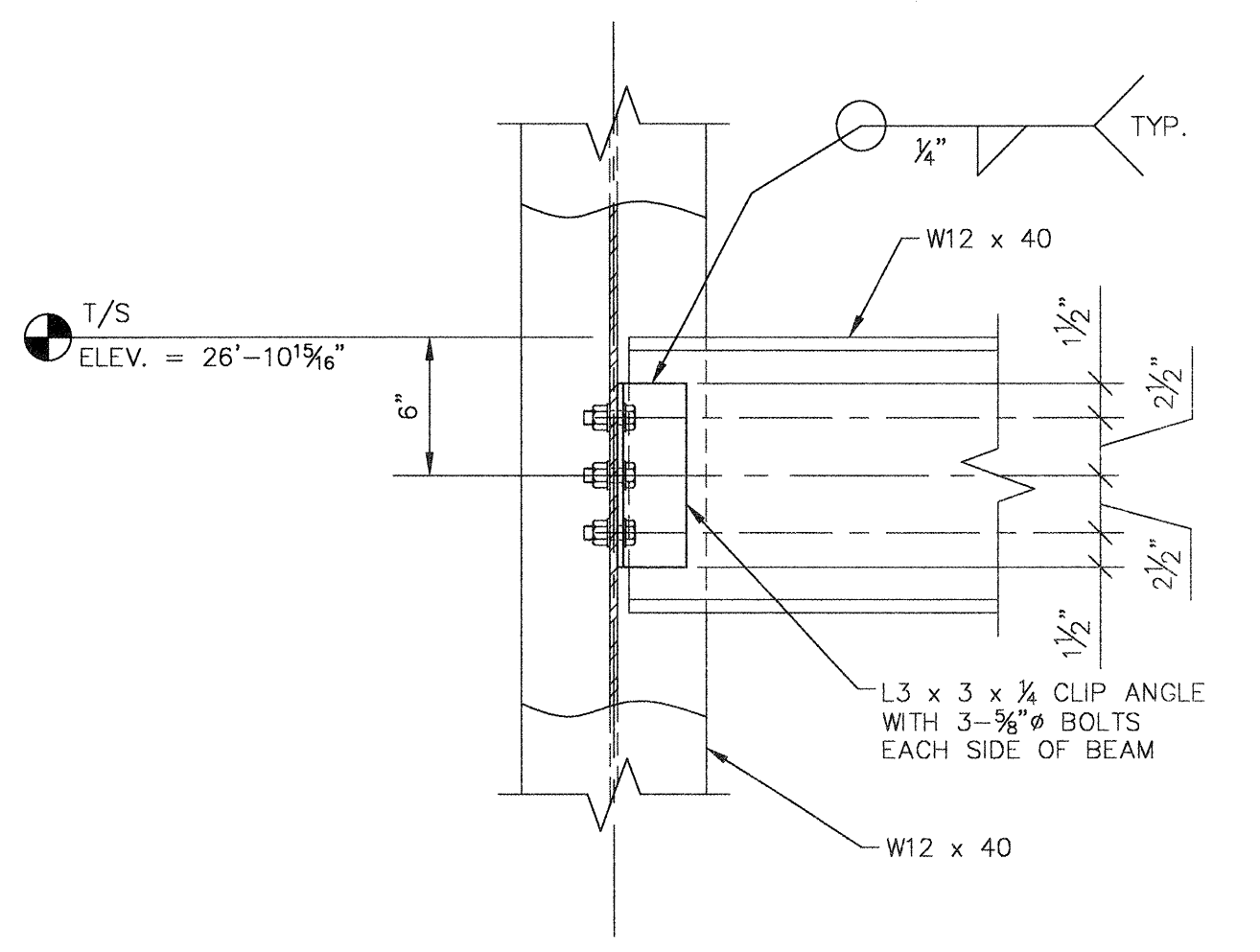
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 HEADWORKS FRAMING SECTIONS AND DETAILS

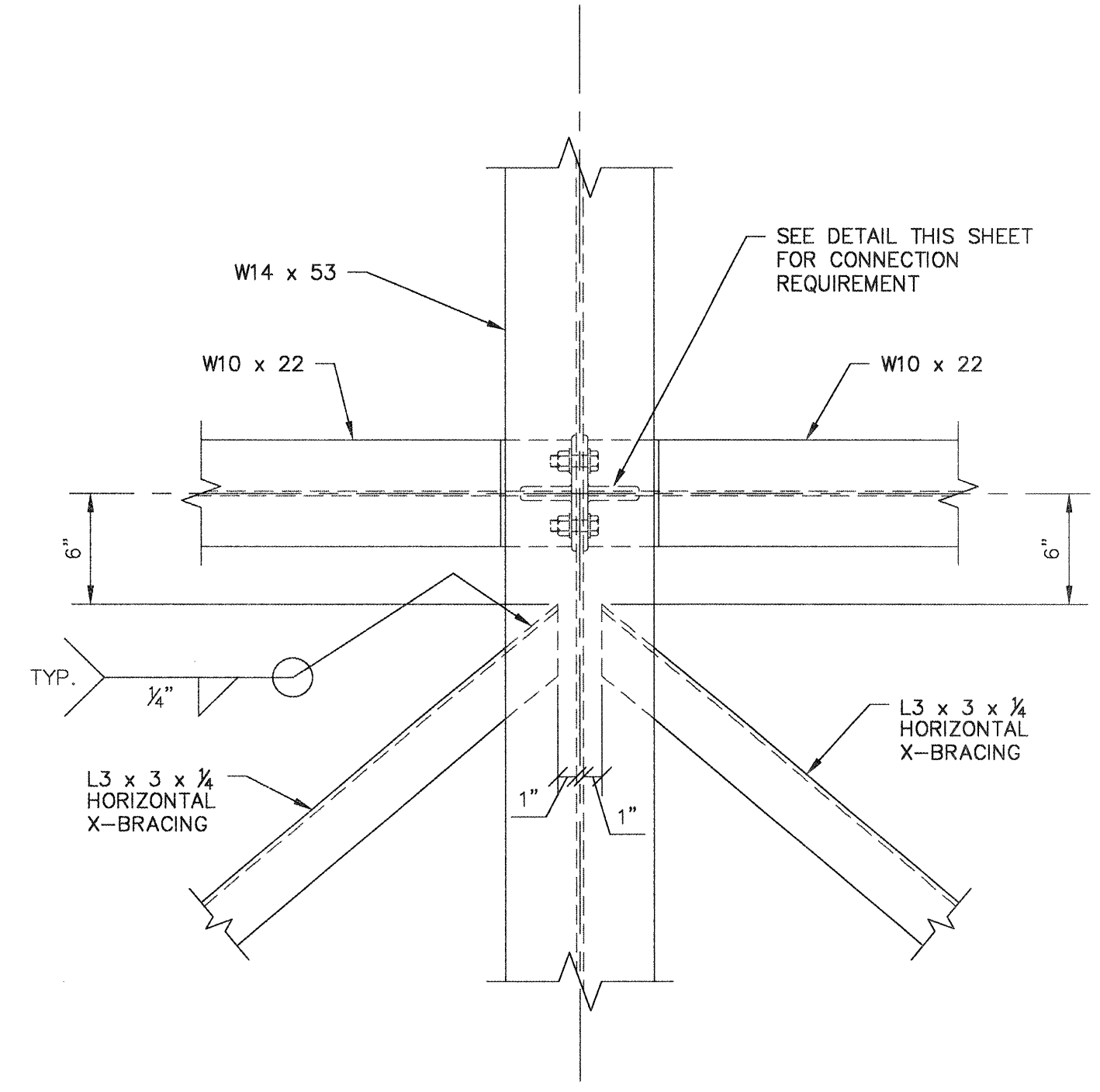
JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	

S2.4

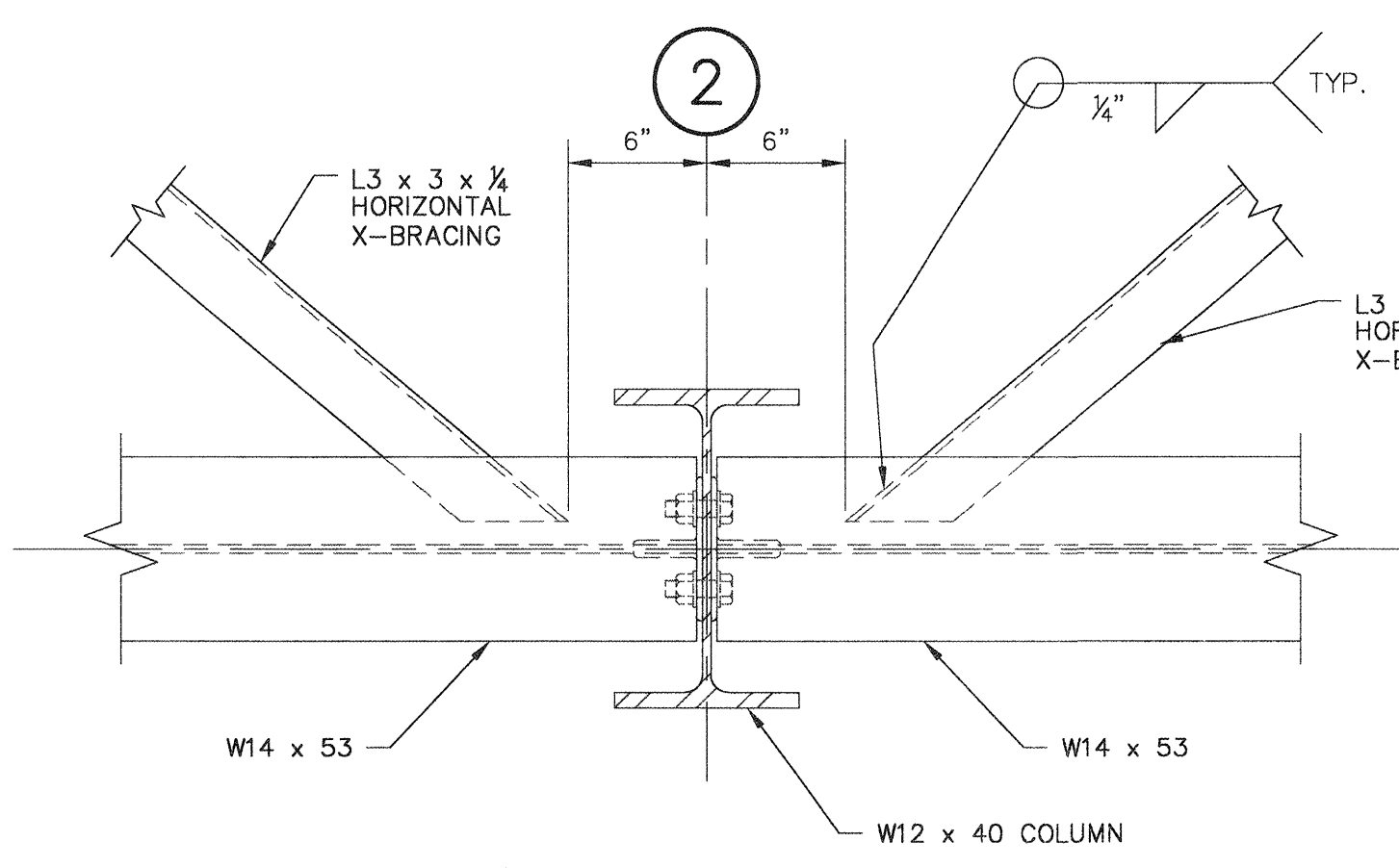
BID SET - NOT FOR CONSTRUCTION



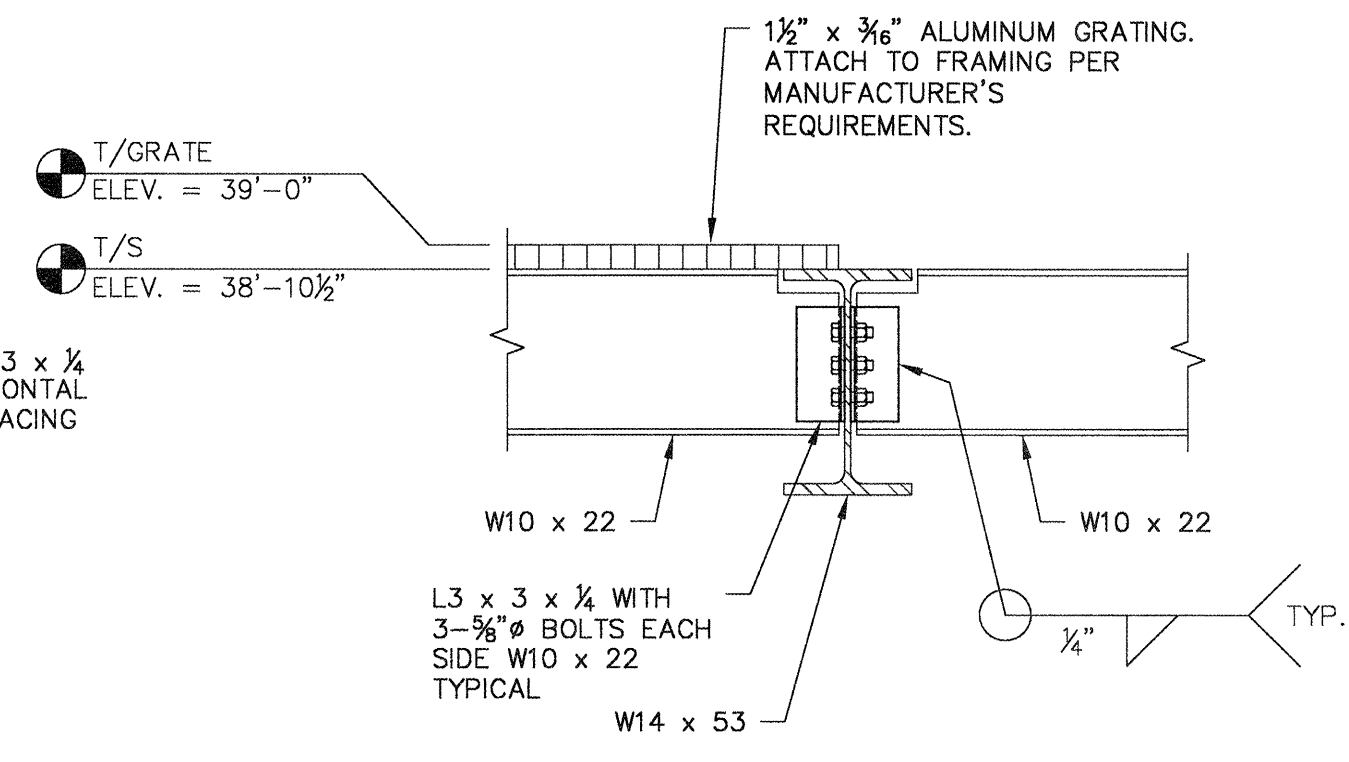
1 STEEL DETAIL
S2.5 1 1/2" = 1'-0"



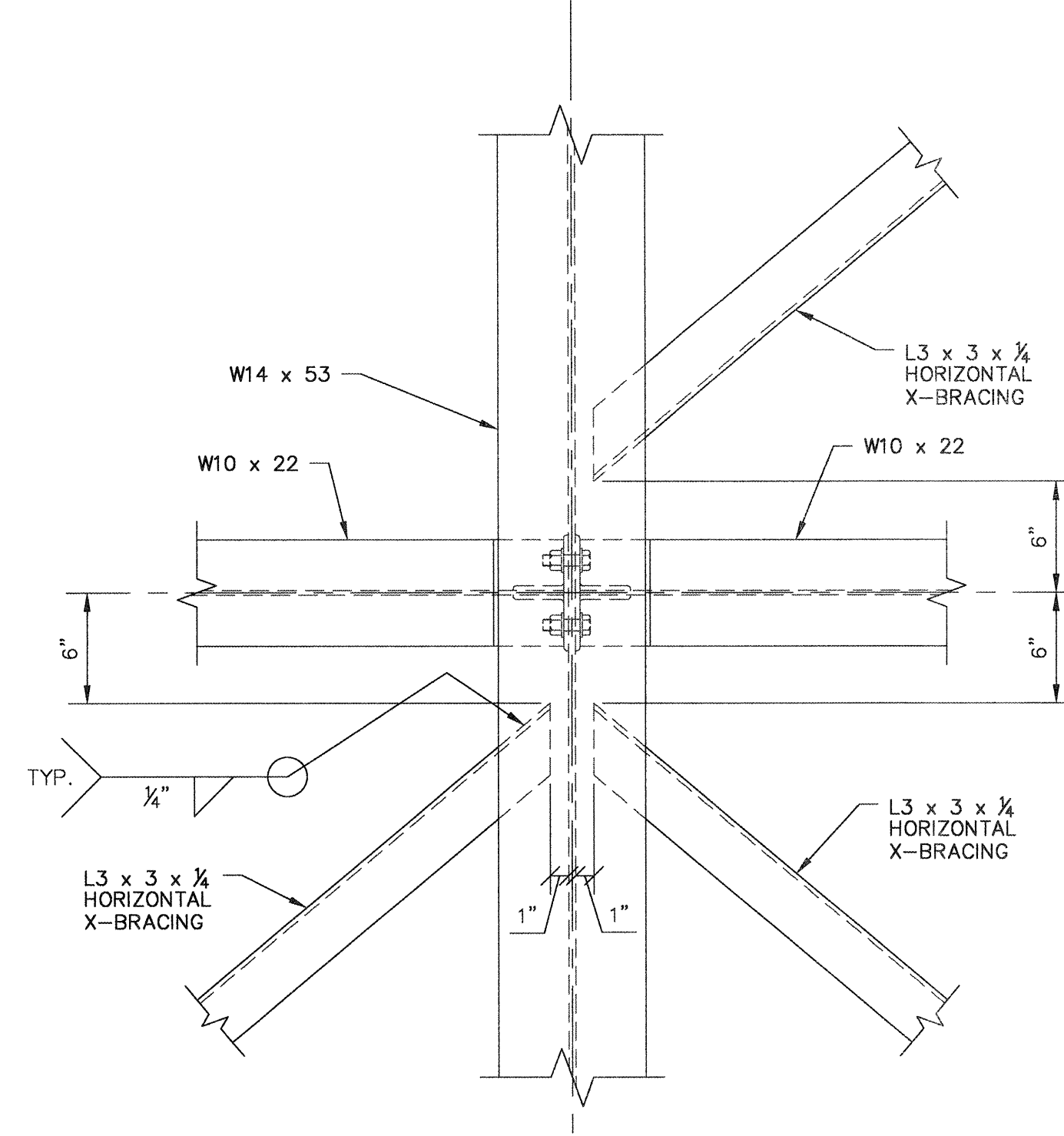
2 STEEL BRACING DETAIL
S2.5 1 1/2" = 1'-0"



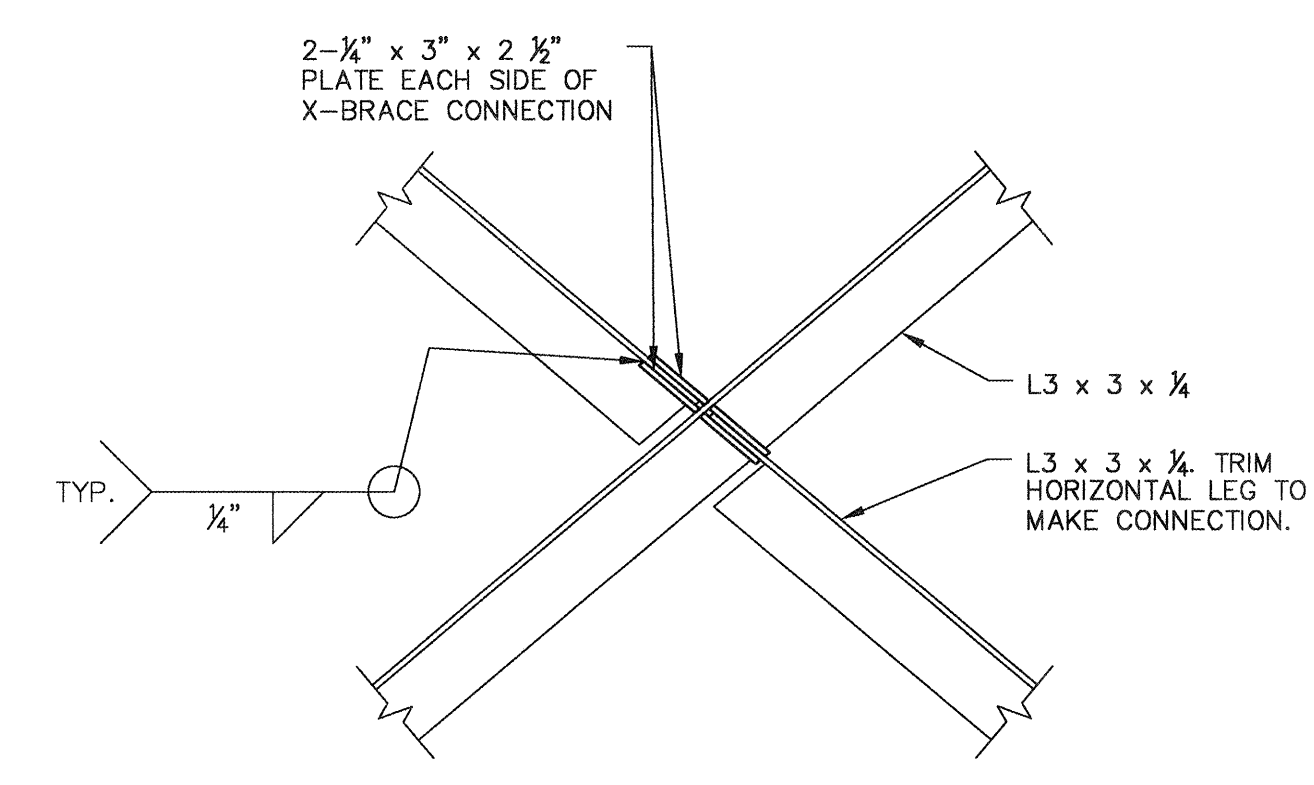
3 STEEL BRACING DETAIL
S2.5 1 1/2" = 1'-0"



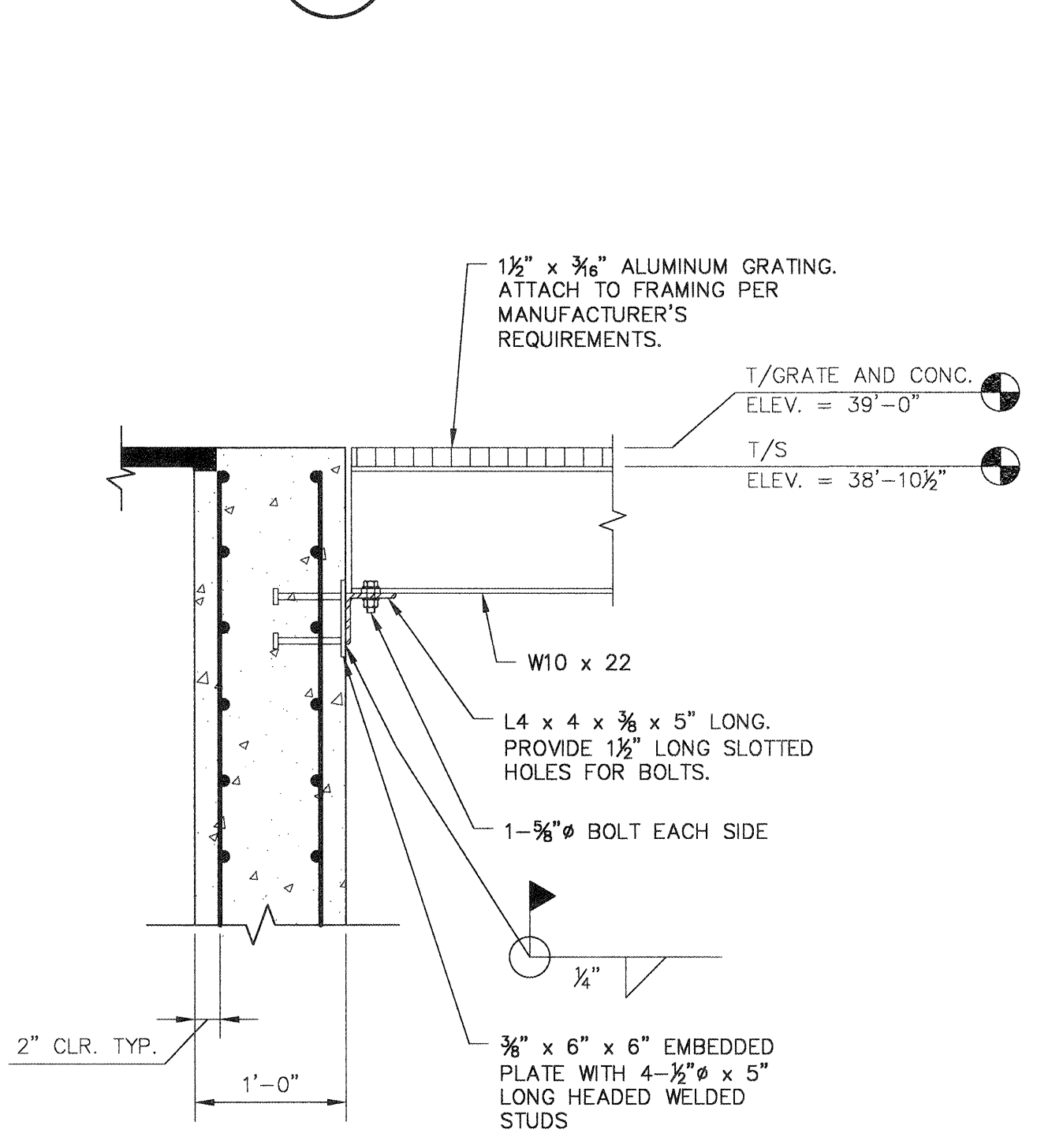
4 STEEL FRAMING DETAIL
S2.5 1 1/2" = 1'-0"



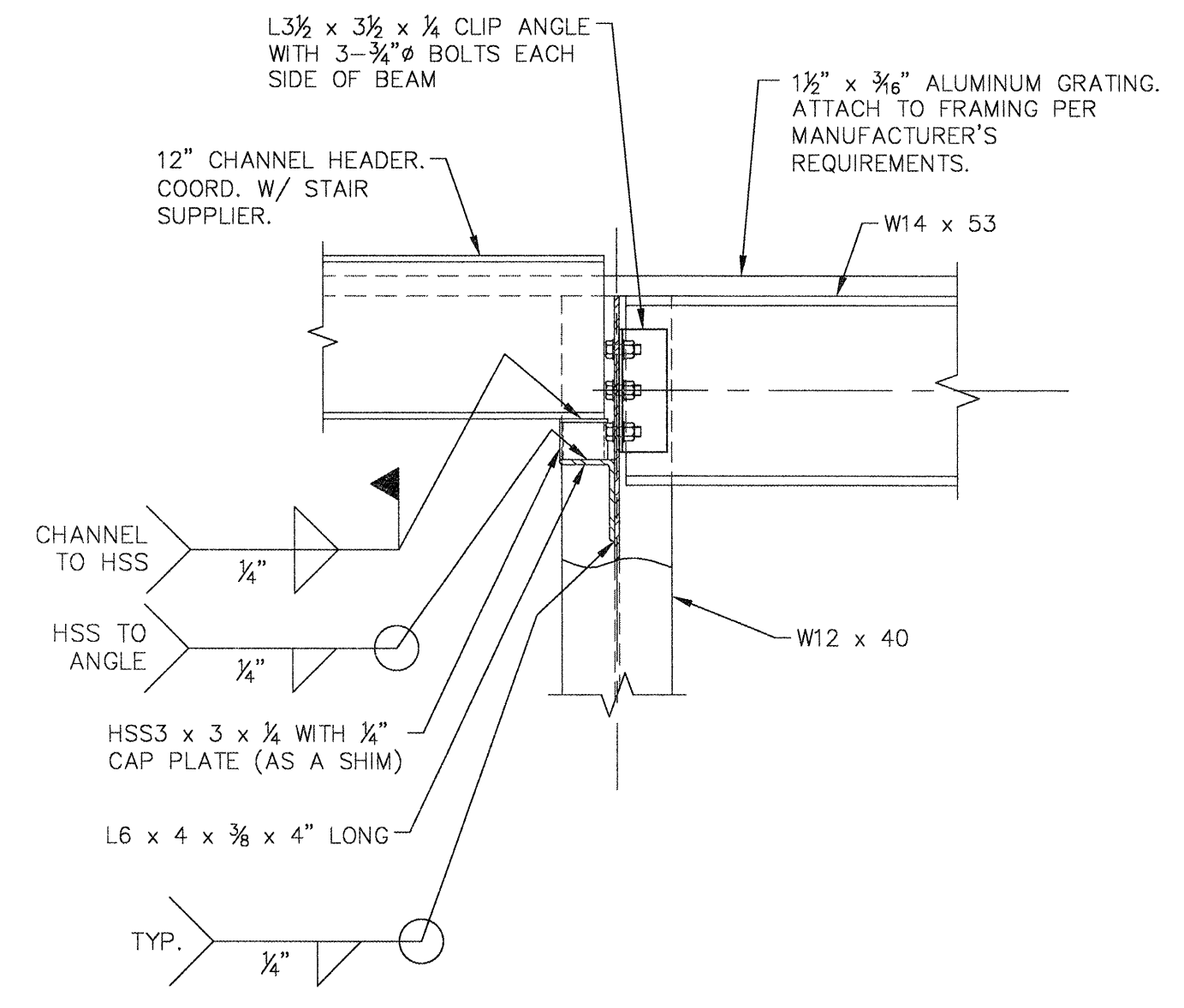
5 STEEL BRACING DETAIL
S2.5 1 1/2" = 1'-0"



