

1. ANY ITEMS REFERENCED AS BEING ON "HOLD" ARE TO BE INCLUDED IN THE WORK AS SHOWN, HOWEVER, CONSTRUCTION OR FABRICATION IS NOT TO BEGIN UNTIL THE "HOLD" REFERENCE IS REMOVED.
2. ELEVATIONS ON THE STRUCTURAL DRAWINGS REFERENCE THE FINISHED FLOOR ELEVATION ASSIGNED THE DATUM OF 0'-0".
3. THE STRUCTURAL INTEGRITY OF THIS STRUCTURE IS DESIGNED TO BE ATTAINED IN ITS COMPLETED STATE. WHILE UNDER CONSTRUCTION ANY TEMPORARY BRACING OR SHORING WHICH MAY BE REQUIRED TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, 2015 EDITION, AND ALL INCLUDED REFERENCE CODES AND STANDARDS. THE LATEST EDITIONS AT THE TIME OF PERMITTING. REFERENCED SECTIONS OF THE BUILDING CODES ARE NOT INTENDED TO BE ALL INCLUSIVE. THAT IS, OTHER PERTINENT SECTIONS MAY NOT BE NOTED ON THE DRAWINGS BUT ARE STILL THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
5. THE DIMENSIONS, LOCATIONS, AND ELEVATIONS OF ANY EXISTING STRUCTURES WHICH RELATE TO OR INFLUENCE, IN ANY MANNER, THE WORK SHALL BE VERIFIED BY FIELD MEASUREMENT BY THE CONTRACTOR PRIOR TO PREPARATION AND SUBMISSION OF CHECKED SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR REVIEW.
6. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
7. NEW PRE-ENGINEERED COLUMN FRAME DESIGN AND REACTIONS REFERENCE RIGID GLOBAL BUILDINGS, JOB #181495, DATED 05-25-17.

A.) GROUND FLOOR LIVE LOADS (PSF)
TYPICAL UNLESS NOTED OTHERWISE 100

<u>B.) SNOW LOADS:</u>	
GROUND SNOW LOAD:	$P_g = 5 \text{ psf}$
FLAT ROOF SNOW LOAD:	$P_f = 3.28 \text{ psf}$
SNOW EXPOSURE FACTOR:	$C_e = 1.0$
SNOW LOAD IMPORTANCE FACTOR:	$I = 0.8$
THERMAL FACTOR:	$C_t = 1.2$

MEAN ROOF HEIGHT 19.0 FEET
ULTIMATE DESIGN WIND SPEED: 132 MPH
RISK CATEGORY: I
EXPOSURE CATEGORY: C
ENCLOSURE CLASSIFICATION: ENCLOSED

MAPPED ACCELERATIONS:

S_s	=	1.07g
S_1	=	0.340g

SITE CLASS D $F_a = 1.07$
 $F_v = 1.71$

DESIGN SPECTRAL RESPONSE ACCELERATIONS AT 5% DAMPENING:
 $S_{DS} = 0$

GENERAL DESIGN RESPONSE SPECTRAL ACCELERATION: $S_a = 0.39g$
SEISMIC USE GROUP (I_E) $I_E = 1.0$
SEISMIC DESIGN CATEGORY D
BASIC SEISMIC FORCE RESISTING SYSTEM

BASIC SEISMIC FORCE RESISTING SYSTEMS:
ORDINARY STEEL MOMENT FRAMES

$R = 3.25$
 $\Omega_o = 3$
 $C_d = 3$

SEISMIC ANALYSIS PROCEDURE (T. 1616.6.3):
EQUIVALENT LATERAL-FORCE

1. ALL FOUNDATION CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.

2. UNLESS NOTED OTHERWISE, ALL CONCRETE FLATWORK SHALL CONFORM TO THE FOLLOWING FINISHING TOLERANCES MEASURED AS PER ASTM E1155:

OVERALL FLATNESS NUMBER:	F ₂ >20
MINIMUM LOCAL FLATNESS NUMBER:	F ₁ >15
OVERALL LEVELNESS NUMBER:	F ₁ >15
MINIMUM LOCAL LEVELNESS NUMBER:	F ₁ >10

3. ALL FOUNDATIONS ARE TO BEAR ON UNDISTURBED "RESIDUAL SOIL OR ON TESTED, STRUCTURAL BACKFILL (95% MODIFIED PROCTOR VALUE FOR BACKFILL) TO INCLUDE THE LAYER OF CLEAN WASHED SAND FOR SLABS ON GRADE.
4. STRUCTURAL FOUNDATION DESIGN IS BASED UPON AN ALLOWABLE SOIL BEARING VALUE OF 2000 PSF. REFERENCE COASTAL ENGINEERING & TESTING REPORT OF GEOTECHNICAL ENGINEERING STUDY, CETCO JOB #17-02-006, DATED 02-07-17.

5. ALL REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS COMPLYING WITH ASTM SECTION A615. REINFORCING STEEL WHICH IS INDICATED ON THE DRAWINGS AS BEING WELDED SHALL COMPLY WITH ASTM SECTION A706, AND SHALL ALSO BE DEFORMED.

6. ALL DETAILING, FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI-SP-66)

7. ALL REINFORCING BAR SPLICE LENGTHS AND LOCATIONS, EMBEDMENTS, LENGTHS, HOOKS, ETC. SHALL BE DONE AS INDICATED ON THE DRAWINGS. NO VARIATION WILL BE ACCEPTED WITHOUT PRIOR APPROVAL OF THE ENGINEER. IF NO DIMENSION IS PROVIDED, THE SPLICE LENGTH SHALL BE CLASS "B" LENGTH AS PER ACI 318, SECTION 12.15.

