

15/03/2018 10:30 AM

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.

DESIGN INFORMATION

- 1. STRUCTURAL DESIGN CONFORMS TO THE REQUIREMENTS OF THE SOUTH CAROLINA STATE BUILDING CODE (IBC 2012 W/ MODIFICATIONS).
2. DESIGN LOADS AND PARAMETERS ARE AS FOLLOWS:
A. DEAD LOADS: ACTUAL WEIGHT OF MATERIALS AND EQUIPMENT
B. LIVE LOADS: SECOND FLOOR LOAD 80 PSF, EXTERIOR ELEVATED WALKWAYS 80 PSF, ELECTRICAL EQUIPMENT ON 2ND FLR 275 PSF, ROOF 20 PSF, ALUMINUM COVERS OVER BASINS 50 PSF, GRATING OVER BASINS 50 PSF
C. WIND LOAD: BASIC WIND SPEED (3 SEC GUST) 157 MPH, WIND EXPOSURE CATEGORY C, INTERNAL PRESSURE COEFFICIENT (Gcp1) +0.18
D. SEISMIC DESIGN DATA: OCCUPANCY CATEGORY III, SEISMIC IMPORTANCE FACTOR I/25, SPECTRAL RESPONSE COEFFICIENT Sds 0.765 g, SPECTRAL RESPONSE COEFFICIENT Sd1 0.391 g, SITE CLASS D, BASIC STRUCTURAL SYSTEM D, SEISMIC DESIGN CATEGORY D, SEISMIC RESISTING SYSTEM SPECIAL R/F MASONRY SHEARWALLS, SPECIAL REINFORCED R/F CONCRETE SHEARWALLS AND ORDINARY STEEL MOMENT FRAMES, SEISMIC BASE SHEAR ANALYSIS PROCEDURE Q174*W ELFA

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. FOUNDATION DESIGN IS BASED ON A SUBSURFACE INVESTIGATION BY TERRACON, DATED FEBRUARY 6, 2015, PROJECT NUMBER EN145129.
2. CONTRACTOR SHALL READ GEOTECHNICAL REPORT AND ADDENDUMS PRIOR TO COMMENCEMENT OF WORK AND SHALL FOLLOW RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER FOR PREPARATION OF THE SUBGRADE AND EXCAVATIONS.
3. GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA SHALL BE ENGAGED BY CONTRACTOR TO CONDUCT PILE TESTING PROGRAM, AS DETAILED HEREIN.
4. PILE DESIGN IS BASED UPON PILE LOAD CAPACITY INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT. CAPACITY REQUIREMENTS FOR PILE TESTING ARE OUTLINED IN THE PILE SPECIFICATION.
5. WHERE APPLICABLE, ALL EXCAVATIONS, COMPACTED FILL, AND SUBGRADES SHALL BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA TO VERIFY SPECIFIED GEOTECHNICAL CONFORMANCE REQUIREMENTS.
6. WHERE APPLICABLE, COMPACT SOIL MATERIALS TO NOT LESS THAN 98% OF MODIFIED PROCTOR DENSITY OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557.
7. DO NOT PLACE BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.

METAL DECK

- 1. UNLESS NOTED OTHERWISE, THE METAL DECK SHALL BE GALVANIZED, CONFORMING TO THE STEEL DECK INSTITUTE (SDI) SPECIFICATIONS, LATEST EDITION.
2. FLOOR DECK AT SECOND LEVEL SHALL BE 2", 20 GAUGE, COMPOSITE METAL DECK WITH 6x6 W2.IXW2.I WWR, AND SHALL BE GALVANIZED. FLOOR DECK SHALL HAVE THE FOLLOWING MIN SECTION PROPERTIES: Sp = 0.341 IN^3/FT AND Ip = 0.409 IN^4/FT.
3. 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.
4. DECKING SHALL BE CONTINUOUS OVER 3 SPANS MINIMUM WHERE SUPPORTING STRUCTURE PERMITS.
5. DECKING SHALL BE ERECTED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE.
6. SUBMIT PRODUCT DATA, INCLUDING SPAN TABLES, FOR REVIEW.
7. TOUCH UP AREAS DAMAGED IN HANDLING AND ERECTION WITH GALVANIZING REPAIR PAINT.
8. 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 APPROVED 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 = 1,500 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:

Table with 5 columns: BAR Ø, BAR SIZE, SPLICE/LAP LENGTH, HOOK DEVELOPMENT, HOOK LENGTH. Rows include .500 in. #4, .625 in. #5, .750 in. #6, .875 in. #7, 1.000 in. #8.

- 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 JOINT.
10. INSTALL MASONRY WALLS W/ 4'-0" MAXIMUM LIFTS.

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 (N.W.) WITH A MAXIMUM UNIT WEIGHT OF 150 PCF, AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
3. CONCRETE MIX DESIGNS, IN ACCORDANCE WITH ACI 318 SECTION 5.3, SHALL BE SUBMITTED TO THE ENGINEER AND TESTING AGENCY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE REQUIRED CONCRETE DESIGN STRENGTH.
4. USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
5. THE AIR CONTENT IN ALL CONCRETE EXPOSED TO WEATHER SHALL BE BETWEEN 3% AND 6%.
6. 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.
7. 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.
8. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, AND SHALL BE GRADE 60 UNLESS OTHERWISE NOTED.
9. LAP SPLICES SHALL BE AS SHOWN IN THE TABLE PROVIDED IN THESE NOTES AND SHALL CONFORM TO ACI 318. SHOULD CONFLICTS EXIST, THE STRICTEST PROVISION SHALL APPLY.
10. REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.
11. WELDING OF REINFORCING STEEL IS NOT PERMITTED.
12. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:
A. CONCRETE CAST AGAINST EARTH (NOT FORMED) 3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER #5 & SMALLER 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. REINFORCEMENT SPLICE/LAP LENGTH, HOOK DEVELOPMENT AND HOOK LENGTH TABLE SHOWN BELOW IS BASED UPON A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI AND 60,000 PSI REINFORCEMENT (WITH NO EPOXY COATING).
19. 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.
20. 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.

Table with 5 columns: BAR Ø, BAR SIZE, SPLICE/LAP LENGTH, HOOK DEVELOPMENT, HOOK LENGTH. Rows include .375 in. #3, .500 in. #4, .625 in. #5, .750 in. #6, .875 in. #7, 1.000 in. #8, 1.128 in. #9.

STRUCTURAL STEEL

- 1. ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO AISC 360-10 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AND AISC 303-10 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. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL CONFORM TO ASTM A992, GRADE 50. HP SHAPES MAY BE A572, GRADE 50, CHANNELS, ANGLES AND PLATES MAY BE ASTM A36 UNLESS NOTED OTHERWISE. SQUARE AND RECTANGULAR TUBES SHALL CONFORM TO ASTM A500, GRADE B. ALL TUBE STEEL AND PIPE STEEL SHALL BE CAPPED WITH A 1/4" PLATE MINIMUM.
4. STEEL FRAMING CONNECTIONS SHALL BE BOLTED OR WELDED:
A. BOLTED JOINTS SHALL CONFORM TO AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". BOLTS SHALL CONFORM TO ASTM A325, AND SHALL BE MINIMUM 3/4" DIAMETER. UNLESS NOTED OTHERWISE PROVIDE DIRECT TENSION INDICATORS (LOAD INDICATING WASHERS OR SNAP OFF BOLTS) IN ACCORDANCE WITH ASTM F959 AT ALL HIGH STRENGTH BOLTS.
B. WELDS SHALL CONFORM TO THE "STRUCTURAL WELDING CODE" OF THE AMERICAN WELDING SOCIETY, AWS D11. USE E70XX ELECTRODES. WELDING PROCESSES AND OPERATORS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATIONS PROCEDURES". WELDERS SHALL CARRY PROOF OF QUALIFICATIONS ON THEIR PERSONS.
5. ANCHOR BOLTS SHALL CONFORM TO ASTM F 1554 GRADE 36 UNLESS NOTED OTHERWISE.
6. DO NOT USE GAS CUTTING TORCHES FOR CORRECTING FABRICATION ERRORS IN THE STRUCTURAL FRAMING.
7. ALL STEEL SHALL BE HOT DIP GALVANIZED.
8. PACK UNDER BASE PLATES WITH NON-SHRINK, HI-STRENGTH GROUT (MINIMUM 6,000 PSI) AFTER SETTING AND LEVELING.
9. 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.
COLD FORMED METAL FRAMING (CFMF)
1. UNLESS NOTED OTHERWISE, ALL DESIGN, DETAILING, FABRICATION AND ERECTION OF PREFABRICATED CFMF SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF AISI'S "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
2. ALL CFMF MEMBERS SHALL BE GALVANIZED.
3. CFMF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:
A. LIVE LOAD 20 PSF
B. DEAD LOAD TOP CHORD 10 PSF
C. DEAD LOAD BOTTOM CHORD 15 PSF
D. WIND LOADS SHOWN ON DRAWINGS
4. CFMF TRUSS SHOP DRAWINGS, SIGNED & SEALED BY A SOUTH CAROLINA PROFESSIONAL ENGINEER, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. PRIOR TO FABRICATION OF THE CFMF TRUSSES.
5. CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING OF CFMF TRUSSES AGAINST WIND LOADS, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL STRUCTURE IS COMPLETE.
6. SEE SPECIFICATION FOR INTERIOR WALL STUD REQUIREMENTS.

PRE-CAST PRESTRESSED 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 THE GENERAL NOTES, SCDOT SPECIFICATIONS SECTION 704, "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 THE FOLLOWING).
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.
G. METHODS AND EQUIPMENT PROPOSED TO PREVENT DISPLACEMENT OF PILES DURING PLACEMENT AND COMPACTION OF FILL WITHIN 20 FEET OF PILES.
3. SUBMIT A PILE DRIVING RECORD FOR EACH PILE, AS INSTRUCTED IN THE PILE SPECIFICATION, WITHIN THREE DAYS OF DRIVING.
4. NO PILE SHALL BE DRIVEN WITHIN 20 FEET OF CONCRETE THAT IS LESS THAN 4 DAYS OLD.
5. PILES SHALL BE CAREFULLY LOCATED TO THE LINES AND SPACING INDICATED ON THE DRAWINGS. PILE BUTTS SHALL NO 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.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL FIELD ENGINEERING REQUIRED FOR CONSTRUCTION, FURNISHING ALL LINES, GRADES AND CONTROL POINTS.
7. 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 HAD TO ENABLE THE PILE TO ROTATE SLIGHTLY WITHOUT BINDING.
8. 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.
9. PILES ARE TO BE DRIVEN CONTINUOUSLY TO THE MINIMUM TIP ELEVATION AND DESIGN BEARING CAPACITY WITHOUT INTERRUPTION.
10. 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.
11. PRACTICAL REFUSAL SHALL BE DEFINED AS 2.5 TIMES THE DESIGN BEARING CAPACITY WITH A MINIMUM PENETRATION OF 40'-0" BELOW EXISTING GRADE.
12. 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.
13. 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.
14. 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.
15. 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.

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.

SPECIAL INSPECTIONS

- 1. THE OWNER SHALL EMPLOY SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION AS NOTED HEREIN.
2. 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.
3. SPECIAL INSPECTION PROCEDURES SHALL BE COMPLETED IN ACCORDANCE WITH IBC 2012, CHAPTER 17. AT A MINIMUM, SPECIAL INSPECTIONS SHALL INCLUDE THE ITEMS LISTED BELOW. IF CONFLICTS EXIST BETWEEN THE CODE AND THE REQUIREMENTS STATED BELOW, THE STRICTEST PROVISION SHALL GOVERN.

STEEL:

- WELDING - PERIODIC (FILET), CONTINUOUS (PARTIAL PEN, MOMENT FRAMES)
FRAMING - PERIODIC
BOLT MATERIALS - PERIODIC
BEARING-TYPE BOLTED CONNECTIONS - PERIODIC
REINFORCING STEEL FOR SPECIAL R/F SHEAR WALLS - CONTINUOUS
REINFORCING STEEL OTHER - PERIODIC

CONCRETE:

- USE OF REQUIRED MIX - PERIODIC
SAMPLING FOR TESTING - CONTINUOUS
PLACEMENT - CONTINUOUS
CURING - PERIODIC
FORMWORK - PERIODIC

MASONRY:

- MORTAR & CONSTRUCTION OF MORTAR JOINTS - PERIODIC
LOCATION & PLACEMENT OF R/F, CONNECTORS & ANCHORAGE - CONTINUOUS
SIZE & LOCATION OF STRUCTURAL ELEMENTS - PERIODIC
TYPE, SIZE & LOCATION OF ANCHORS - PERIODIC
SIZE, GRADE & TYPE OF REINFORCEMENT - CONTINUOUS
PROTECTION OF UNITS DURING COLD/HOT WEATHER - PERIODIC
PREPARATION OF GROUT SPACE - PERIODIC
GROUT PLACEMENT - CONTINUOUS
PREPARATION OF GROUT & MORTAR SPECIMENS - CONTINUOUS
VERIFICATION OF MASONRY & GROUT PROPERTIES PRIOR TO CONSTRUCTION - CONTINUOUS

SOIL: ALL AS NOTED IN TABLE I704.7

PILES:

- MATERIALS, SIZES, LENGTHS - CONTINUOUS
RESULTS OF TEST PILES - CONTINUOUS
DRIVING OPERATIONS & MAINTAIN RECORDS FOR EACH PILE - CONTINUOUS

GENERAL:

- COMPLIANCE WITH REQ'D INSPECTION PROVISIONS OF CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS - PERIODIC

- 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) - PERIODIC

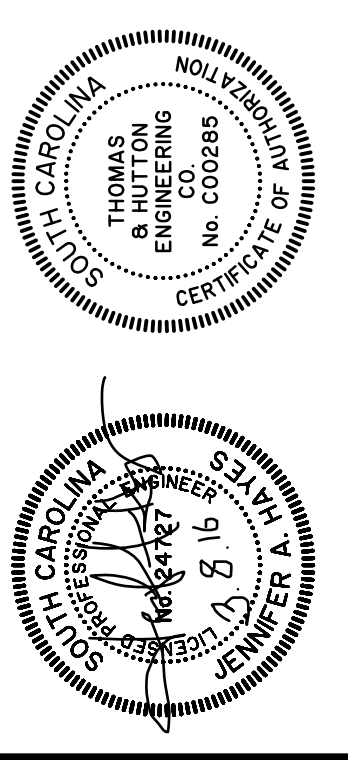
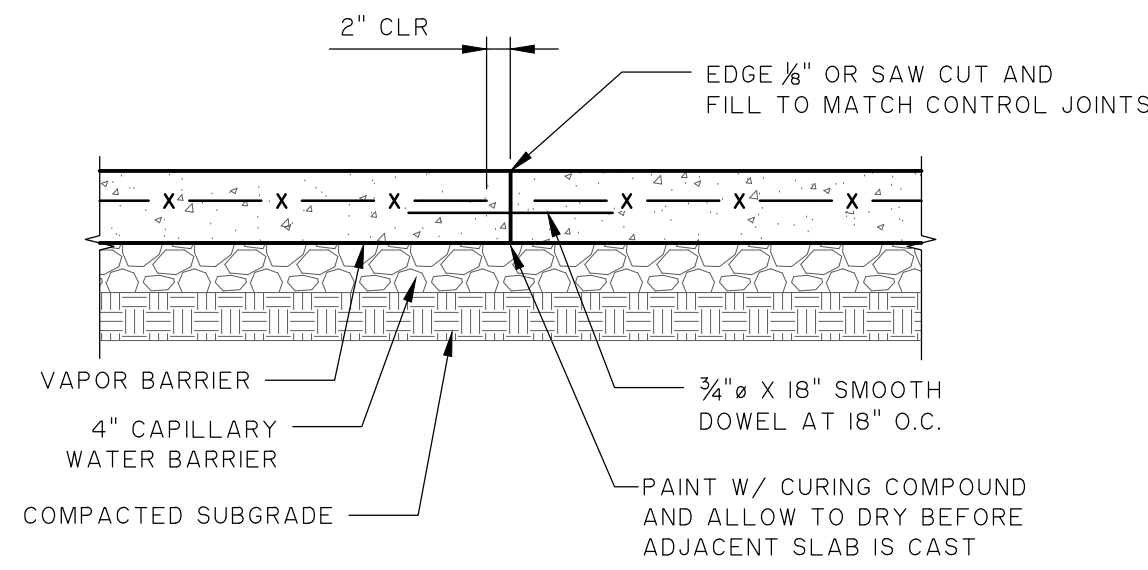


Table with 2 columns: NO., DATE. Includes a REVISIONS column.

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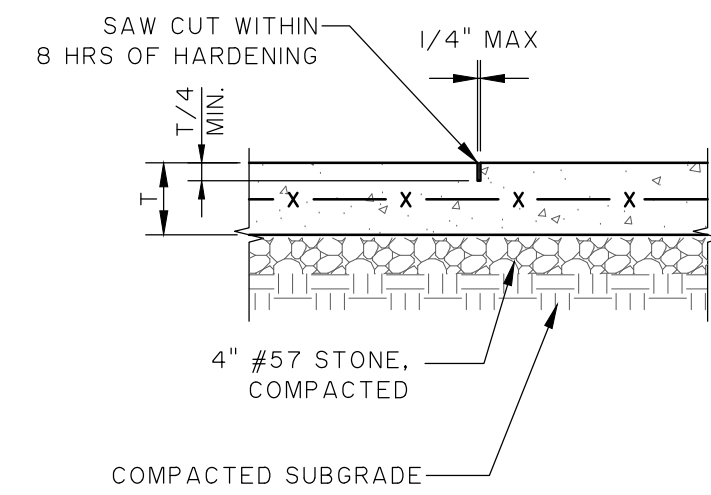
KIAWAH RIVER PLANTATION CHARLESTON COUNTY, SOUTH CAROLINA
KIAWAH RIVER PLANTATION WWTP
STRUCTURAL NOTES & DETAILS
JOB NO: J-25328.0000
DATE: 12/18/15
DRAWN: JAH
DESIGNED: JAH/SHG
REVIEWED: JAH/SHG
APPROVED: MFY
SCALE: AS NOTED

01-S-01



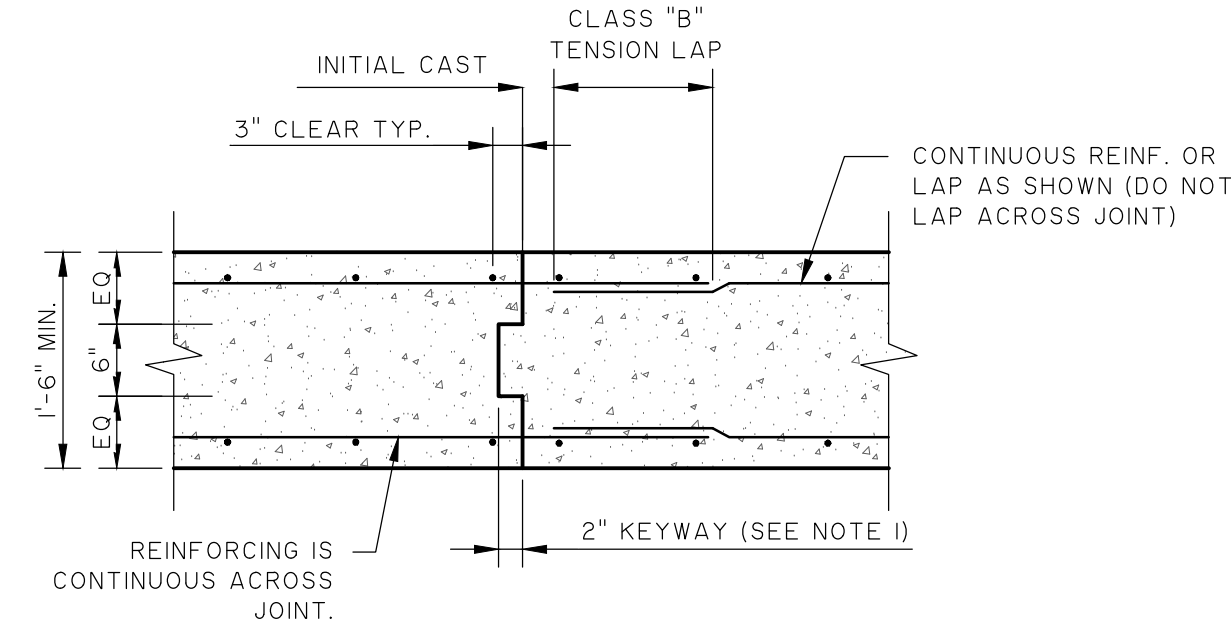
1 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL

01-S-02 3/4" = 1'-0"



2 TYPICAL CONTROL JOINT DETAIL

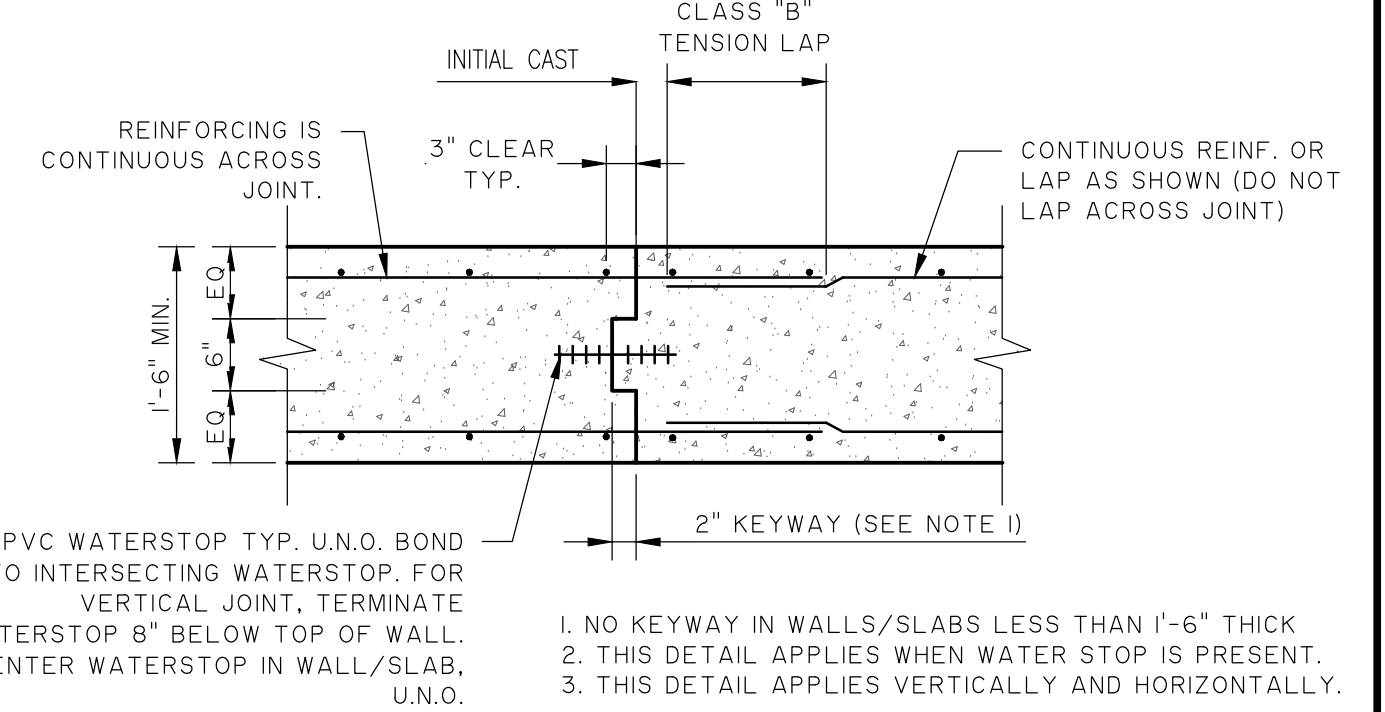
01-S-02 3/4" = 1'-0"



3 CONSTRUCTION JOINT DETAIL W/O WATER STOP

01-S-02 3/4" = 1'-0"

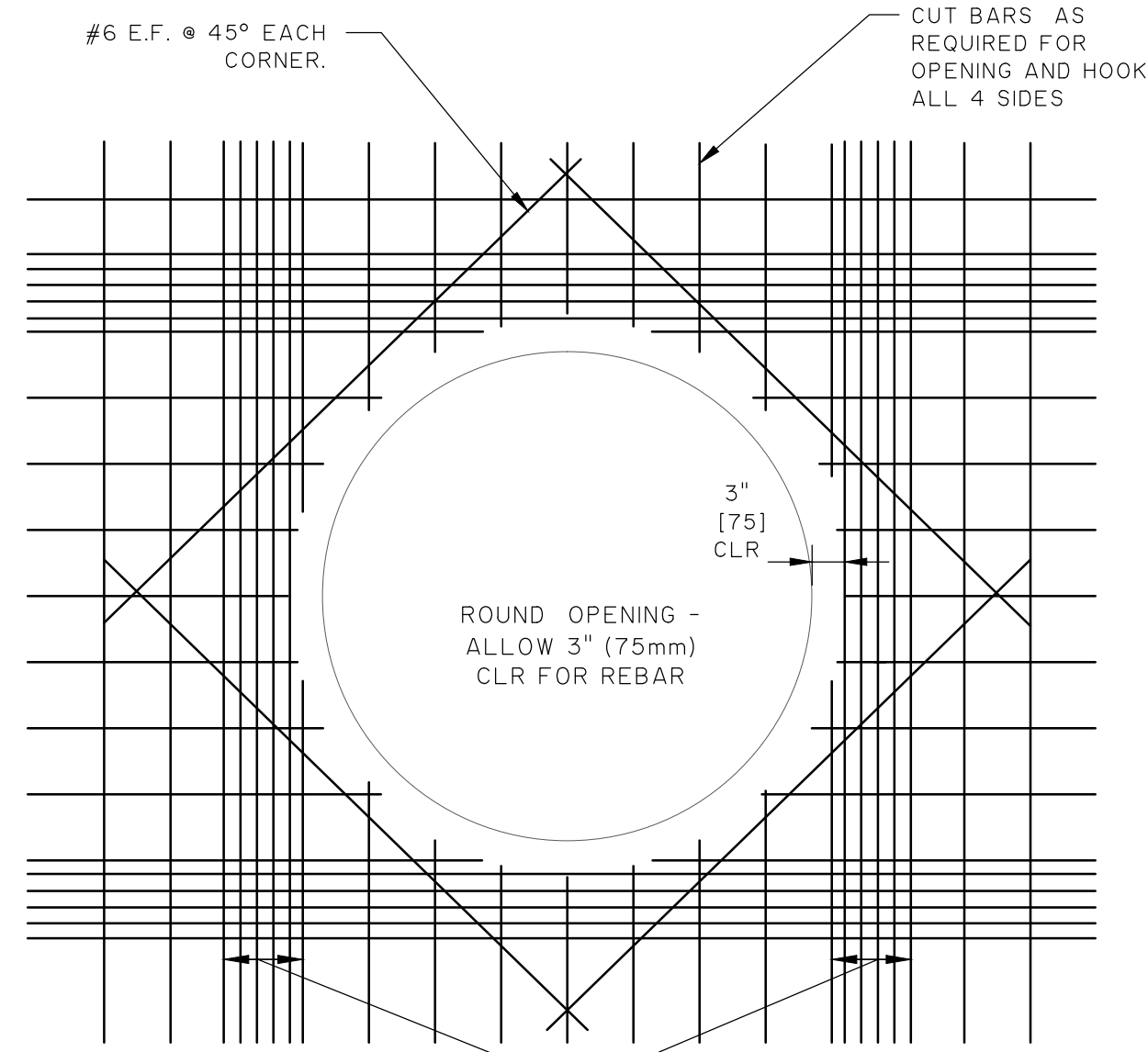
- NOTES:
1. NO KEYWAY IN WALLS/SLABS LESS THAN 1'-6" THICK
 2. THIS DETAIL APPLIES WHERE WATER IS ALWAYS PRESENT ON BOTH SIDES OF THE WALL (NO WATER STOP NEEDED).
 3. THIS DETAIL APPLIES VERTICALLY AND HORIZONTALLY.



4 CONSTRUCTION JOINT DETAIL W/ WATER STOP

01-S-02 3/4" = 1'-0"

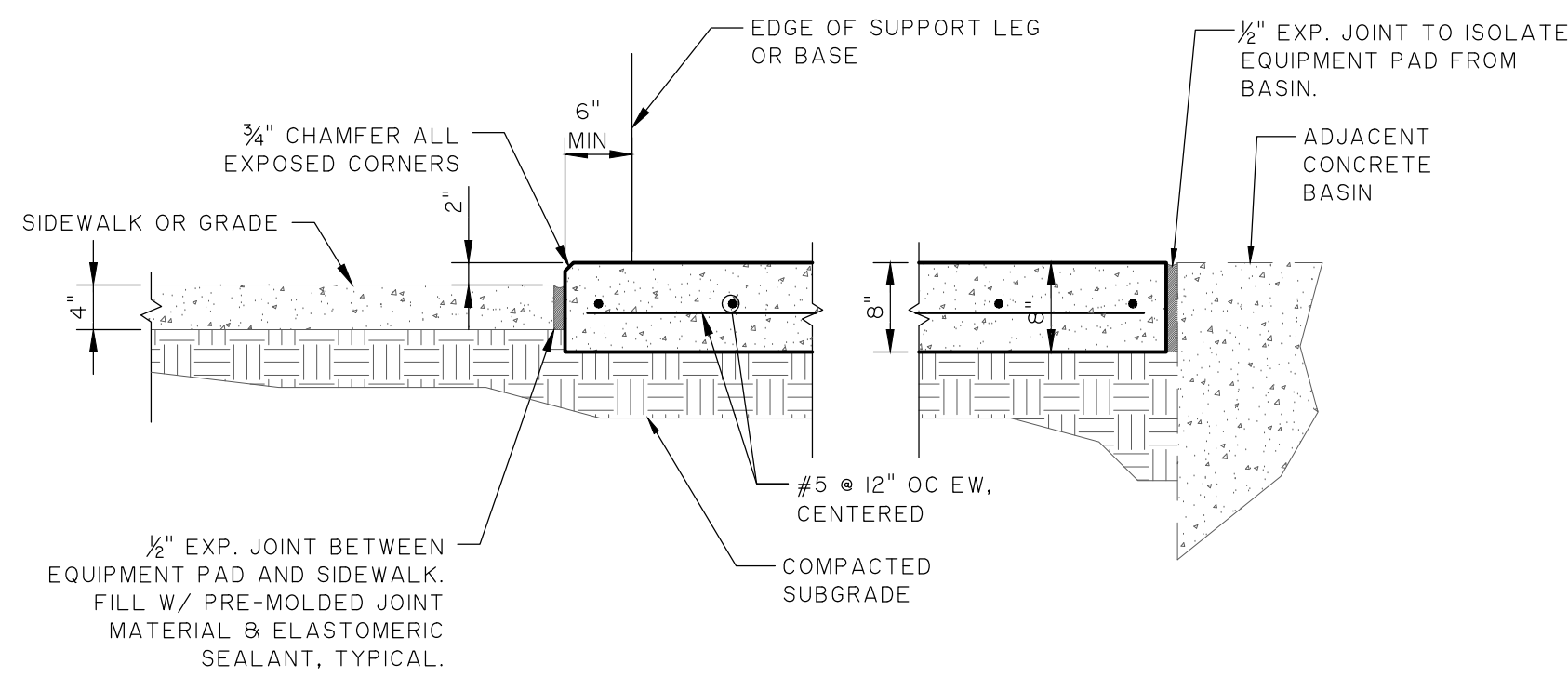
- NOTES:
1. NO KEYWAY IN WALLS/SLABS LESS THAN 1'-6" THICK
 2. THIS DETAIL APPLIES WHEN WATER STOP IS PRESENT.
 3. THIS DETAIL APPLIES VERTICALLY AND HORIZONTALLY.



5 R/F AT OPENINGS IN CONCRETE WALLS

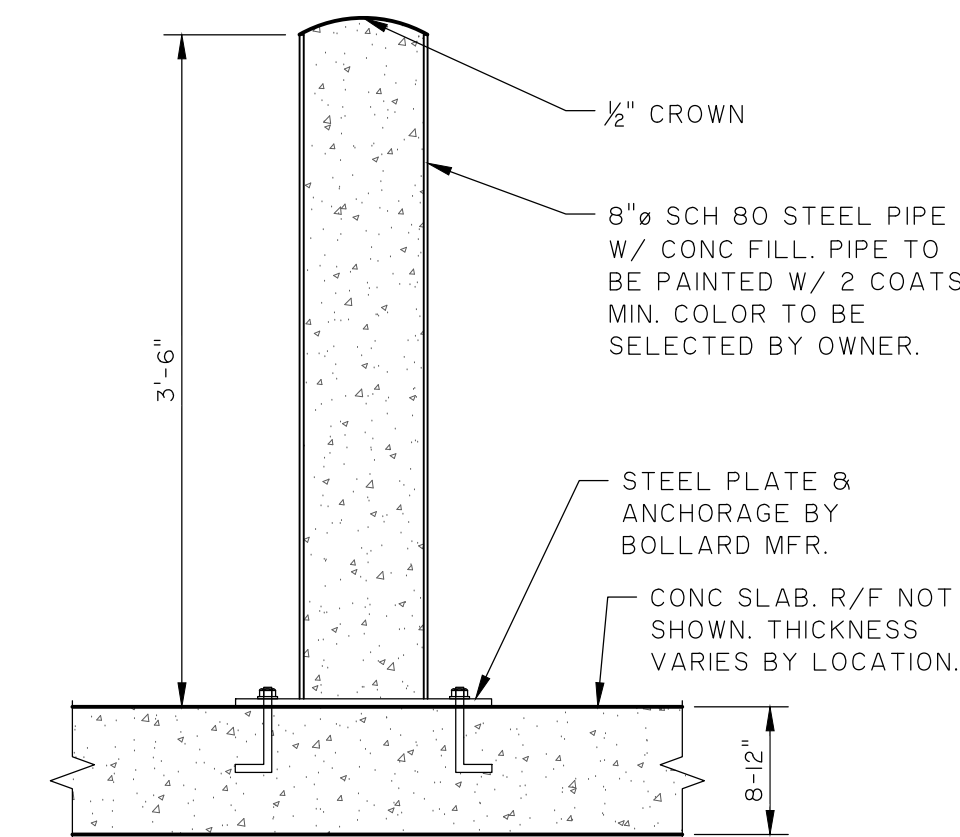
01-S-02 3/4" = 1'-0"

NOTE: THIS DETAIL APPLIES TO ROUND OPENINGS UP TO 30" DIAMETER MAXIMUM



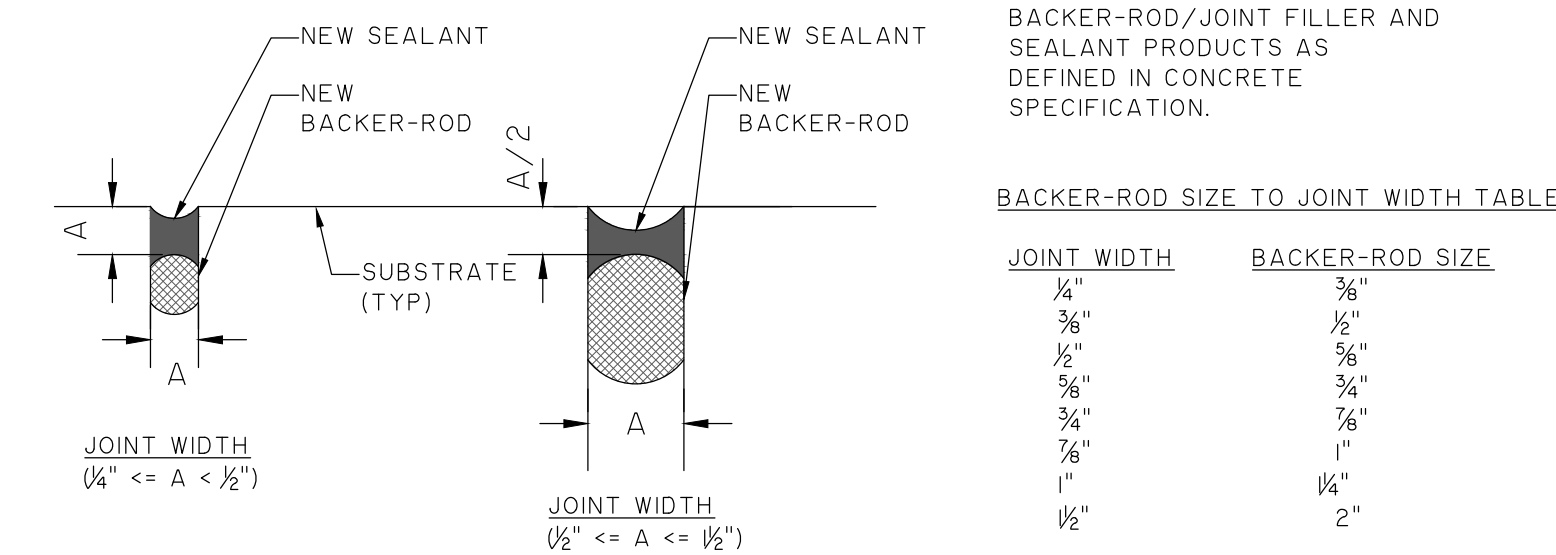
6 SECTION AT EQUIPMENT PAD

01-S-02 3/4" = 1'-0"



7 TYP BOLLARD ON STRUCTURAL SLAB

01-S-02 1" = 1'-0"



JOINT SEALANT REQUIREMENTS:

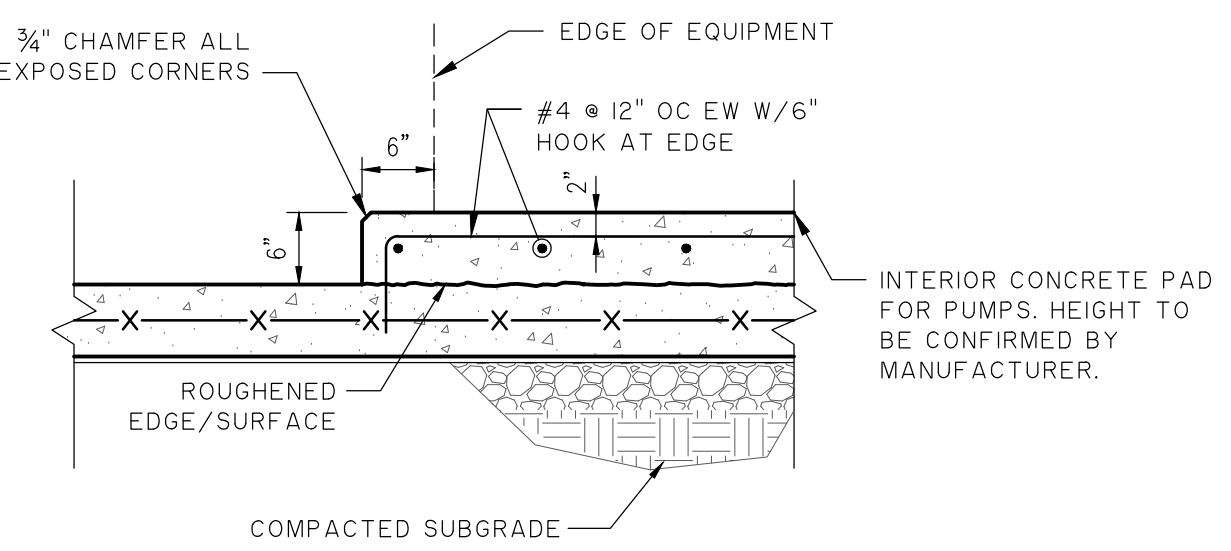
1. NO JOINT SEALANTS SMALLER THAN 1/4"
2. NO JOINT SEALANTS LARGER THAN 1/2"
3. SEALANT THICKNESS NO LESS THAN 1/4"
4. SEALANT THICKNESS NO GREATER THAN 1"
5. BACKER-ROD = CLOSED-CELL PRE-FORMED JOINT FILLER. SIZE SEE TABLE.
6. JOINTS OVER 1/2" CAN BE PERFORMED WITH CLOSED CELL RIGID FOAM ISULATION.

