

GENERAL CONDITIONS AND STATEMENTS

- THESE NOTES SHALL APPLY UNLESS INDICATED OTHERWISE BY DRAWINGS OR SPECIFICATIONS. IN THE EVENT THAT CONFLICTS OCCUR BETWEEN THESE NOTES, DRAWINGS OR SPECIFICATIONS NOTIFY THE STRUCTURAL ENGINEER FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
- STRUCTURAL DRAWINGS INDICATE TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. SHOP DRAWINGS SHALL DETAIL ALL CONDITIONS IN ACCORDANCE WITH THE SPECIFIED STANDARDS AND THE SPECIFIC REQUIREMENTS OF THIS PROJECT.
- SUBMIT SHOP DRAWINGS ON ALL STRUCTURAL MATERIALS FOR APPROVAL BEFORE FABRICATION. CONTRACTOR SHALL REVIEW AND APPROVE SHOP DRAWINGS PRIOR TO SUBMISSION.
- THE STRUCTURE INDICATED BY THE DRAWINGS AND SPECIFICATIONS IS STRUCTURALLY STABLE ONLY IN ITS COMPLETED FORM. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, SEQUENCES AND OPERATIONS OF CONSTRUCTION AND SHALL PROVIDE TEMPORARY BRACING AS REQUIRED TO MAINTAIN THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
- ALL DETAILS, SECTIONS, AND NOTES INDICATED ON THE DRAWINGS SHALL APPLY AT ALL LOCATIONS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY THE DETAIL, SECTION, OR NOTE.
- CENTERLINES OF COLUMNS AND FOUNDATIONS SHALL COINCIDE WITH GRID LINE INTERSECTIONS UNLESS NOTED OTHERWISE.
- CENTERLINES OF FLOOR AND ROOF FRAMING MEMBERS SHALL COINCIDE WITH GRID LINES UNLESS NOTED OTHERWISE.
- EQUALLY SPACE FLOOR AND ROOF FRAMING MEMBERS BETWEEN GRID LINES UNLESS NOTED OTHERWISE.
- USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS; DO NOT SCALE THE DRAWINGS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DATA FILES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE STRUCTURAL WORK WITH CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS AND ALL OTHER RELEVANT TRADES. IN CASE OF CONFLICT BETWEEN STRUCTURAL WORK AND DRAWINGS RELATED TO OTHER TRADES THE CONTRACTOR SHALL MAKE IN THEIR BID ALLOWANCE FOR THE MORE SEVERE REQUIREMENTS. CONFLICTS BETWEEN THE STRUCTURAL WORK AND THE DRAWINGS OF OTHER TRADES SHALL NOT BE A REASON FOR ANY ADDITIONAL COST OR DELAY IN EXECUTION OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DOCUMENTS AND ANY OTHER DOCUMENTS OR EXISTING CONDITIONS FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.

ABBREVIATIONS

ADDL	ADDITIONAL	EJ	EXPANSION JOINT	LLV	LONG LEG VERTICAL
ADH	ADHESIVE	LEV	ELEVATION	LH	LONG SIDE HORIZONTAL
AEES	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	ELEC	ELECTRICAL	LSV	LONG SIDE VERTICAL
AFF	ABOVE FINISHED FLOOR	ELO	EDGE OF DECK	LW	LONG WEIGHT
ALT	ALTERNATE	EOD	EDGE OF SLAB	MAX	MAXIMUM
ARCH	ARCHITECT	EQ	EQUAL	MECH	MECHANICAL MANUFACTURER
B/	BOTTOM OF	EQU	EQUIPMENT	MNS	MINIMUM
B/CB	BOTTOM CHORD BRACING	EXP	EXPANSION	MOW	MIDDLE OF WALL
B/CB	BOTTOM CHORD EXTENSION	EXT	EXTERIOR	NTS	NOT TO SCALE
B/FF	BELOW FINISHED FLOOR	EXT	EXTERIOR	NW	NORMAL WEIGHT
B/B	BUILDING	EXIST, E	EXISTING	OC	ON CENTER
B/OT	BOTTOM	FF	FINISHED FLOOR ELEVATION	OH	OPPOSITE HAND
BP	BASE PL	FIN	FINISHED	OPF	OPENING
BRG	BEARING	FLR	FLOOR	PAF	POWDER ACTUATED FASTENER
BTWN	BETWEEN	FOB	FACE OF BRICK	PFM	PRECAST or PILE CAP
CIP	CAST IN PLACE	FOM	FACE OF MASONRY	PC	PRE-MOLDED JOINT FILLER
CJ	CONNECTION OR CONSTRUCTION JOINT	FTG	FOOTING	P/F	PER FOR
CL	CENTERLINE	GA	GAGE	PLT	PLUMBING
CMU	CONCRETE MASONRY UNIT	GB	GRADE BEAM	PLG	PRESSURE TREATED or POST TENSIONED
COL	COLUMN	GC	GENERAL CONTRACTOR	QTY	QUANTITY
CONC	CONCRETE	GLB	GLULAM BEAM	REINF	REINFORCEMENT
CONN	CONNECTION	HD	HEADED	REF	REFERENCE
CONT	CONTINUOUS	HORIZ, H	HORIZONTAL	REQ	REQUIRED
COORD	COORDINATE	INT	INTERIOR	SCHD	SCHEDULE
CTR	CENTER	JBE	JOIST BEARING ELEVATION	SEM	SIMILAR
DCA	DEFORMED BAR ANCHOR	JT	JOINT	SOG	SLAB ON GRADE
DBJ	DOWN LINED CONSTRUCTION JOINT	KIPS	KIPS	SPCC	STRUCTURAL STEEL STANDARD
DEFD	DEFLECTION	KL/F, PLF	KIPS/SPANS PER LINEAR FOOT	STD	STANDARD
DEMOL	DEMOLITION	KSI, PSI	KIPS/SQUARE PER SQUARE INCH	T	TYPICAL
DIA, Ø	DIAMETER	KSF, PSF	KIPS/SQUARE PER SQUARE FOOT	UNT	UNLESS NOTED OTHERWISE
DIM	DIMENSION	LB	POUND	VERT, V	VERTICAL
DWG	DRAWING	LG	LONG LEG HORIZONTAL	W	WITH
DWL	DOWEL	LL	LONG LEG VERTICAL	WP	WORK POINT
EA	EACH	LH	LONG SIDE HORIZONTAL	W/W	WELDED WIRE FABRIC

DESIGN CRITERIA

DESIGN CODES

- BUILDING CODE: 2018 NORTH CAROLINA STATE BUILDING CODE BASED ON THE 2015 INTERNATIONAL BUILDING CODE
- DESIGN LOADS: ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- STEEL: AISI 360-10 SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS
- CONCRETE: ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- CONCRETE MASONRY: ACI 530-13 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
- COLD FORMED STEEL: AISI S100-12 NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

DESIGN LOADS

1. BUILDING RISK CATEGORY	II	
2. ROOF DEAD LOAD	ROOF MEMBRANE INSULATION METAL DECK STEEL SUSPENDED TOTAL DEAD LOAD	2 PSF 2 PSF 3 PSF 5 PSF 8 PSF 20 PSF
3. ROOF LIVE LOAD		20 PSF
C		
GROUND SNOW LOAD	Is D Ct Ps	15 PSF 1.0 1.0 15 PSF
4. FLOOR SUPERIMPOSED DEAD LOAD		20 PSF
5. FLOOR LIVE LOAD	1ST LEVEL 2ND LEVEL STAIRS MECHANICAL ROOM	100 PSF 80 PSF 100 PSF 100 PSF
6. SEISMIC LOAD	le SITE CLASSIFICATION Sds SDS SEISMIC DESIGN CATEGORY SEISMIC FORCE RESISTING SYSTEM ANALYSIS PROCEDURE	1.0 D 0.193 0.137 C R-3
7. SEISMIC BASE SHEAR		45.8 KIPS
8. WIND LOAD	WIND SPEED EXPOSURE W OBS Kz kt CGP	118 MPH B 1.0 0.85 0.70 1.0 +/- 0.18
B	WIND BASE SHEAR NS WIND BASE SHEAR EW	27.0 KIPS 26.0 KIPS
COMPONENTS AND CLADDING PRESSURES IN ACCORDANCE WITH ASCE 7		

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SOIL AND SUBSURFACE CONDITIONS

- SOIL BEARING CAPACITY SHALL BE VERIFIED BY NORTH CAROLINA GEOTECHNICAL ENGINEER.
- THE FOUNDATIONS HAVE BEEN DESIGNED BASED ON PRESUMPTIVE ALLOWABLE BEARING CAPACITY NOTED ON THE EXISTING DRAWINGS. SPREAD FOOTING BEARING PRESSURE ON SOIL 3,000 PSF.
- THE CONTRACTOR SHALL VERIFY WITH THE GEOTECHNICAL ENGINEER THAT THE FOLLOWING ARE IN CONFORMANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT:
 - THE BEARING STRATUM AT EACH FOUNDATION IS AS ASSUMED IN THE REPORT.
 - ENGINEERED FILL IS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE REPORT.
 - ENGINEERED FILL IS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE REPORT.
 - THE INSTALLATION OF THE FOUNDATION IS AS ASSUMED IN THE REPORT.
- ALL FILL MATERIALS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. ALL FILL WITHIN 10'-0" OF THE BUILDING FOUNDATION PERIMETER SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR. THE TOP 12" BELOW FLOOR SLABS AND FOOTINGS SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR.
- ALL FILL MATERIALS SHALL BE ADJUSTED AT TIME OF EXCAVATION TO ACHIEVE THE REQUIRED BEARING CAPACITY IF SO REQUIRED.
- PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS BOTH DURING CONSTRUCTION AND PERMANENTLY. THE CONTRACTOR SHALL VERIFY THAT ALL EXCAVATIONS UNTIL PROPERLY BACKFILLED. KEEP EXCAVATIONS FREE OF LOOSE MATERIAL. DEWATER EXCAVATIONS AND REMOVE ANY WET MATERIAL PRIOR TO PLACING CONCRETE.
- PLACE A 3" THICKNESS "MUDMAT" OF CONCRETE IN THE BOTTOM OF FOOTINGS THAT WILL BE EXPOSED TO RAIN OR LEFT OPEN OVER NIGHT.
- HEAVY EQUIPMENT USED FOR PLACING OR COMPACTING BACKFILL SHALL NOT BE OPERATED WITHIN A DISTANCE EQUAL TO THE HEIGHT OF THE BACKFILL ABOVE THE TOP OF FOOTING. (1 HORIZONTAL TO 1 VERTICAL). HAND OPERATED COMPACTION EQUIPMENT SHALL BE USED FOR COMPACTION OPERATIONS IN THIS AREA.
- GRADE SHALL BE SUCH THAT THE THICKNESS OF ANY FOUNDATION OR SLAB ON GRADE IS NOT REDUCED BY MORE THAN 5% OF THAT INDICATED.
- EXCAVATION BRACING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION BRACING SHALL BE DESIGNED FOR LATERAL LOADING RESULTING FROM AN EQUIVALENT FLUID PRESSURE OF 60 PCF AND A SURFACE SURCHARGE OF 260 PSF.