6 STEEL BRACING DETAIL
S2.5 1 1/2" = 1'-0"
NOTE:
SECTION SHOWN UPSIDE DOWN FOR CLARITY.

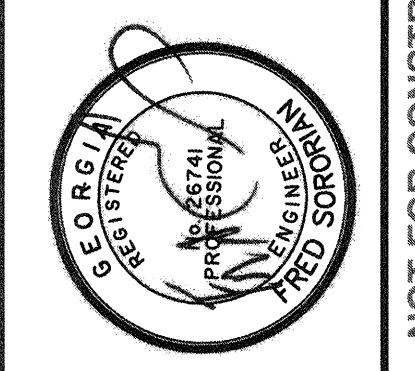


7 FRAMING DETAIL AT VORTEX WALL
S2.5 1 1/2" = 1'-0"



8 STEEL FRAMING DETAIL
S2.5 1 1/2" = 1'-0"

DATE PLOTTED: 11/15/2011 10:00:00 AM USER: JEP



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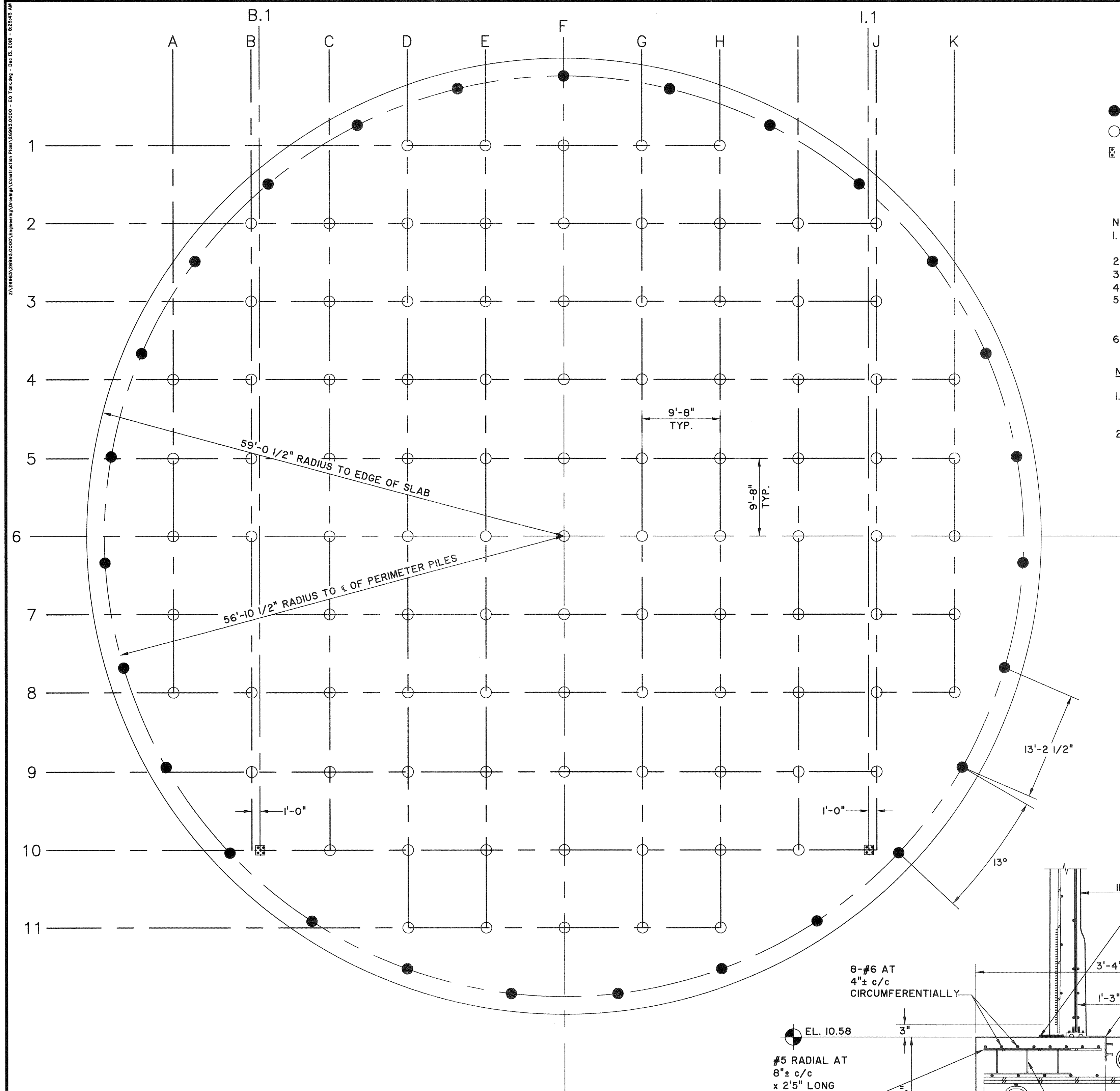
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HEADWORKS FRAMING SECTIONS & DETAILS

JOB NO:	J-26963.0000
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DRAWN:	JEP
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APPROVED:	JAH
SCALE:	

S2.5

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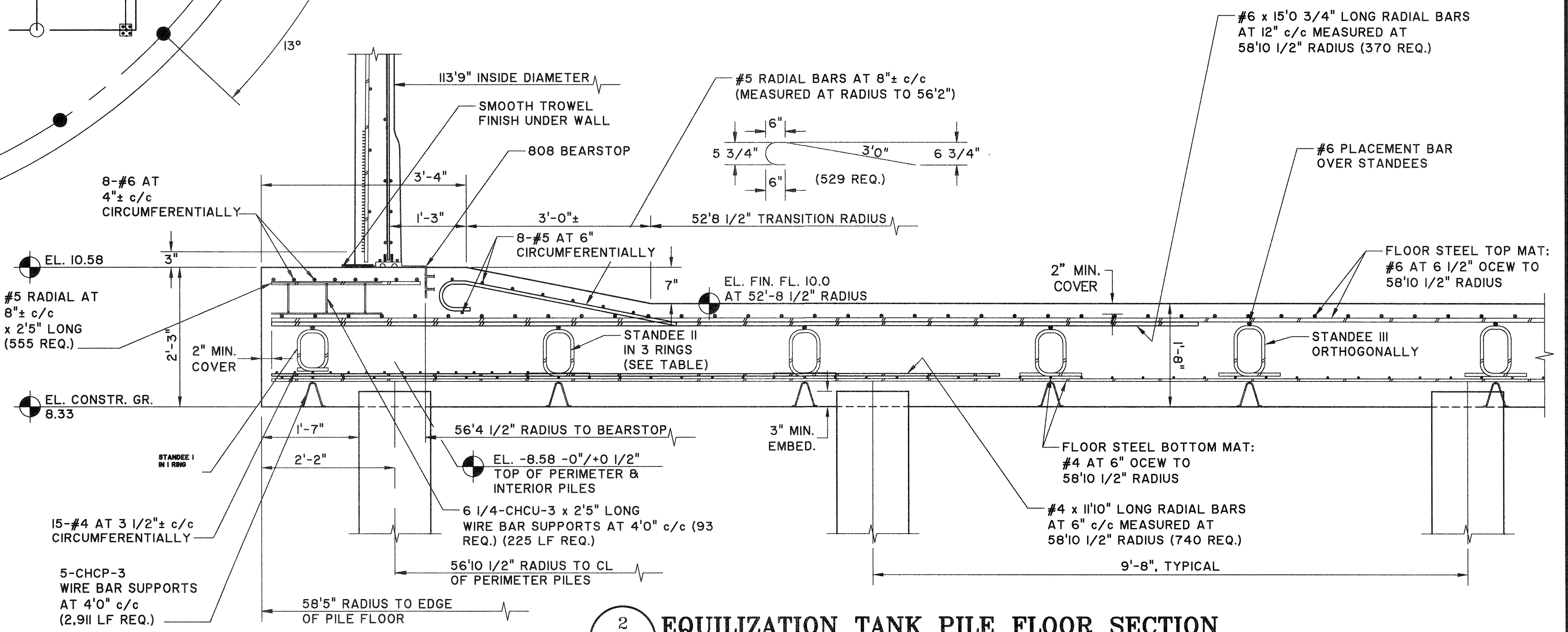


- 14" SQUARE 14" SQUARE PRESTRESSED PILES
- 27 PERIMETER PILES
 - 99 INTERIOR PILES
 - ⊠ 2 RELOCATED INTERIOR PILES
- 128 TOTAL PILES

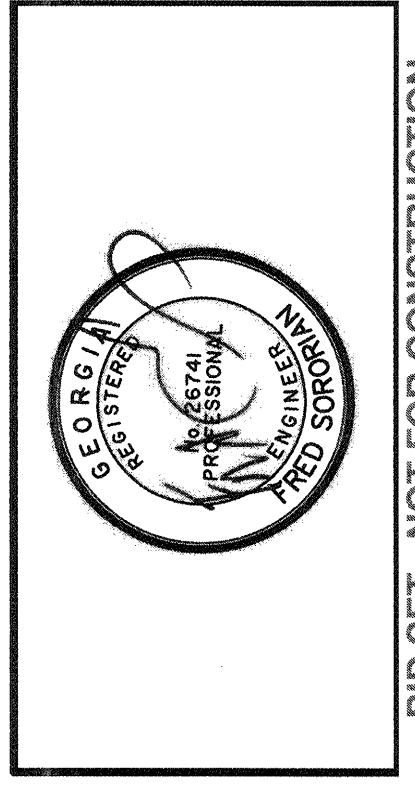
- NOTES:
1. PILE SPACING IS BASED ON 14" SQUARE, 14" SQUARE PRESTRESSED PILES WITH 25'0" TANK SWD
 2. PILE CAPACITY: 85 TONS
 3. INTERIOR FLOOR THICKNESS: 1'8"
 4. TYPICAL PILE SPACING: 9'8"
 5. PILE TOLERANCE:
 - A. VERTICAL: -0"/+0 1/2"
 - B. HORIZONTAL: 6"
 6. PILE EMBEDMENT: 3"

- NOTES:
1. DETAILS ARE TYPICAL AND ARE SHOWN FOR BIDDING PURPOSES ONLY.
 2. ALL DETAILS ARE BASED UPON CROM TANK SUPPLIER. CONTRACTOR TO COORDINATE WITH TANK MANUFACTURER IF DIFFERENT TANK IS USED.

1 EQUALIZATION TANK PILE PLAN
 S3.0 SCALE: 1/8"=1'-0"



2 EQUALIZATION TANK PILE FLOOR SECTION
 S3.0 SCALE: 3/4"=1'-0"



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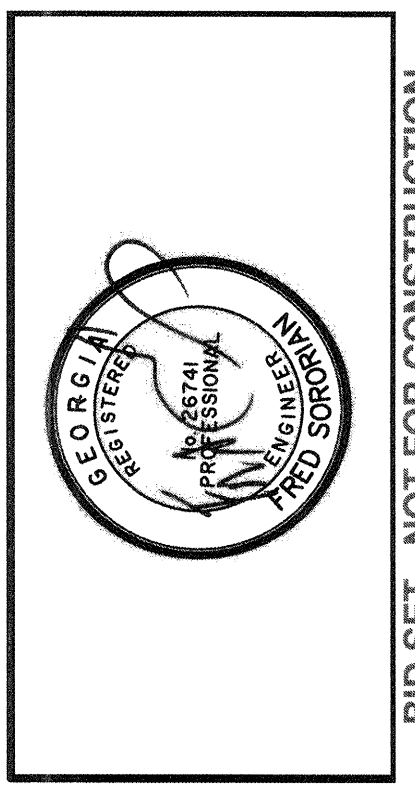
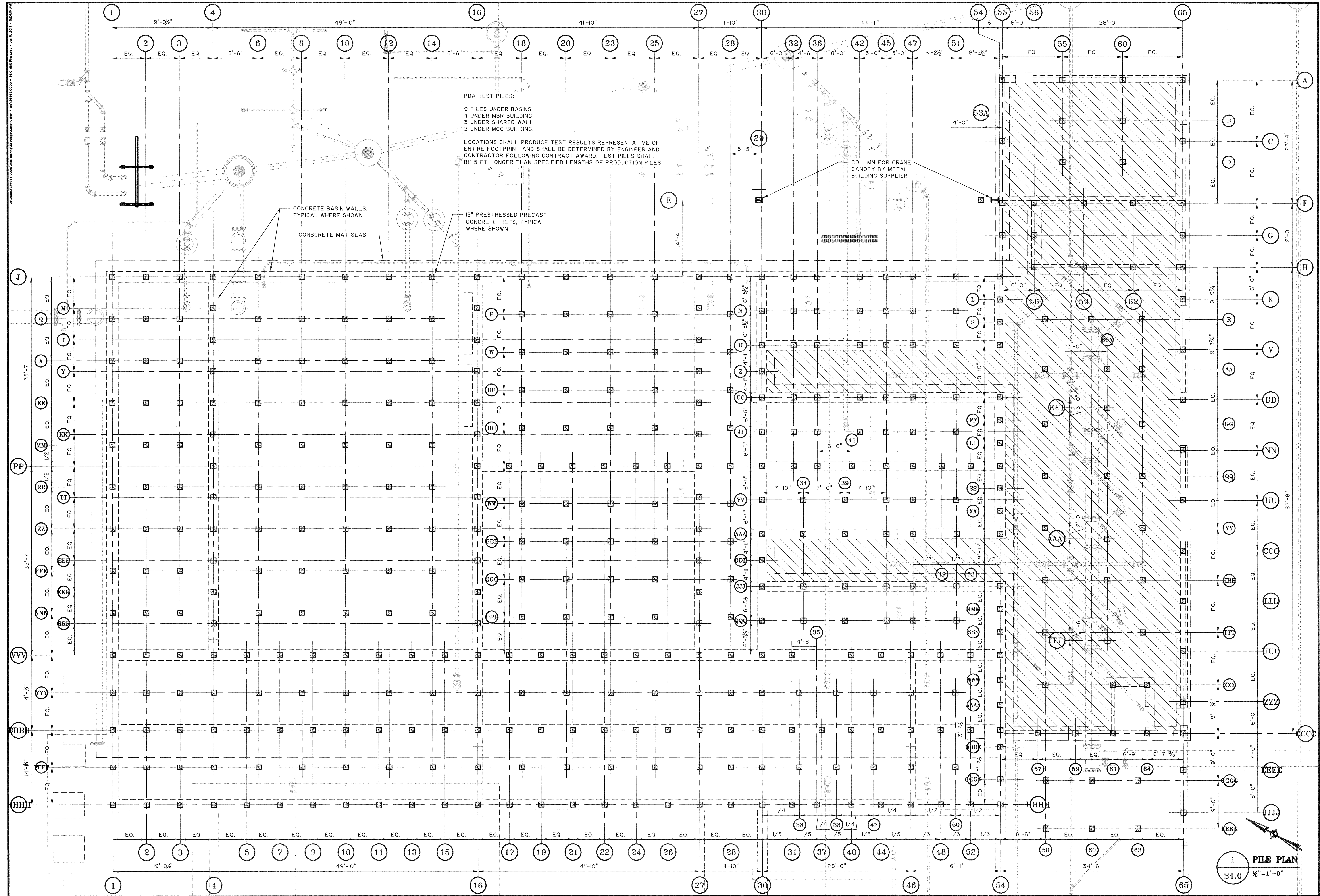
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 EQUALIZATION TANK PILE PLAN & SECTION

JOB NO.:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S3.0

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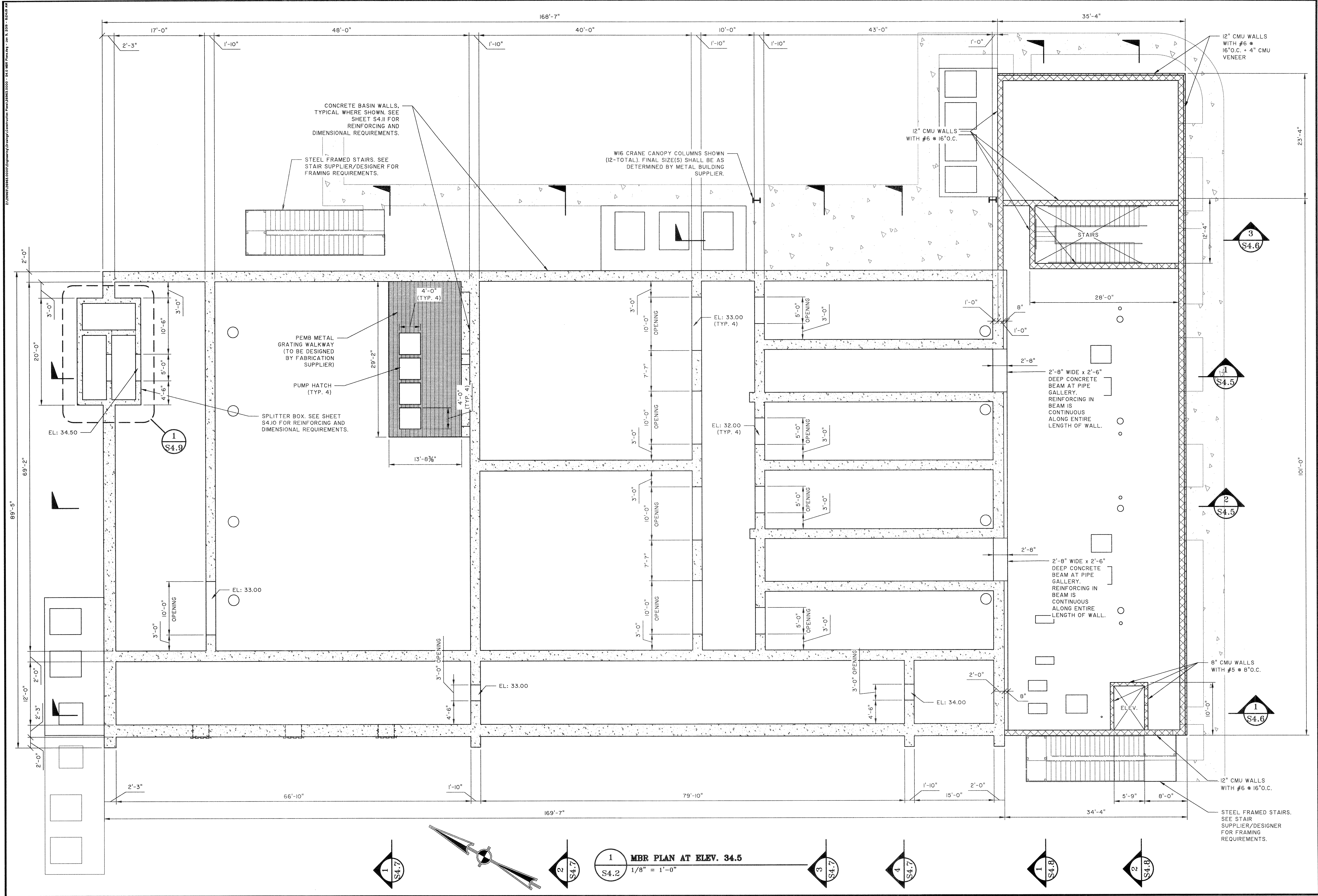
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TRAVIS FIELD WATER RECLAMATION FACILITY
MBR PLAN - PILE LAYOUT

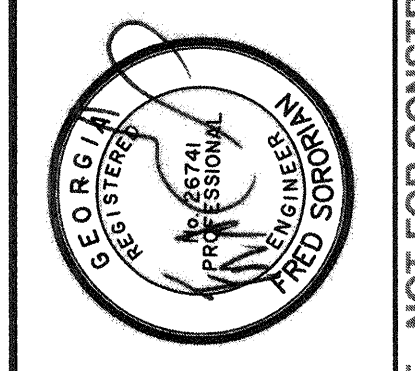
JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	1" = 96"

S4.0

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1 MBR PLAN AT ELEV. 34.5
 1/8" = 1'-0"



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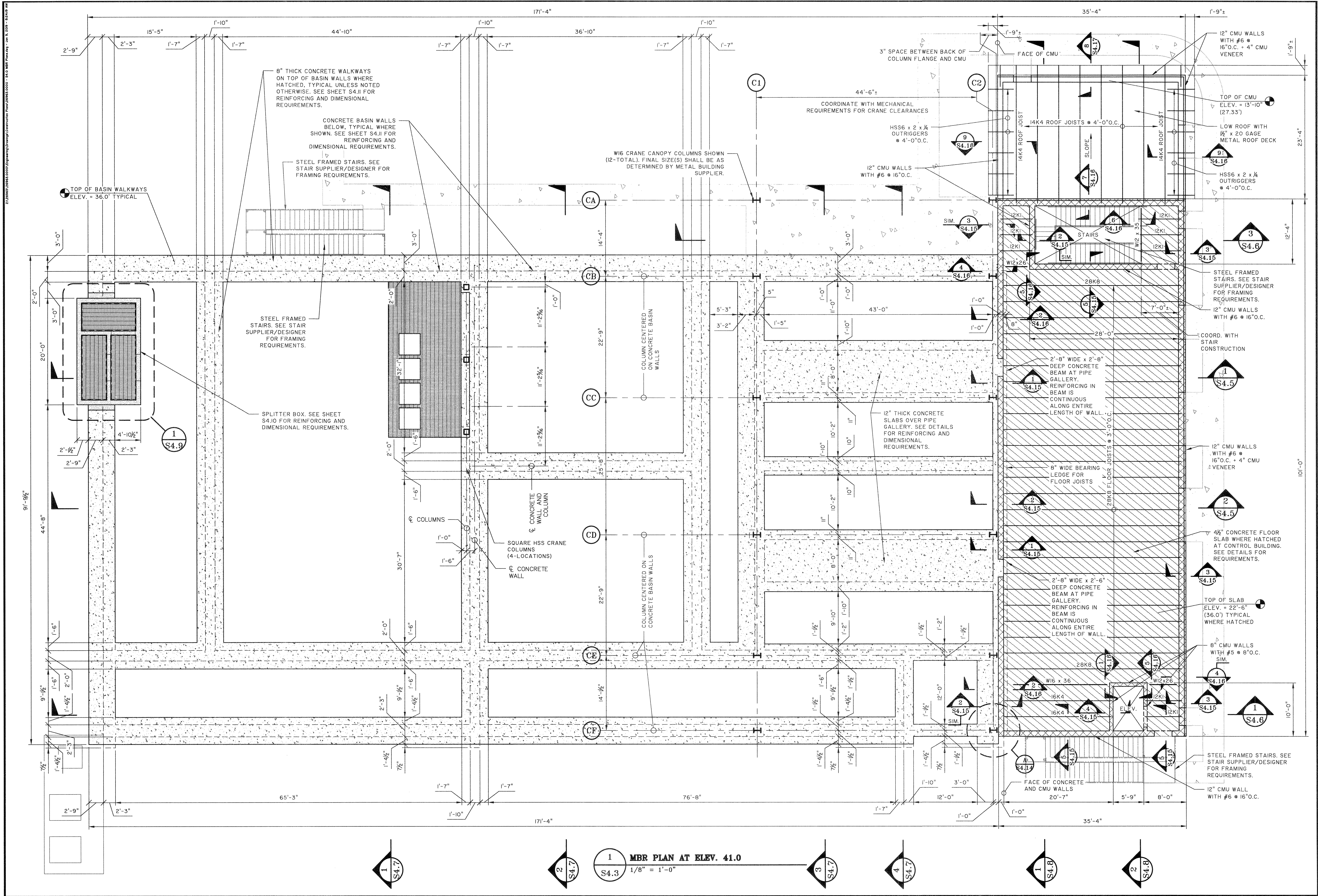
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TRAVIS FIELD WATER RECLAMATION FACILITY
 MBR PLAN - BELOW TOP OF BASIN WALLS (SHOWN AT EL. 34.5)

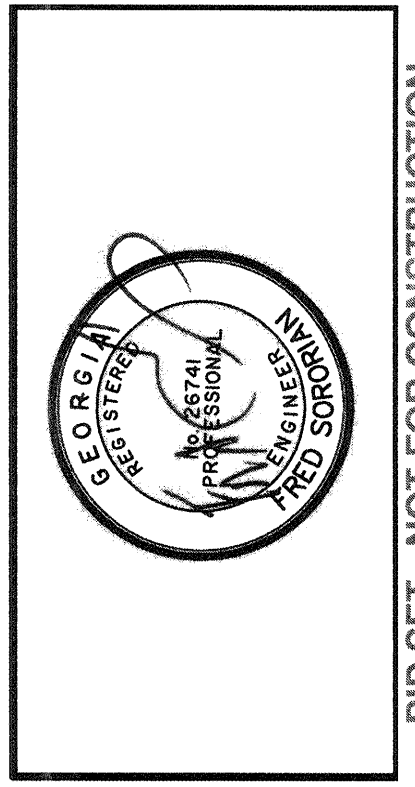
JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	1" = 96"

S4.2

BID SET - NOT FOR CONSTRUCTION



1 MBR PLAN AT ELEV. 41.0
 S4.3 1/8" = 1'-0"



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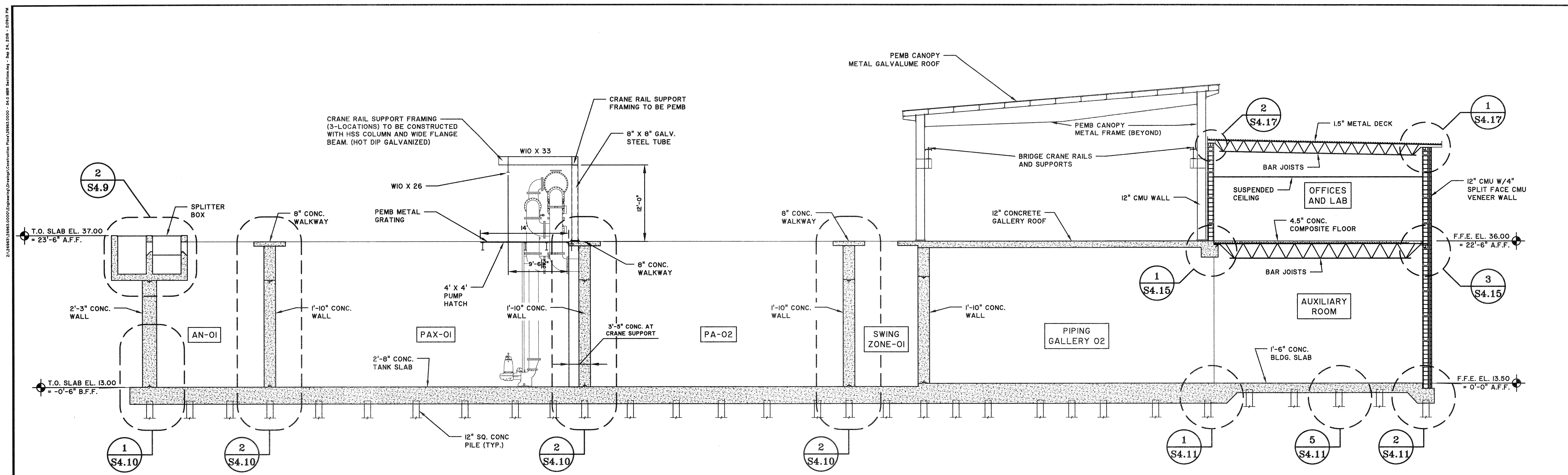
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TRAVIS FIELD WATER RECLAMATION FACILITY
 MBR PLAN-BUILDING FLOOR FRAMING AND TOP OF BASIN WALLS - ELEV. 36.0'

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	1" = 36"

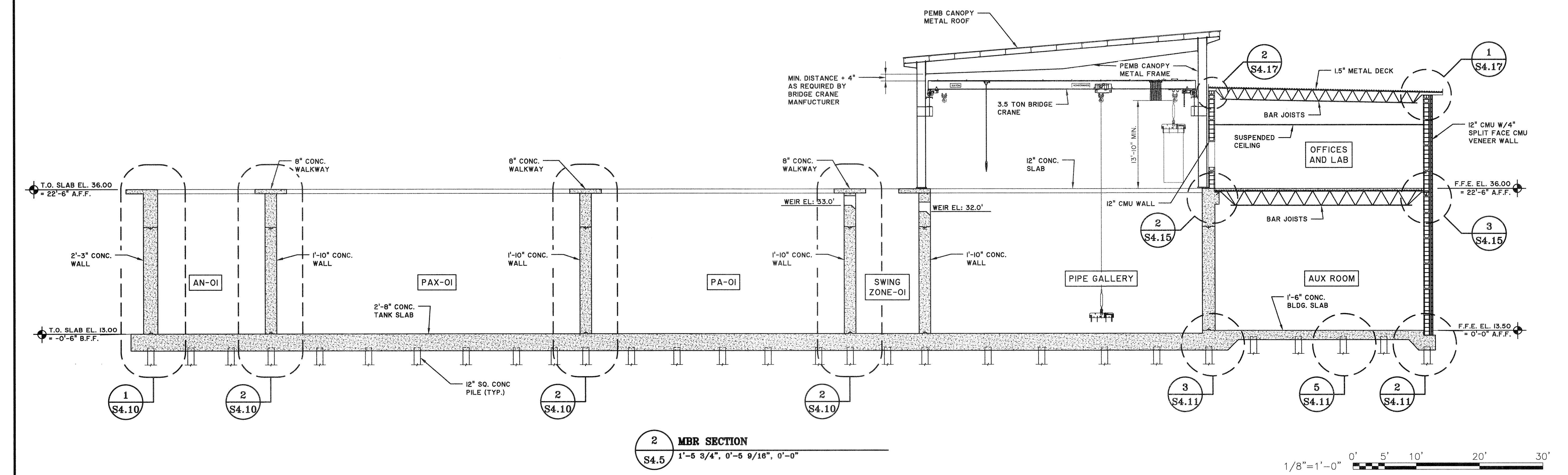
S4.3

BID SET - NOT FOR CONSTRUCTION

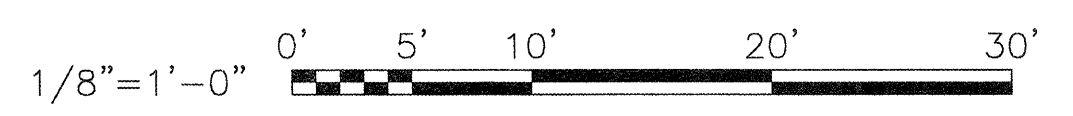


1 MBR SECTION
S4.5 1/8" = 1'-0"

NOTE: ALL FRAMING FOR CRANE CANOPY AND CRANE RAIL STRUCTURE SHALL BE HOT DIP GALVANIZED



2 MBR SECTION
S4.5 1'-5 3/4", 0'-5 9/16", 0'-0"



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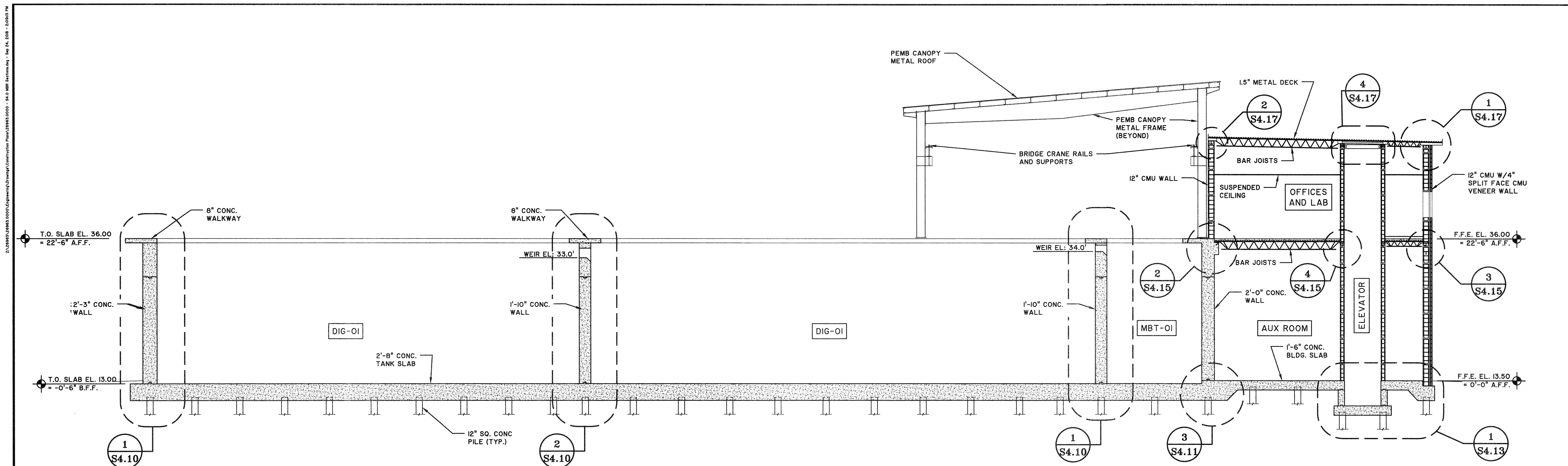
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TRAVIS FIELD WATER RECLAMATION FACILITY