BACKER-ROD SIZE TO JOINT WIDTH TABLE

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

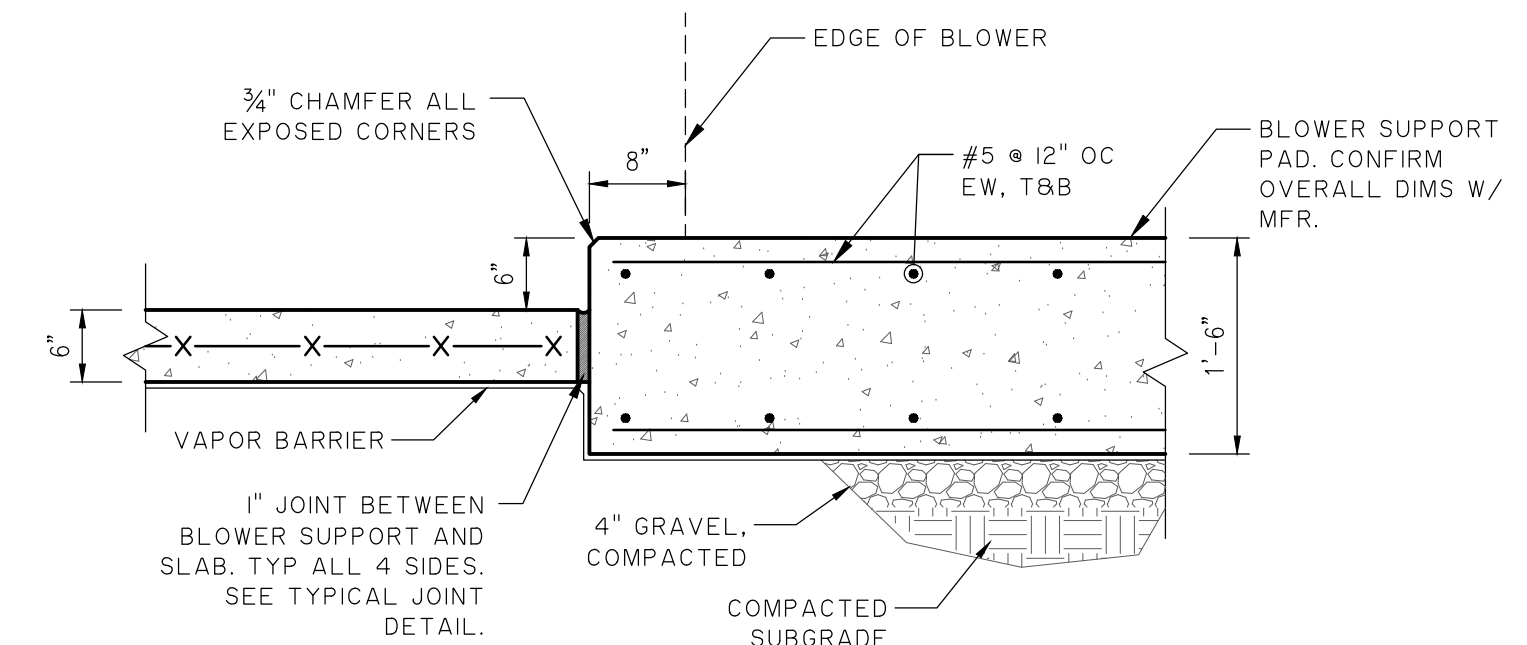
8 TYPICAL JOINT DETAIL

01-S-02 6" = 1'-0"



10 CONC PAD UNDER PUMP

01-S-02 3/4" = 1'-0"



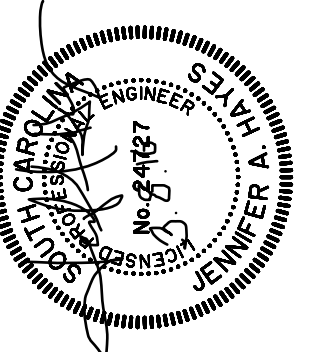
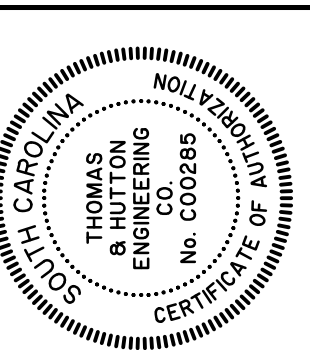
11 CONC PAD UNDER BLOWER

01-S-02 3/4" = 1'-0"

9 SECTION AT GENERATOR PAD

01-S-02 3/4" = 1'-0"

- NOTES:
1. GENERATOR ANCHORAGE TO BE PROVIDED BY MFR. APPROX. DIMENSIONS OF PAD PROVIDED HEREIN TO BE CONFIRMED BY ENGINEER FOLLOWING RECEIPT OF GENERATOR SUBMITTAL.
 2. SEE 35-S-01 FOR LOCATION AND ADD'L INFORMATION.



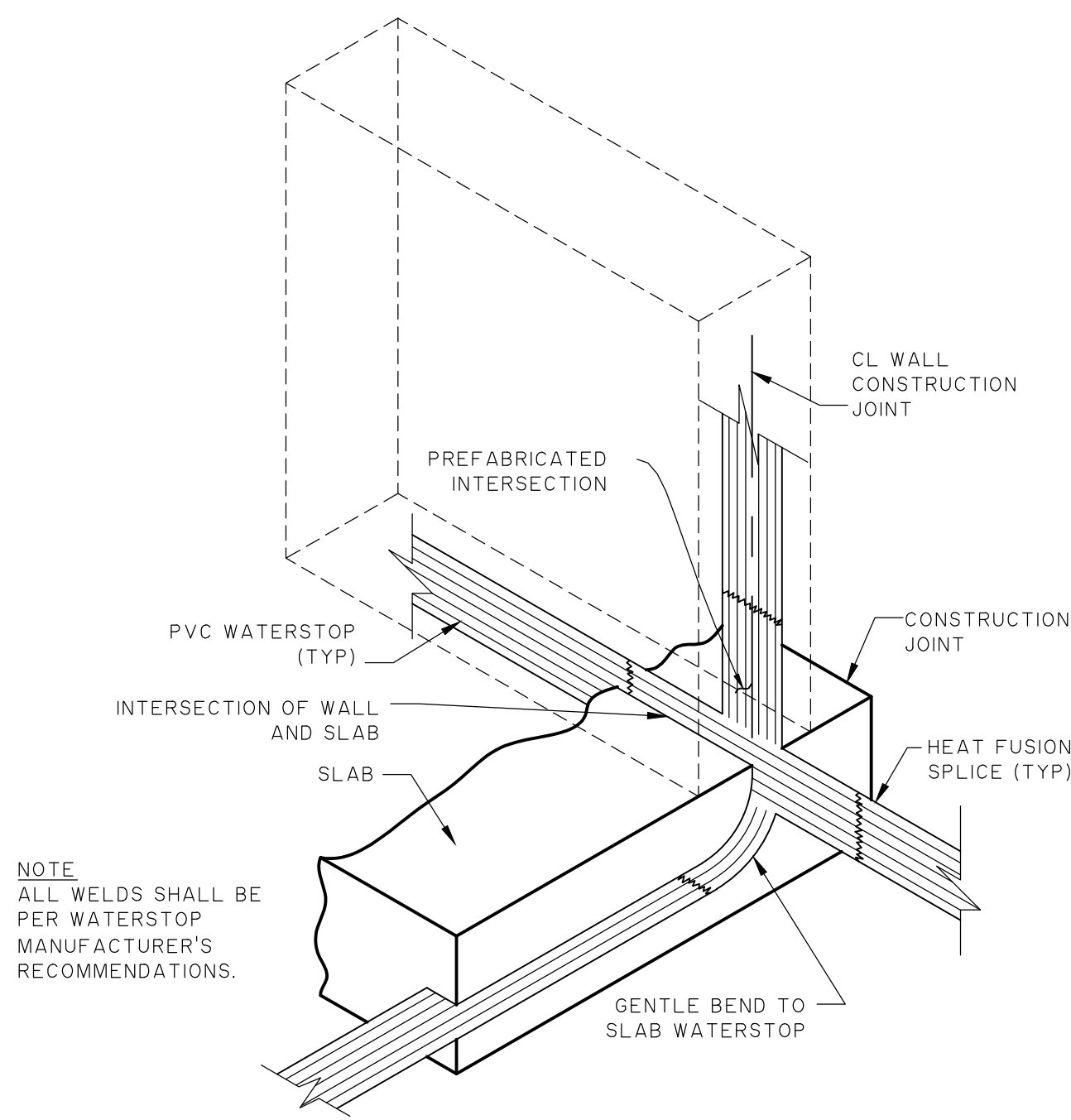
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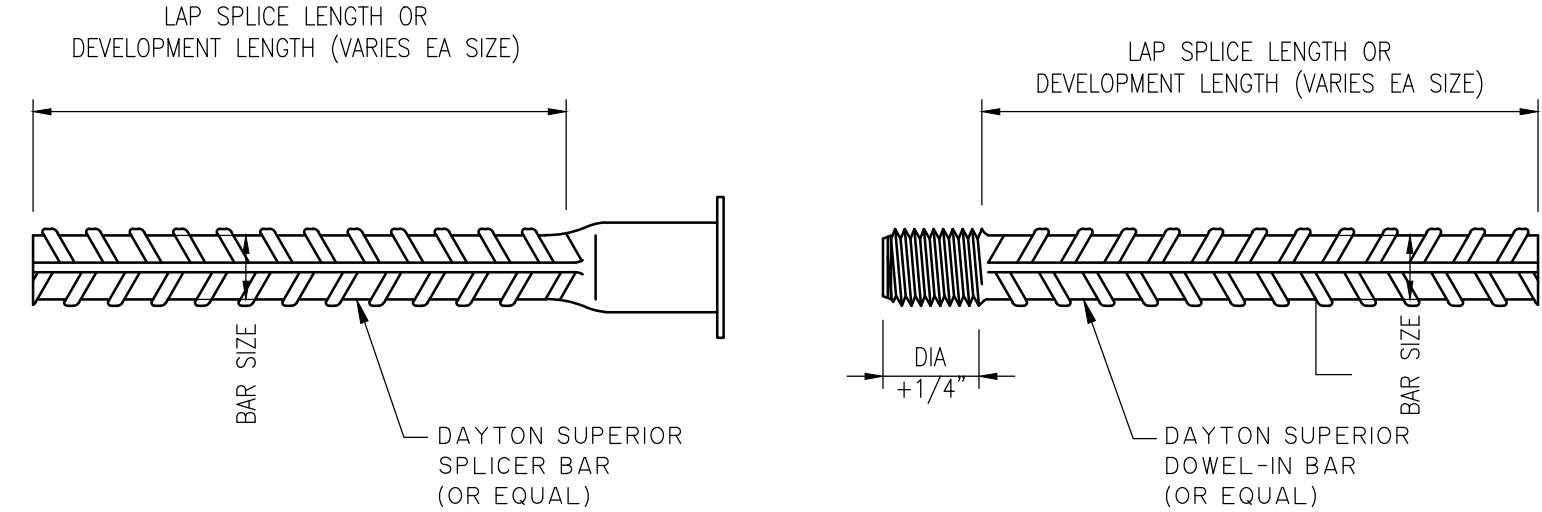
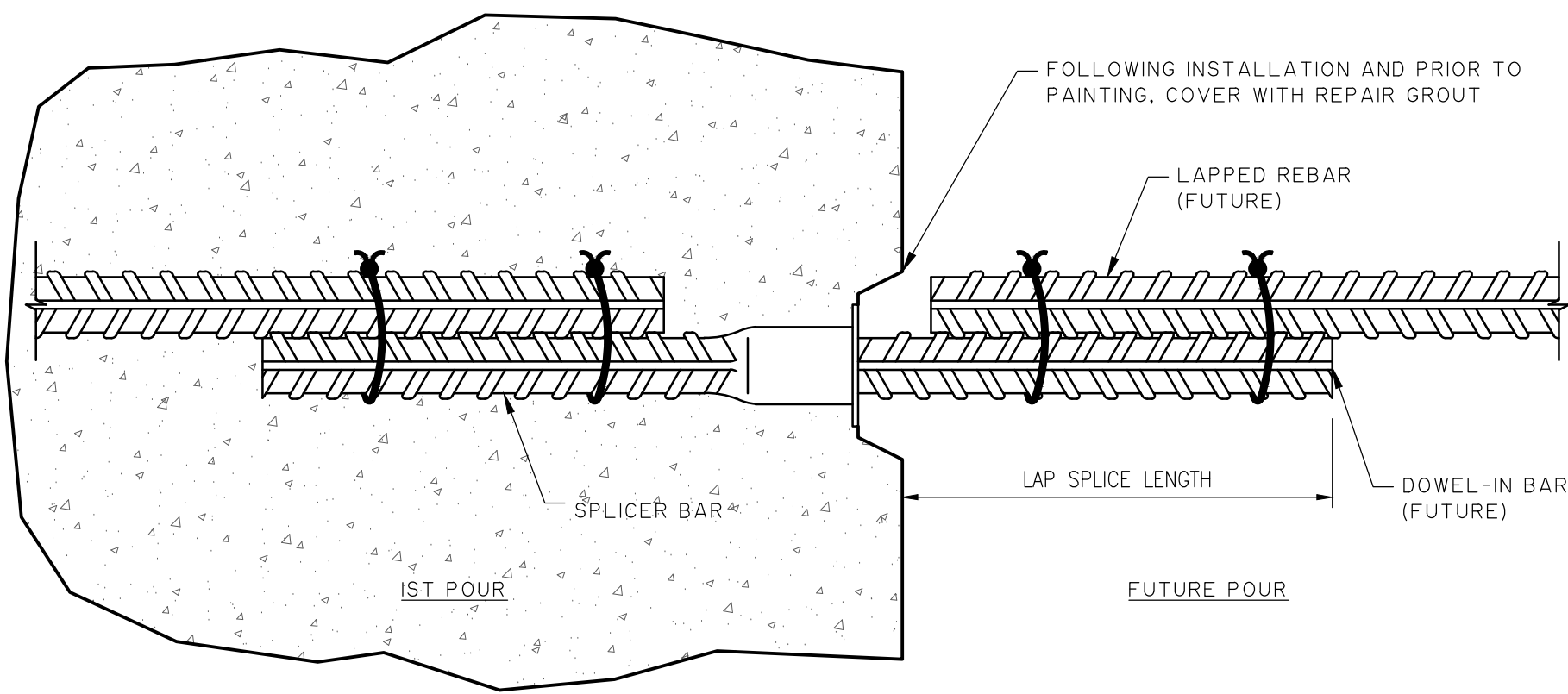
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 CHARLESTON COUNTY, SOUTH CAROLINA
 KIAWAH RIVER PLANTATION WWTP
 STRUCTURAL DETAILS

JOB NO: J-25328.0000
 DATE: 12/18/15
 DRAWN: JAH
 DESIGNED: JAH
 REVIEWED: JAH/SHG
 APPROVED: MFY
 SCALE:

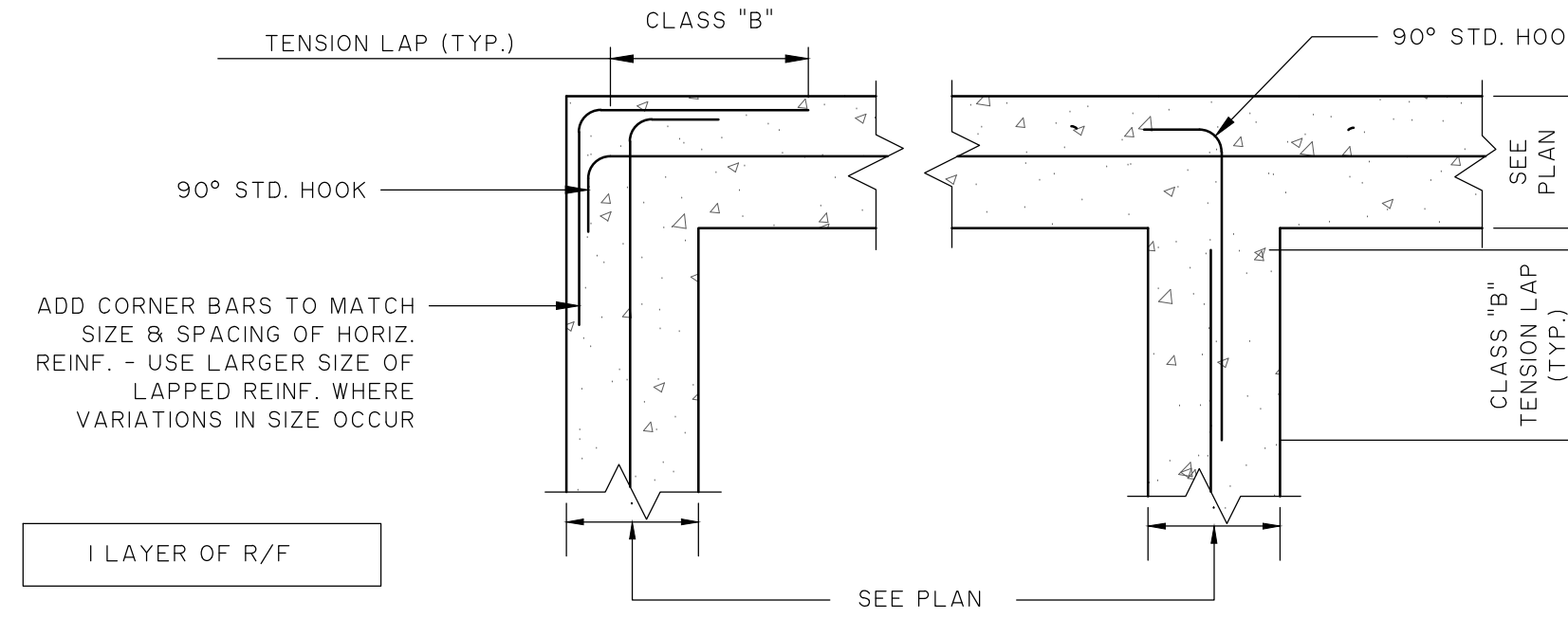
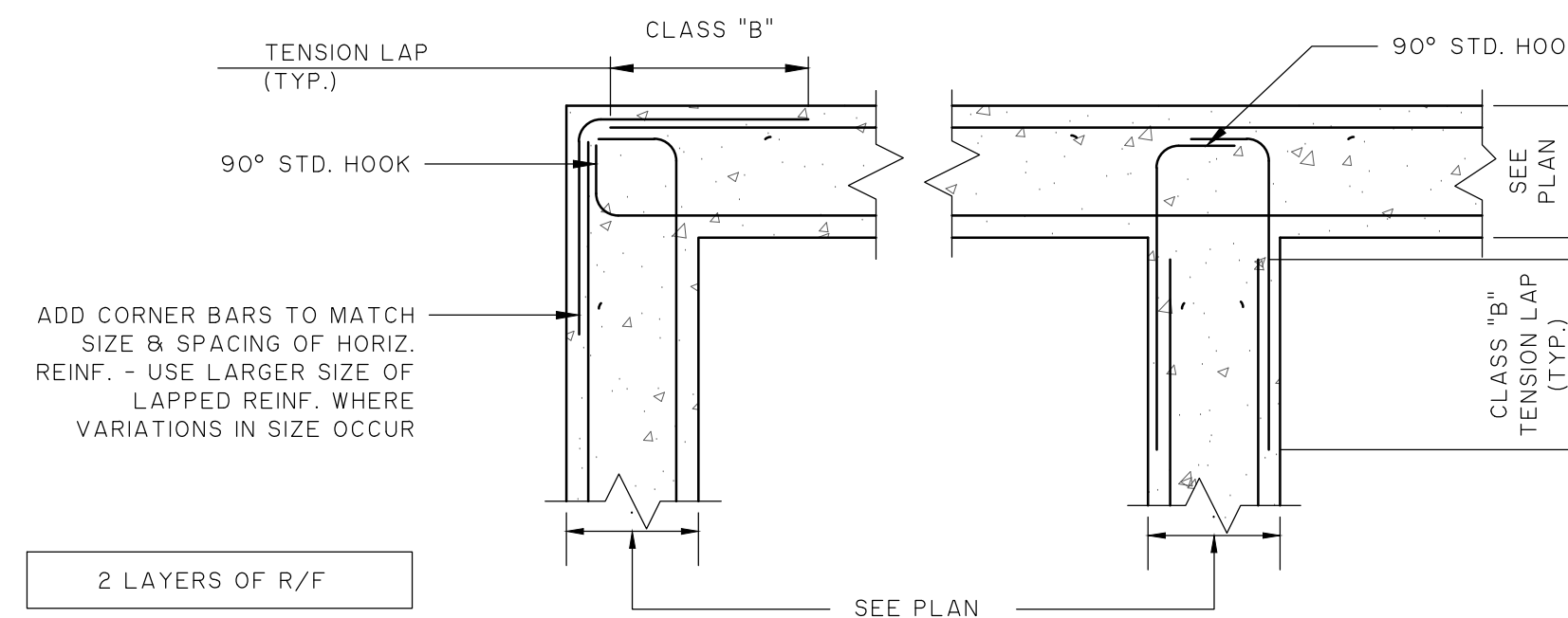
01-S-02



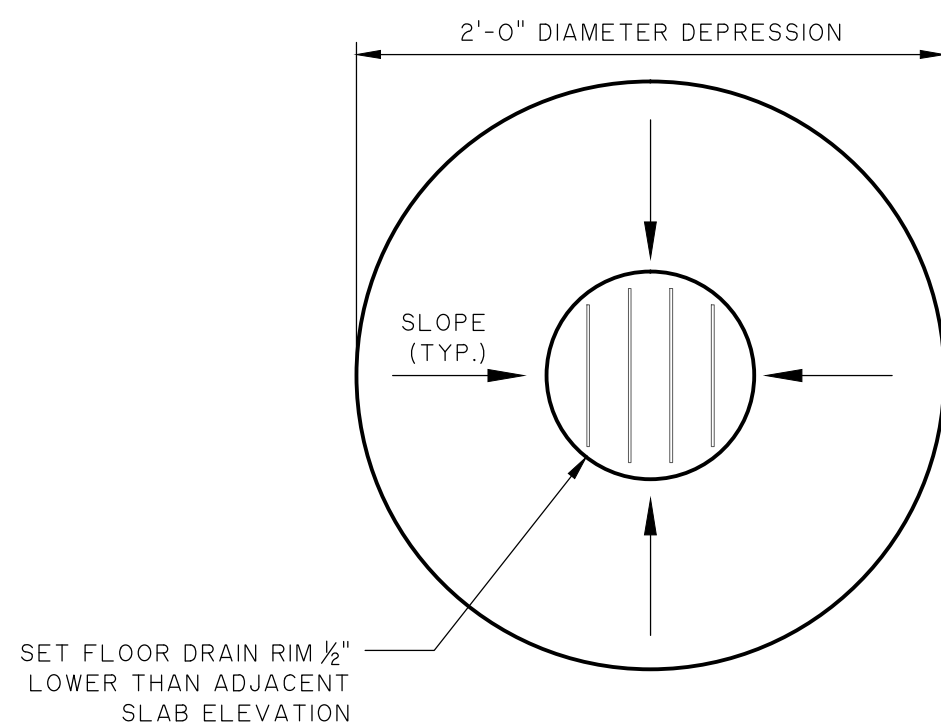
1 WATERSTOP INTERSECTION
01-S-03 3/4" = 1'-0"



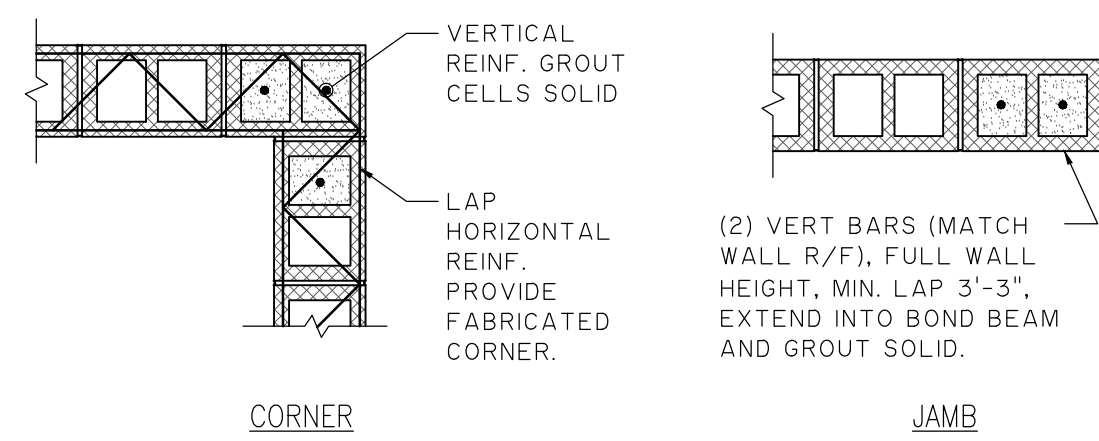
2 DOWEL SPLICER FOR FUTURE
01-S-03 NTS



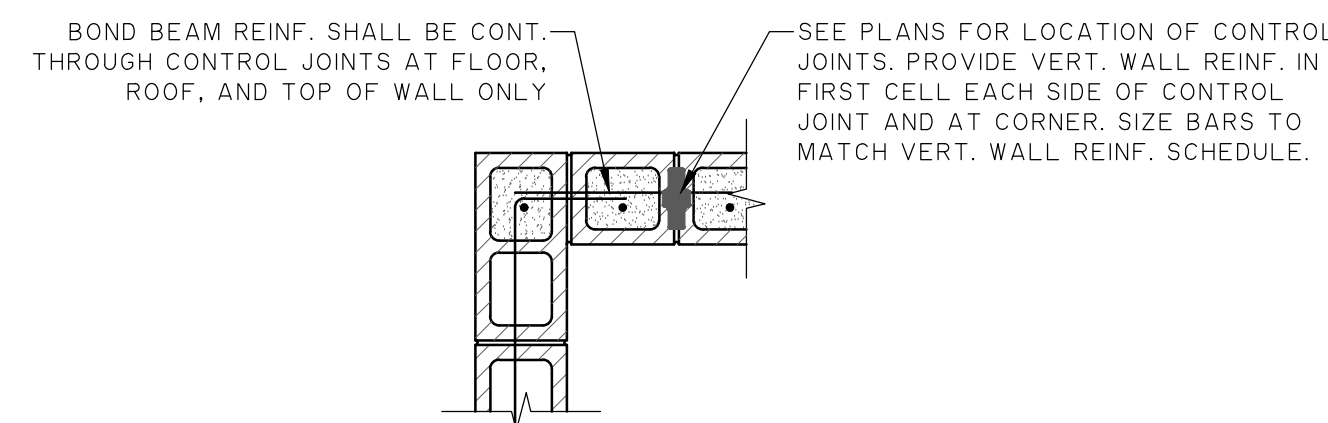
3 CONCRETE R/F AT CORNERS & INTERSECTIONS
01-S-03 NTS



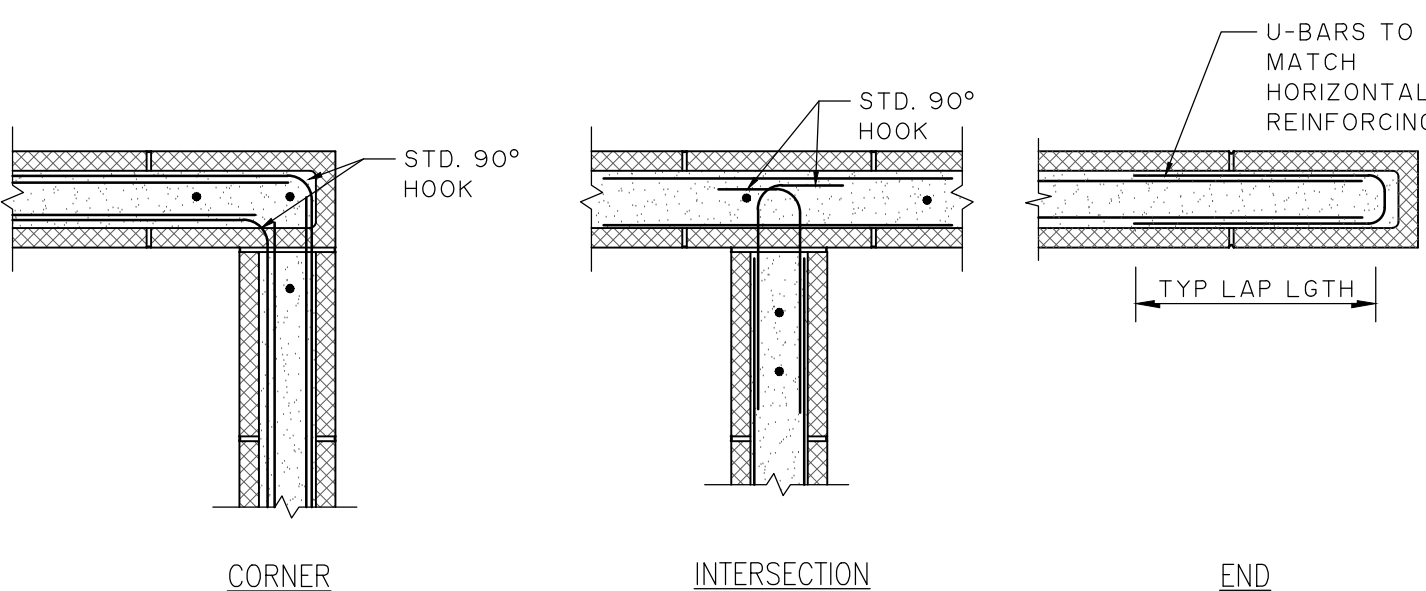
4 TYP INTERIOR FLOOR DRAIN
01-S-03 NTS



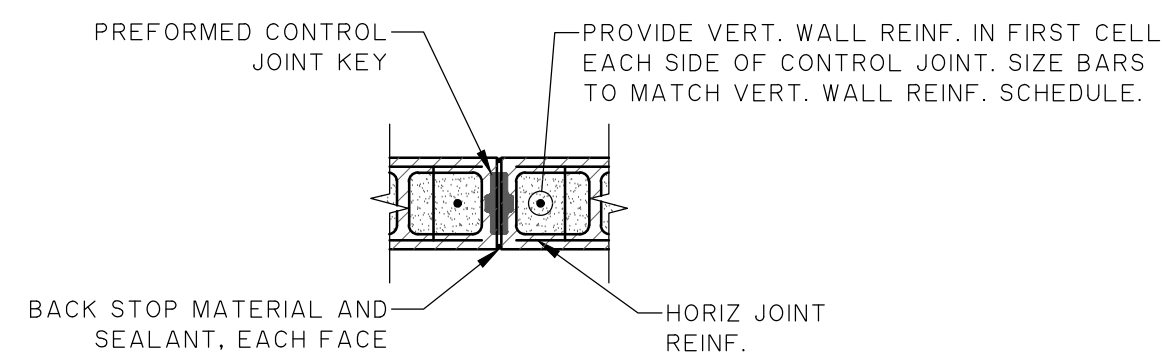
5 CMU CORNER & JOINT R/F
01-S-03 NTS



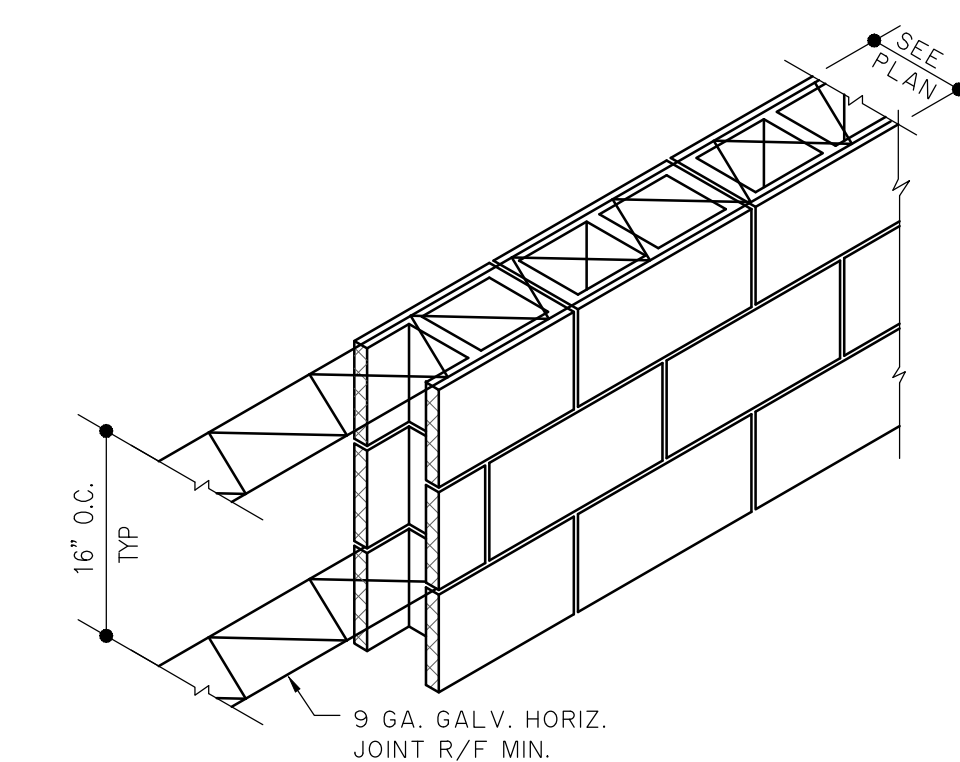
6 CMU CONTROL JOINT - CORNER
01-S-03 NTS



