



ETC Engineers & Architects, Inc.

ENGINEERS ■ ARCHITECTS ■ PLANNERS

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ADDENDUM NO.6

DATE: June 13, 2019
PROJECT: Paragould Fire Station #1
Paragould, Greene County, Arkansas
ETC Project No.: 15032CPARA

TO ALL PROSPECTIVE BIDDERS:

This Addendum forms a part of the Contract Documents and modifies or interprets the Project Manual and Drawings as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

DRAWINGS:

1. See attached Structural Sheets for Clarification to the Drawings.

End of Addendum 6

BUILDING A BETTER WORLD

■ e-mail: etc@etcengineersinc.com ■



GENERAL NOTES

A. DESIGN PARAMETERS

1. BUILDING CODE: 2012 Arkansas Fire Prevention Code Based on the 2012 IBC, IRC & IFC

2. WHEN LOADING :
BASIC WIND SPEED 120 MPH (BASED ON ALLOWABLE STRESS DESIGN)

3. GROUND SNOW LOAD = 10 PSF

3. SEISMIC LOADING:
SDS=0.08g
SD1=0.48g
SEISMIC RESISTING SYSTEM : ORDINARY MOMENT FRAMES OF STEEL
R = 6.12
Cd = 0
SEISMIC ANALYSIS PROCEDURE=EQUIVALENT LATERAL FORCE PROCEDURE

B. FOUNDATION

1. FOUNDATION DESIGN IS BASED UPON A PRESUMED BEARING VALUE OF 1500 PSF AND NO EXPANSIVE SOILS PRESENT AT THE SITE, GEOTECHNICAL REPORT PROVIDED BY MTA ENGINEERS IN LITTLE ROCK, AR.

2. BEARING MATERIAL AND BEARING VALUE OF THE FOUNDATION SOILS SHALL BE FIELD VERIFIED AFTER EXCAVATION AND PRIOR TO PLACEMENT OF CONCRETE. VERIFICATION SHALL BE MADE BY A CERTIFIED SOILS MATERIALS TESTING LABORATORY. APPROVE BEARING MATERIAL BEFORE FOUNDATION INSTALLATIONS.

3. SOME UNDERCUTTING MAY BE REQUIRED DEPENDING ON TIME OF YEAR (GROUND MEASURE). COORDINATE CLEARING AND DIRT WORK WITH MTA ENGINEERING.

4. BACKFILLING:

- DO NOT PLACE BACKFILL AGAINST CONCRETE WALLS AND GRADE BEAMS UNTIL BRACING FLOORS ARE IN PLACE OR ADEQUATE TEMPORARY BRACING HAS BEEN INSTALLED.
- BACKFILL IN EVEN LIFTS ALTERNATING FROM SIDE TO SIDE (8" MAX LOOSE LIFTS)
- ALL FILL MATERIAL SHALL BE NONEXPANSIVE AND MINIMUM PLASTICITY
- FILL SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY PER ASTM 1557.
- COMPACTON SHALL BE ACHIEVED WITHIN -3% TO +5% OF THE OPTIMUM WATER CONTENT.

C. CONCRETE AND REINFORCING

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF ALL CONCRETE (EXCEPT FOUNDATION WALLS AND PEDESTALS) AT 28 DAYS SHALL BE 3,000 PSI WITH A WEIGHT OF 145 PCF. FOUNDATION WALLS AND PEDESTALS SHALL BE 3000 PSI AT 28 DAYS WITH A WEIGHT OF 145 PCF.

2. REINFORCING :

- BARS: ASTM A615 - GRADE 60, EXCEPT USE GRADE 40 FOR BARS NOTED (IF NOTED), AS FIELD BENT.
- SHEET MESH: ASTM A185

3. CLEARANCE BETWEEN REINFORCING AND CONCRETE SURFACES WHICH ARE:

- CAST AGAINST EARTH OR ROCK.....3"
- FORMED AND EXPOSED TO WEATHER OR EARTH.....2"
- FORMED BUT NOT EXPOSED TO WEATHER OR EARTH:
- COLUMNS, BEAMS, GIRDER.....1-12"
- WALLS, SLABS.....3/4"

4. MAXIMUM WATER/CEMENT RATIO = 0.45 AND MAXIMUM SLUMP OF 4"

5. CONTROL JOINTS (C.J.) SHALL BE SAW CUT ONE THIRD OF THE SLAB DEPTH WITHIN 8 HOURS OF CONCRETE POUR.

6. SLAB SHALL BE REINFORCED W/6x6 - W2.1XW2.1 SHEET MESH ONLY. SHEET MESH SHALL BE SUPPORTED WITH PLASTIC HIGH CHAIRS @ 3-4 O.C., MAX

7. UNLESS NOTED, PROVIDE CONTINUOUS REINFORCING AROUND CORNERS AND THROUGH CONSTRUCTION JOINTS, CONTROL JOINTS, CONTRACTION JOINTS AND BETWEEN ALL ABUTTING MEMBERS. AT JOINTS, CUT EVERY OTHER REINFORCEMENT BAR PERPENDICULAR TO JOINT ADJACENT TO JOINT (TYPICAL EACH SIDE OF JOINT).

8. UNLESS SHOWN OR OTHERWISE NOTED , PROVIDE STANDARD HOOKS ON END OF ALL BARS EXCEPT THOSE LAPPED OR SPLICED TO A CONTINUING BAR.

9. WHERE REINFORCING IS NOT INDICATED OR DEFINED, INCLUDE FOR BID PURPOSES:

- WALLS: #5 EACH WAY EACH FACE, SPACING IN INCHES = 140/(WALL THICKNESS IN INCHES) BUT NOT OVER 18" O.C.
- BEAMS: 1-#9 CONTINUOUS, TOP AND BOTTOM FOR EACH 100 SQUARE INCHES OF BEAM CROSS SECTIONAL AREA AND #4 STIRRUP SPACED AT 1/4 OF BEAM DEPTH FULL LENGTH OF BEAM
- COLUMNS : 1-#9 VERT PER 50 SQUARE INCHES OF CROSS SECTIONAL AREA AND #3 TIES @ #9
- SLABS: #5 EACH WAY TOP AND BOTTOM, SPACING IN INCHES=100/(SLAB THICKNESS IN INCHES) BUT NOT OVER 18" O.C.

ON SHOP DRAWINGS, INDICATE ABOVE REINFORCING AS "PER GENERAL NOTES" SUCH REINFORCING MAY BE REVISED OR RELOCATED BY STRUCTURAL ENGINEER DURING SHOP DRAWING REVIEW

10. AS PART OF CONCRETE WORK PROVIDE CONCRETE EQUIPMENT PADS, HOUSE KEEPING PADS, INERTIA BASES AND CURBS AS INDICATED ON ANY OF THE CONTRACT DRAWINGS UNLESS SPECIFIED TO BE PROVIDED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS. UNLESS NOTED, DOWEL TO STRUCTURE BELOW WITH #4 X 0-6 PROJECTING 3" FROM CONCRETE BELOW AT 12" O.C. EACH WAY AND REINFORCE WITH #4 @ 12" EACH WAY, TOP AND BOTTOM.

11. CONCRETE EQUIPMENT PADS, INERTIA BASES AND CURBS NOT SHOWN ON THE CONTRACT DOCUMENTS FOR THIS BID PACKAGE ARE THE RESPONSIBILITY OF THE TRADE WHO'S EQUIPMENT BEARS ON THEM OR ATTACHES TO THEM.

12. UNLESS OTHERWISE SHOWN IN THE ARCHITECTURAL DRAWINGS, PROVIDE 3/4" CHAMFERS AT ALL COLUMNS, BEAMS, WALLS, AND SLAB EDGES THAT ARE EXPOSED TO VIEW IN THE FINISHED STRUCTURE.

13. REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES. WHERE FORM FINISH IS NOT SPECIFIED, CONFORM TO REQUIREMENTS OF ACI 301 AS MODIFIED BY THE SPECIFICATIONS.

14. SEE ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW OPENINGS, DRIP SLOTS, REGLETS, MASONRY ANCHORS, PRECAST BEARING LEDGES, AND FOR MISCELLANEOUS EMBEDDED PLATES, BOLTS, ANCHORS, ETC.

15. SELECT FORMWORK TO PRODUCE THE FINISH REQUIRED, WHERE FINISH IS NOT SPECIFIED, FORMWORK FOR EXPOSED SURFACES SHALL BE ACI 304R CLASS A, AND FORMWORK FOR OTHER SURFACES SHALL BE ACI 304R CLASS C. A SURFACE IS CONSIDERED EXPOSED IF THE CONCRETE TEXTURE CAN BE SEEN BY ANYONE IN THE COMPLETED STRUCTURE.

16. MASONRY DOWELS: PROVIDE, PLACE AND SPACE TO MATCH MASONRY VERTICAL REINFORCING.

D. STRUCTURAL STEEL

1. ROLLED AND BUILT UP SECTIONS:

- WB's THRU W36's - A572 GRADE 50
- PIPES - A53 - 35 KSI
- TUBES - A500 GRADE B - 46 KSI
- BUILT-UP SHAPES - AS INDICATED
- ALL ELSE - A36 - 36 KSI OR A572 GRADE 50

2. SPACE MEMBERS UNIFORMLY BETWEEN DIMENSIONED LOCATIONS

3. CONNECTIONS:

- WELD OR BOLT, UNLESS NOTED OTHERWISE
- DESIGN CONNECTIONS NOT ENTIRELY DETAILED ON DRAWINGS
- DETAILS SHOW THE RELATIONSHIP BETWEEN MEMBERS AND MAY GIVE LIMITATIONS OR CRITERIA TO BE USED IN DEVELOPING COMPLETE CONNECTION DESIGN AND DETAILS. USE CONNECTIONS FROM PART 4, AISC MANUAL, 9TH EDITION, FOR TS AND PIPE CONNECTIONS. USE CONNECTIONS FROM AISC HOLLOW STRUCTURAL SECTIONS CONNECTIONS MANUAL.
- MINIMUM THICKNESS: ANGLES 5/16", PLATES 3/8"

4. CONNECTION DESIGN FORCES:

- BEAM CONNECTIONS:
 - 1) IF SHOWN, USE 100% OF THE REACTION OF THE DRAWINGS BUT NOT LESS THAN 10 KIPS.
 - 2) IF NO REACTION IS SHOWN, USE 55% OF TOTAL ALLOWABLE UNIFORM LOAD CAPACITY FROM THE AISC TABLES FOR ALLOWABLE LOADS ON BEAMS BUT NOT LESS THAN 10 KIPS.

5. BOLTED CONNECTIONS:

- MINIMUM BOLT DIAMETER: 3/4" UNLESS NOTED.
- TWO BOLTS MINIMUM PER CONNECTED MEMBER.
- USE A325SS OR A490SS BOLTS FOR BRACING, MOMENT CONNECTIONS, CANTILEVERS, TENSION MEMBERS AND AT OVERSIZED OR SLOTTED HOLES WHERE THE FORCE ON THE JOINT IS PARALLEL TO THE LONG AXIS OF THE SLOT. USE A325N OR A490N ELSEWHERE.

- FOR BEAM TO COLUMN CONNECTIONS USE SHORT OR LONG SLOTTED HOLES AND FULLY TENSIONED BOLTS EXCEPT USE 3/2 BOLTS AT MOMENT CONNECTIONS.
- OVERSIZED AND LONG SLOTTED HOLES PERMITTED ONLY WHERE SHOWN OR NOTED.

6. WELDED CONNECTIONS:
- ELECTRODES: E70 SERIES
- FILLET WELDS: AISC MINIMUM BUT NOT LESS THAN 3/16" UNLESS NOTED
- GROOVE WELDS: FULL PENETRATION, UNLESS NOTED OTHERWISE.
- WELDS ARE CONTINUOUS UNLESS NOTED OTHERWISE.
L. LIGHT GAUGE METAL STUDS:

1. ALL LIGHT GAUGE METAL, NON-LOAD BEARING EXTERIOR STUDS SHALL BE 18 GAUGE MINIMUM. NON-BEARING INTERIOR STUDS SHALL BE 22 GAUGE MINIMUM. ALL LIGHT GAUGE METAL TO BE GALVANIZED. ALL EXTERIOR STUDS SHALL BE E70, 18GA, CEE STUDS WITH 1-5/8" FLANGE, Fy=33ksi.
2. ALL WINDOW AND DOOR OPENINGS IN EXTERIOR WALLS ARE TO HAVE DOUBLE JOIST HEADERS WITH DOUBLE STUDS EACH END FOR BEARING. IN ADDITION, PROVIDE FULL HEIGHT STUDS EACH SIDE OF OPENING. EQUAL IN NUMBER TO ONE-HALF THE NUMBER OF STUDS INTERRUPTED BY THE WALL OPENING. ROUND UP IF CALCULATED NUMBER IS ODD WITH 2 MINIMUM. PLACE BEARING AND FULL HEIGHT STUDS FACE TO FACE AND WELD TOGETHER WITH 1-1/2" LONG FLARE V-GROOVE WELDS AT 12" O.C., MAX EACH SIDE.

M. MISCELLANEOUS

1. PRIOR TO STARTING SHOP DRAWINGS, ORDERING MATERIAL AND PRIOR TO FABRICATION:
a. CHECK ALL DIMENSIONS AGAINST REQUIREMENTS OF OTHER CONTRACT DOCUMENTS.
b. ARCHITECTURAL DIMENSIONS GOVERN.

2. USE STRUCTURAL DRAWINGS WITH OTHER CONTRACT DOCUMENTS AND COMBINE REQUIREMENTS INTO SHOP DRAWINGS AND WORK.

3. TYPICAL DETAILS ARE APPLICABLE TO ALL OCCURENCES OF THE CONDITION DEPICTED IN THE DETAIL UNLESS ANOTHER DETAIL IS PREFERRED.

4. RESOLVE APPARENT DEFICIENCIES, OMISSIONS, CONTRADICTIONS, AND AMBIGUITIES IN CONTRACT DOCUMENTS WITH ARCHITECT/ENGINEER BEFORE AFFECTED WORK PROCEEDS. FOR BID PURPOSES USE THE INTERPRETATIONS RESULTING IN THE GREATEST COST.

5. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION OF CONSTRUCTION OF THE ENTIRE PROJECT AND THEN ONLY TO SUPPORT THE DESIGN LOADS INDICATED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING LOADINGS OCCURRING DURING CONSTRUCTION FOR COORDINATING LOADINGS WITH OTHER CONTRACTORS AND FOR DETERMINING AND NOT EXCEEDING THE CAPACITY OF THE STRUCTURE AT ANY TIME PRIOR TO COMPLETION OF THE ENTIRE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROCEDURES, MEANS, AND METHODS AND SEQUENCES OF CONSTRUCTION, DESIGN AND PROVIDE ALL TEMPORARY BRACING, SHORING, AND/OR SUPPORT.

6. NO MODIFICATION, ALTERATION, CORRECTION OR REPAIR SHALL BE MADE WITHOUT PRIOR REVIEW AND ACCEPTANCE OF STRUCTURAL ENGINEER. SUBMIT DETAILS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND EMPLOYED BY CONTRACTOR. A-E REVIEW IS CONTRACTOR'S EXPENSE.

N. OPENINGS:

1. OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE SUBJECT TO APPROVAL STRUCTURAL ENGINEER.

2. PERMITTED OPENINGS SHALL BE FORMED. TRADE CONTRACTORS SHALL NOT RELY ON CORE DRILLING OR CUTTING OF OPENINGS.

P. EMBEDDED ITEMS:

1. DO NOT EMBED PIPES, TUBES, WIRES, CONDUIT, DUCTS, OR CAVITY CREATING NON-STRUCTURAL ITEMS IN CONCRETE.

Q. ANCHORING:

1. ANCHORS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE PROVIDED BY THE TRADE CONTRACTOR ATTACHING TO THE ANCHOR.

2. DETERMINING THE INSTALLED CAPACITY OF ANCHORS WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS IS THE RESPONSIBILITY OF THE TRADE CONTRACTOR ATTACHING TO THE ANCHOR.

3. LOCATING AND MISSING EMBED ITEMS IN CONCRETE IS THE RESPONSIBILITY OF THE TRADE CONTRACTOR ATTACHING TO THE ANCHOR.

R. SUPPORT AND BRACING OF WORK NOT SHOWN ON STRUCTURAL DRAWINGS:

1. SUPPORTS, BRACING, SUB-FRAMING, LIGHT GAGE FRAMING, MISCELLANEOUS STEEL, BRACKETS, CONNECTORS, AND ATTACHMENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE TRADE CONTRACTOR WITH ITEMS BEING SUPPORTED OR BRACED AT THE TRADE CONTRACTOR'S EXPENSE.

2. IF STRUCTURAL DRAWINGS REFERENCED BY OTHER DRAWINGS FOR ITEMS NOT FULLY DEFINED ON STRUCTURAL DRAWINGS (AND ASSOCIATED SPECIFICATIONS) THEN ENGINEER AND PROVIDE SUCH ITEMS ON A PERFORMANCE BASIS IN COMPLIANCE WITH THE GOVERNING BUILDING CODE. ALL COSTS SHALL BE BORN BY THE TRADE CONTRACTOR ATTACHING TO OR BEARING UPON SUCH ITEMS.