8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT.

MINIMUM COVER, IN.

- | | |
|--|-------|
| (A) CONCRETE CAST AGAINST AND
PERMANENTLY EXPOSED TO EARTH: | 3 |
| (B) CONCRETE EXPOSED TO EARTH OR WEATHER: | |
| #5 BAR, W31 OR D31 WIRE AND SMALLER: | 1 1/2 |

9. ALL EMBEDDED STRUCTURAL STEEL, INCLUDING ANCHOR BOLTS, SHALL COMPLY WITH ASTM A36, UNLESS INDICATED DIFFERENTLY ON THESE DRAWINGS.

10. ALL EXPOSED CORNERS OF CONCRETE SHALL BE FORMED INTO A $\frac{3}{4}$ " x 45 DEGREE CHAMFER, UNLESS NOTED OTHERWISE.

11. CONSTRUCT FORMS COMPLYING TO SHAPES, LINES, AND DIMENSIONS SHOWN ON DRAWINGS TO OBTAIN AND HOLD ACCURATE ALIGNMENT OF CONCRETE DURING PLACEMENT AND CURING.

12. FABRICATE FORMS FOR EASY REMOVAL WITHOUT HAMMERING OR PRYING AGAINST CONCRETE SURFACES.

13. THOROUGHLY CLEAN FORMS AND ADJACENT SURFACES TO RECEIVE CONCRETE. REMOVE CHIPS, WOOD, SAWDUST, DIRT AND OTHER DEBRIS PRIOR TO CONCRETE PLACEMENT.

14. CLEAN REINFORCING OF LOOSE RUST, MILL SCALE, DIRT, OR ANY OTHER FOREIGN MATERIAL. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT.

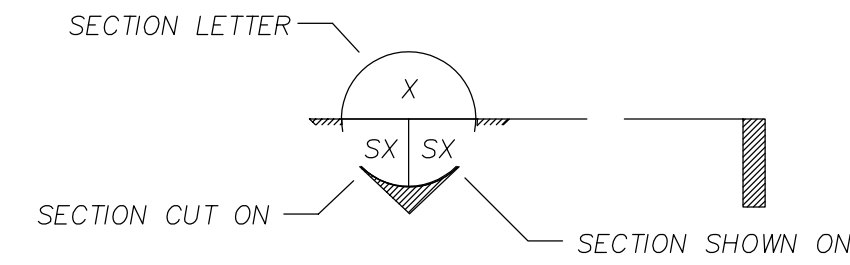
15. ANCHOR BOLTS SHALL NOT DEVIATE FROM THEIR THEORETICAL LOCATION BY MORE THAN 0.4 TIMES THE DIFFERENCE BETWEEN THE BOLT DIAMETER AND THE HOLE DIAMETER THROUGH WHICH THE BOLT PASSES.

16. PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP AT POINT OF PLACEMENT NOT LESS THAN 3" AND NOT MORE THAN 5". ADDITION OF WATER TO READY-MIX CONCRETE IN THE FIELD SHALL NOT BE ALLOWED.

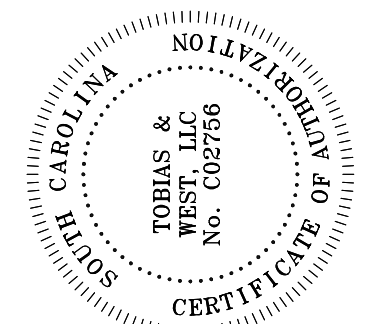
17. DEPOSIT CONCRETE IN A CONTINUOUS OPERATION UNTIL THE PLACING OF CONCRETE IS COMPLETE. IF THE POUR IS TO BE DISCONTINUOUS, CONTRACTOR SHALL USE CONSTRUCTION JOINTS, AS DETAILED ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

18. REPAIR ALL SURFACE DEFECTS INCLUDING TIE HOLES, MINOR HONEYCOMBING AND OTHER VISUAL IRREGULARITIES WITH CEMENT MORTAR. MORTAR FOR PATCHING SHALL BE THE SAME COMPOSITION AS THAT USED IN THE CONCRETE. PATCHING SHALL BE DONE AS SOON AS THE FORMS ARE REMOVED.

19. DEWATERING OF EXCAVATIONS MAY BE REQUIRED CONTRACTOR TO CONSULT WITH GEOTECHNICAL ENGINEER FOR ADDITIONAL INFORMATION.



S100-STRUCTURAL NOTES & SPECIFICATIONS
S101-STRUCTURAL QUALITY ASSURANCE PLAN
S200-STRUCTURAL FOUNDATION PLAN
S300-STRUCTURAL FOUNDATION SECTIONS & DETAILS