MBR STRUCTURAL OVERALL SECTIONS

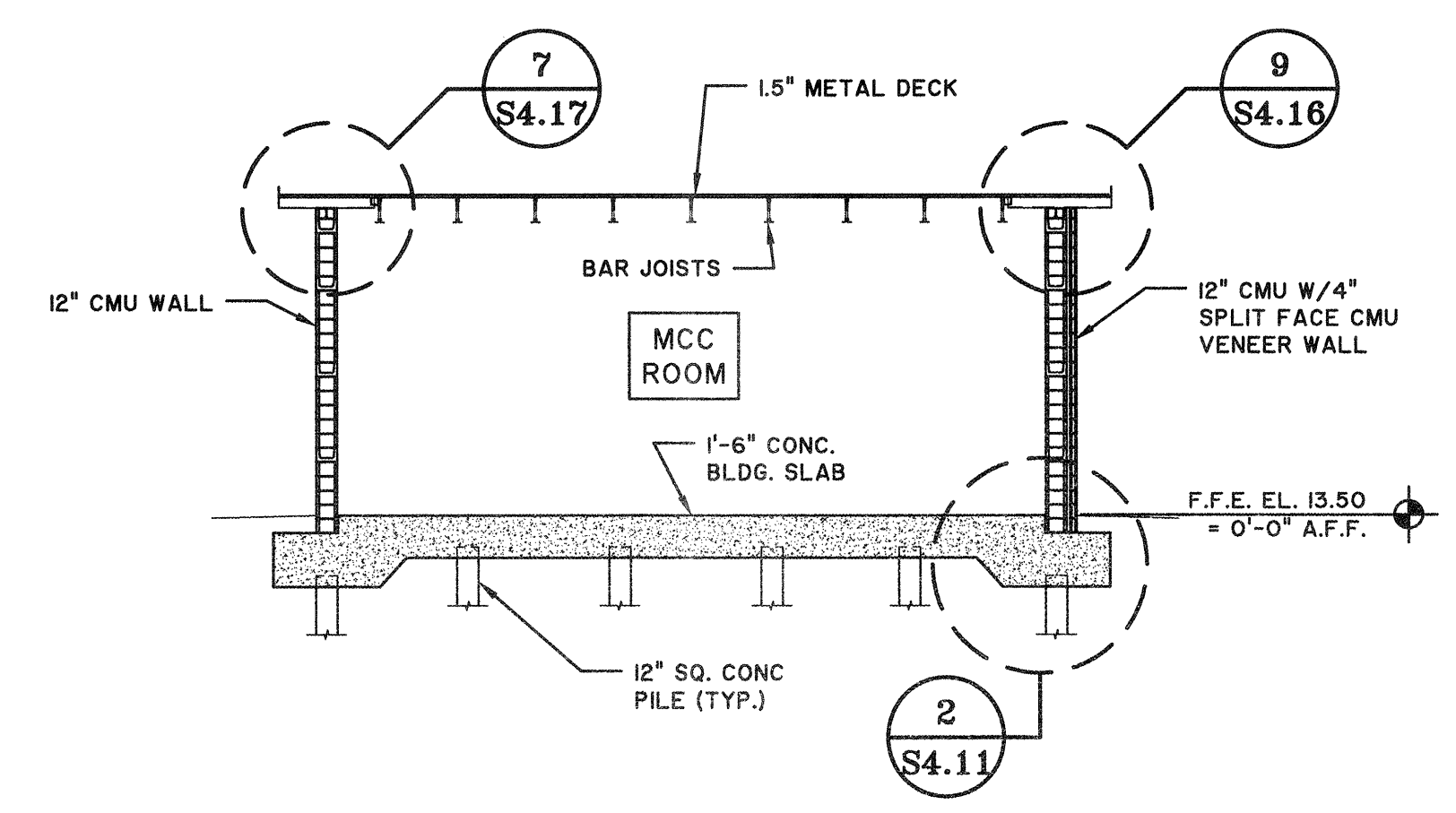
JOB NO: J-26963.0000
DATE: 1-16-19
DRAWN: JEP
DESIGNED: JEP
REVIEWED: FS
APPROVED: JAH
SCALE: AS NOTED

S4.5

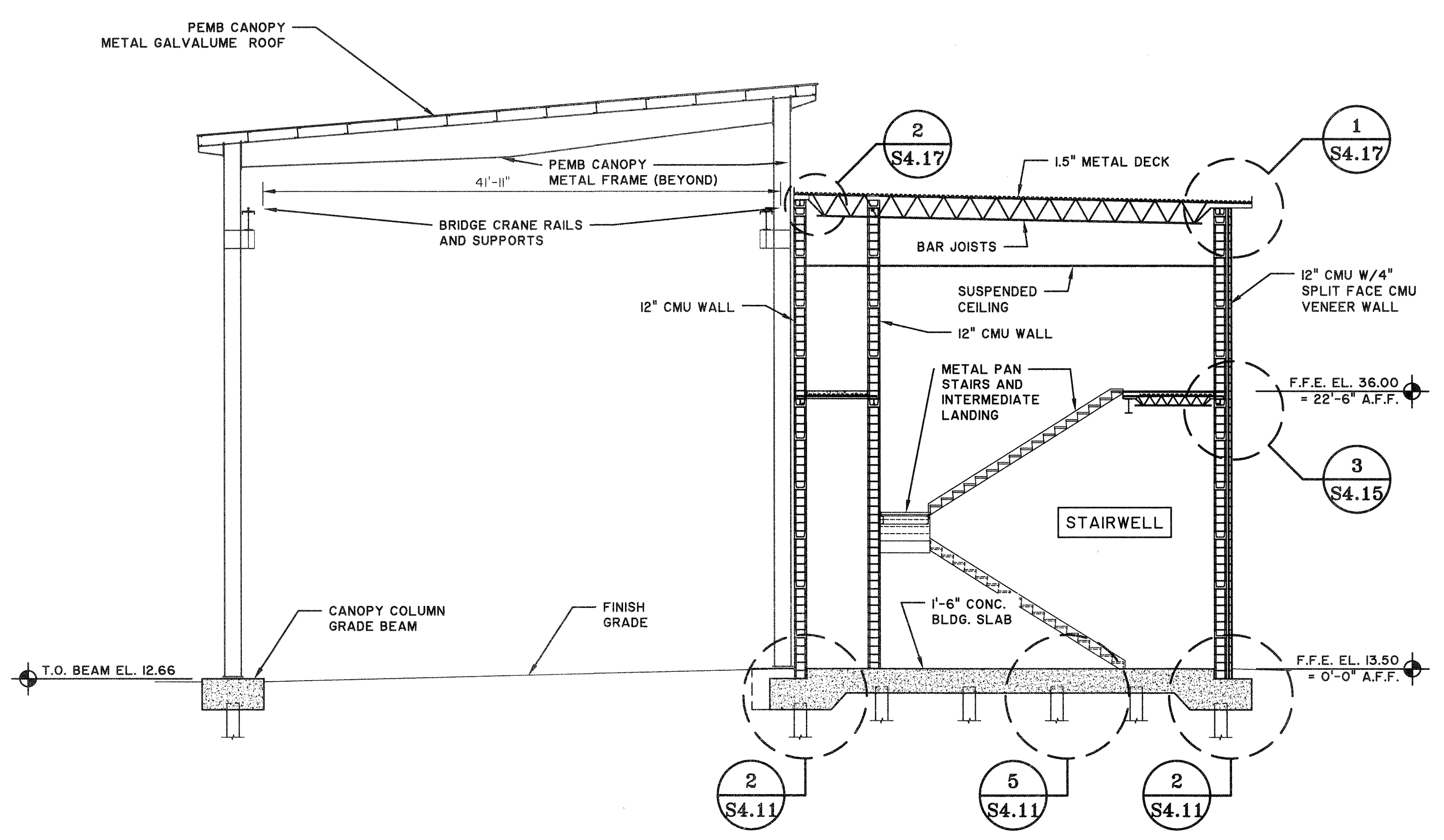


1 MBR SECTION
 S4.6 1/8" = 1'-0"

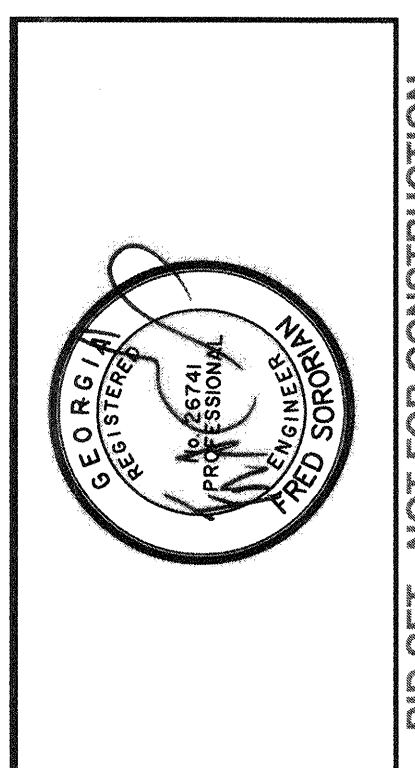
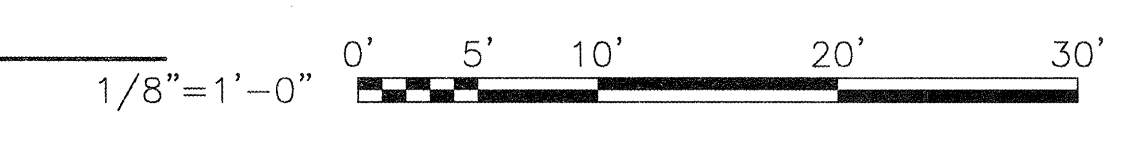
NOTE: ALL FRAMING FOR CRANE CANOPY AND CRANE RAIL STRUCTURE SHALL BE HOT DIP GALVANIZED



2 MCC SECTION
 S4.6 1/8" = 1'-0"



3 MBR SECTION
 S4.6 1/8" = 1'-0"



NO.	ISSUED FOR	REVISIONS	DATE
0	ISSUED FOR BIDS		

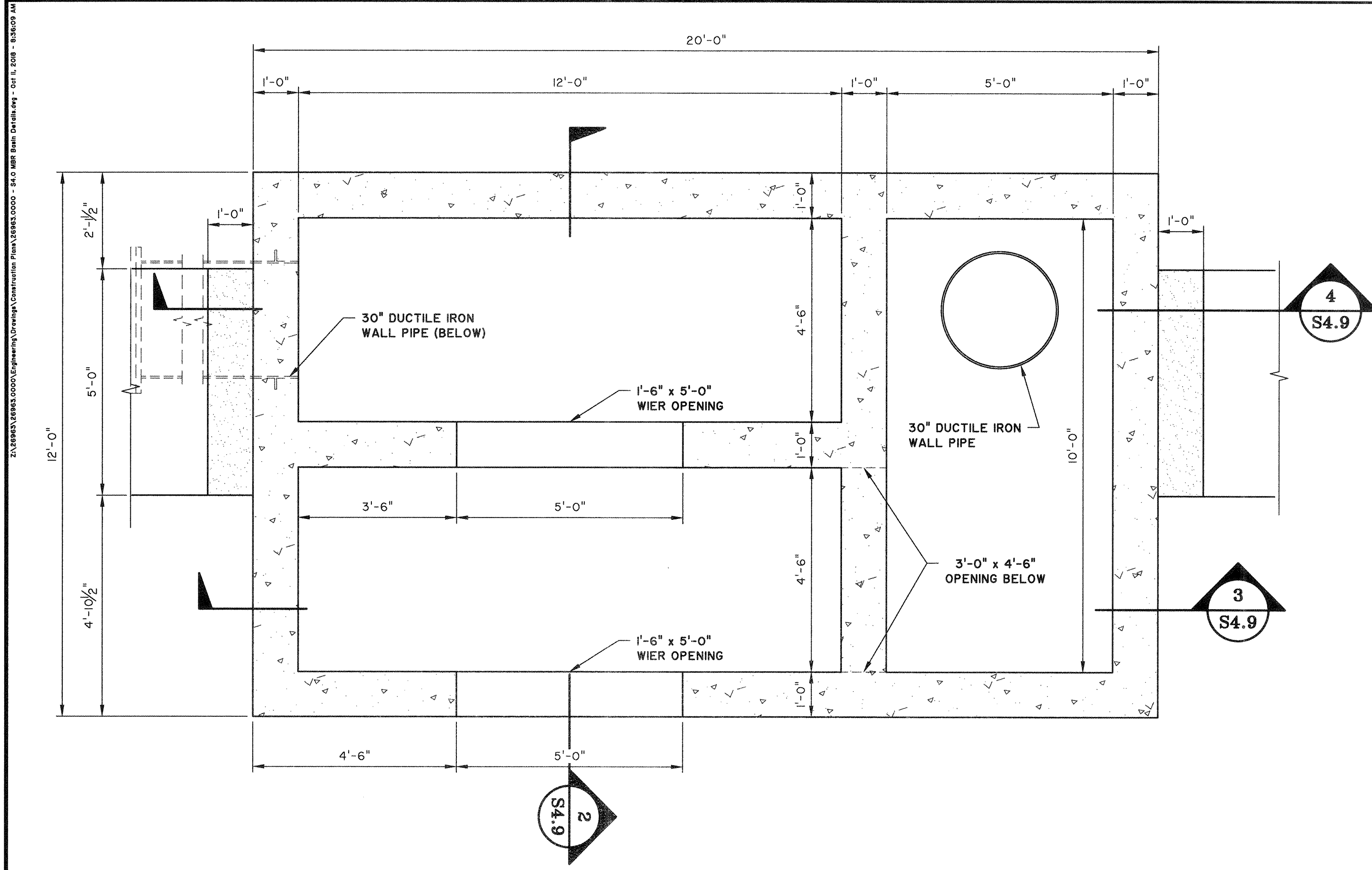
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 MBR STRUCTURAL OVERALL SECTIONS

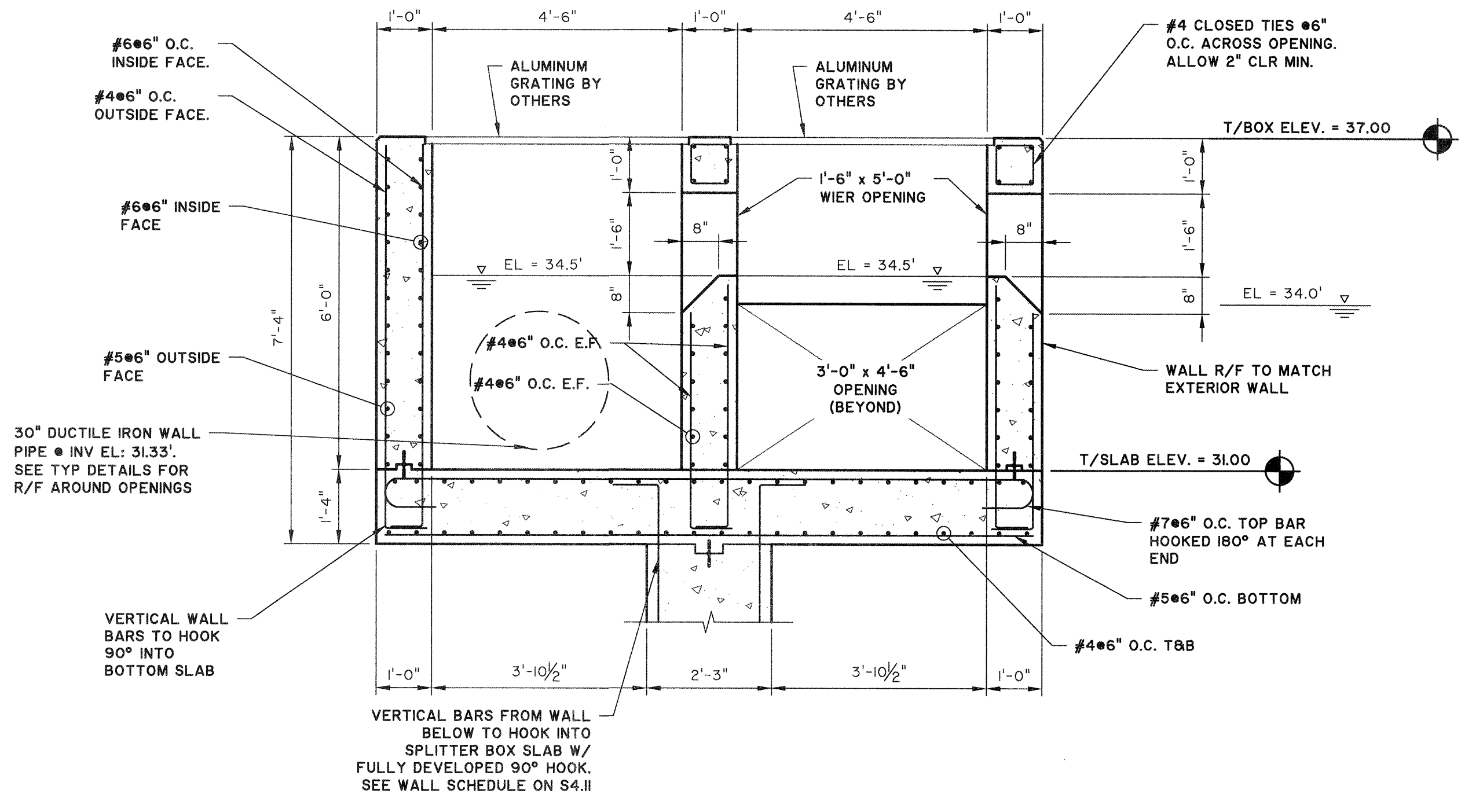
JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S4.6

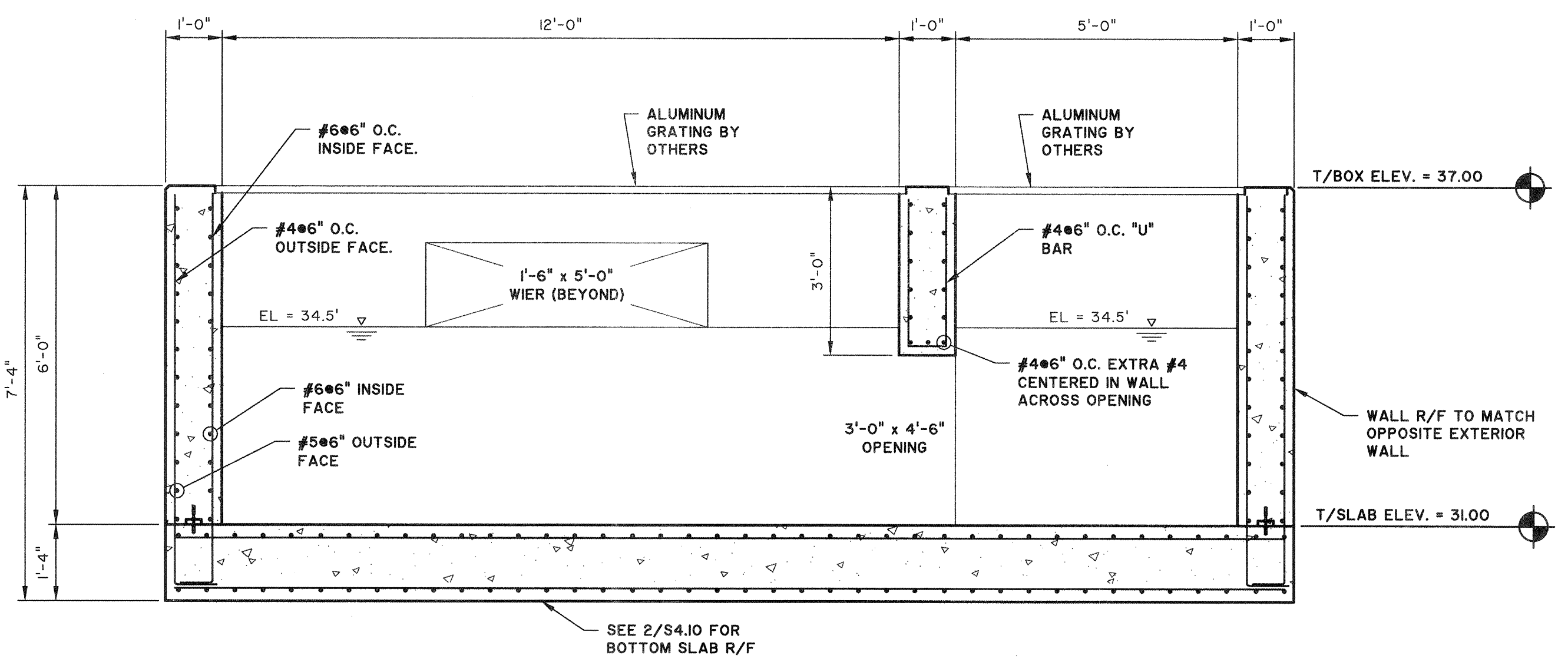
BID SET - NOT FOR CONSTRUCTION



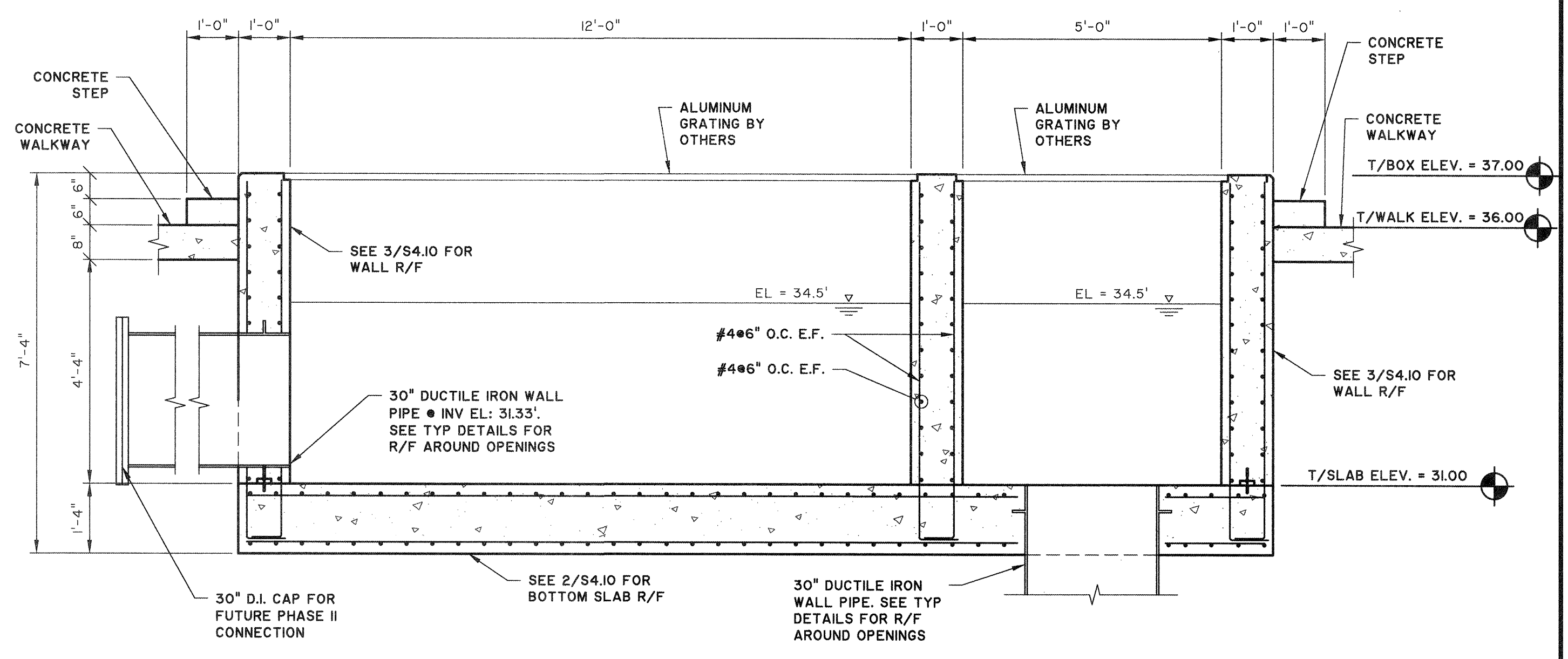
1 SPLITTER BOX PLAN
S4.9 1/2" = 1'-0"



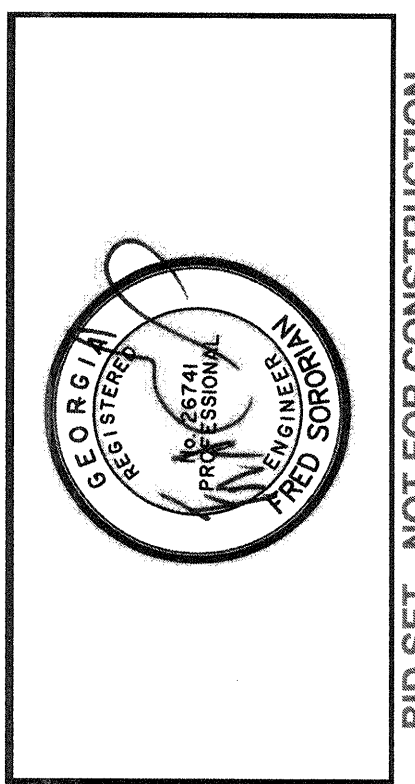
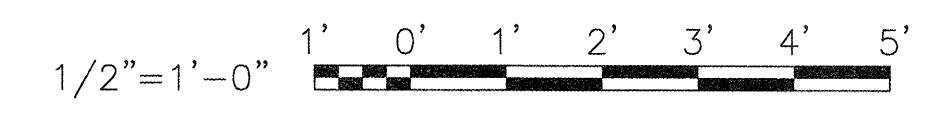
2 SPLITTER BOX SECTION
S4.9 1/2" = 1'-0"



3 SPLITTER BOX SECTION
S4.9 1/2" = 1'-0"



4 SPLITTER BOX SECTION
S4.9 1/2" = 1'-0"



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MBR SPLITTER BOX PLAN AND SECTIONS