3. SUPPORT AND BRACING SYSTEMS SHALL NOT TRANSMIT LATERAL LOADS TO COLUMNS BETWEEN FLOORS OR TO THE BOTTOMS OR SIDES OF STEEL BEAMS OR JOISTS. IF OTHER CONTRACT DRAWINGS INDICATE BRACING OR ATTACHMENT DETAILS WHICH WOULD RESULT IN LATERAL LOADS BEING TRANSMITTED TO THE SIDE OF COLUMNS BETWEEN FLOORS OR TO THE BOTTOMS OR SIDES OF BEAMS OR JOISTS THEN THE TRADE CONTRACTOR RESPONSIBLE FOR THE ITEMS TRANSMITTING SUCH LATERAL LOADS INCLUDE IN HIS BID FOR ENGINEERING AND PROVIDING BRACING TO THE TOP OF FLANGE OF THE NEXT ADJACENT BEAM OR JOIST.

FACADE AND WALL SYSTEMS ATTACHMENTS TO THE STRUCTURE:

- SHALL NOT ASSUME THE STRUCTURE PROVIDES MOMENT RESISTANCE AT THE POINT OF ATTACHMENT.
- SHALL BE TO THE EDGE OF THE FLOOR SLAB OR ROOF DECK ONLY UNLESS NOTED ON THE STRUCTURAL DRAWINGS.
- SHALL NOT RESTRICT INDEPENDENT VERTICAL OR LATERAL MOVEMENT OF THE BUILDING LEVELS.

S. ALL WORK MUST BE DONE IN COMPLIANCE WITH O.S.H.A. REGULATIONS, SCAFFOLDING, AND SUPPORT. DESIGN IS THE RESPONSIBILITY OF EACH AND EVERY CONSTRUCTION SUB-CONTRACTOR ON THIS PROJECT.

T. STRUCTURAL WOOD NOTES:

1. FLOOR FRAMING:
PREPARATION FOR THE APPLICATION OF FLOOR DECKING SHALL BEGIN WITH A TRUE AND PLUMB STRUCTURAL FRAMING SYSTEM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BRACING TO INSURE A TRUE AND PLUMB, UNIFORMLY SPACED AND SAFE FLOOR FRAMING SYSTEM BEFORE APPLICATION OF DECKING IS BEGUN. INSTALL 2x BLOCKING BETWEEN PRE-ENGINEERED FLOOR TRUSSES AS REQUIRED TO SUPPORT PANEL EDGES AT FLOOR OPENINGS.

2. ROOF SHEATHING:
ROOF SHEATHING SHALL BE 3/4" THICK APA RATED SHEATHING EXPOSURE 1. ALL PANELS SHALL BE STAMPED WITH THE APA RATING MARK. PANELS MAY BE PLYWOOD VENEER CONSTRUCTION. PANELS SHALL BE PLACED WITH THE LONG DIMENSION PERPENDICULAR TO THE PANEL SUPPORTS. PANELS ARE ASSUMED TO BE CONTINUOUS OVER TWO OR MORE SUPPORTS. PANELS SHALL BE PLACED IN A MANNER TO STAGGER ALL END JOINTS FROM ADJACENT PANELS. LEAVE MINIMUM OPEN SPACE AT ALL PANEL EDGES AND END JOINTS AS RECOMMENDED BY SHEATHING SUPPLIER TO ALLOW FOR EXPANSION.

3. FASTENING:
FASTENING REQUIREMENTS FOR ALL SHEATHING TO SUPPORTS SHALL BE IN CONFORMANCE WITH THE AMERICAN PLYWOOD ASSOCIATION'S (APA) TABLE FOR RECOMMENDED MINIMUM FASTENING SCHEDULE FOR APA PANEL ROOF AND WALL SHEATHING UNLESS NOTED OTHERWISE ON PLANS. ALL 3/4" FLOOR SHEATHING SHALL BE FASTENED (AND GLED) TO SUPPORTS WITH SIMPSON STRONG-TIE 1/8" WALLS OR APPROVED EQUAL) OR #10 (1-1/2" LONG) WOOD SCREWS SPACED AT 6" O.C. ALONG ALL PANEL EDGES AND AT 12" O.C. ALONG INTERMEDIATE SUPPORTS. ADDITIONALLY, WALL AND ROOF SHEATHING SHALL BE FASTENED SUPPORTS IN ACCORDANCE WITH CHAPTER 23 OF THE INTERNATIONAL BUILDING CODE.

4. A. STUDS: STRUCTURAL LUMBER: DOUGLAS FIR-LARCH #2, OR APPROVED EQUAL :

SIZE	F _b	F _v	F _t	F _u	E
2x4	1500	825	90	565	1,600,000
2x6	1250	725	90	565	1,600,000
2x8	1200	650	90	565	1,600,000
2x10	1050	600	90	565	1,600,000
2x12	975	550	90	565	1,600,000

B. ROOF/WALL/FLOOR: PLYWOOD: C-PLUGGED, STRUCTURAL 1, EXPOSURE 1, EXTERIOR
GLUE FOR ROOF AND WALL PANEL IDENTIFICATION INDEX 2416-56 INCH (ROOF) OR 2410-12 INCH (WALL)

C. SILL PLATES: NO. 2 SPRUCE-PINE-FIR, OR EQUAL FC=675 PSI, FV=70 PSI, E=1,200,000 PSI

U. METAL BUILDING NOTES:

1. ALL METAL BUILDING ELEMENTS SHALL BE DESIGNED BY THE METAL BUILDING SUPPLIER TO MEET ALL REQUIREMENTS OF THE 2012.

INTERNATIONAL BUILDING CODE (WITH PRECEDENCE) INCLUDING LIVE LOAD, WIND LOAD AND SEISMIC LOAD AS WELL AS DEAD LOAD. ALL OF THE MASS CONNECTED TO THE BUILDING SHALL BE ACCOUNTED FOR IN THE SEISMIC LOADS INCLUDING BUT NOT LIMITED TO SUSPENDED SLAB SYSTEMS, BRICK AND BLOCK VENEER, ALL INTERIOR PARTITIONS, ETC. IT WILL NOT BE ACCEPTABLE TO CALCULATE THE SEISMIC SHEAR BASED ON THE METAL BUILDING COMPONENTS WEIGHT ONLY. CLEAR CONCISE DESIGN CALCULATIONS (STAMPED BY AN ENGINEER LICENSED IN THE STATE OF ARKANSAS) FOR THE SEISMIC AND WIND LOADS WILL BE REQUIRED.

2. ALL METAL BUILDING ELEMENTS SHALL BE DESIGNED FOR THE CODE REQUIRED LOADINGS PLUS THE ACTUAL DEAD WEIGHT OF THE CONSTRUCTION MATERIALS INCLUDING, BUT NOT LIMITED TO, SUSPENDED SLAB SYSTEMS, BRICK AND BLOCK VENEER IN ANY AREAS DETAILED ON THE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS (MINIMUM COLLATERAL LOAD SHALL BE 10 PSF)

4. METAL BUILDING COLUMNS SHALL BE DESIGNED TO SUPPORT BOTH DEAD AND LIVE LOADS FROM FLOOR FRAMING AND HORIZONTAL FORCES GENERATED BY THE SECOND FLOOR (IF PRESENT).

5. THE METAL BUILDING SUPPLIER SHALL PROVIDE EXACT MEMBER SIZES, PROFILES AND DIMENSIONS TO THE STRUCTURAL STEEL CONTRACTOR TO ALLOW THE STRUCTURAL STEEL FRAMING MEMBERS AND CONNECTIONS TO BE DETAILED FOR ATTACHMENT TO THE METAL BUILDING FRAMING. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSMITTING THE REQUIRED DATA TO THE STRUCTURAL STEEL CONTRACTOR BEFORE SHOP DRAWING ARE SUBMITTED FOR APPROVAL. THE METAL BUILDING SUPPLIER SHALL COORDINATE WITH STRUCTURAL STEEL FABRICATOR/DETAILER FOR LOCATIONS OF HOLES IN METAL BUILDING COLUMNS OR CLIP ANGLES ATTACHED TO METAL BUILDING COLUMNS FOR ATTACHMENT OF FLOOR FRAMING BEAMS AND JOIST.

6. THE METAL BUILDING DESIGN ENGINEER SHALL CHECK ALL METAL BUILDING ELEMENTS FOR LOAD APPLIED BY FLOOR FRAMING TOPS OF EXTERIOR WALLS AND ETC. THIS WILL INCLUDE CHECKING FOR LOCAL BENDING AND BUCKLING. ALL METAL BUILDING FLANGES OR WEBS THAT ARE TO RECEIVE SHALL BE STIFFENED AS REQUIRED TO PREVENT LOCAL BUCKLING OR OVERSTRESS. THE STRUCTURE SHALL BE CALCULATIONS FOR SPECIAL CONNECTIONS (INCLUDING BUT NOT LIMITED TO X-BRACING CONNECTIONS AND METAL BUILDING COLUMNS WITH HORIZONTAL CONCENTRATED FORCES (INCLUDING WHETHER OR NOT BEAM STIFFENERS ARE NEEDED)) SHALL BE SUBMITTED ALONG WITH THE SHOP DRAWINGS AND OTHER DESIGN CALCULATIONS. IN ADDITION TO THE CODE LOAD REQUIREMENTS, ALL STRUCTURAL ELEMENTS SHALL MEET THE FOLLOWING MAXIMUM DEFLECTION LIMITATIONS.

ROOF MAXIMUM TOTAL VERTICAL LOAD DEFLECTIONS TO BE PER SPEC (I2100-2)

ROOF MAXIMUM LIVE LOAD DEFLECTION TO BE PER SPEC (I2100-2)

WALL MAXIMUM LATERAL RIGID FRAME DEFLECTION = H/200

WHERE L = ROOF BEAM SPAN
H = HEIGHT FROM BOTTOM OF METAL BASEPLATE TO EAVE
Cd = DEFLECTION AMPLIFICATION FACTOR FROM SBC, LATEST EDITION

7. THE METAL BUILDING SHALL BE DESIGNED FOR A MINIMUM OF 20 PSF LIVE LOAD. NO LIVE LOAD REDUCTIONS ALLOWED FOR FRAME DESIGN.

8. THE METAL BUILDING SUPPLIER SHALL DESIGN THE WIND GIRTS THAT ARE ATTACHED TO MASONRY BRICK/BLOCK TO LIMIT THE DEFLECTION TO L/240 OR LESS WITH WIND PRESSURE WITH 50 YEAR RECURRENCE INTERVAL.

9. THE METAL BUILDING SUPPLIER SHALL SUBMIT TO THE ARCHITECT THROUGH THE GENERAL CONTRACTOR COMPLETE DESIGN CALCULATIONS AND DETAILED SHOP DRAWINGS INCLUDING BEFORE FABRICATION OF ANY METAL BUILDING ELEMENT OR FOUNDATION CONSTRUCTION IS BEGUN. THE METAL BUILDING CALCULATION AND SHOP DRAWINGS SHALL BE STAMPED AND SIGNED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF ARKANSAS. A LETTER OF COMPLIANCE TO ALL APPLICABLE CODES FOR SEISMIC DESIGN SHALL ALSO BE STAMPED AND SIGNED BY THE METAL BUILDING SUPPLIER'S ENGINEER AND SUBMITTED TO THE ARCHITECT TO CERTIFY THAT THE INDIVIDUAL METAL BUILDING ELEMENTS HAVE BEEN DESIGNED FOR SEISMIC FORCES.

10. NO BASE MOMENT ALLOWED IN PORTAL FRAMES DESIGN.

11. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE STANDARD PRACTICES OF THE "AISC", FLASHING, GUTTERS, AND OTHER METALS IN ACCORDANCE WITH "SMACNA".

12. ALL WELDS SHALL BE IN ACCORDANCE WITH THE AMERICA WELDING SOCIETY.

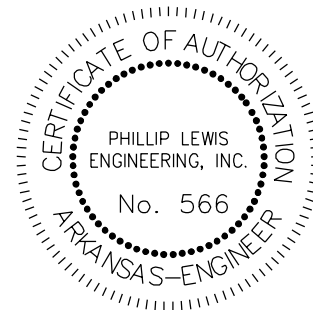
13. FIELD AND SHOP CONNECTIONS SHALL BE HIGH STRENGTH BOLTS OR EQUIVALENT.

14. PROVIDE TEMPORARY BRACING AS REQUIRED TO MAINTAIN ALIGNMENT AND SECURITY OF STRUCTURES DURING CONSTRUCTION.

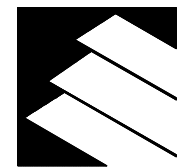
BAR SIZE	LAP CLASS	SPLICE LENGTH (in)			
		TOP BARS (alpha = 1.3)		OTHER BARS (alpha = 1.0)	
		CASE 1	CASE 2	CASE 1	CASE 2
*3	A	22	33	17	25
	B	28	42	22	33
*4	A	29	43	22	33
	B	38	56	29	43
*5	A	36	54	28	42
	B	47	70	36	54
*6	A	43	65	33	50
	B	56	84	43	65
*7	A	63	94	48	72
	B	81	122	63	94
*8	A	72	107	55	83
	B	93	139	72	107
*9	A	81	121	62	93
	B	105	157	81	121
*10	A	91	136	70	105
	B	118	177	91	136
*11	A	101	151	78	116
	B	131	196	101	151

BAR SIZE	LAP CLASS	SPLICE LENGTH (in)			
		TOP BARS (alpha = 1.3)		OTHER BARS (alpha = 1.0)	
		CASE 1	CASE 2	CASE 1	CASE 2
*3	A	19	28	15	22
	B	25	37	19	28
*4	A	25	37	19	28
	B	33	49	25	37
*5	A	31	47	24	36
	B	41	61	31	47
*6	A	37	56	29	43
	B	49	73	37	56
*7	A	44	67	34	51
	B	71	106	54	81
*8	A	62	93	48	72
	B	81	121	62	93
*9	A	70	105	54	81
	B	91	136	70	105
*10	A	79	118	61	91
	B	102	153	79	118
*11	A	87	131	67	101
	B	114	170	87	131

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ETC ENGINEERS & ARCHITECTS, INC.
Environmental, Technical Consultants, Inc.
ENGINEERING & ARCHITECTURAL CONSULTANTS,
CONSTRUCTION MANAGERS



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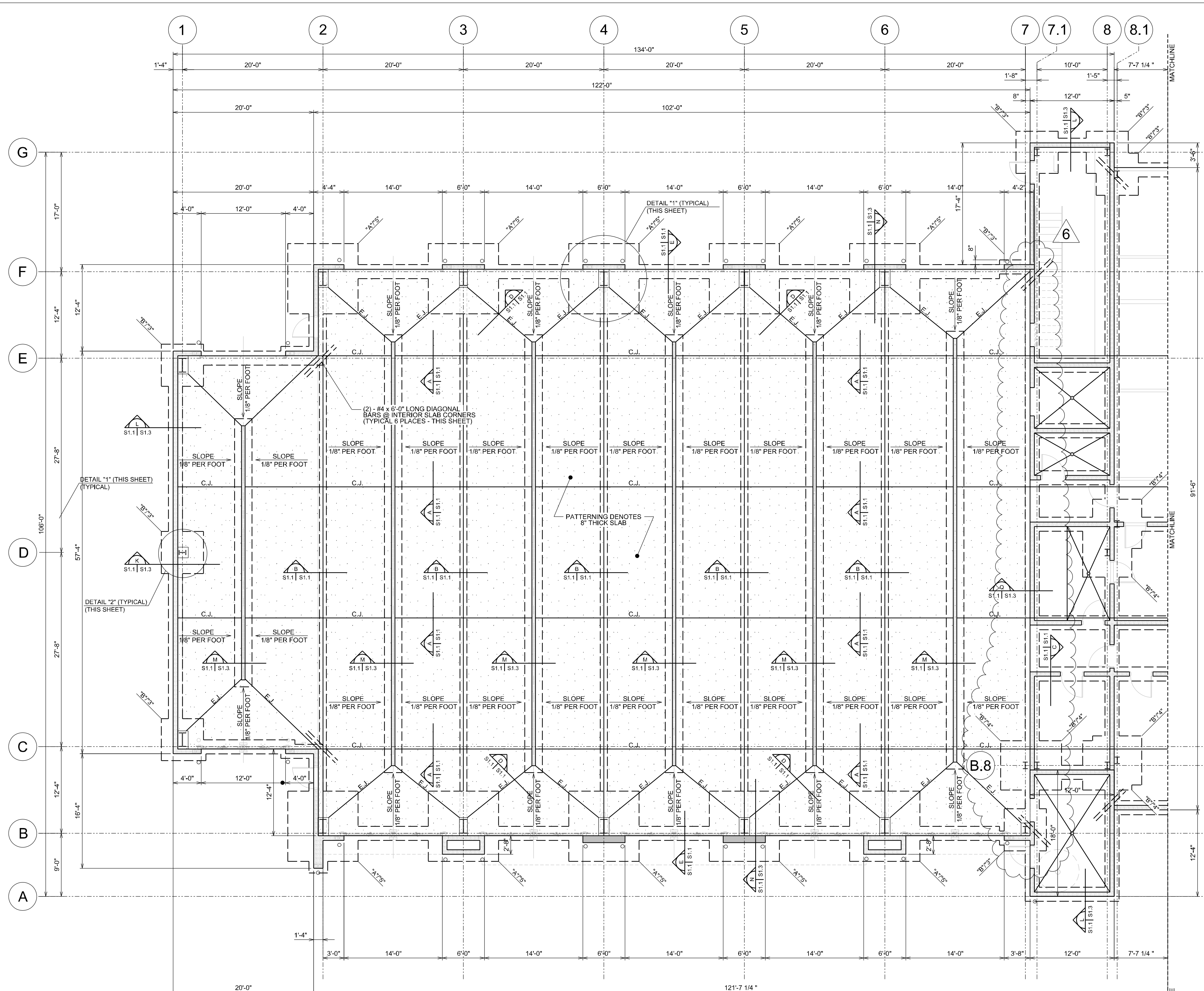
ARKANSAS