River Road Equestrian Center
4080 River Road
Johns Island
South Carolina

STRUCTURAL GENERAL NOTES & SPECIFICATIONS

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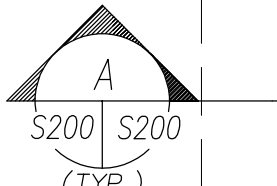
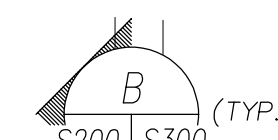
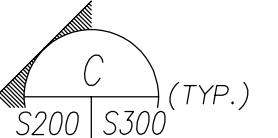
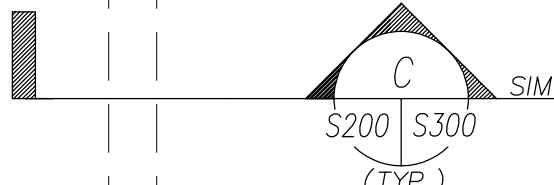
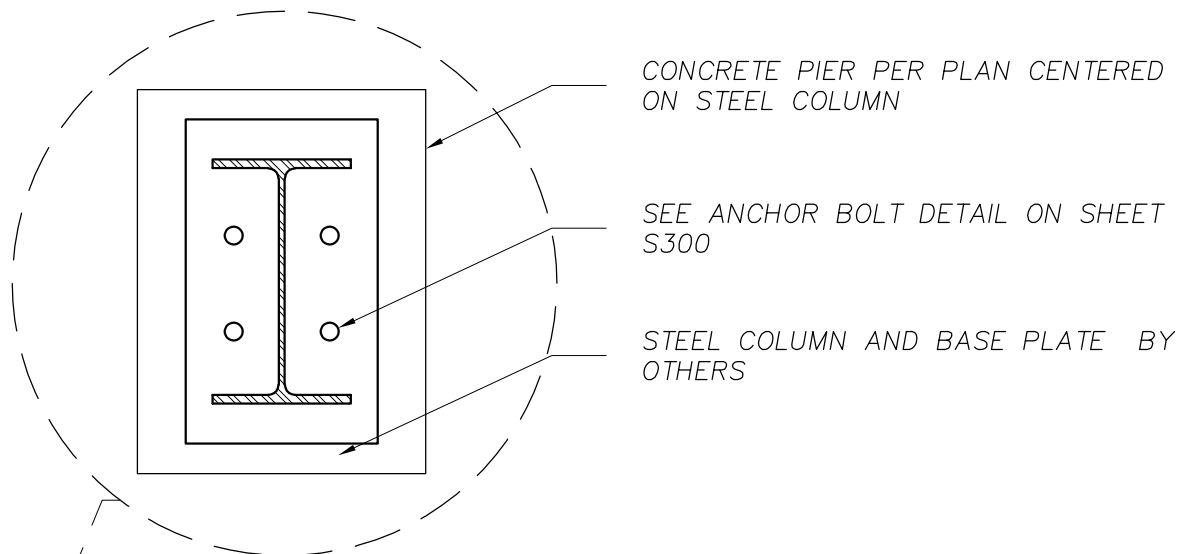
3. THE QUALITY ASSURANCE PLAN OUTLINED HERE WITHIN AND AS SPECIFIED BY THE 2018 INTERNATIONAL BUILDING CODE, CHAPTER 17, WHICH REQUIRES THAT THE OWNER EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS LISTED IN THE TABLE BELOW. WHEN A REPORT WILL BE FURNISHED TO THE BUILDING OFFICIAL AND THE APPROPRIATE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE UPON THE COMPLETION OF EACH INSPECTION. UPON COMPLETION OF ALL SPECIAL INSPECTIONS A FINAL REPORT SHALL BE SUBMITTED DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL.
2. CONTRACTOR SHALL SUBMIT WRITTEN STATEMENT OF RESPONSIBILITY ACCORDING TO THE REQUIREMENTS LISTED IN SECTION 705.3 OF THE INTERNATIONAL BUILDING CODE TO THE BUILDING OFFICIAL, OWNER, ARCHITECT AND ENGINEER OF RECORD.
3. ALL STRUCTURAL COMPONENTS AND STRUCTURAL SYSTEMS SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH THE SCHEDULES BELOW.
4. INSPECTIONS LISTED AS PERIODIC ARE TO BE CONDUCTED PART-TIME OR INTERMITTENTLY DURING EACH TASK REQUIRED BY THE QUALITY ASSURANCE PLAN BY AN APPROVED SPECIAL INSPECTOR.
5. INSPECTIONS LISTED AS CONTINUOUS ARE TO BE OBSERVED FOR THE ENTIRE DURATION OF EACH TASK REQUIRED BY THE QUALITY ASSURANCE PLAN BY AN APPROVED SPECIAL INSPECTOR.
6. STRUCTURAL OBSERVATIONS SHALL BE CONDUCTED BY A PROFESSIONAL ENGINEER PER SECTION 1709 AND A REPORT SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND OWNER AFTER THE COMPLETION OF THE OBSERVATIONS AT THE FOLLOWING STAGES OF CONSTRUCTION:
 - A. PRIOR TO PLACEMENT OF CONCRETE FOR FOUNDATION AFTER PLACEMENT OF REINFORCING STEEL AND EMBEDDED ANCHOR BOLTS
 - B. AFTER STEEL FRAMING AND EQUIPMENT INSTALLED.
7. FOR ALL STRUCTURAL MEMBERS AND ASSEMBLIES FABRICATED ON THE FABRICATOR'S SHOP SHALL REQUIRE A SPECIAL INSPECTION TO VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES WHICH ALLOW FOR STRUCTURAL MEMBERS TO BE FABRICATED IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND RELEVANT CODES. IF THE STRUCTURAL MEMBERS AND ASSEMBLIES ARE TO BE FABRICATED BY A PRE-APPROVED FABRICATOR A SPECIAL INSPECTION IS NOT REQUIRED. UPON COMPLETION OF WORK BY AN APPROVED FABRICATOR, THE CONTRACTOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
8. WIND & SEISMIC FORCE RESISTING SYSTEMS:
 - A. STEEL ORDINARY CONCENTRICALLY BRACED FRAMES
 - B. STEEL ORDINARY MOMENT FRAMES
9. STATEMENT OF SPECIAL INSPECTION PROGRAM WILL BE PROVIDED BY STRUCTURAL ENGINEER OF RECORD AFTER SPECIAL INSPECTORS ARE SELECTED.