CAST IN PLACE STRUCTURAL CONCRETE

- SUBMIT MIX DESIGNS FOR EACH TYPE OF CONCRETE SPECIFIED.
- SUBMIT DATA FOR ALL ADMIXTURES, CURING COMPOUNDS AND HARDENERS THAT ARE INTENDED FOR USE.
- TEST REPORTS SHALL BE SENT TO THE STRUCTURAL ENGINEER AND SHALL BE AVAILABLE AT THE JOBSITE.
- CONCRETE SHALL HAVE THE MINIMUM 28 DAY COMPRESSIVE STRENGTH AND WEIGHTS:

LOCAN FOUNDATIONS AND SLAB ON GRADE	3,000 PSI	UNIT WEIGHT	145 PCF
ELEVATED SLAB ON DECK	4,000 PSI		115 PCF
- CONCRETE SHALL BE PLACED TO ACI 318.
- REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A62 AND A186. PROVIDE MATERIAL IN SHEETS. LAP ALL WELDED WIRE EACH END.
- FABRIC ONE FULL SQUARE PLUS 2" AT ALL SHEET EDGES.
- SLAB ON GRADE DOWELS SHALL BE SMOOTH RODS CONFORMING TO ASTM A36 WITH ENDS SMOOTH CUT.
- REINFORCING BAR SUPPORT DEVICES SHALL CONFORM TO CRSI MANUAL OF STANDARD PRACTICE.
- CONCRETE CLEAR COVER ON EMBEDDED REINFORCING SHALL BE AS FOLLOWS:

LOCATION	MINIMUM CLEAR COVER
FOOTINGS	2" TOP
	3" BOTTOM AND SIDES
- ALL CONTINUOUS BARS SHALL HAVE A CLASS B TENSION LAP SPlice AT ALL SPLICES UNO. PROVIDE CORNER BARS FOR ALL CONTINUOUS BARS AT ALL FOUNDATION AND WALL CORNERS AND INTERSECTIONS. LAP CORNER BARS 48 BAR DIAMETERS EACH END.
- PROVIDE DOWELS TO MATCH ALL WALL, PIER AND COLUMN VERTICAL REINFORCING UNO. EMBED DOWELS IN FOOTING WITH HOOK TO WITHIN 3" OF BOTTOM OF FOOTING. EXTEND DOWELS ABOVE FOOTING FOR 48 BAR DIAMETER LAP SPlice WITH VERTICAL REINFORCING UNO.
- CONSTRUCTION JOINTS SHALL BE INSTALLED IN SLABS ON GRADE AT A SPACING NOT TO EXCEED 12'-0" OR EACH DIRECTION UNO ON FOUNDATION PLAN. ASPECT RATIO OF SLAB AREAS BETWEEN JOINTS (RATIO OF LONG SIDE TO SHORT SIDE) SHALL NOT EXCEED 1:6. SAW CUT JOINTS SHALL BE MADE AS SOON AS SLABS WILL SUPPORT MEN AND EQUIPMENT. EMBEDDED JOINTS SHALL BE MADE AT SLAB JOINT LOCATIONS.
- CONFORM TO ACI 308 FOR COLD WEATHER CONCRETE AND ACI 305 FOR HOT WEATHER CONCRETE WORK WHEN ANY COMBINATION OF TEMPERATURE, HUMIDITY OR WIND SPEED RESULTS IN CONDITIONS THAT WOULD IMPAIR THE QUALITY OF CONCRETE. CONCRETE IS TO BE RECEIVED AT ITS TEMPERATURE AT TIME OF PLACEMENT IS 90 DEGREES F OR ABOVE. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNO. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL EMBEDDED ITEMS IN CONCRETE WORK. COORDINATE WITH THE FOLLOWING: CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS, PRECAST SHOP DRAWINGS, MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT AND FIXTURE REQUIREMENTS.

CONCRETE MASONRY

- UNO HOLLOW MASONRY UNITS SHALL CONFORM TO ASTM C90, LIGHTWEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH $F_m = 1,500$ PSI ON THE NET BLOCK AREA.
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C270 CEMENT-LIME TYPE M OR S. MINIMUM COMPRESSIVE STRENGTH TO BE 1,800 PSI.
- COURSE MASONRY GROUT SHALL CONFORM TO ASTM C476 WITH MAXIMUM AGGREGATE SIZE OF 3/8". MINIMUM COMPRESSIVE STRENGTH SHALL BE 2,000 PSI AT 28 DAYS. PROVIDE CLEAR OUT OPENINGS WHERE GROUT POUR EXCEEDS 5'-0".
- CONCRETE MASONRY QUALITY CONTROL:
 - WORK IN PROGRESS SHALL BE INSPECTED FOR CONFORMANCE WITH SPECIFIED MATERIALS AND THAT WORKMANSHIP AND CONSTRUCTION IS IN COMPLIANCE WITH PLANS, SPECIFICATIONS AND INDUSTRY STANDARDS.
 - WORK IN PROGRESS SHALL BE INSPECTED FOR CONFORMANCE WITH ASTM C780. VERIFY ALL MATERIALS ARE AS APPROVED FOR THE PROJECT.
 - GROUT TEST 3"x3" PRISMS IN ACCORDANCE WITH ASTM C1019, TEST (2) PRISMS FOR EACH 30 CUBIC YARDS OR FRACTION THEREOF PLACED EACH DAY AND WHEN MIX PROPORTIONS ARE CHANGED.
- PROVIDE MINIMUM REINFORCING FOR ALL CONCRETE MASONRY WALLS UNO ON PLANS.
 - PROVIDE W/ 1.7 HORIZONTAL JOINT REINFORCING AT 16" OC WITH FORMED "L" AND "T" SECTIONS AT WALL CORNERS AND INTERSECTIONS. REINFORCE VERTICALLY WITH 1 #5 CENTERED IN GROUT FILLED CELL FULL HEIGHT OF WALL WITH DOWEL TO FOUNDATION AT WALL CORNERS, ENDS, INTERSECTIONS, OPENING JAMBS, EACH SIDE OF CORNER JOINTS AND SPACED AT 48" OC MAXIMUM. LAP VERTICAL REINFORCING 32 BAR DIAMETER AT ALL SPLICES UNO.
- MINIMUM MASONRY WALL FOOTINGS SHALL PROJECT 4" MINIMUM ON EACH SIDE OF WALL AND BE 12" DEEP WITH (2) #5 CONTINUOUS.
- BOND BEAMS SHALL BE REINFORCED WITH (2) #5 CONTINUOUS. LAP 32" AT ALL SPLICES. PROVIDE CORNER BARS AT ALL WALL CORNERS AND INTERSECTIONS.
- PROVIDE DOWELS TO MATCH VERTICAL BARS AT THE BASE OF ALL WALLS. LAP 52 BAR DIAMETERS MINIMUM WITH VERTICAL BARS UNO.

SELECTIVE DEMOLITION

- THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS OF DEMOLITION AND THE INTEGRITY AND STABILITY OF THE EXISTING STRUCTURE DURING DEMOLITION AND THROUGHOUT CONSTRUCTION UNTIL THE WORK IS COMPLETED.
- EXISTING CONDITIONS AND STRUCTURAL MEMBERS INDICATED ARE FOR REFERENCE ONLY AND SHALL BE VERIFIED AT THE SITE BY THE CONTRACTOR. NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES BETWEEN CONDITIONS INDICATED AND THOSE FOUND AT THE SITE PRIOR TO THE START OF DEMOLITION OF EXISTING STRUCTURAL MEMBERS.
- PRIOR TO THE START OF DEMOLITION WORK VERIFY THAT ANY ELECTRICAL SYSTEM, MECHANICAL SYSTEM, PLUMBING SYSTEM, OR UTILITY EMBEDDED IN THE EXISTING STRUCTURE IS NOT DAMAGED OR DISRUPTED BY THE DEMOLITION WORK UNLESS IT IS REQUIRED BY THE WORK AND ADEQUATE MEASURES ARE TAKEN TO PRESERVE THE SYSTEM OR UTILITY BEYOND THE AREA OF DEMOLITION.
- WHERE NEW OPENINGS ARE INDICATED TO BE CUT THROUGH EXISTING CONCRETE MEMBERS, THE CONTRACTOR SHALL CORE DRILL ALL CORNERS OF THE OPENING AND SAW CUT OPENING EDGES BETWEEN CORE DRILLED HOLES. DO NOT CUT BEYOND HOLES. CUT AND CHIP CORNER HOLES TO PRODUCE SQUARE OPENING CORNERS AS REQUIRED.

EXISTING CONDITIONS

- EXISTING DRAWINGS BY GARDNER & McDaniel, PA DATED AUGUST 1994 WERE AVAILABLE FOR THIS PROJECT. ALL EXISTING DIMENSIONS, CONNECTION DETAILS, MEMBER SIZES, FRAMING CONFIGURATION, ETC. HAVE BEEN ASSUMED. THE GENERAL CONTRACTOR IS TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION OR PREPARING SHOP DRAWINGS. NOTIFY THE ARCHITECT AND ENGINEER OF ANY AREA WHERE THE EXISTING CONDITIONS DO NOT MATCH THE CONDITIONS ASSUMED ON THESE DRAWINGS.

DELEGATED DESIGN / DEFERRED SUBMITTALS

- LIGHT GAGE METAL FRAMING
- HANDRAILS, AND GUARDRAILS
- EQUIPMENT ANCHORAGE AND CALCULATIONS

THE FOLLOWING ITEMS SHALL BE DESIGNED BY A SPECIALTY ENGINEER FOR THE CONTRACTOR. DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW, SEALED AND SIGNED BY A PROJECT STATE STRUCTURAL ENGINEER.

STRUCTURAL STEEL

- STRUCTURAL STEEL CONSTRUCTION DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
- STRUCTURAL STEEL MEMBERS SHALL CONFORM TO THE FOLLOWING STANDARDS:

WIDE FLANGE SHAPES	ASTM A992
ANGLE, CHANNELS AND PLATES	ASTM A36
ANCHOR RODS <= 3/4"	ASTM F1554 GRADE 36
ANCHOR RODS >= 7/8"	ASTM F1554 GRADE 36
PIPE	ASTM A53
RECTANGULAR HSS	ASTM A500 GRADE C, 50 ksi
FRAMED STUDS	ASTM A108, GRADE 1015-1020
- ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED.
- SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER FOR THE LOCATION AND TYPE OF SPlice.
- CAMBER BEAMS WHERE INDICATED, WHERE NO CAMBER IS INDICATED, BEAMS SHALL BE FABRICATED SO THAT AFTER ERECTION, ANY NATURAL CAMBER IS UPWARD.
- ALL COPES, HOLES, OPENINGS AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR REVISION OR THE WORK OF OTHER TRADES SHALL BE INDICATED ON THE SHOP DRAWINGS AT TIME OF SUBMITTAL FOR REVIEW.
- FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL STEEL AND SHALL INDICATE COMPLETE CONNECTION INFORMATION, BOTH SHOP AND FIELD.
- PROVIDE A SHOP COAT OF FABRICATOR'S STANDARD RUST INHIBITIVE PRIMER TO ALL STEEL UNO.
- SEE ARCHITECTURAL DRAWINGS FOR FIRE PROTECTIVE MATERIAL APPLIED TO STRUCTURAL STEEL. DO NOT PRIME STEEL WHICH IS TO RECEIVE SPRAY APPLIED FIRE PROTECTIVE MATERIAL. DO PRIME STEEL WHICH IS TO RECEIVE ULTIMUMESCENT FIRE PROTECTIVE COATING.
- HOLD STUDS SHALL BE SUBMITTED FOR ALL STEEL STRUCTURE AND SHALL INDICATE COMPLETE CONNECTION INFORMATION, BOTH SHOP AND FIELD.
- PROVIDE A SHOP COAT OF FABRICATOR'S STANDARD RUST INHIBITIVE PRIMER TO ALL STEEL UNO.
- SEE ARCHITECTURAL DRAWINGS FOR FIRE PROTECTIVE MATERIAL APPLIED TO STRUCTURAL STEEL. DO NOT PRIME STEEL WHICH IS TO RECEIVE SPRAY APPLIED FIRE PROTECTIVE MATERIAL. DO PRIME STEEL WHICH IS TO RECEIVE ULTIMUMESCENT FIRE PROTECTIVE COATING.
- FILL SOLID WITH NON-SHRINK GROUT UNDER ALL BASE AND BEARING PLATES.
- PROVIDE HEADED STUDS AT 12" OC MAXIMUM FOR ALL BEAMS SUPPORTING COMPOSITE FLOOR SYSTEMS UNO.
- CONNECTION NOTATIONS:
 - STRUCTURAL STEEL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY THE CONTRACTOR TO SUPPORT MEMBER REACTION INDICATED. REACTIONS INDICATED ARE SERVICE LOAD FORCES (ASD) OR ALLOWABLE LOAD COMBINATIONS. WHERE NO REACTION IS INDICATED PROVIDE A CONNECTION DESIGNED TO SUPPORT A VERTICAL SHEAR REACTION OF 80% OF THE MAXIMUM TOTAL UNIFORM LOAD FOR THE APPROPRIATE BEAM SECTION AND SPAN AS DETERMINED PER THE MAXIMUM TOTAL UNIFORM LOAD TABLES IN THE AISC "MANUAL OF STEEL CONSTRUCTION".
 - CONNECTION MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

ANGLES	ASTM A36
WT	ASTM A992
PLATES	ASTM A36
BOLTS	ASTM A325 OR ASTM A490
NUTS	ASTM F663
WASHERS	ASTM F438
WELDING ELECTRODES	E70XX
 - STANDARD SHEAR CONNECTIONS SHALL BE DETAILED AS DOUBLE ANGLE OR SINGLE PLATE CONNECTIONS IN ACCORDANCE WITH THE CONNECTION TABLES IN THE AISC "MANUAL OF STEEL CONSTRUCTION ALLOWABLE STRESS DESIGN". BOLTED CONNECTIONS SHALL BE DETAILED USING TYPE II BOLTS INSTALLED IN SNUG TIGHTENED JOINTS UNO.
 - BRACED FRAME CONNECTIONS, MOMENT CONNECTIONS AND COLLECTOR ELEMENT CONNECTIONS SHALL BE DESIGNED BY A PROJECT STATE ENGINEER. STRUCTURAL CALCULATIONS FOR THESE CONNECTIONS SHALL BE SUBMITTED AND SHALL BE SEALED BY THE ENGINEER RESPONSIBLE FOR THE DESIGN.
 - PROVIDE STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES OR OTHER ADDITIONAL MEMBER LOCAL STRENGTHENING MEASURES AS REQUIRED FOR THE CONNECTION DESIGN.
 - WELDED CONNECTIONS SHALL BE MADE WITH A MINIMUM OF (2) 3/4" BOLTS AND HAVE A MINIMUM SHEAR CAPACITY OF 10 KIPS.
 - BOLTED CONNECTIONS SHALL CONFORM TO THE PROVISIONS OF THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
 - WELDED CONNECTIONS SHALL BE MADE WITH CONTINUOUS FILLET WELDS UNO. MINIMUM WELD SIZE SHALL BE 1/4" OR AS REQUIRED BY AISC SPECIFICATION, WHICHEVER IS LARGER. MINIMUM WELD LENGTH SHALL BE 2".
 - ALL WELDS SHALL BE CERTIFIED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL WELDED JOINTS.
 - BOLTED CONNECTIONS OF MOMENT CONNECTIONS, TENSION CONNECTIONS, BRACED FRAME CONNECTIONS, MOMENT FRAME CONNECTIONS, COLLECTOR ELEMENT CONNECTIONS AND AS INDICATED SHALL BE SLIP-CRITICAL.