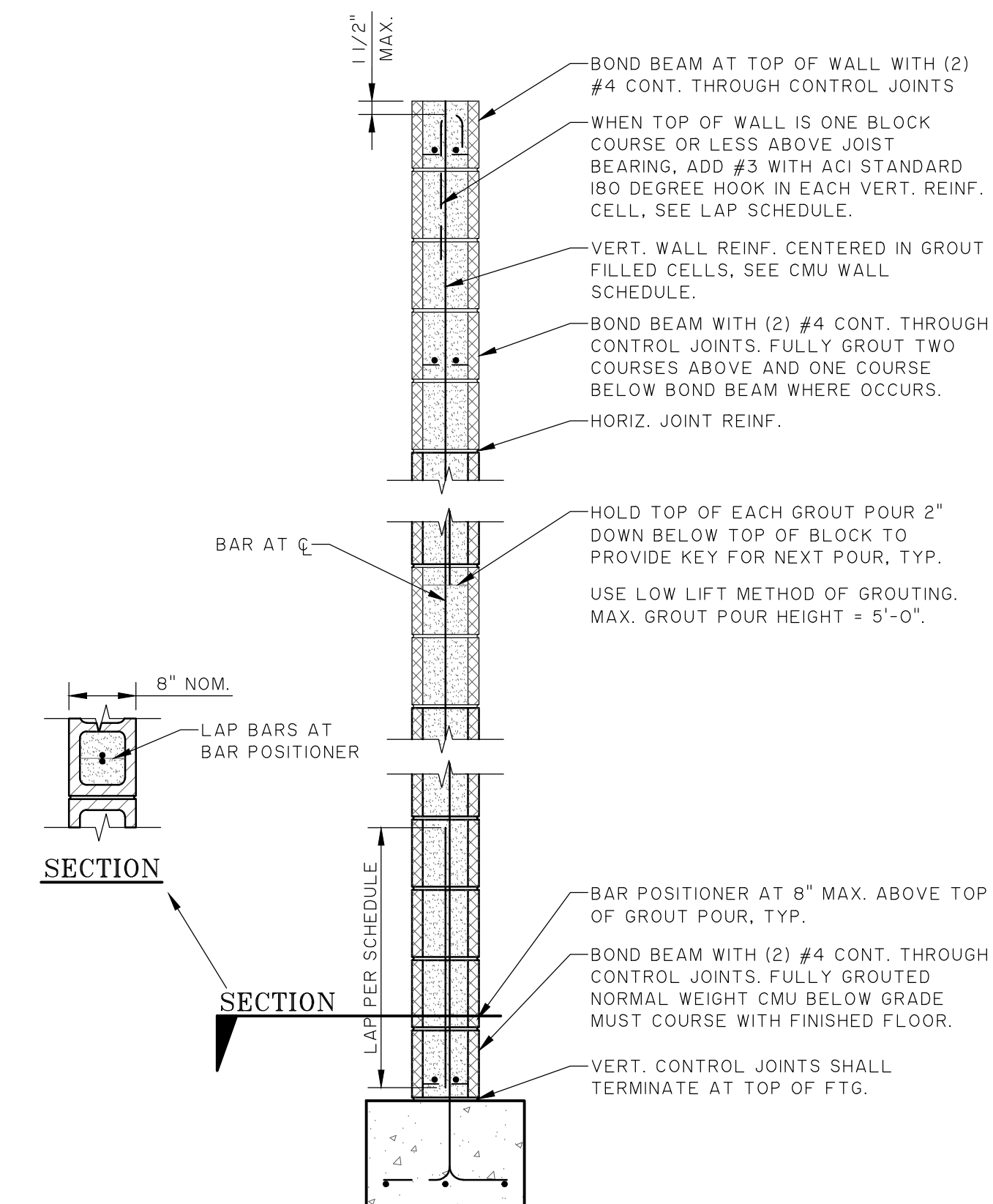
7 CMU BOND BEAM TYP R/F
01-S-03 NTS



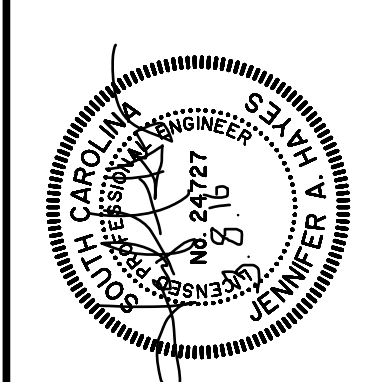
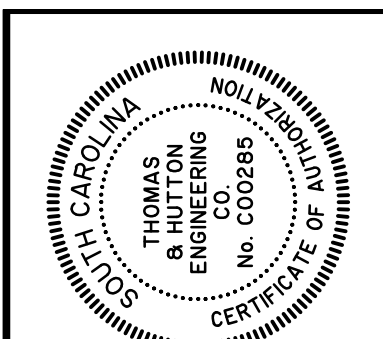
8 CMU CONTROL JOINT
01-S-03 NTS



9 CMU HORIZ JOINT R/F
01-S-03 NTS



10 CMU TYP WALL CONSTRUCTION
01-S-03 NTS



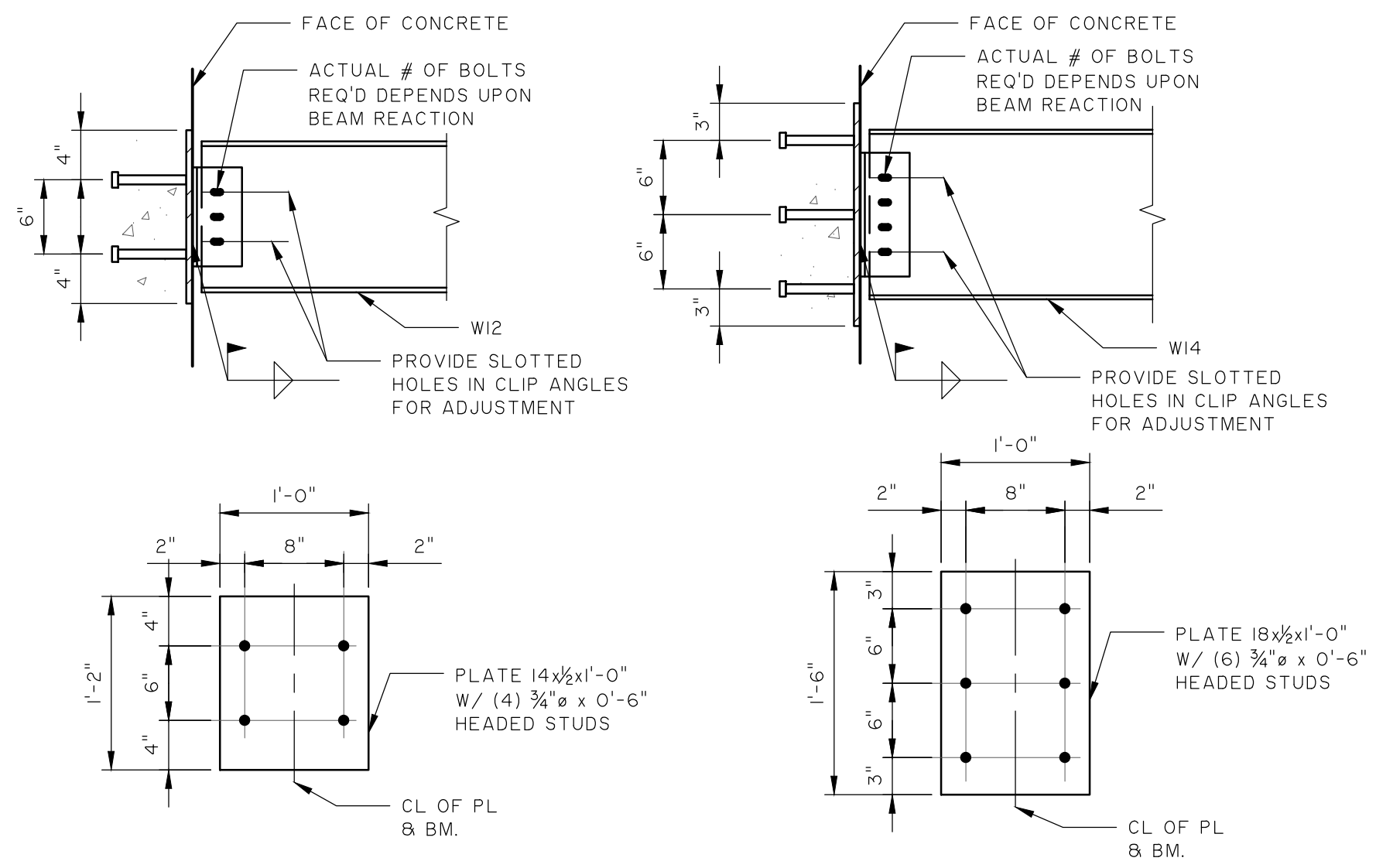
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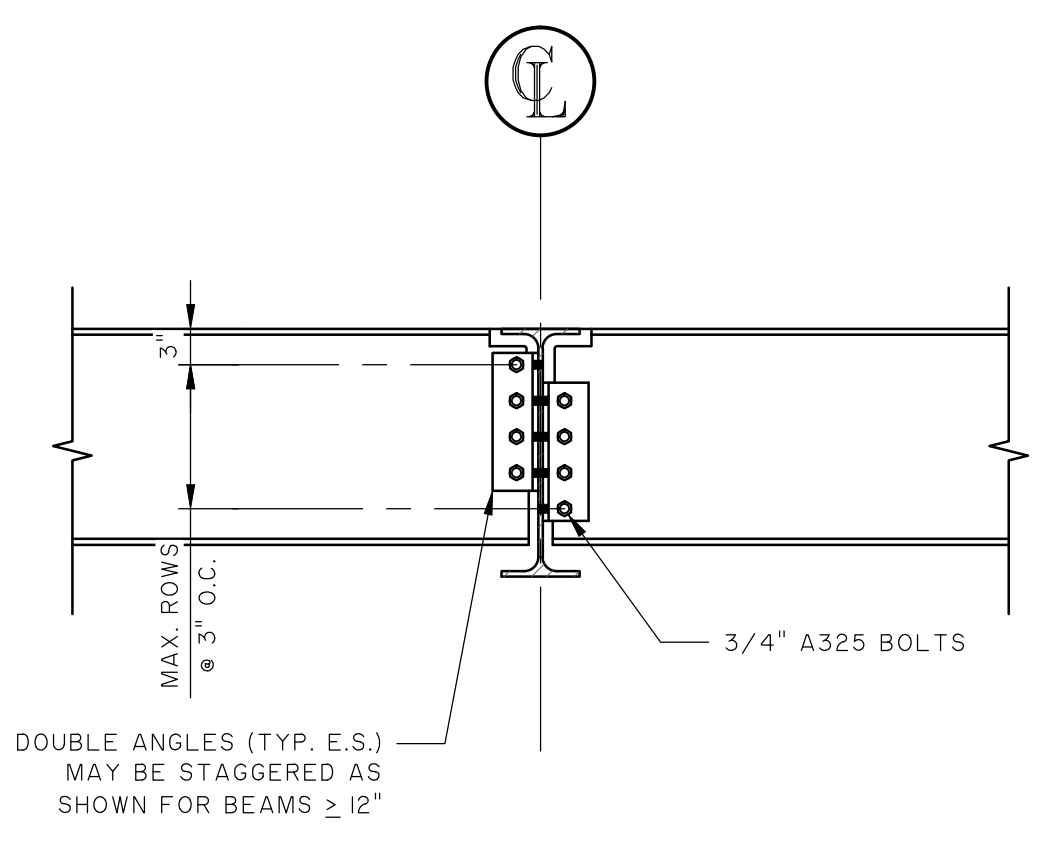
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KIAWAH RIVER PLANTATION WWTP
STRUCTURAL DETAILS

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH
DESIGNED:	JAH
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

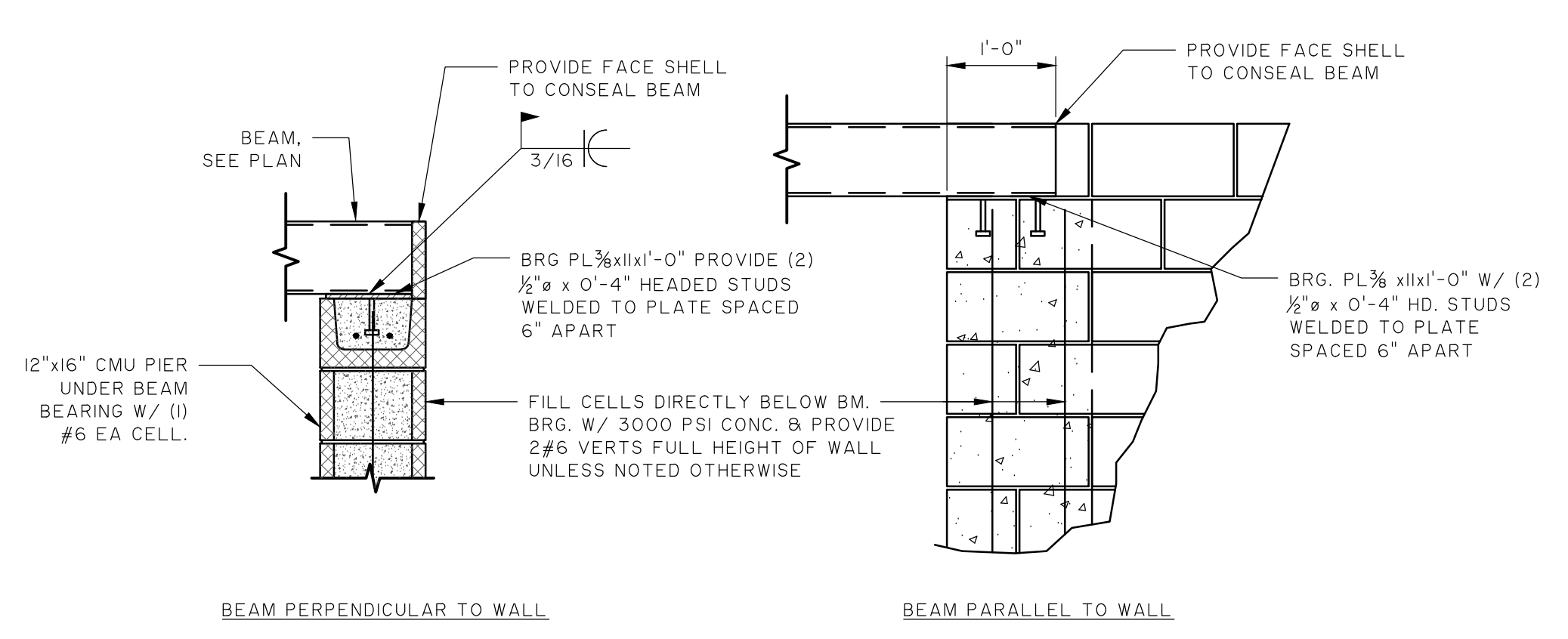
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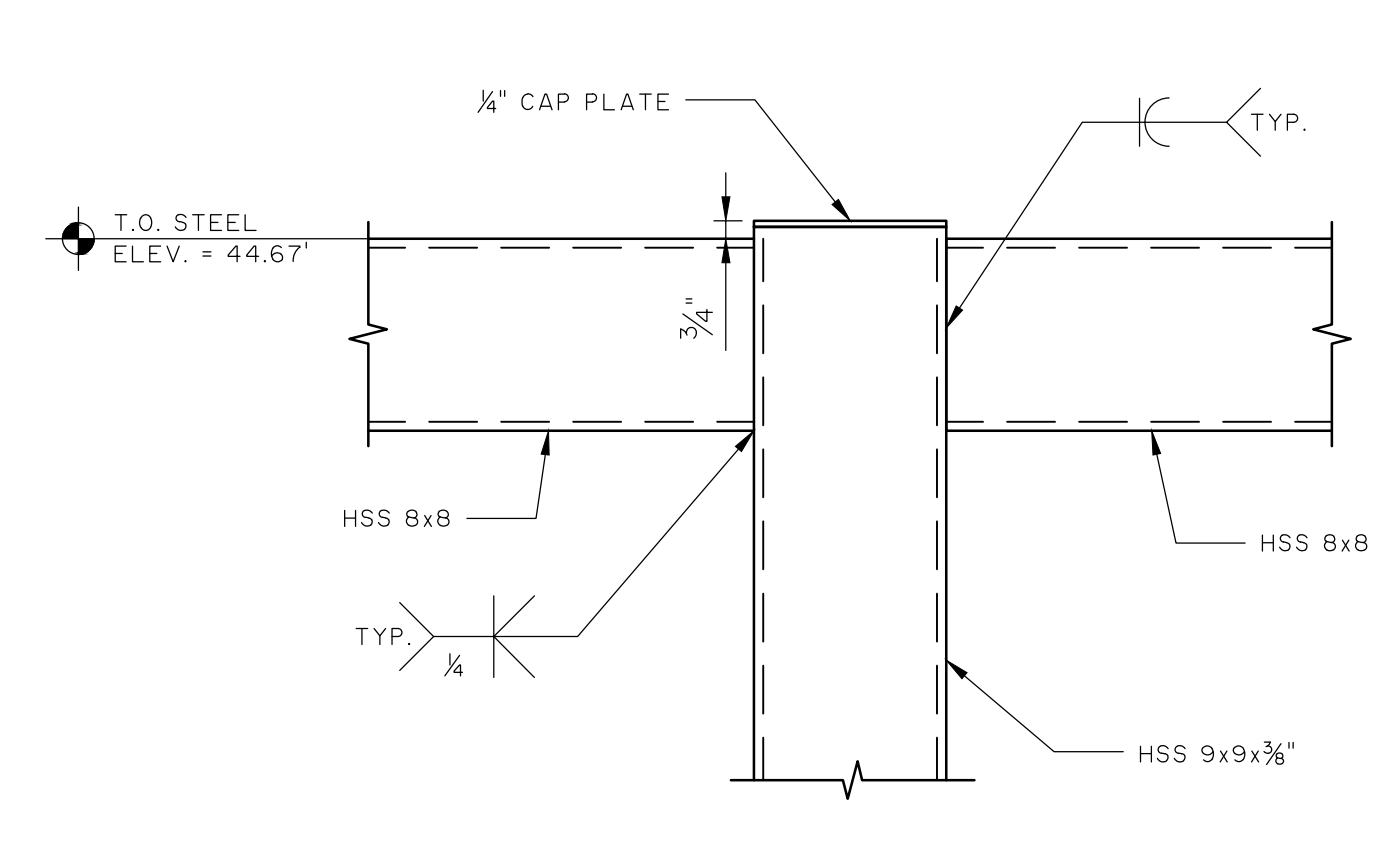
1 TYPICAL EMBED PLATE
01-S-04 1" = 1'-0"



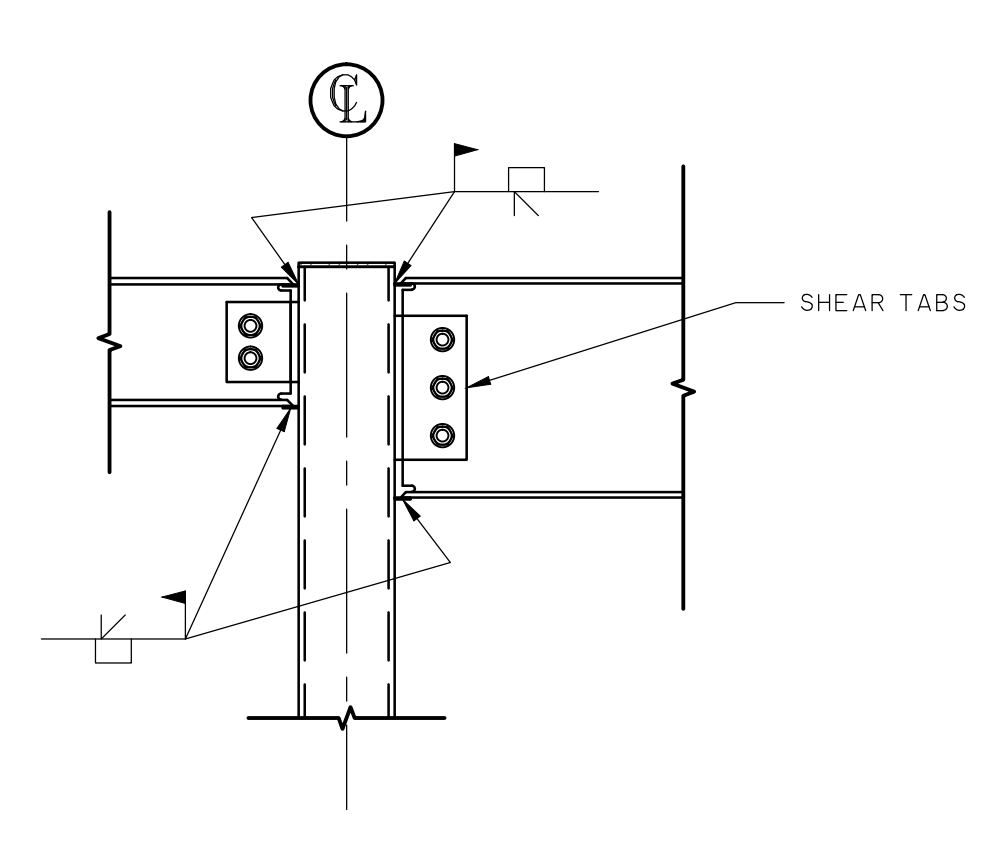
4 TYPICAL BEAM TO BEAM SHEAR CONNECTION
01-S-04 3/4" = 1'-0"



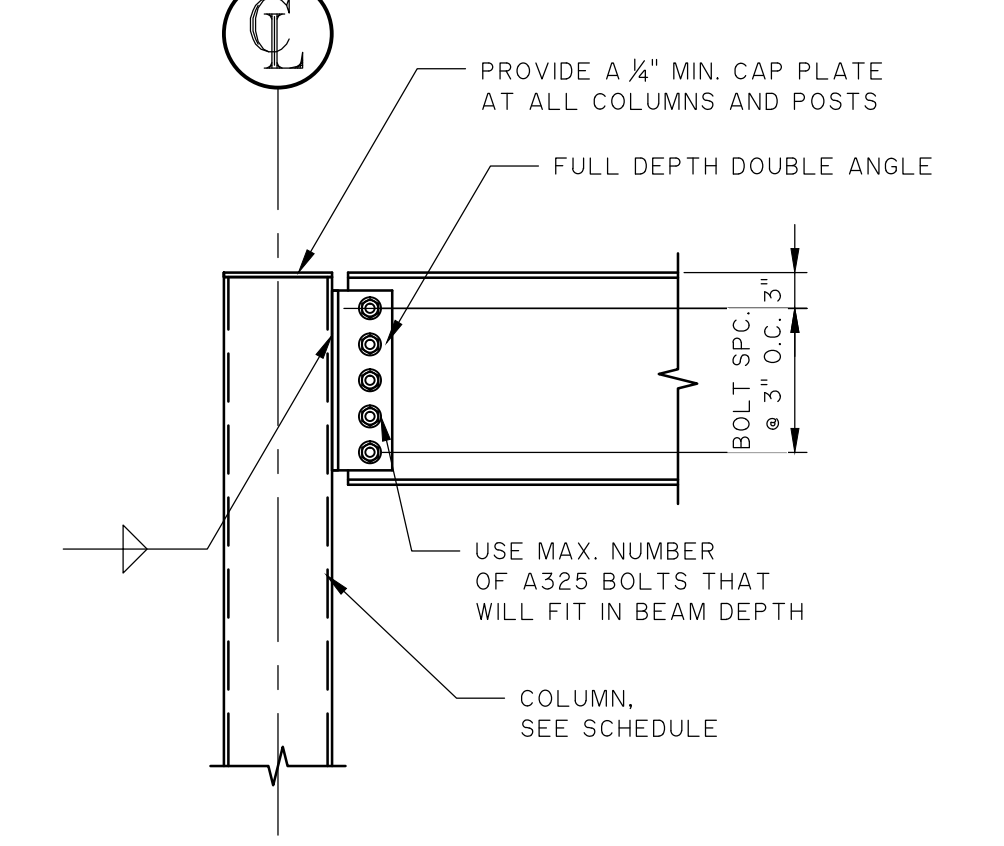
2 BEAM BEARING ON CMU
01-S-04 3/4" = 1'-0"



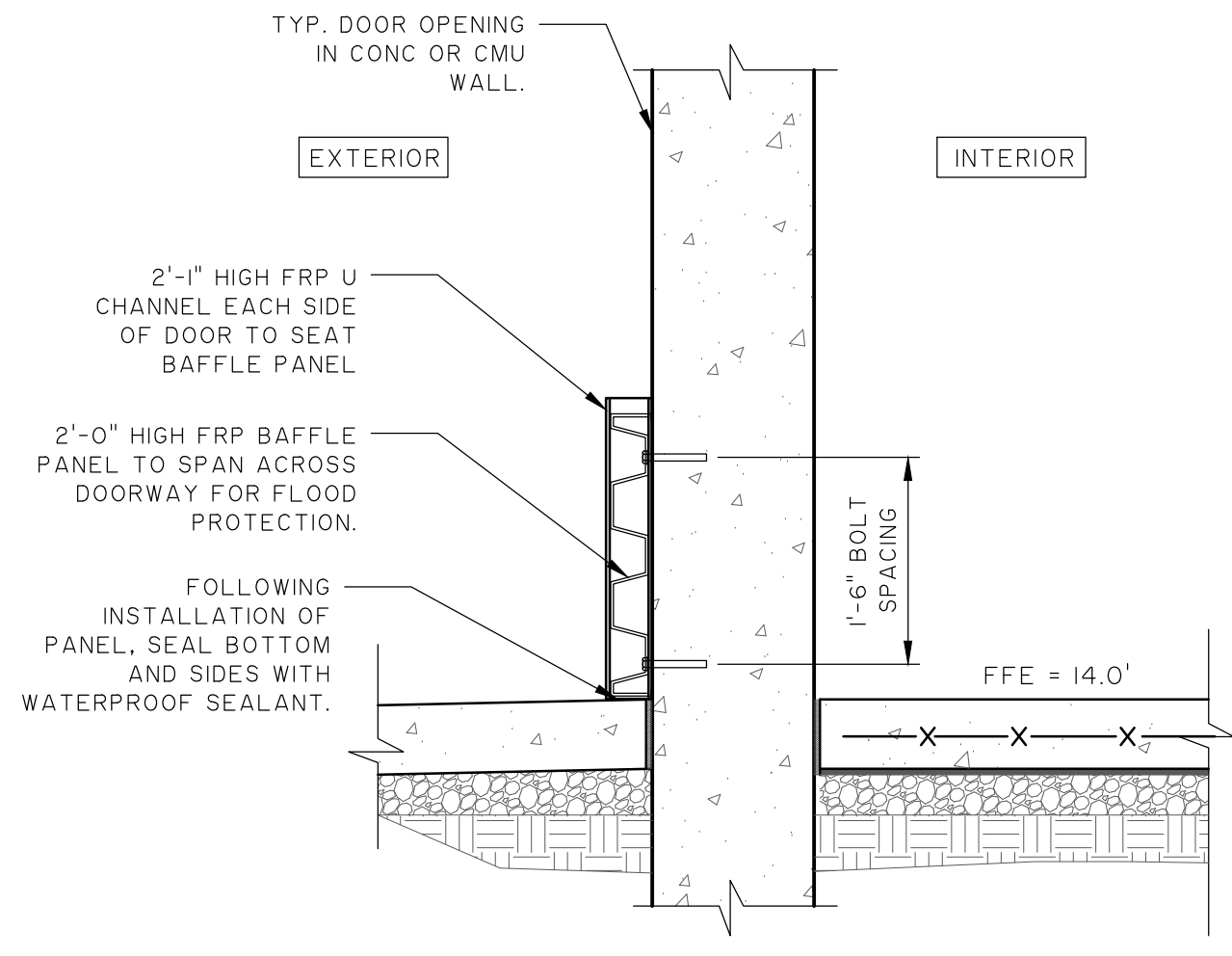
3 TYPICAL HSS BEAM TO COL
01-S-04 1-1/2" = 1'-0"



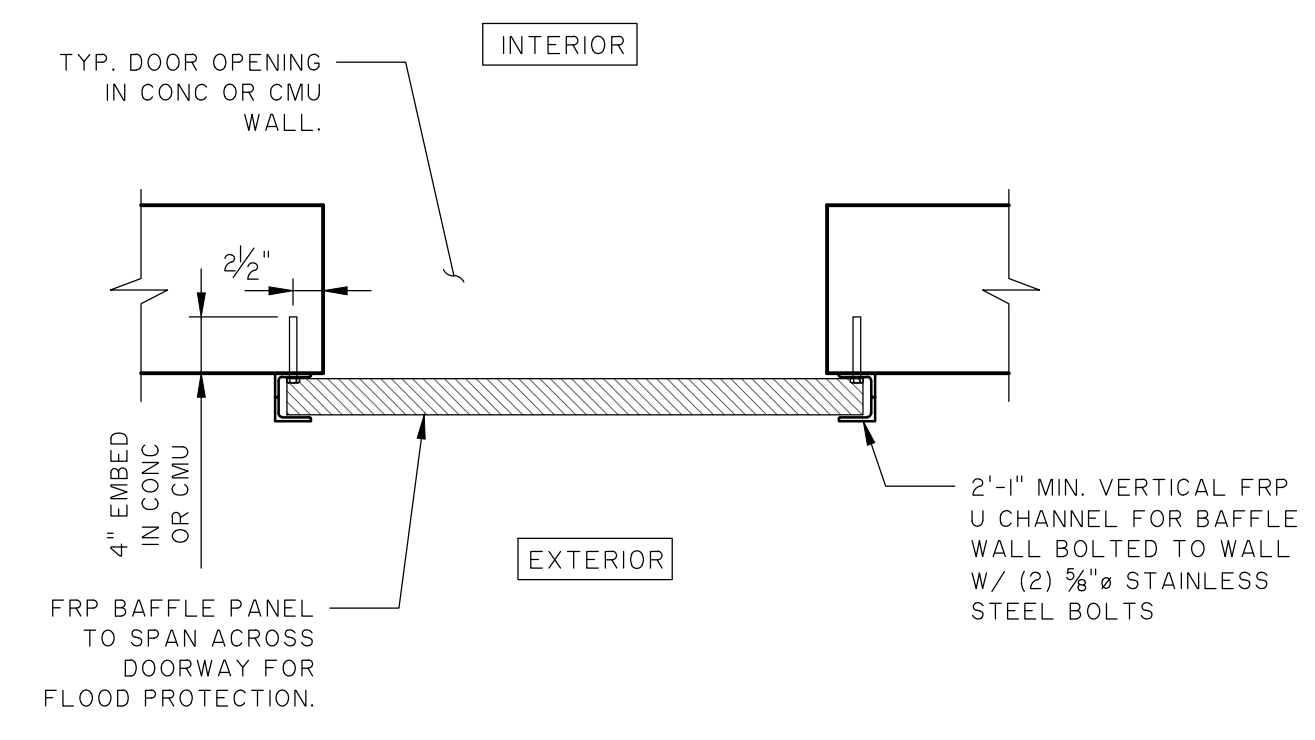
5 TYPICAL W-SHAPE BEAM TO COLUMN MOMENT CONNECTION
01-S-04 1" = 1'-0"



6 TYPICAL W-SHAPE BEAM TO COLUMN SHEAR CONNECTION
01-S-04 3/4" = 1'-0"

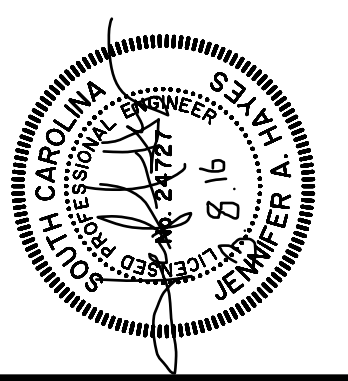
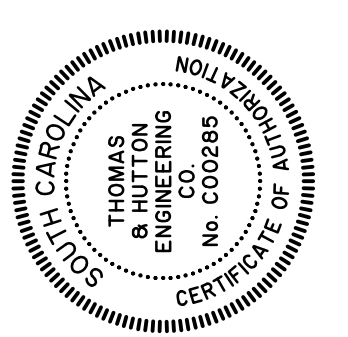


7 FLOOD PANEL SECTION - SIDE
01-S-04 3/4" = 1'-0"



8 FLOOD PANEL SECTION - TOP
01-S-04 3/4" = 1'-0"

- FRP FLOOD PANEL NOTES:**
1. THE FRP BAFFLE PANELS AND CHANNELS ARE TO BE DESIGNED BY FRP MANUFACTURER TO WITHHOLD 12" OF WATER ON THE EXTERIOR SIDE OF BUILDING.
 2. FRP PANELS SHALL BE INSTALLED ACROSS THE BOTTOMS OF ALL OPENINGS THAT ARE BELOW ELEVATION 15.0. CONTRACTOR SHALL EXAMINE PLANS TO DETERMINE QUANTITY AND SIZES OF THE OPENINGS AND SHALL COORDINATE WITH FRP MANUFACTURER TO COMMUNICATE PERTINENT DESIGN INFORMATION.
 3. CONTRACTOR SHALL SUBMIT TO ENGINEER FRP SHOP DRAWINGS FOR THE PANELS AND CHANNELS FOR REVIEW AND APPROVAL.
 4. FRP U CHANNELS ARE TO BE INSTALLED DURING CONSTRUCTION AND ARE TO REMAIN IN PLACE (PERMANENT INSTALLATION).
 5. WHEN FRP BAFFLE PANELS ARE INSTALLED FOR THE PURPOSE OF FLOOD PROTECTION, THE PERIMETER OF THE ENTIRE ASSEMBLY SHALL BE SEALED WITH WATERPROOF SEALANT WHICH SHALL BE REMOVED AT THE SAME TIME AS THE PANELS.
 6. COLOR OF ALL FRP ELEMENTS SHALL BE GREY.
 7. FRP PANELS SHALL BE LABELED WITH A DOOR IDENTIFIER SO IT IS CLEAR WHICH PANEL IS TO BE INSTALLED ACROSS WHICH OPENING.