CITY OF PARAGOULD
FIRE STATION NO. 1

STRUCTURAL NOTES

GREENE COUNTY

DATE	REVISION
5/30/19	Addendum 1
6/12/19	
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET S1.0	

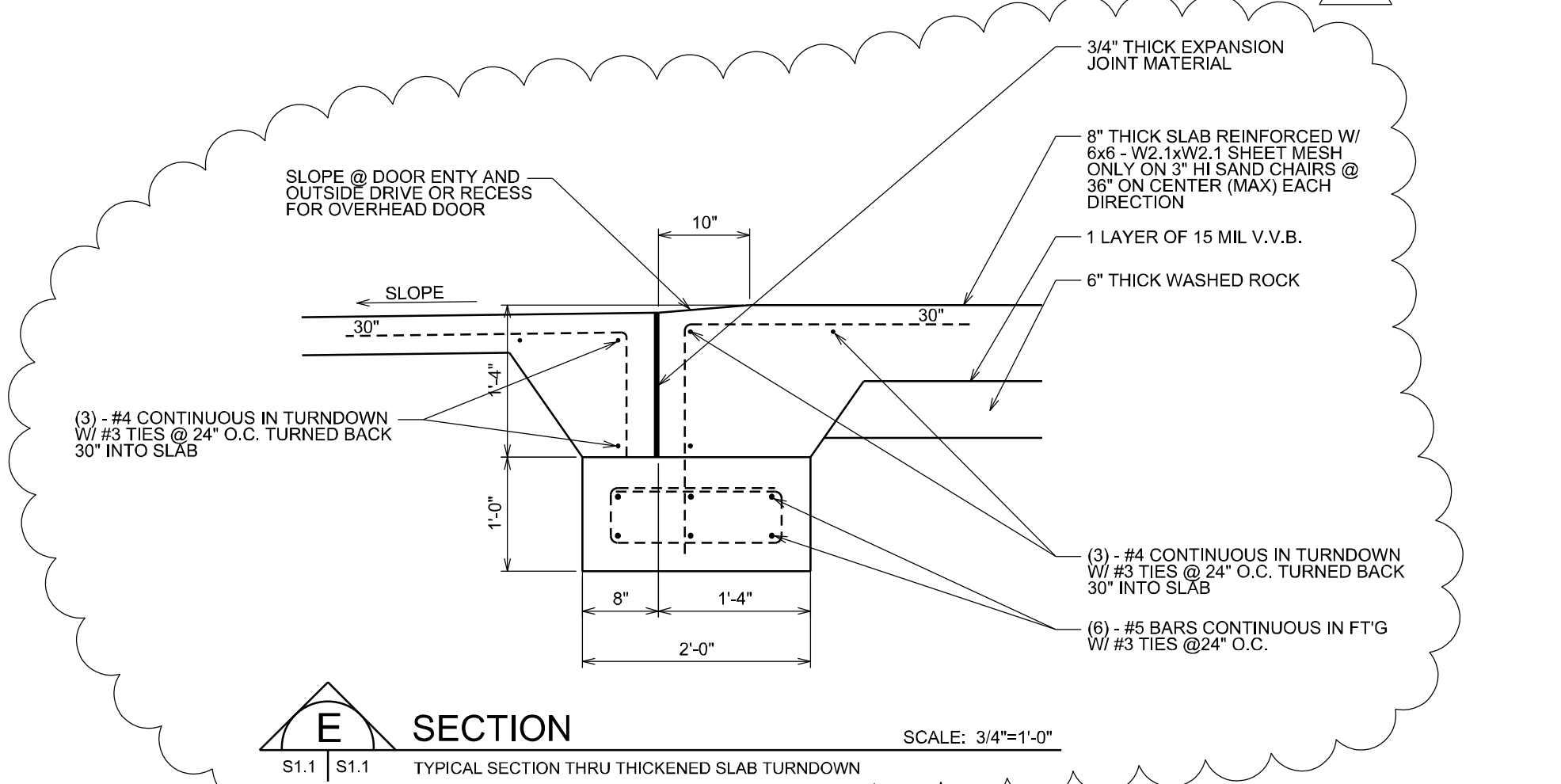
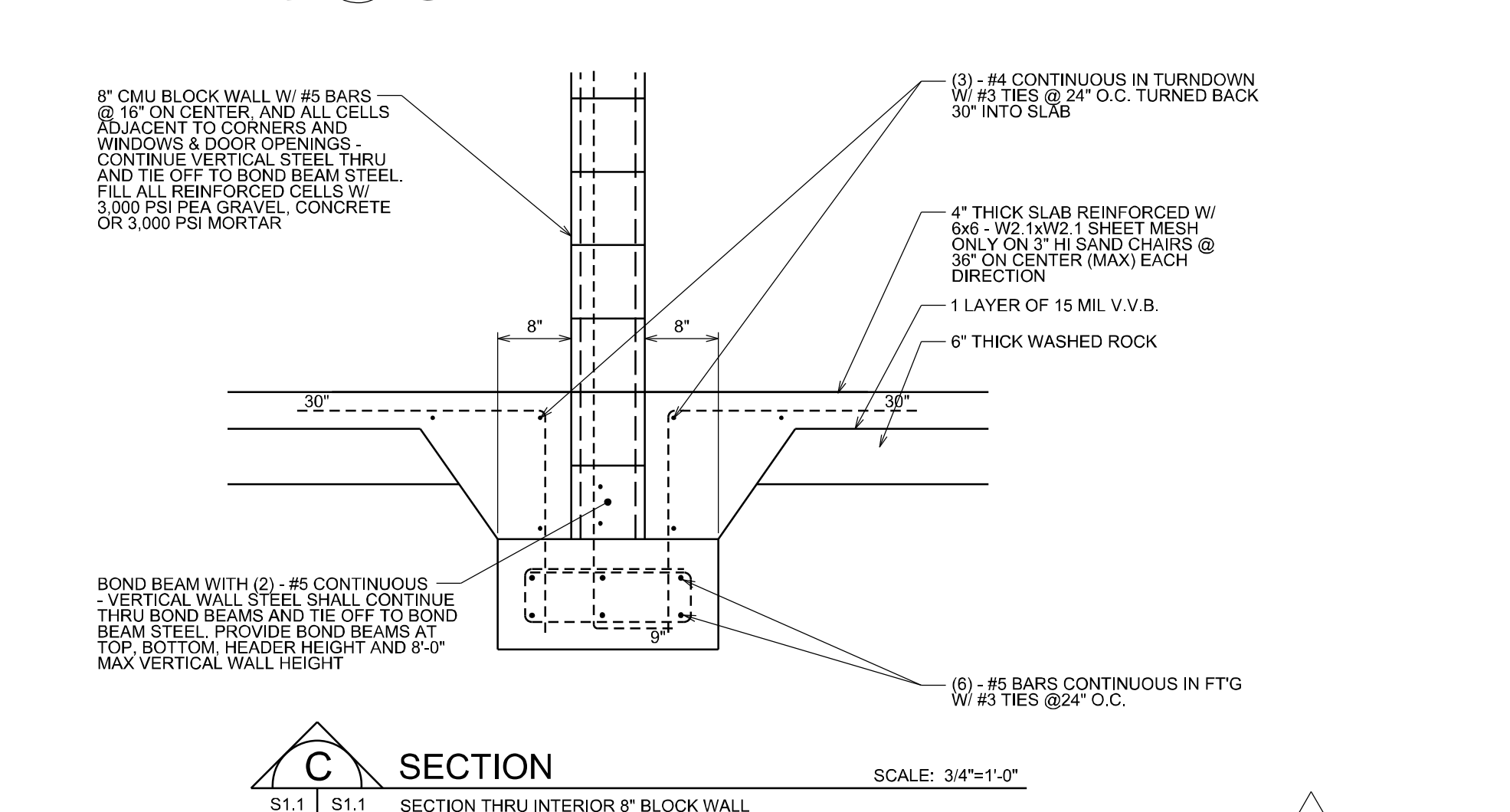
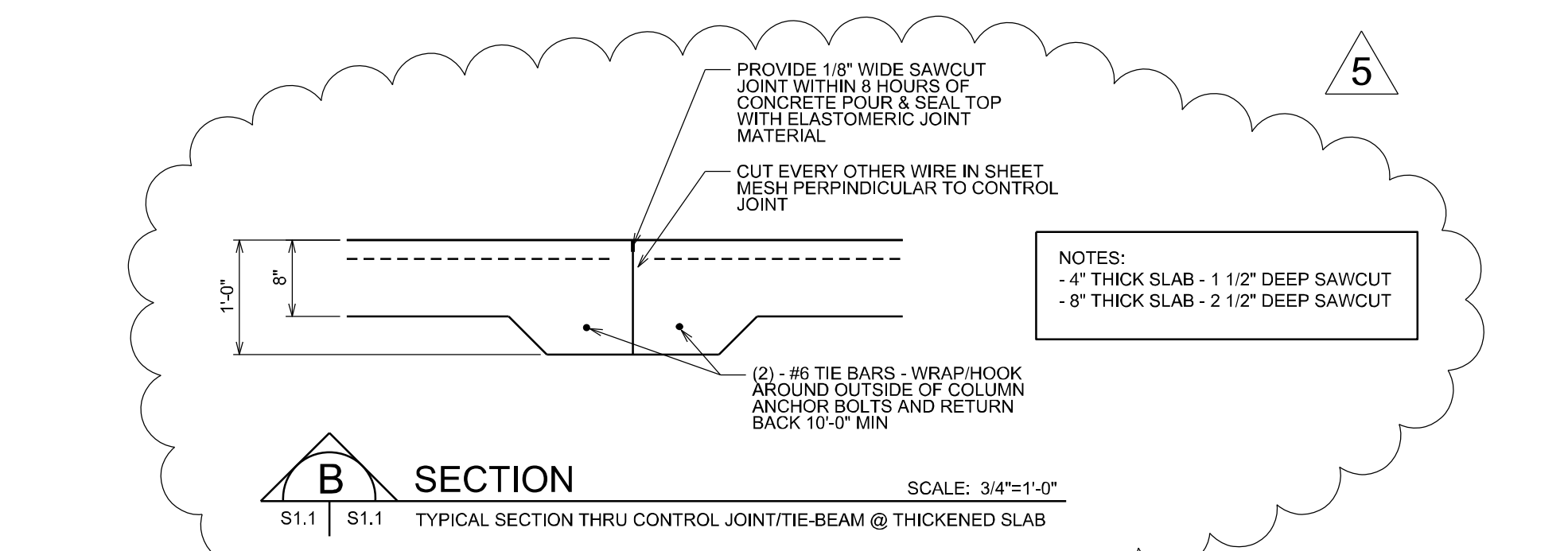
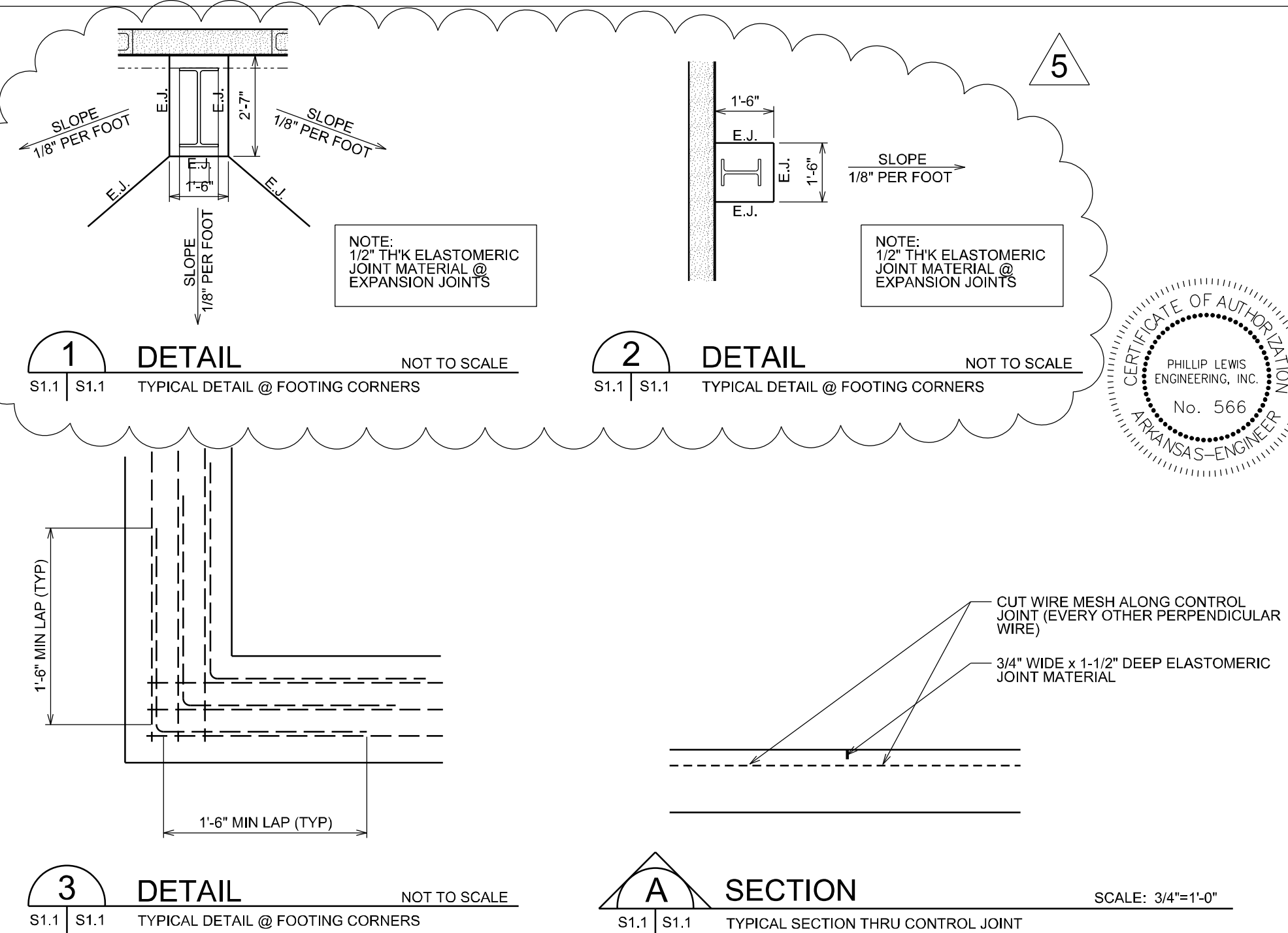


FOUNDATION PLAN

- NOTE:
- CONCRETE SHALL ACHIEVE 4000 PSI IN 28 DAYS.
 - MAXIMUM ALLOWABLE w/c RATIO = 0.55
 - MAXIMUM ALLOWABLE SLUMP = 5"
 - NO CHLORIDE ADDITIVES ALLOWED.
 - "C.J." INDICATES CONTROL JOINT PER DETAIL "A". SAWCUTS SHALL BE MADE WITHIN 8 HOURS OF POUR.
 - "E.J." INDICATES EXPANSION JOINT PER DETAIL "D"

COLUMN SCHEDULE		
A	PRE-ENGINEERED MAIN FRAME COLUMN	
B	PRE-ENGINEERED ENDWALL COLUMN	
C	HSS 6x6x5/8" COLUMN	

FOOTING SCHEDULE		
1	4'-0"x4'-0"x1'-6" THK	W/(5) - #5 EACH WAY
2	5'-0"x5'-0"x1'-6" THK	W/(6) - #5 EACH WAY
3	6'-0"x6'-0"x2'-0" THK	W/(7) - #5 EACH WAY
4	7'-0"x7'-0"x2'-0" THK	W/(8) - #5 EACH WAY
5	10'-0"x10'-0"x2'-0" THK	W/(11) - #5 EACH WAY

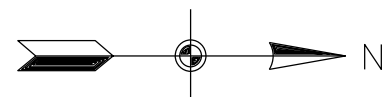
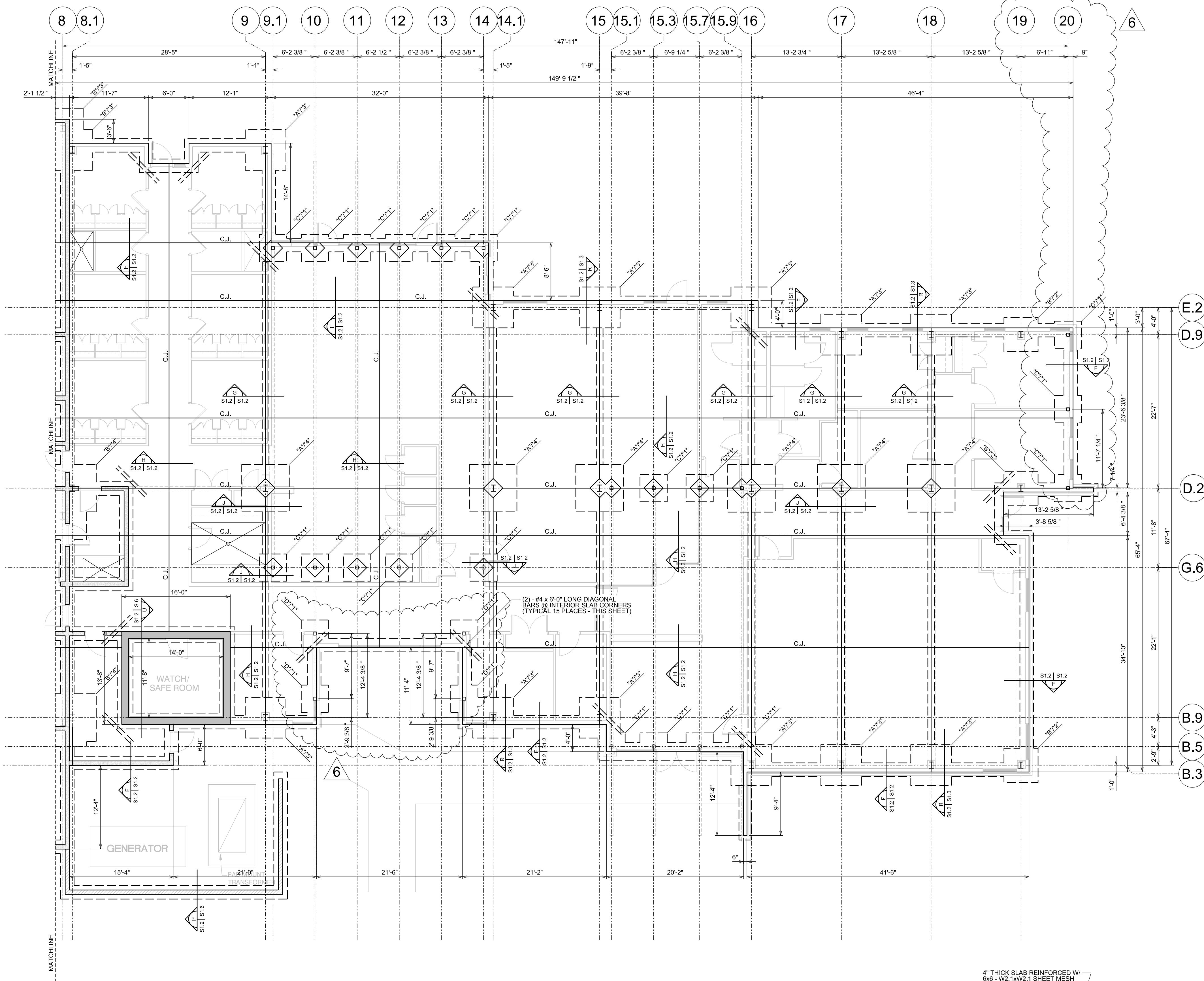


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CITY OF PARAGOULD FIRE STATION NO. 1 FOUNDATION PLAN

DATE	REVISION
5/30/19	Addendum 1
6/11/19	
6/12/19	
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET S1.1	



FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

NOTE:

1. CONCRETE SHALL ACHIEVE 4000 PSI IN 28 DAYS.
2. MAXIMUM ALLOWABLE w/c RATIO = 0.55
3. MAXIMUM ALLOWABLE SLUMP = 5"
4. NO CHLORIDE ADDITIVES ALLOWED.
5. "C.J." INDICATES CONTROL JOINT PER DETAIL "G". SAWCUTS SHALL BE MADE WITHIN 8 HOURS OF POUR.