STEEL JOISTS

- STRUCTURAL STEEL JOIST AND JOIST GIRDER DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE STEEL JOIST INSTITUTE "STANDARD SPECIFICATION AND LOAD TABLES". JOISTS AND JOIST GIRDERS SHALL BE DESIGNED TO SUPPORT ADDITIONAL CONCENTRATED LOADS, END MOMENTS AND REACTIONS RESULTING FROM THE SPECIFIED END MOMENTS WHERE INDICATED ON THE DRAWINGS.
- JOIST BRIDGING SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SJI SPECIFICATIONS. BRIDGING SHALL BE INSTALLED AND ANCHORED AT ENDS OF ALL BRIDGING RUNS TO WALLS OR STEEL FRAMES PRIOR TO PLACEMENT OF ROOF DECK. PROVIDE BOLTED "X" BRIDGING IN ACCORDANCE WITH OSHA STANDARDS.
- JOIST MANUFACTURER SHALL DESIGN JOISTS FOR THE NET UPLIFT PRESSURE INDICATED, WHERE NO NET UPLIFT PRESSURE IS INDICATED DESIGN JOISTS FOR A MINIMUM NET UPLIFT OF 14 PSF (ASD, 0.6w). PROVIDE ADDITIONAL UPLIFT BRIDGING AS REQUIRED ON THE DRAWINGS.
- CAMBER JOISTS IN ACCORDANCE WITH SJI SPECIFICATIONS.
- JOISTS SHALL BE FASTENED TO SUPPORTING STEEL WITH A MINIMUM OF 1/8" FILLET WELD x 2" LONG EACH SIDE.
- PROVIDE BOLTED CONNECTIONS AT SUPPORTS AND BOTTOM CHORD STABILIZER PLATES AT COLUMNS IN ACCORDANCE WITH OSHA STANDARDS.
- CONCENTRATED LOADS SHALL BE PERMITTED TO BE ATTACHED TO JOISTS AT JOIST PANEL POINTS ONLY. WHERE IT IS NECESSARY TO ATTACH A CONCENTRATED LOAD TO THE JOIST BETWEEN PANEL POINTS THE JOIST SHALL BE REINFORCED TO SUPPORT THE CONCENTRATED LOAD.
- JOIST AND JOIST GIRDER BOTTOM CHORD EXTENSIONS SHALL NOT BE WELDED TO STABILIZER PLATES UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
- JOIST SUPPLIER SHALL BE PREPARED TO SUBMIT CALCULATIONS FOR ALL JOISTS AT ARCHITECT OR ENGINEER'S REQUEST. CALCULATIONS SHALL INCLUDE LOAD DIAGRAMS FOR EACH MEMBER INDICATING UNIFORM AND CONCENTRATED LOADS. PROVIDE ELEVATION OF EACH JOIST INDICATING GEOMETRY, MEMBERS USED, AND CONNECTIONS.

LIGHT GAGE METAL FRAMING

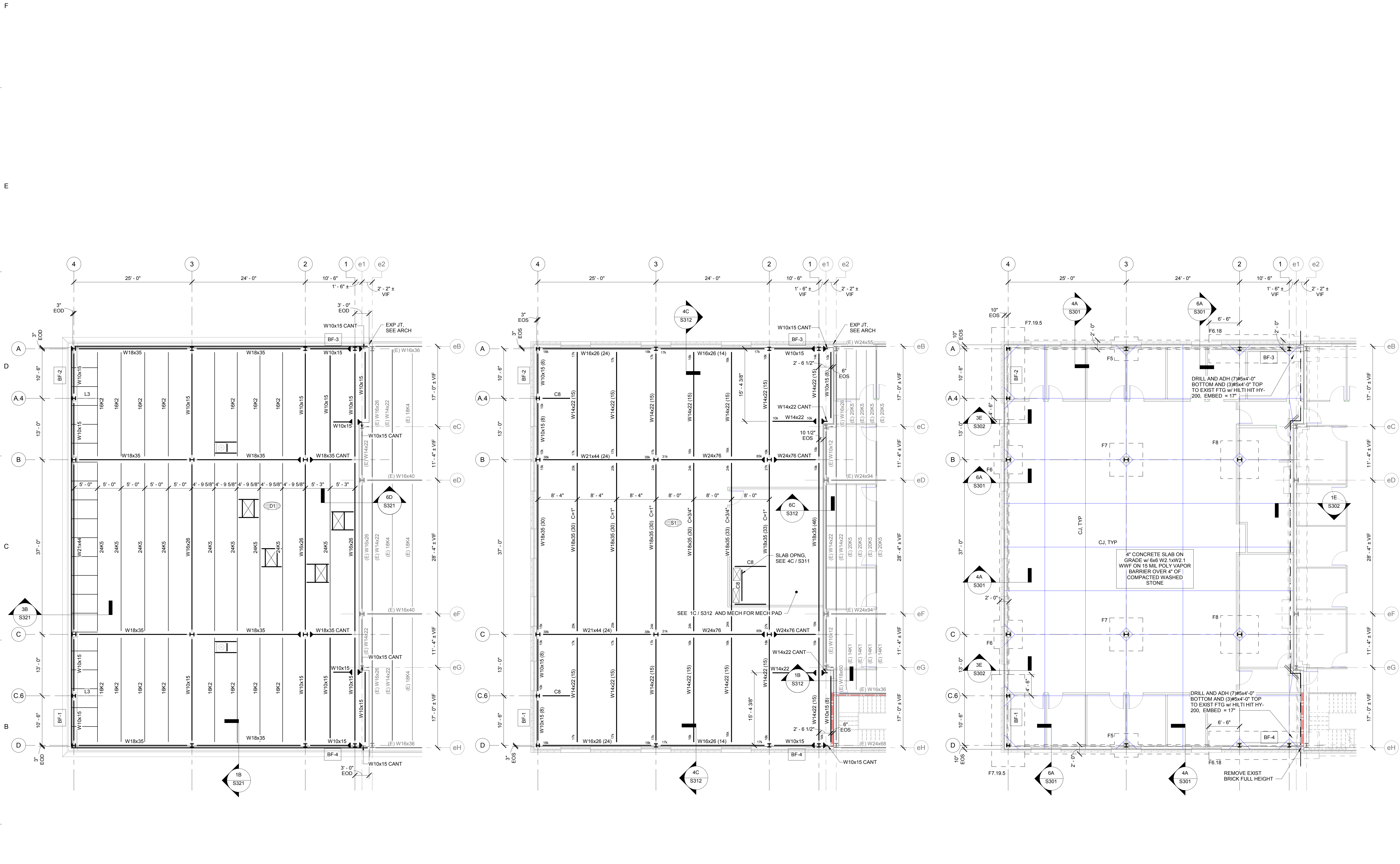
- LIGHT GAGE METAL FRAMING INDICATED ON THE DRAWINGS INDICATES TYPICAL CONDITIONS AND MINIMUM REQUIREMENTS.
- LIGHT GAGE METAL FRAMING SHALL BE DESIGNED BY A NORTH CAROLINA STRUCTURAL ENGINEER. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER OF RECORD FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE LAYOUT OF ALL LIGHT GAGE METAL FRAMING INCLUDING ARRANGEMENT, DIMENSIONS, MATERIALS, STRESS VALUES, CONNECTORS, ANCHORAGE, AND RELATION TO ADJACENT WORK.
- LIGHT GAGE METAL FRAMING DESIGN AND CONSTRUCTION SHALL CONFORM TO THE AISI NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.
- MINIMUM GAGE OF MEMBERS PROVIDING LATERAL SUPPORT FOR MASONRY VENEER SHALL BE 18 GAGE (43 MILS). LIMIT LATERAL DEFLECTION OF STUDS PROVIDING LATERAL SUPPORT FOR MASONRY VENEER TO H/80.
- MINIMUM YIELD STRENGTH (FY) FOR LIGHT GAGE METAL FRAMING MEMBERS SHALL BE 33,000 PSI FOR 18 GAGE (43 MILS) AND THINNER. MINIMUM YIELD STRENGTH (FY) FOR MEMBERS SHALL BE 50,000 PSI FOR 16 GAGE (54 MILS) AND THICKER.
- ALL LIGHT GAGE METAL STUDS, TRUSSES, TRACK, BRIDGING AND ACCESSORIES SHALL BE FORMED FROM STEEL HAVING A G-60 GALVANIZED COATING CONFORMING TO ASTM A653 AND C955.
- A MINIMUM OF 10" LENGTH OF UN-PUNCHED STEEL IS REQUIRED AT ENDS OF STUDS AND AT ALL BEARING POINTS AND CONCENTRATED LOADS AND PUNCHING HOLES OF ANY SIZE IS PERMITTED IN THESE 10 INCHES). NO CUTTING OF THE STUD FLANGES IS PERMITTED.
- SPLICES IN STUDS ARE NOT PERMITTED.
- BRIDGING IS TO BE SPACED AT 4'-0" VERTICALLY.
- LATERAL BRIDGING SHALL BE USED TO PROVIDE LATERAL STABILITY OF TOP AND BOTTOM. STUD ENDS SHALL BE CUT SQUARE.
- LATERAL BRIDGING SHALL BE USED TO PROVIDE LATERAL STABILITY OF LOAD BEARING STUDS. BRIDGING SHALL BE (2) 1 1/2" x 18 GA (43 MILS) FLAT STRAP (ONE EACH SIDE OF WALL). FASTEN BRIDGING TO EACH STUD FLANGE WITH (1) #10 SCREW. PROVIDE TRACK BLOCKING BETWEEN STUDS IN LINE WITH BRIDGING SPACED AT 10'-0" MAXIMUM ALONG LENGTH OF ALL BRIDGING LINES AND EACH SIDE OF WALL OPENINGS.
- MINIMUM TRACK FASTENING AT FOUNDATION SHALL BE 0.177" O POWDER ACTUATED FASTENERS (PAF) SPACED AT 8" OC, WITH 1 1/2" MINIMUM PENETRATION INTO CONCRETE.
- CUTTING OF METAL STUDS, TRACK, BRIDGING OR BRACKING IS NOT PERMITTED WITHOUT SPECIFIC APPROVAL FROM THE ENGINEER OF RECORD.
- ATTACH ALL EXTERIOR SHEATHING AND INTERIOR SHEATHING AT WALLS TO METAL STUDS WITH #8 SCREWS SPACED AT 8" OC AT ALL PANEL EDGES AND PANEL INTERIOR. REFER TO ARCHITECTURAL DRAWINGS FOR NON-LOAD BEARING WALLS AND ALL WALL DIMENSIONS.