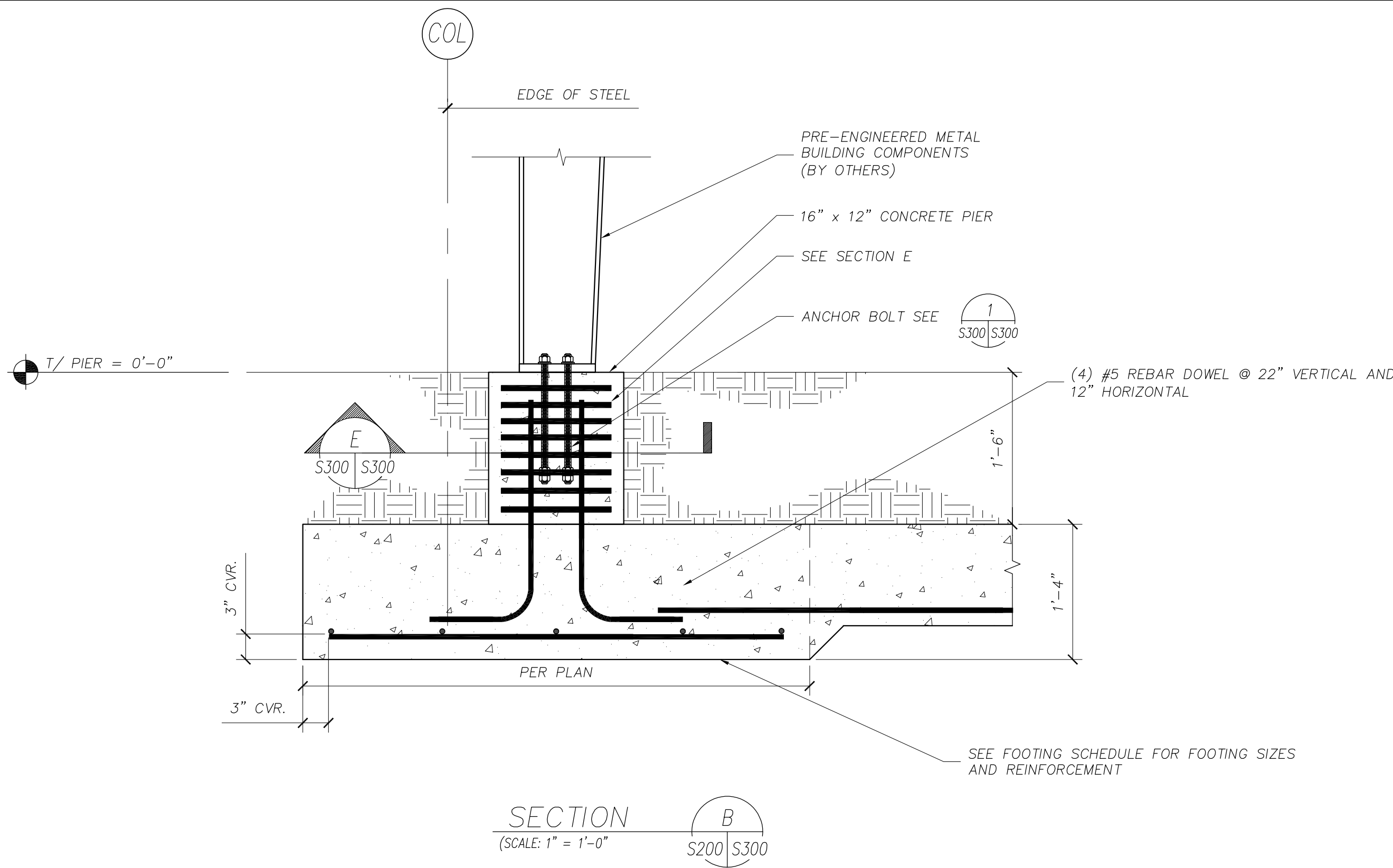
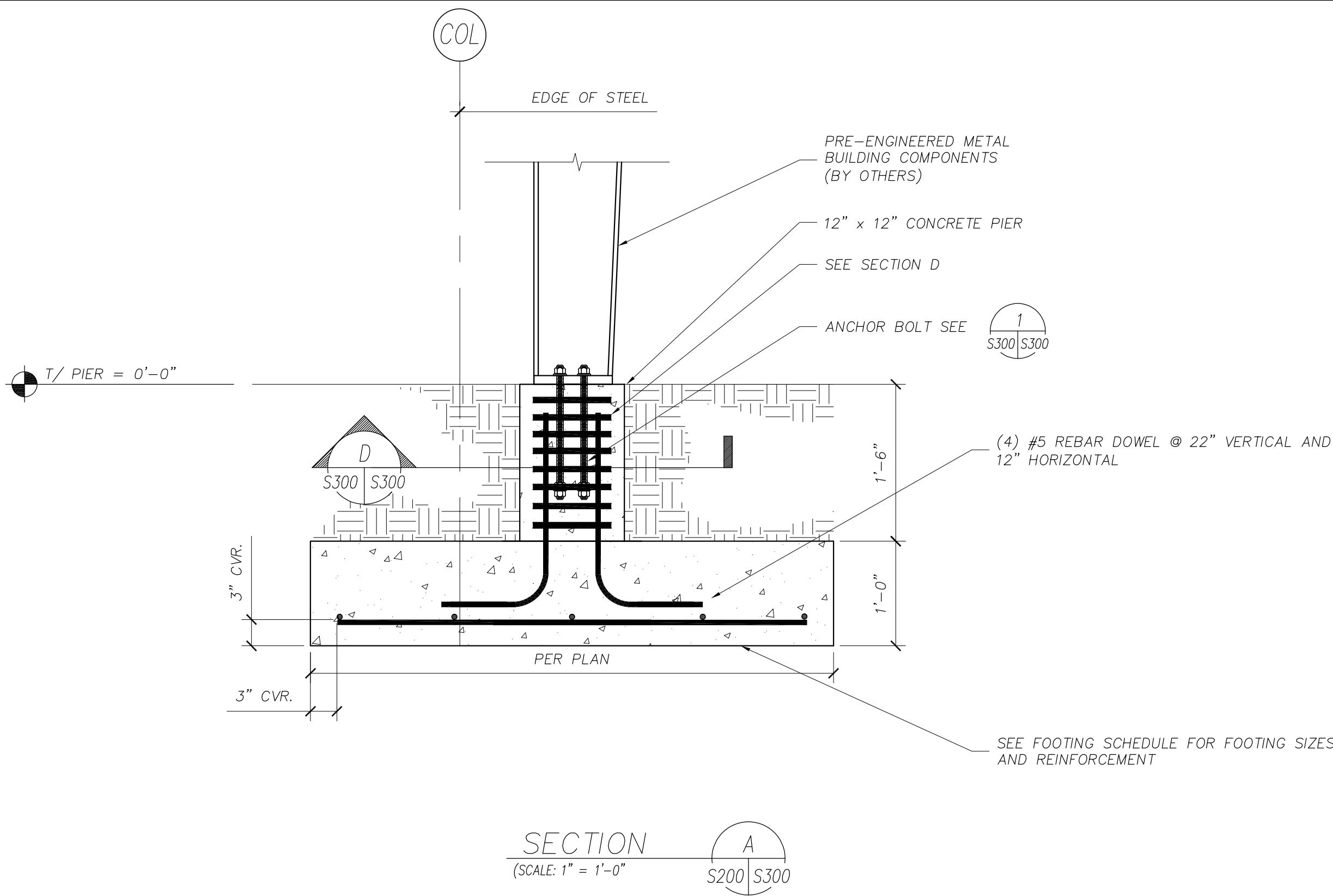
PROJECT		SCHEDULE OF SPECIAL INSPECTION SERVICES			
MATERIAL / ACTIVITY	SERVICE	Y/N	APPLICABLE TO THIS PROJECT		
			EXTENT	AGENT*	DATE COMPLETED
1705.6 Soils					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic		
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic		
3. Perform classification and testing of controlled fill materials.	Field inspection	Y	Periodic		
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous		
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic		
1705.11.1 Structural Steel Special Inspections for Seismic Resistance					
Inspection of structural steel in accordance with AISC 341	Shop (3) and field inspection	Y	In accordance with AISC 341		
1705.12.2 Structural Steel Testing and Qualification for Seismic Resistance					
Test in accordance with the quality assurance requirements of AISC 341	Shop (3) and field testing	Y	Per AISC 341		
* INSPECTION AGENTS			ADDRESS		
FIRM			TELEPHONE NO.		
1. _____					
2. _____					
3. _____					
4. _____					
Notes: 1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional. 2. The list of Special Inspectors may be submitted as a separate document, if noted so above. 3. Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2 4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element. 5. NOT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, NT.					
Are Requirements for Seismic Resistance included in the Statement of Special Inspections ?			Yes		
Are Requirements for Wind Resistance included in the Statement of Special Inspections ?			Yes		
DATE: 6/9/2017					

MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	DATE COMPLETED
1705.3 Concrete Construction					
1. Inspection of reinforcing steel installation (see 1705.2.2 for welding)	Shop (3) and field inspection	Y	Periodic.		
2. Inspection of anchors cast in concrete where allowable loads have been increased per section 1908.5 or where strength design is used	Shop (3) and field inspection	Y	Continuous		
3. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source		
4. Verify use of approved design mix	Shop (3) and field inspection	Y	Periodic		
5. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Shop (3) and field inspection	Y	Continuous		
6. Inspection of concrete and shotcrete placement for proper application techniques	Shop (3) and field inspection	N	Continuous		
7. Inspection for maintenance of specified curing temperature and techniques	Shop (3) and field inspection	Y	Periodic		
8. Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic		
9. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic		

STRUCTURAL QUALITY ASSURANCE PLAN

DRAWN BY:	A. Kimbrell
DESIGNED BY:	E. Tobias
CHECKED BY:	S. West
APPROVED BY:	T. Weeks
DATE:	June 13, 2017
PROJECT NO.:	17-046





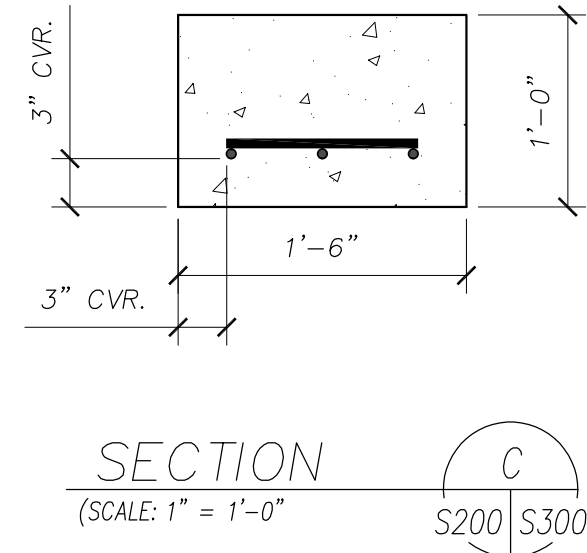
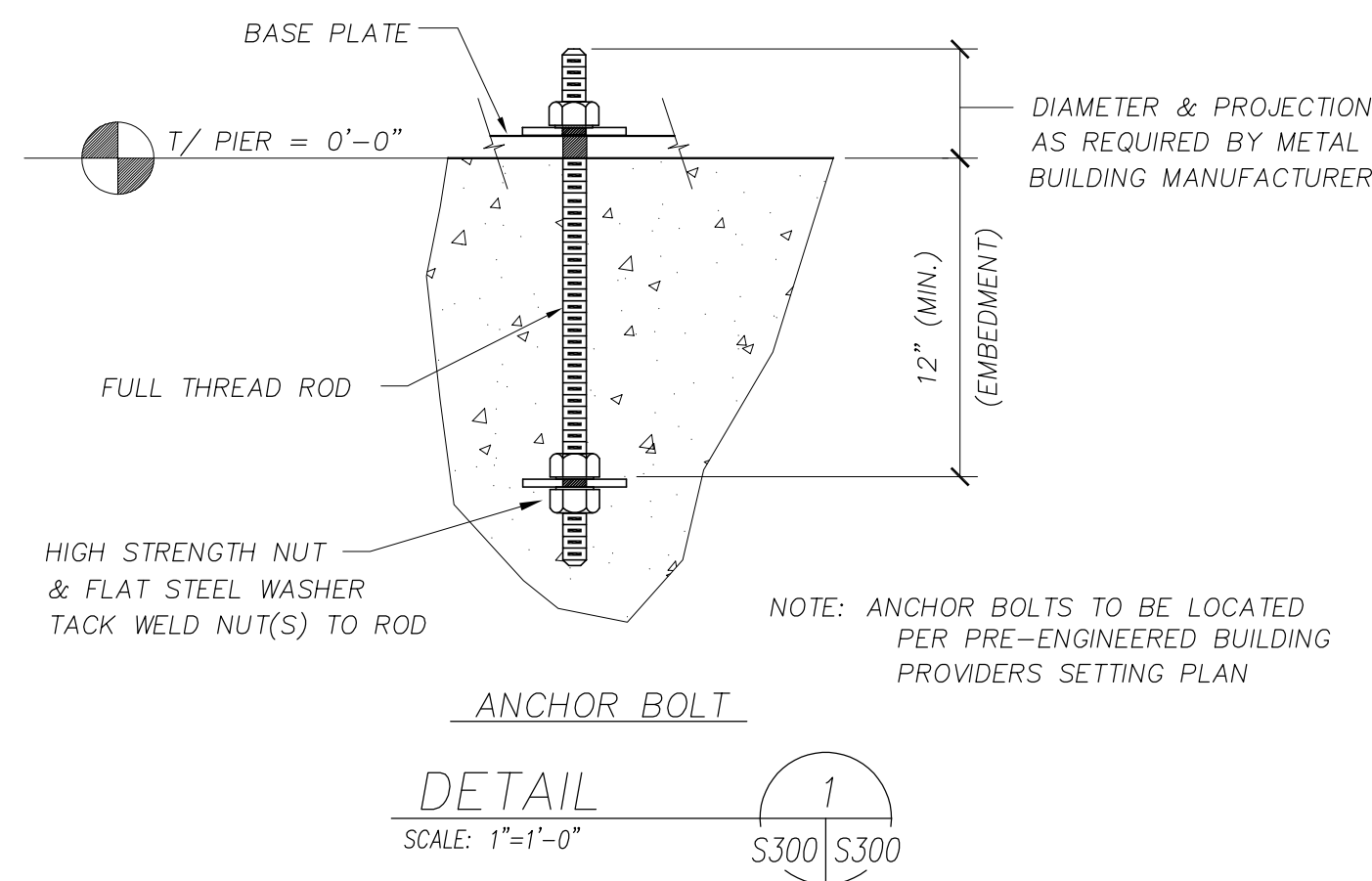
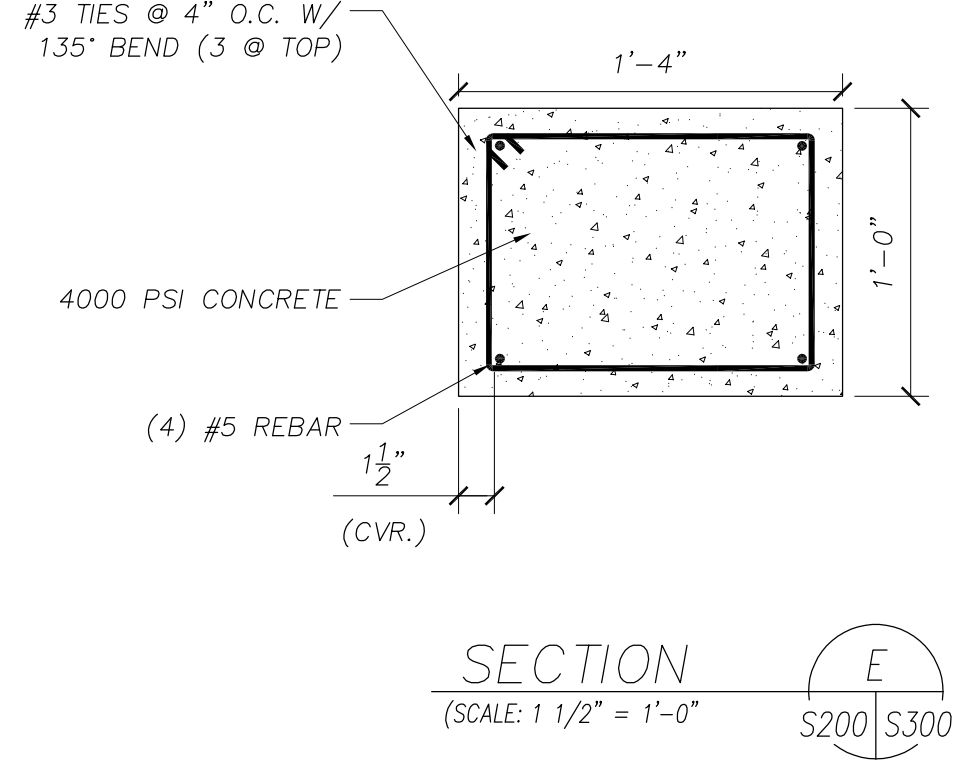
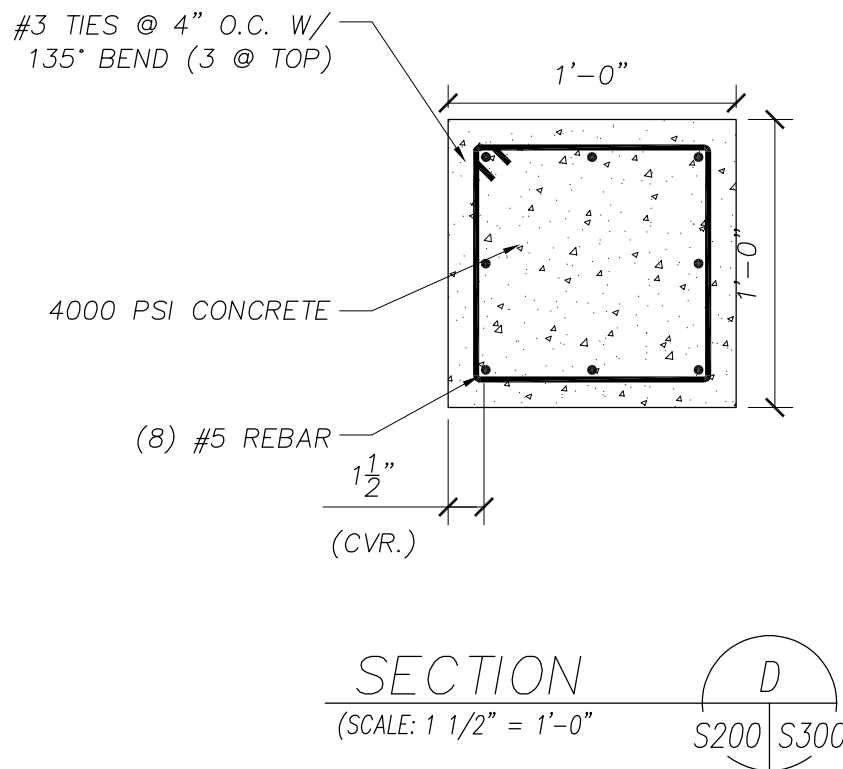
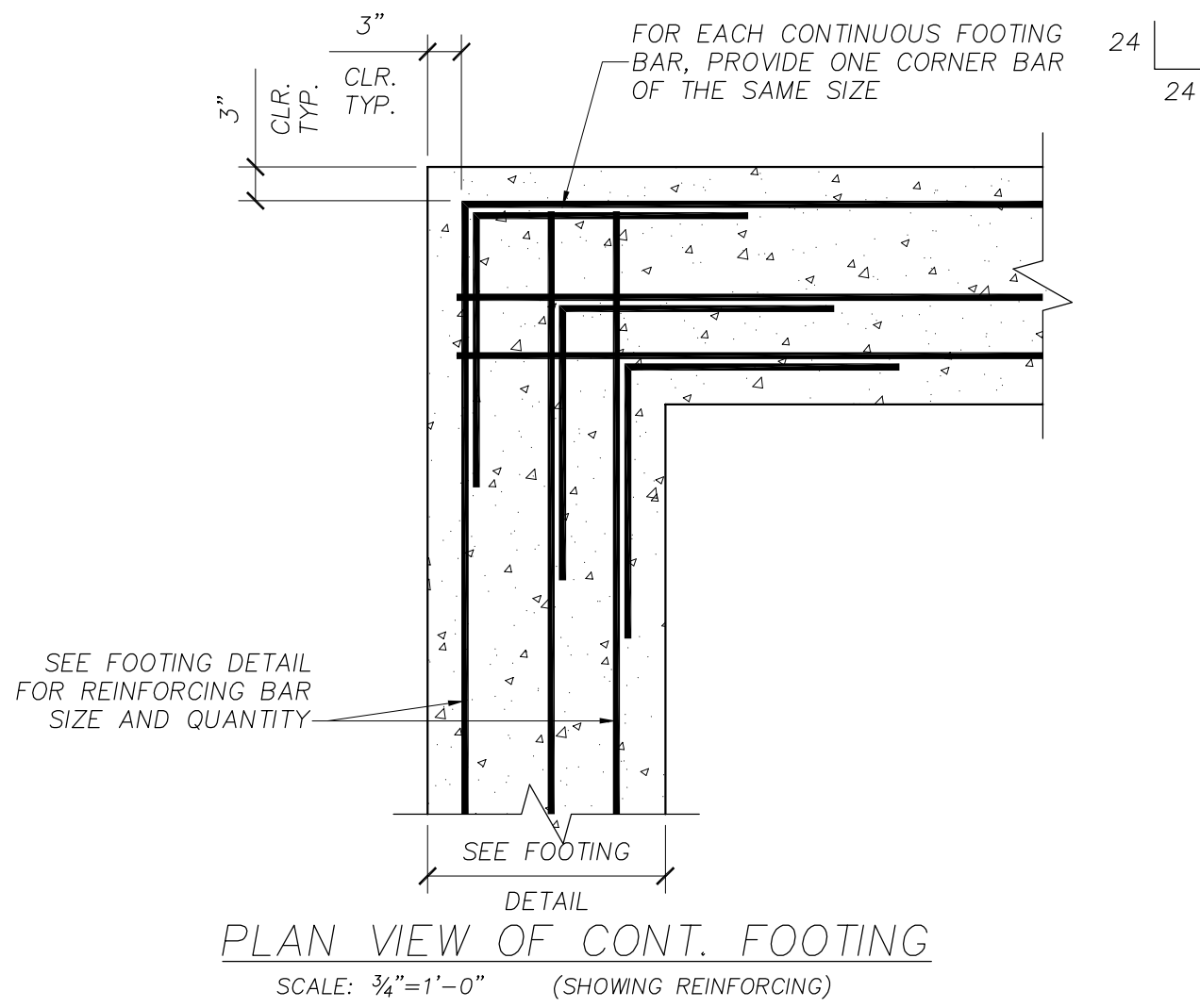
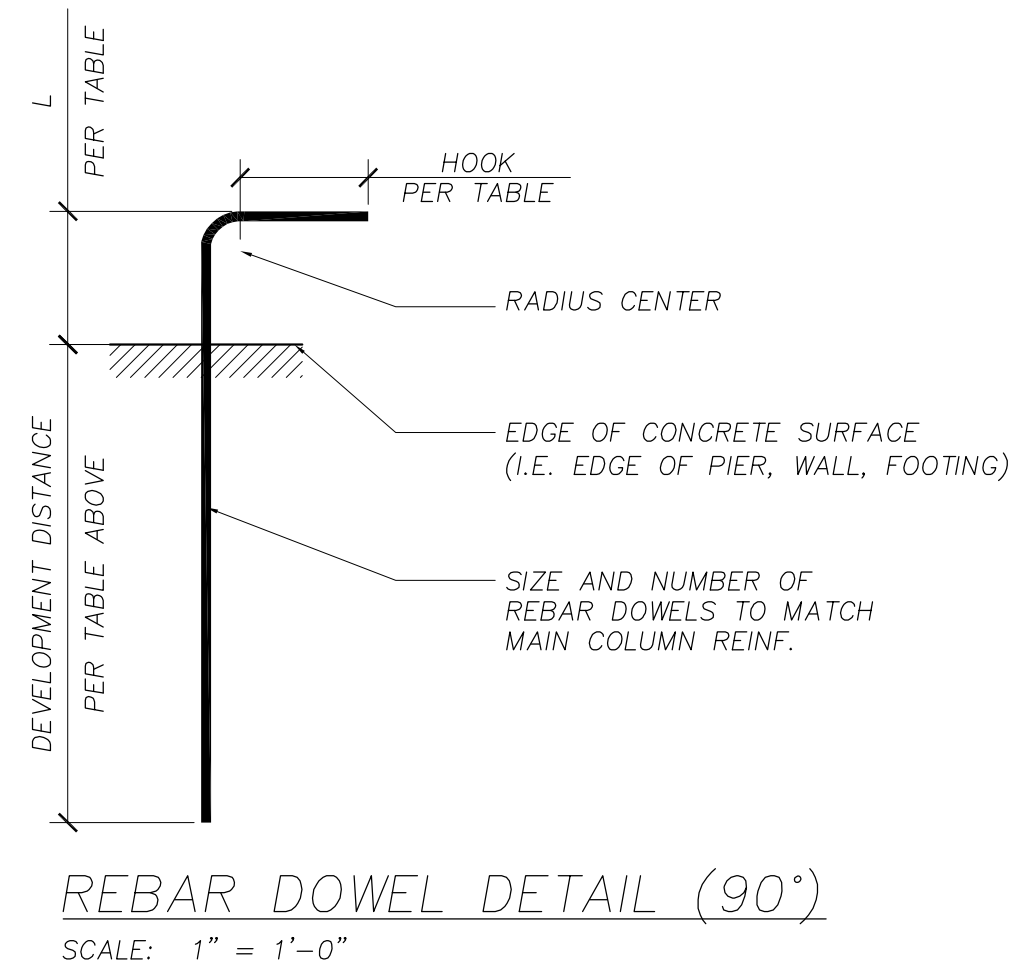
REINFORCEMENT DEVELOPMENT
DISTANCES PER BAR SIZE