NO.	REVISIONS	BY	DATE

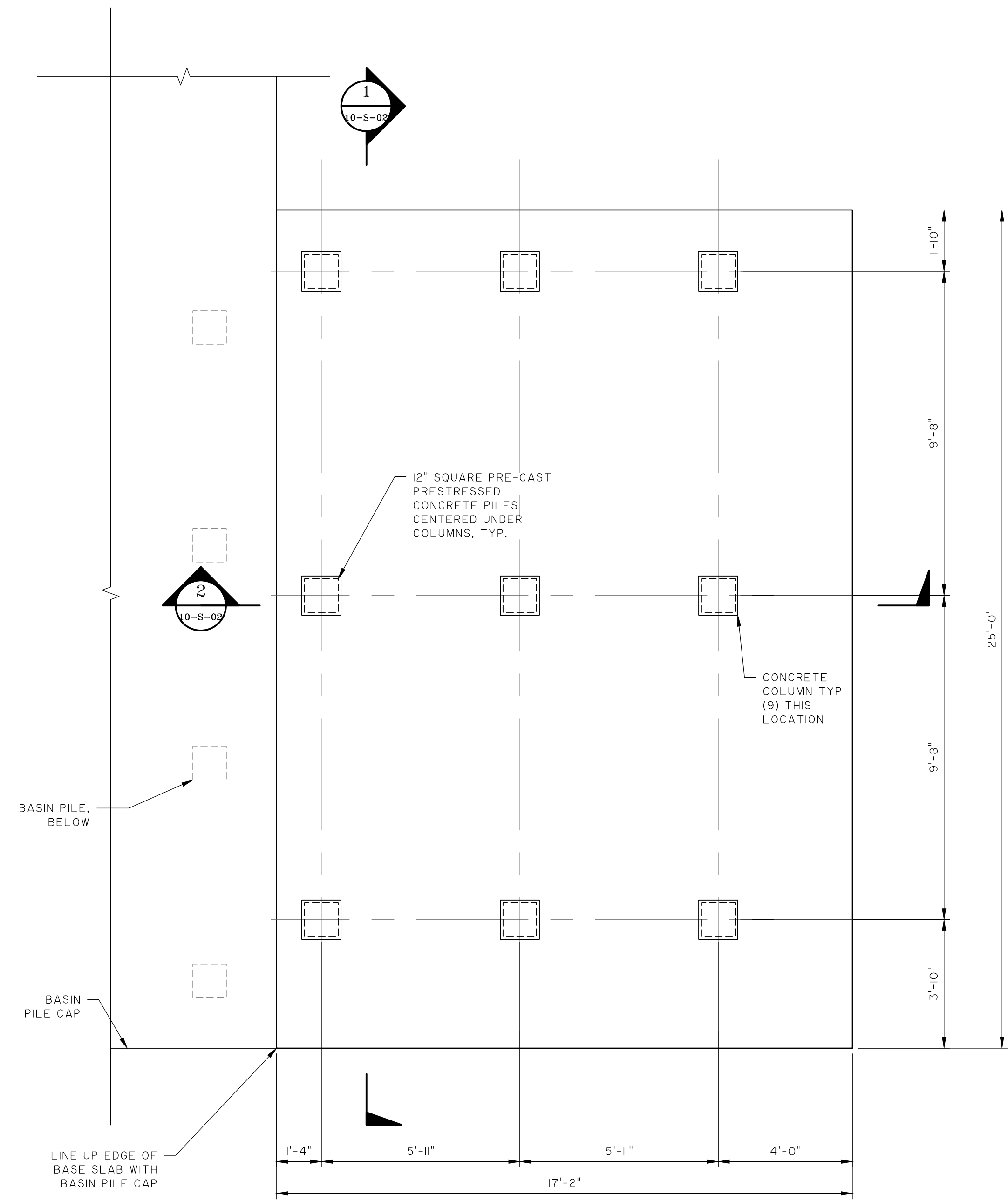
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KIAWAH RIVER PLANTATION WWTP
STRUCTURAL DETAILS

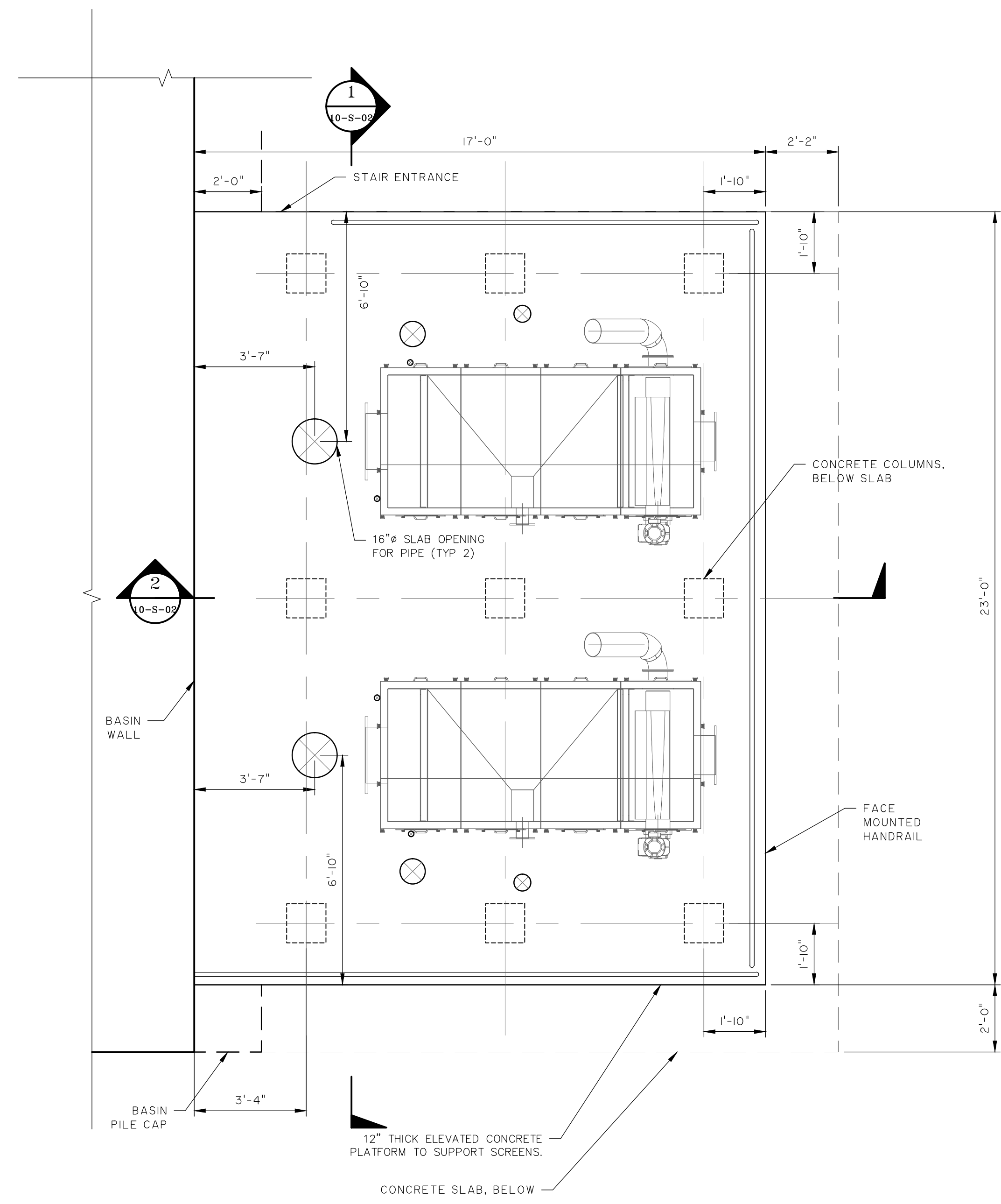
JOB NO: J-25328.0000
DATE: 12/18/15
DRAWN: EAC
DESIGNED: EAC/SHG
REVIEWED: JAH/SHG
APPROVED: MFY
SCALE: AS NOTED

01-S-04

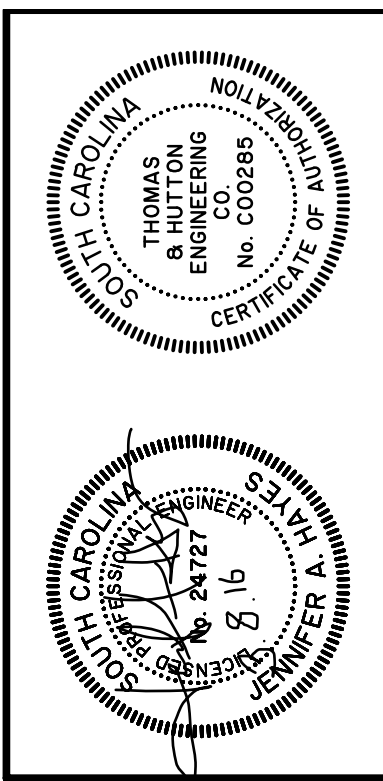
21/03/2018 10:58:00 AM Engineering/Structural/Primary Screen Plans/10-S-001 - Structure - Basin-01/02.dwg - User: JAH/SHG



1 PRIMARY SCREEN FOUNDATION PLAN
 10-S-01 3/8" = 1'-0" FIN. FLR. ELEV. = 14.0'
 NOTES:
 1. SEE 35-S-01 FOR PILE LENGTH.



2 PRIMARY SCREEN ELEVATED SLAB PLAN
 10-S-01 3/8" = 1'-0"
 NOTES:
 1. EQUIPMENT ANCHORAGE REQUIREMENTS SHALL BE COORDINATED WITH MANUFACTURER PRIOR TO CONSTRUCTION TO ENSURE ADEQUATE AND ACCURATE ANCHORAGE ELEMENTS ARE CAST INTO THE CONCRETE SLAB.
 2. OPENING SIZES AND LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED AND CONFIRMED BY MANUFACTURER PRIOR TO CONSTRUCTION.
 3. TOP OF SLAB ELEVATION SHALL MATCH THAT OF ADJACENT BASIN TOP OF WALL ELEVATION.



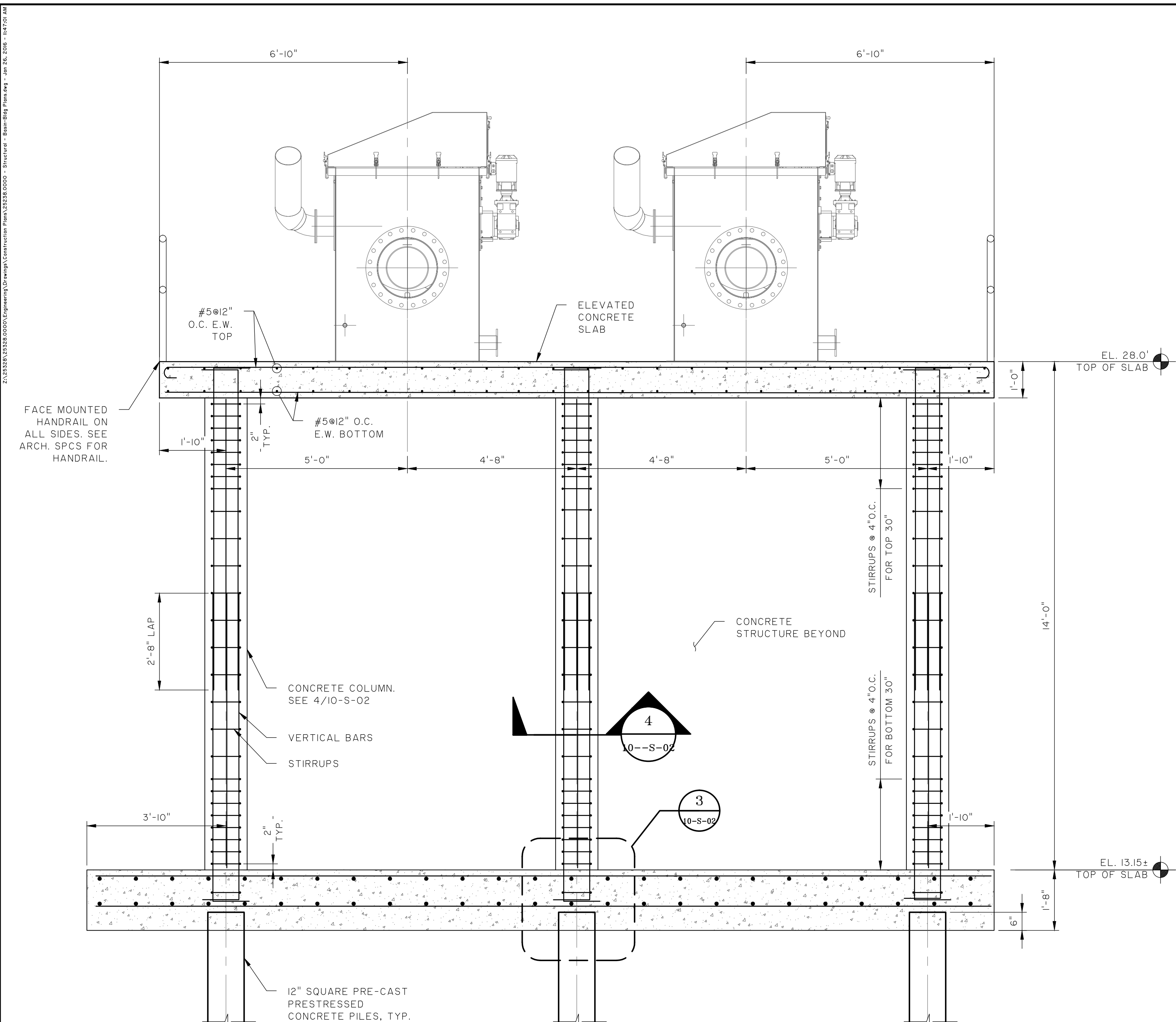
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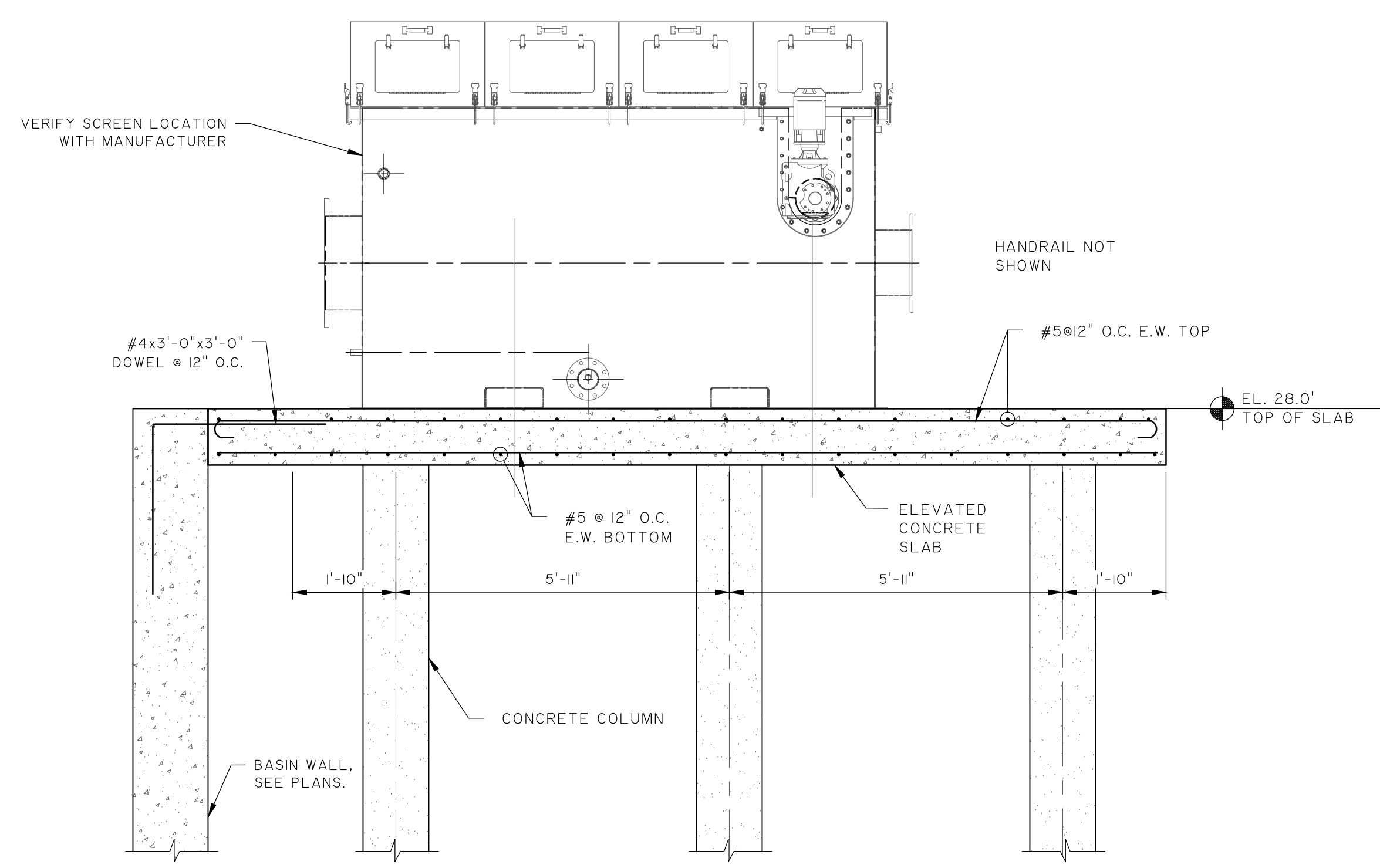
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KIAWAH RIVER PLANTATION WWTP
PRIMARY SCREEN STRUCTURAL PLANS

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/SHG
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

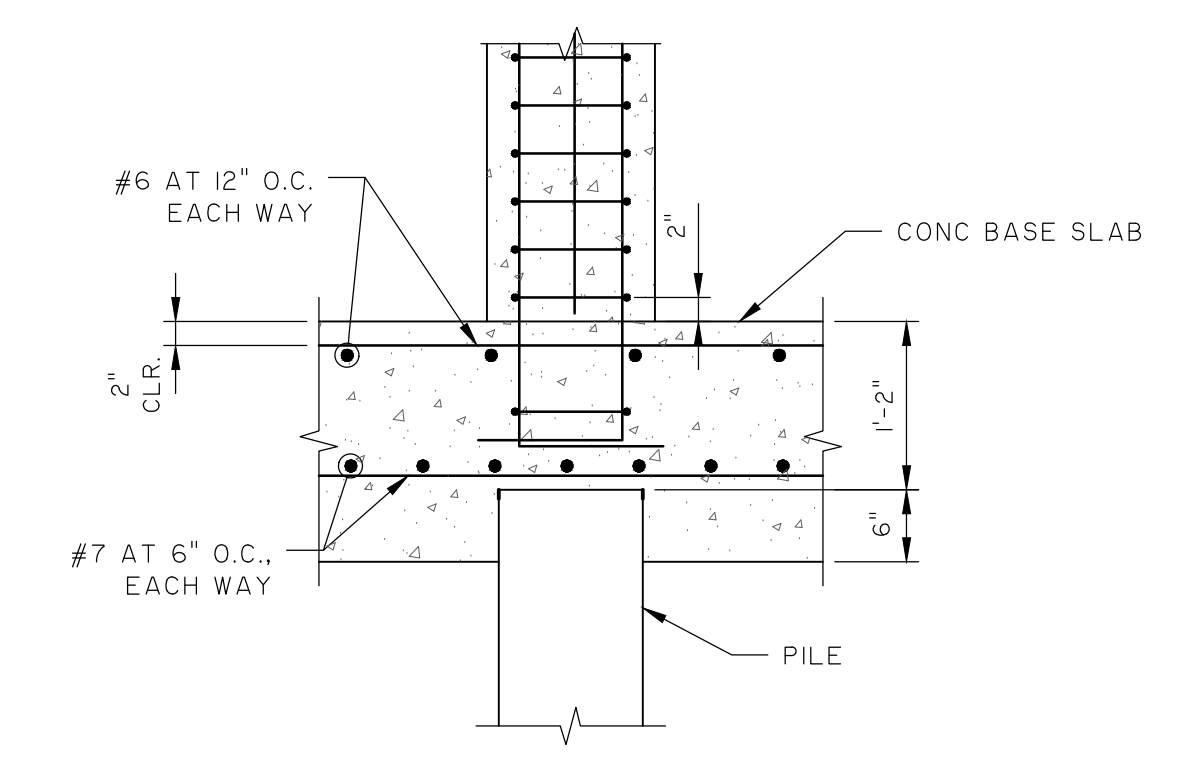
10-S-01



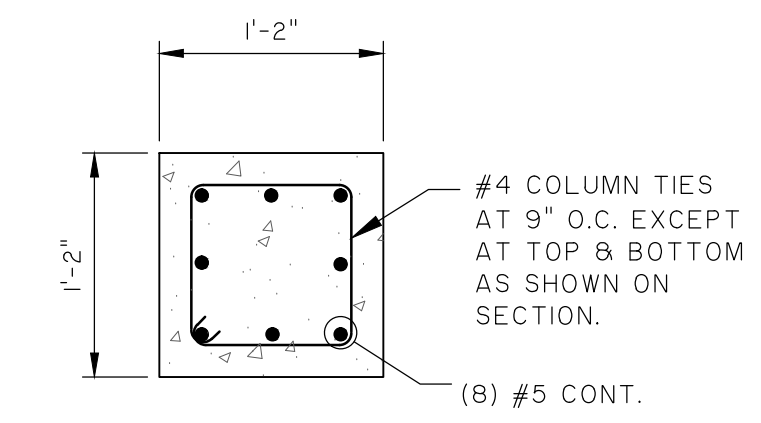
1 SECTION AT PRIMARY SCREEN
10-S-02 1/2" = 1'-0"



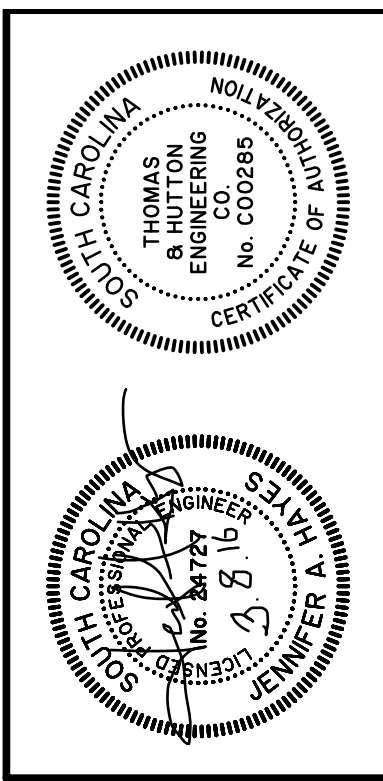
2 SECTION AT PRIMARY SCREEN
10-S-02 1/2" = 1'-0"



3 BASE SLAB DETAIL
10-S-02 3/4" = 1'-0"



4 COLUMN SECTION
10-S-02 1" = 1'-0"



NO.	REVISIONS	BY	DATE

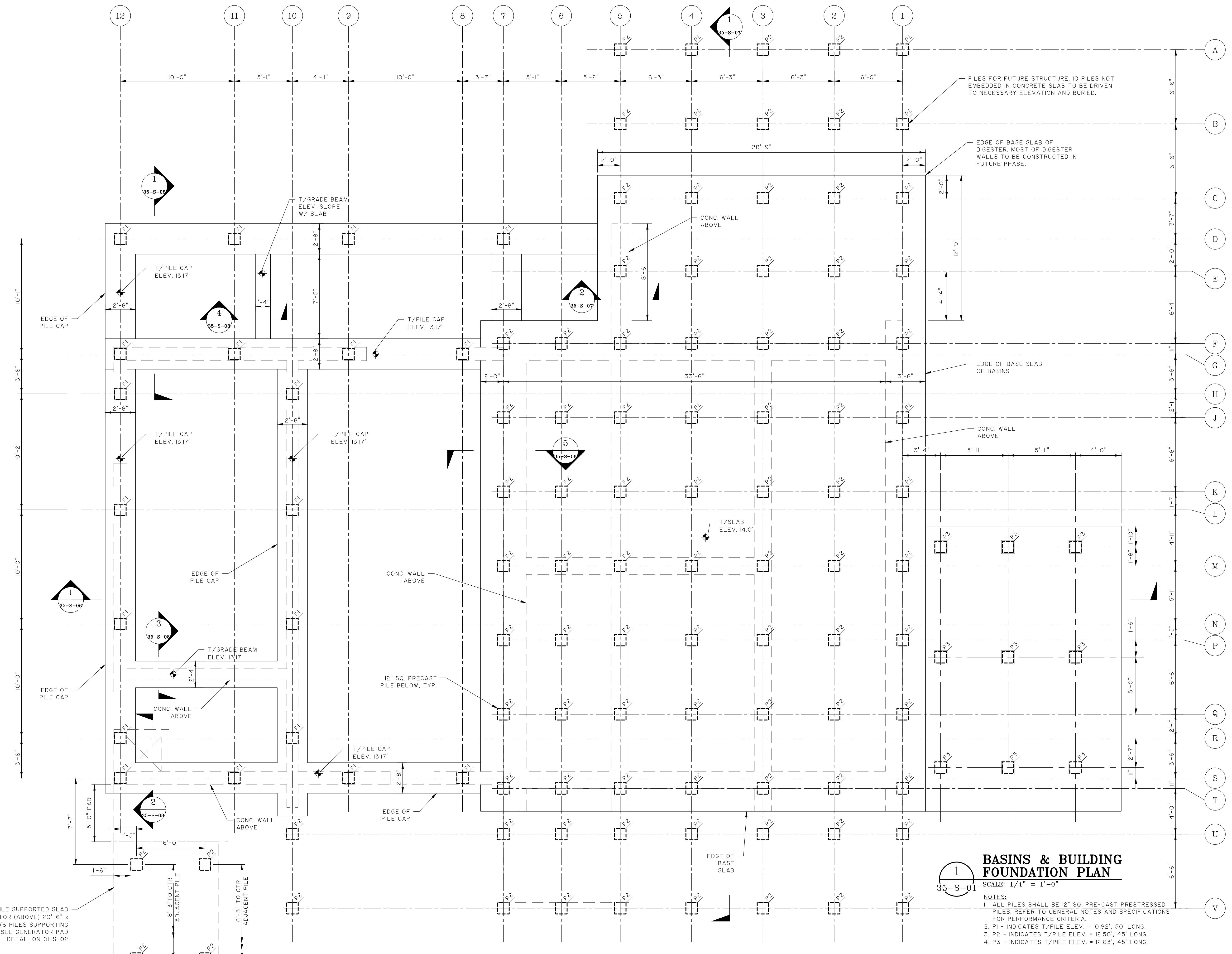
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PRIMARY SCREEN SECTION & DETAILS

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/SHG
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

10-S-02

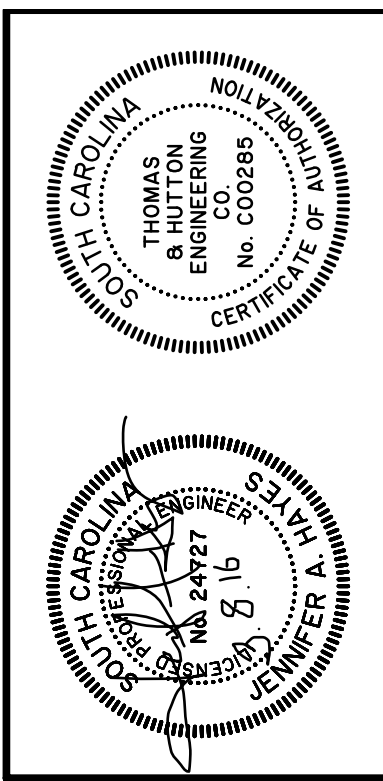
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CONCRETE PILE SUPPORTED SLAB FOR GENERATOR (ABOVE) 20'-6" x 9'-2" x 12" (6 PILES SUPPORTING GENERATOR). SEE GENERATOR PAD DETAIL ON 01-S-02

1
35-S-01
BASINS & BUILDING FOUNDATION PLAN
 SCALE: 1/4" = 1'-0"

- NOTES:
- ALL PILES SHALL BE 12" SQ. PRE-CAST STRESSERED PILES. REFER TO GENERAL NOTES AND SPECIFICATIONS FOR PERFORMANCE CRITERIA.
 - P1 - INDICATES T/PILE ELEV. = 10.92', 50' LONG.
 - P2 - INDICATES T/PILE ELEV. = 12.50', 45' LONG.
 - P3 - INDICATES T/PILE ELEV. = 12.83', 45' LONG.



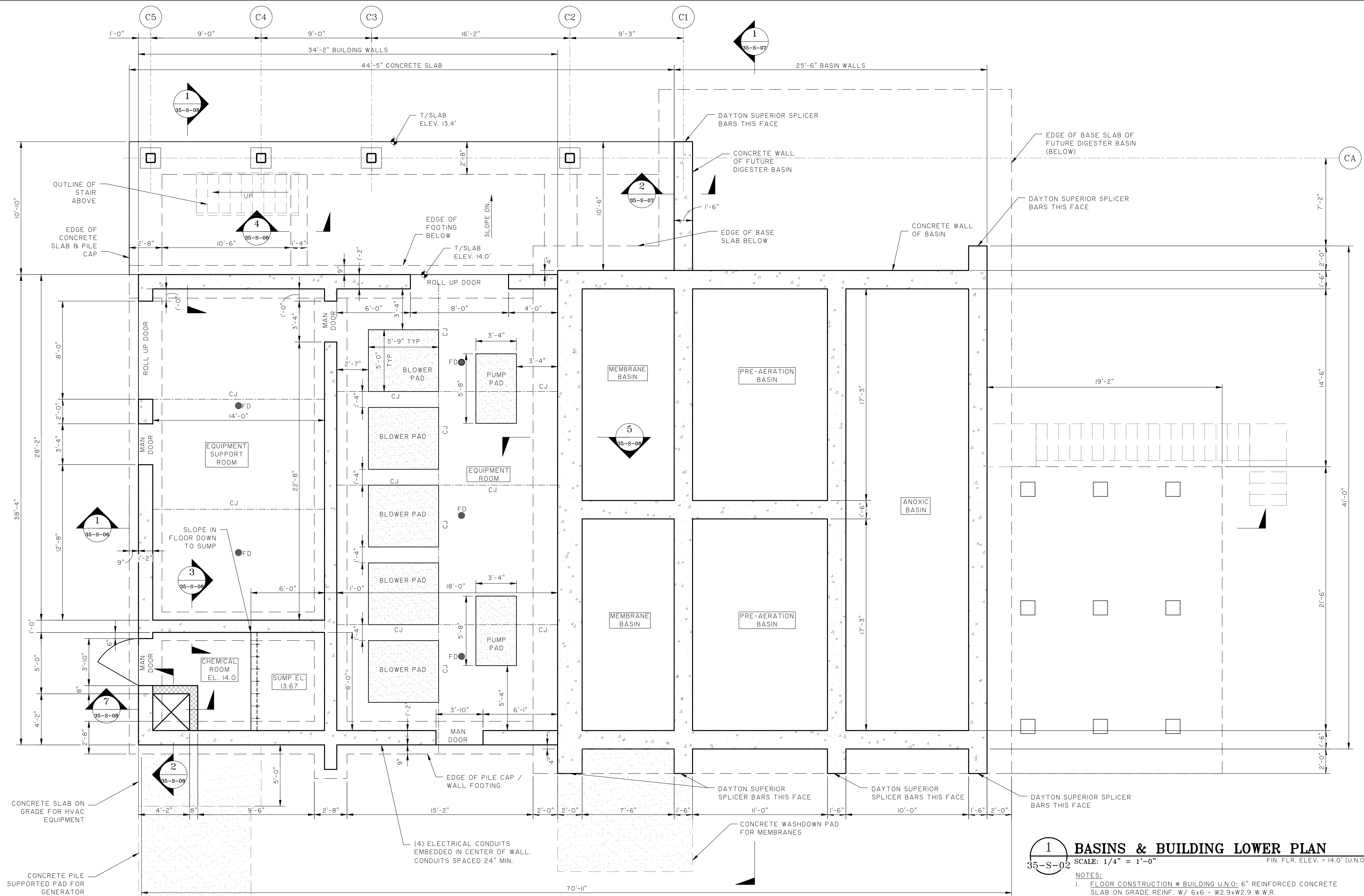
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BASINS & CONTROL BUILDING FNDN PLAN

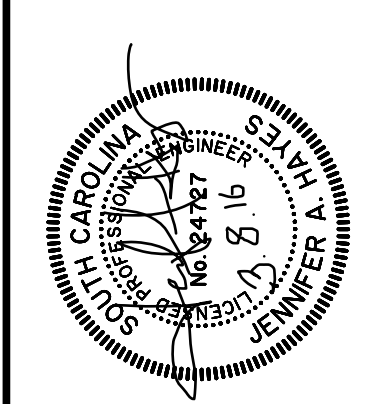
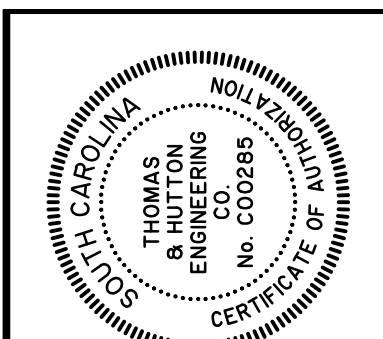
JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/EAC
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

35-S-01



1 BASINS & BUILDING LOWER PLAN
 35-S-02 SCALE: 1/4" = 1'-0" FIN. FLR. ELEV. = 14.0' (U.N.O.)

- NOTES:
- FLOOR CONSTRUCTION @ BUILDING U.N.O.: 6" REINFORCED CONCRETE SLAB ON GRADE REINF. W/ 6x6 - W2.9xW2.9 W.W.R.
 - 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.
 - INTERIOR OF WETWELL WALLS, SLABS AND PIPING SHALL BE COATED PER SPECIFICATIONS.
 - COORDINATE SIZE, LOCATION AND INSTALLATION OF OPENINGS W/ CIVIL PLANS AND WITH MANUFACTURERS.
 - SEE 01-S-03 FOR DAYTON SUPERIOR SPLICER BARS.
 - "FD" DENOTES FLOOR DRAIN. SEE 45-D-03.
 - "CJ" DENOTES SAW CUT CONTROL JOINT IN SLAB ON GRADE.
 - SEE 01-S-02 FOR SECTIONS THROUGH BLOWER AND PUMP PADS.
 - ALL OPENINGS BELOW ELEVATION 15.0 SHALL BE EQUIPPED FOR THE INSTALLATION OF FRP FLOOD PANELS. SEE 01-S-04.