METAL ROOF DECK

- THE DESIGN, MANUFACTURE AND ERECTION OF STEEL ROOF DECK AND ITS ANCHORAGE SHALL BE IN ACCORDANCE WITH THE ANSISI "STANDARD FOR STEEL ROOF DECK".
- PROVIDE ROOF DECK OF TYPE, DEPTH AND MINIMUM THICKNESS INDICATED.
- ROOF DECK SHALL BE INSTALLED IN LENGTHS TO PROVIDE 3 CONTINUOUS SPANS MINIMUM.
- INSTALL ROOF DECK WITH A MINIMUM END BEARING LENGTH OF 1'-1 1/2".
- ROOF DECK SHALL BE FASTENED TO SUPPORTS AS INDICATED ON THE DRAWINGS. FASTEN TO SUPPORTS AT DECK PERIMETER WITH A MINIMUM OF 5/8" DIAMETER WELDS SPACED AT 6" OC.

COMPOSITE FLOOR DECK

- THE DESIGN, MANUFACTURE AND ERECTION OF COMPOSITE FLOOR DECK AND ITS ANCHORAGE SHALL BE IN ACCORDANCE WITH THE ANSISI "STANDARD FOR COMPOSITE STEEL FLOOR DECK".
- PROVIDE COMPOSITE FLOOR DECK OF TYPE, DEPTH AND MINIMUM THICKNESS INDICATED.
- VERIFY DECK PROVIDED WILL SUPPORT THE CONSTRUCTION LOADS DURING CONCRETE PLACEMENT. ACCOUNT FOR RELEVANT FACTORS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - THE PLANNED CONCRETE PLACEMENT METHODS.
 - ADDITIONAL CONCRETE WEIGHT DUE TO DECK DEFLECTION.
 - ADDITIONAL CONCRETE WEIGHT DUE TO DEFLECTION OF BEAMS AND GIRDERS EQUAL TO SPAN DIVIDED BY 240 MINUS ANY INDICATED CAMBER.
- INSPECT FLOOR DECK PRIOR TO CONCRETE PLACEMENT AND NOTIFY ENGINEER OF ANY DAMAGE THAT WOULD PREVENT DECK FROM ACTING AS A TIGHT AND SUBSTANTIAL FORM.
- COMPOSITE FLOOR DECK SHALL BE INSTALLED IN LENGTHS TO PROVIDE 3 CONTINUOUS SPANS MINIMUM.
- COMPOSITE FLOOR DECK SHALL BE FASTENED TO SUPPORTS A MINIMUM OF 5/8" DIAMETER WELDS SPACED AT 12" OC MAXIMUM. DECK SPANS GREATER THAN 5'-0" SHALL HAVE SIDE LAPS FASTENED WITH #10 SCREWS SPACED AT 36" OC MAXIMUM.



1A ROOF FRAMING PLAN
1/8" = 1'-0"
S101

NOTES:

- SEE S001 FOR GENERAL NOTES AND ABBREVIATIONS.
- JOIST BEARING ELEV=28'-4"
- *MC# INDICATES MOMENT CONNECTION TYPE. SEE S312.
- *BF# INDICATES BRACED FRAME TYPE. SEE S201 FOR ELEVATIONS AND DETAILS.
- SEE S321 FOR TYPICAL ROOF FRAMING DETAILS.
- SEE S301 FOR COLUMN SCHEDULE.

DT METAL ROOF DECK, 1 1/2" TYPE "B", 22 GA. GALV G60 FINISH. SEE S321 FOR ATTACHMENT

3A 2ND FLOOR FRAMING PLAN
1/8" = 1'-0"
S101

NOTES:

- SEE S001 FOR GENERAL NOTES AND ABBREVIATIONS.
- FINISHED FLOOR ELEVATION 13'-4" ABOVE REFERENCE DATUM ELEVATION, UNO.
- TOP OF STEEL ELEVATION 5 1/4" BELOW FINISHED FLOOR ELEVATION, UNO. (No) INDICATES TOP OF STEEL ELEVATION.
- MINIMUM COMPOSITE BEAM REACTION TO BE 10k UNO.
- *MC# INDICATES MOMENT CONNECTION TYPE. SEE S312.
- *BF# INDICATES BRACED FRAME TYPE. SEE S201 FOR ELEVATIONS AND DETAILS.
- SEE S311 FOR TYPICAL FLOOR FRAMING DETAILS.
- SEE S301 FOR COLUMN SCHEDULE.

SI INDICATES SPAN DIRECTION OF 2"-20 GA COMPOSITE STEEL DECK, GALV G60 FINISH, w/ 3 1/4" 4000 PSI LIGHT WEIGHT CONCRETE REINFORCED w/ 6x6 W2.1xW2.1 WWF. SEE TYPICAL DETAILS ON S311

5A FOUNDATION PLAN
1/8" = 1'-0"
S101

NOTES:

- SEE S001 FOR GENERAL NOTES AND ABBREVIATIONS.
- FINISHED FLOOR ELEVATION TO MATCH EXISTING. REFERENCE ELEVATION 0'-0", DATUM.
- [No] INDICATES DEPRESSED OR RAISED SLAB ELEVATION. SEE PLAN.
- TOP OF FOOTING 2'-0" BELOW FINISHED FLOOR ELEVATION, UNO. <No> INDICATES TOP OF FOOTING ELEVATION. SEE PLAN.
- #-#-# INDICATES STEP IN WALL FOOTING. SEE 2A/S301.
- *F# INDICATES FOOTING TYPE. SEE S301.
- *BF# INDICATES BRACED FRAME TYPE. SEE S201 FOR ELEVATIONS AND DETAILS.
- SEE S301 FOR COLUMN SCHEDULE.
- SEE S301 FOR TYPICAL SLAB CONSTRUCTION DETAILS.
- CONTRACTOR TO COORDINATE ALL THICKENED SLAB LOCATIONS UNDER CMU PARTITIONS WITH ARCHITECTURAL DRAWINGS.

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ISSUE DATE: 06/28/2019

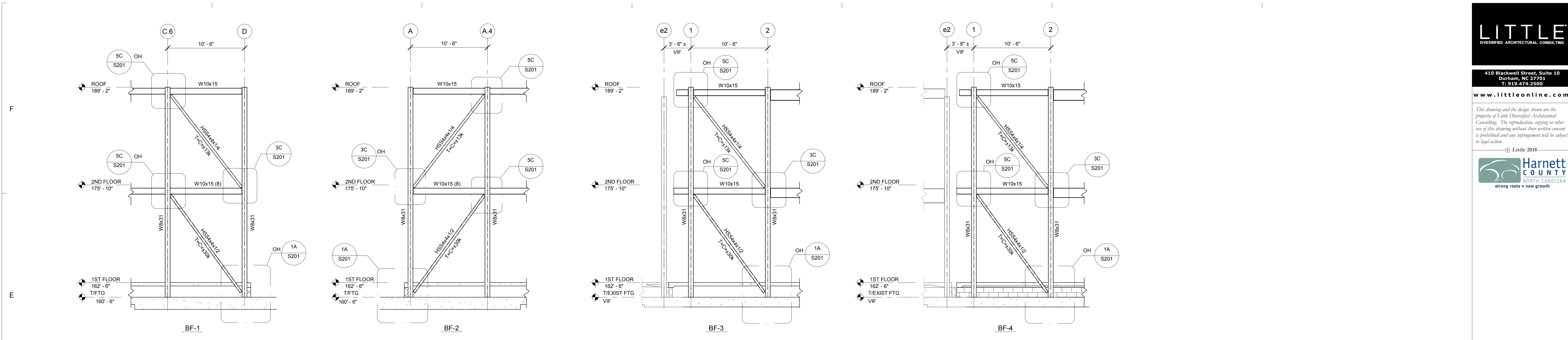
REVISIONS NO.	REASON	DATE

PROJECT TEAM
PRINCIPAL IN CHARGE: Julie M. McLaurin, AIA
PROJECT MANAGER: Eric Schoenagel, AIA
DESIGN TEAM: Sarah Musser, PE

HARNETT COUNTY DSS ADDITION

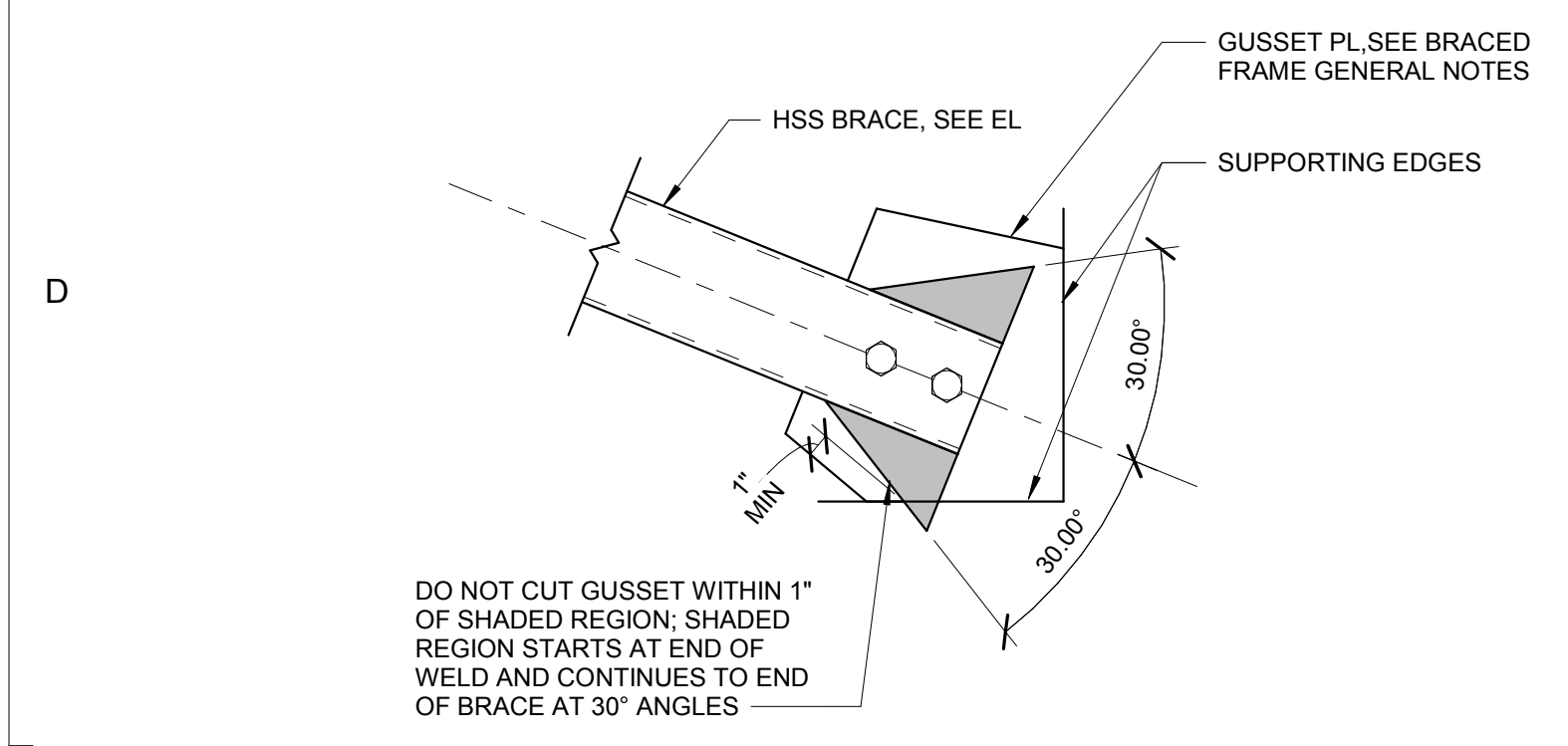
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SHEET NUMBER: S101