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

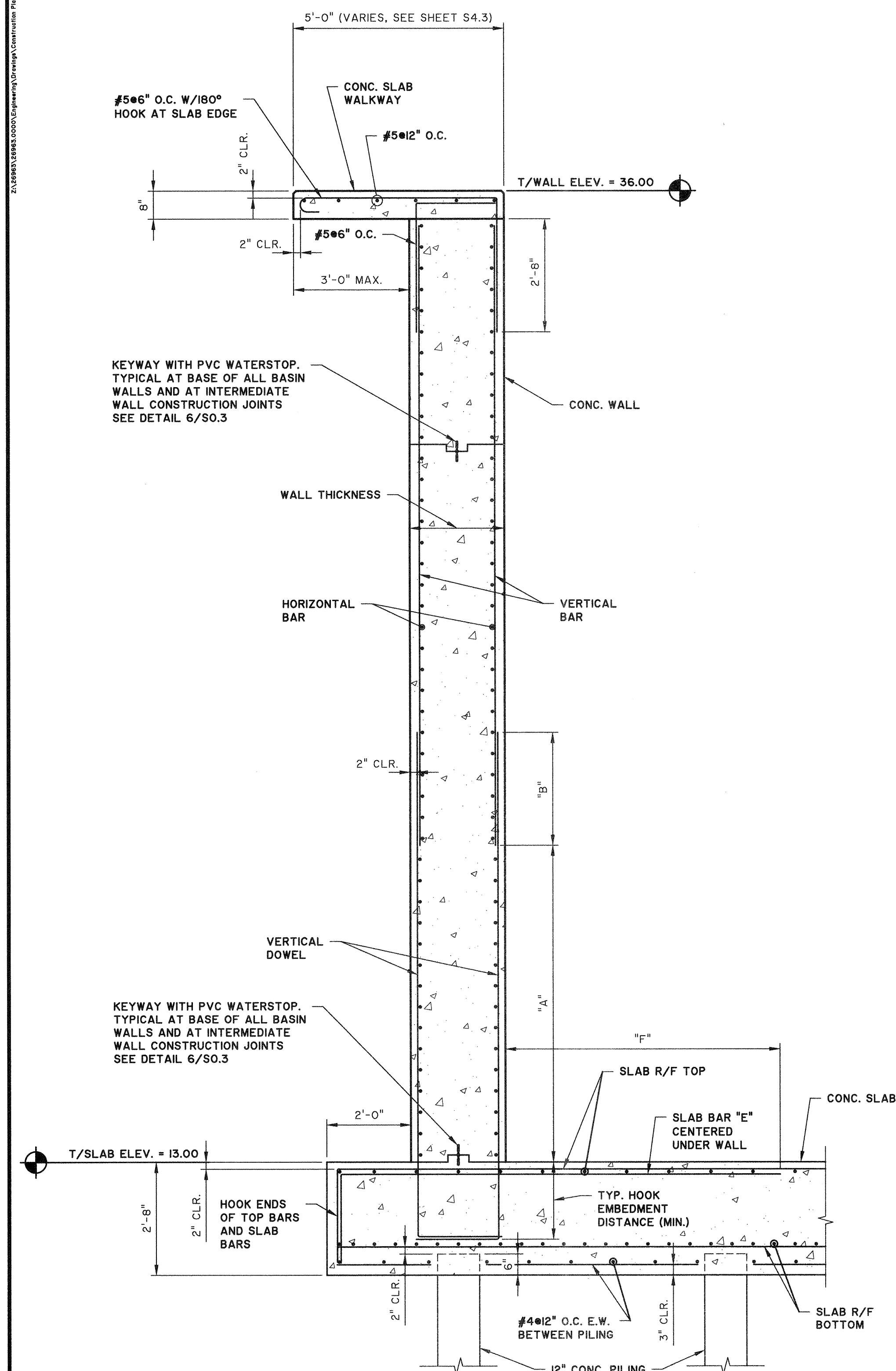
S4.9

BID SET - NOT FOR CONSTRUCTION

WALL REINFORCING TABLE

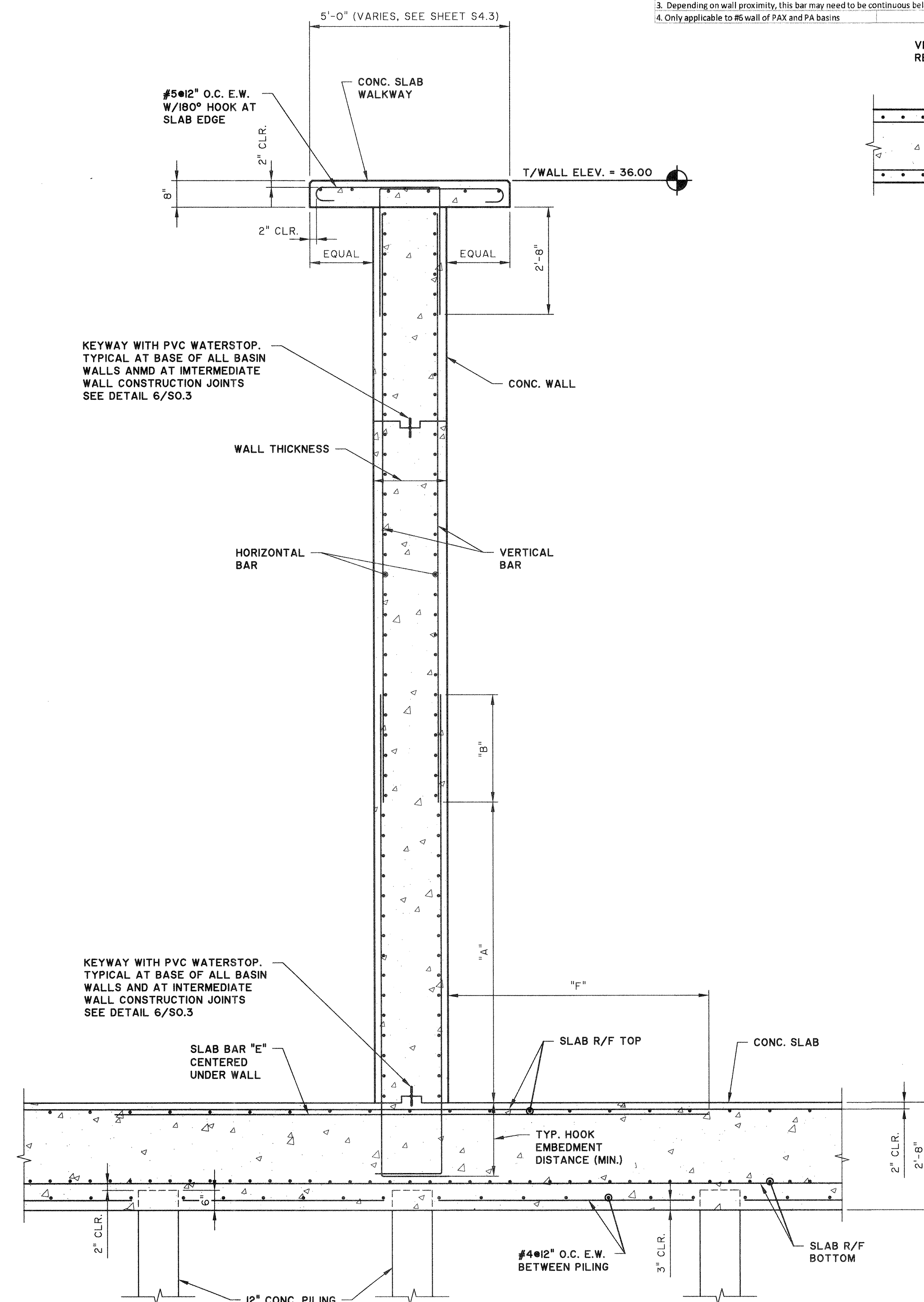
Wall Designation	Wall Thickness	Vertical Dowel	Vertical Bar Typ	Vertical Bar Dist "A"	Vertical Bar Dist "B"	Horizontal at Corner & Intersections ¹	Horizontal Bar Typ	Horizontal Bar Dist "C"	Horizontal Bar Dist "D"	Slab Thickness	Slab Bar "E"	Slab Bar Dist "F"	Slab R/F Top	Slab R/F Bottom	Waterstop at Base & Joints
1	27"	#10 @ 6"	#5 @ 6"	7'-6"	2'-8"	#5 @ 5"	#5 @ 6"	7'-6"	2'-8"	2'-8"	#9 @ 6"	6'-6"	#7 @ 12"	#7 @ 6"	Yes
2	27"	#10 @ 6"	#5 @ 6"	7'-6"	2'-8"	#7 @ 5"	#5 @ 6"	7'-6"	2'-8"	2'-8"	#9 @ 6"	6'-6"	#7 @ 12"	#7 @ 6"	No
3	22"	#8 @ 6"	#5 @ 6"	2'-6"	2'-8"	#7 @ 5"	#5 @ 6"	4'-8"	2'-8"	2'-8"	#9 @ 12"	6'-6"	#7 @ 12"	#7 @ 6"	Yes
4	22"	#6 @ 12"	#6 @ 12"	n/a	3'-2"	#5 @ 5"	n/a	n/a	n/a	2'-8"	not needed	n/a	#7 @ 12"	#7 @ 6"	Yes
5	24"	#6 @ 12"	#6 @ 12"	n/a	3'-2"	#5 @ 5"	n/a	n/a	n/a	2'-8"	not needed	n/a	#7 @ 12"	#7 @ 6"	Yes
6	24"	#9 @ 6"	#5 @ 6"	4'-6"	2'-8"	#7 @ 5"	#5 @ 6"	7'-4"	2'-8"	2'-8"	#8 @ 6"	5'-10"	#7 @ 12"	#7 @ 6"	Yes
7	22"	#10 @ 6"	#5 @ 6"	4'-6"	2'-8"	#5 @ 5"	#6 @ 6"	6'-6"	2'-8"	2'-8"	#9 @ 6"	6'-6"	#7 @ 12"	#7 @ 6"	Yes

- Horizontal bars at corners and intersections of different wall designations to be the larger of the two, as specified in table above.
- Not applicable for walls shorter than 2x distance "D" and/or may be easier to use corner size and not downside due to short length.
- Depending on wall proximity, this bar may need to be continuous below multiple walls, extending with development length beyond last wall.
- Only applicable to #5 wall of FAX and PA basins



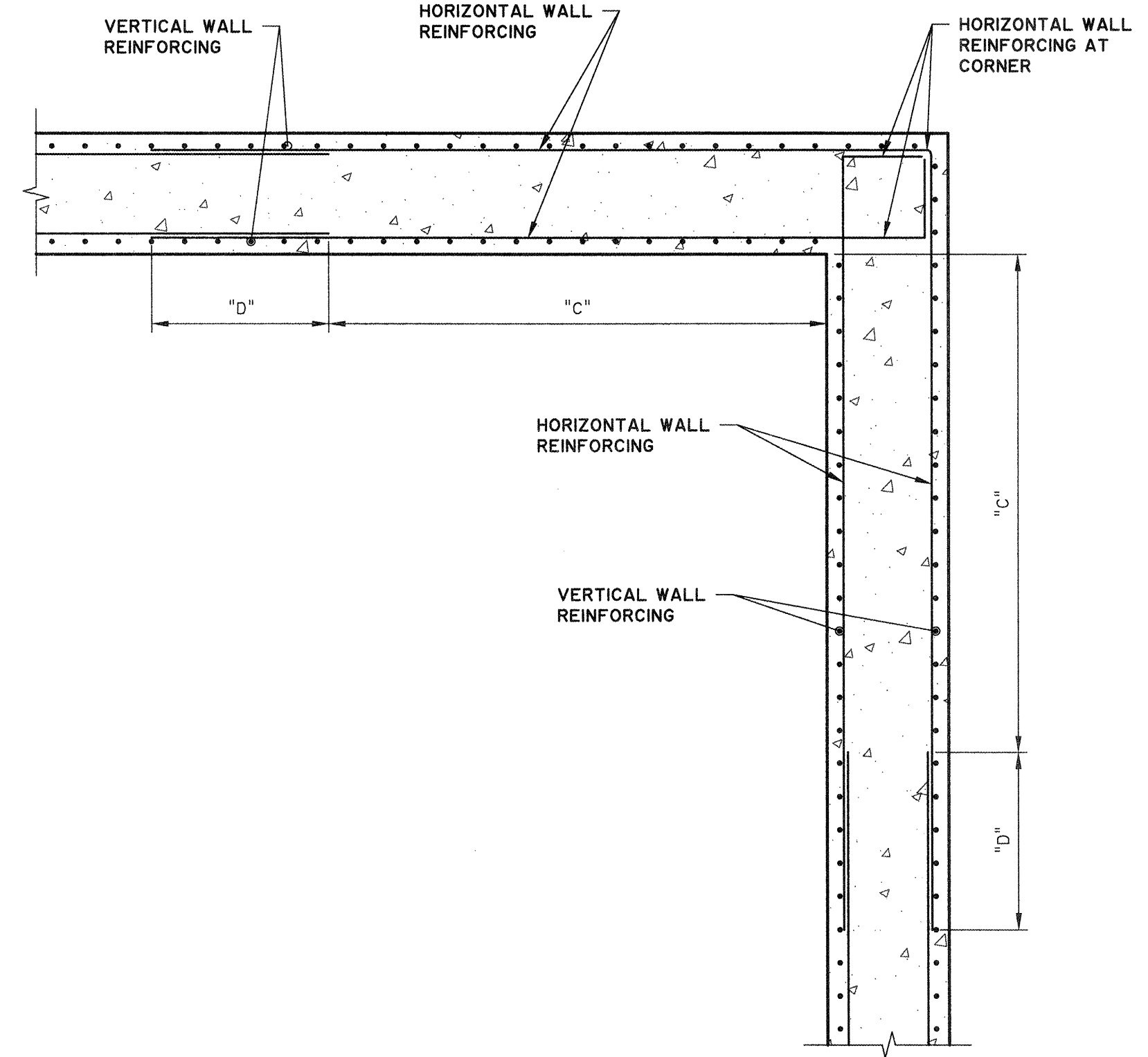
1 TYPICAL MBR TANK EXTERIOR WALL
S4.10 1/2" = 1'-0"

NOTE:
1. THIS DETAIL TO BE USED IN CONJUNCTION WITH WALL DESIGN TABLE PROVIDED ON THIS SHEET



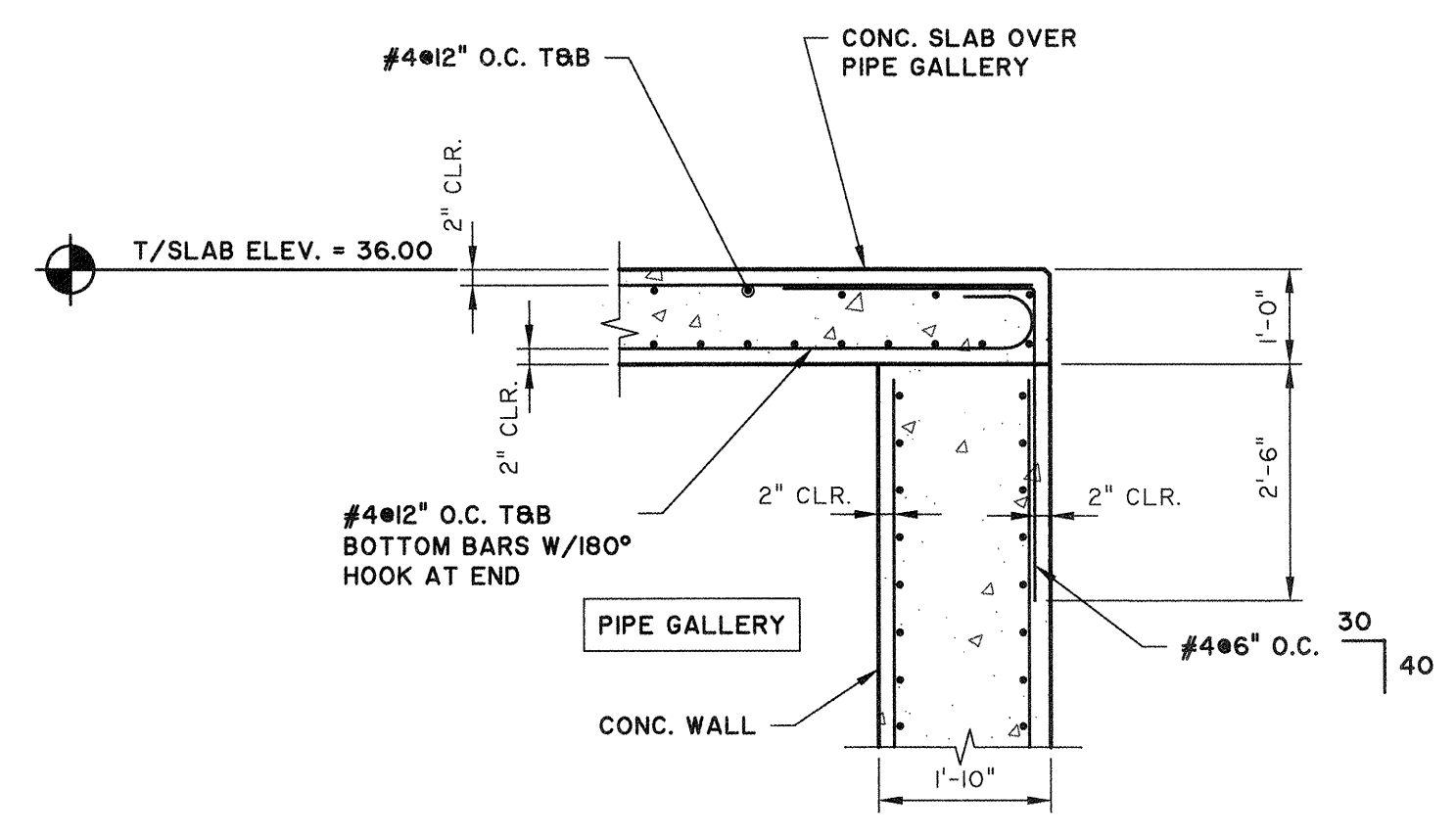
2 TYPICAL MBR TANK INTERIOR WALL
S4.10 1/2" = 1'-0"

NOTE:
1. THIS DETAIL TO BE USED IN CONJUNCTION WITH WALL DESIGN TABLE PROVIDED ON THIS SHEET

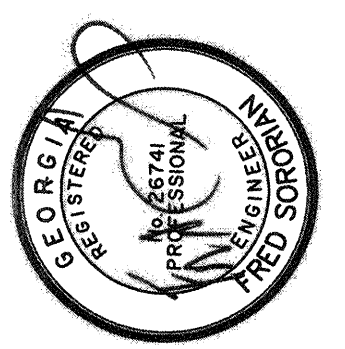
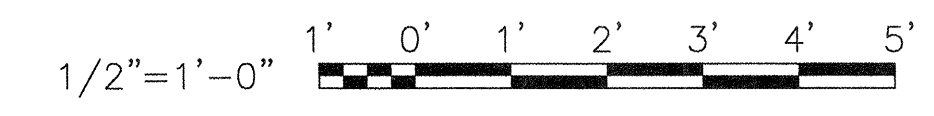


3 TYPICAL MBR TANK INTERIOR WALL
S4.10 1/2" = 1'-0"

NOTE:
1. THIS DETAIL TO BE USED IN CONJUNCTION WITH WALL DESIGN TABLE PROVIDED ON THIS SHEET



4 TYPICAL MBR TANK INTERIOR WALL
S4.10 1/2" = 1'-0"



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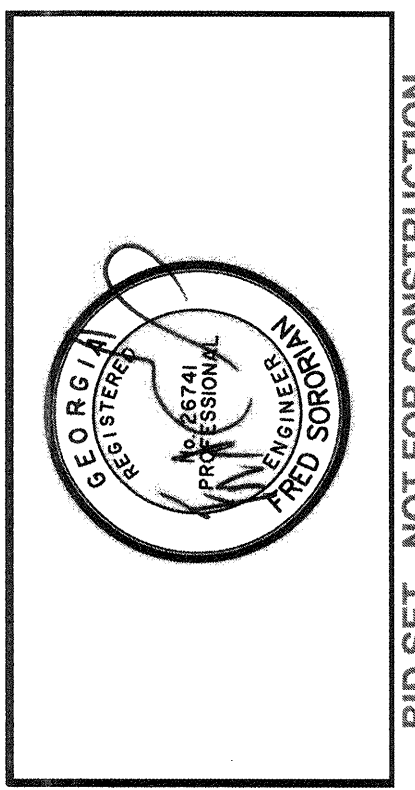
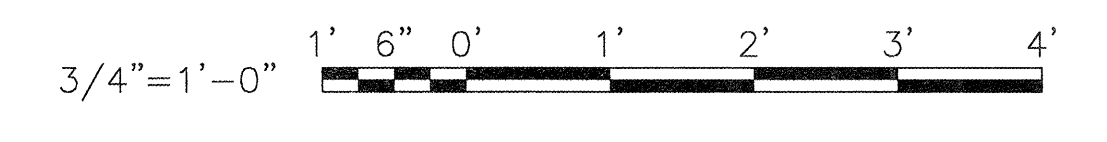
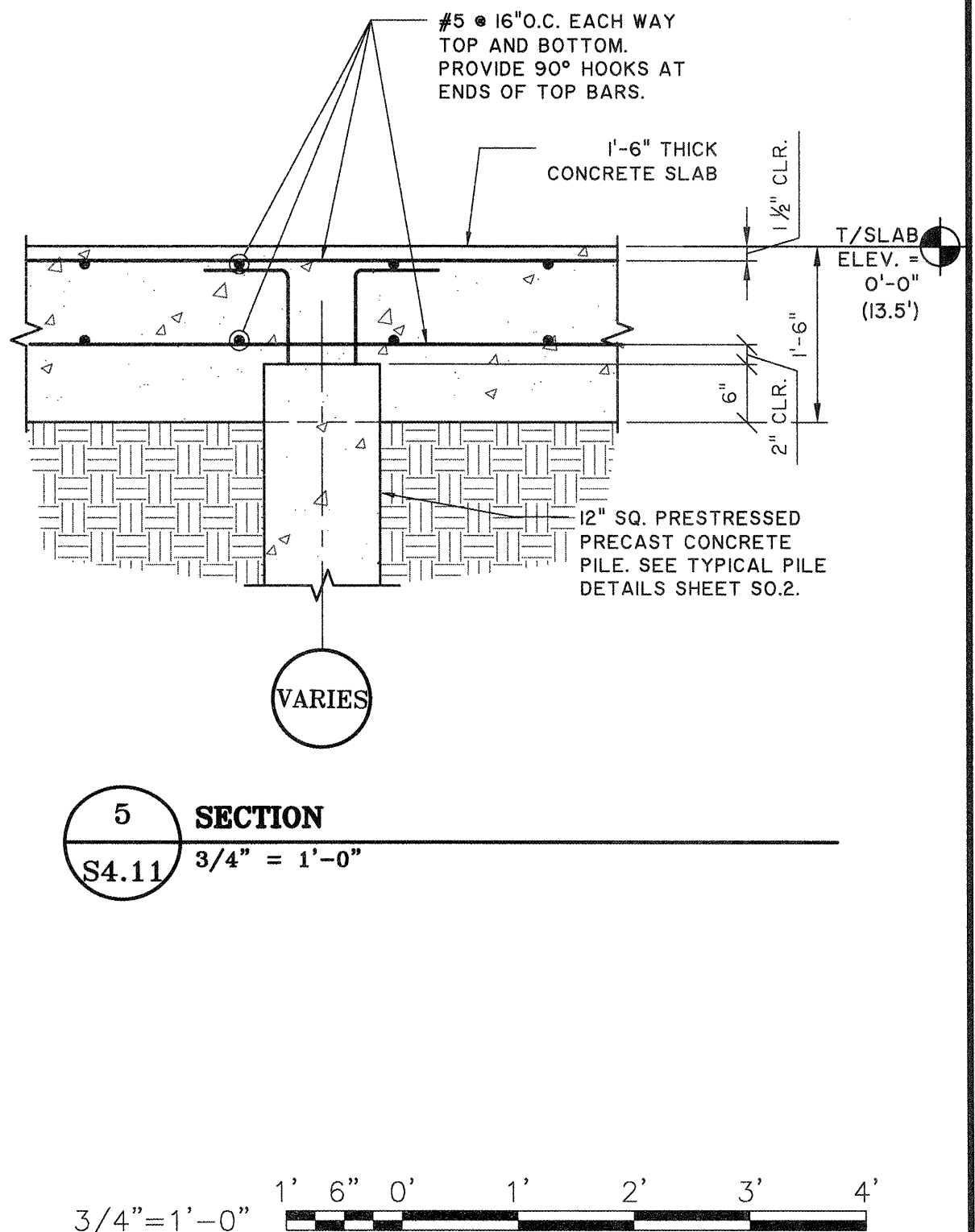
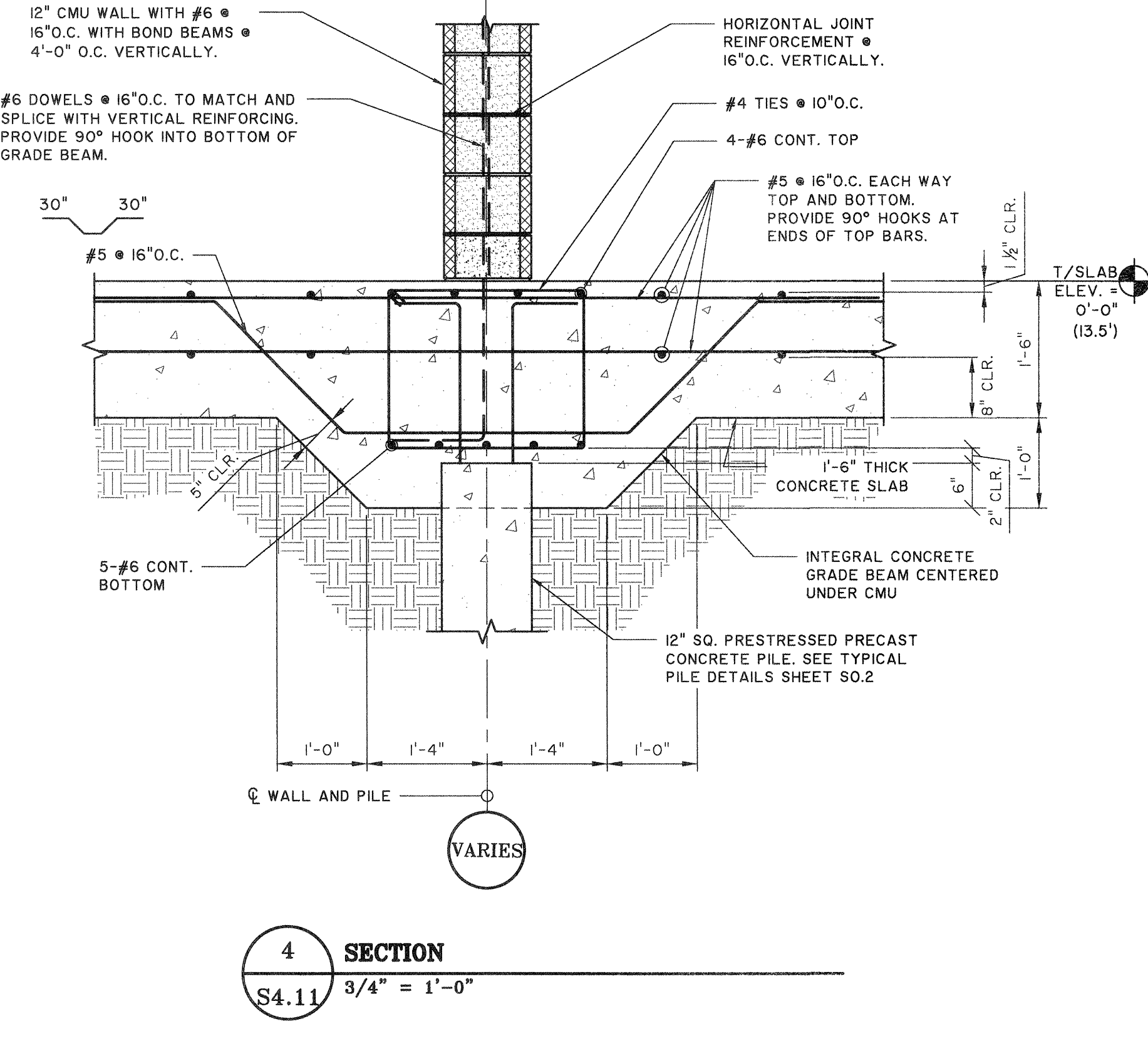
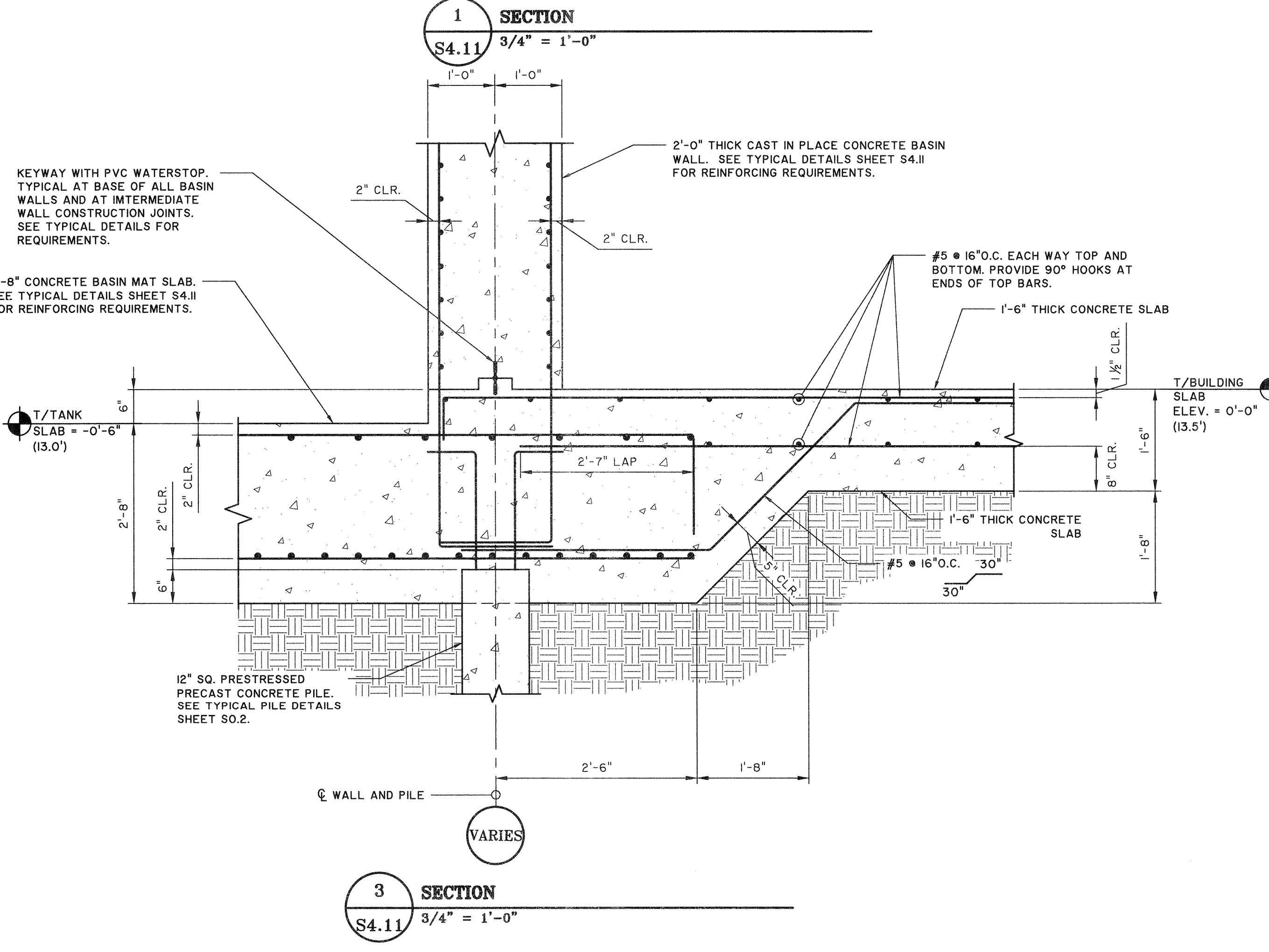
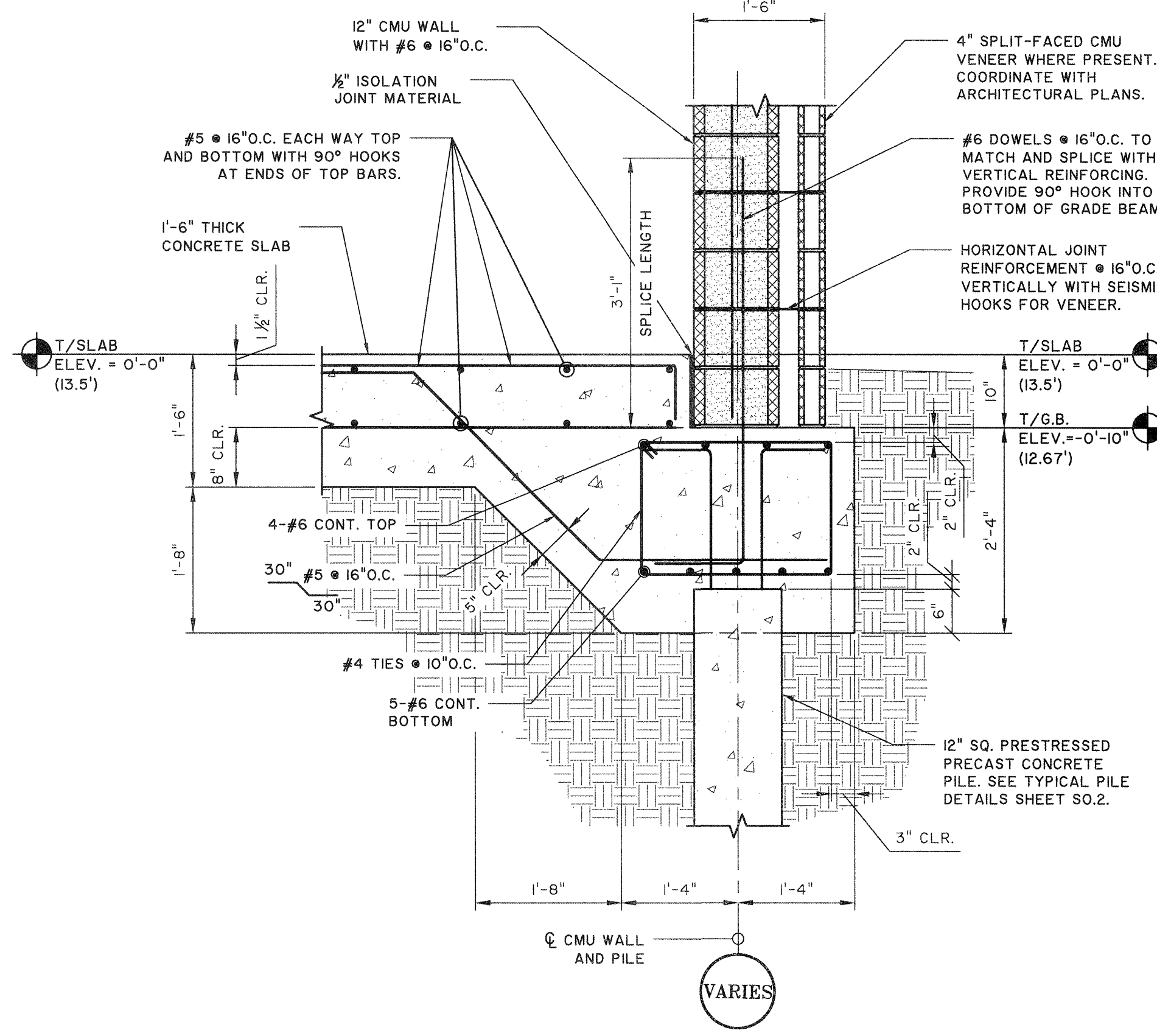
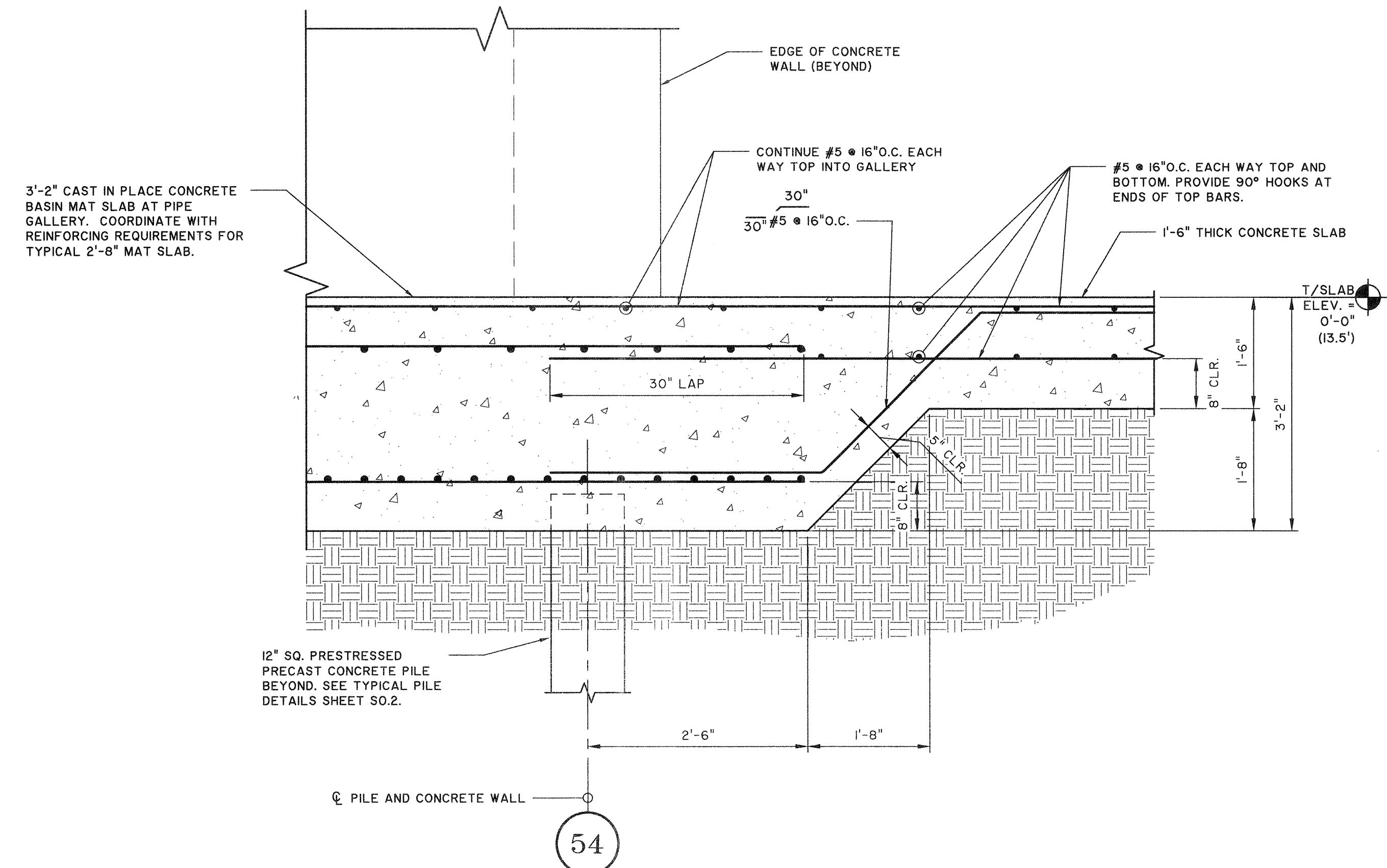
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MBR CONCRETE TANK TYPICAL DETAILS