BAR SIZE	MINIMUM DEVELOPMENT LENGTH (IN.)
	3000 PSI4000 PSI5000 PSI6000 PSI
#3	17 15 13 12
#4	22 19 17 16
#5	28 24 22 20
#6	33 29 26 24
#7	48 42 38 34
#8	55 48 43 39
#9	62 54 48 44
#10	69 60 54 49
#11	76 66 59 54
#14	96 84 75 68
#18	124 107 96 88

- NOTES:
- MINIMUM LENGTH OF LAP FOR TENSION LAP SPLICES SHALL BE AS REQUIRED FOR CLASS "A" OR "B" SPLICE, BUT NOT LESS THAN 12-IN. WHERE:
- ALL CLASS "A" LAP SPLICES SHALL BE 1.0_L
 - ALL CLASS "B" LAP SPLICES SHALL BE 1.3_L

STANDARD 90° HOOK
DISTANCES PER BAR SIZE

BAR SIZE	HOOK (in)	L (in)
#3	5	3.5
#4	6	5.5
#5	8	6.75
#6	9	8
#7	11	9.5
#8	12	10.5



REV.	DATE	REVIEW SET	DESCRIPTION
A	6-13-17		

DRAWN BY: A. Kimbrell
DESIGNED BY: E. Tobias
CHECKED BY: S. West
APPROVED BY: T. Weeks
DATE: June 13, 2017
PROJECT NO.: 17-046