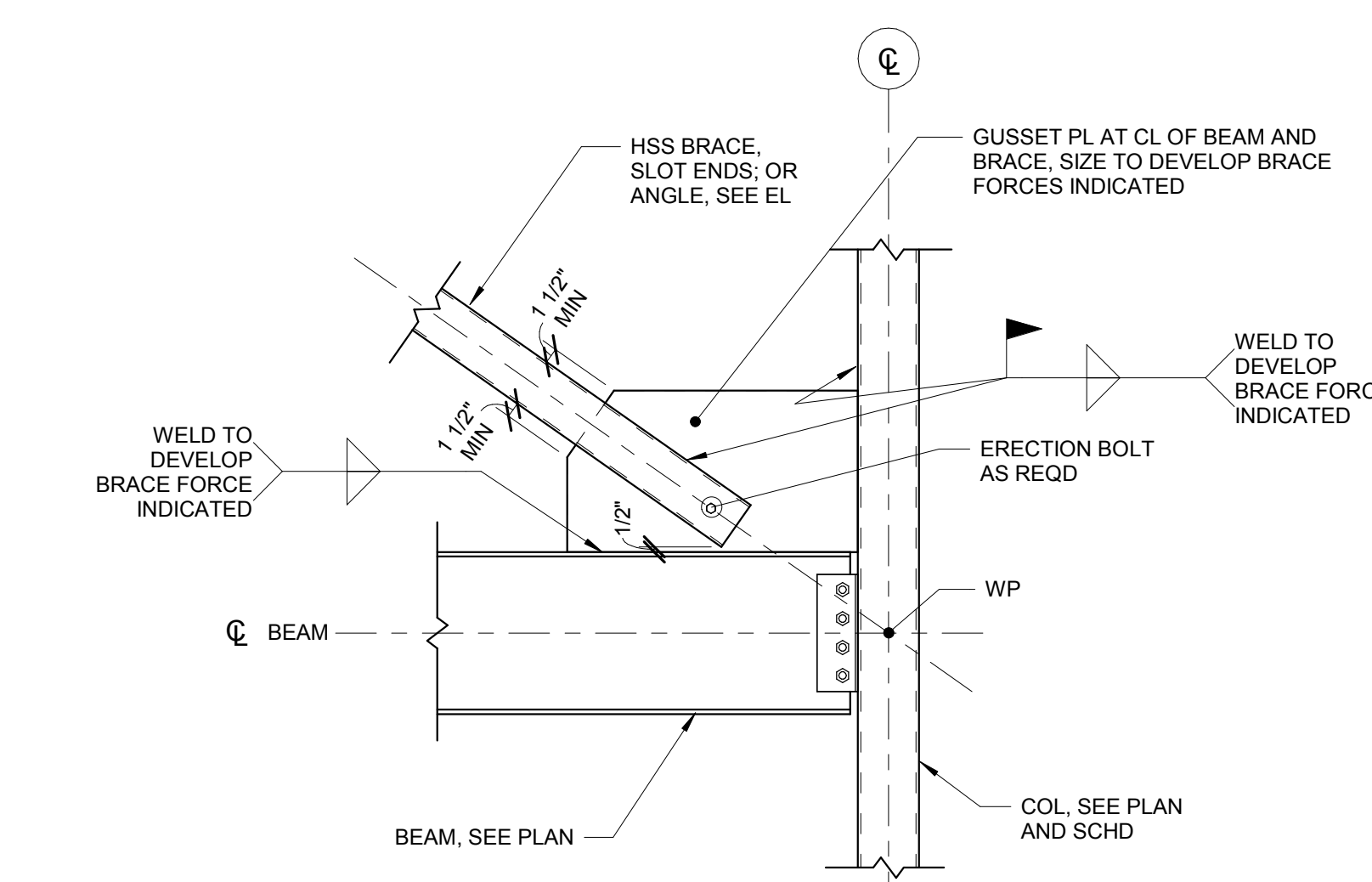
1E BRACE FRAME ELEVATIONS

- S201 3/16" = 1'-0"
- NOTES:**
- CENTROIDS OF MEMBERS SHALL COINCIDE, UNO.
 - (N) INDICATES BRACE AXIAL FORCE (IN KIPS). "T" DENOTES THE BRACE IS IN TENSION, "C" DENOTES THE BRACE IS IN COMPRESSION. "V" INDICATES SHEAR FORCE (IN KIPS).
 - "TF" INDICATES TRANSFER FORCE (IN KIPS) FROM ADJACENT BEAM.
 - FABRICATOR SHALL DESIGN ALL BEAM TO COLUMN CONNECTIONS WITHIN BRACE FRAME TO SUPPORT THE HORIZONTAL AND VERTICAL COMPONENTS OF THE BRACE FORCE PLUS THE BEAM SHEAR SHOWN ON THE ELEVATION. ALLOWABLE STRESS INCREASES OR LOAD REDUCTIONS ARE NOT PERMITTED.
 - CONNECTIONS TO BE DESIGNED BASED ON AISC SEISMIC DETAILING REQUIREMENTS.
 - SEE STEEL GENERAL NOTES FOR DESIGN METHOD, ASD OR LRFD.



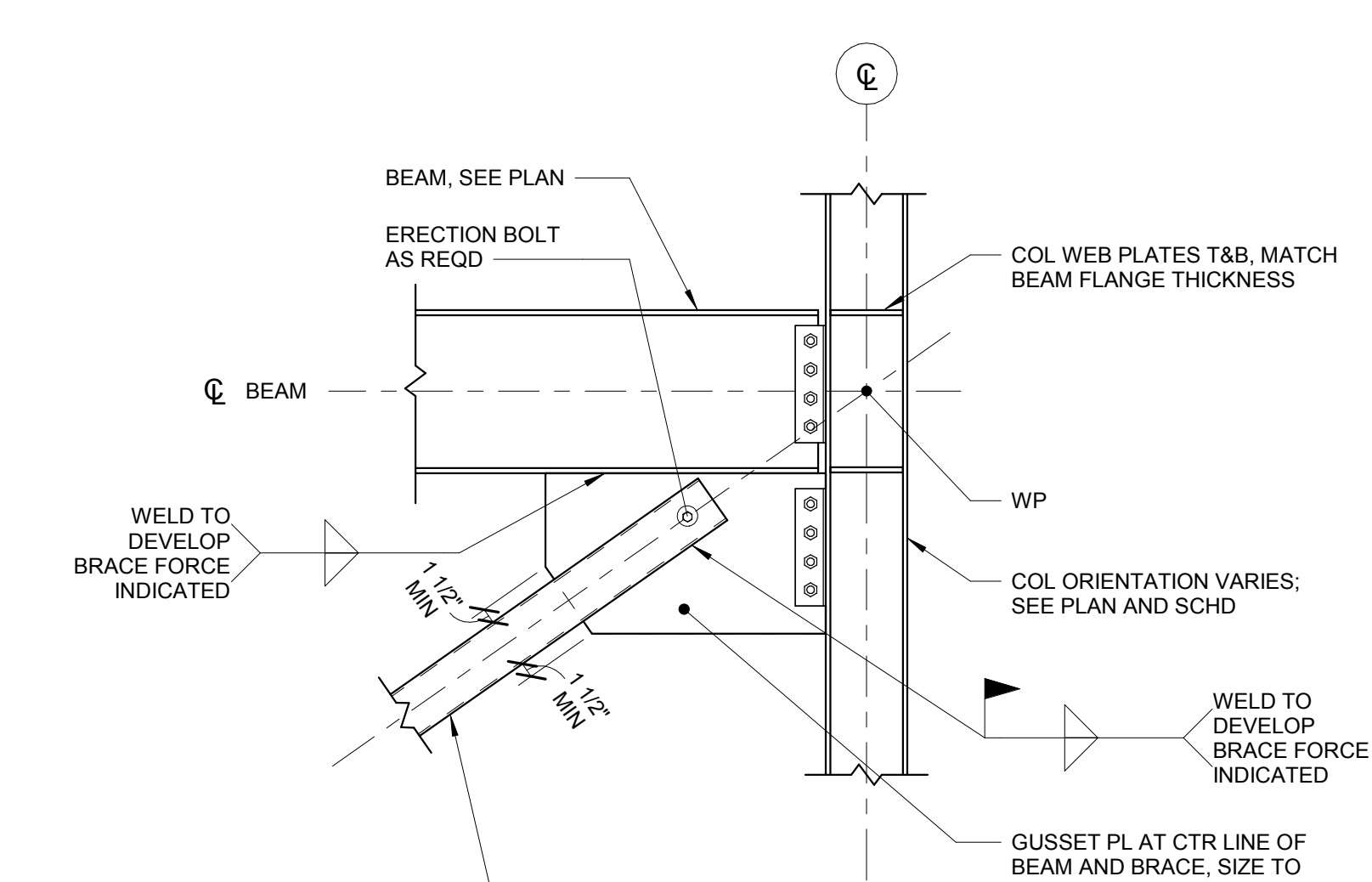
1C GUSSET CUTTING CRITERIA

S201 NOT TO SCALE



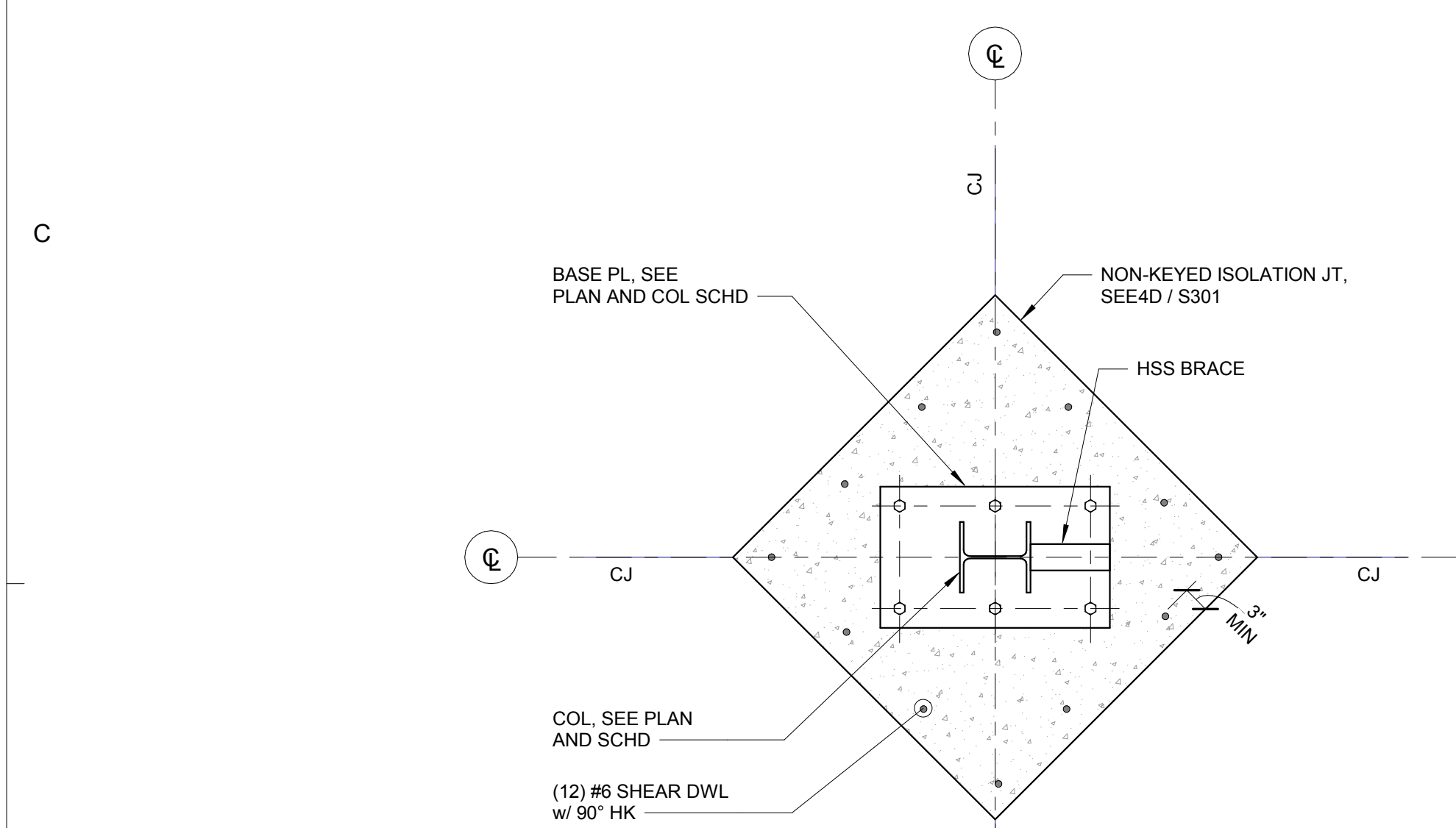
3C HSS BRACE TO BEAM BOTTOM DETAIL

S201 NOT TO SCALE



5C HSS BRACE WIDE FLANGE COLUMN TOP DETAIL

S201 NOT TO SCALE



1A SECTION AT BRACED FRAME COLUMN BASE PLATE

S201 3/4" = 1'-0"

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DESIGN TEAM: Sarah Musser, PE