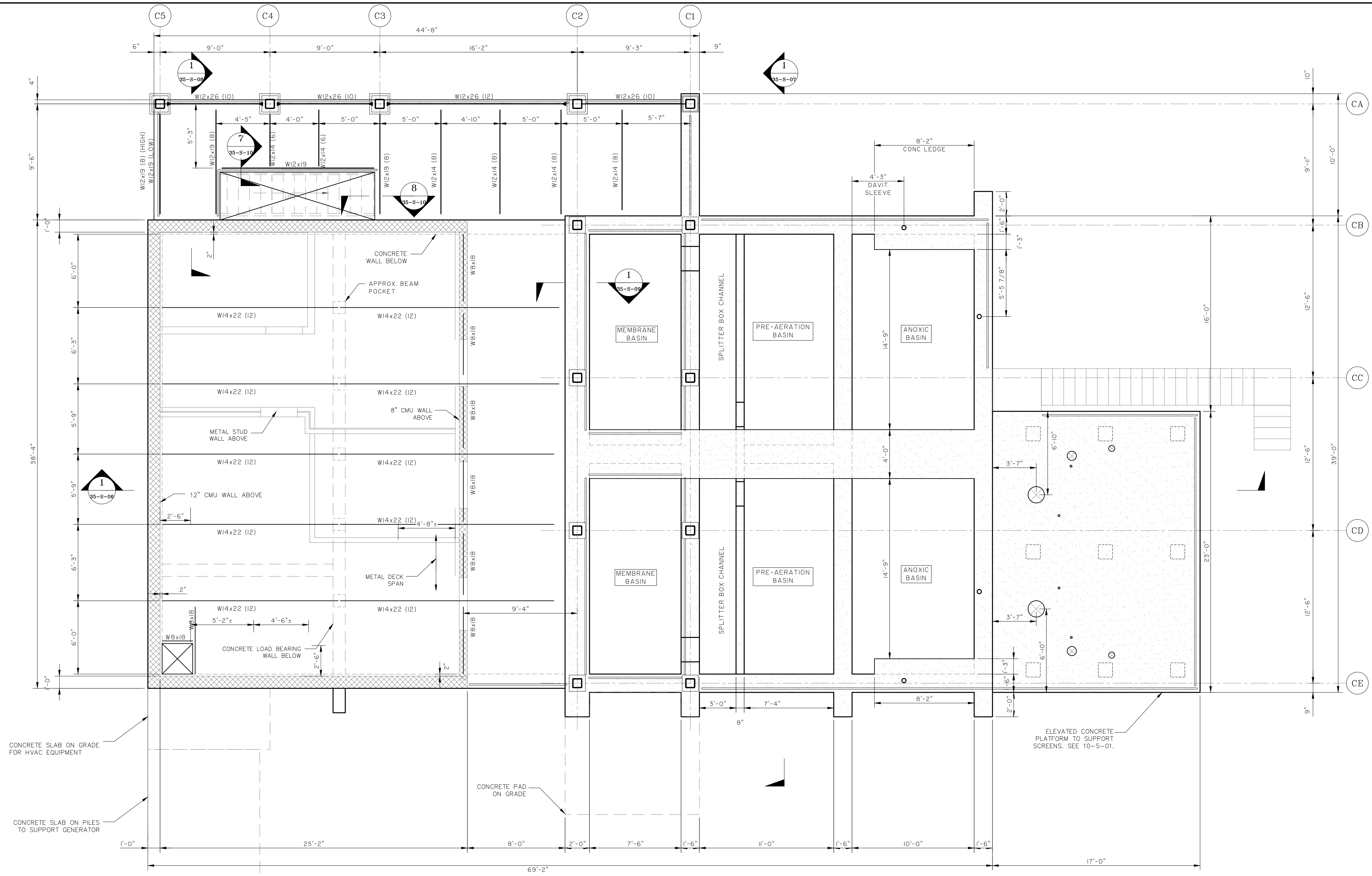
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BASINS & BUILDING LOWER PLAN

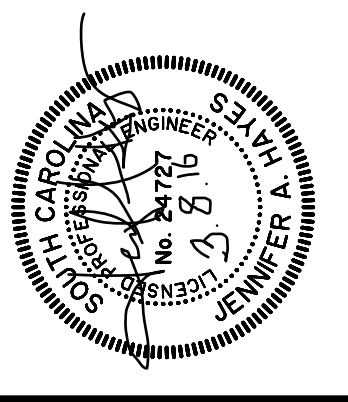
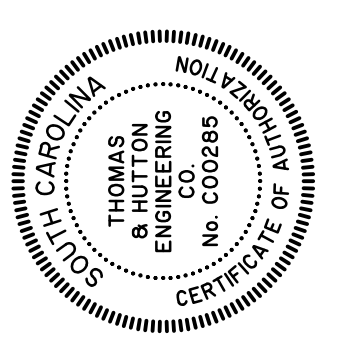
JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/EAC
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

35-S-02



1 BASINS & BUILDING UPPER FRAMING PLAN
 SCALE: 1/4" = 1'-0" FIN. FLR. ELEV. = 28.0'
 T/STEEL ELEV. = 27.50'

- NOTES:
- FLOOR CONSTRUCTION • BUILDING U.N.O.: 4" CONCRETE ON 2", 20 GA., GALV. COMPOSITE METAL DECK, REINF. W/ 6x6-W2.IxW2.I W.W.R.
 - 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.
 - INTERIOR OF WETWELL WALLS, SLABS AND PIPING SHALL BE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - COORDINATE SIZE, LOCATION AND INSTALLATION OF OPENINGS W/ CIVIL PLANS AND WITH MANUFACTURERS.
 - ▶ - INDICATES MOMENT CONNECTIONS



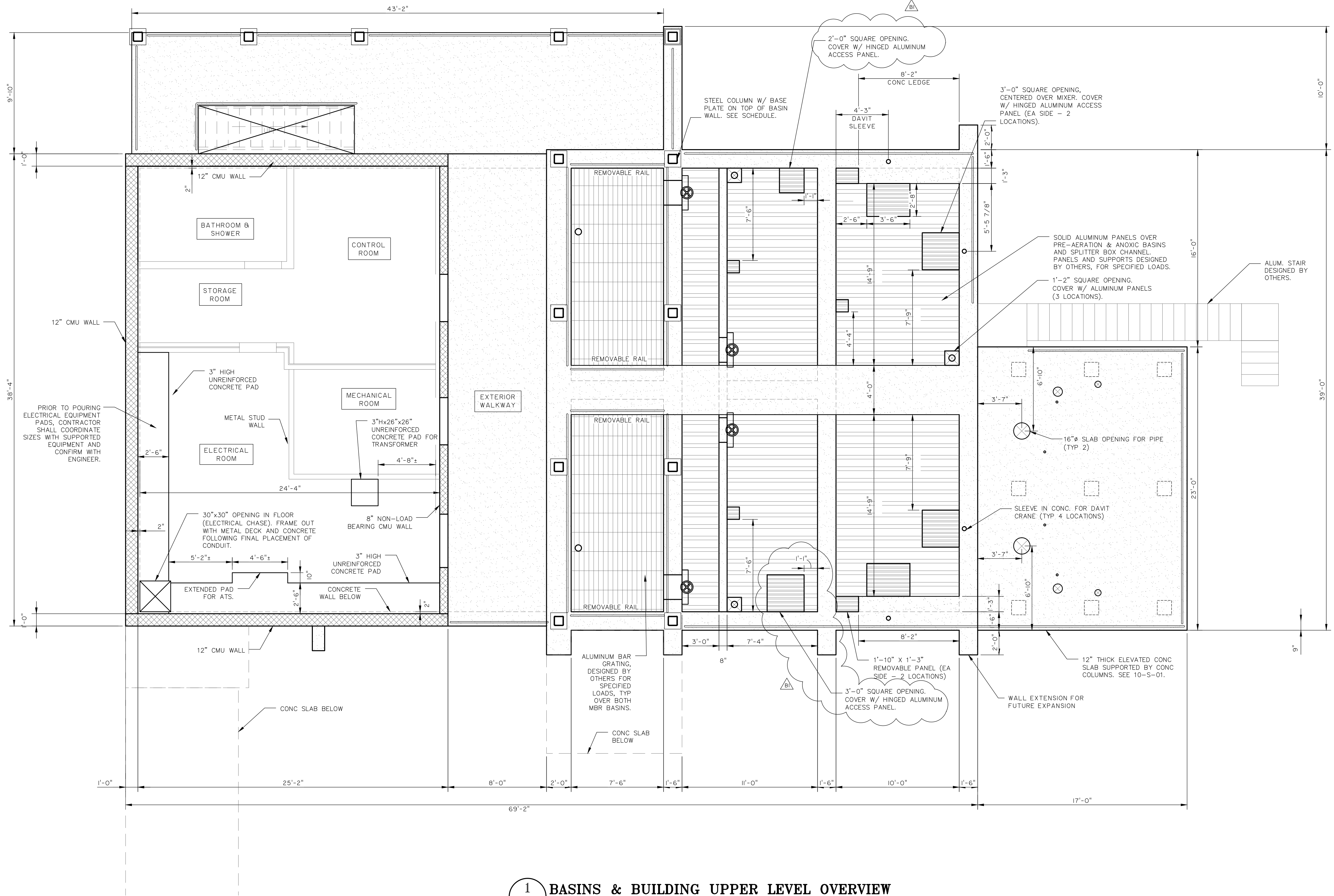
NO.	REVISIONS	BY	DATE

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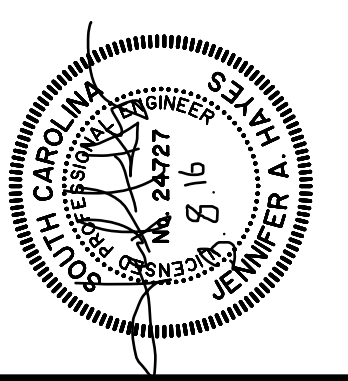
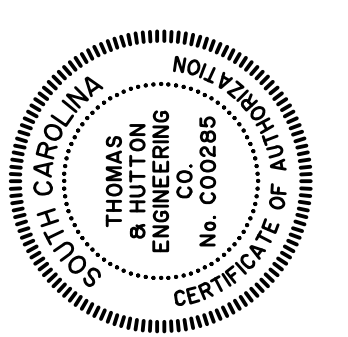
KIAWAH RIVER PLANTATION
 CHARLESTON COUNTY, SOUTH CAROLINA
 KIAWAH RIVER PLANTATION WWTP
BASINS & BLDG 2ND FLR FRAMING PLAN

JOB NO: J-25328.0000
 DATE: 12/18/15
 DRAWN: JAH/SHG
 DESIGNED: JAH/EAC
 REVIEWED: JAH/SHG
 APPROVED: MFY
 SCALE: AS NOTED

35-S-03



1 BASINS & BUILDING UPPER LEVEL OVERVIEW
 35-S-04 SCALE: 1/4" = 1'-0"



NO.	REVISIONS	BY	DATE
BI	BID ADDENDUM I	JAH	3/3/16

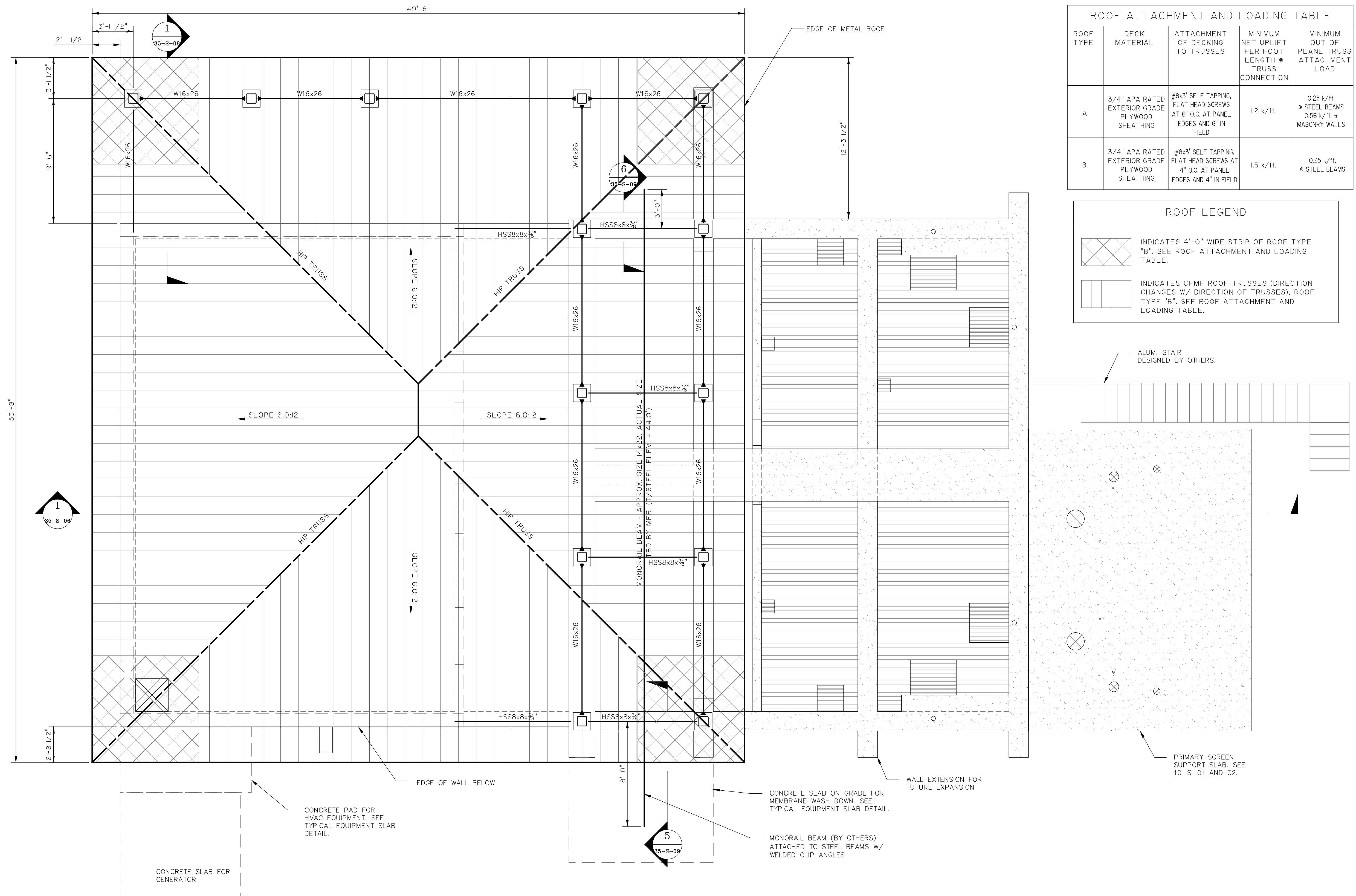
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 CHARLESTON COUNTY, SOUTH CAROLINA
KIAWAH RIVER PLANTATION WWTP
BASINS & BLDG UPPER LEVEL OVERVIEW

JOB NO:	J-25328.0000
DATE:	12/16/15
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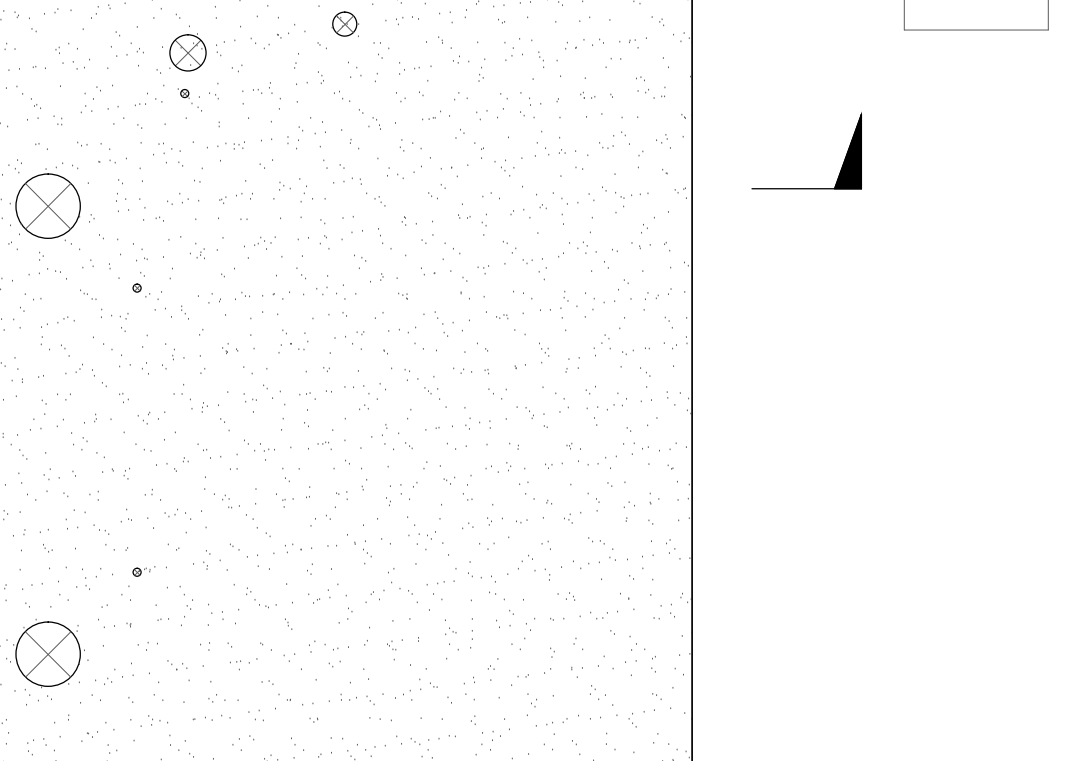
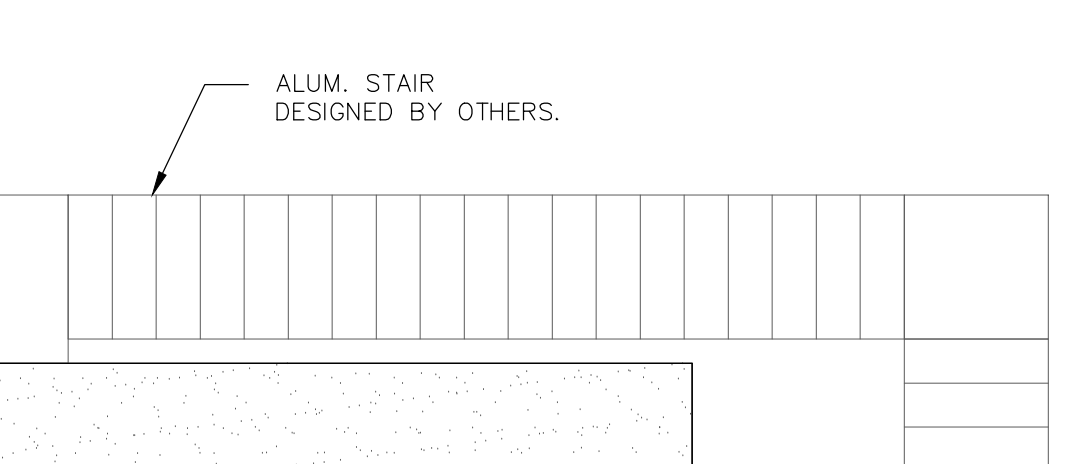
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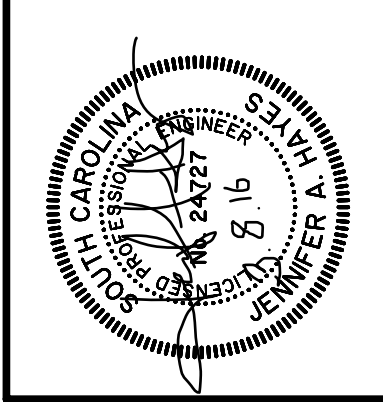
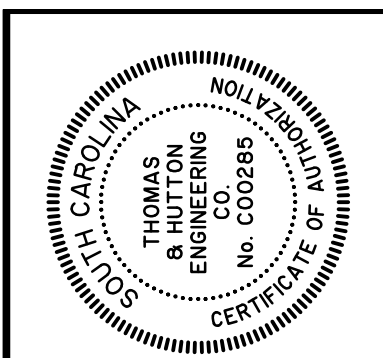
ROOF ATTACHMENT AND LOADING TABLE				
ROOF TYPE	DECK MATERIAL	ATTACHMENT OF DECKING TO TRUSSES	MINIMUM NET UPLIFT PER FOOT LENGTH @ TRUSS CONNECTION	MINIMUM OUT OF PLANE TRUSS ATTACHMENT LOAD
A	3/4" APA RATED EXTERIOR GRADE PLYWOOD SHEATHING	#8x3" SELF TAPPING, FLAT HEAD SCREWS AT 6" O.C. AT PANEL EDGES AND 6" IN FIELD	1.2 k/ft.	0.25 k/ft. @ STEEL BEAMS 0.56 k/ft. @ MASONRY WALLS
B	3/4" APA RATED EXTERIOR GRADE PLYWOOD SHEATHING	#8x3" SELF TAPPING, FLAT HEAD SCREWS AT 4" O.C. AT PANEL EDGES AND 4" IN FIELD	1.3 k/ft.	0.25 k/ft. @ STEEL BEAMS

ROOF LEGEND	
	INDICATES 4'-0" WIDE STRIP OF ROOF TYPE "B". SEE ROOF ATTACHMENT AND LOADING TABLE.
	INDICATES CFMF ROOF TRUSSES (DIRECTION CHANGES W/ DIRECTION OF TRUSSES), ROOF TYPE "B". SEE ROOF ATTACHMENT AND LOADING TABLE.



1 BUILDING ROOF FRAMING PLAN
 35-S-05 SCALE: 1/4" = 1'-0" T/ STEEL ELEV. + 44.67' (U.N.O.)

- NOTES:
- ROOF CONSTRUCTION: STANDING SEAM METAL ROOF ON 3/4" APA EXTERIOR GRADE PLYWOOD SHEATHING. SEE TABLE FOR ATTACHMENT NOTES.
 - L.T. GAGE TRUSS MANUF. SHALL SUBMIT ENGINEERED ROOF FRAMING PLANS FOR REVIEW AND COORDINATION PRIOR TO MANUFACTURING ROOF TRUSSES.
 - ▶ - INDICATES MOMENT CONNECTIONS
 - TRUSS DESIGNER SEE DETAIL 7 ON 35-S-09 FOR ATTACHMENT INFORMATION AT NON-LOADBEARING CMU WALL.



NO.	REVISIONS	BY	DATE

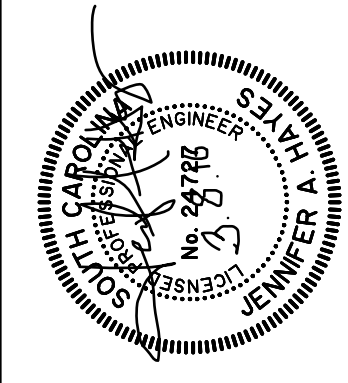
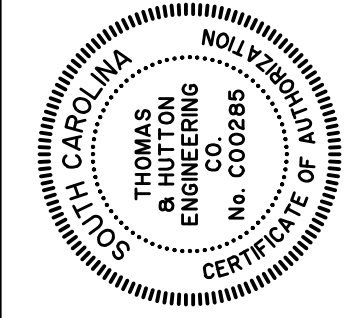
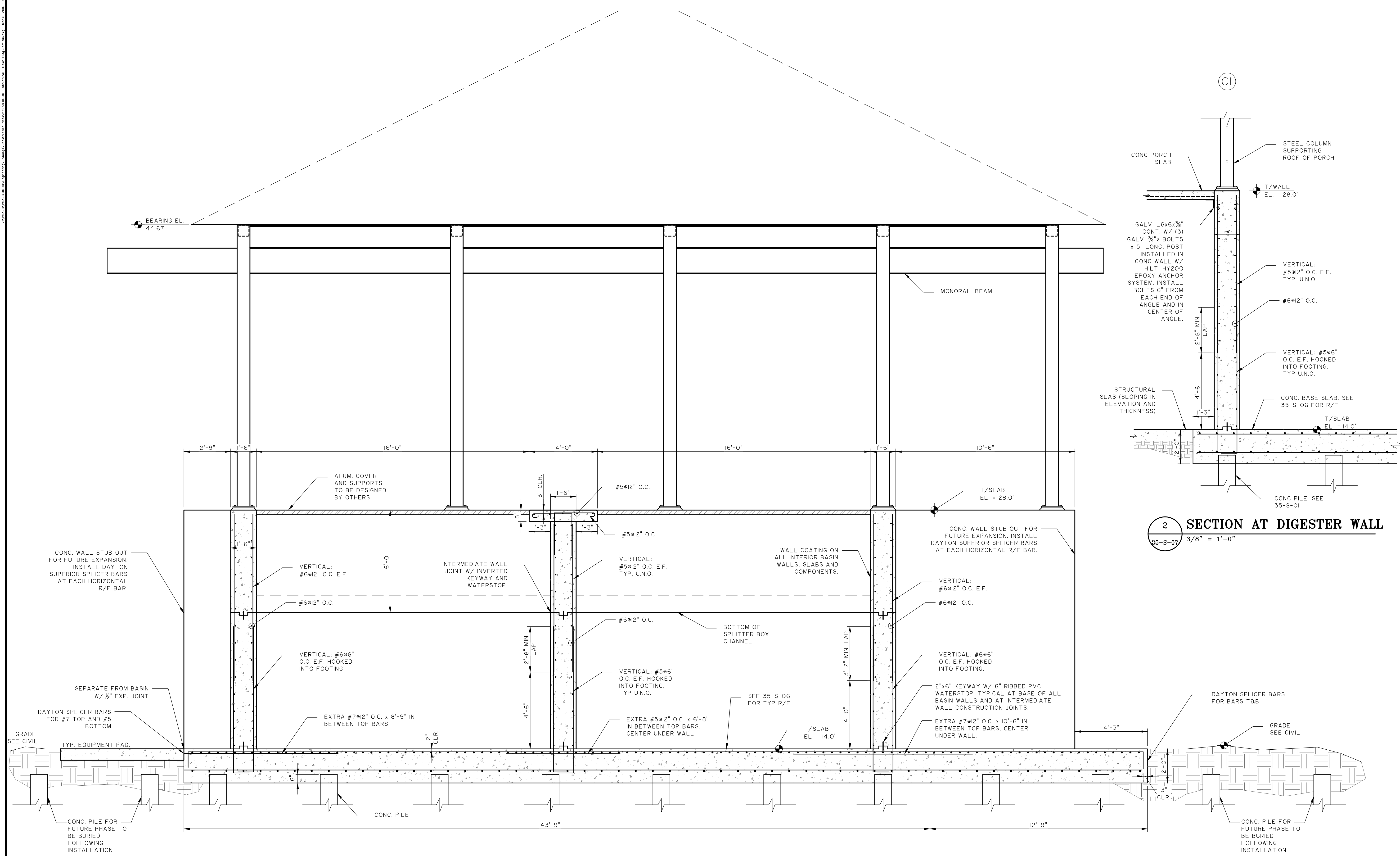
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 KIAWAH RIVER PLANTATION WWTP
BUILDING ROOF FRAMING PLAN

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/EAC
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

35-S-05

24-3528-0000 Engineering/Construction/Plan/3528-0000 - Structural - Revisions - 12/18/15



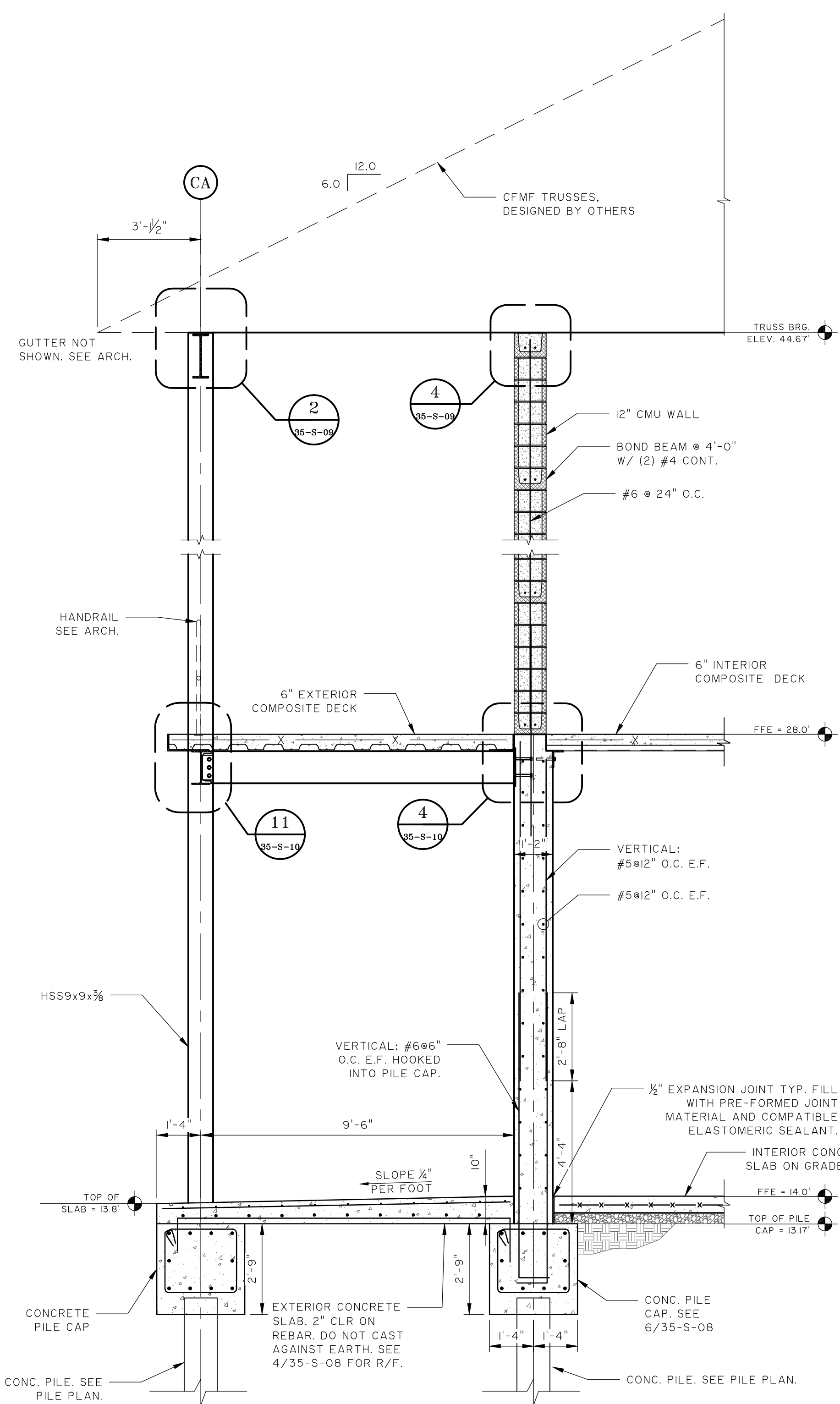
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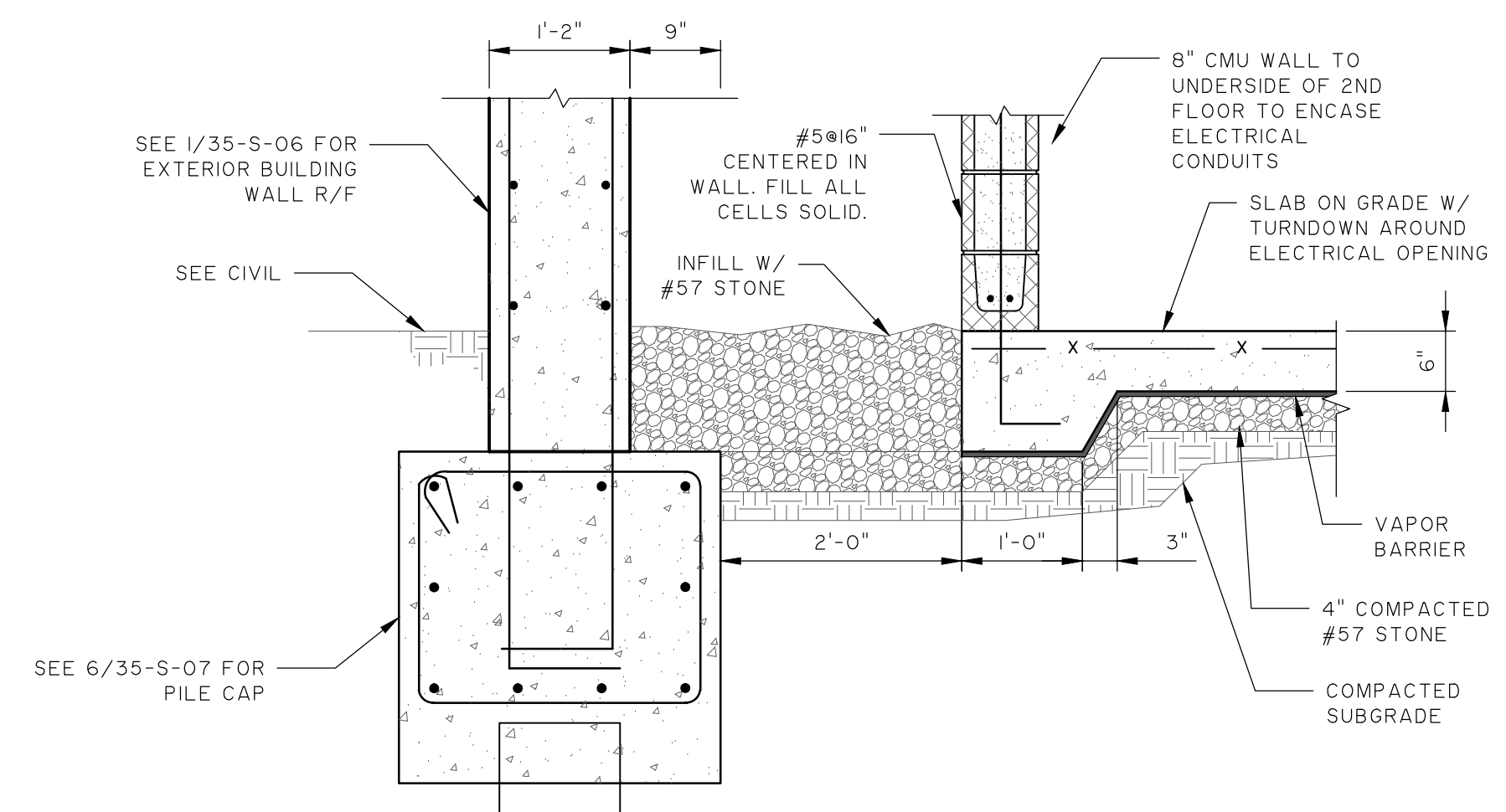
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CAINHOY PLANTATION WATER & SEWER - PHASE I
SECTIONS AND DETAILS

JOB NO: J-25328.0000
DATE: 12/18/15
DRAWN: DNF
REVIEWED: MFY
APPROVED: MFY
SCALE: AS NOTED

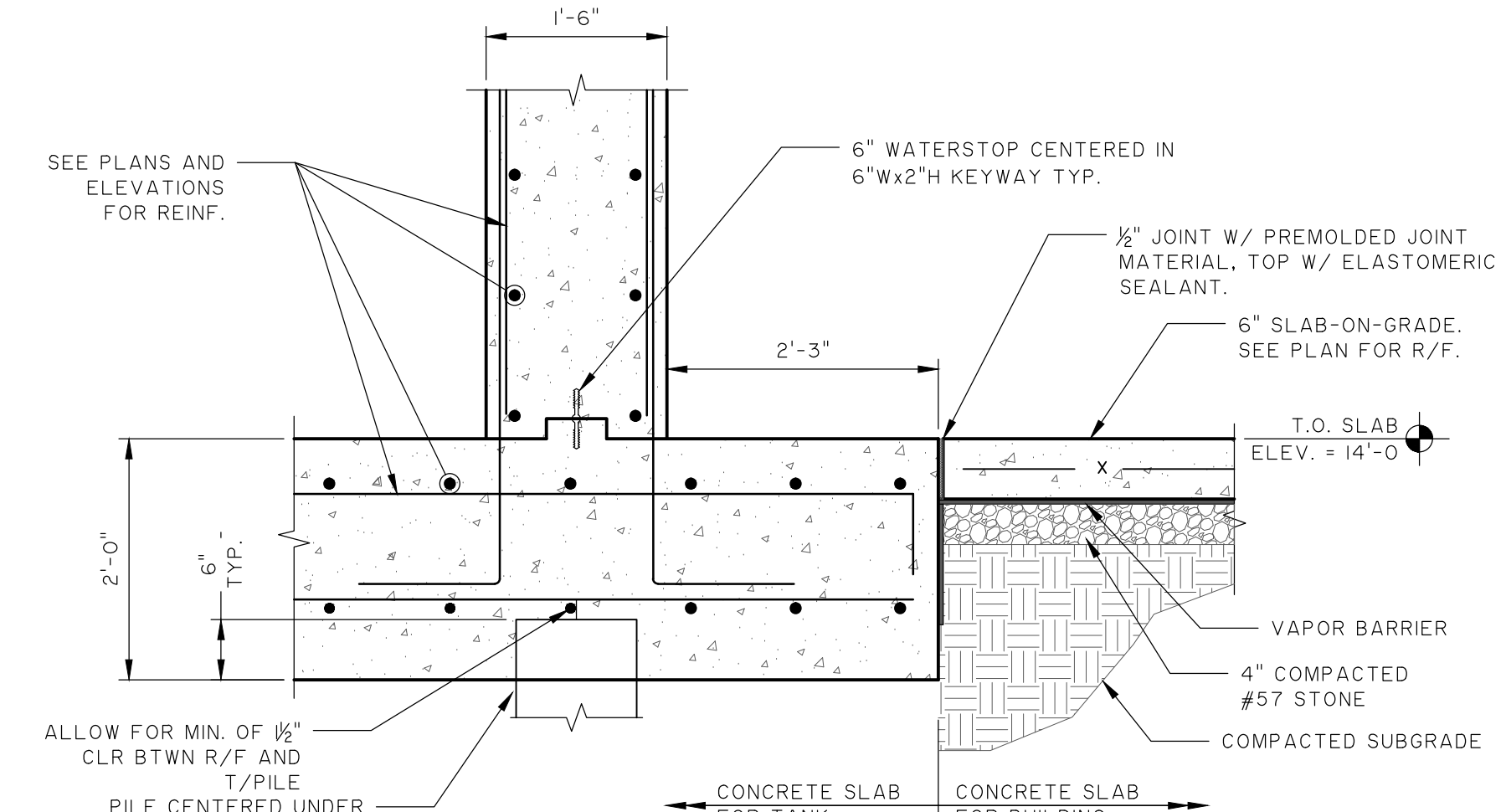
35-S-07



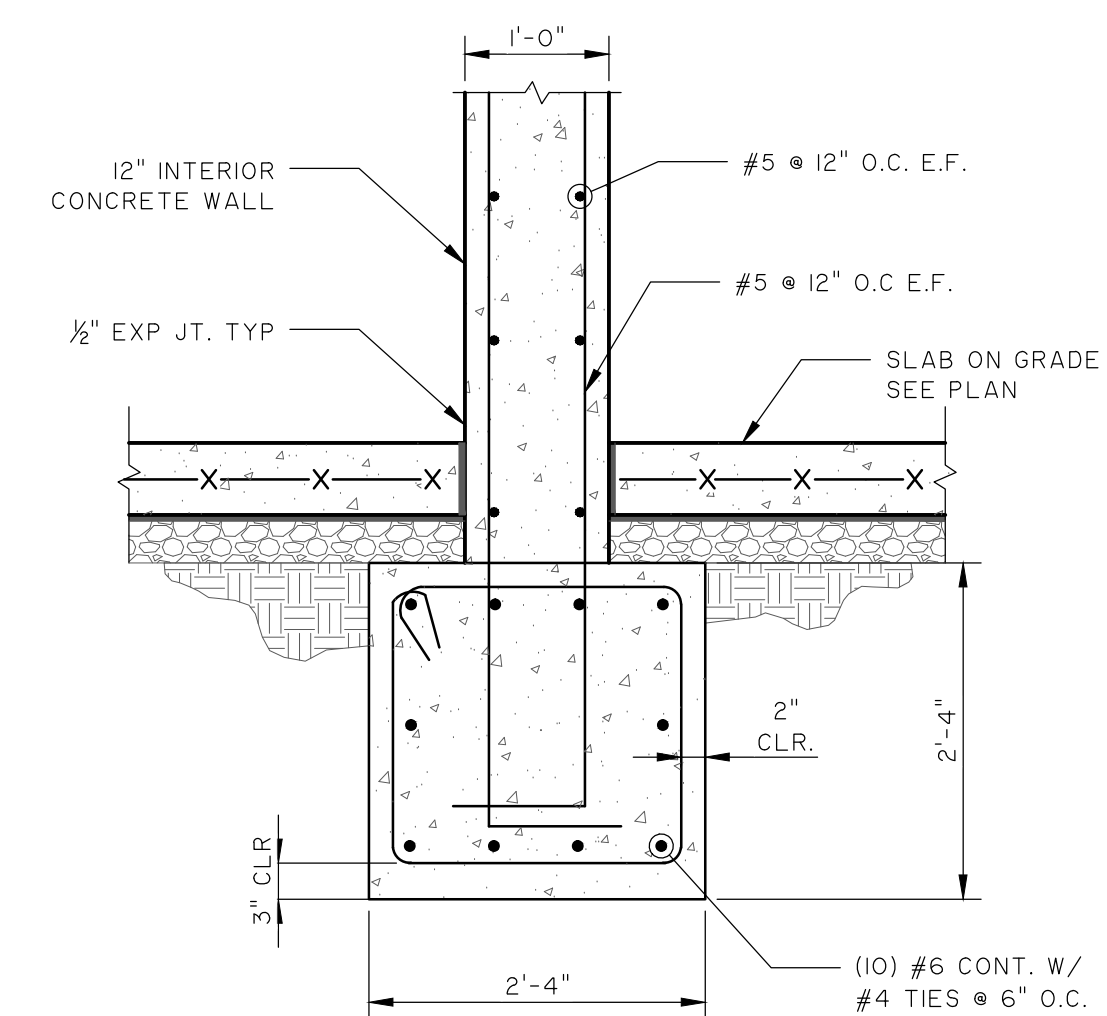
1 SECTION AT STAIR SLAB
35-S-08 3/8" = 1'-0"