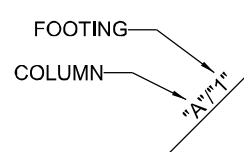
COLUMN SCHEDULE

A	PRE-ENGINEERED MAIN FRAME COLUMN
B	PRE-ENGINEERED ENDWALL COLUMN
C	HSS 6x6x5/8" COLUMN
D	COLUMN BY PEMB PROVIDER

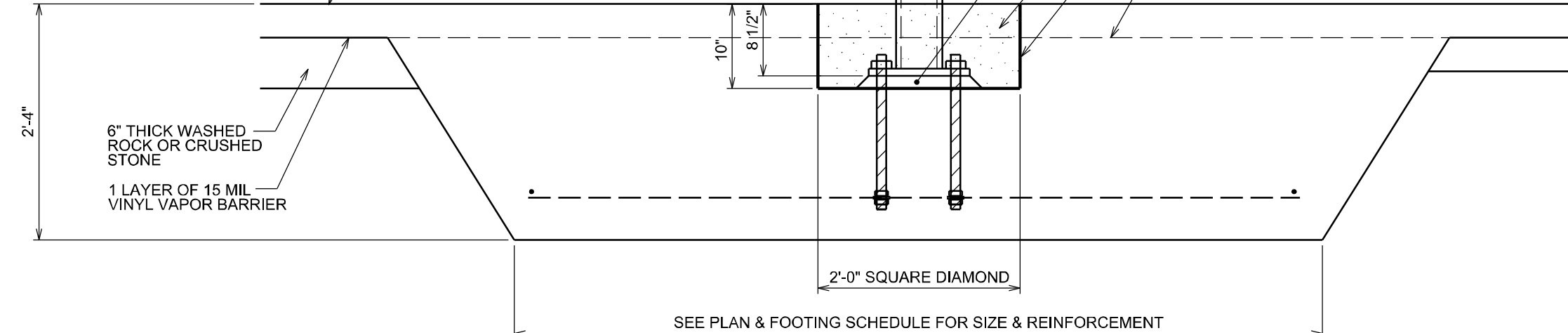
ALL COLUMNS TO HAVE (4 MINIMUM) - 3/4" DIA ASTM F1554 HIGH STRENGTH ALL-THREAD BOLTS x 1'-3" LONG WITH DOUBLE NUT AND WASHERS ON BOTTOM OF ANCHOR BOLTS

FOOTING SCHEDULE

1	4'-0"x4'-0"x1'-6" THK	W(5) - #5 EACH WAY
2	5'-0"x5'-0"x1'-6" THK	W(6) - #5 EACH WAY
3	6'-0"x6'-0"x2'-0" THK	W(7) - #5 EACH WAY
4	7'-0"x7'-0"x2'-0" THK	W(8) - #5 EACH WAY
5	10'-0"x10'-0"x2'-0" THK	W(11) - #5 EACH WAY



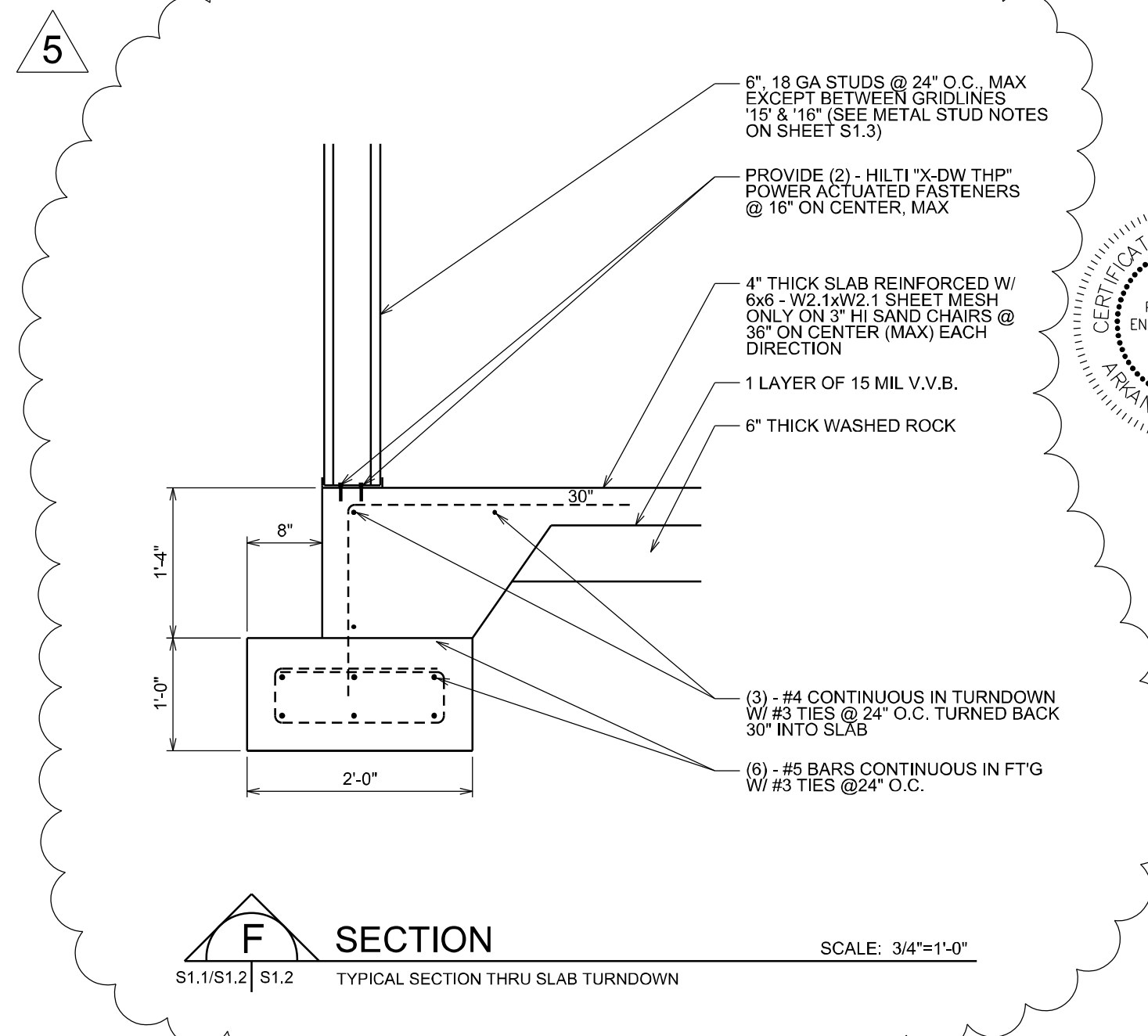
4" THICK SLAB REINFORCED W/ 6x6 - W2.1xW2.1 SHEET MESH ONLY ON 2" HI SAND CHAIRS @ 36" ON CENTER (MAX) EACH DIRECTION



SECTION J

S1.2 | S1.2 TYPICAL SECTION THRU INTERIOR COLUMN FOOTINGS

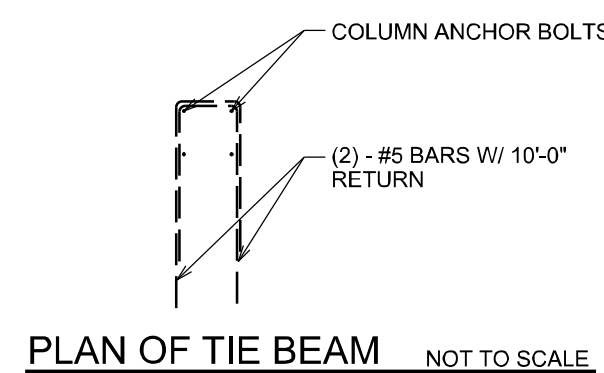
SCALE: 3/4" = 1'-0"



SECTION F

S1.1/S1.2 | S1.2 TYPICAL SECTION THRU SLAB TURNDOWN

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



PLAN OF TIE BEAM

NOT TO SCALE

SECTION G

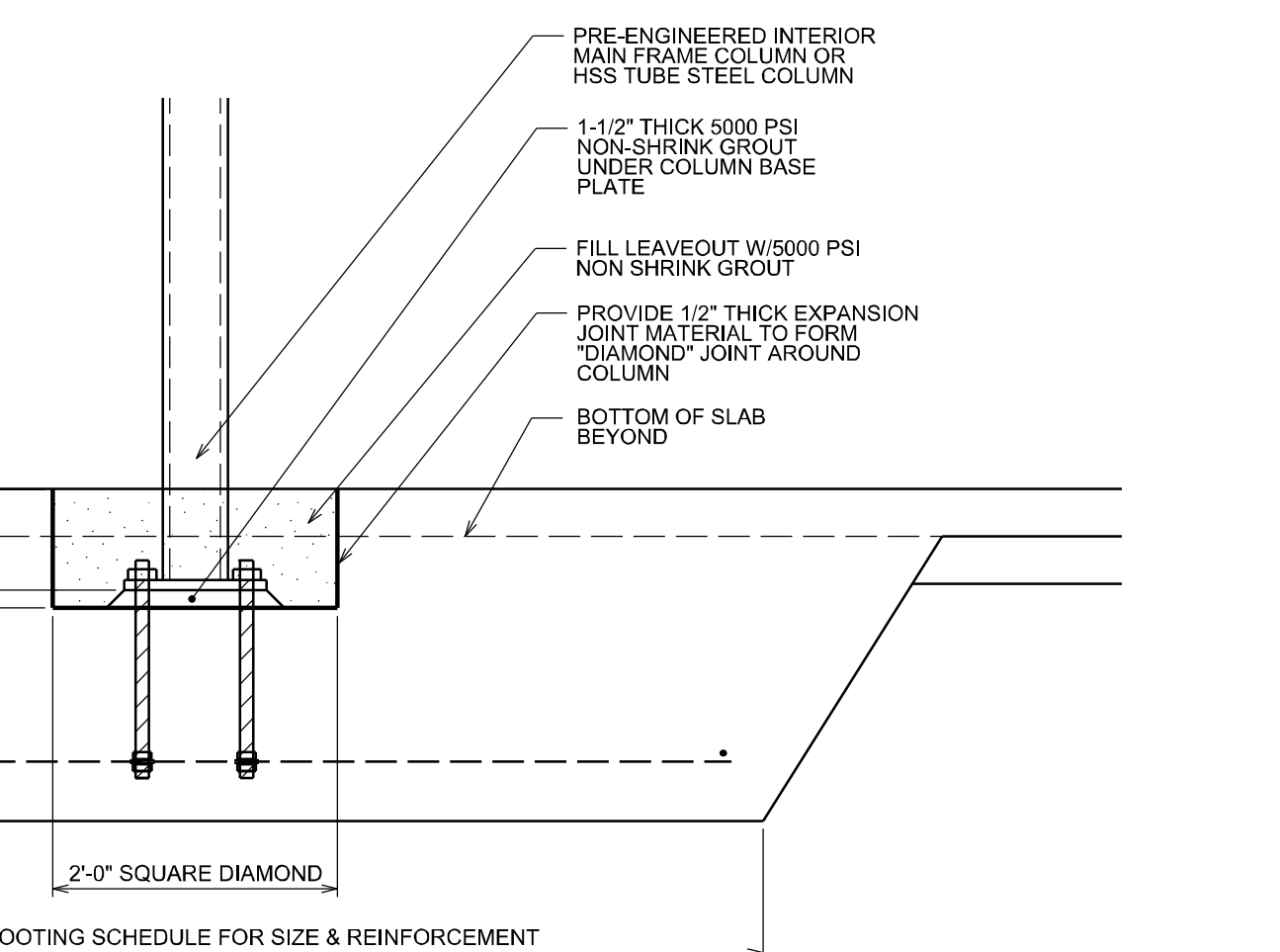
S1.2 | S1.2 TYPICAL SECTION THRU CONTROL JOINT/TIE BEAM

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

SECTION H

S1.2 | S1.2 TYPICAL SECTION THRU CONTROL JOINT

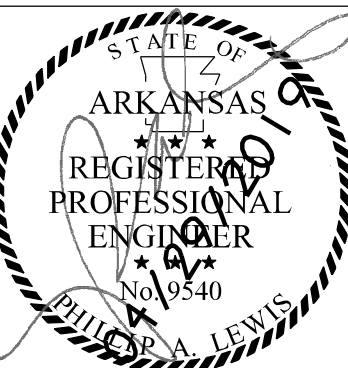
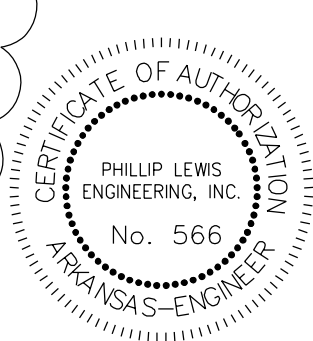
SCALE: 3/4" = 1'-0"