JOB NO: J-26963 0000
DATE: 1-16-19
DRAWN: JEP
DESIGNED: JEP
REVIEWED: FS
APPROVED: JAH
SCALE: AS NOTED

S4.10

BID SET - NOT FOR CONSTRUCTION

2/16/2013 10:52:00 AM C:\Users\jeh\Documents\Projects\2013\2013-0000 - 44.0 MBR Details.dwg - Job 3, 2013 - 10:52:07 PM



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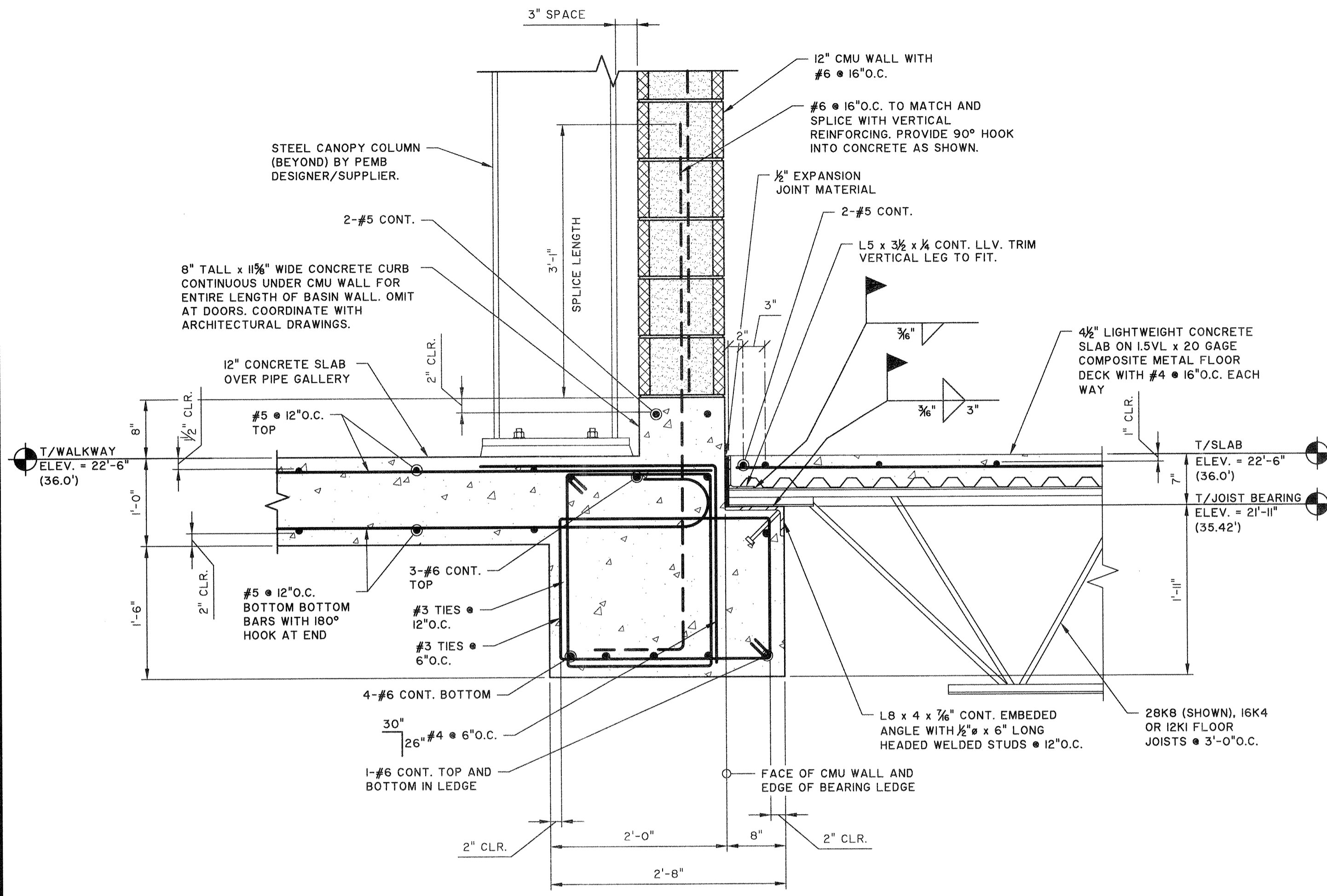
TRAVIS FIELD WATER RECLAMATION FACILITY
 MBR FOUNDATION DETAILS

JOB NO:	J-26965.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

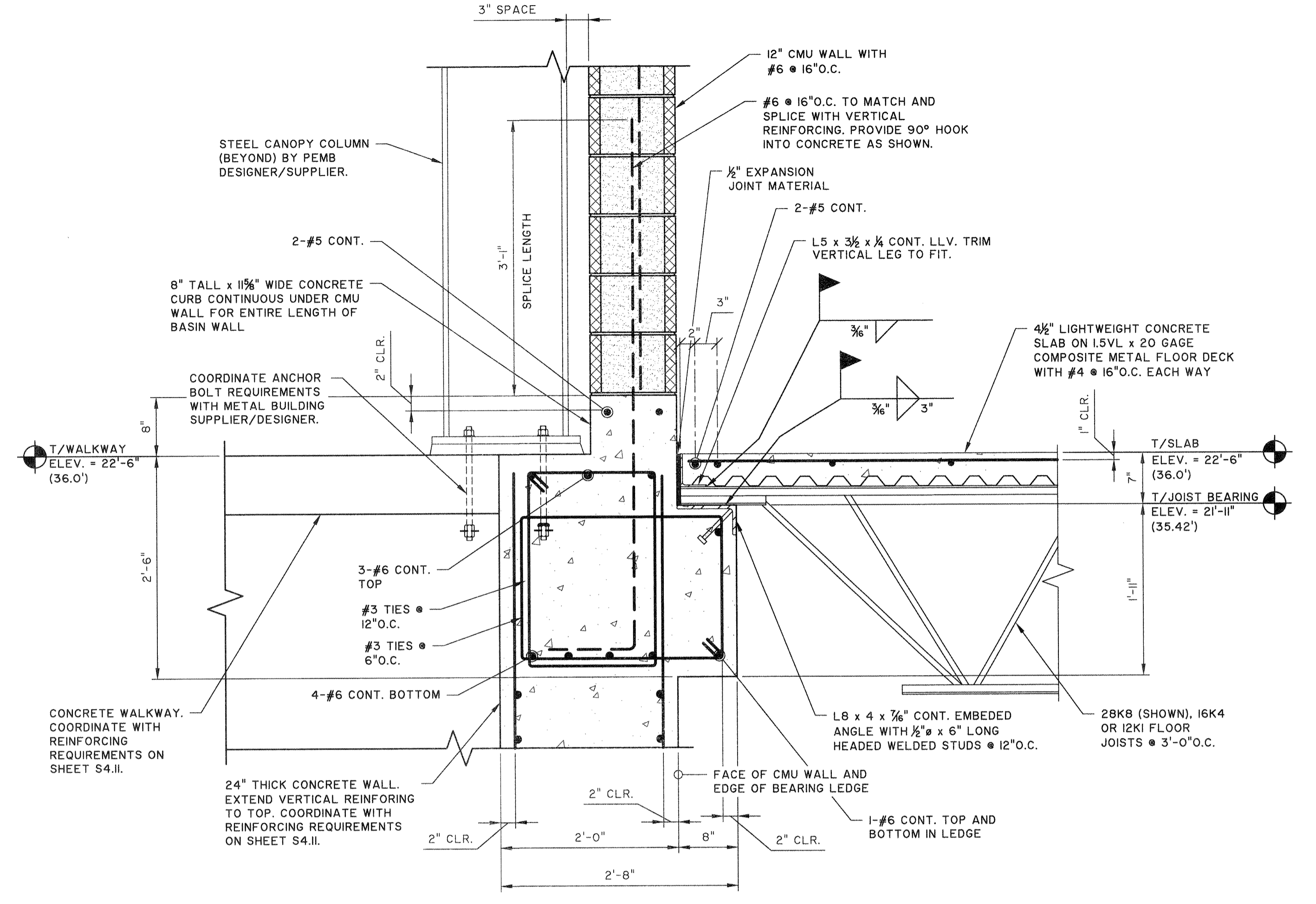
S4.11

BID SET - NOT FOR CONSTRUCTION

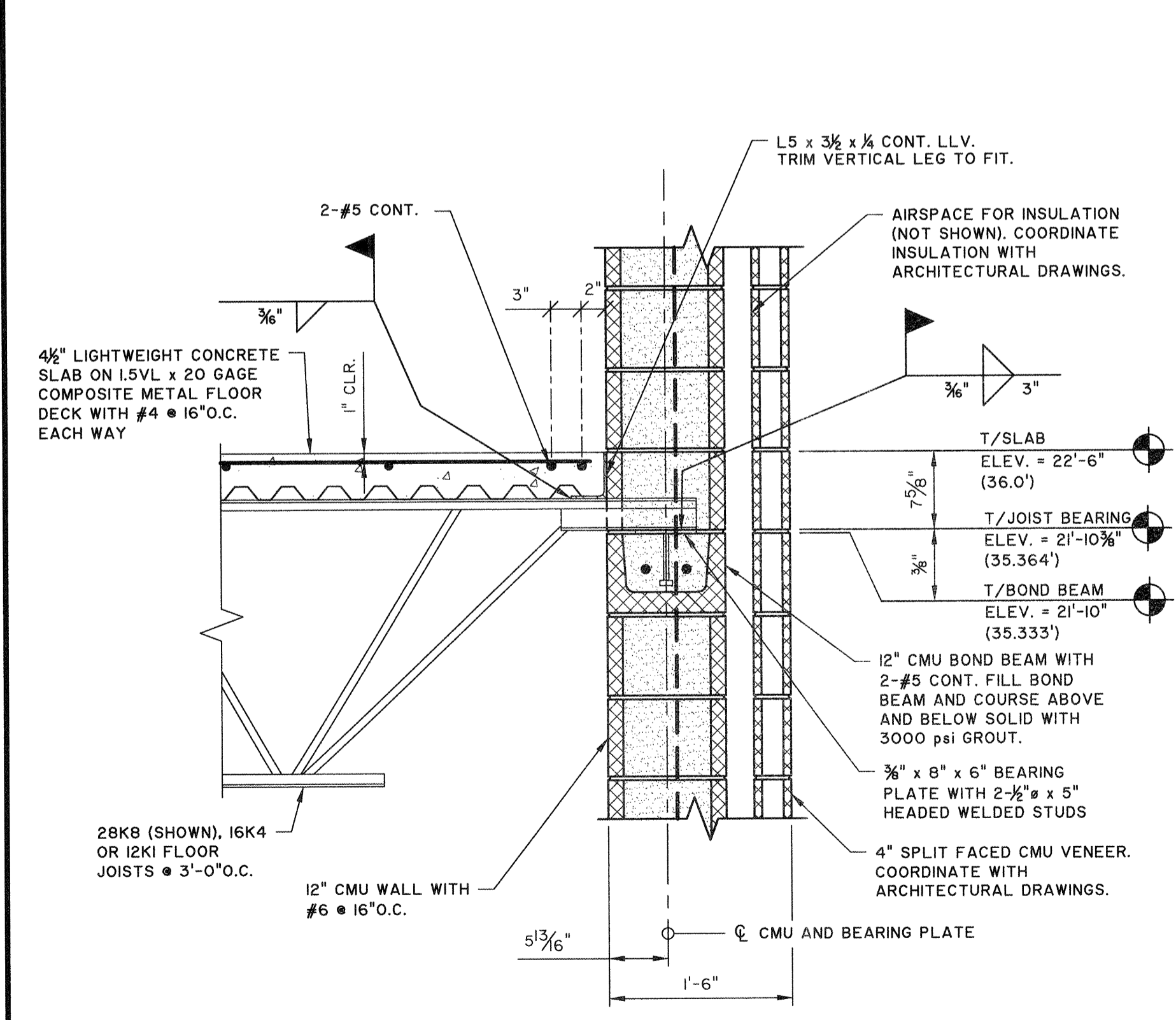
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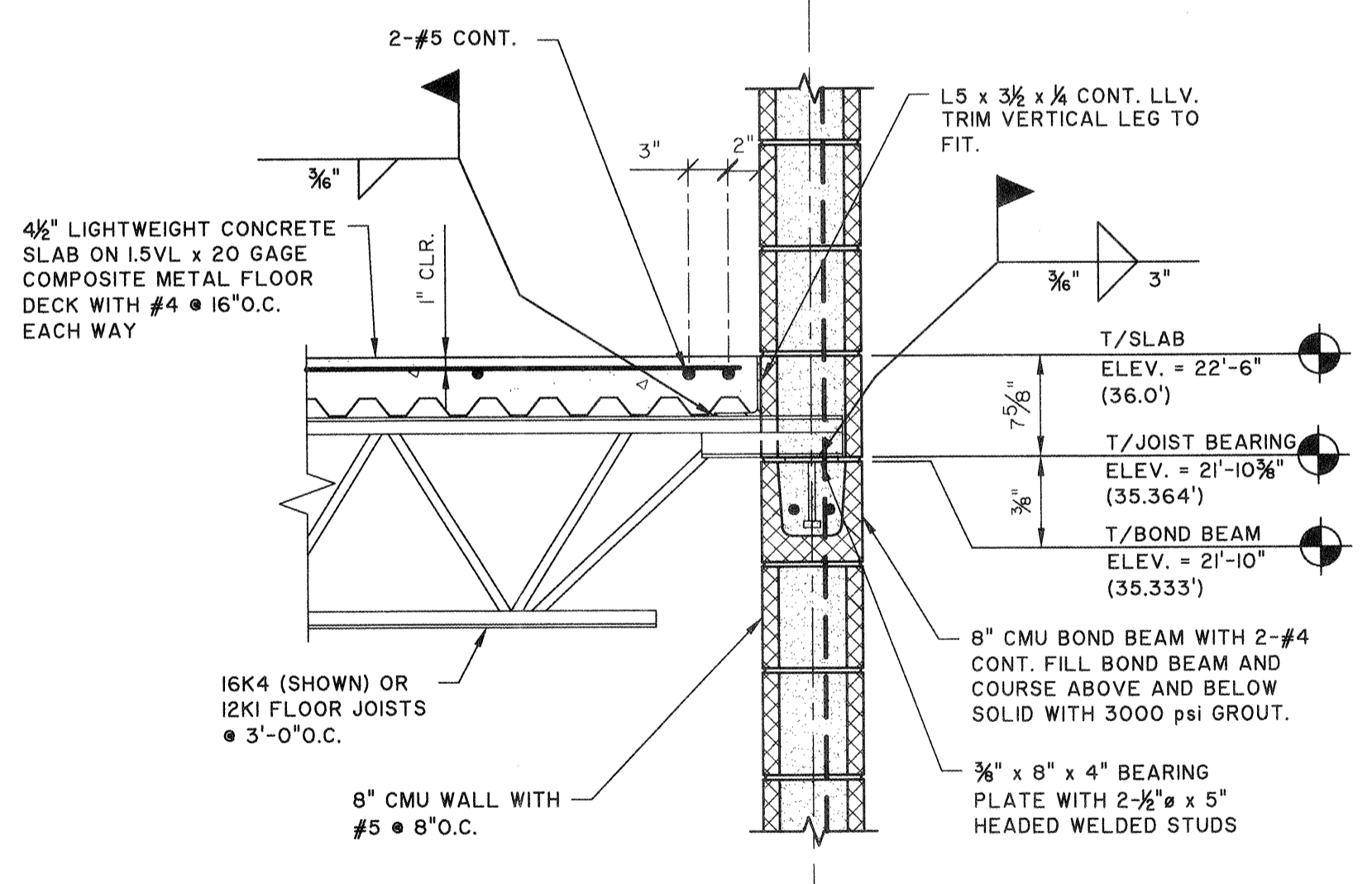
1 SECTION
S4.15 1" = 1'-0"



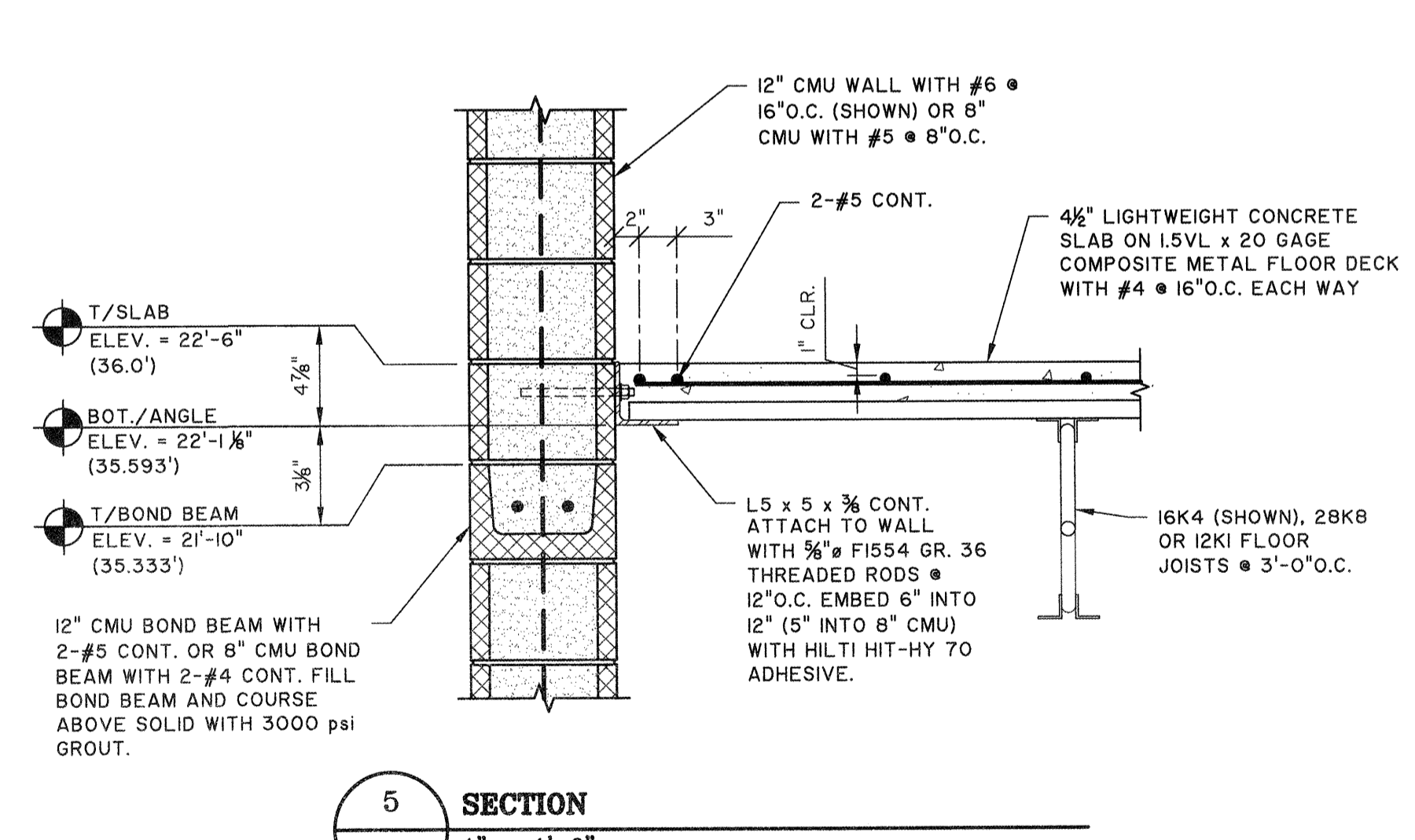
2 SECTION
S4.15 1" = 1'-0"



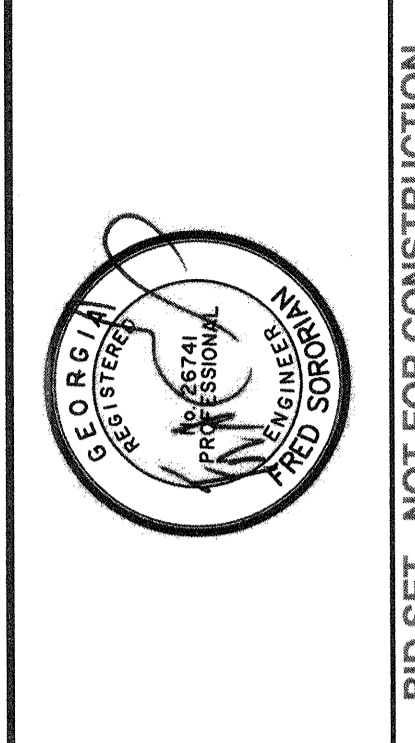
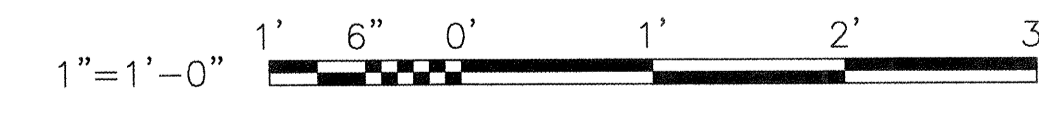
3 SECTION
S4.15 1" = 1'-0"



4 SECTION
S4.15 1" = 1'-0"



5 SECTION
S4.15 1" = 1'-0"



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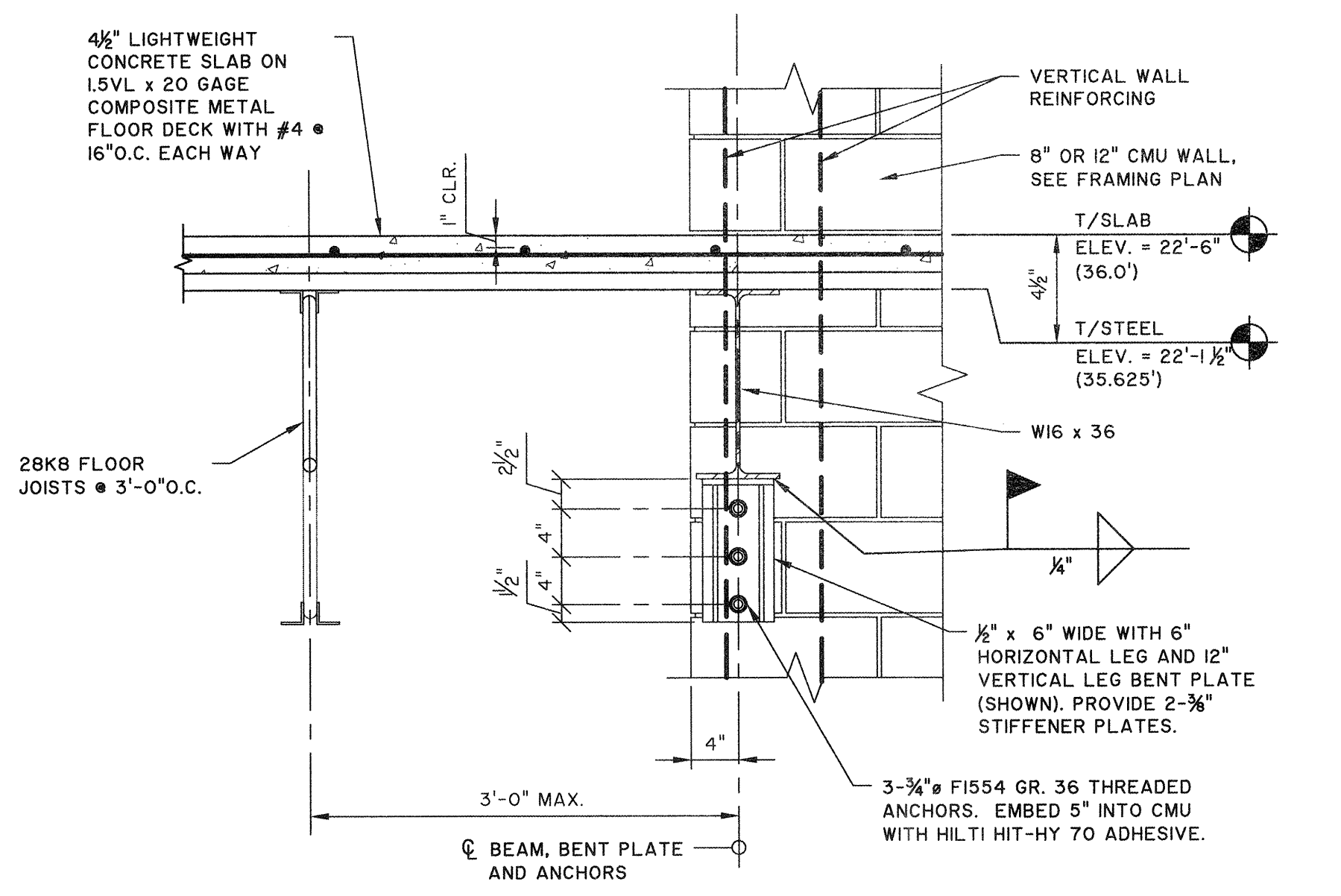
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MBR SECOND FLOOR DETAILS

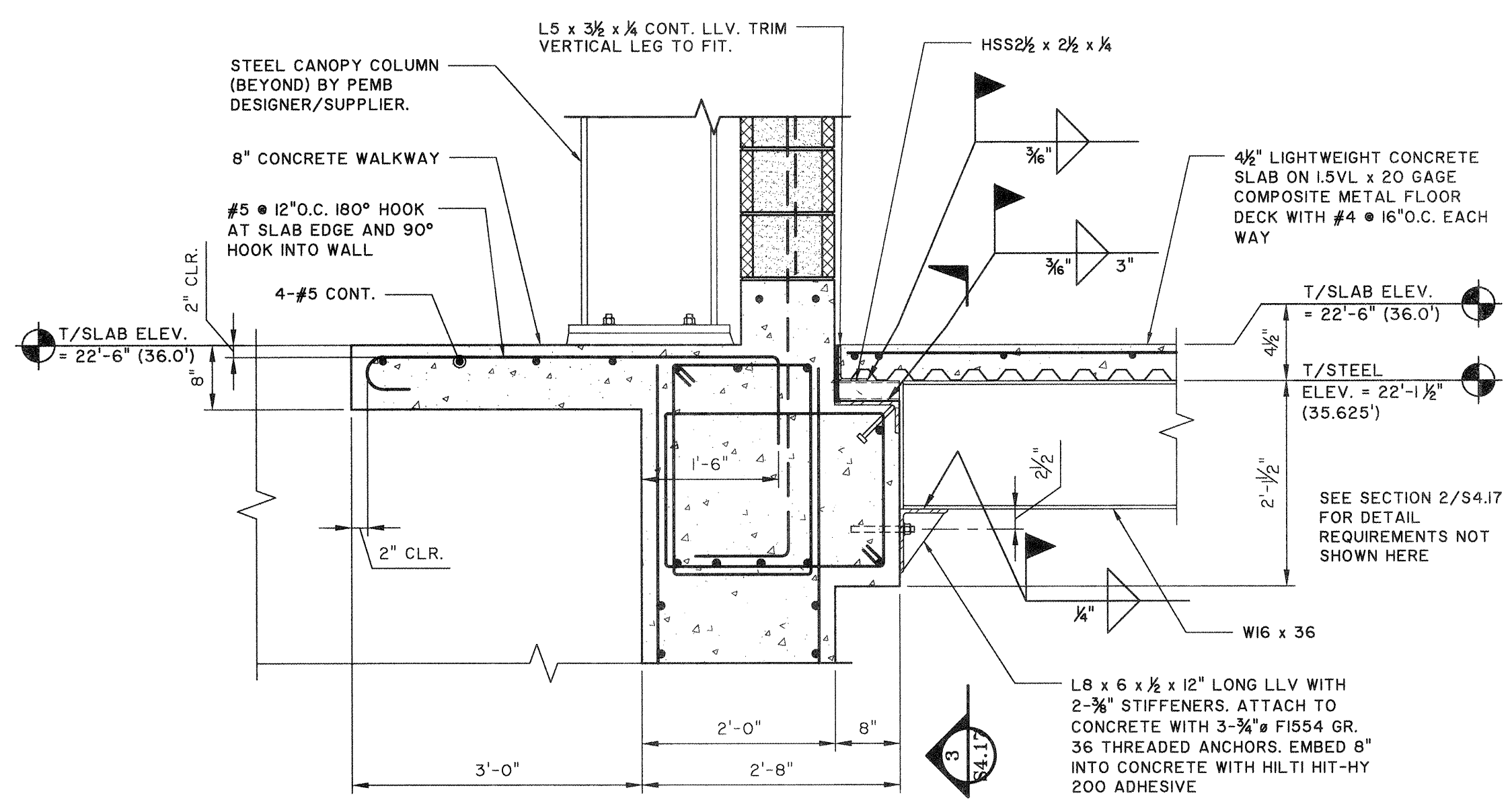
JOB NO:	J-28963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S4.15