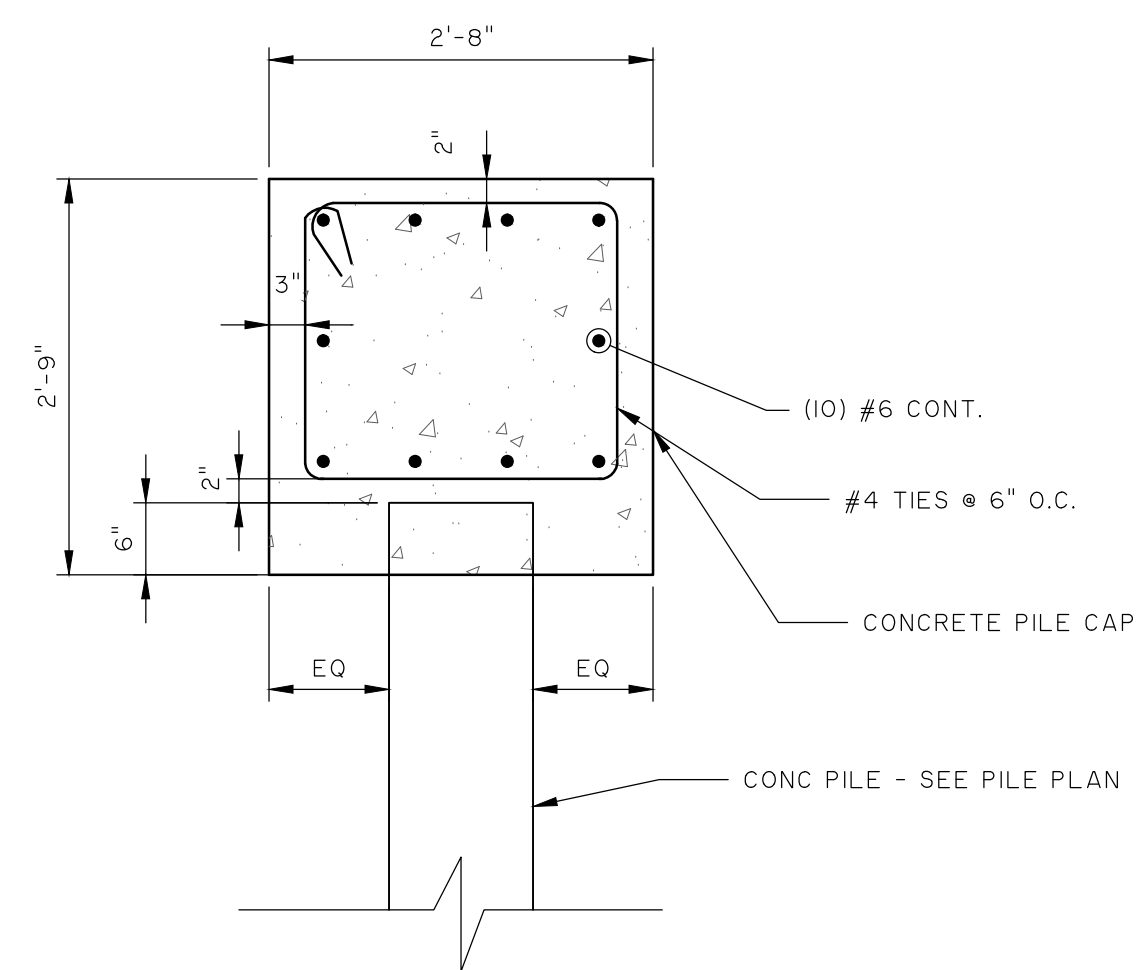
2 SECTION AT ELECTRICAL CHASE
35-S-08 3/4" = 1'-0"



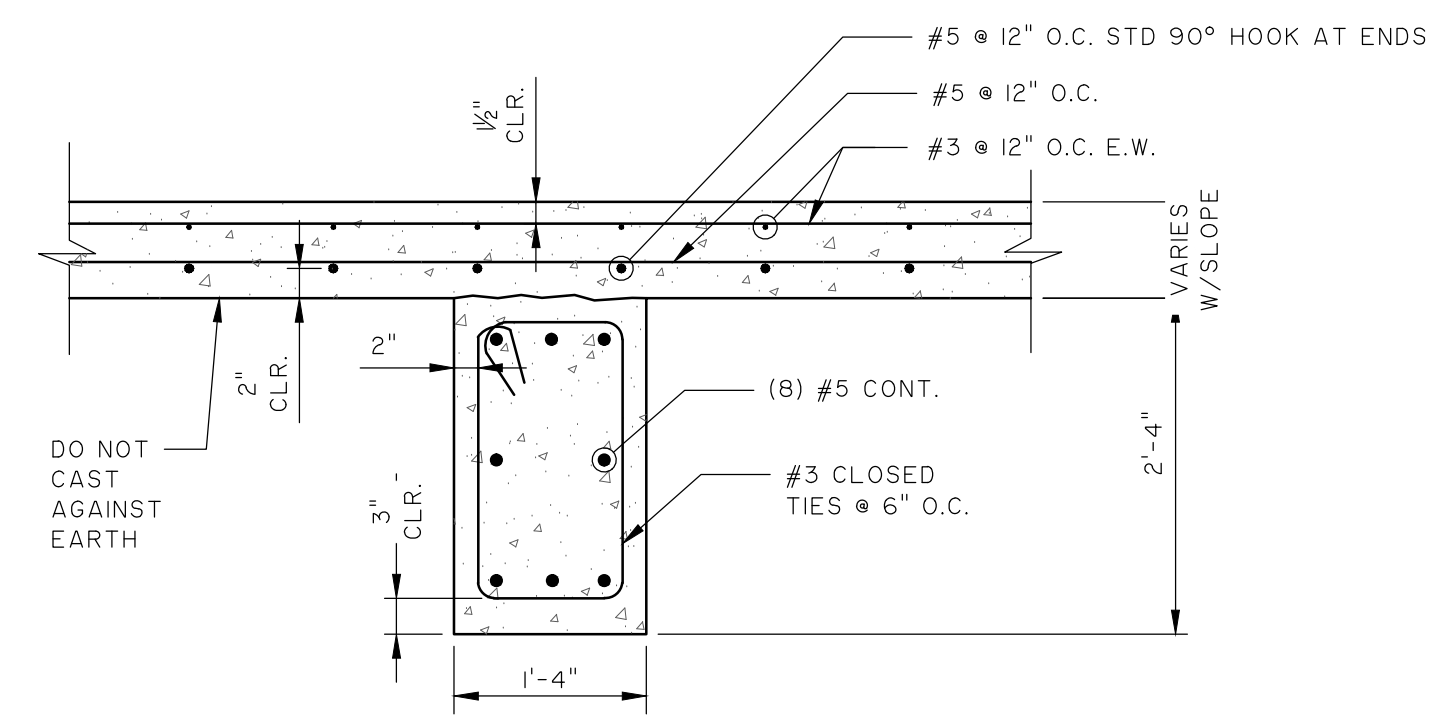
5 FOOTING SECTION
35-S-08 3/4" = 1'-0"



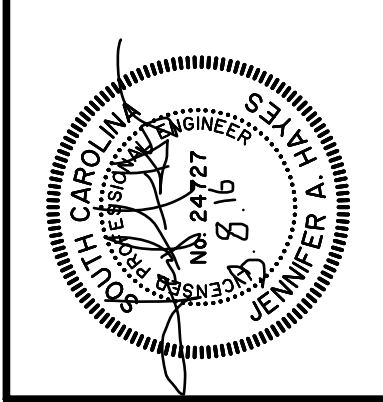
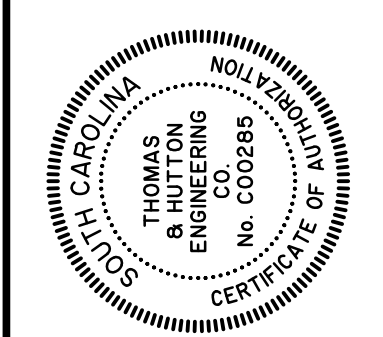
3 FOOTING AT INTERIOR WALL
35-S-08 3/4" = 1'-0"



6 TYPICAL PILE CAP
35-S-08 3/4" = 1'-0"



4 SECTION AT GRADE BEAM
35-S-08 3/4" = 1'-0"



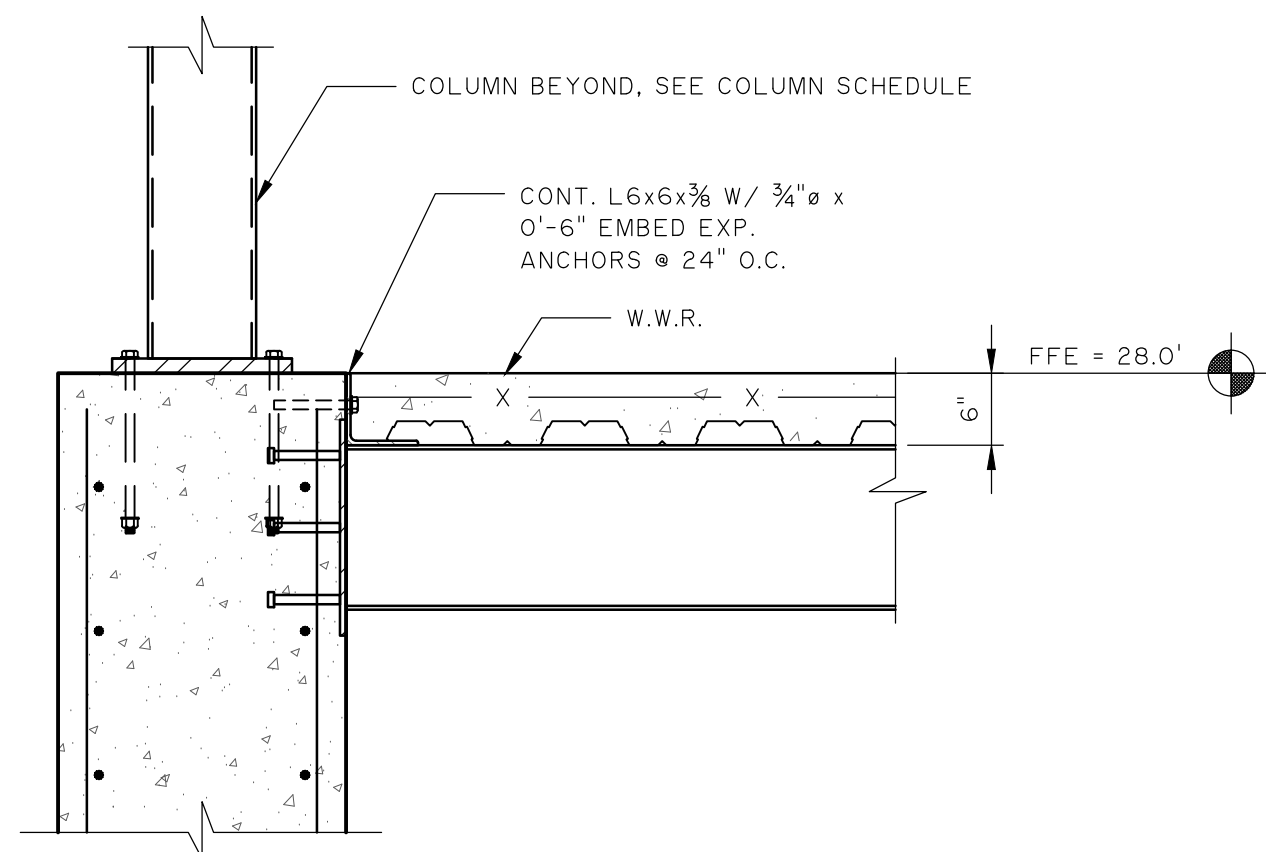
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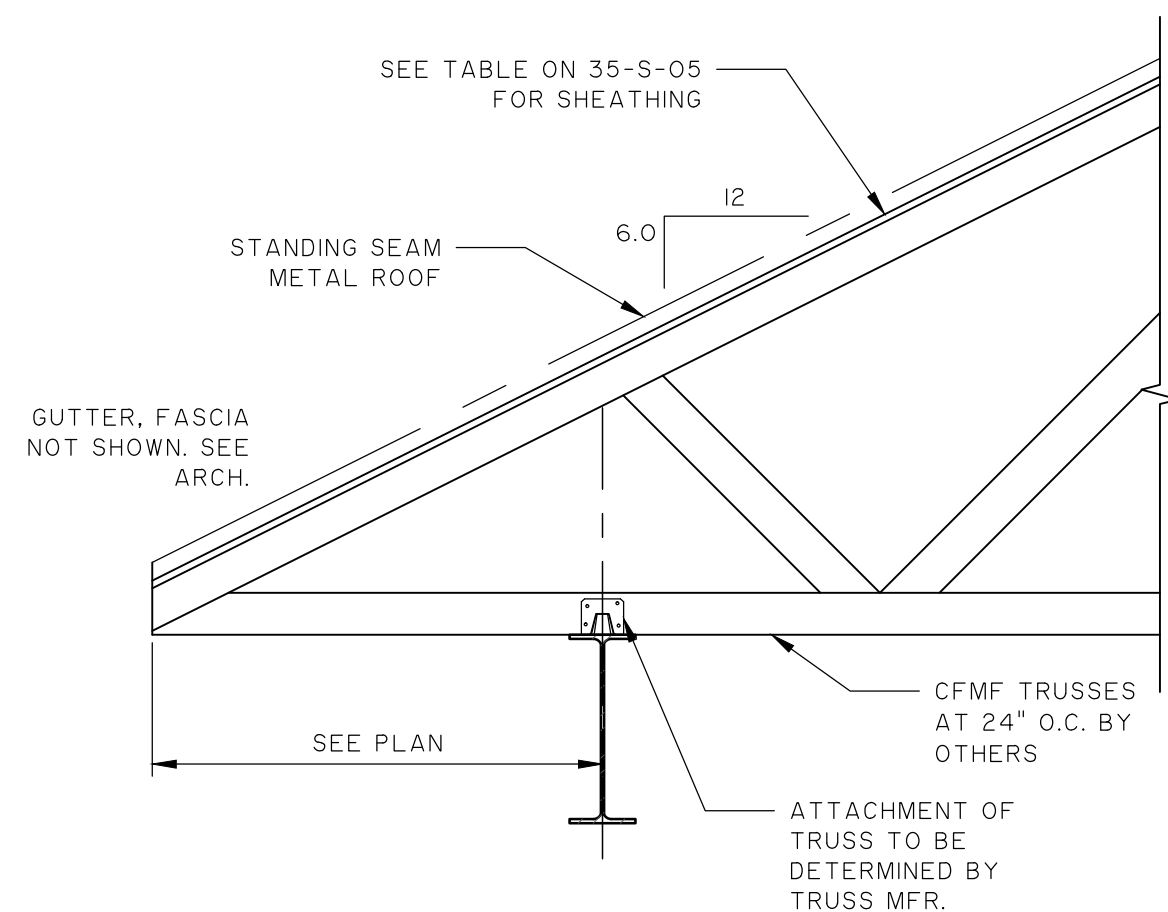
KIAWAH RIVER PLANTATION
CHARLESTON COUNTY, SOUTH CAROLINA
KIAWAH RIVER PLANTATION WWTP
BUILDING SECTIONS & DETAILS

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/EAC
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REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

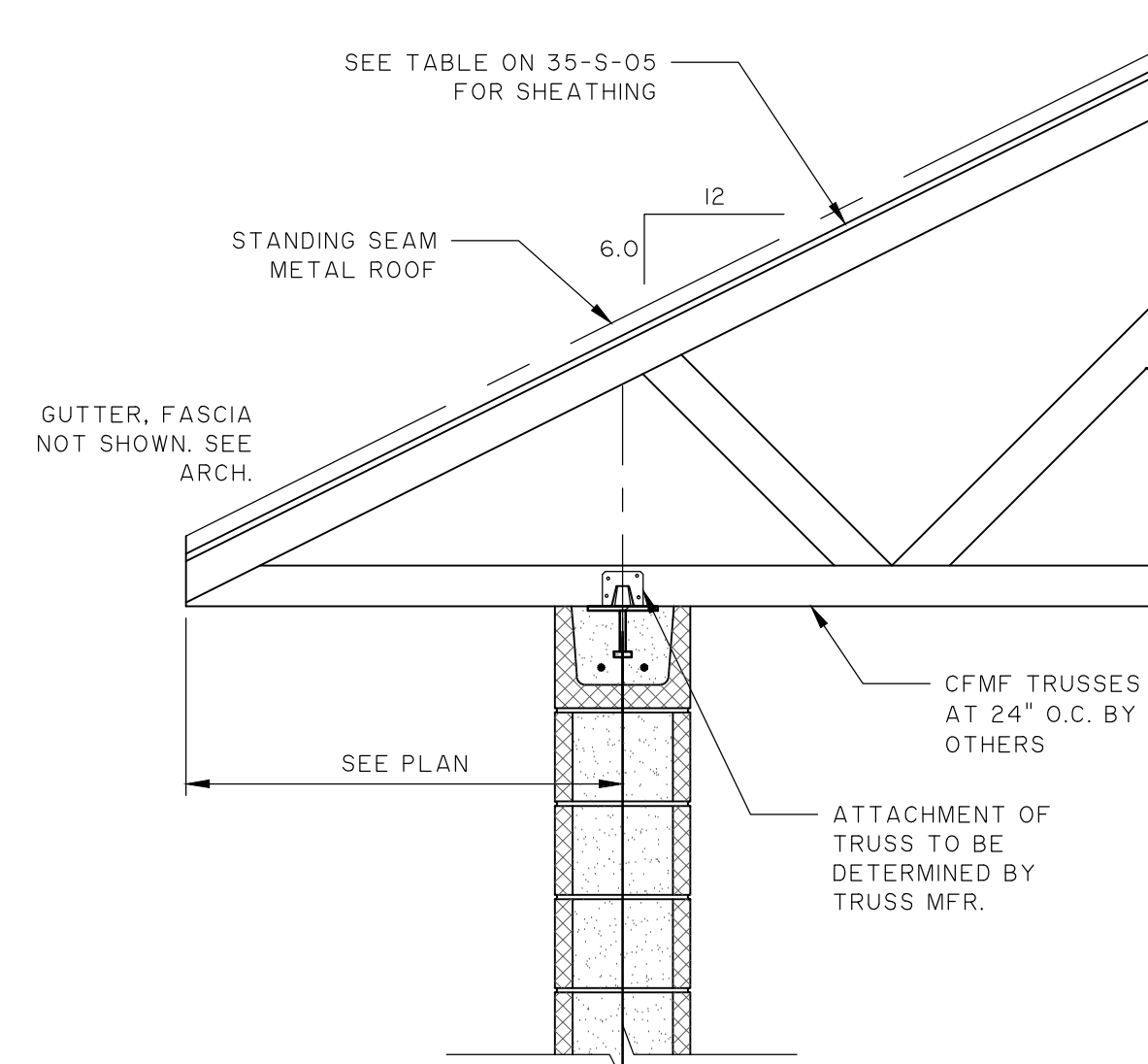
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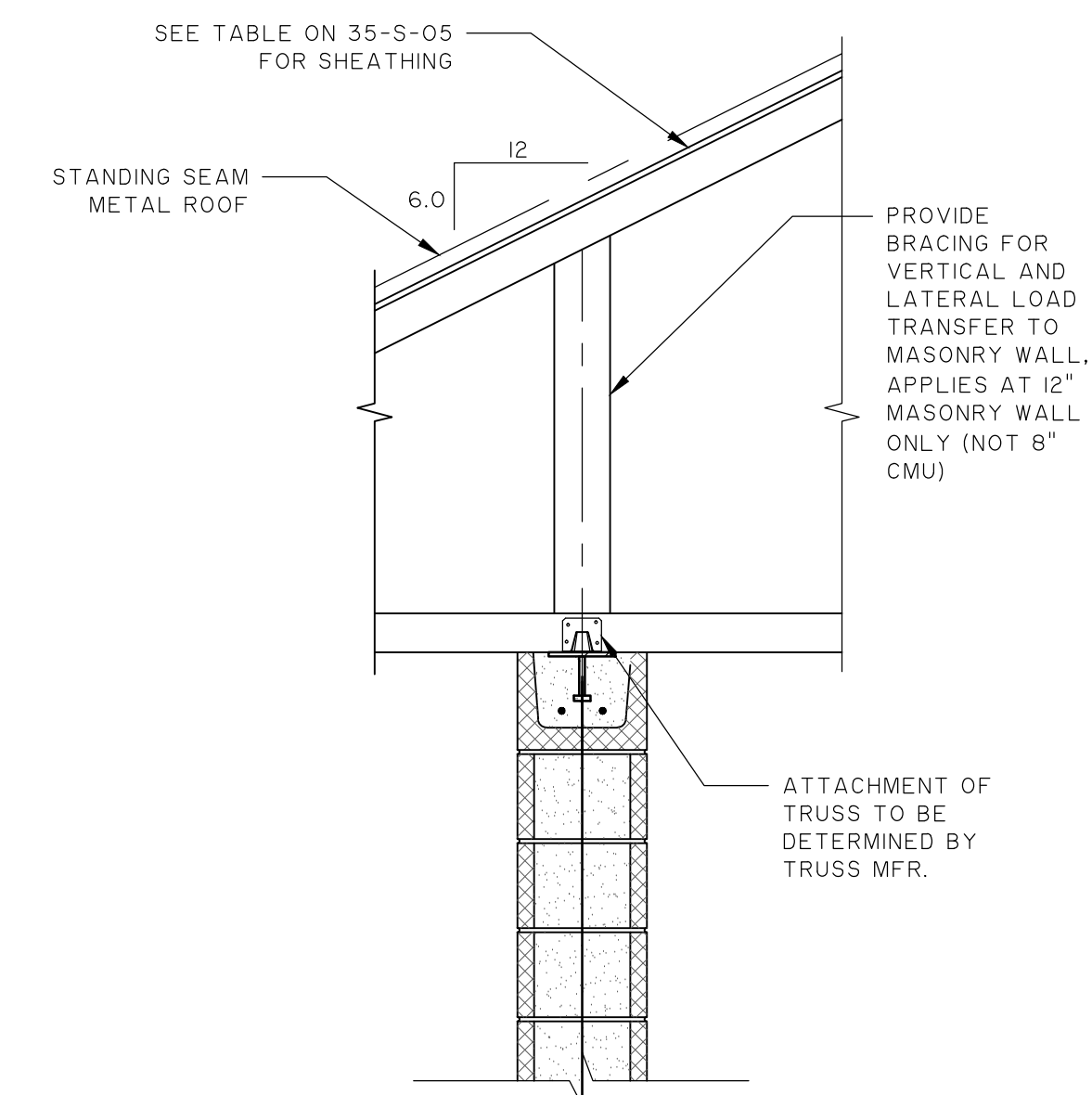
1 SECTION
35-S-09 3/4" = 1'-0"



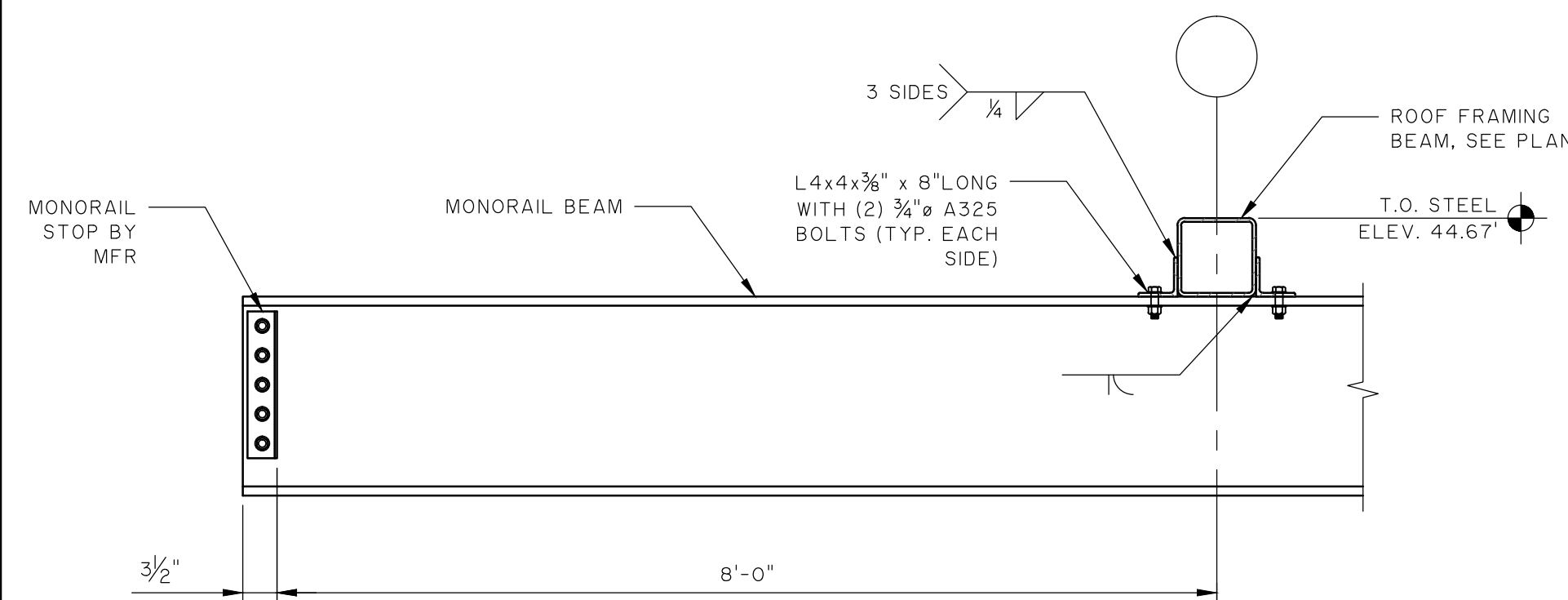
2 ROOF SECTION
35-S-09 3/4" = 1'-0"



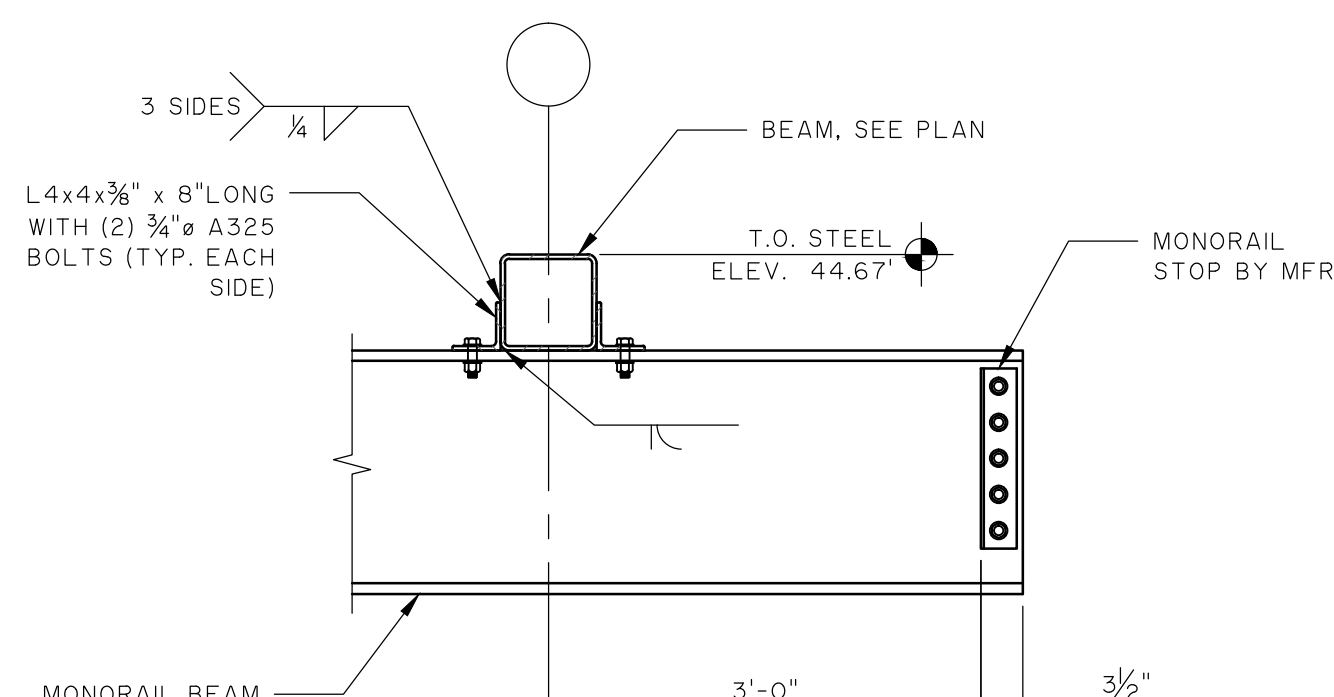
3 ROOF SECTION
35-S-09 3/4" = 1'-0"



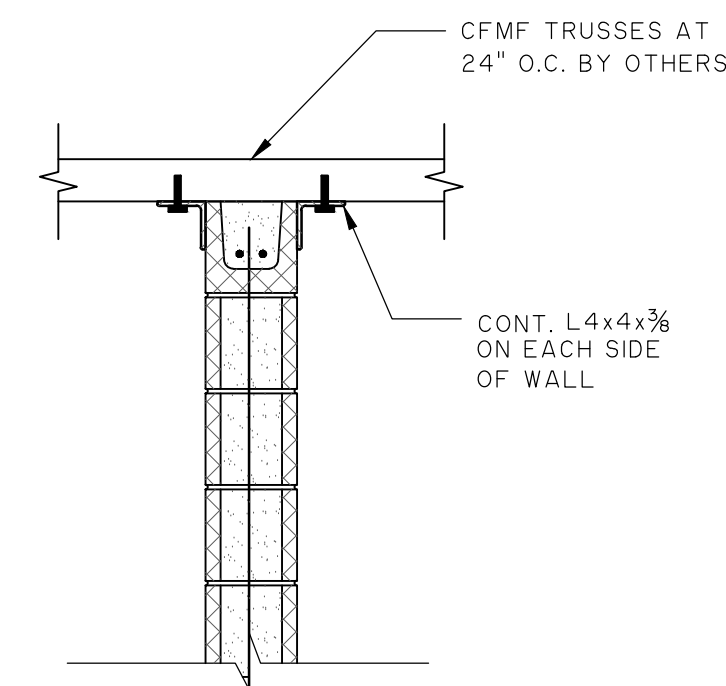
4 ROOF SECTION @ LOAD-BEARING CMU WALL
35-S-09 NTS



5 MONORAIL CANTILEVER
35-S-09 3/4" = 1'-0"

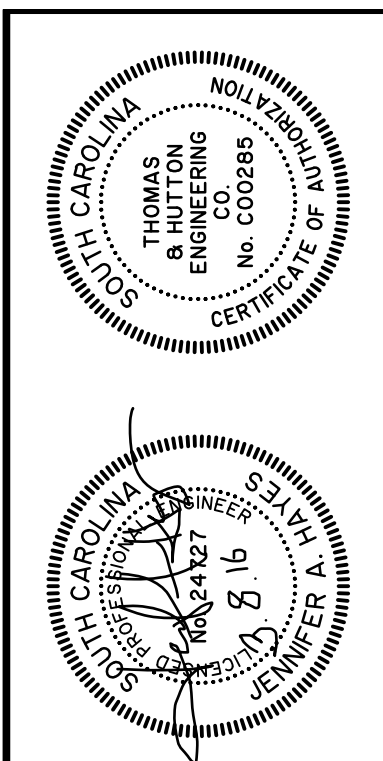


6 TYP CONN OF MONORAIL BEAM
35-S-09 3/4" = 1'-0"



NOTE: TRUSS ATTACHMENT TO BE DETERMINED BY TRUSS MFR. OUT-OF-PLANE WIND LOAD = (+) 560 LB/FT.

7 NON LOAD-BEARING WALL CONNECTION @ TRUSS
35-S-09 3/4" = 1'-0"



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KIAWAH RIVER PLANTATION WWTP
BUILDING DETAILS

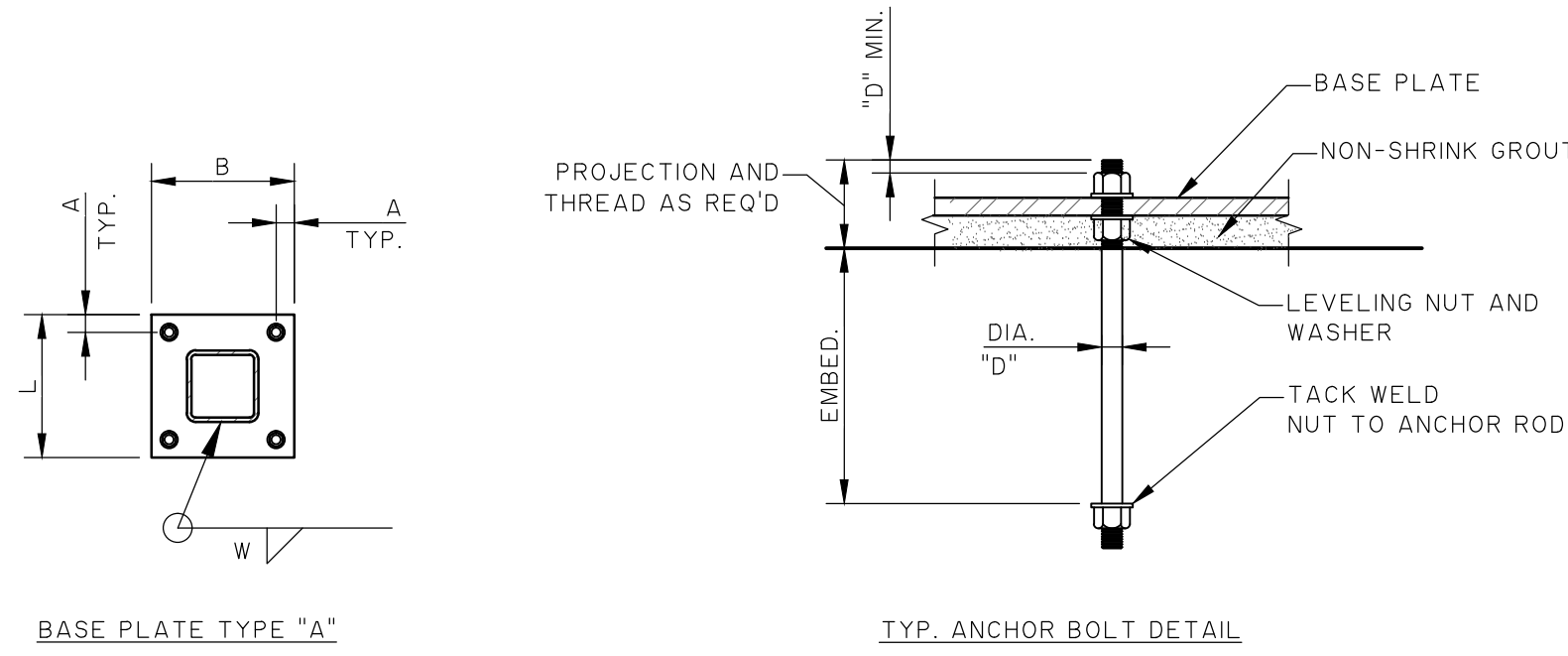
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APPROVED:	MFY
SCALE:	AS NOTED

35-S-09

LINTEL SCHEDULE					
LENGTH	MAT'L	SIZE	BEARING	FLEXURAL R/F	SHEAR R/F
≤ 3'-6"	8" CMU	8"x8"	16"	(1) #5 BOTTOM	NONE
≤ 3'-6"	12" CMU	12"x8"	16"	(1) #5 BOTTOM	NONE
3'-7" - 6'-0"	8" CMU	8"x16"	16"	(2) #5 BOTTOM	NONE
3'-7" - 6'-0"	12" CMU	12"x16"	16"	(2) #5 BOTTOM	NONE
≤ 3'-6"	CONC	14"wx14"d	N/A	(2) #5 T&B, W/ 1/2" COVER, EXTEND 36" BEYOND EDGE OF OPENING	#4 TIES @ 6" O.C.
3'-7" - 10'-0"	CONC	14"wx16"d	N/A	(2) #7 T&B, W/ 1/2" COVER, EXTEND 42" BEYOND EDGE OF OPENING	#4 TIES @ 4" O.C.