HARNETT COUNTY DSS ADDITION

PROJECT NO.: 514806600
SHEET TITLE: ELEVATIONS

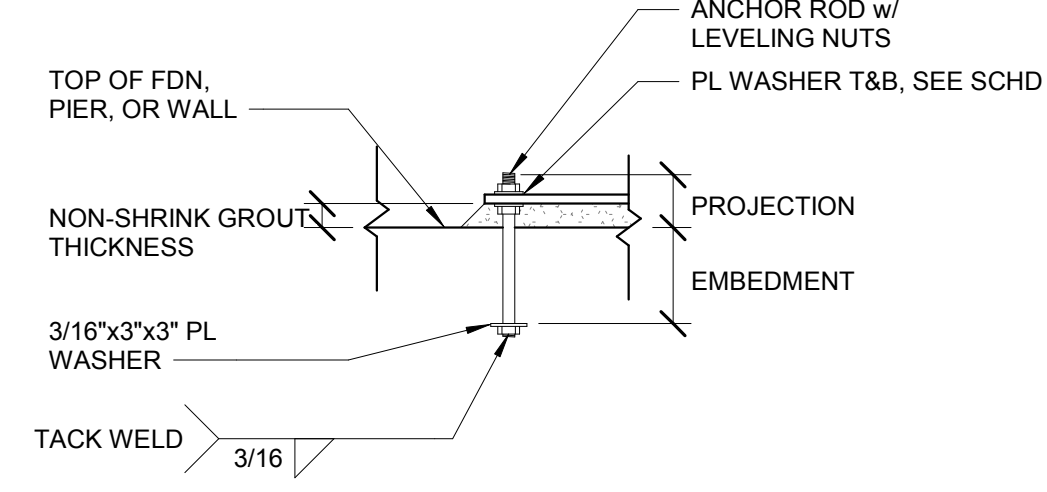
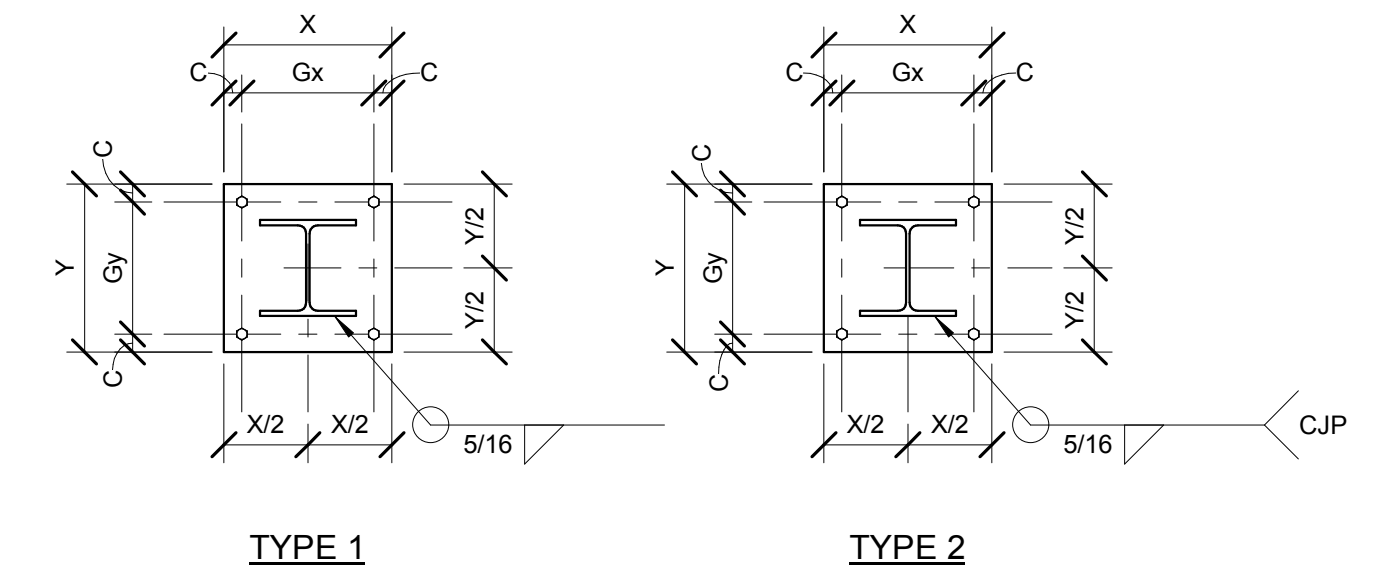
SHEET NUMBER: S201

STEEL COLUMN SCHEDULE

ROOF																	ROOF
189' - 2"																	189' - 2"
2ND FLOOR																	2ND FLOOR
175' - 10"	WBK31	WBK31	WBK31	WBK31	WBK31	WDK45	WDK45	WDK45	WDK45	WDK45	WBK31	WBK31	WBK31	WBK31	WBK31	175' - 10"	
1ST FLOOR																	1ST FLOOR
162' - 6"																	162' - 6"
Column Locations	A-1	A-2	A-3	A-4	A-4.4	B-2	B-3	B-4	C-2	C-3	C-4	C-6.4	D-1	D-2	D-3	D-4	
BASE PLATE SIZE	1'x16'x16"	1'x16'x16"	3/4'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	1'x16'x16"	3/4'x16'x16"	1'x16'x16"	BASE PLATE SIZE
BASE PLATE TYPE	2	2	1	2	2	1	1	1	1	1	1	2	2	2	1	2	BASE PLATE TYPE
ANCHOR BOLTS	(4)1/2"	(4)1/2"	(4)3/4"	(4)1/2"	(4)1/2"	(4)3/4"	(4)3/4"	(4)3/4"	(4)3/4"	(4)3/4"	(4)3/4"	(4)1/2"	(4)1/2"	(4)1/2"	(4)3/4"	(4)1/2"	ANCHOR BOLTS
EMBEDMENT LENGTH	16"	16"	9"	16"	16"	9"	9"	9"	9"	9"	9"	16"	16"	16"	9"	16"	EMBEDMENT LENGTH

SPREAD FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT (EACH WAY)	
	WIDTH	LENGTH	DEPTH	TOP	BOTTOM
F5	5' - 0"	5' - 0"	1' - 0"	NA	(6)#5
F6	6' - 0"	6' - 0"	1' - 0"	NA	(7)#5
F6.18	6' - 0"	16' - 0"	1' - 4"	(7)#7 LW (19) #7 SW	(7)#7 LW (19) #7 SW
F7	7' - 0"	7' - 0"	1' - 3"	NA	(8)#5
F7.19.5	7' - 0"	19' - 6"	1' - 8"	(8)#7 LW (21) #7 SW	(8)#7 LW (21) #7 SW
F8	8' - 0"	8' - 0"	1' - 3"	NA	(9)#7

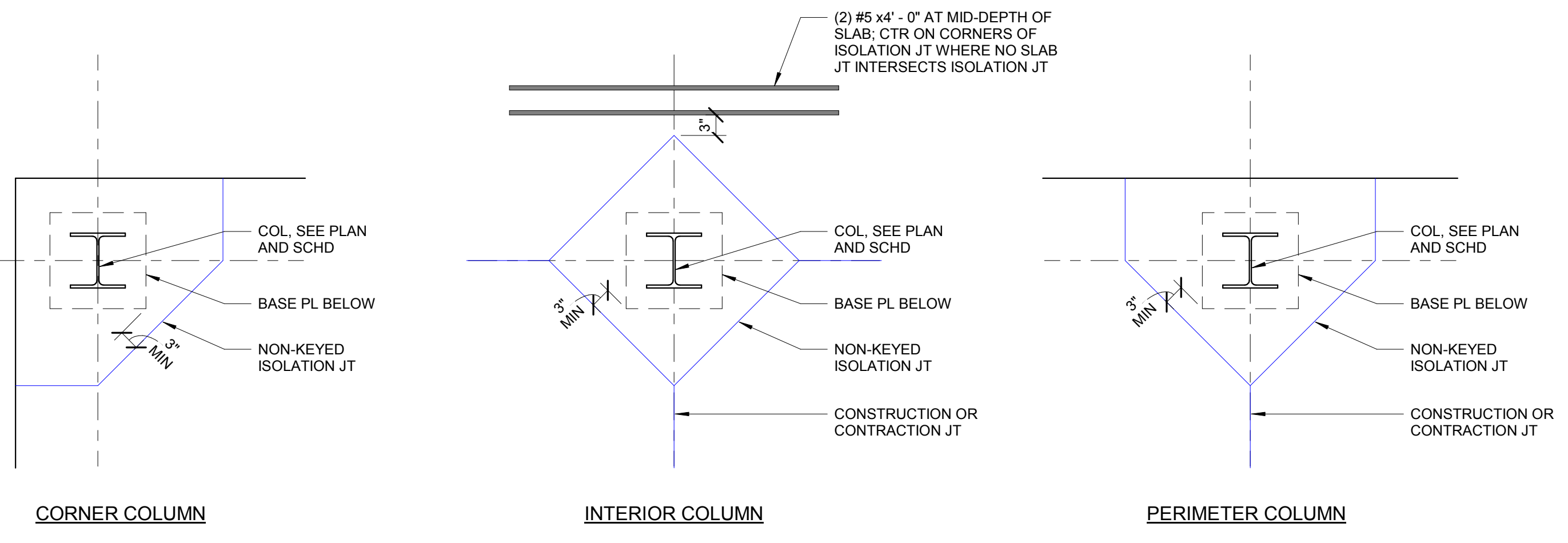


ANCHOR ROD SCHEDULE

BOLT SIZE	3/4"	1"
DIMENSION "C"	1 1/2"	2"
SQUARE PL WASHER SIZE	1/4" x 2"	3/8" x 3"
GROUT THICKNESS	2"	2"

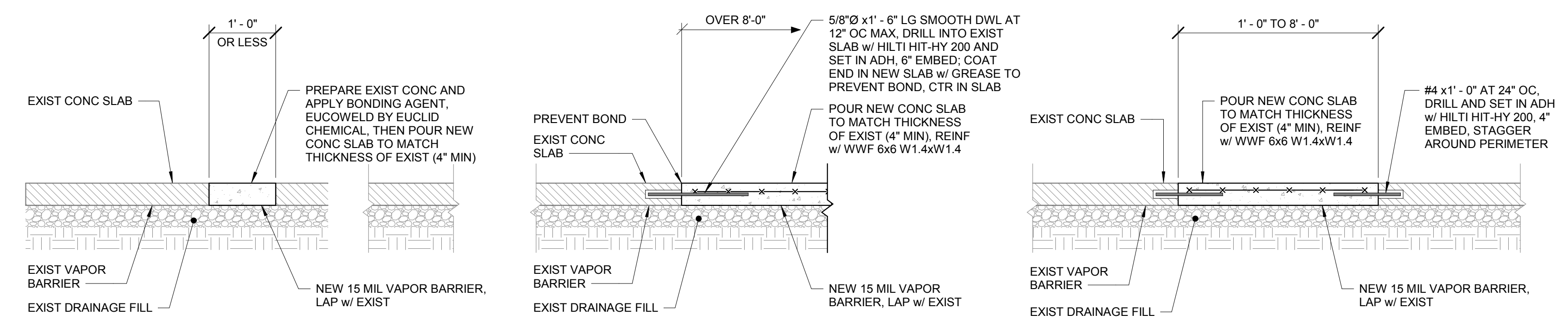
6E BASE PLATE AND ANCHOR ROD SCHEDULE

NOT TO SCALE
NOTES:
1. WELDS MAY BE OMITTED AT COLUMN FLANGE TOES AND RADII.
2. SEE GENERAL NOTES FOR ANCHOR ROD MATERIAL.



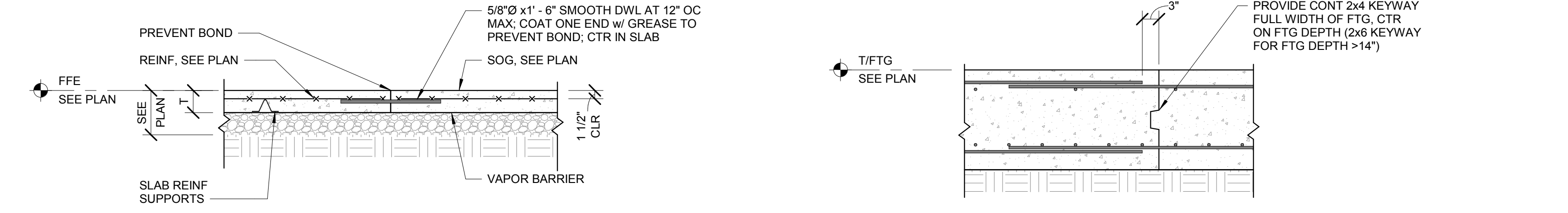
4D COLUMN ISOLATION JOINT DETAIL

NOT TO SCALE
NOTES:
1. POUR CONCRETE FILL AROUND COLUMN AFTER BASE PLATE HAS BEEN GROUTED.