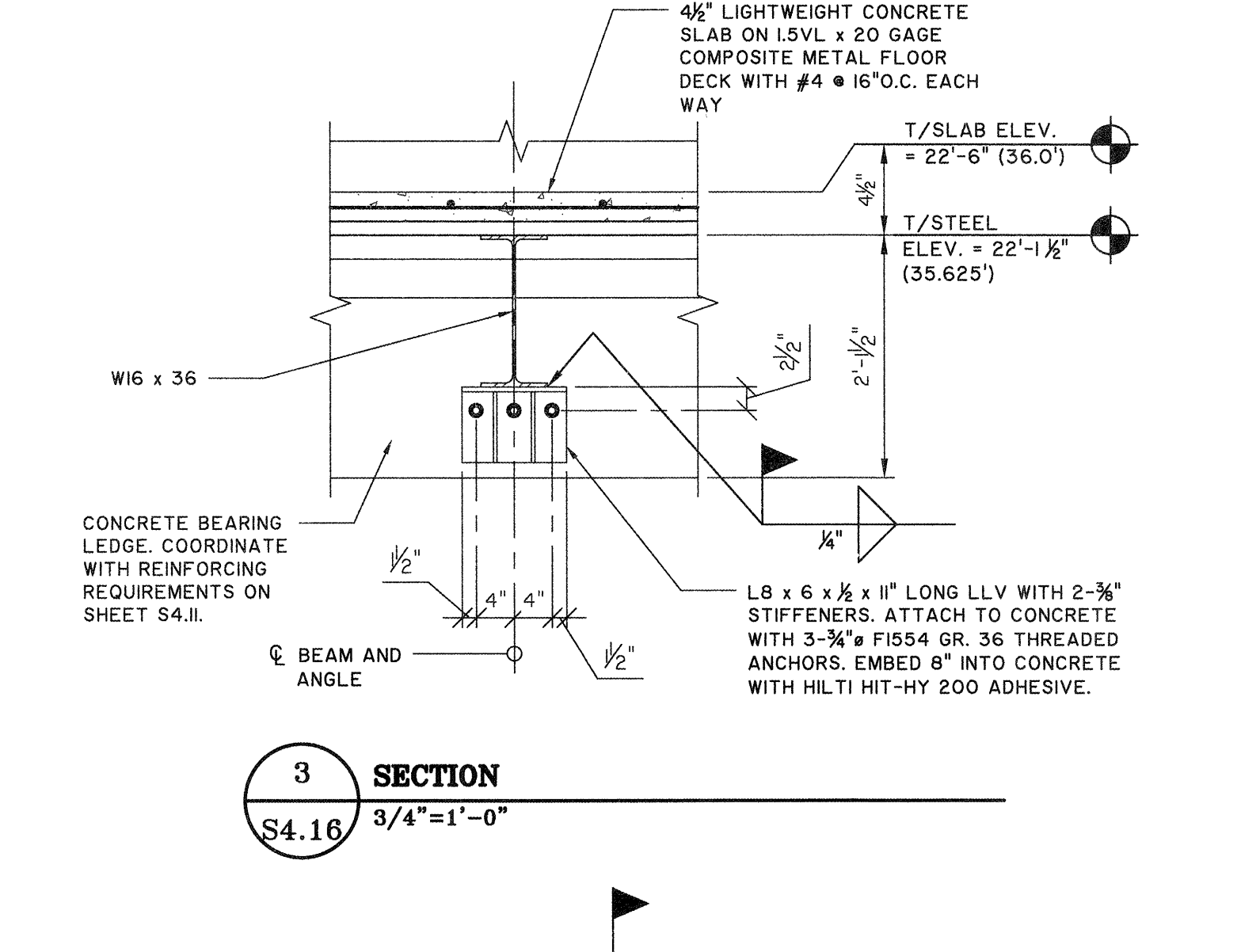
BID SET - NOT FOR CONSTRUCTION



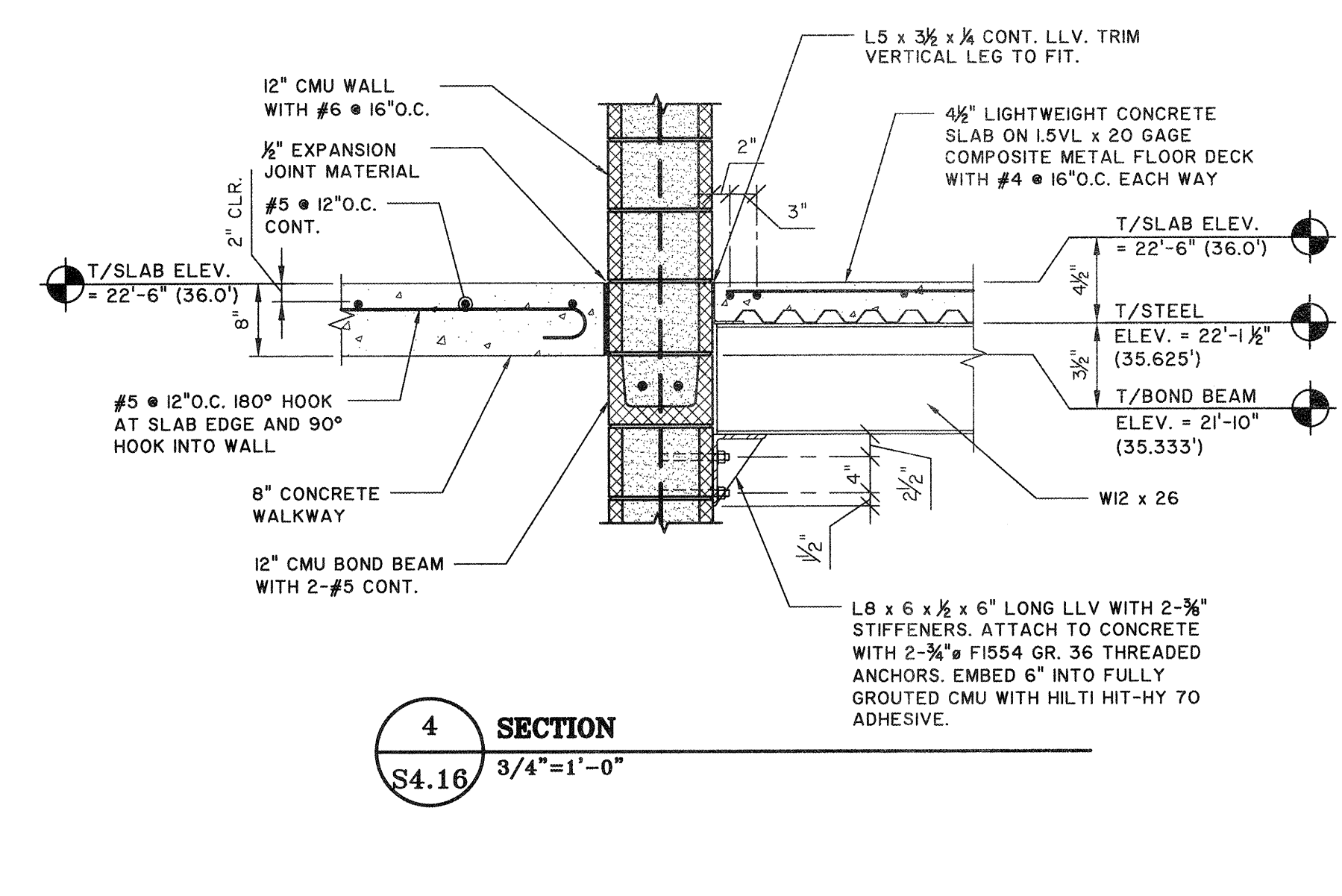
1 SECTION
S4.16 1"=1'-0"



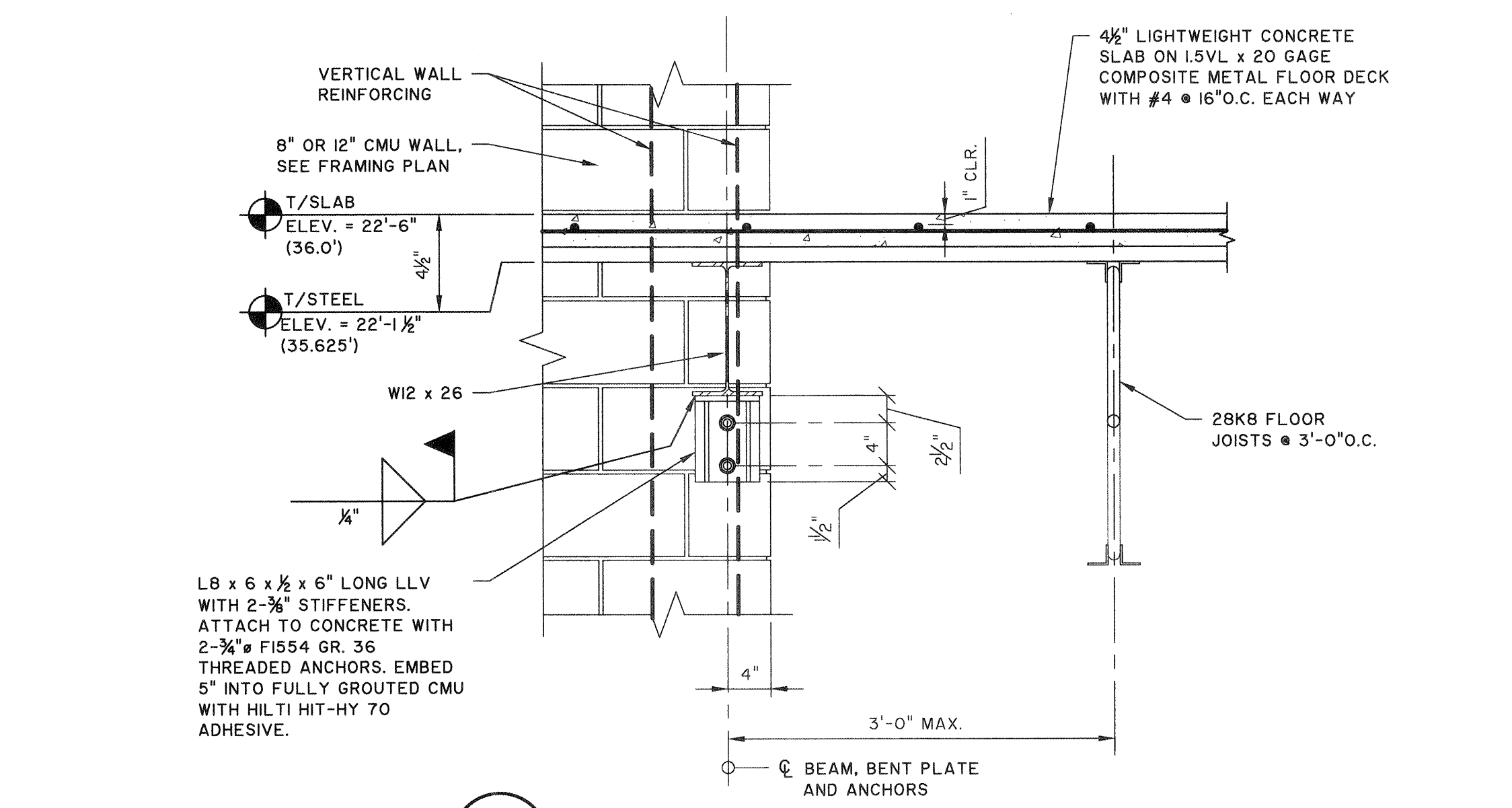
2 SECTION
S4.16 3/4"=1'-0"



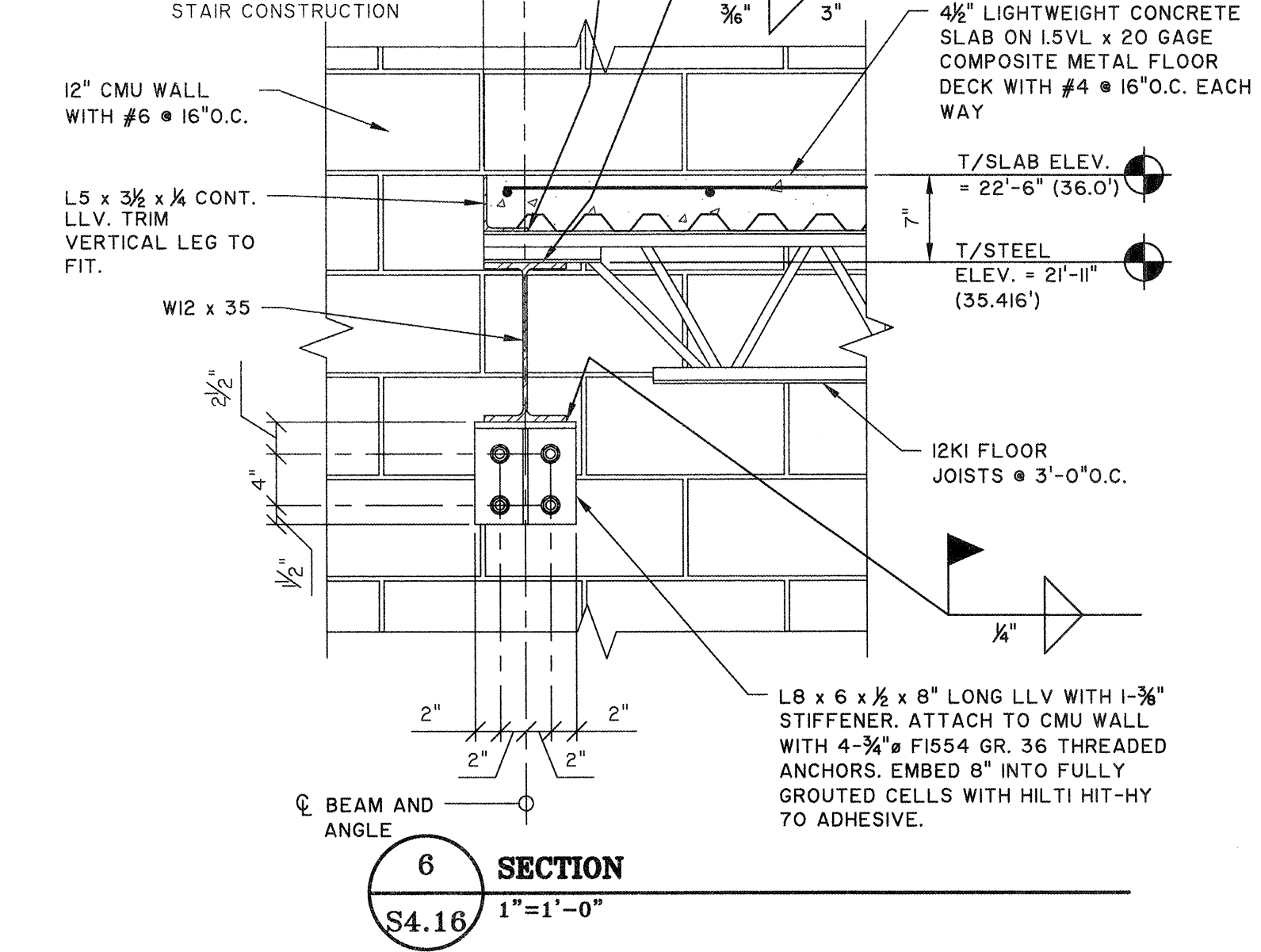
3 SECTION
S4.16 3/4"=1'-0"



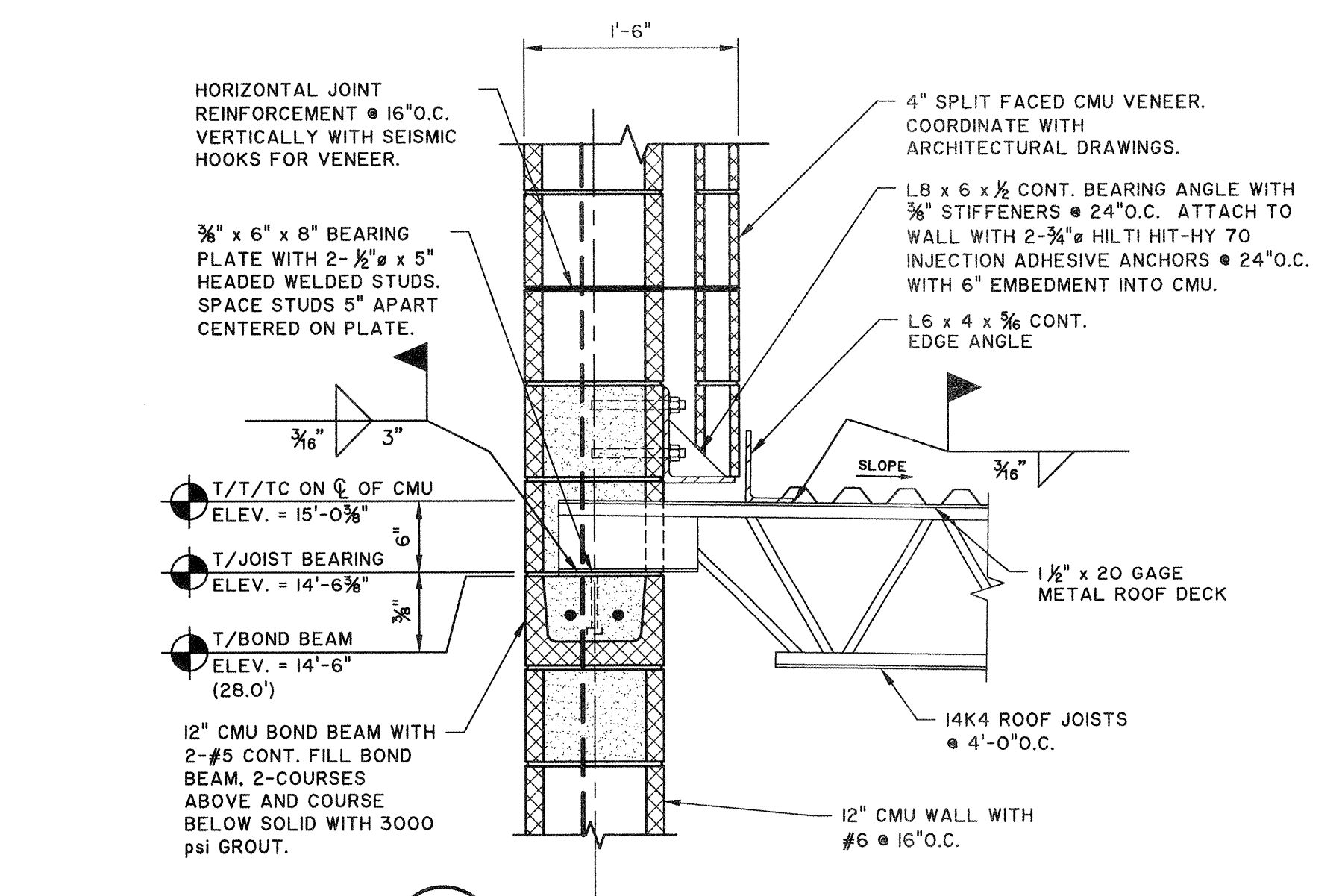
4 SECTION
S4.16 3/4"=1'-0"



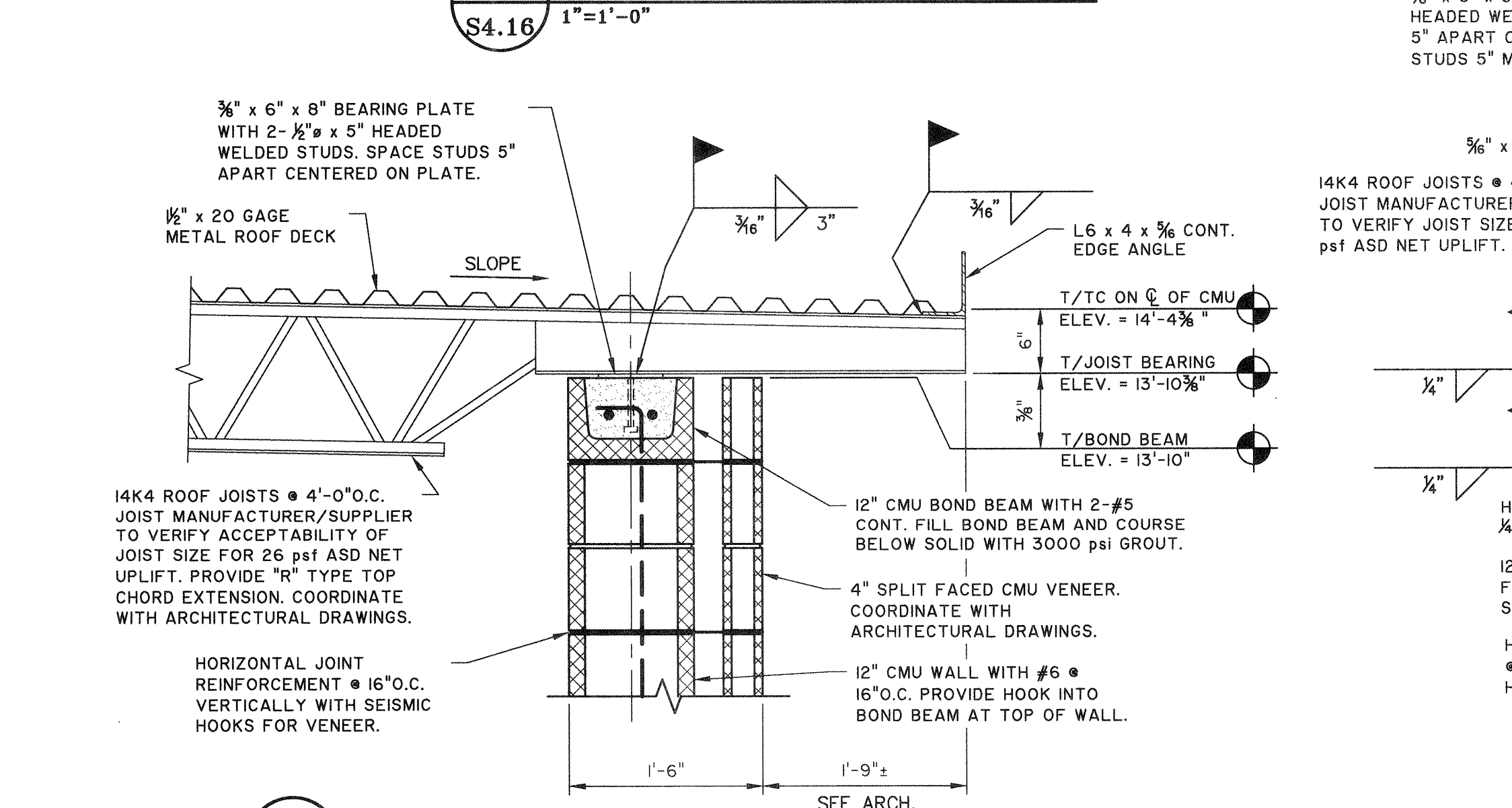
5 SECTION
S4.16 1"=1'-0"



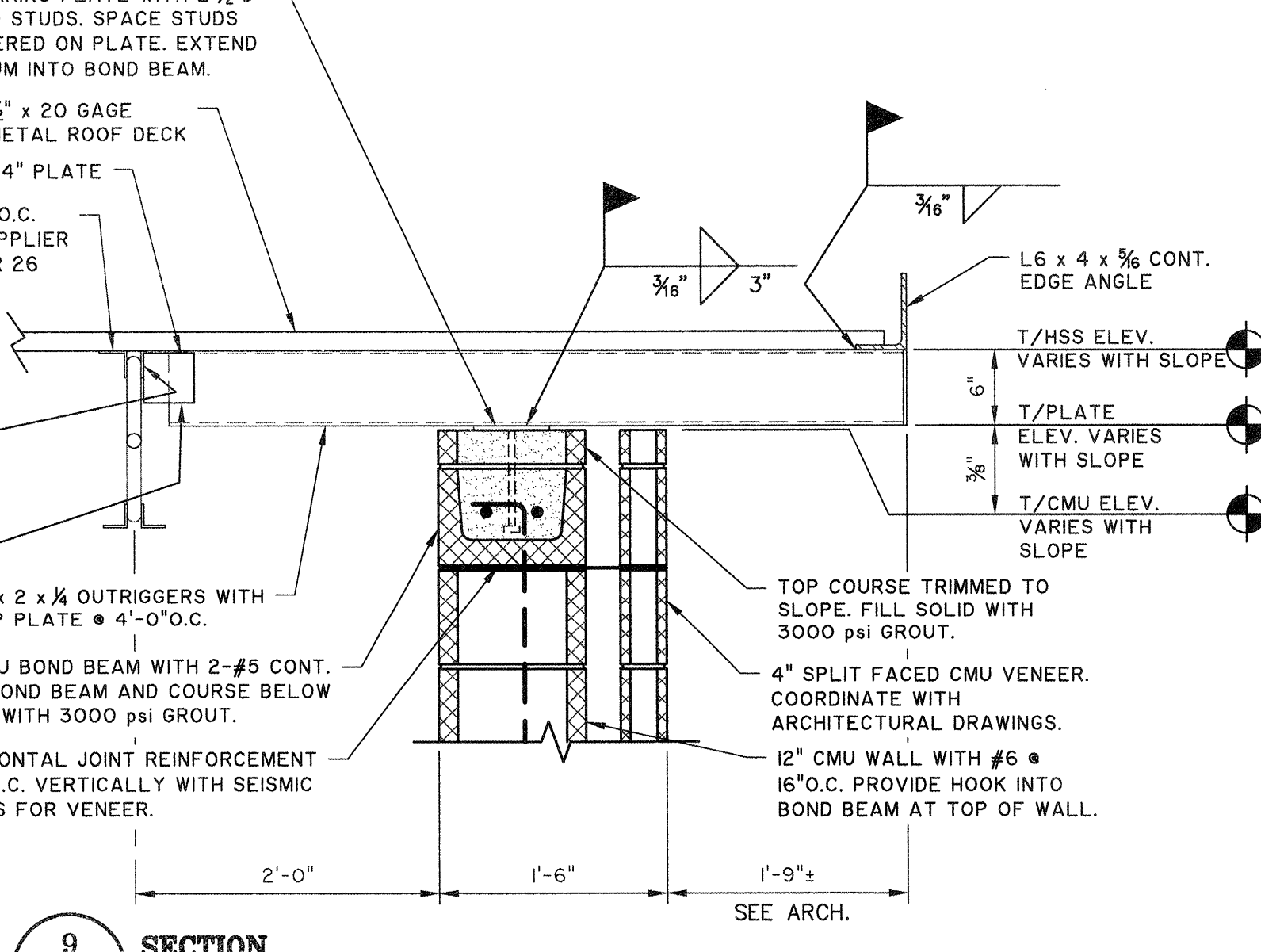
6 SECTION
S4.16 1"=1'-0"



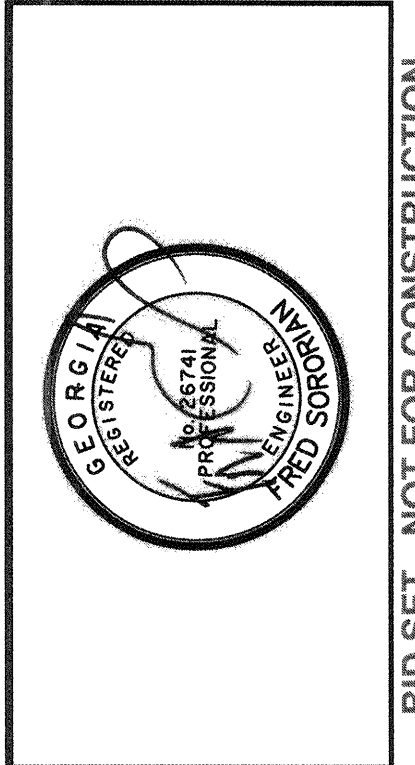
7 SECTION
S4.16 1"=1'-0"