LINTEL NOTES:

- COORDINATE ALL LINTELS WITH ARCHITECTURAL DRAWINGS.
- OPENINGS FOR ROUND DUCTS, PIPING, AND ELECTRICAL CONDUIT ARE NOT SHOWN. SLEEVE ROUND OPENINGS BETWEEN 4 AND 12 INCHES WITH SCHEDULE 40 STEEL PIPE OR AS DIRECTED BY MANUFACTURER (FOR EQUIPMENT ITEMS).
- FOR MASONRY LINTELS, FILL (2) CMU CELLS EACH SIDE OF OPENING (BELOW LINTEL BEARING) WITH GROUT FULL HEIGHT AND REINFORCE W/ (1) VERTICAL BAR EACH CELL (TO MATCH WALL R/F).
- CONTINUE CMU WALL REINFORCING THROUGH LINTEL WHERE WALL REINFORCING OCCURS OVER MASONRY LINTELS.
- PLACE BOTTOM REINFORCING AT BOTTOM OF LINTEL. PLACE TOP REINFORCING W/ 1/2" CLEAR.

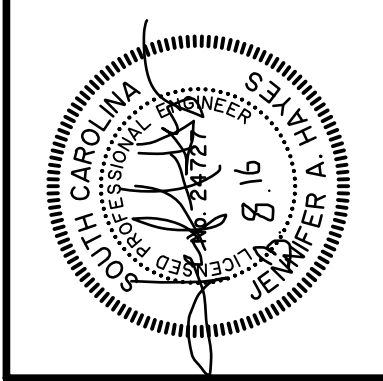
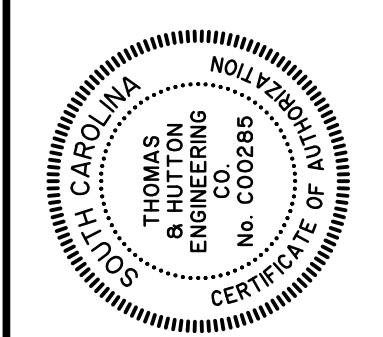


BASE PLATE SCHEDULE										
BASE PLATE				ANCHOR BOLTS					GROUT THICK.	REMARKS
tp	L	B	WELD, W	No.	DIA. "D"	EMBED	"A"	PL. WASHER		
1/2"	15"	15"	3/8"	4	3/4"	1'-0"	1/2"	-	1/2"	-

- NOTES:**
- PROVIDE OVERSIZE HOLES IN BASE PLATES AS PER AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
 - GROUT SHALL BE NON-SHRINK, NON-METALLIC GROUT. USE FLOWABLE GROUT AT BASE PLATES WITH SHEAR LUGS.

COLUMN SCHEDULE		
COLUMN MARK	C5-CA, C4-CA, C3-CA, C2-CA	C1-CA, C2-CB, C1-CB, C2-CC, C1-CC, C2-CD, C1-CD, C2-C3, C1-CF
ROOF ELEV. VARIES		
SECOND LEVEL F.F.E. = 28.0'	HSS9x9x3/8	HSS9x9x3/8
FIRST LEVEL F.F.E. = 14.0'		
BOTT. OF BASE PL EL. = 13.94'		

B/BASE PLATE ELEV. = 28.13'

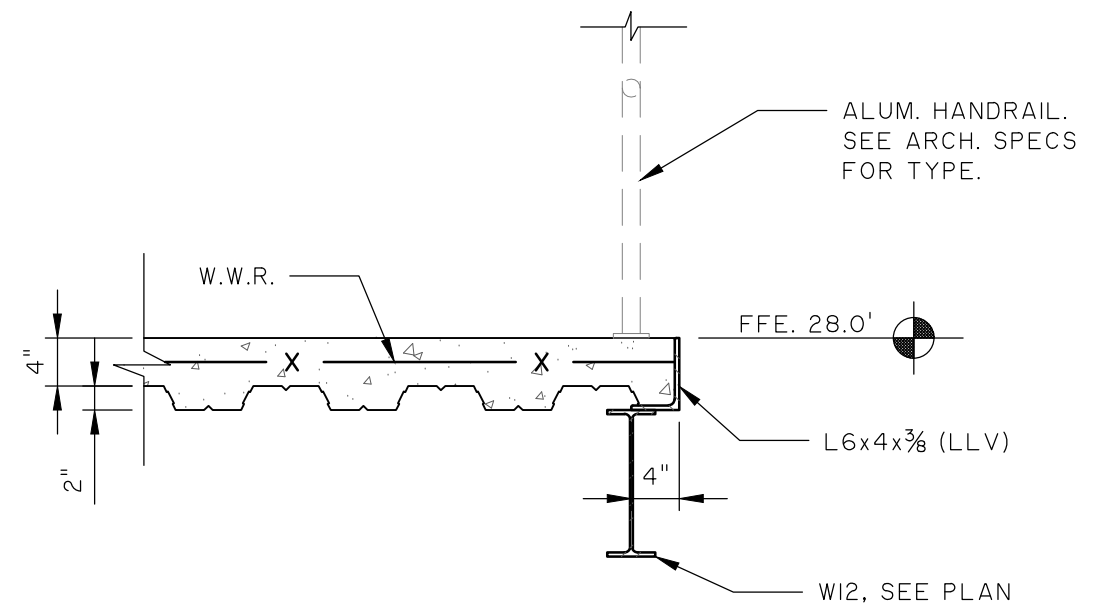
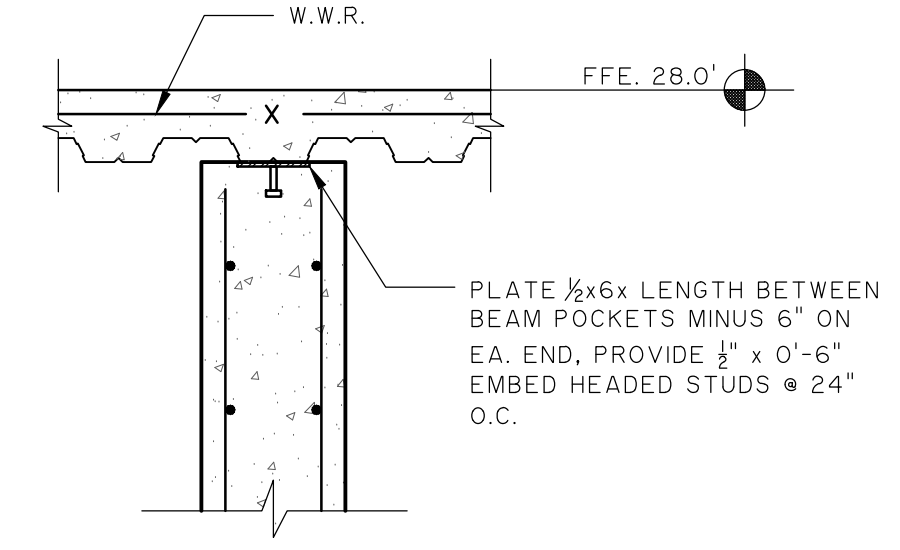
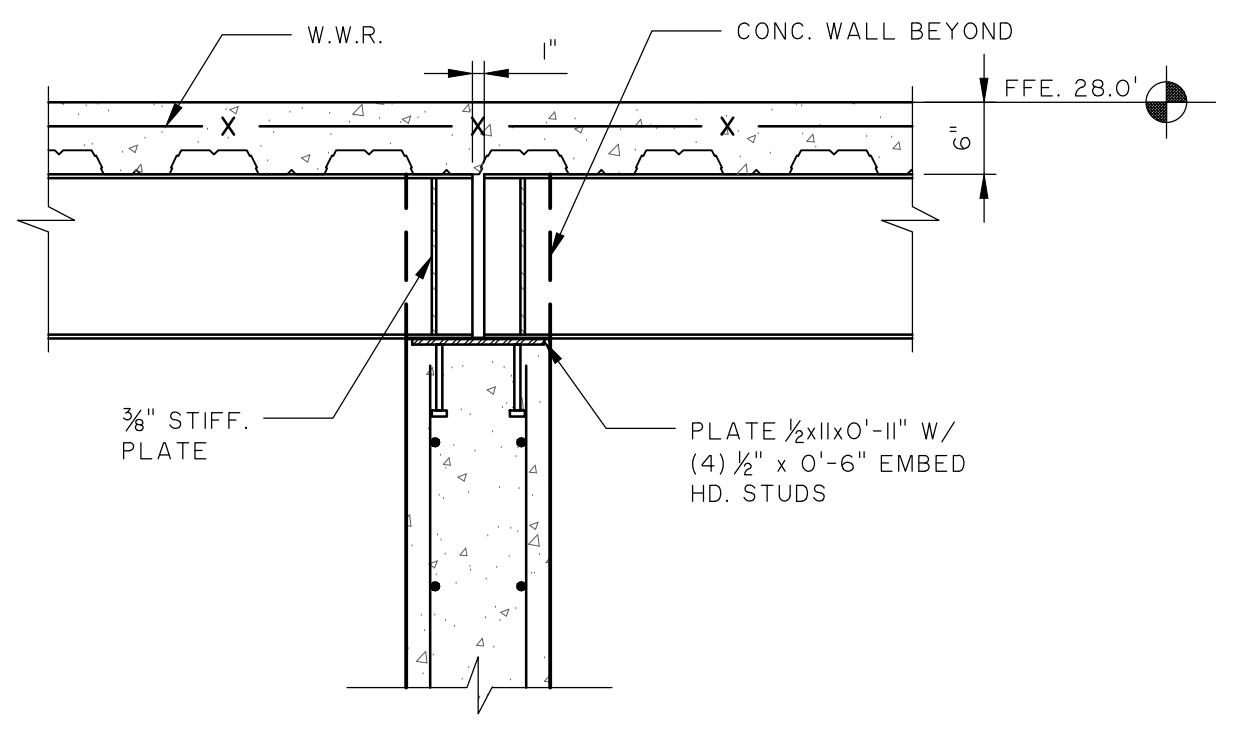
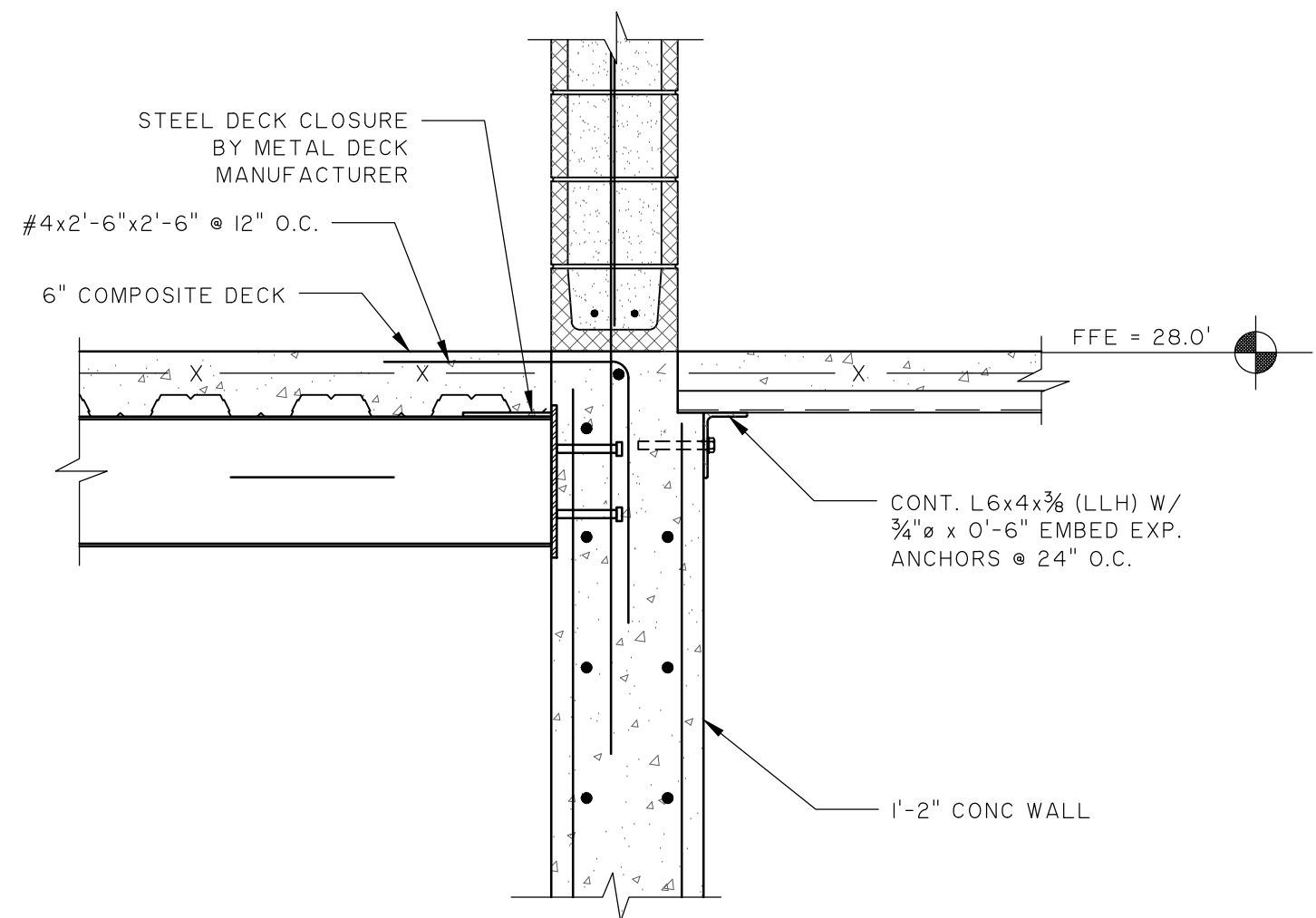


NO.	REVISIONS	BY	DATE

1 LINTEL SCHEDULE
35-S-10 3/4" = 1'-0"

2 COLUMN BASE PLATE DETAILS
35-S-10 3/4" = 1'-0"

3 COLUMN SCHEDULE
35-S-10 NTS

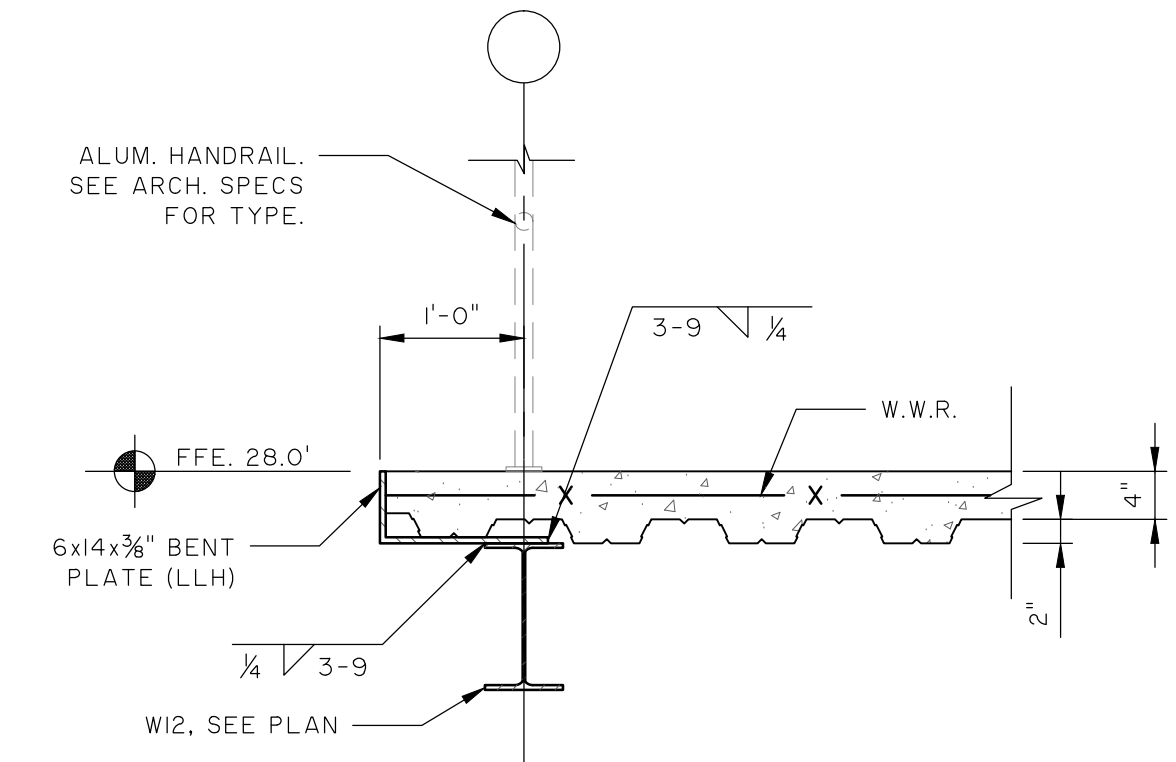
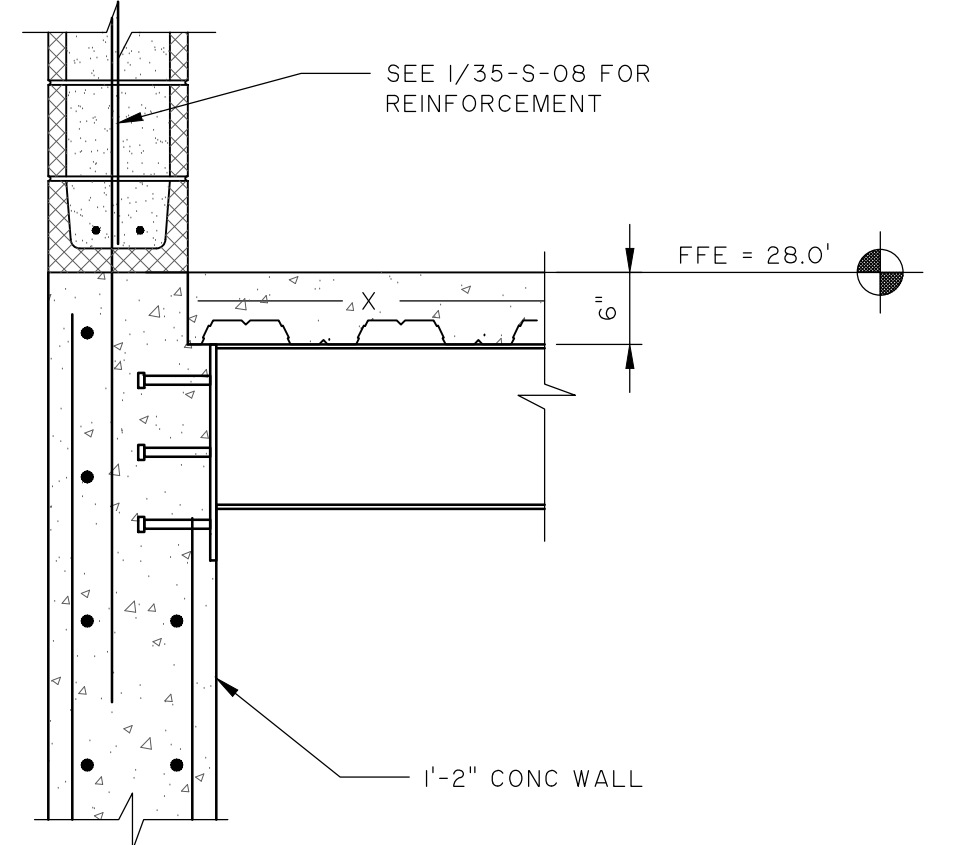
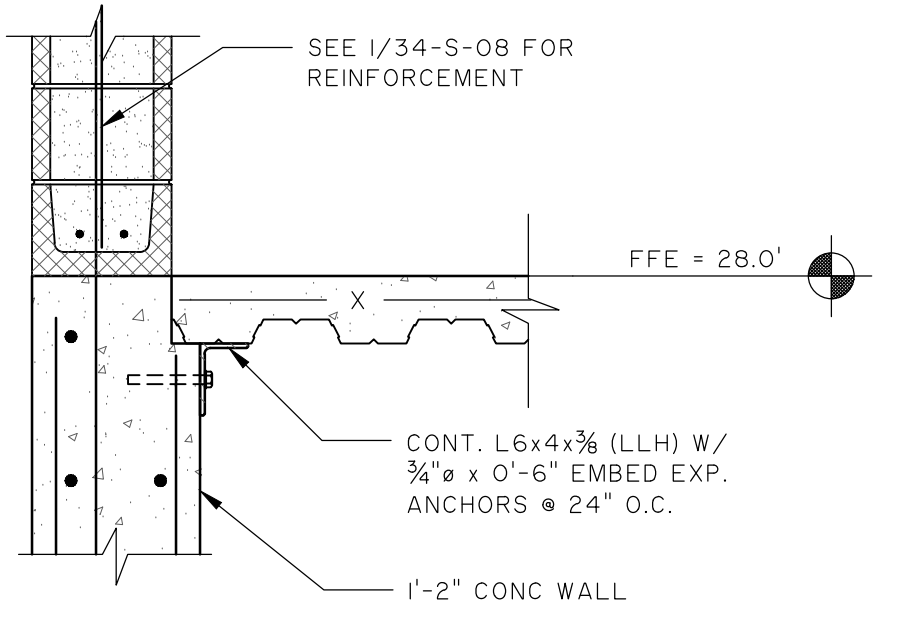
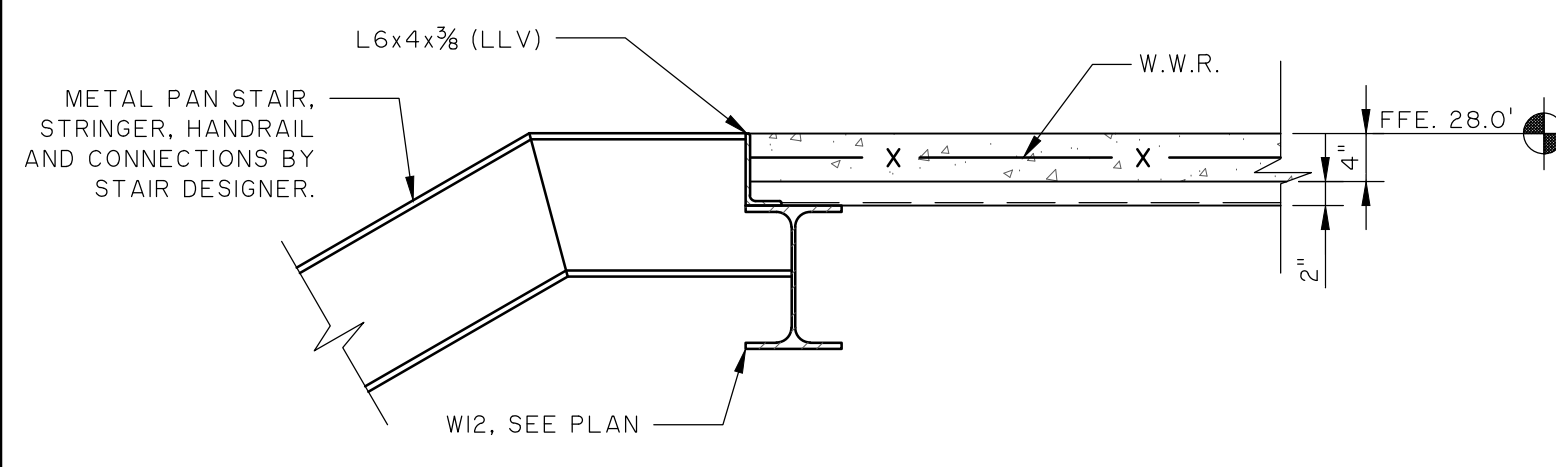


4 SECTION AT ELEVATED WALKWAY
35-S-10 3/4" = 1'-0"

5 BEAMS BEARING ON CONC WALL
35-S-10 3/4" = 1'-0"

6 DECK BEARING SECTION
35-S-10 3/4" = 1'-0"

7 SECTION AT STAIR LANDING
35-S-10 3/4" = 1'-0"



8 SECTION AT TOP OF STAIR
35-S-10 3/4" = 1'-0"

9 SECTION
35-S-10 3/4" = 1'-0"

10 SECTION
35-S-10 3/4" = 1'-0"

11 SECTION AT EDGE OF PORCH
35-S-10 3/4" = 1'-0"

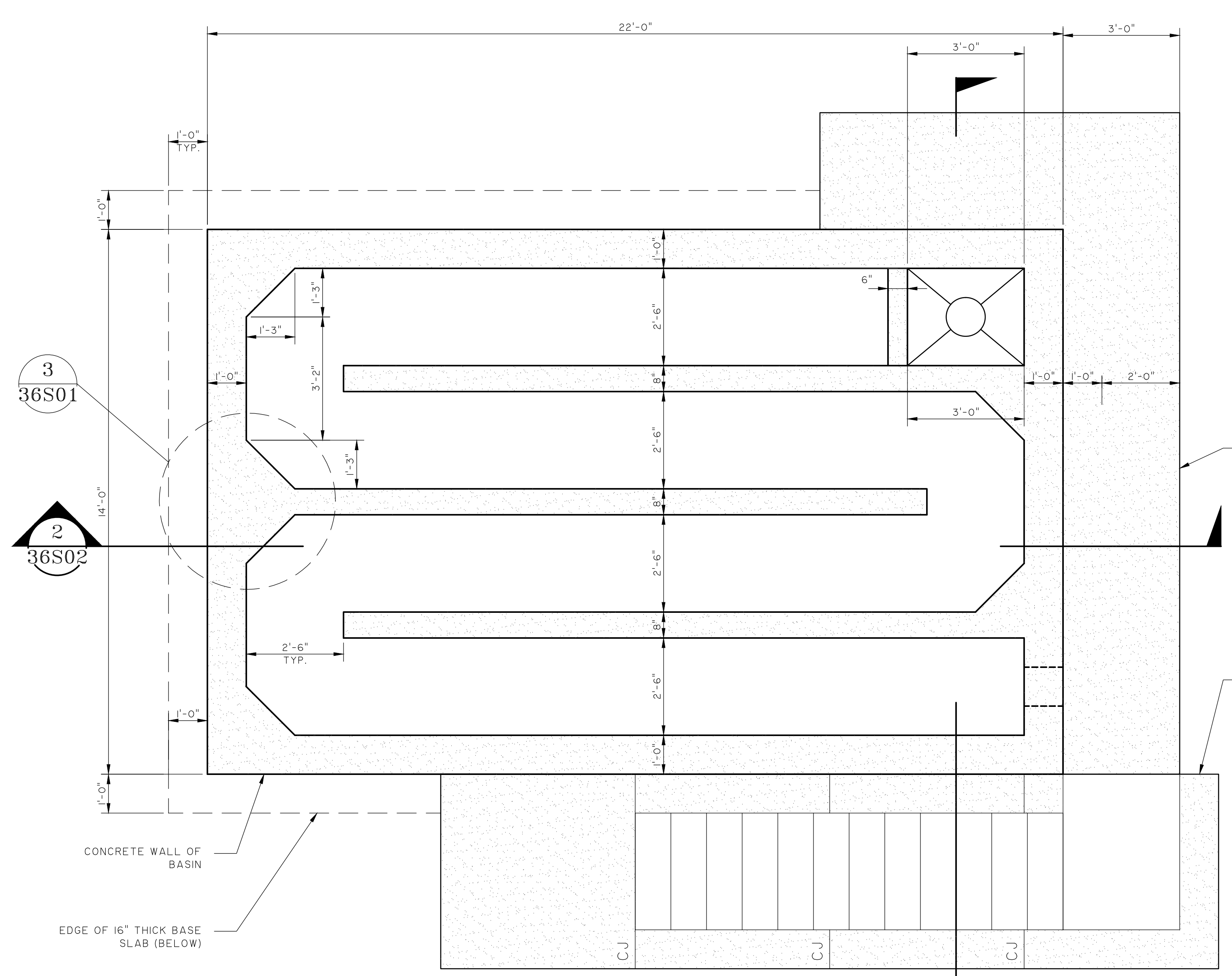
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CHARLESTON COUNTY, SOUTH CAROLINA
KIAWAH RIVER PLANTATION WWTP
BUILDING DETAILS

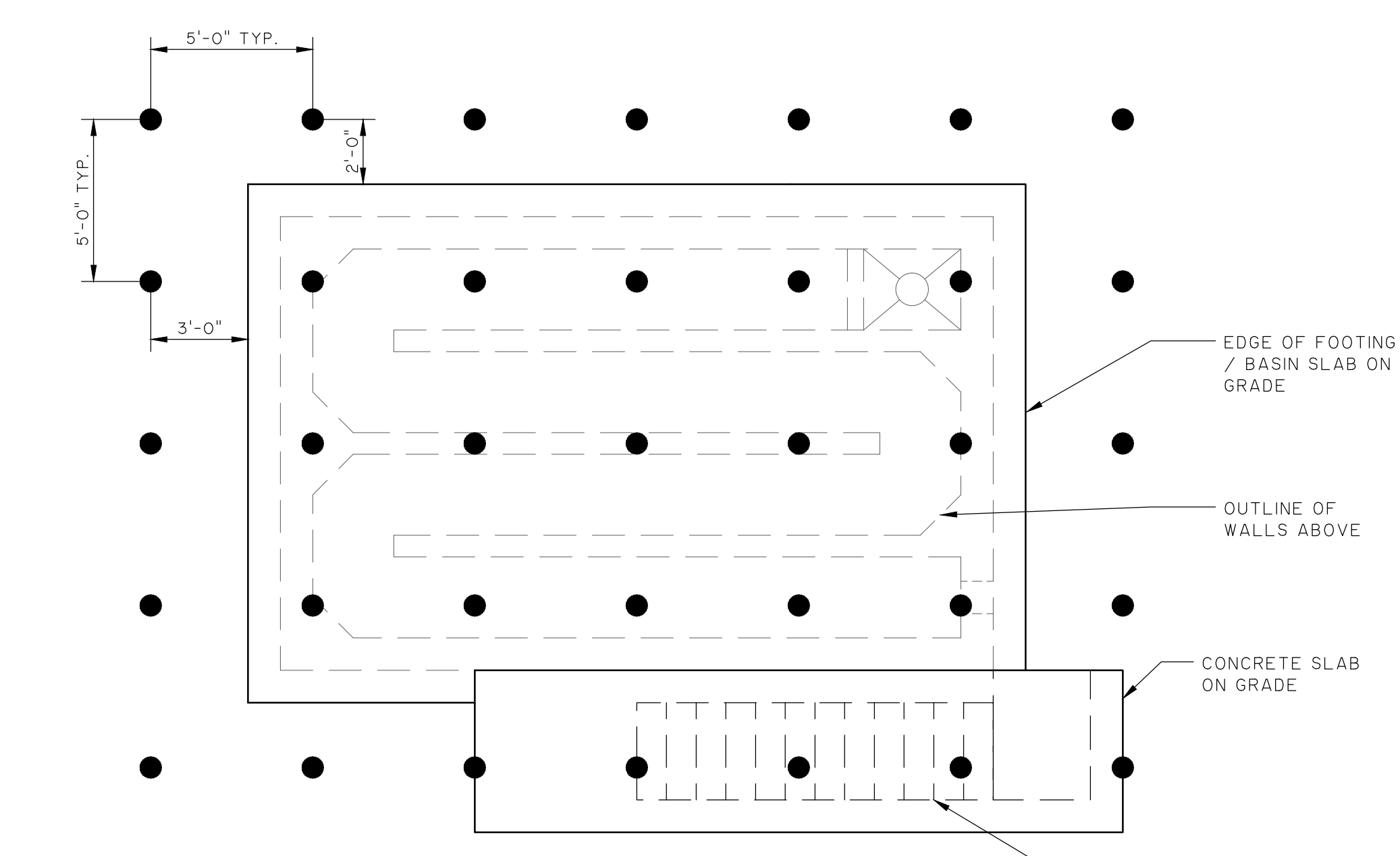
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APPROVED:	MFY
SCALE:	AS NOTED

35-S-10

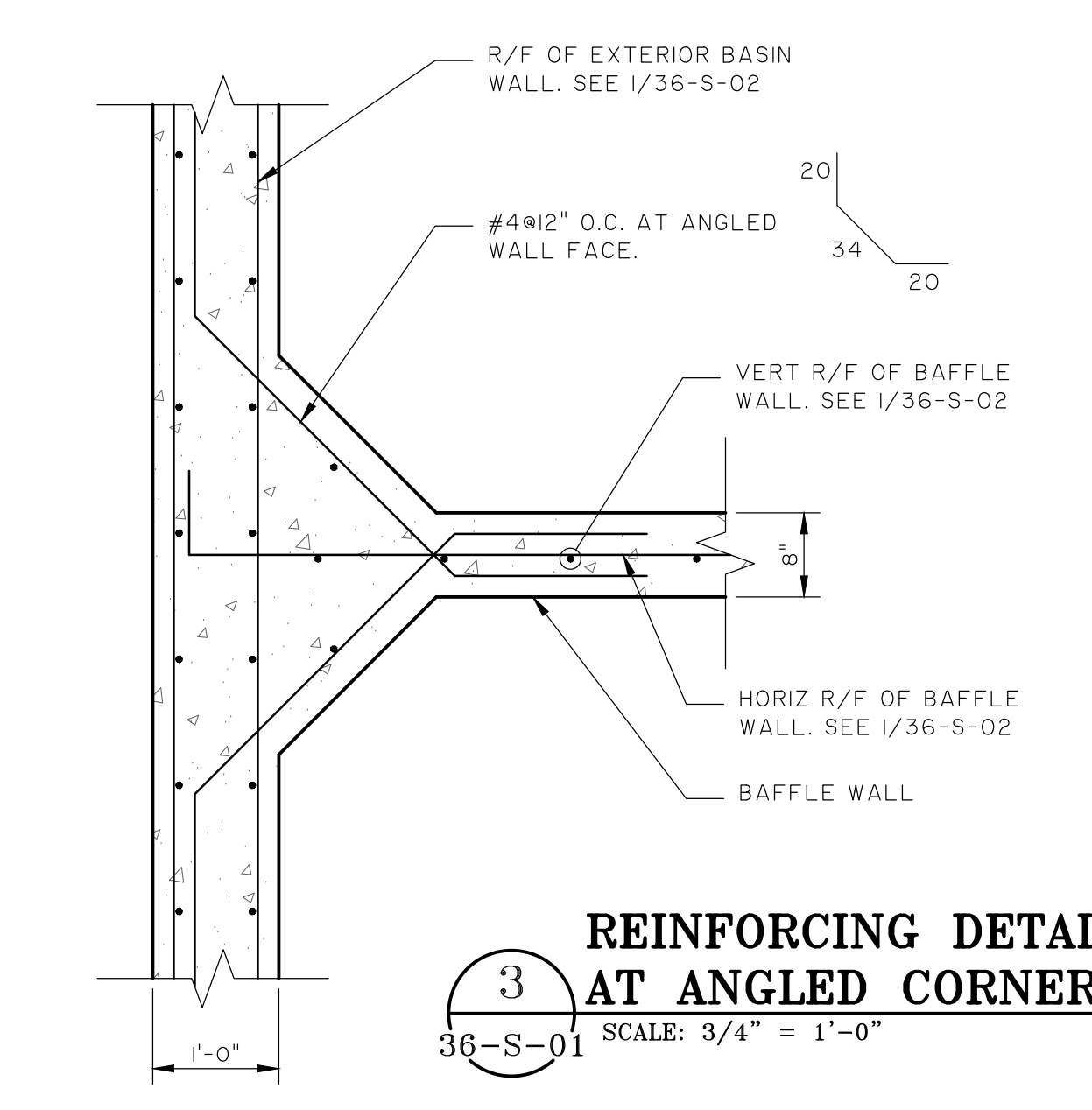
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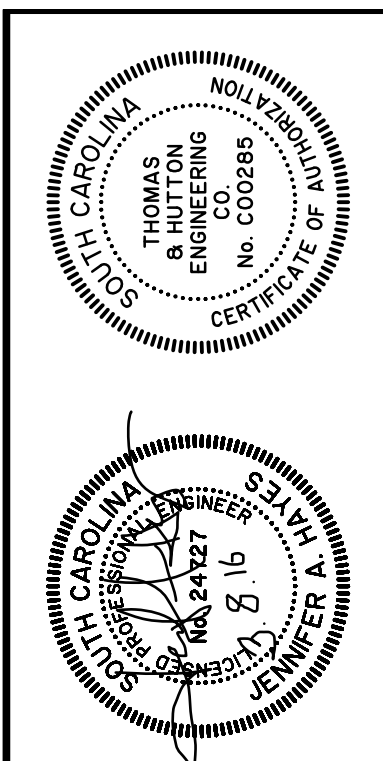
1 PLAN VIEW
 36-S-01 SCALE: 1/2" = 1'-0"
 NOTES:
 1. INTERIOR OF BASINS AND BASE SLAB TO BE COATED WITH WATERPROOF COATING, PER THE SPECIFICATIONS.
 2. EXTERIOR WALLS TO BE PAINTED COLOR 2 TO MATCH EXTERIOR COLOR OF THE WWTP BASINS.