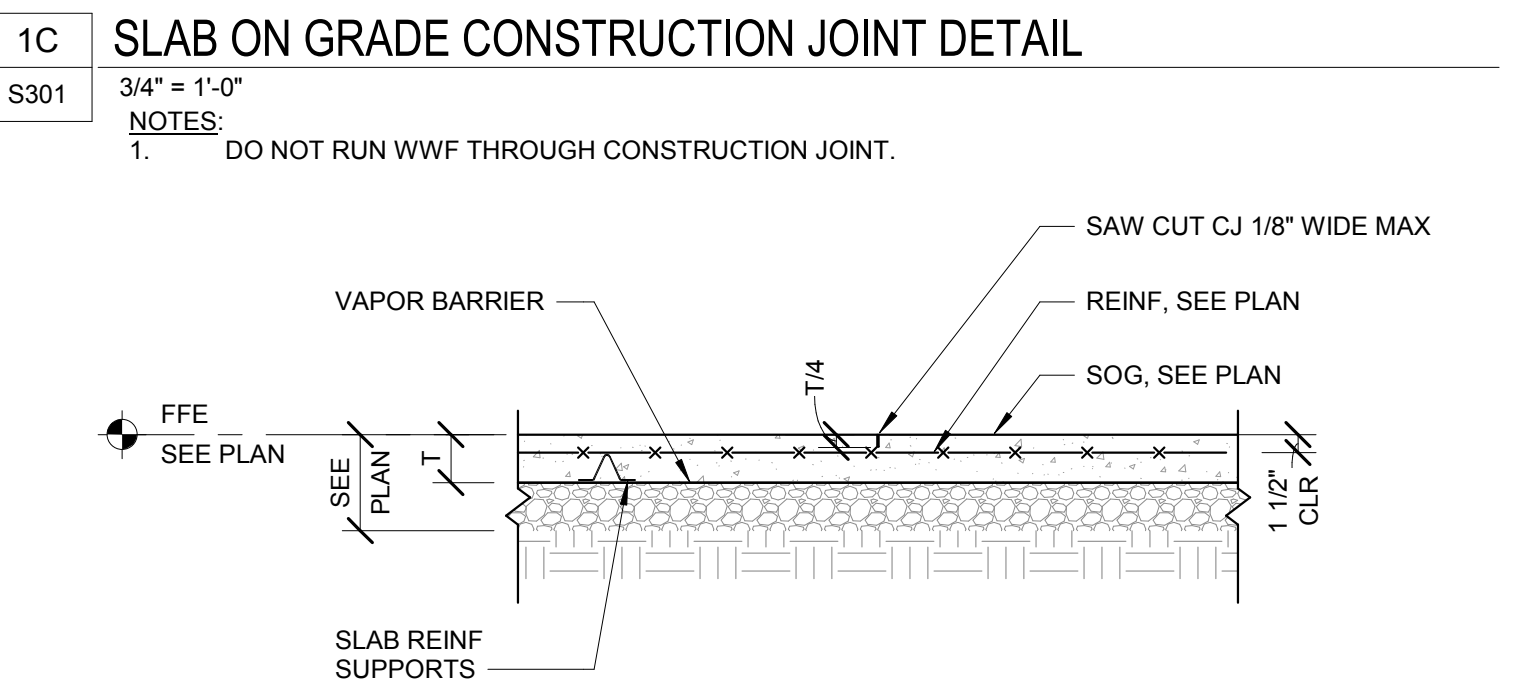
1D SLAB ON GRADE REPAIR DETAILS

NOT TO SCALE
NOTES:
1. PROVIDE A CONTRACTION JOINT AT ANY EXISTING CONTRACTION JOINT IN THE ADJACENT SLAB AND AT 12' - 0\"/>



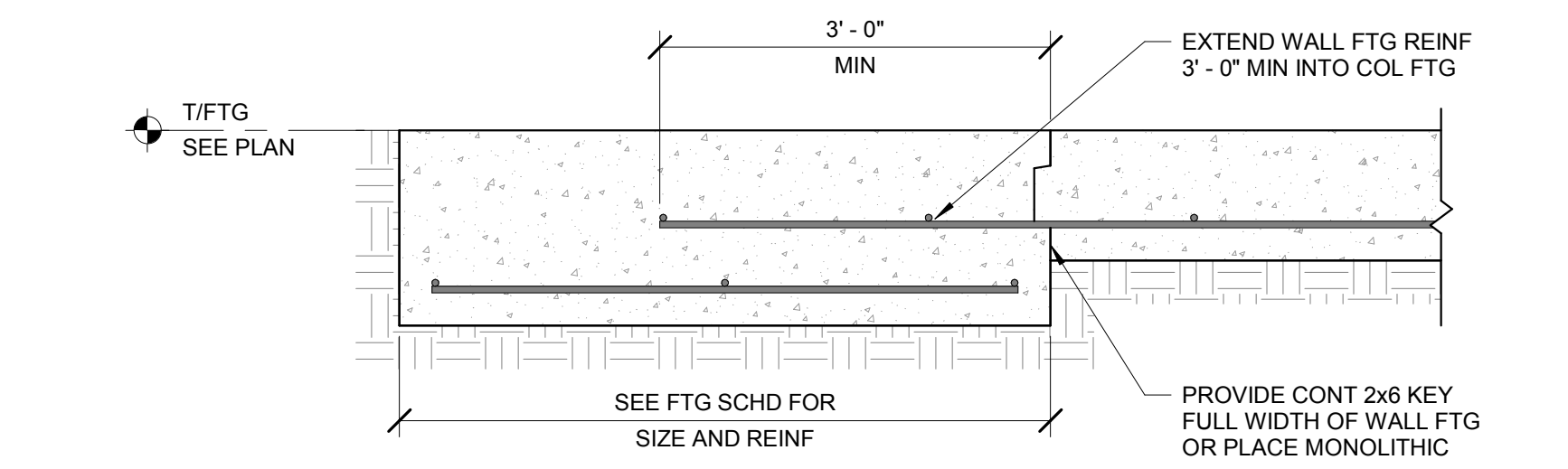
3C CONTINUOUS FOOTING CONSTRUCTION JOINT DETAIL

NOT TO SCALE
NOTES:
1. PROVIDE CONT 2x4 KEYWAY FULL WIDTH OF FTG. CTR ON FTG DEPTH (2x6 KEYWAY FOR FTG DEPTH >14\"/>



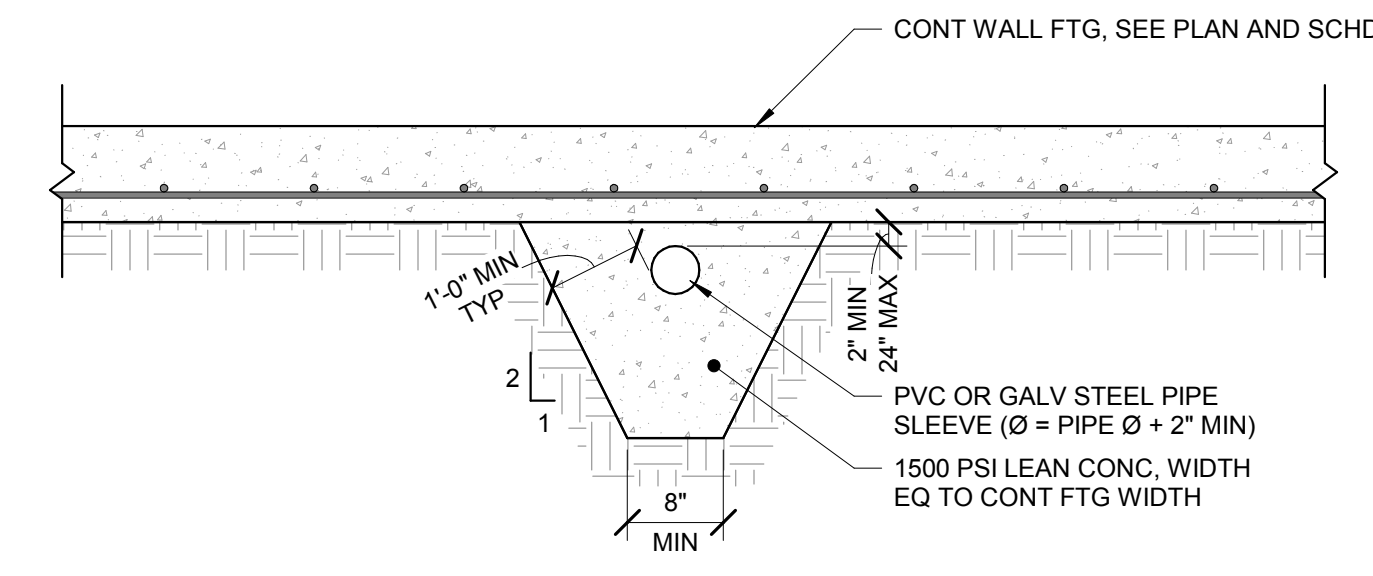
1C SLAB ON GRADE CONSTRUCTION JOINT DETAIL

NOT TO SCALE
NOTES:
1. DO NOT RUN WWF THROUGH CONSTRUCTION JOINT.



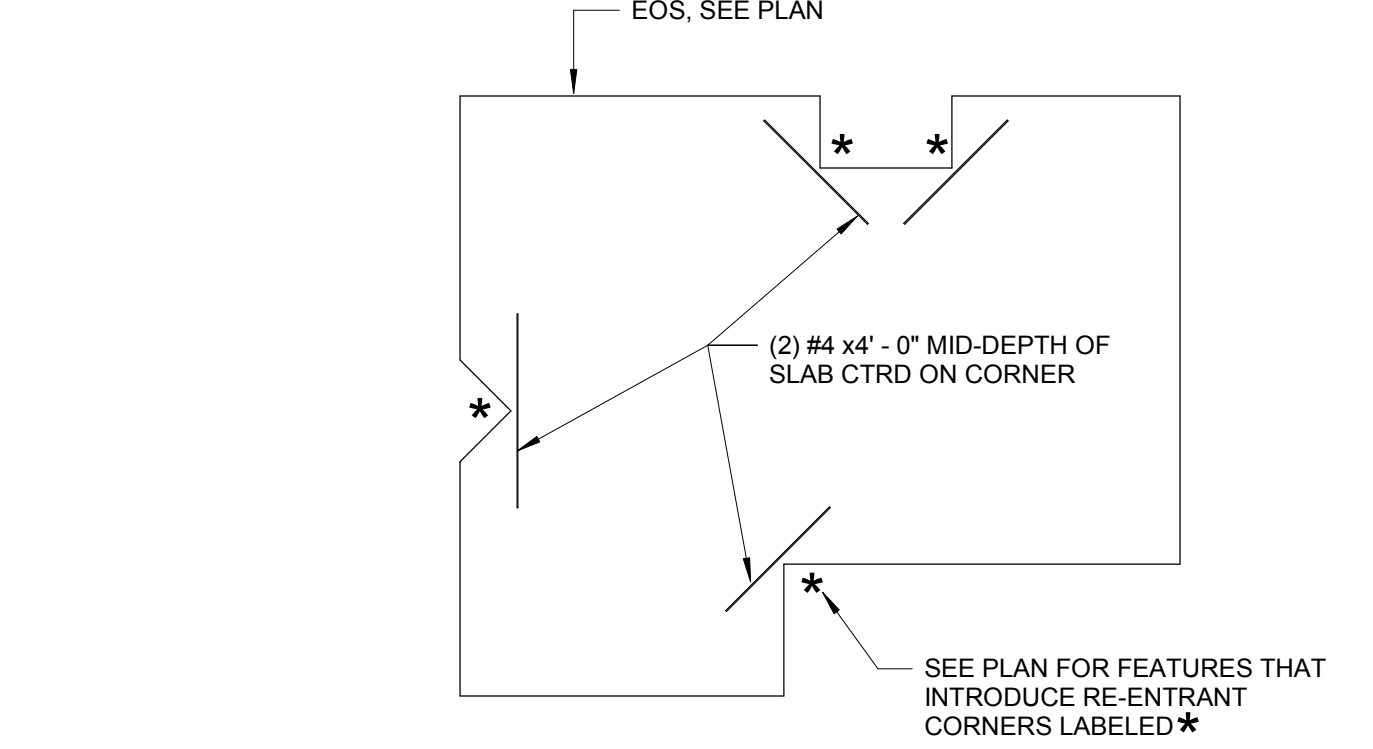
3B WALL FOOTING INTERSECTION WITH COLUMN FOOTING