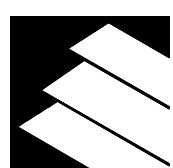
SECTION J

S1.2 | S1.2 TYPICAL SECTION THRU INTERIOR COLUMN FOOTINGS

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



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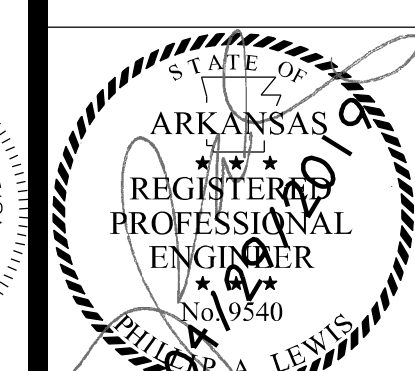
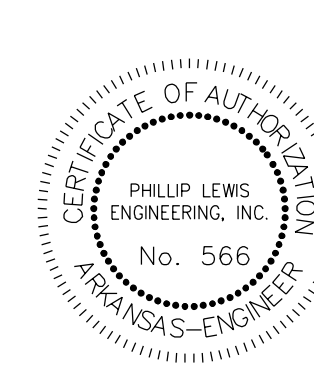
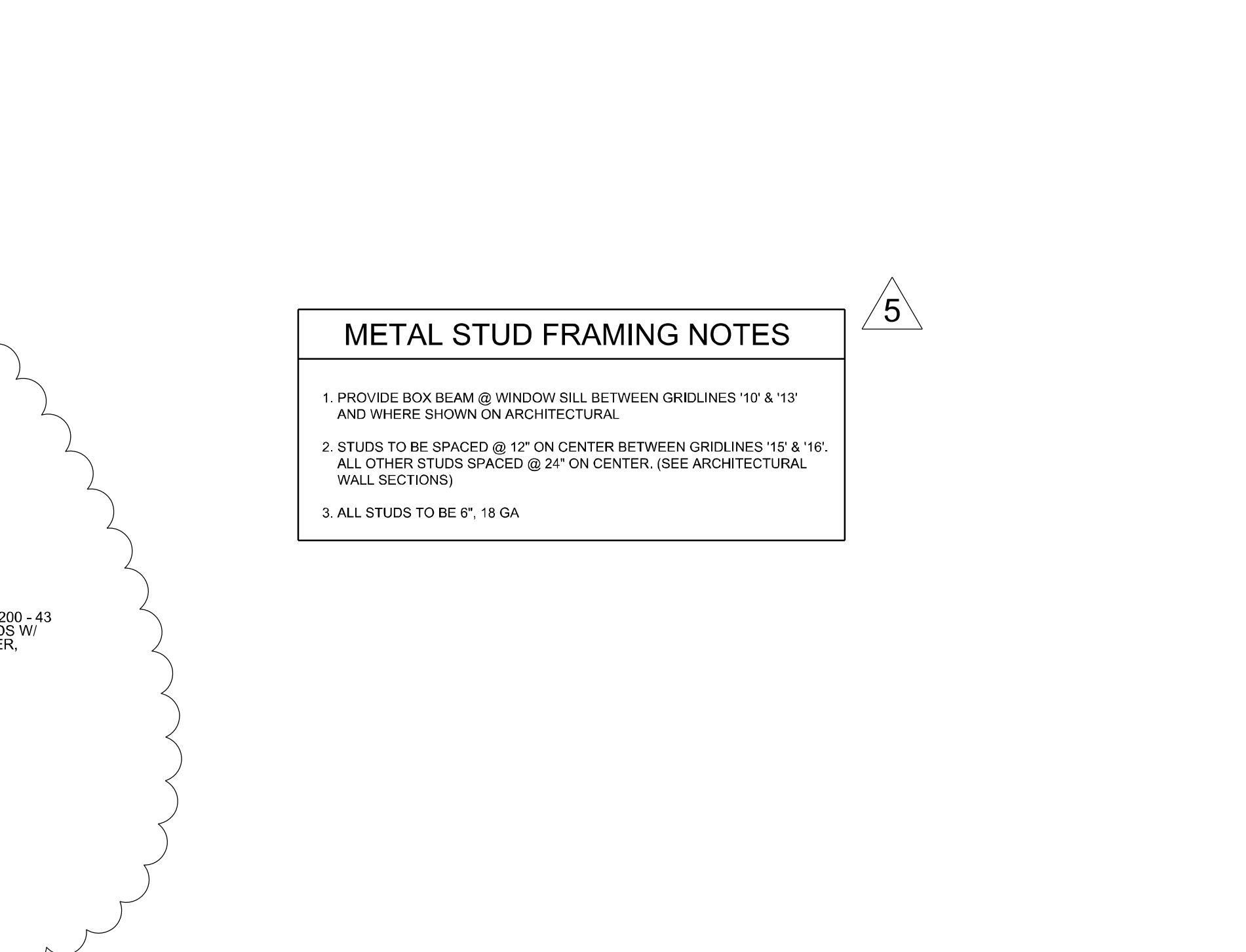
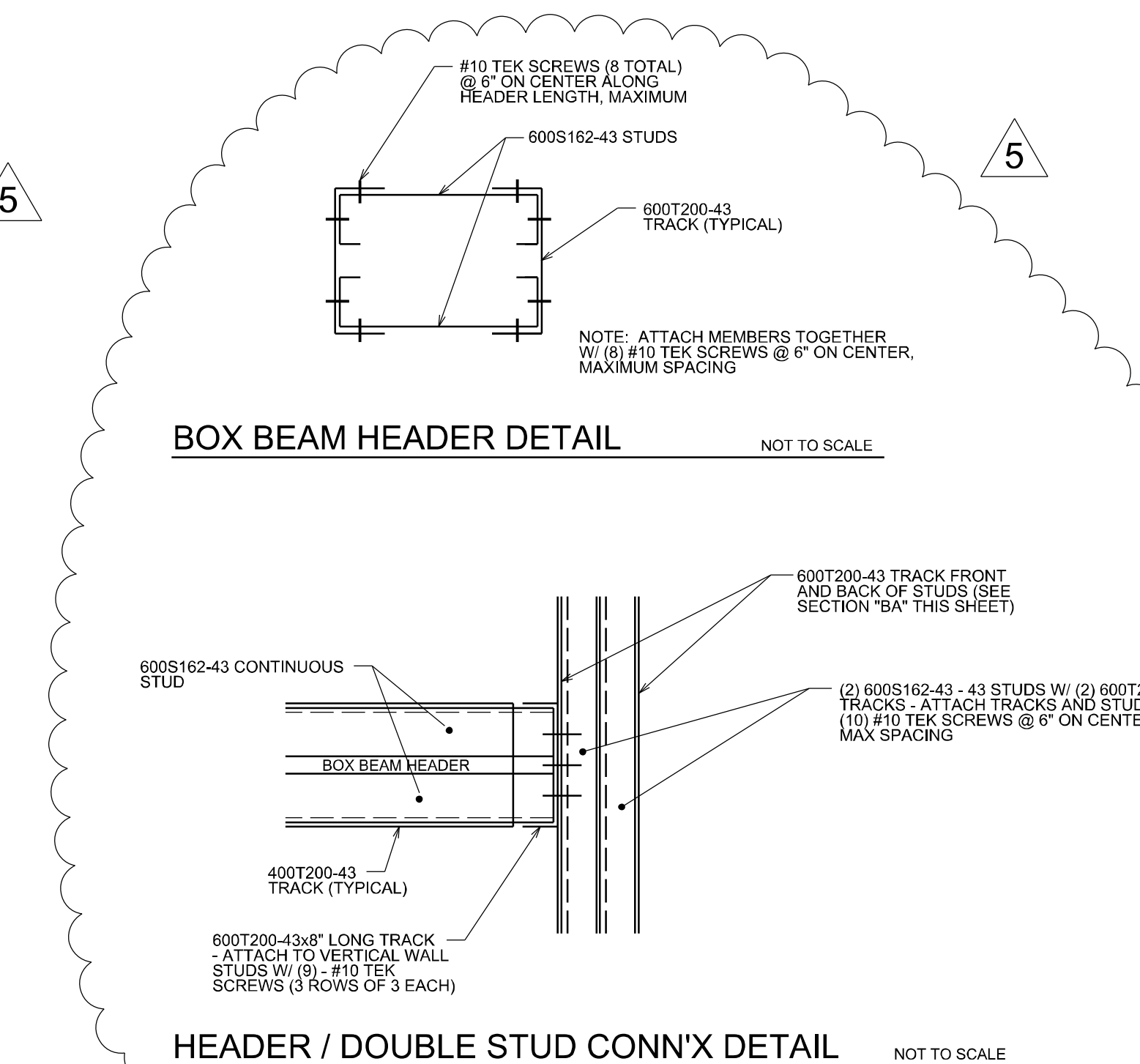
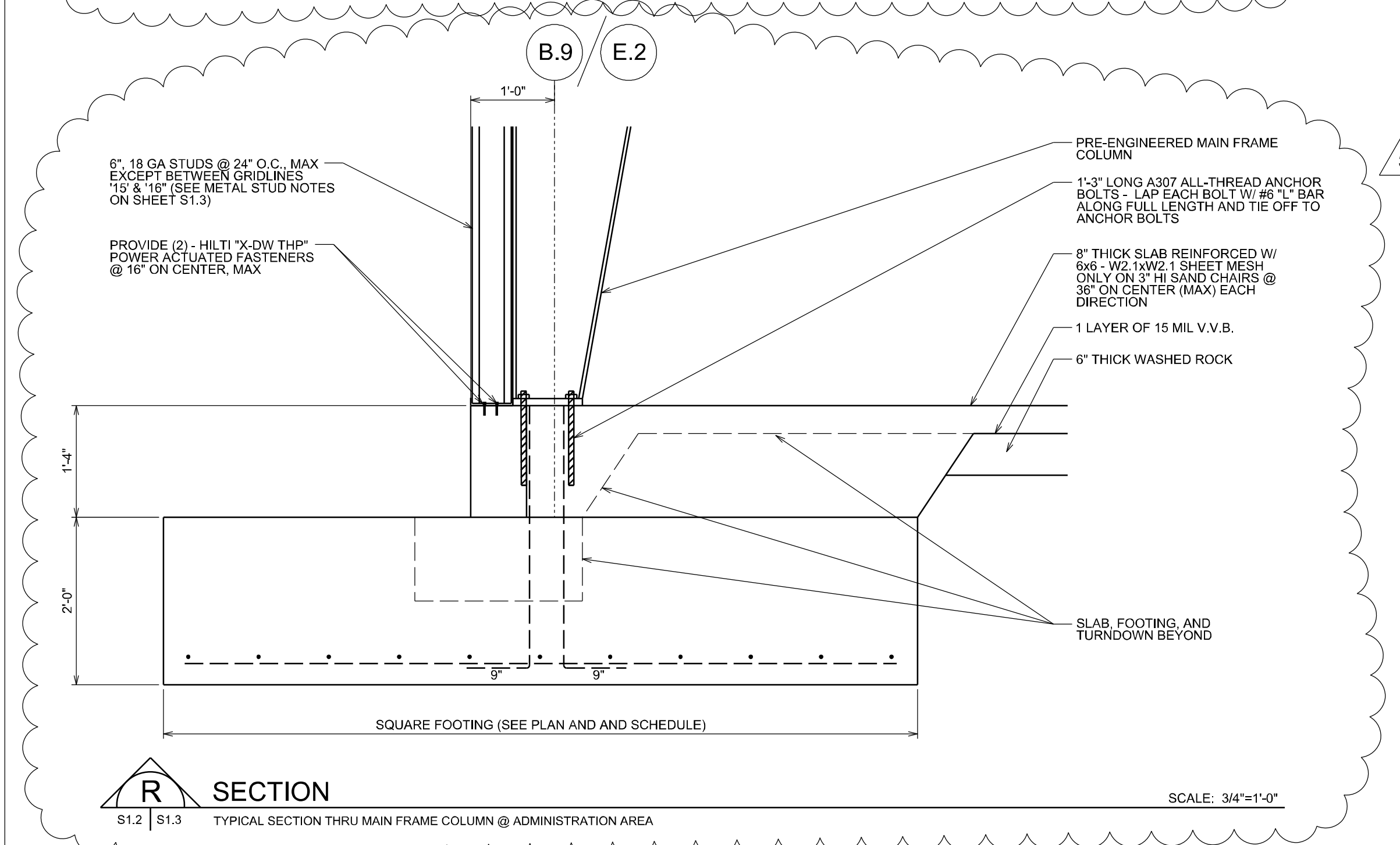
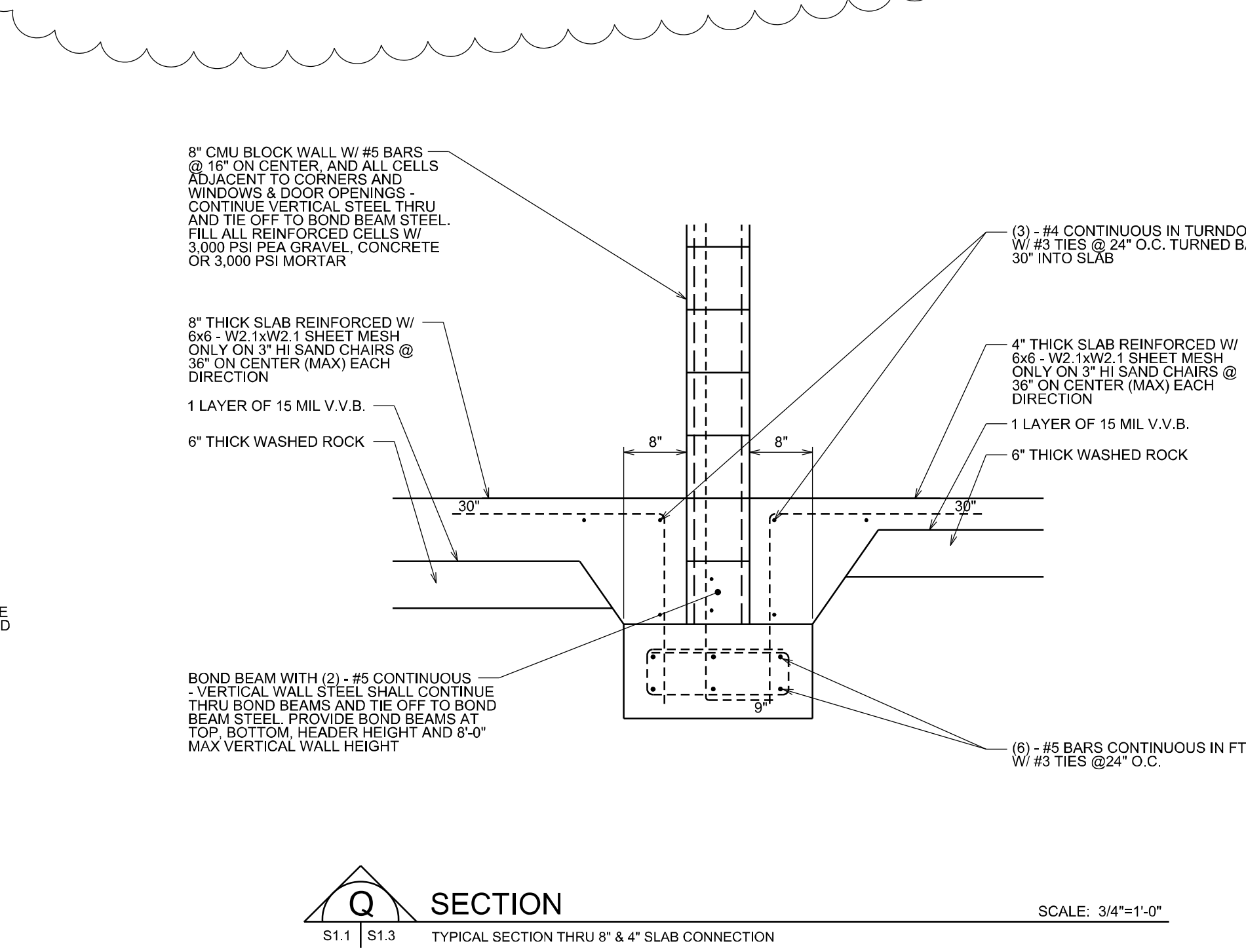
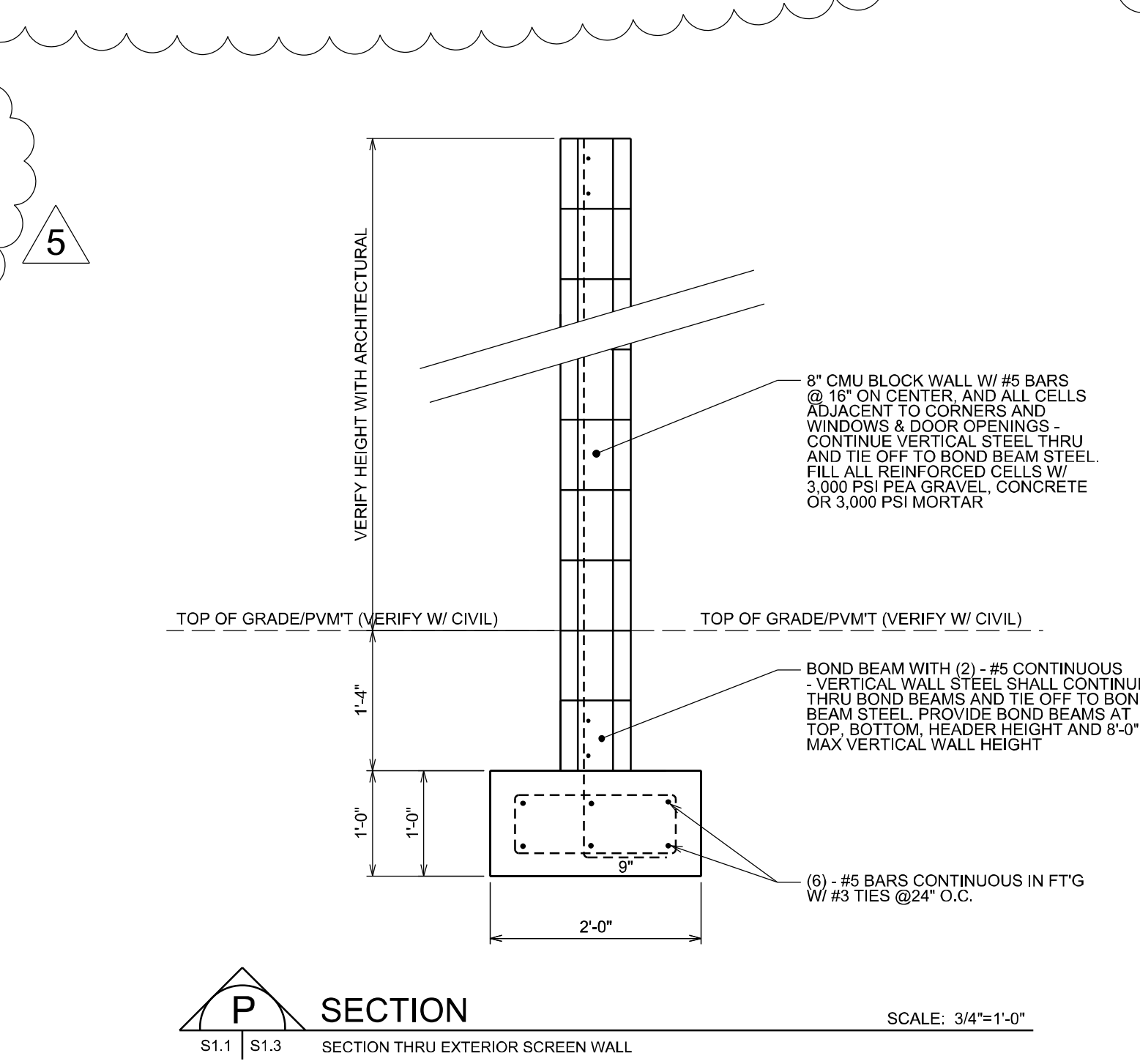
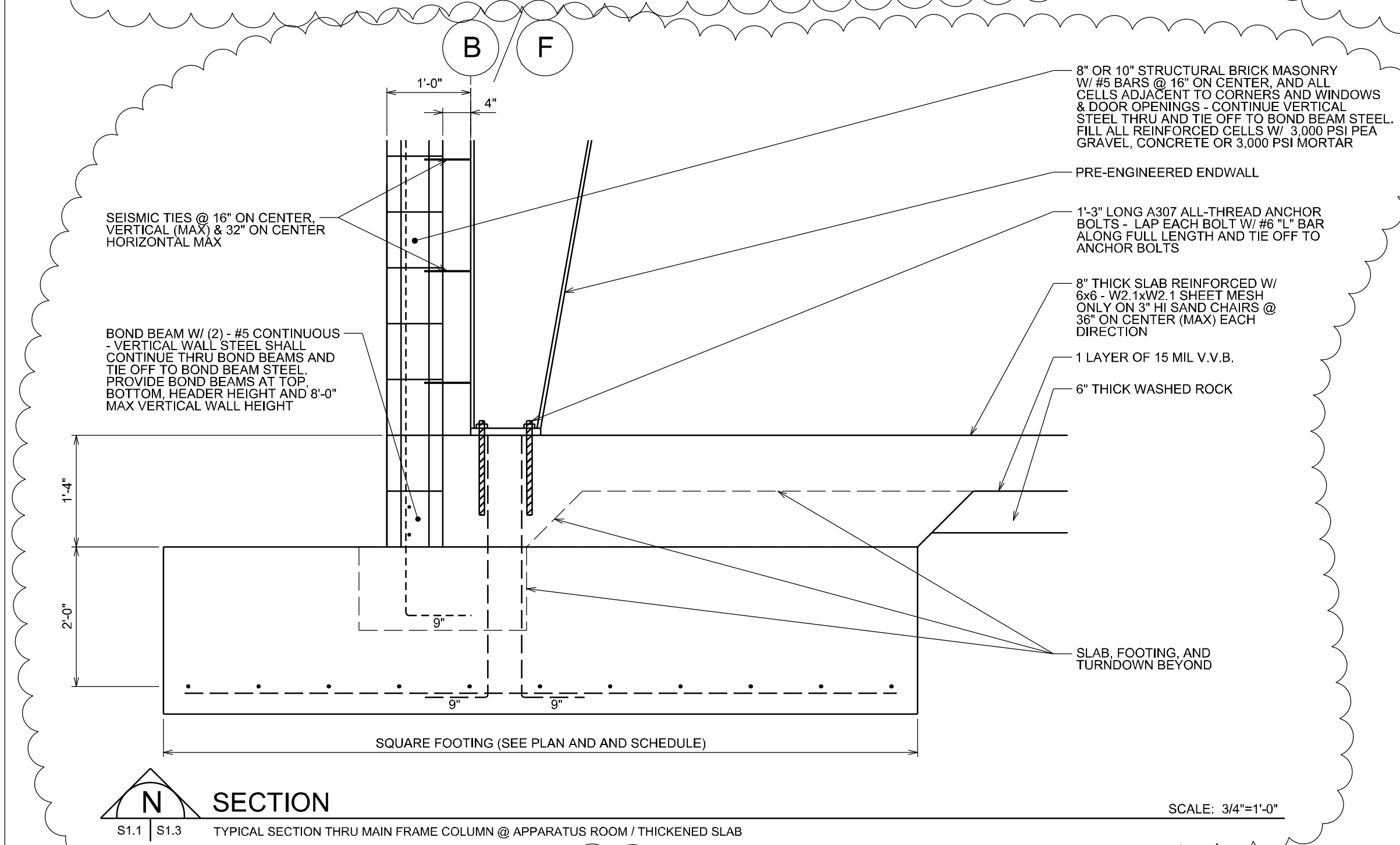
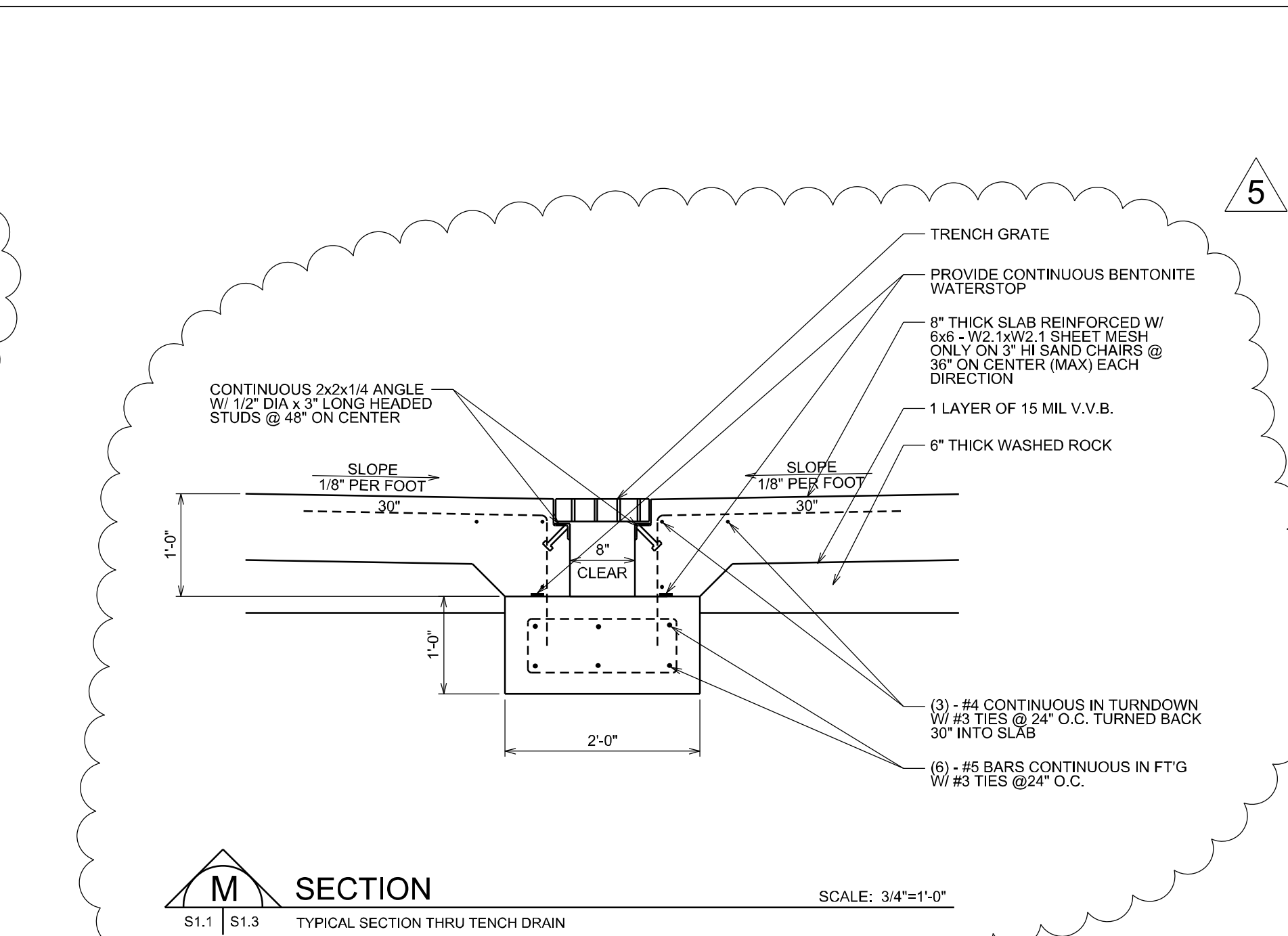
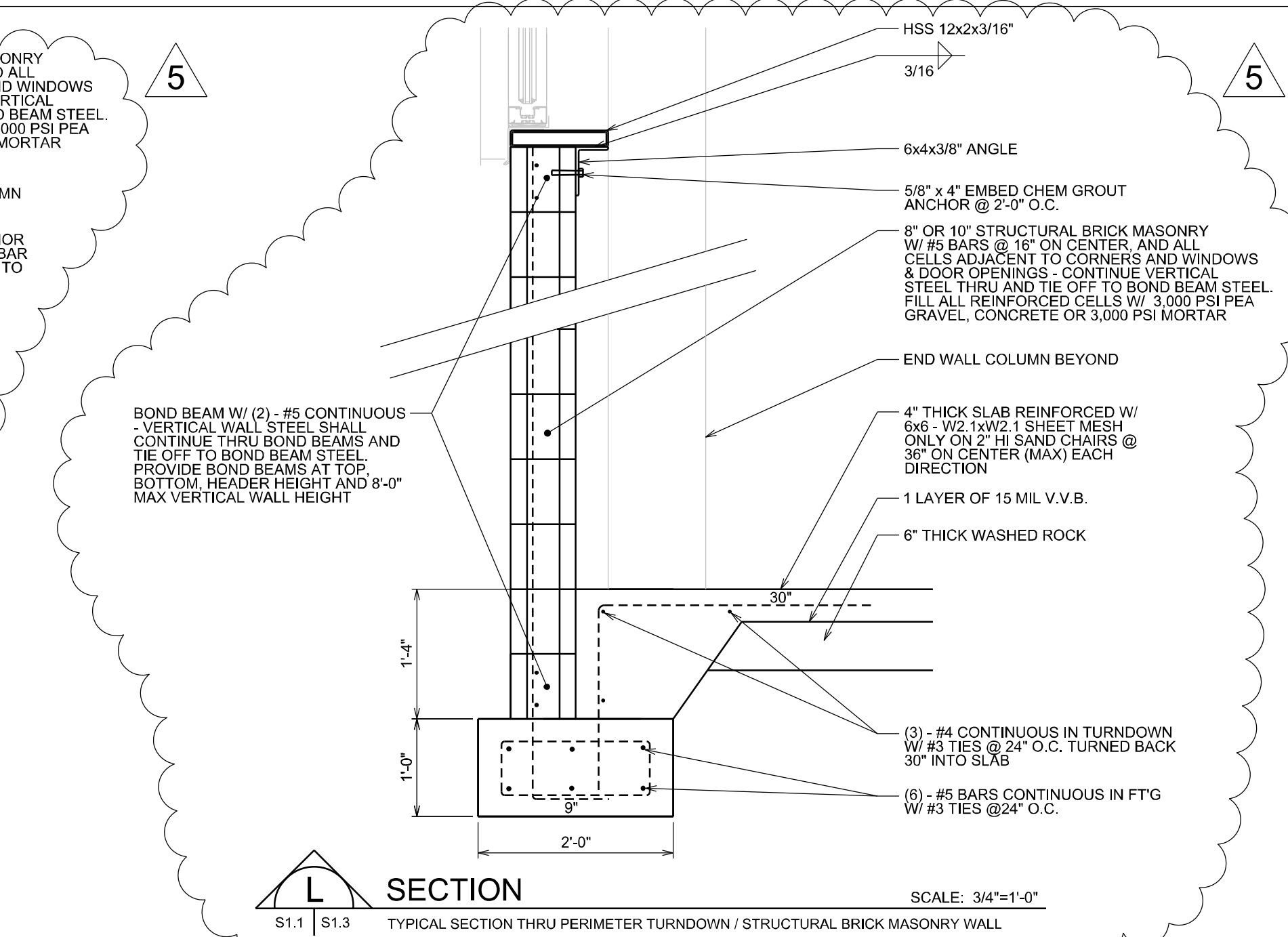
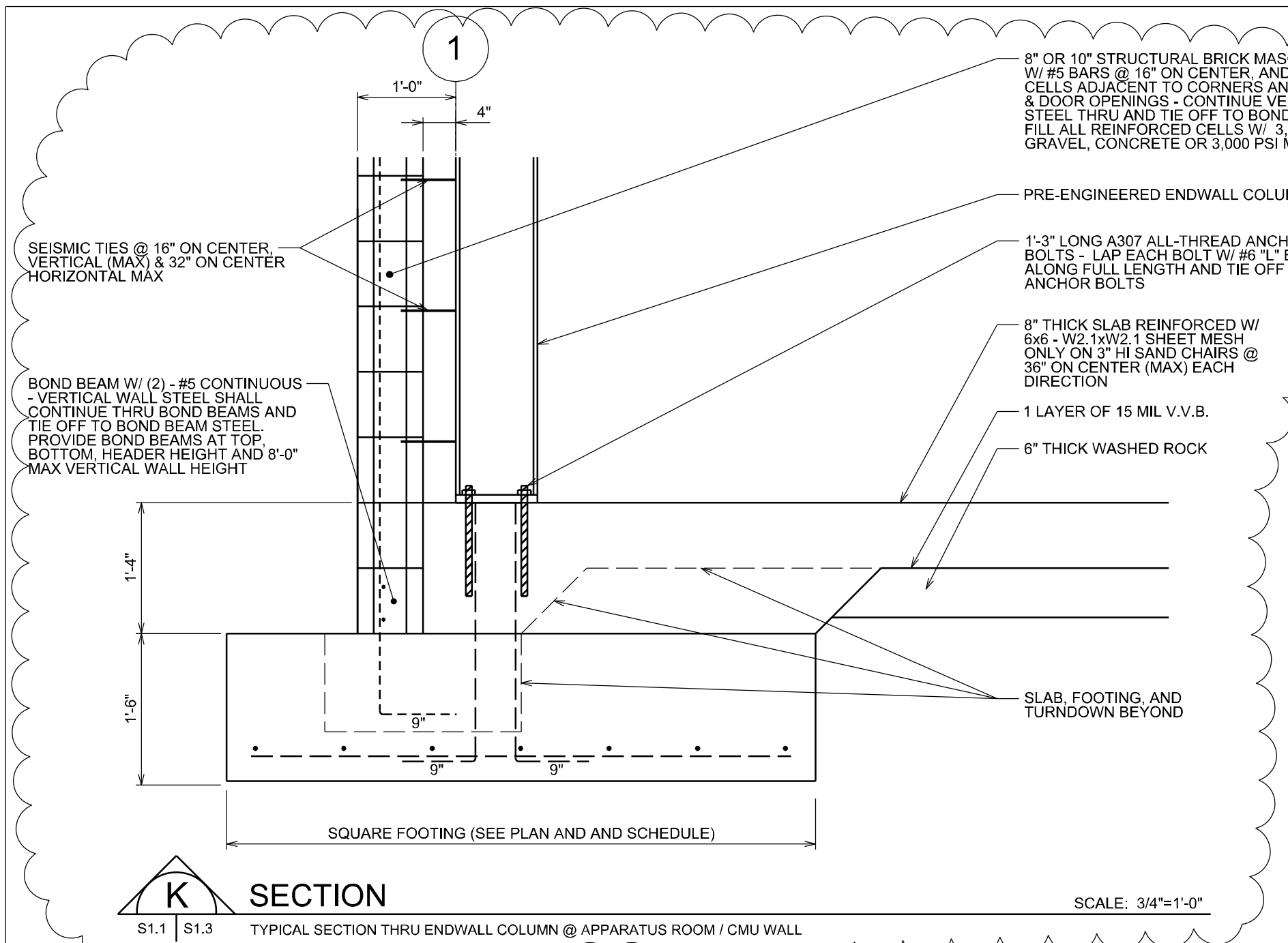
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CITY OF PARAGOULD FIRE STATION NO. 1