2 SUBGRADE PREPARATION - EARTHQUAKE DRAIN LAYOUT
 36-S-01 SCALE: 1/4" = 1'-0"
 NOTES:
 1. EARTHQUAKE DRAINS SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT COMPLETED BY TERRACON, DATED FEBRUARY 06, 2015, PROJECT NO. ENI45129.
 2. EARTHQUAKE DRAINS SHALL BE PREFABRICATED POLYMER TUBES WRAPPED IN FILTER FABRIC, INSTALLED VERTICALLY IN THE GROUND. THEY SHALL BE 4"ø AND SHALL EXTEND TO A DEPTH OF 40 FEET BELOW EXISTING GRADE. THE EXACT DEPTH SHOULD BE DETERMINED BY THE CONTRACTOR, USING THE GEOTECHNICAL REPORT AND, CONSULTING WITH TERRACON, IF NEEDED.
 3. INSTALLATION OF EARTHQUAKE DRAINS SHALL OCCUR AFTER ROUGH GRADING IS COMPLETED AND PRIOR TO FINE GRADING. CONTRACTOR IS FULLY RESPONSIBLE FOR INSTALLATION AND CONDITION OF EARTHQUAKE DRAINS THROUGHOUT CONSTRUCTION.
 4. INSTALLATION AND DRAINAGE DETAILS SHALL BE PROVIDED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.



3 REINFORCING DETAIL AT ANGLED CORNER
 36-S-01 SCALE: 3/4" = 1'-0"



NO.	REVISIONS	BY	DATE

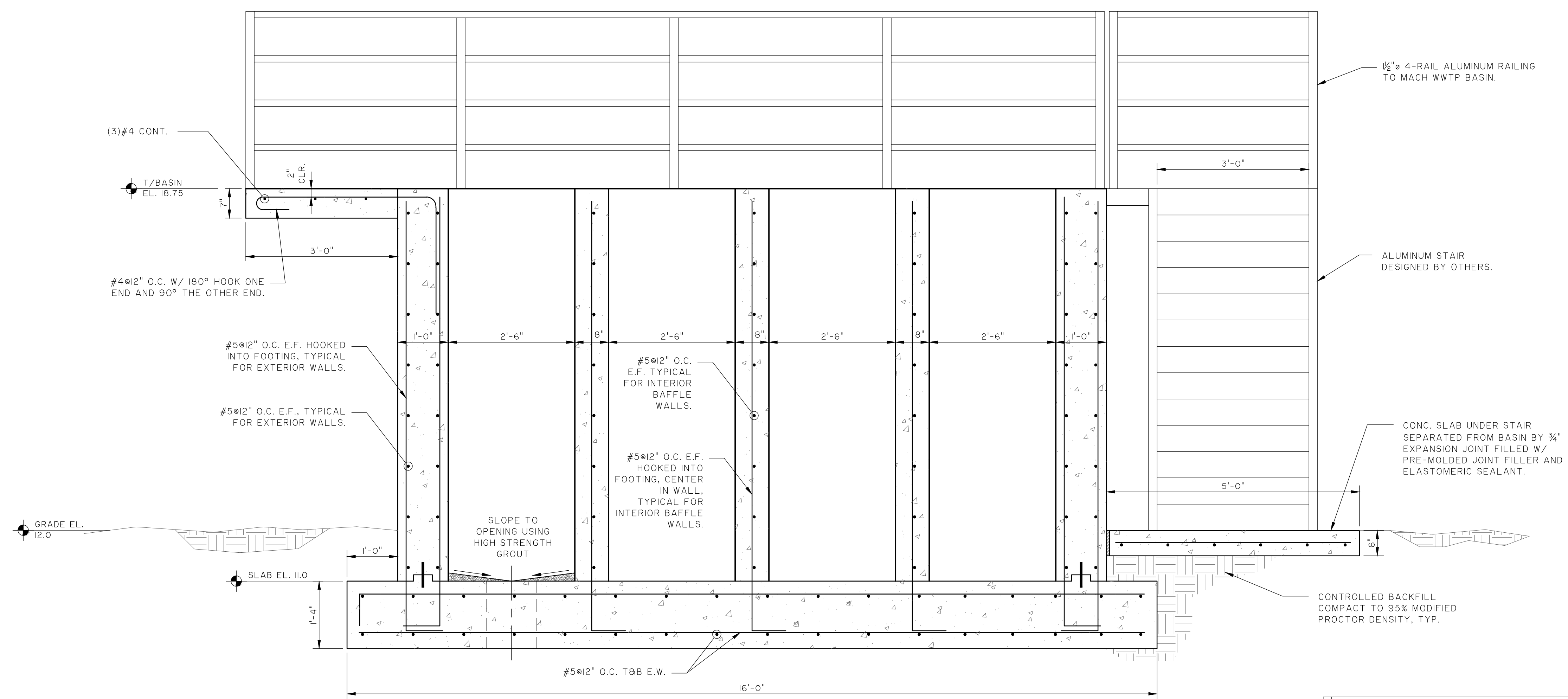
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KIAWAH RIVER PLANTATION
 CHARLESTON COUNTY, SOUTH CAROLINA
WASTEWATER TREATMENT PLANT
CHLORINE CONTACT PLAN VIEW

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH
DESIGNED:	JAH
REVIEWED:	MFY
APPROVED:	MFY
SCALE:	AS NOTED

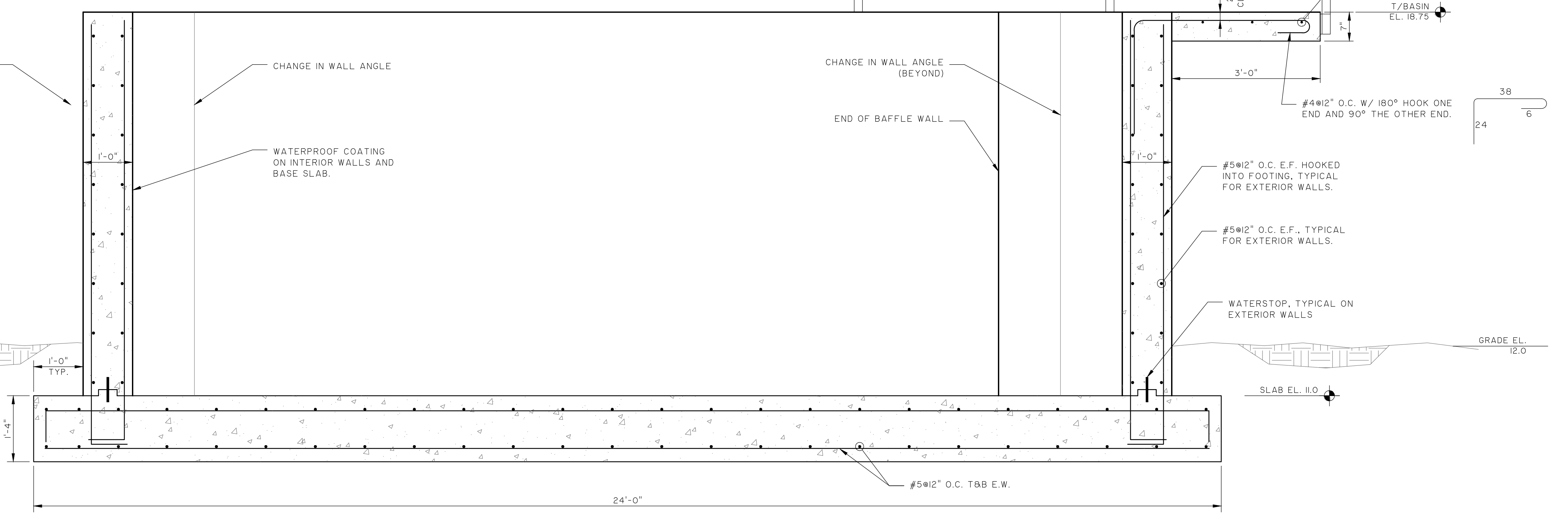
36-S-01

2013/12/18/15 08:00:00 Engineering/Consulting/Plant/36-S-02-0000 - Structural - Chlorine Contact Chamber.dwg, Plot Date: 12/18/15 08:00:00

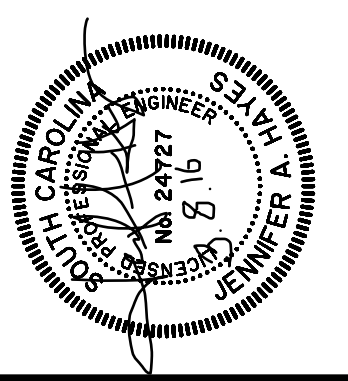
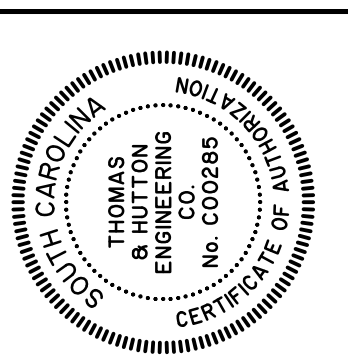


1 TRANSVERSE SECTION
36-S-02 SCALE: 3/4" = 1'-0"

- SHEET NOTES:
1. WATERSTOPS TO BE INSTALLED AT ALL CONSTRUCTION JOINTS IN THE BASIN WALLS AND BASE SLAB. WATERSTOPS SHALL BE GREENSTREAK PVC RIBBED FLAT, STYLE NO. 784 OR APPROVED EQUAL.
 2. INTERIOR OF BASIN WALLS, SLABS AND PIPING SHALL BE COATED WITH RAVEN 405
 3. COORDINATE SIZE, LOCATION AND INSTALLATION OF PIPE OPENINGS W/ PROCESS PLANS AND WITH MANUFACTURERS.



2 LONGITUDINAL SECTION
36-S-02 SCALE: 3/4" = 1'-0"



NO.	REVISIONS	BY	DATE

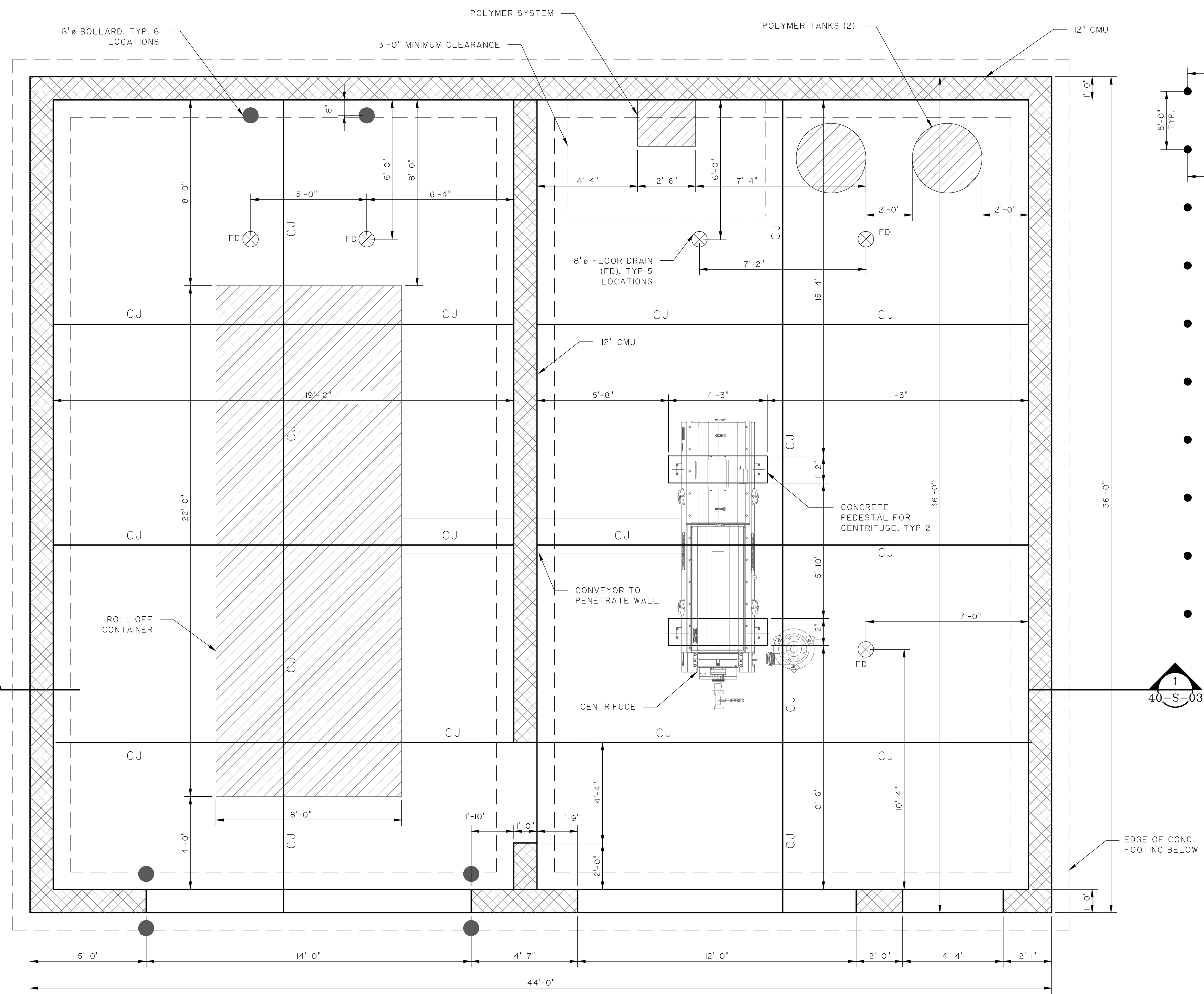
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KIAWAH RIVER PLANTATION
CHARLESTON COUNTY, SOUTH CAROLINA
CAINHOY PLANTATION WATER & SEWER - PHASE I
CHLORINE CONTACT SECTIONS & DETAILS

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH
DESIGNED:	JAH
REVIEWED:	MFY
APPROVED:	MFY
SCALE:	AS NOTED

36-S-02

D:\131528\131528\0000\Engineering\Drawings\Centrifuge\Plan\131528_0000_01.dwg - Centrifuge Building - Job # 2015 - 131528



1
SLAB PLAN - CENTRIFUGE BUILDING
 SCALE: 3/8" = 1'-0"
 FIN. FLR. ELEV. = 14.0'
 T/FTG. ELEV. = 12.0'
NOTES:
 1. FLOOR CONSTRUCTION @ BUILDING U.N.O: 6" REINFORCED CONCRETE SLAB ON GRADE REINF. W/ 6X6 - W2.9XW2.9 W.W.R.
 2. CJ DENOTES SAW CUT CONTROL JOINT LOCATION IN SLAB ON GRADE.
 3. FD DENOTED FLOOR DRAIN IN SLAB ON GRADE.

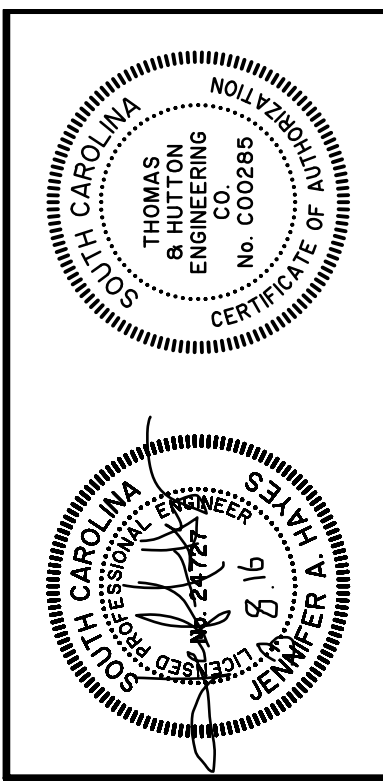
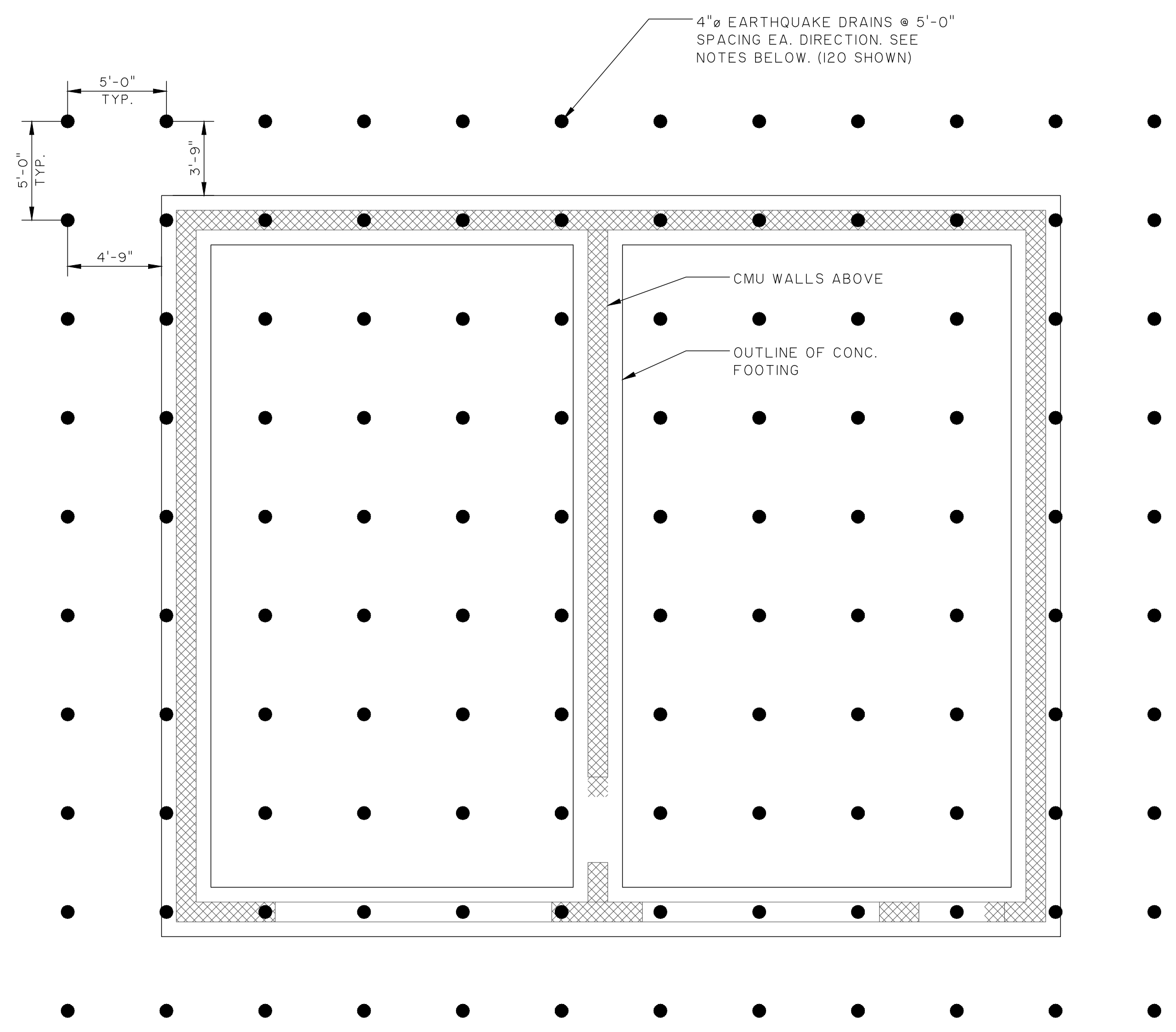
1
40-S-03

EDGE OF CONC. FOOTING BELOW

2
40-S-01

SUBGRADE PREPARATION - EARTHQUAKE DRAIN LAYOUT
 SCALE: 3/16" = 1'-0"

- NOTES:**
- EARTHQUAKE DRAINS SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT COMPLETED BY TERRACON, DATED FEBRUARY 06, 2015, PROJECT NO. EN145129.
 - EARTHQUAKE DRAINS SHALL BE PREFABRICATED POLYMER TUBES WRAPPED IN FILTER FABRIC, INSTALLED VERTICALLY IN THE GROUND. THEY SHALL BE 4" AND SHALL EXTEND TO A DEPTH OF 40 FEET BELOW EXISTING GRADE. THE EXACT DEPTH SHOULD BE DETERMINED BY THE CONTRACTOR, USING THE GEOTECHNICAL REPORT AND, CONSULTING WITH TERRACON, IF NEEDED.
 - INSTALLATION OF EARTHQUAKE DRAINS SHALL OCCUR AFTER ROUGH GRADING IS COMPLETED AND PRIOR TO FINE GRADING. CONTRACTOR IS FULLY RESPONSIBLE FOR INSTALLATION AND CONDITION OF EARTHQUAKE DRAINS THROUGHOUT CONSTRUCTION.
 - INSTALLATION AND DRAINAGE DETAILS SHALL BE PROVIDED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.



NO.	REVISIONS	BY	DATE

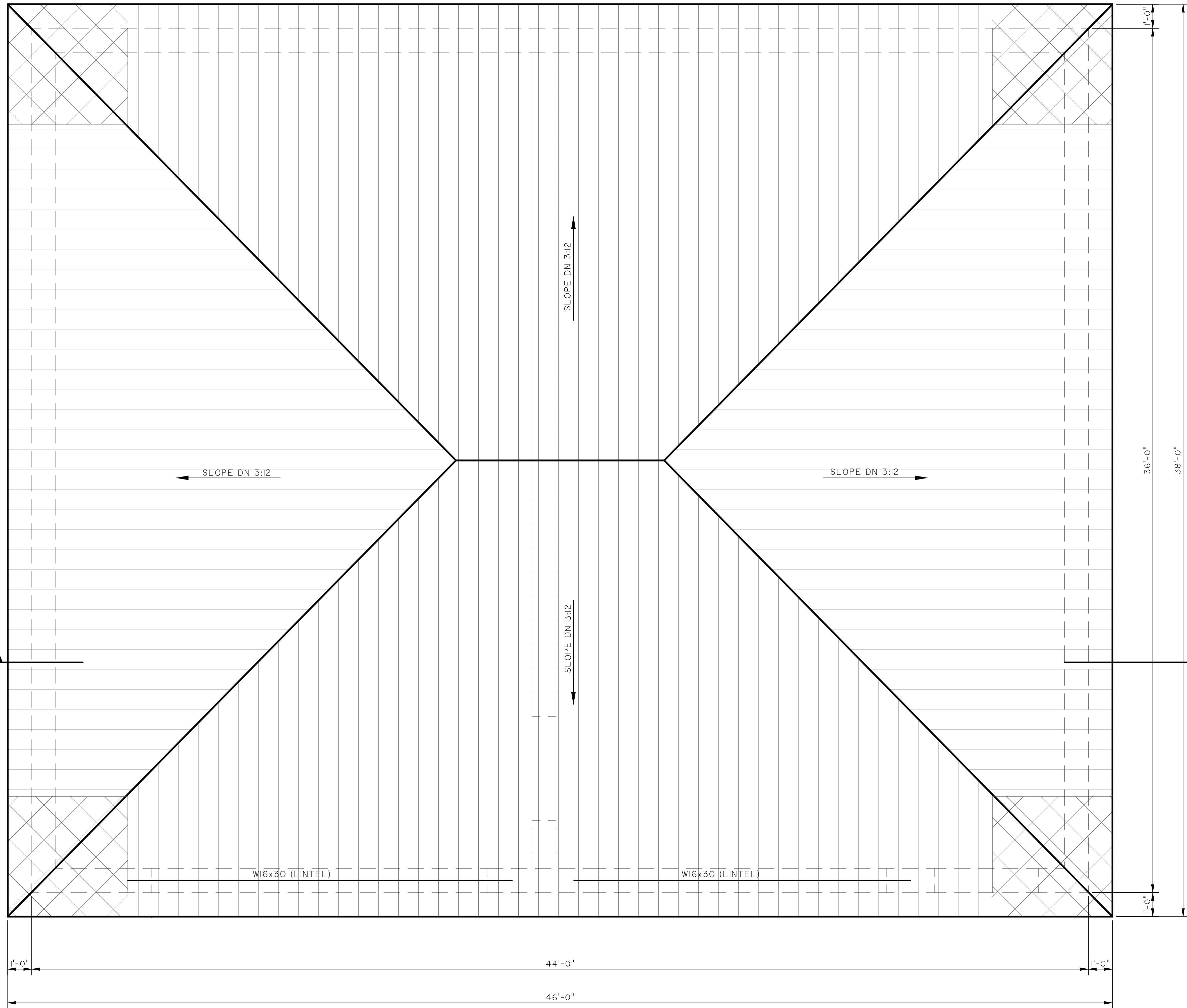
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KIAWAH RIVER PLANTATION
 CHARLESTON COUNTY, SOUTH CAROLINA
 KIAWAH RIVER PLANTATION WWTP
 CENTRIFUGE BUILDING - SLAB PLAN

JOB NO:	J-25328.0000
DATE:	12/18/15
DRAWN:	JAH/SHG
DESIGNED:	JAH/EAC
REVIEWED:	JAH/SHG
APPROVED:	MFY
SCALE:	AS NOTED

40-S-01

Z:\131528\131528\0000\Drawings\Construction\Roof\131528-0000 - Structural - Centrifuge Plant.dwg - 12/18/15





1
40-S-02 BUILDING ROOF PLAN
 SCALE: 3/8" = 1'-0"

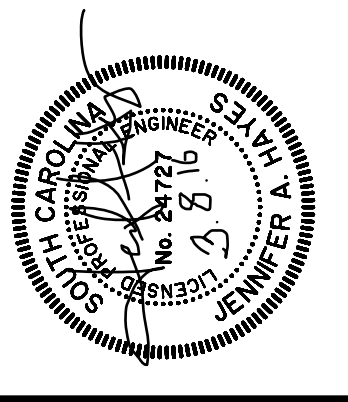
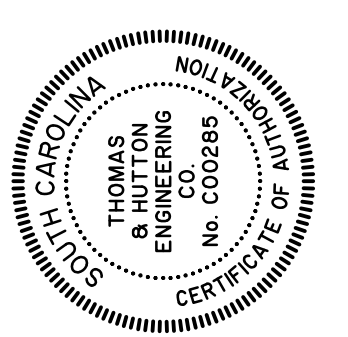
- NOTES:**
1. **ROOF CONSTRUCTION:** STANDING SEAM METAL ROOF ON 3/4" APA EXTERIOR GRADE PLYWOOD SHEATHING. SEE TABLE FOR ATTACHMENT NOTES.
 2. LT. GAGE TRUSS MANUF. SHALL SUBMIT ENGINEERED ROOF FRAMING PLANS FOR REVIEW AND COORDINATION PRIOR TO MANUFACTURING ROOF TRUSSES.
 3. SEE 35-S-10 FOR CMU LINTEL SCHEDULE.
 4. SEE SHEET 01-S-04 FOR TYPICAL BEAM BEARING DETAIL FOR BEARING PLATE.

ROOF ATTACHMENT AND LOADING TABLE				
ROOF TYPE	DECK MATERIAL	ATTACHMENT OF DECKING TO TRUSSES	MINIMUM NET UPLIFT PER FOOT LENGTH @ TRUSS CONNECTION	MINIMUM OUT OF PLANE TRUSS ATTACHMENT LOAD
A	3/4" APA RATED EXTERIOR GRADE PLYWOOD SHEATHING	#8x3' SELF TAPPING, FLAT HEAD SCREWS AT 6" O.C. AT PANEL EDGES AND 6" IN FIELD	1.2 k/ft.	0.56 k/ft. @ MASONRY WALLS
B	3/4" APA RATED EXTERIOR GRADE PLYWOOD SHEATHING	#8x3' SELF TAPPING, FLAT HEAD SCREWS AT 4" O.C. AT PANEL EDGES AND 4" IN FIELD	1.3 k/ft.	0.56 k/ft. @ MASONRY WALLS

ROOF LEGEND

 INDICATES 4'-0" WIDE STRIP OF ROOF TYPE "B". SEE ROOF ATTACHMENT AND LOADING TABLE.

 INDICATES CFMF ROOF TRUSSES (DIRECTION CHANGES W/ DIRECTION OF TRUSSES), ROOF TYPE "B". SEE ROOF ATTACHMENT AND LOADING TABLE.



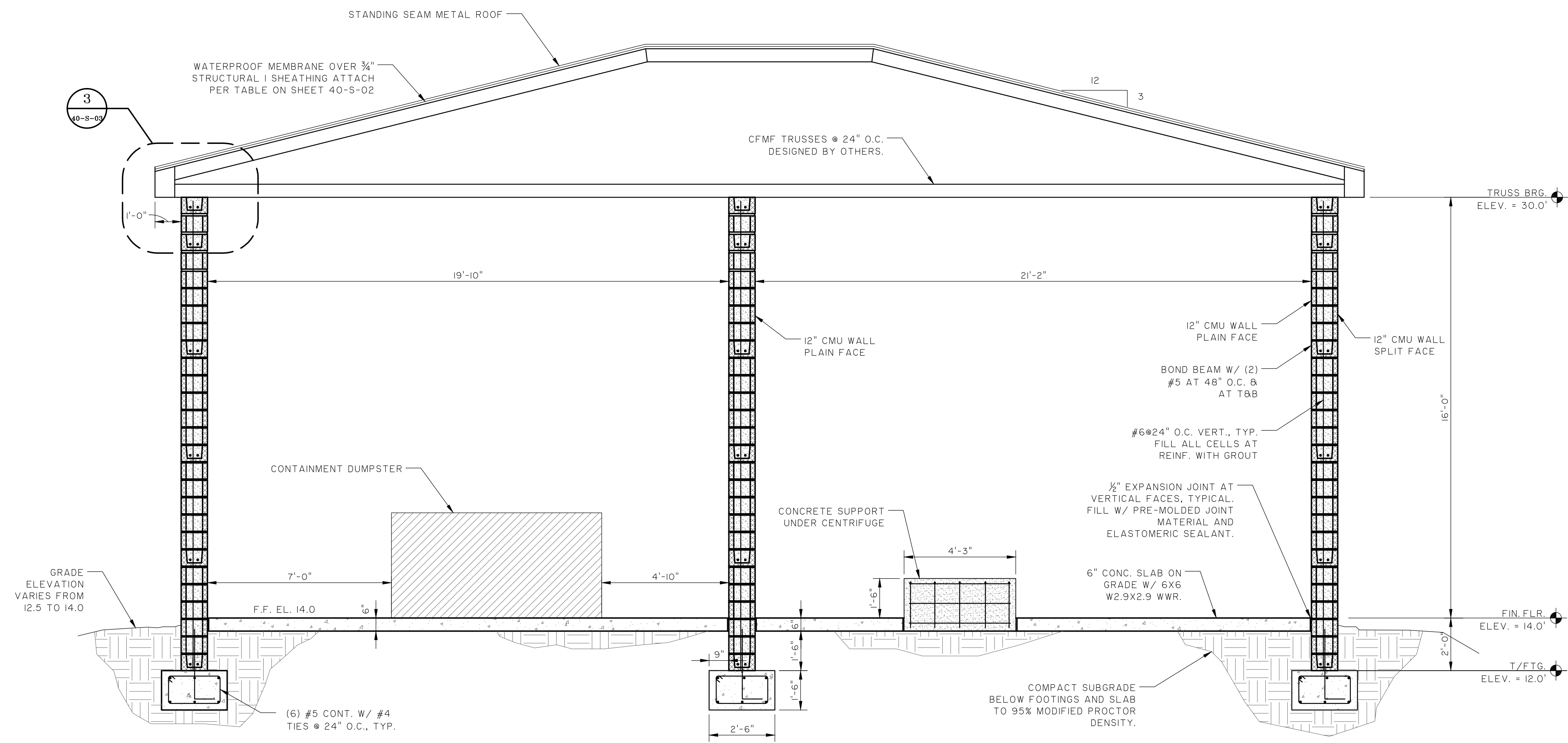
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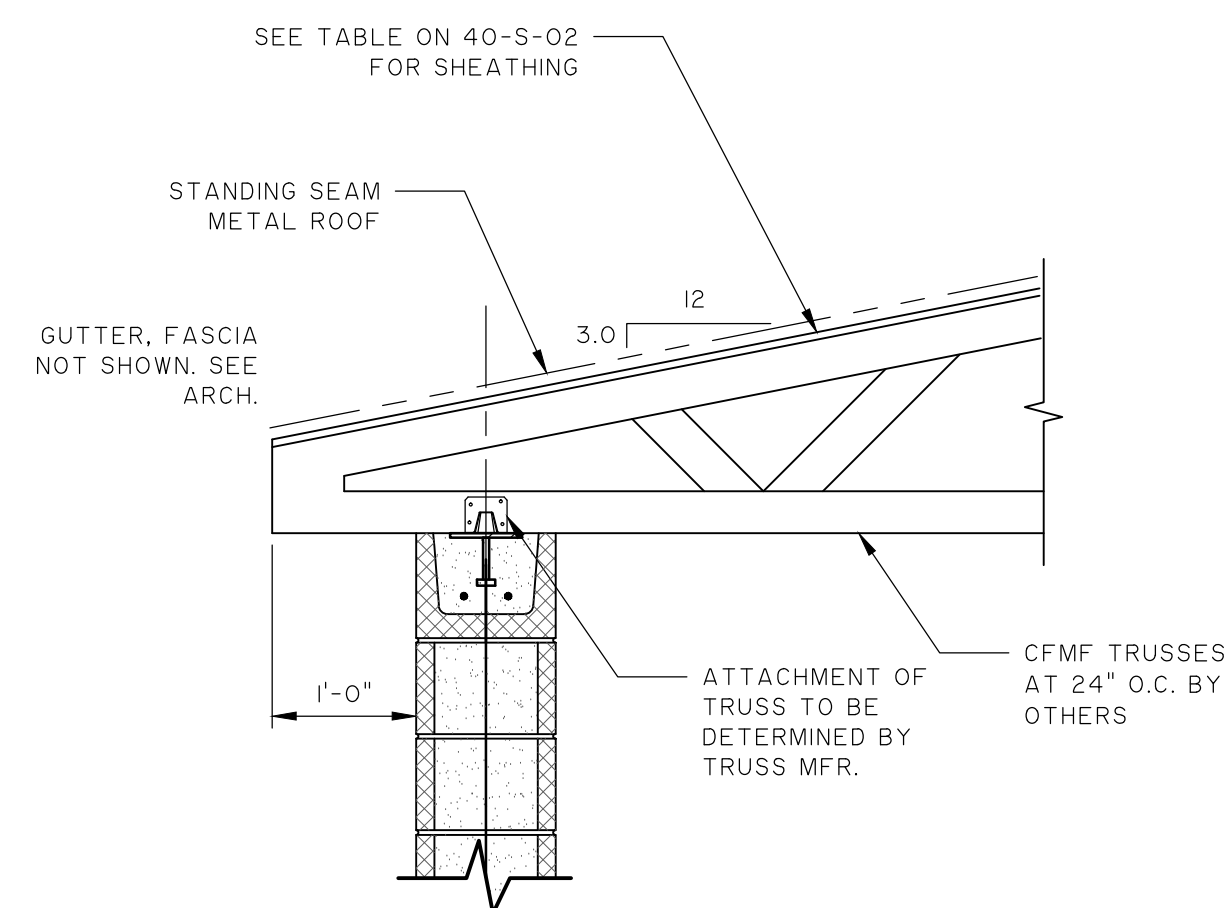
KIAWAH RIVER PLANTATION
 CHARLESTON COUNTY, SOUTH CAROLINA
 KIAWAH RIVER PLANTATION WWTP
CENTRIFUGE BUILDING - ROOF PLAN

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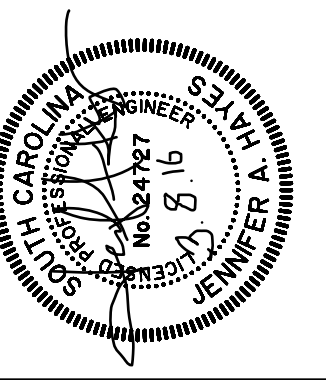
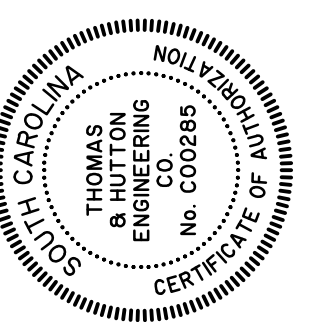
40-S-02



1 SECTION
 40-S-03 SCALE: 3/8" = 1'-0"



2 TRUSS CONNECTION AT CMU
 40-S-03 SCALE: 3/8" = 1'-0"



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 CHARLESTON COUNTY, SOUTH CAROLINA
 KIAWAH RIVER PLANTATION WWTP
 CENTRIFUGE BUILDING - SECTIONS

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40-S-03