8 SECTION
S4.16 1"=1'-0"



9 SECTION
S4.16 1"=1'-0"



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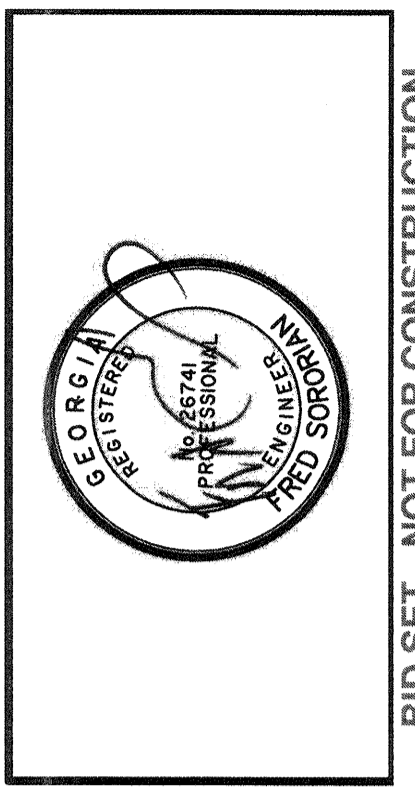
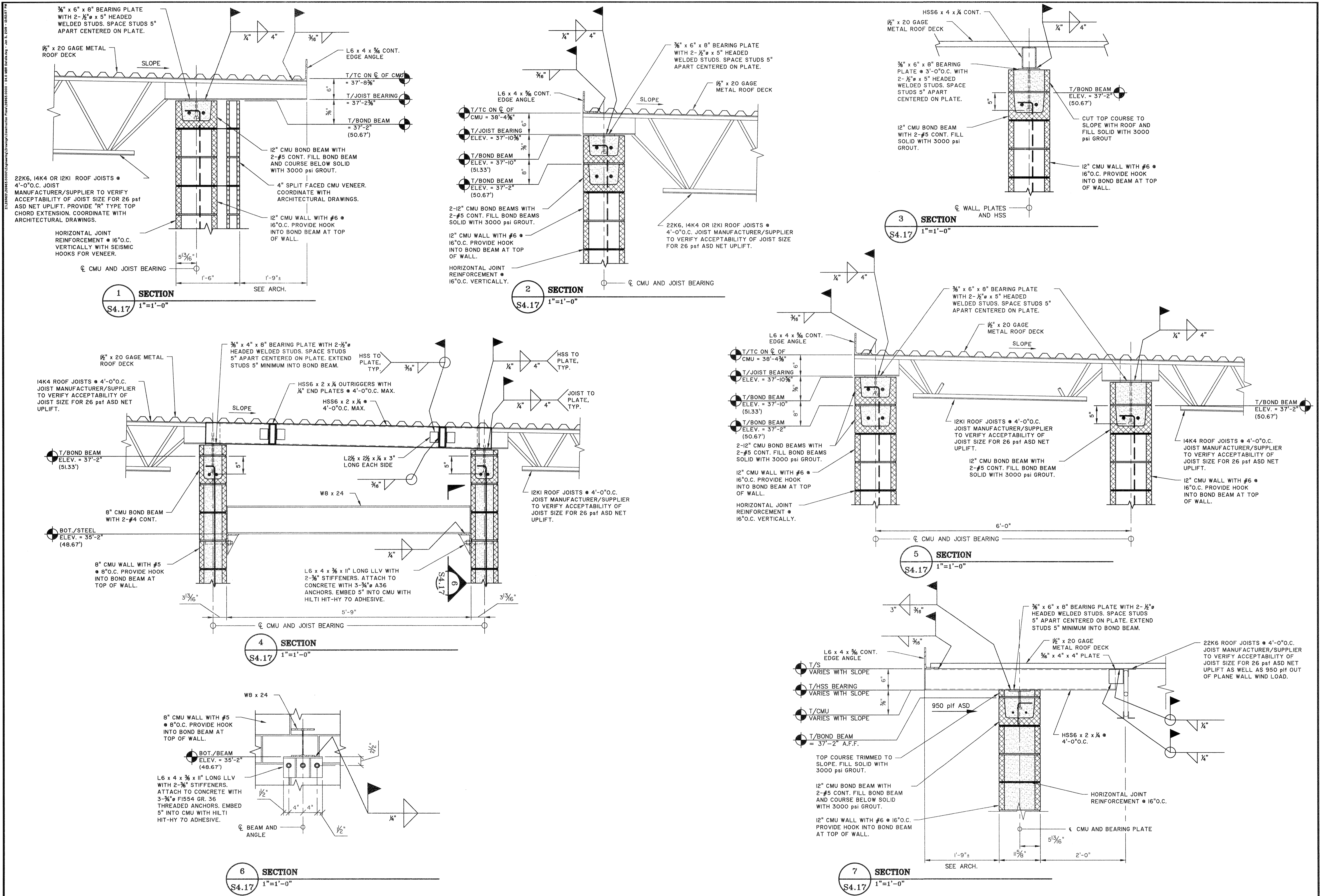
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TRAVIS FIELD WATER RECLAMATION FACILITY
MBR SECOND FLOOR DETAILS

JOB NO: J-26963.0000
DATE: 1-16-19
DRAWN: JEP
DESIGNED: JEP
REVIEWED: FSJ
APPROVED: JAH
SCALE: AS NOTED

S4.16

BID SET - NOT FOR CONSTRUCTION



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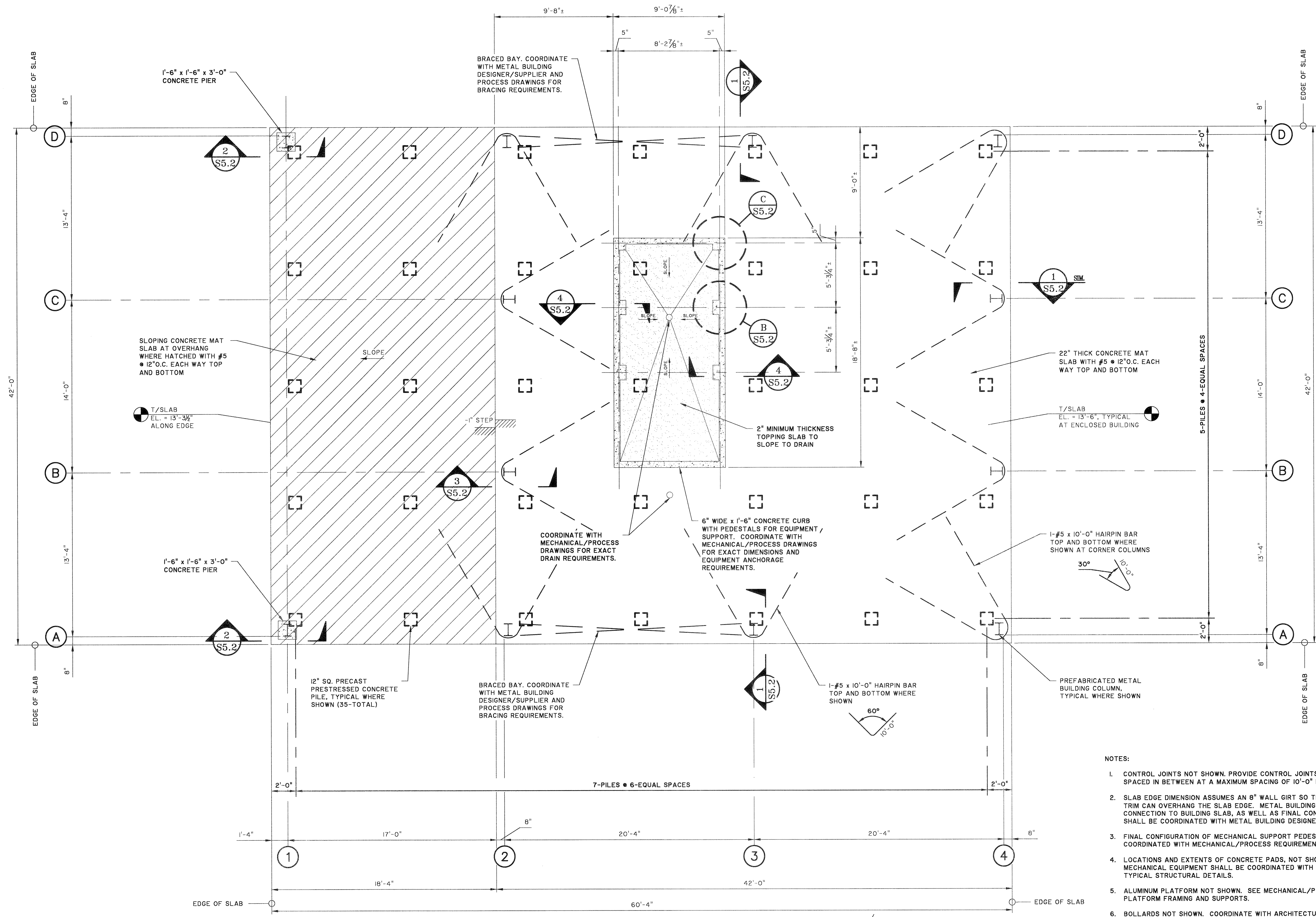
TRAVIS FIELD WATER RECLAMATION FACILITY
 MBR BUILDING ROOF FRAMING DETAILS

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S4.17

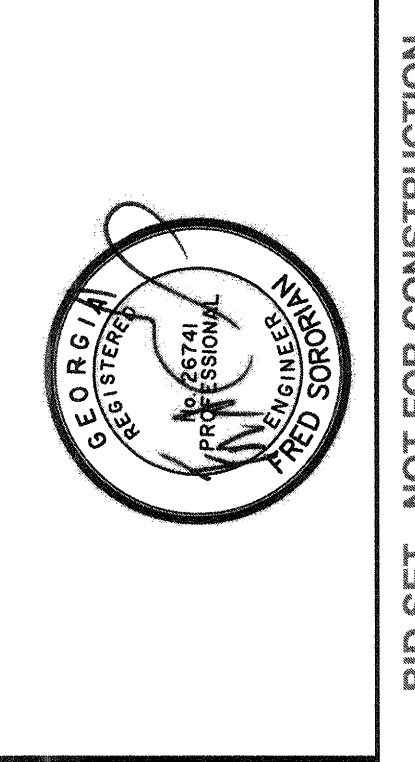
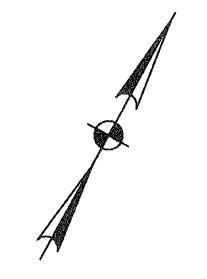
BID SET - NOT FOR CONSTRUCTION

S:\Projects\2019\20190101\Travis Field Water Reclamation Facility\DWG\FOUNDATION\FOUNDATION SLAB PLAN.dwg - 2019.01.16 10:52 AM



- NOTES:
- CONTROL JOINTS NOT SHOWN. PROVIDE CONTROL JOINTS ON COLUMN LINES AND EVENLY SPACED IN BETWEEN AT A MAXIMUM SPACING OF 10'-0" EACH WAY.
 - SLAB EDGE DIMENSION ASSUMES AN 8" WALL GIRT SO THAT THE BUILDING SHEATHING AND TRIM CAN OVERHANG THE SLAB EDGE. METAL BUILDING COLUMN LAYOUT AND COLUMN CONNECTION TO BUILDING SLAB, AS WELL AS FINAL CONFIGURATION OF BUILDING SLAB, SHALL BE COORDINATED WITH METAL BUILDING DESIGNER/SUPPLIER.
 - FINAL CONFIGURATION OF MECHANICAL SUPPORT PEDESTALS AND WALLS SHOWN SHALL BE COORDINATED WITH MECHANICAL/PROCESS REQUIREMENTS.
 - LOCATIONS AND EXTENTS OF CONCRETE PADS, NOT SHOWN ON THIS PLAN, FOR ANY OTHER MECHANICAL EQUIPMENT SHALL BE COORDINATED WITH MECHANICAL REQUIREMENTS AND TYPICAL STRUCTURAL DETAILS.
 - ALUMINUM PLATFORM NOT SHOWN. SEE MECHANICAL/PROCESS DRAWINGS FOR ALUMINUM PLATFORM FRAMING AND SUPPORTS.
 - BOLLARDS NOT SHOWN. COORDINATE WITH ARCHITECTURAL AND MECHANICAL/PROCESS DRAWINGS FOR LOCATIONS. SEE TYPICAL STRUCTURAL DETAILS FOR BOLLARD DETAILS.
 - SITE SLABS AND SIDEWALKS NOT SHOWN. COORDINATE WITH CIVIL AND MECHANICAL/PROCESS DRAWINGS FOR SLABS AND PAVING NOT SHOWN.

1 FOUNDATION SLAB PLAN
S5.0 1/4"=1'-0"



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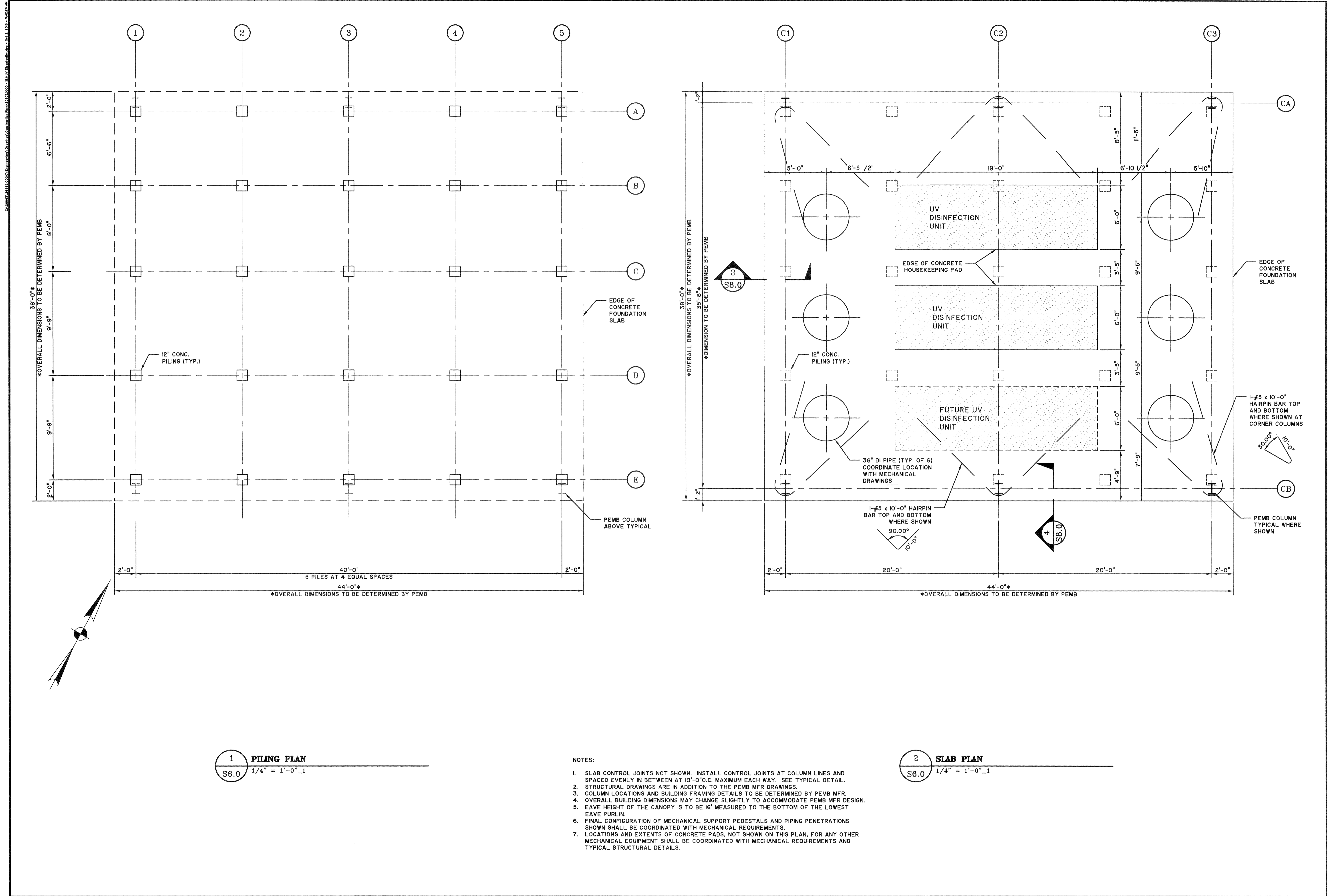
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TRAVIS FIELD WATER RECLAMATION FACILITY
DEWATERING BUILDING FOUNDATION SLAB PLAN

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

S5.0

BID SET - NOT FOR CONSTRUCTION

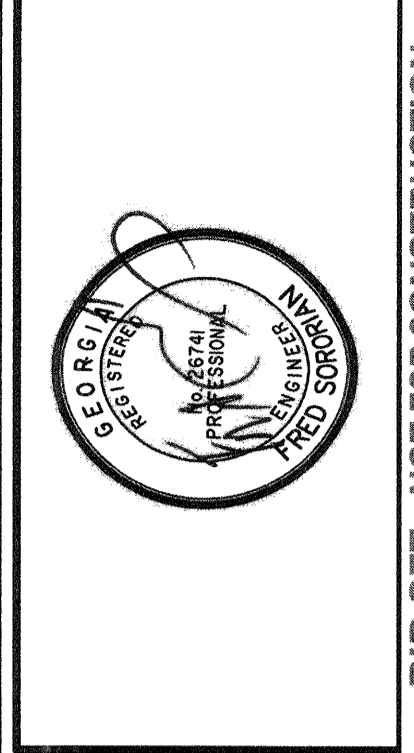


1 PILING PLAN
S6.0 1/4" = 1'-0" _1

2 SLAB PLAN
S6.0 1/4" = 1'-0" _1

NOTES:

1. SLAB CONTROL JOINTS NOT SHOWN. INSTALL CONTROL JOINTS AT COLUMN LINES AND SPACED EVENLY IN BETWEEN AT 10'-0" O.C. MAXIMUM EACH WAY. SEE TYPICAL DETAIL.
2. STRUCTURAL DRAWINGS ARE IN ADDITION TO THE PEMB MFR DRAWINGS.
3. COLUMN LOCATIONS AND BUILDING FRAMING DETAILS TO BE DETERMINED BY PEMB MFR.
4. OVERALL BUILDING DIMENSIONS MAY CHANGE SLIGHTLY TO ACCOMMODATE PEMB MFR DESIGN.
5. EAVE HEIGHT OF THE CANOPY IS TO BE 16' MEASURED TO THE BOTTOM OF THE LOWEST EAVE PURLIN.
6. FINAL CONFIGURATION OF MECHANICAL SUPPORT PEDESTALS AND PIPING PENETRATIONS SHOWN SHALL BE COORDINATED WITH MECHANICAL REQUIREMENTS.
7. LOCATIONS AND EXTENTS OF CONCRETE PADS, NOT SHOWN ON THIS PLAN, FOR ANY OTHER MECHANICAL EQUIPMENT SHALL BE COORDINATED WITH MECHANICAL REQUIREMENTS AND TYPICAL STRUCTURAL DETAILS.



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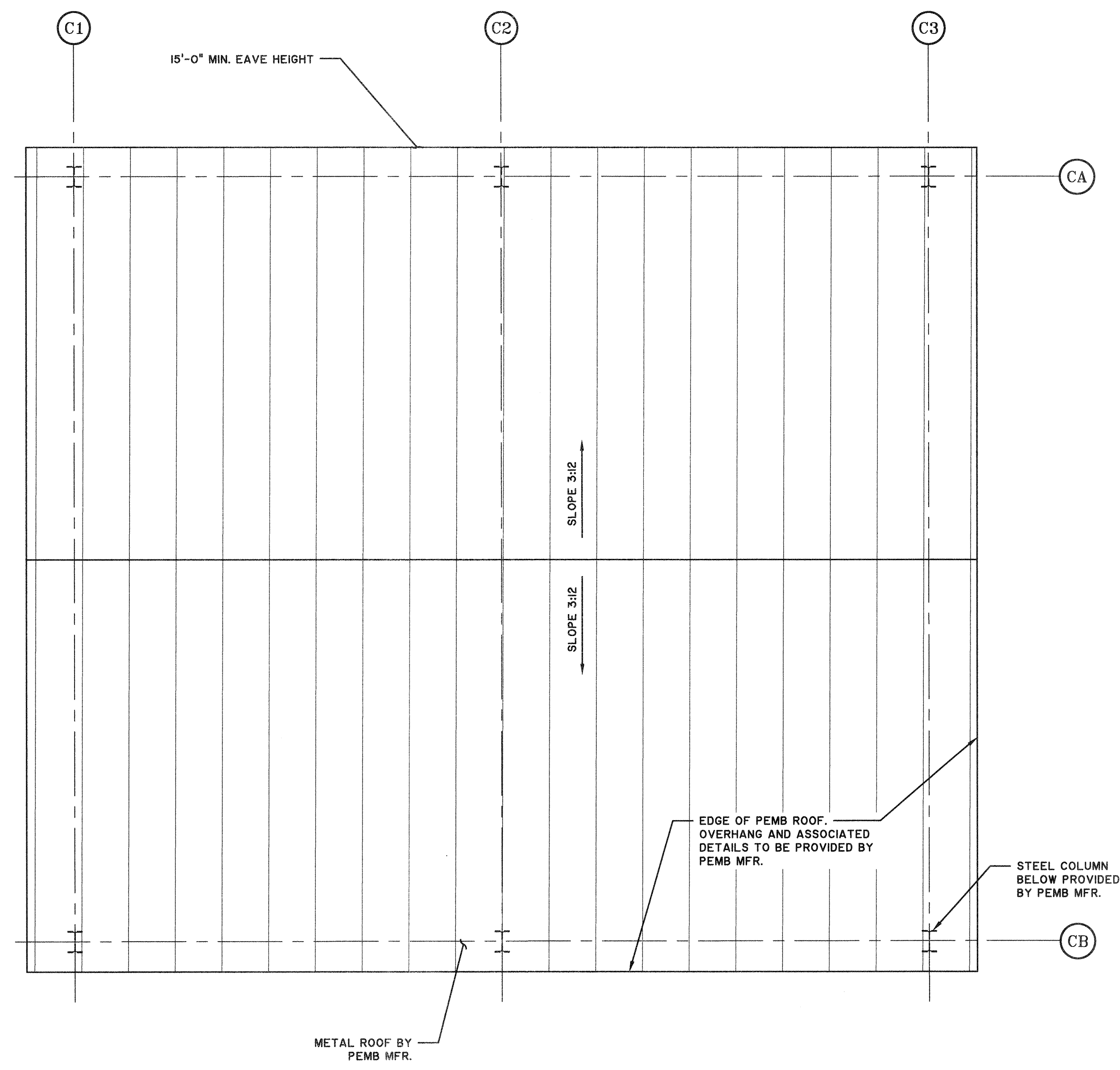
TRAVIS FIELD WATER RECLAMATION FACILITY
UV DISINFECTION SYSTEM ROOF FRAMING PLAN AND FOUNDATION DETAILS

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

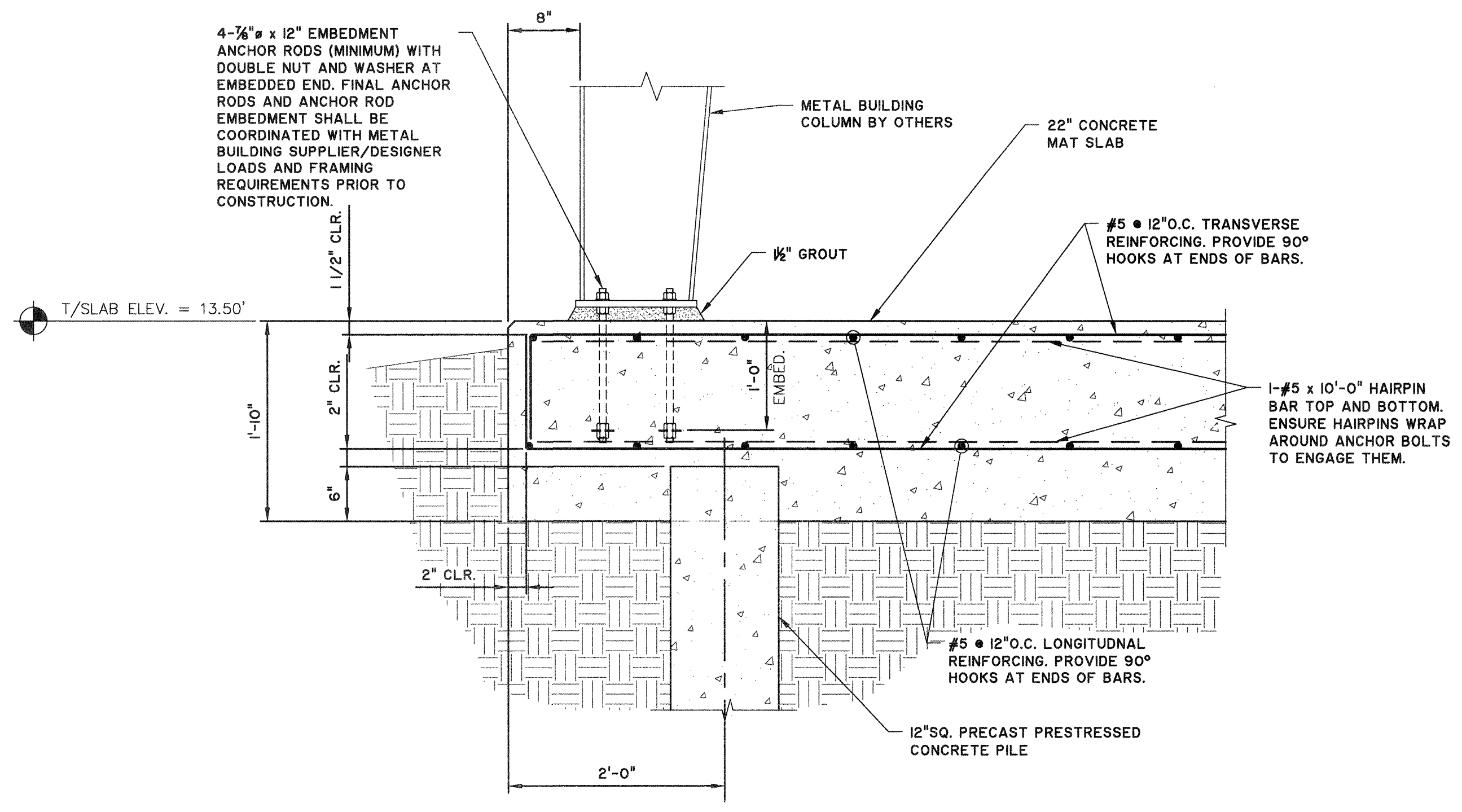
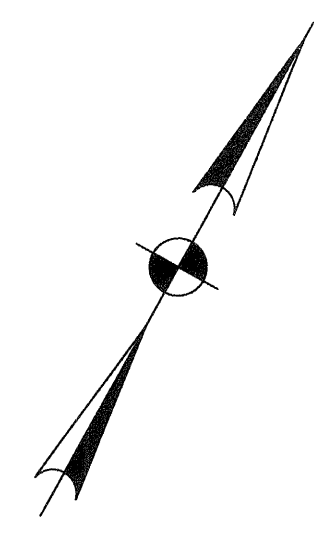
S6.0

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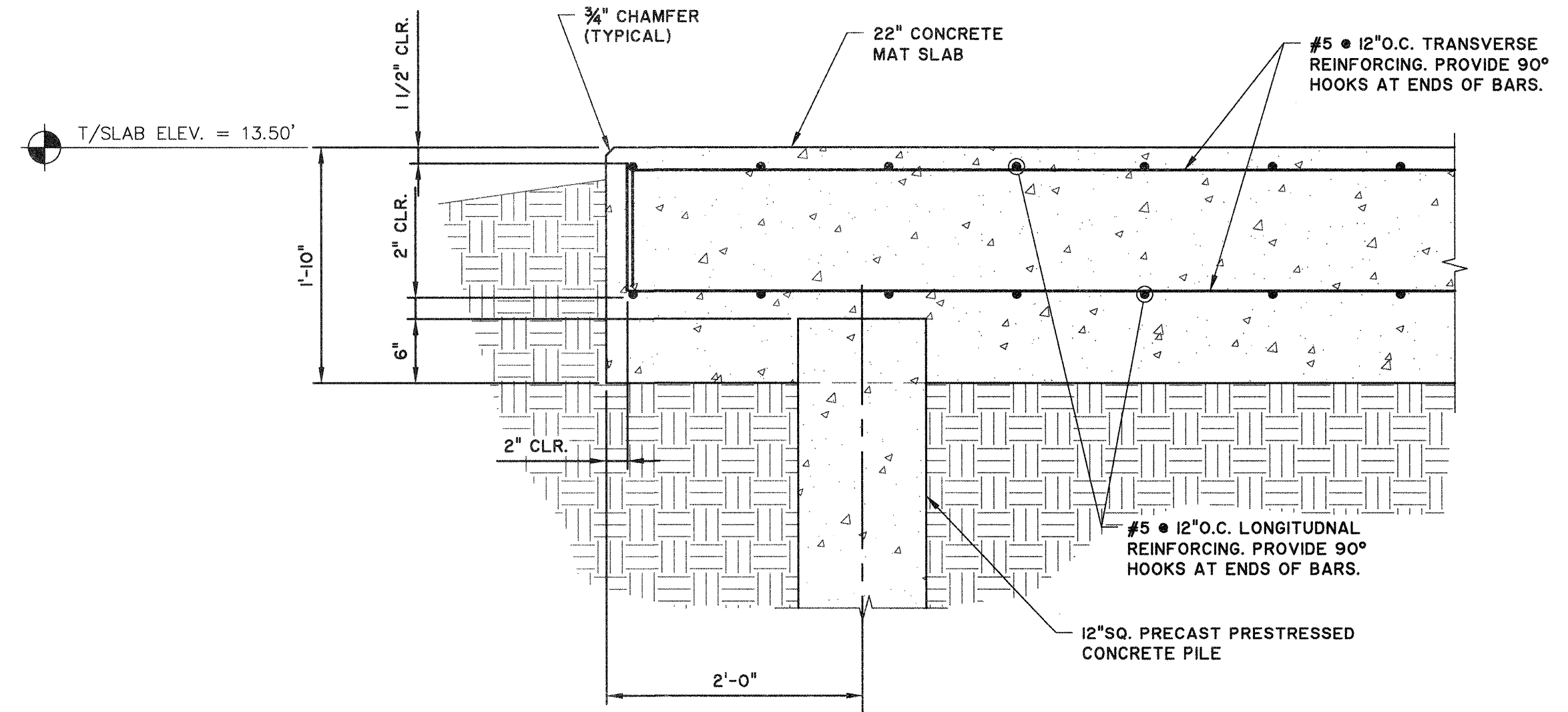
2. UNLESS SHOWN OTHERWISE, ALL DIMENSIONS SHALL BE IN FEET AND INCHES. DIMENSIONS SHALL BE TO CENTER UNLESS NOTED OTHERWISE. DATE: 1-16-19



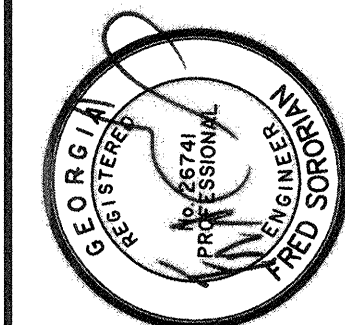
1 ROOF PLAN
 S6.1 1/4" = 1'-0" _1



2 FOOTING DETAIL
 S6.1 1" = 1'-0"



3 FOOTING DETAIL
 S6.1 1" = 1'-0"



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 TRAVIS FIELD WATER RECLAMATION FACILITY
 UV DISINFECTION SYSTEM FOUNDATION PLANS

JOB NO:	J-26963.0000
DATE:	1-16-19
DRAWN:	JEP
DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

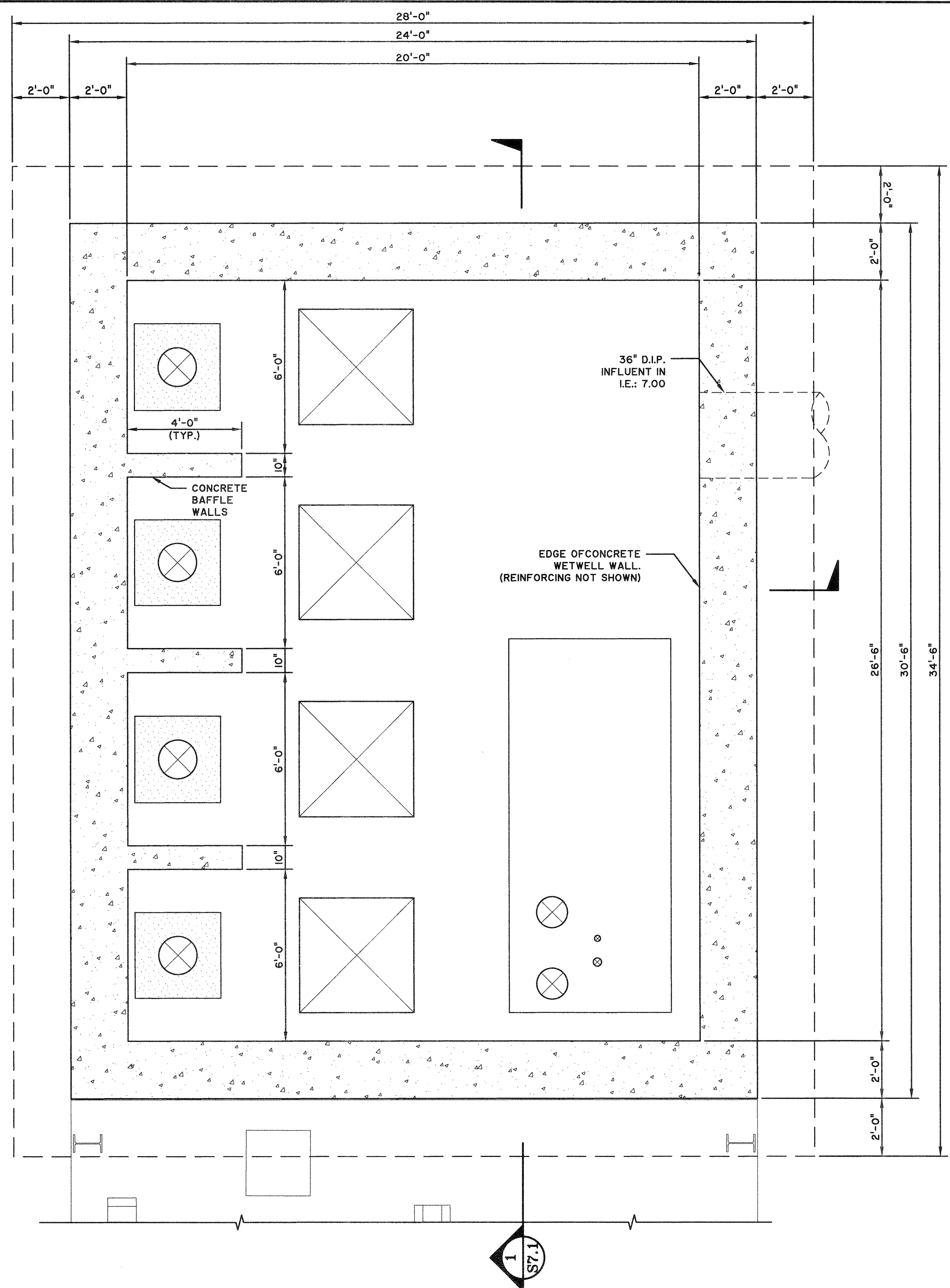
S6.1

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EDGE OF FOOTING

1
S7.2



1
S7.0 **WETWELL FOUNDATION AND LOWER PLAN**
SCALE: 3/8" = 1'-0"

- NOTES:
1. WATERSTOPS TO BE INSTALLED AT ALL CONSTRUCTION JOINTS IN THE BASIN WALLS AND BASE SLAB, INCLUDING VERTICAL JOINTS. WATERSTOPS SHALL BE GREENSTREAK PVC RIBBED FLAT, STYLE NO. 784 OR ACCEPTED EQUIVALENT.
 2. COORDINATE SIZE, LOCATION AND INSTALLATION OF ACCESS HATCHES W/ CIVIL PLANS AND WITH MANUFACTURER.
 3. COORDINATE LOCATIONS OF ALL OPENINGS WITH CIVIL DRAWINGS.