FOUNDATION PLAN II

GREENE COUNTY
ARKANSAS

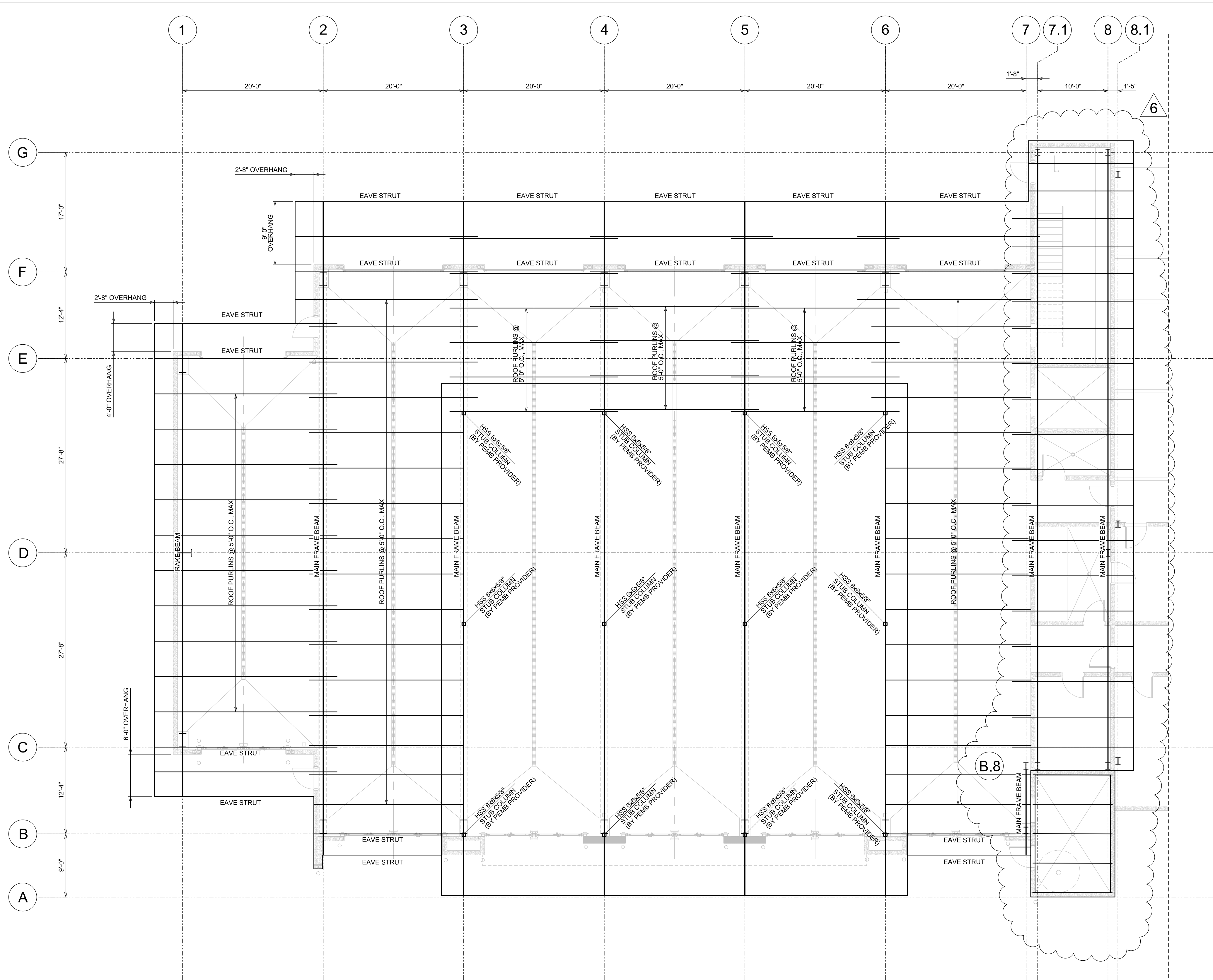
DATE	REVISION
5/30/19	Addendum 1
6/11/19	
6/12/19	
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE	
APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET	
S1.2	



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CITY OF PARAGOULD
FIRE STATION NO. 1
FOUNDATION DETAILS
GREENE COUNTY
ARKANSAS

DATE	REVISION
5/30/19	Addendum 1
6/11/19	
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE	
APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET	
S1.3	



6

ROOF FRAMING PLAN - SOUTH

SCALE: 1/8" = 1'-0"

NOTES:

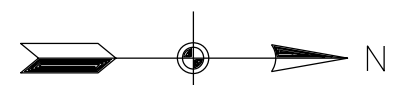
1. PRE-ENGINEERED ROOF SHALL BE DESIGNED FOR THE FOLLOWING LOADS/DEFLECTIONS:

MAIN FRAMES:
14 PSF - LIVE LOADS (MINIMUM REDUCED LOAD ALLOWED)
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

PURLINS:
20 PSF - LIVE LOAD
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

2. THE PRE-ENGINEERED BUILDING SHALL HAVE A MAXIMUM LATERAL TOTAL LOAD DEFLECTION/DRIFT OF H/200.

3. PRE-ENGINEERED DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. THEY SHALL BE STAMPED BY A ENGINEER CURRENTLY LICENSED TO PRACTICE ENGINEERING IN THE STATE OF ARKANSAS.



NOTE: LOCATIONS OF ROOF PURLINS ARE AT REPRESENTATIVE MINIMUM. SPACING/ADDITIONAL FRAMING REQUIRED FOR SUPPORT OF ROOFTOP UNITS (RTU) AND OTHER COMPONENTS SHALL BE DETERMINED BY PRE-ENGINEERED METAL BUILDING (PEMB) SUPPLIER'S ENGINEER.

6

HIGH ROOF LEVEL FRAMING PLAN

SCALE: 1/8" = 1'-0"

NOTES:

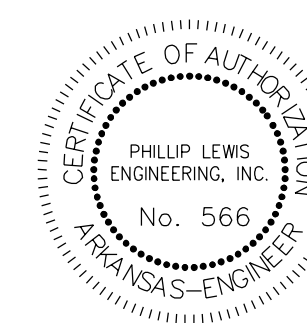
1. PRE-ENGINEERED ROOF SHALL BE DESIGNED FOR THE FOLLOWING LOADS/DEFLECTIONS:

MAIN FRAMES:
14 PSF - LIVE LOADS (MINIMUM REDUCED LOAD ALLOWED)
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

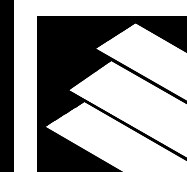
PURLINS:
20 PSF - LIVE LOAD
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

2. THE PRE-ENGINEERED BUILDING SHALL HAVE A MAXIMUM LATERAL TOTAL LOAD DEFLECTION/DRIFT OF H/200.

3. PRE-ENGINEERED DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. THEY SHALL BE STAMPED BY A ENGINEER CURRENTLY LICENSED TO PRACTICE ENGINEERING IN THE STATE OF ARKANSAS.



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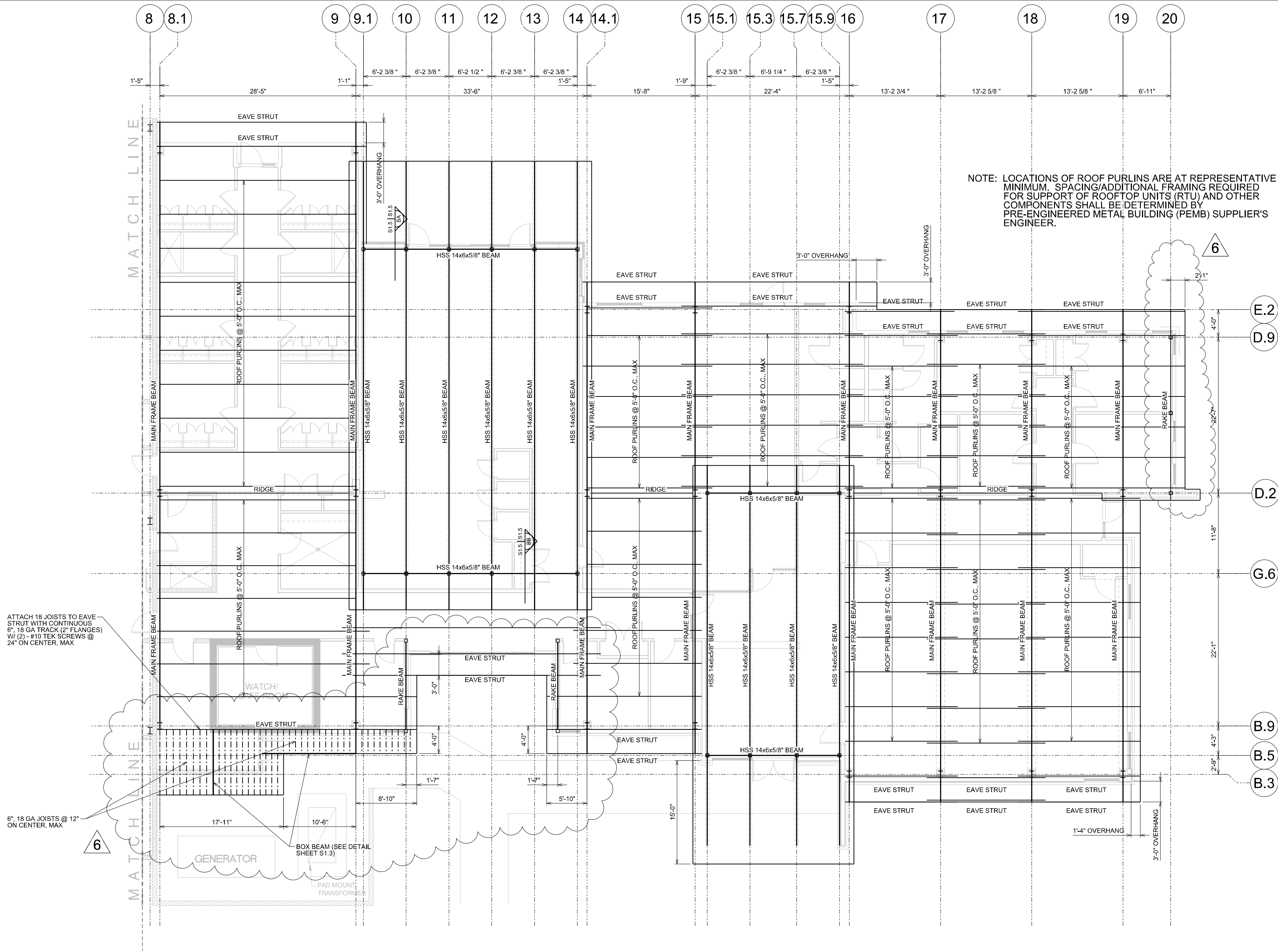
ARKANSAS

CITY OF PARAGOULD
FIRE STATION NO. 1

GREENE COUNTY
ROOF FRAMING PLAN - SOUTH

DATE	REVISION
5/30/19	Addendum 1
6/12/19	
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE	
APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET	
S1.4	

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ROOF FRAMING PLAN - NORTH

SCALE: 1/8"=1'-0"

NOTES:

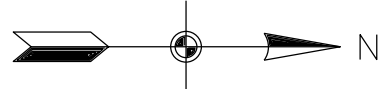
1. PRE-ENGINEERED ROOF SHALL BE DESIGNED FOR THE FOLLOWING LOADS/DEFLECTIONS:

MAIN FRAMES:
14 PSF - LIVE LOADS (MINIMUM REDUCED LOAD ALLOWED)
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

PURLINS:
20 PSF - LIVE LOAD
10 PSF - DEAD AND COLLATERAL LOAD
PURLIN & FRAME DEFLECTIONS TO BE PER SPEC (12100-2)

2. THE PRE-ENGINEERED BUILDING SHALL HAVE A MAXIMUM LATERAL TOTAL LOAD DEFLECTION/DRIFT OF H/200.

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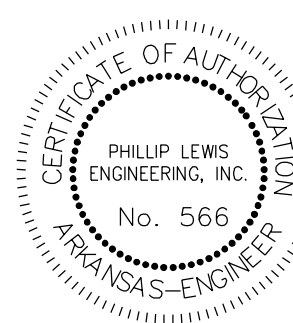
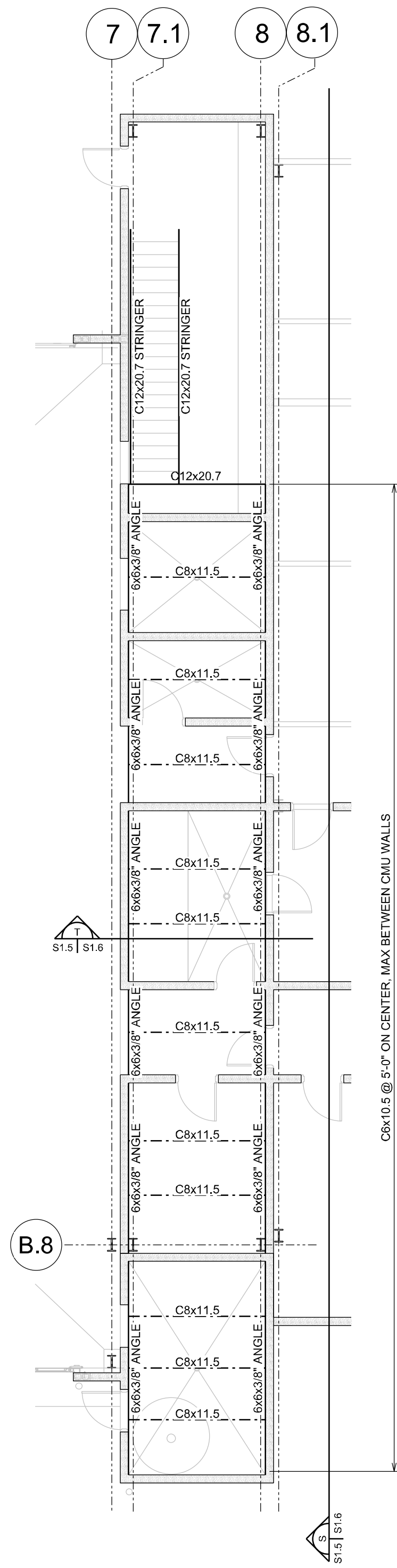
SCALE: 3/4"=1'-0"



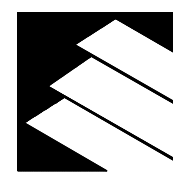
SCALE: 3/4"=1'-0"

MEZZANINE FRAMING PLAN

SCALE: 1/8"=1'-0"