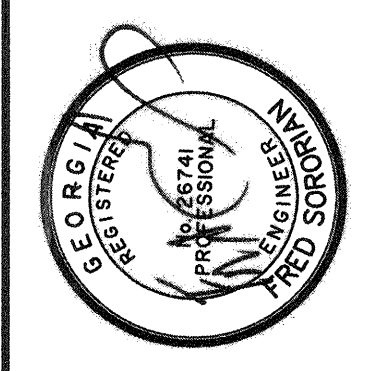
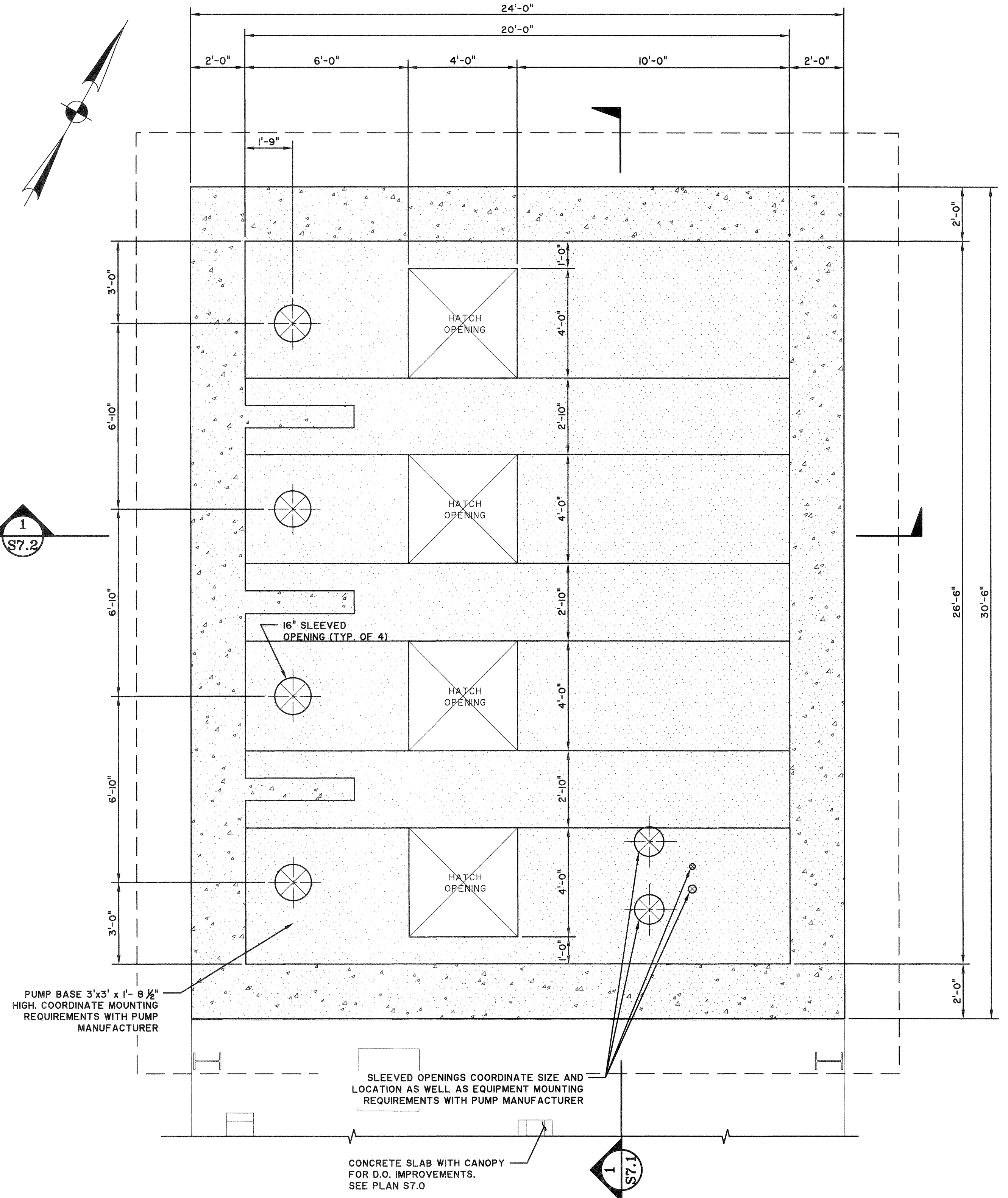
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S7.2

PUMP BASE 3'x3' x 1'-0 1/2" HIGH. COORDINATE MOUNTING REQUIREMENTS WITH PUMP MANUFACTURER

SLEEVED OPENINGS COORDINATE SIZE AND LOCATION AS WELL AS EQUIPMENT MOUNTING REQUIREMENTS WITH PUMP MANUFACTURER

CONCRETE SLAB WITH CANOPY FOR D.O. IMPROVEMENTS. SEE PLAN S7.0

1
S7.2 **WETWELL UPPER PLAN**
SCALE: 3/8" = 1'-0"



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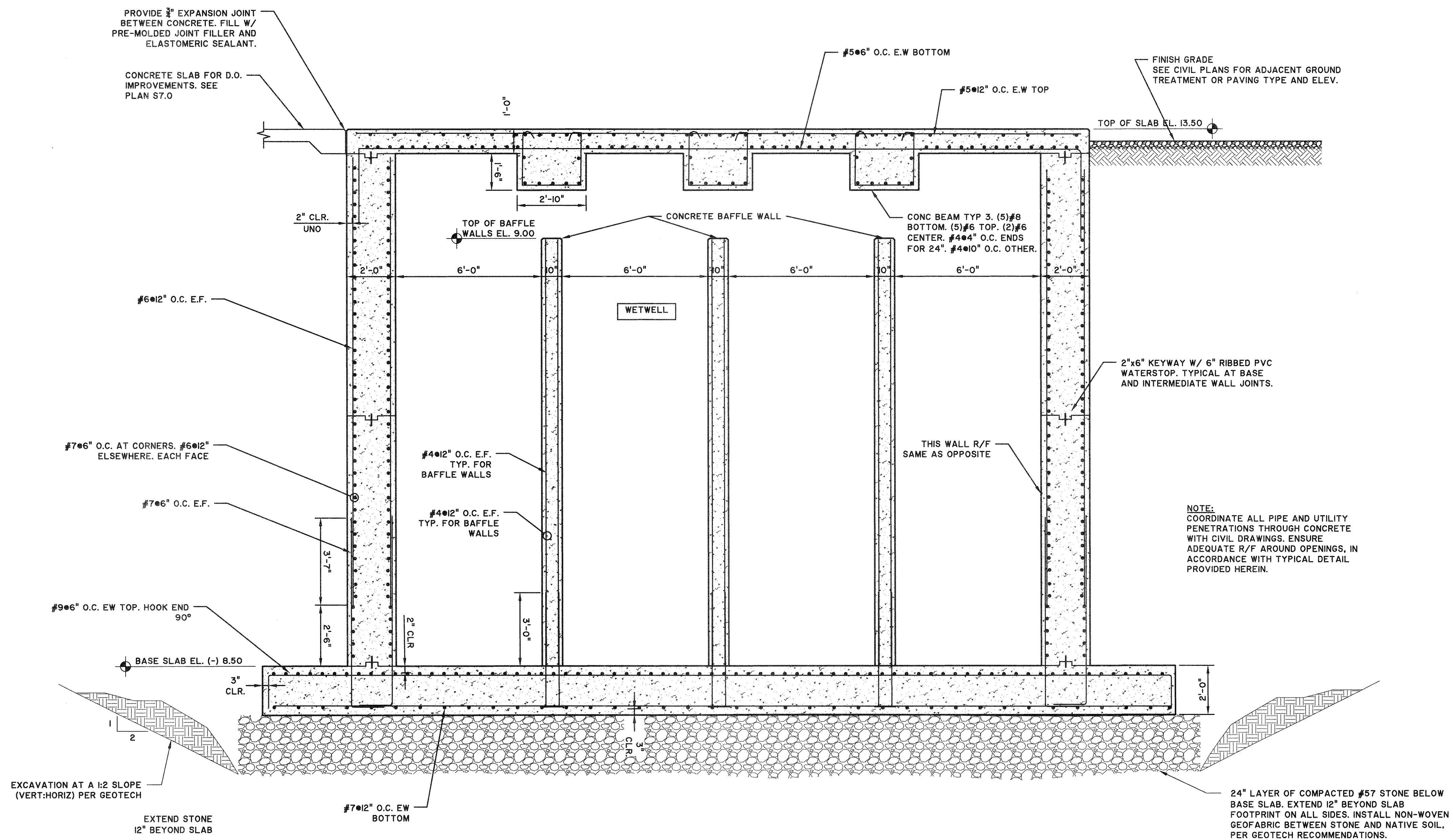
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EFFLUENT PUMP STATION PLAN

JOB NO:	J-26963.0000
DATE:	1-16-19
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DESIGNED:	JEP
REVIEWED:	FS
APPROVED:	JAH
SCALE:	AS NOTED

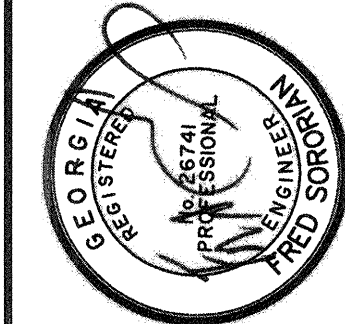
S7.0

BID SET - NOT FOR CONSTRUCTION



1 SECTION VIEW
 S7.1 SCALE: 3/8" = 1'-0"

- NOTES:
1. WATERSTOPS TO BE INSTALLED AT ALL CONSTRUCTION JOINTS IN THE BASIN WALLS AND BASE SLAB, INCLUDING VERTICAL JOINTS. WATERSTOPS SHALL BE GREENSTREAK PVC RIBBED FLAT, STYLE NO. 784 OR APPROVED EQUAL.
 2. COORDINATE SIZE, LOCATION AND INSTALLATION OF ACCESS HATCHES W/ CIVIL PLANS AND WITH MANUFACTURER.
 3. COORDINATE LOCATIONS OF ALL OPENINGS WITH CIVIL DRAWINGS.



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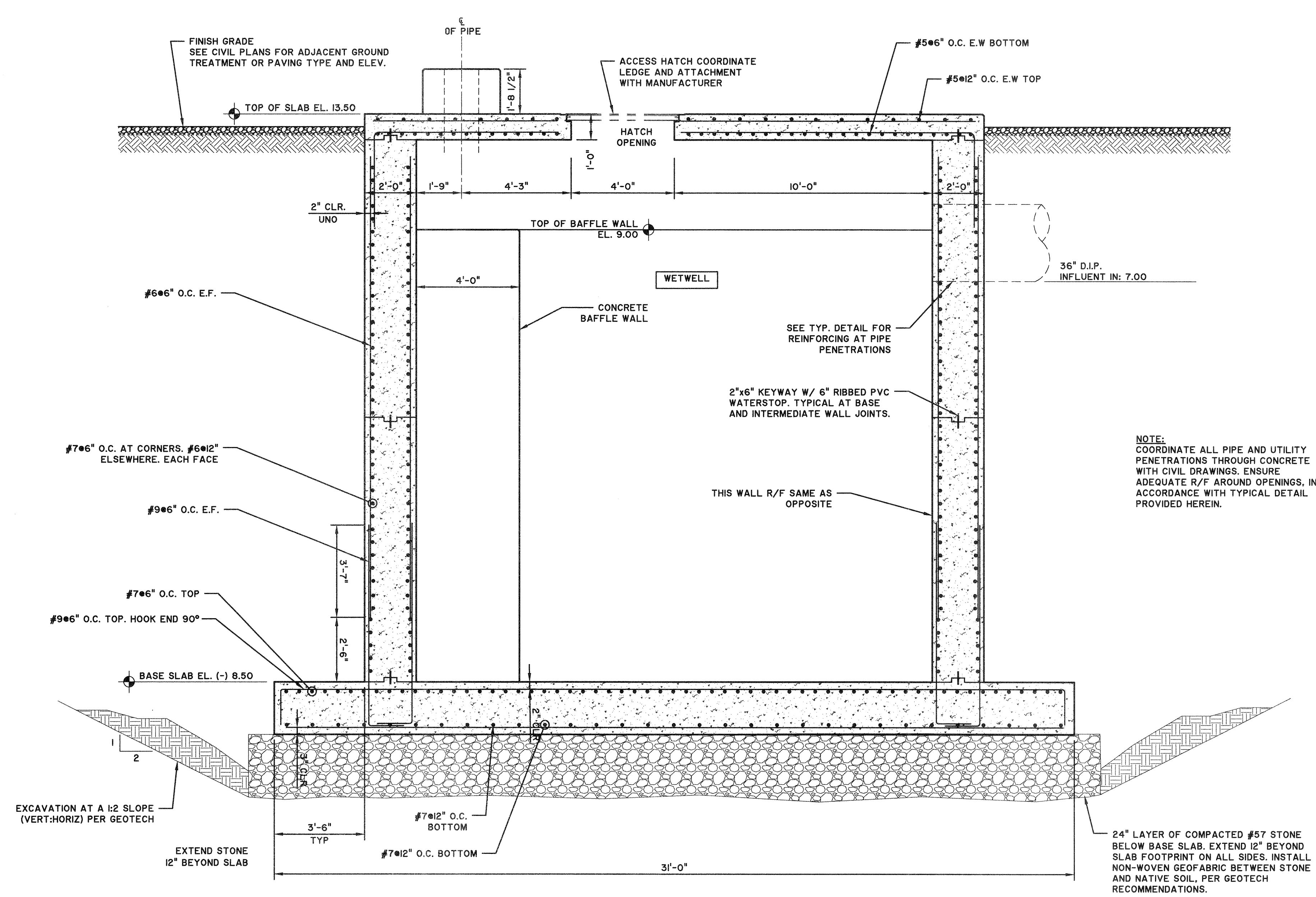
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 DATE: 1-16-19
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 REVIEWED: FS
 APPROVED: JAH
 SCALE: AS NOTED

S7.1

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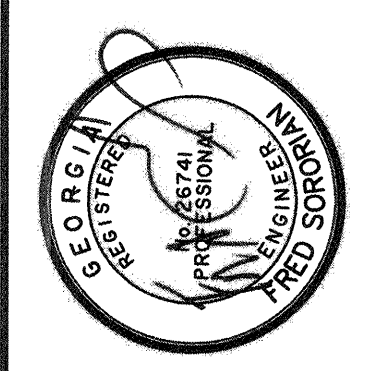
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1 SECTION VIEW
S7.2 SCALE: 3/8" = 1'-0"

- NOTES:
1. WATERSTOPS TO BE INSTALLED AT ALL CONSTRUCTION JOINTS IN THE BASIN WALLS AND BASE SLAB, INCLUDING VERTICAL JOINTS. WATERSTOPS SHALL BE GREENSTREAK PVC RIBBED FLAT, STYLE NO. 784 OR ACCEPTED EQUIVALENT.
 2. COORDINATE SIZE, LOCATION AND INSTALLATION OF ACCESS HATCHES W/ CIVIL PLANS AND WITH MANUFACTURER.
 3. COORDINATE LOCATIONS OF ALL OPENINGS WITH CIVIL DRAWINGS.



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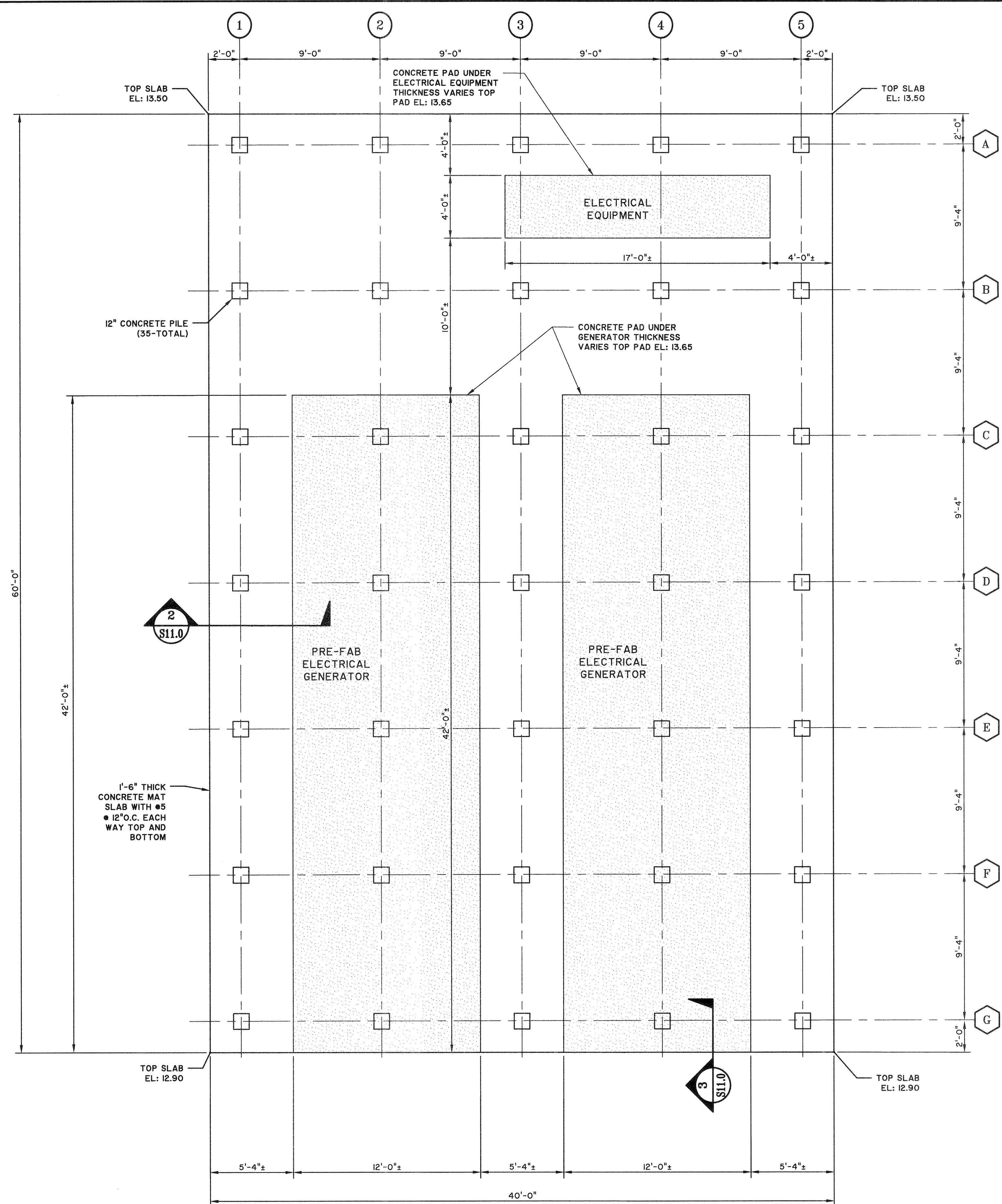
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SCALE:	AS NOTED

S7.2

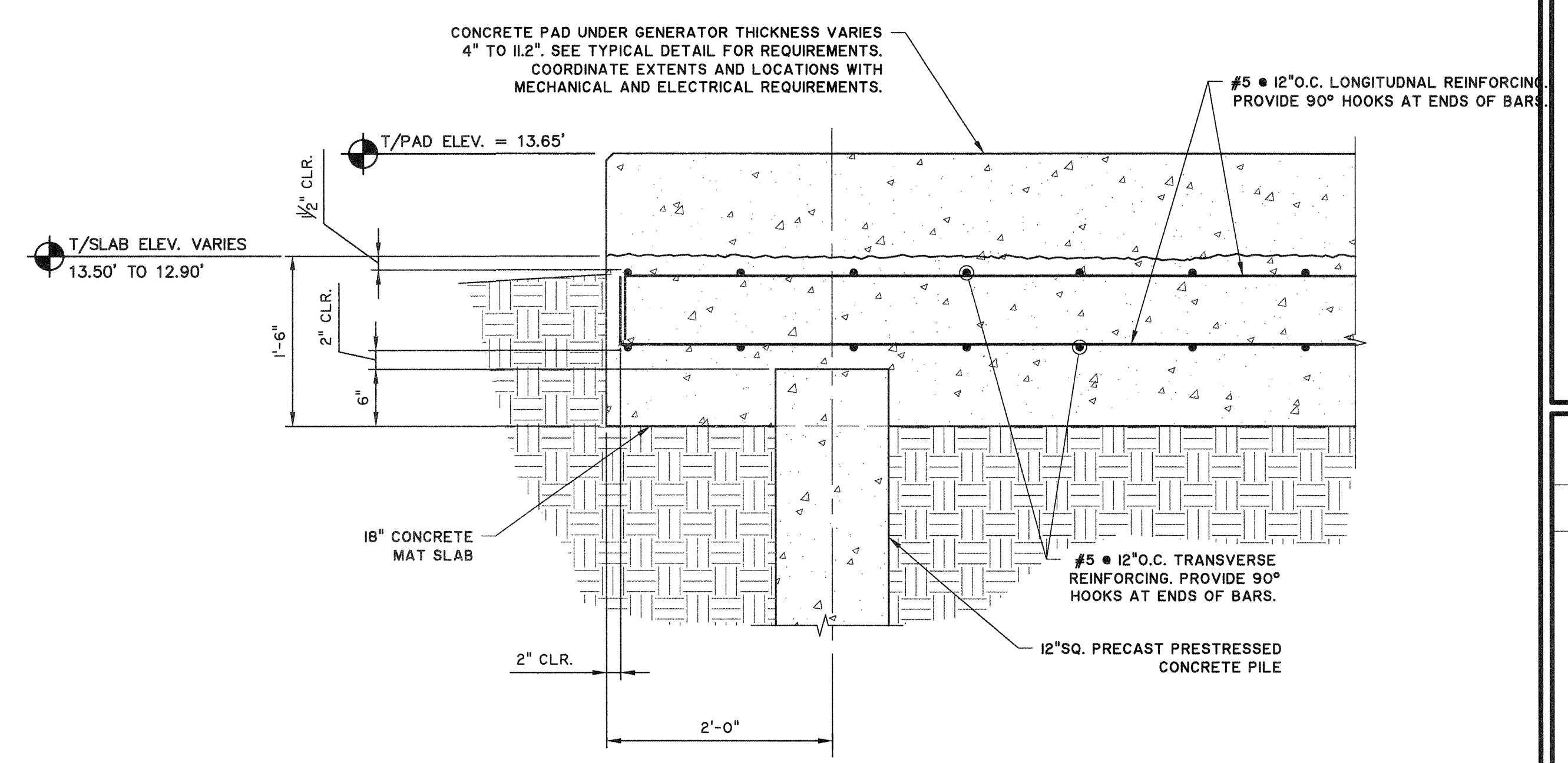
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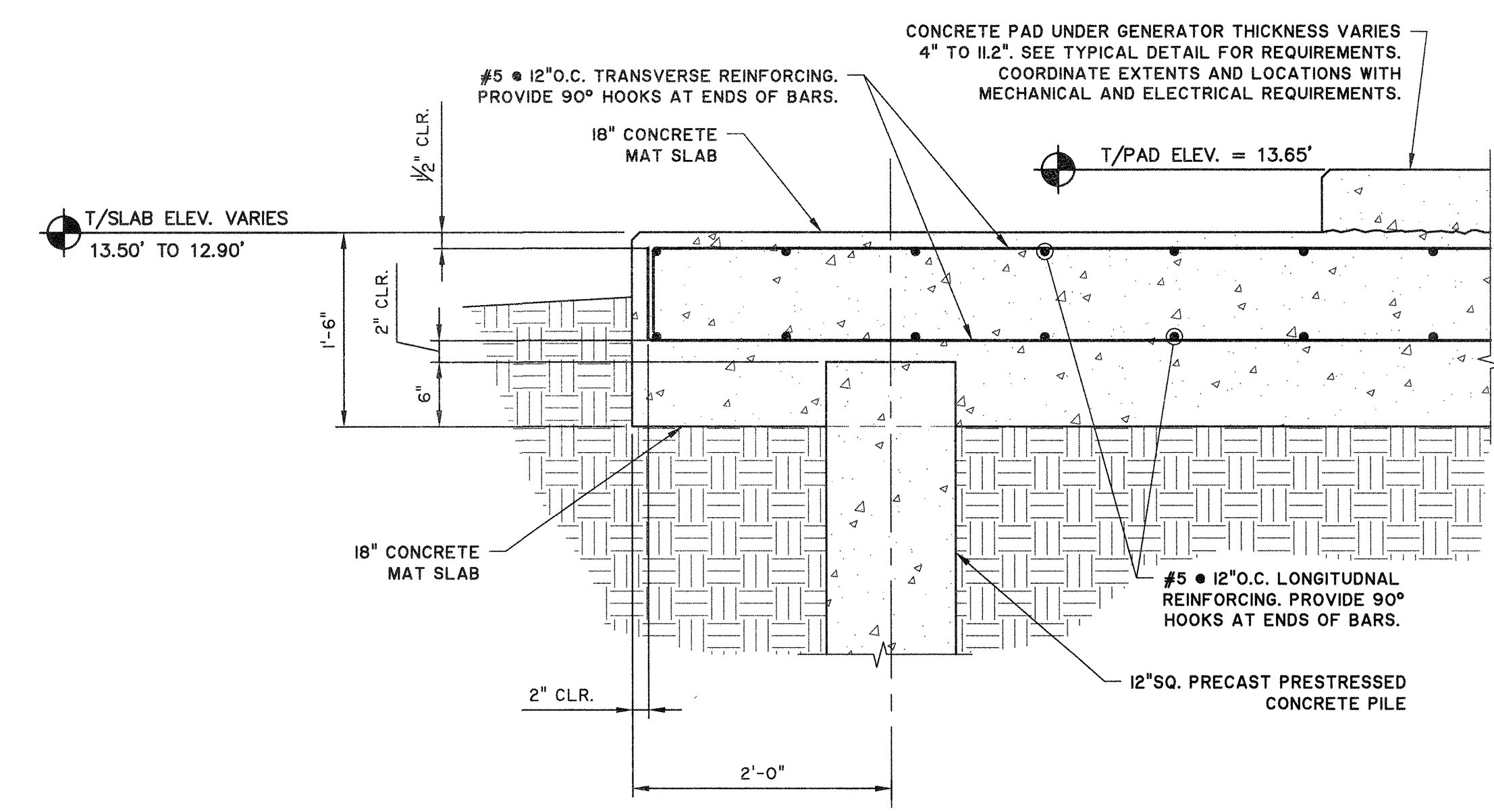


1 SLAB PLAN
S11.0 1/4" = 1'-0"

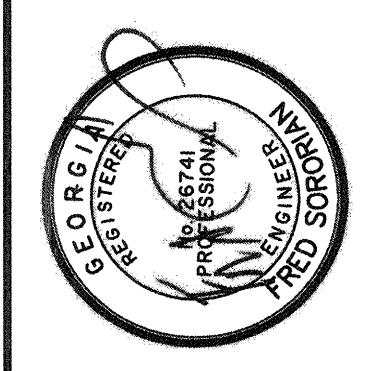
- NOTES:
- COORDINATE ELEVATED HOUSEKEEPING PAD DIMENSIONS AND GENERATOR ANCHORAGE REQUIREMENTS WITH GENERATOR SUPPLIER.
 - SLAB CONTROL JOINTS NOT SHOWN. PROVIDE CONTROL JOINTS AT 10'-0" O.C. MAXIMUM EACH WAY EVENLY SPACED. SEE TYPICAL DETAIL.



2 SECTION
S11.0 1" = 1'-0"



3 SECTION
S11.0 1" = 1'-0"



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S11.0

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