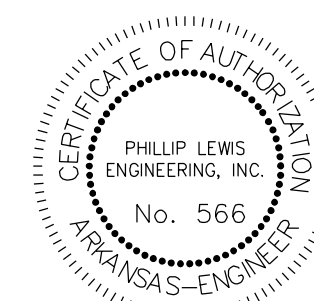
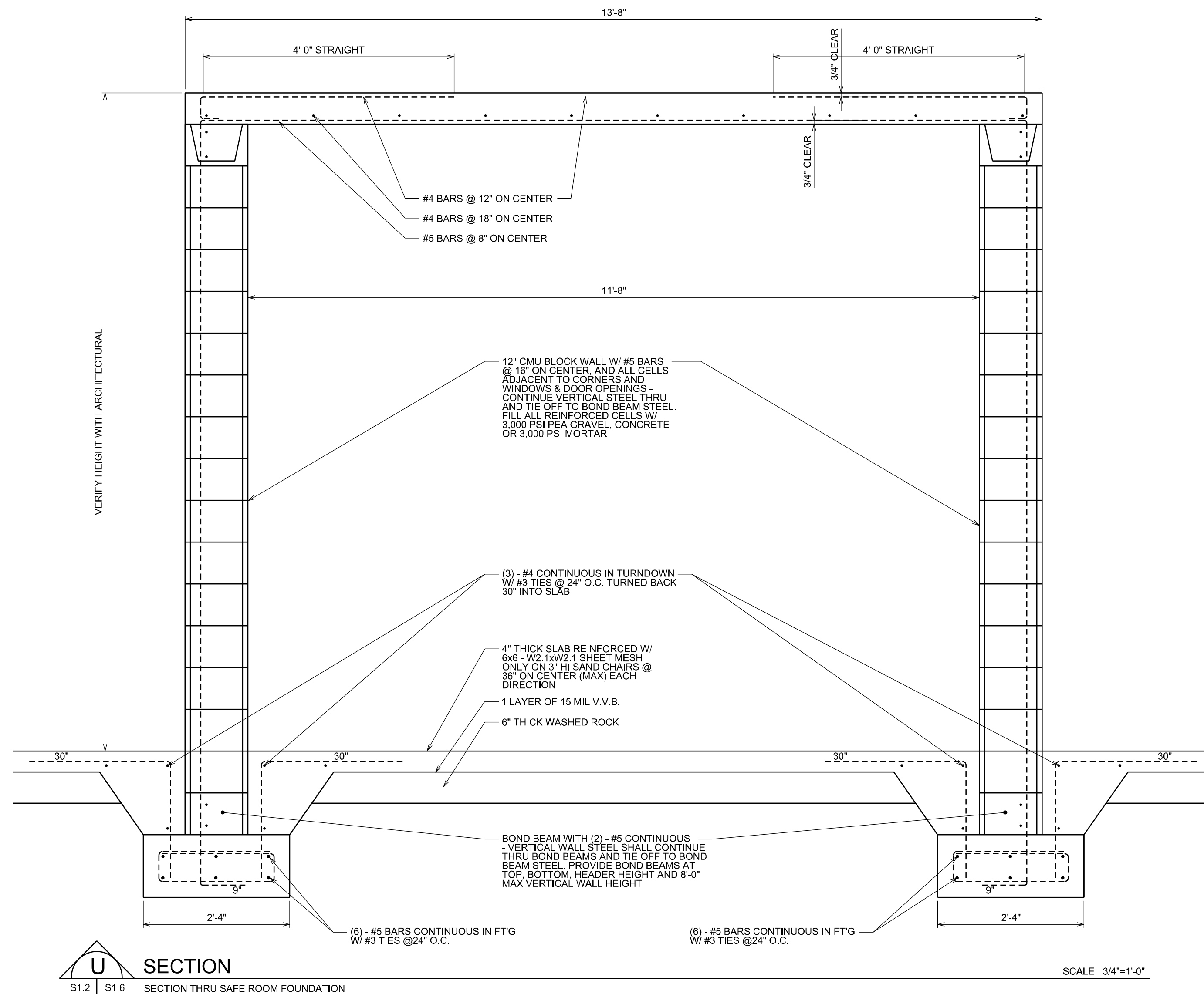
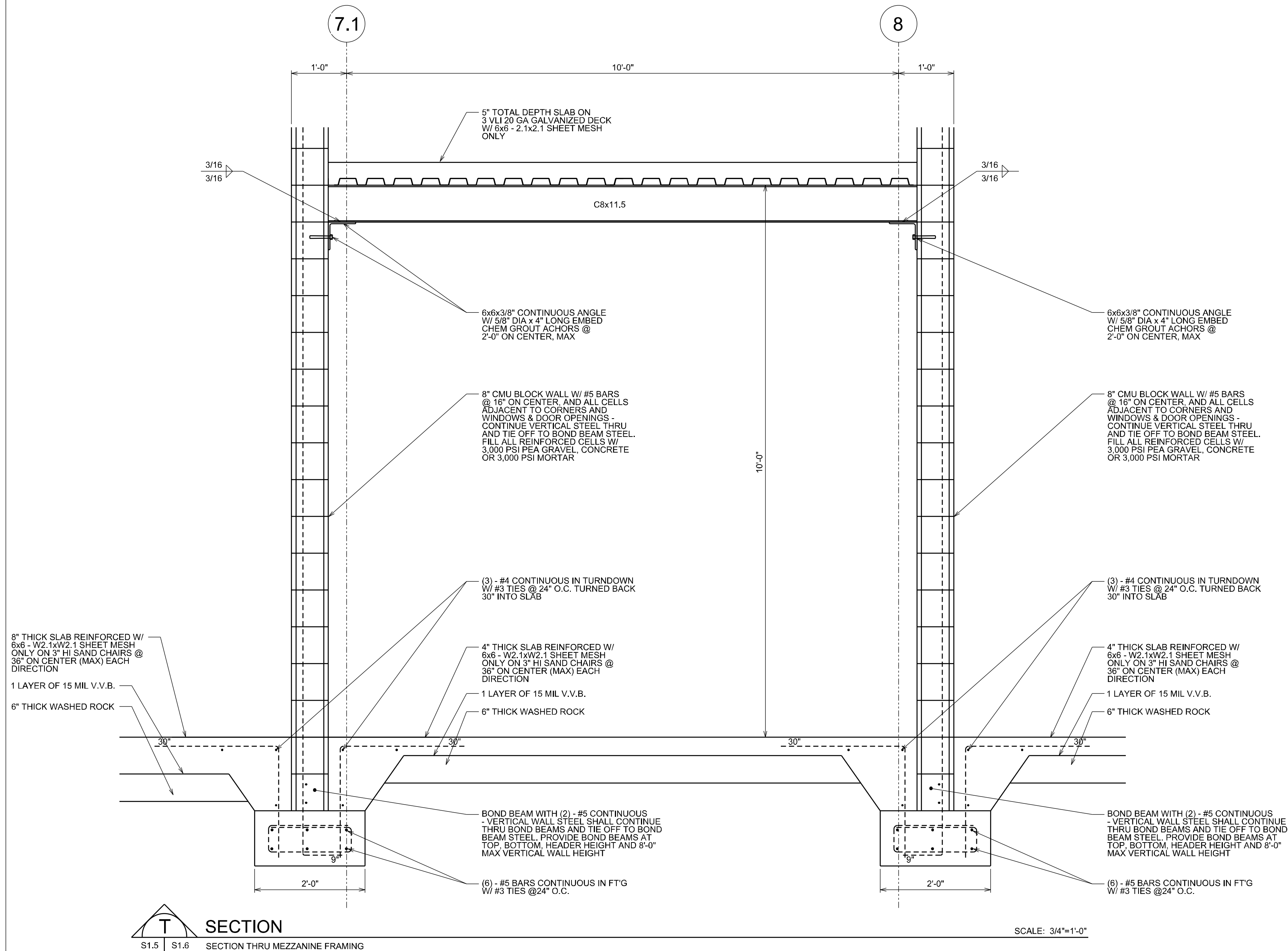
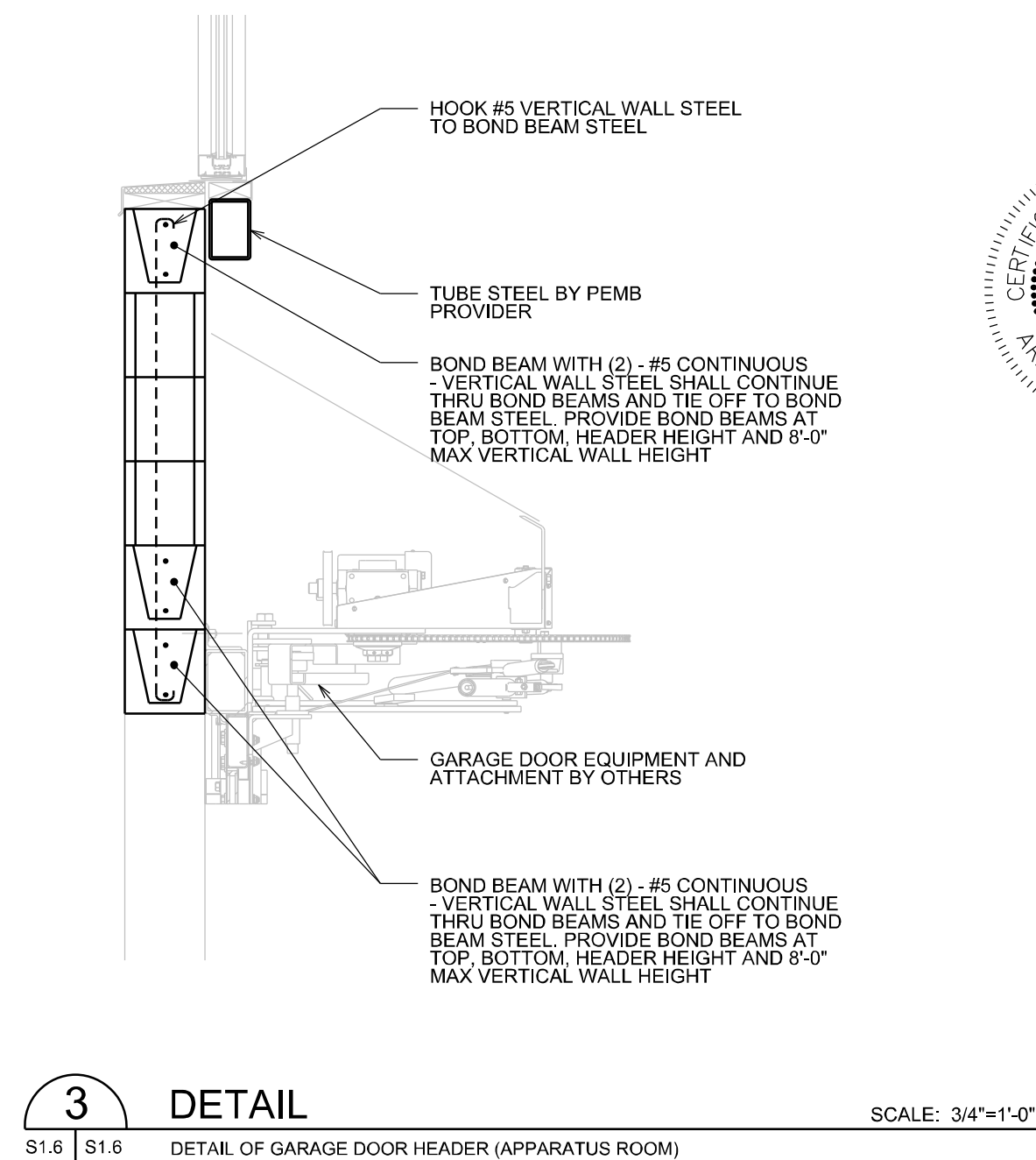
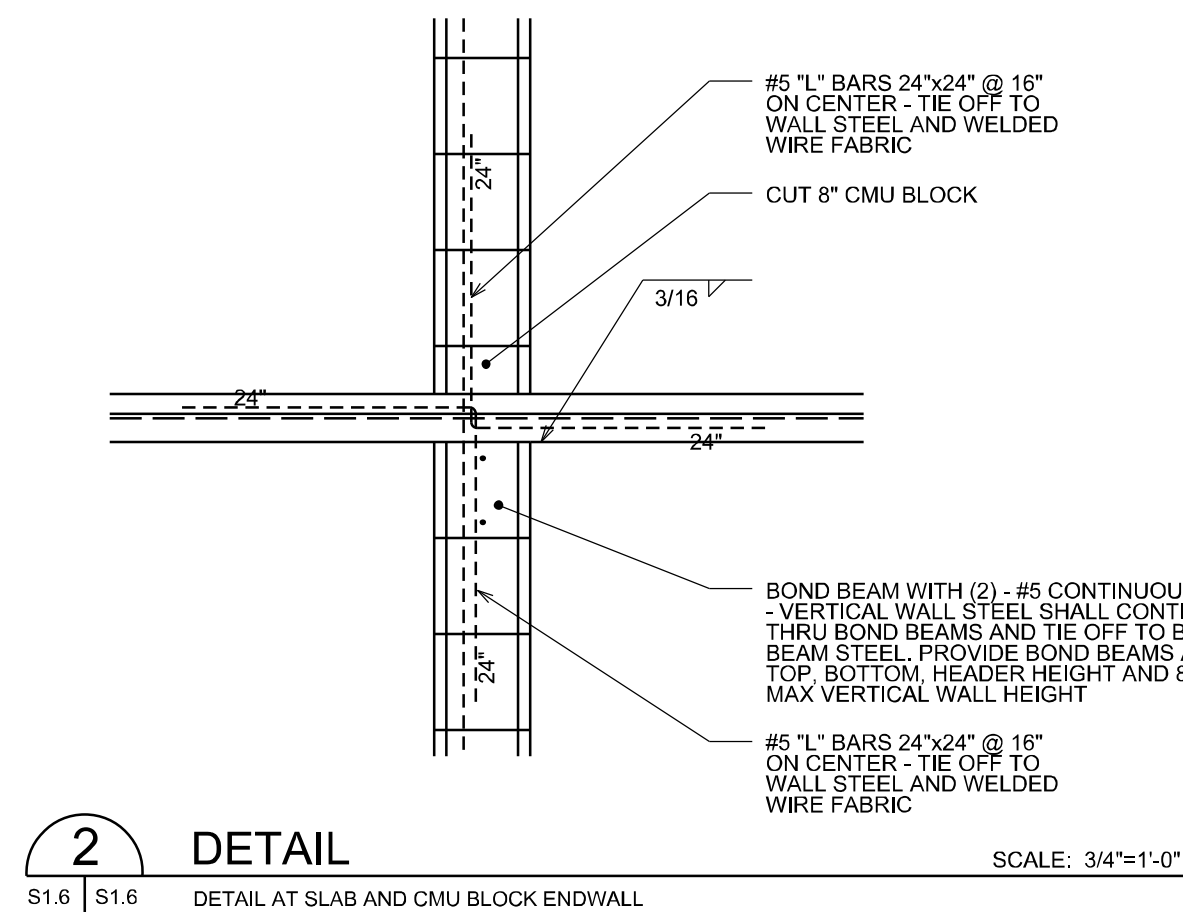
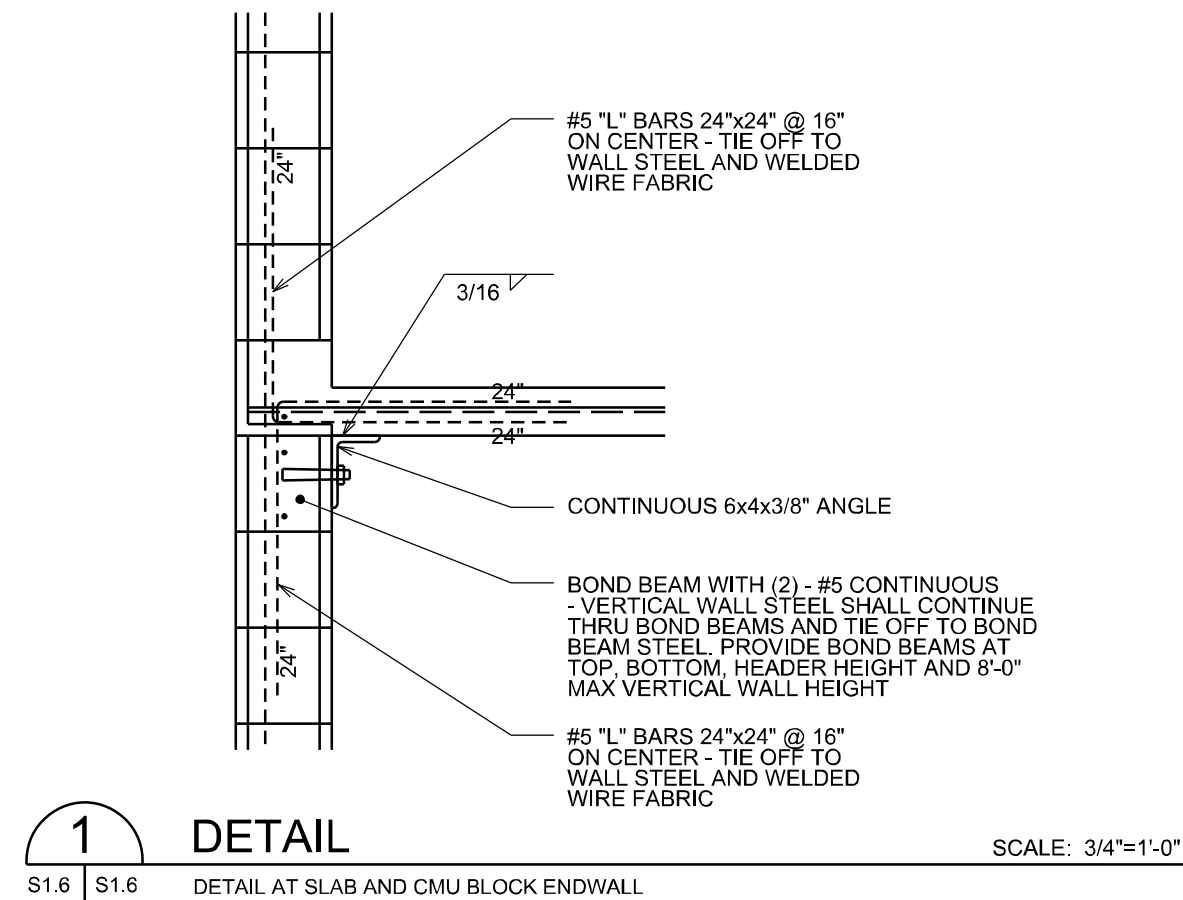
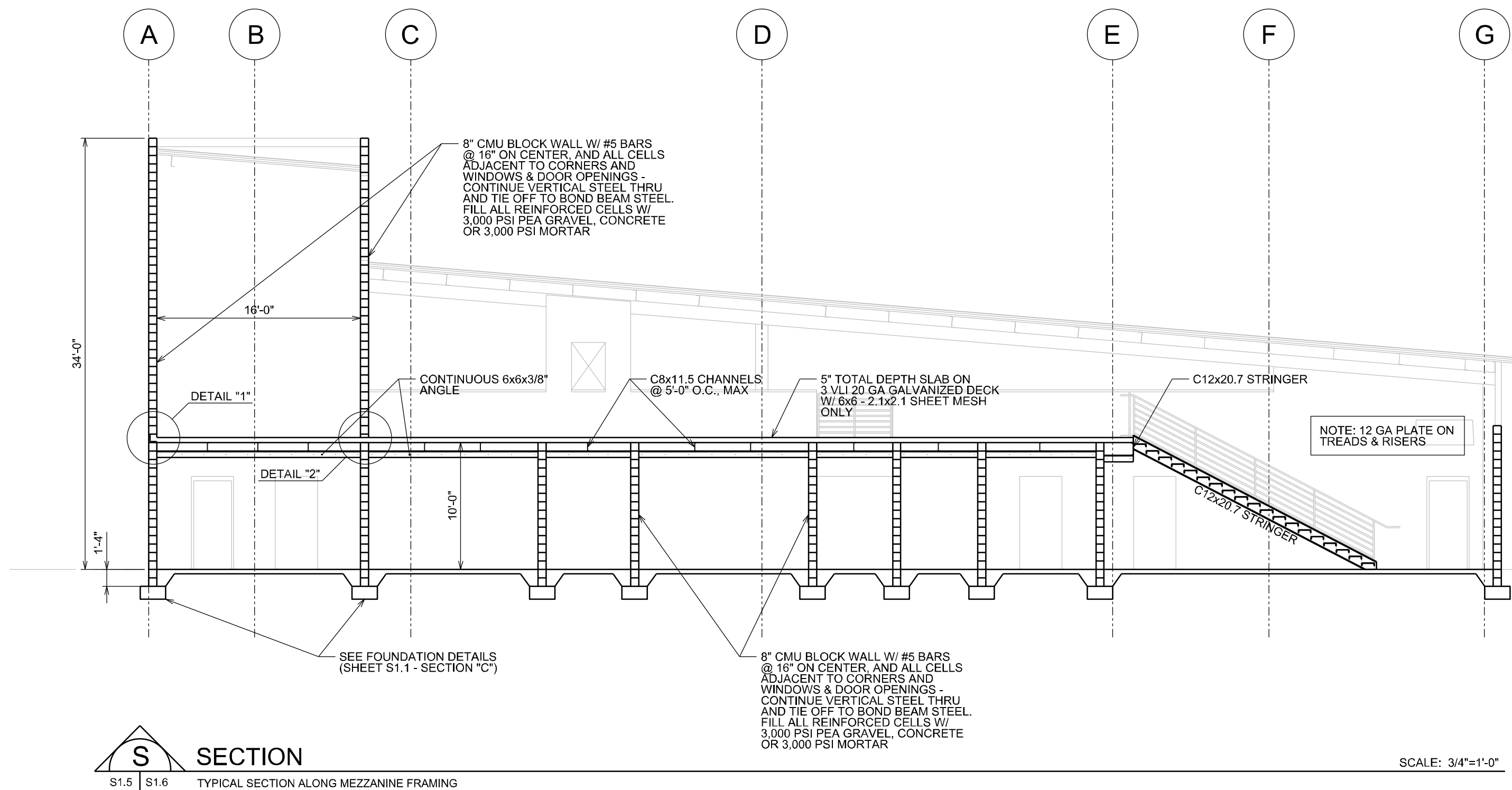
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CITY OF PARAGOULD
FIRE STATION NO. 1

GREENE COUNTY
ROOF FRAMING PLAN - NORTH

DATE	REVISION
5/30/19	Addendum 1
6/12/19	
SURVEY BY:	
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DATE	
APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET	
S1.5	



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**CITY OF PARAGOULD
FIRE STATION NO. 1**
GREENE COUNTY
ARKANSAS

DATE	REVISION
5/30/19	Addendum 1
SURVEY BY:	
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
DATE APRIL 29, 2019	
JOB NO: XXXXXCPARA	
FILENAME:	
SHEET S1.6	