NOT TO SCALE
NOTES:
1. PROVIDE CONT 2x6 KEY FULL WIDTH OF WALL FTG OR PLACE MONOLITHIC



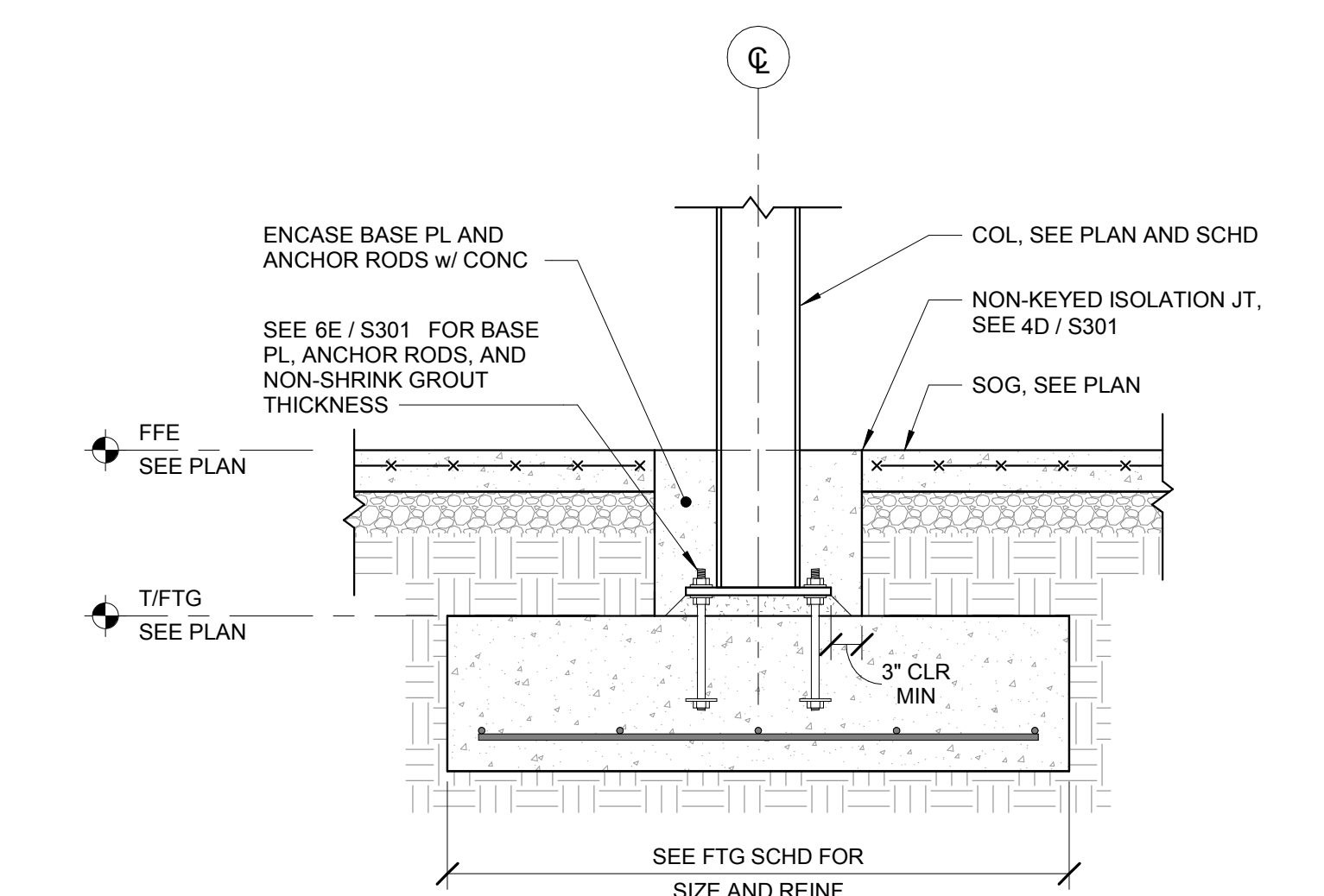
4B TYPICAL PIPE SLEEVE BENEATH FOOTING

NOT TO SCALE
NOTES:
1. PVC OR GALV STEEL PIPE SLEEVE (Ø = PIPE Ø + 2\"/>



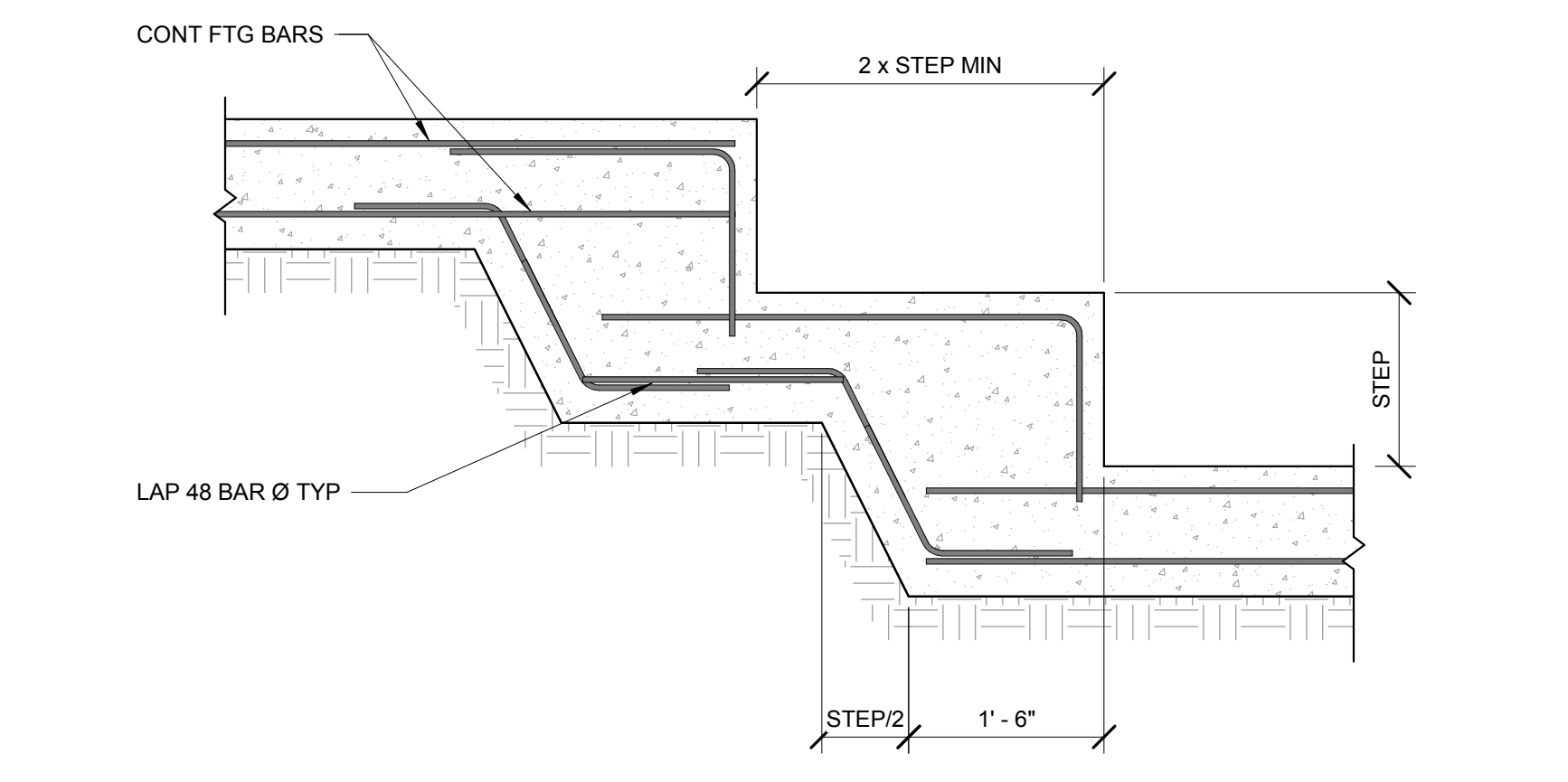
6B SLAB RE-ENTRANT CORNER REINFORCING

NOT TO SCALE
NOTES:
1. WHERE SLAB CONTRACTION JOINT INTERSECTS RE-ENTRANT CORNER ADDED SLAB REINFORCING IS NOT REQUIRED. SEE PLAN FOR JOINT LOCATIONS.



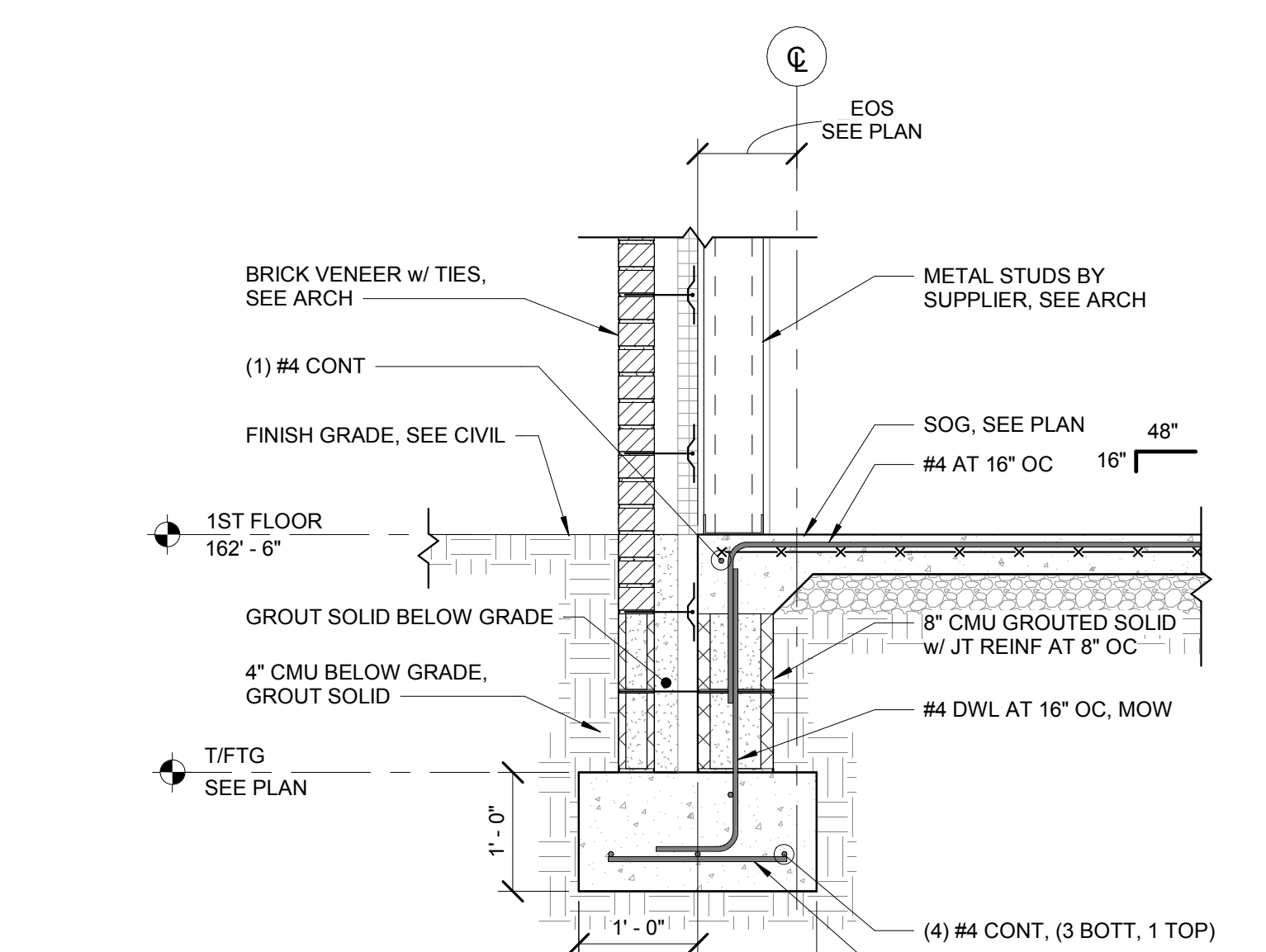
1A INTERIOR COLUMN FOOTING DETAIL

NOT TO SCALE



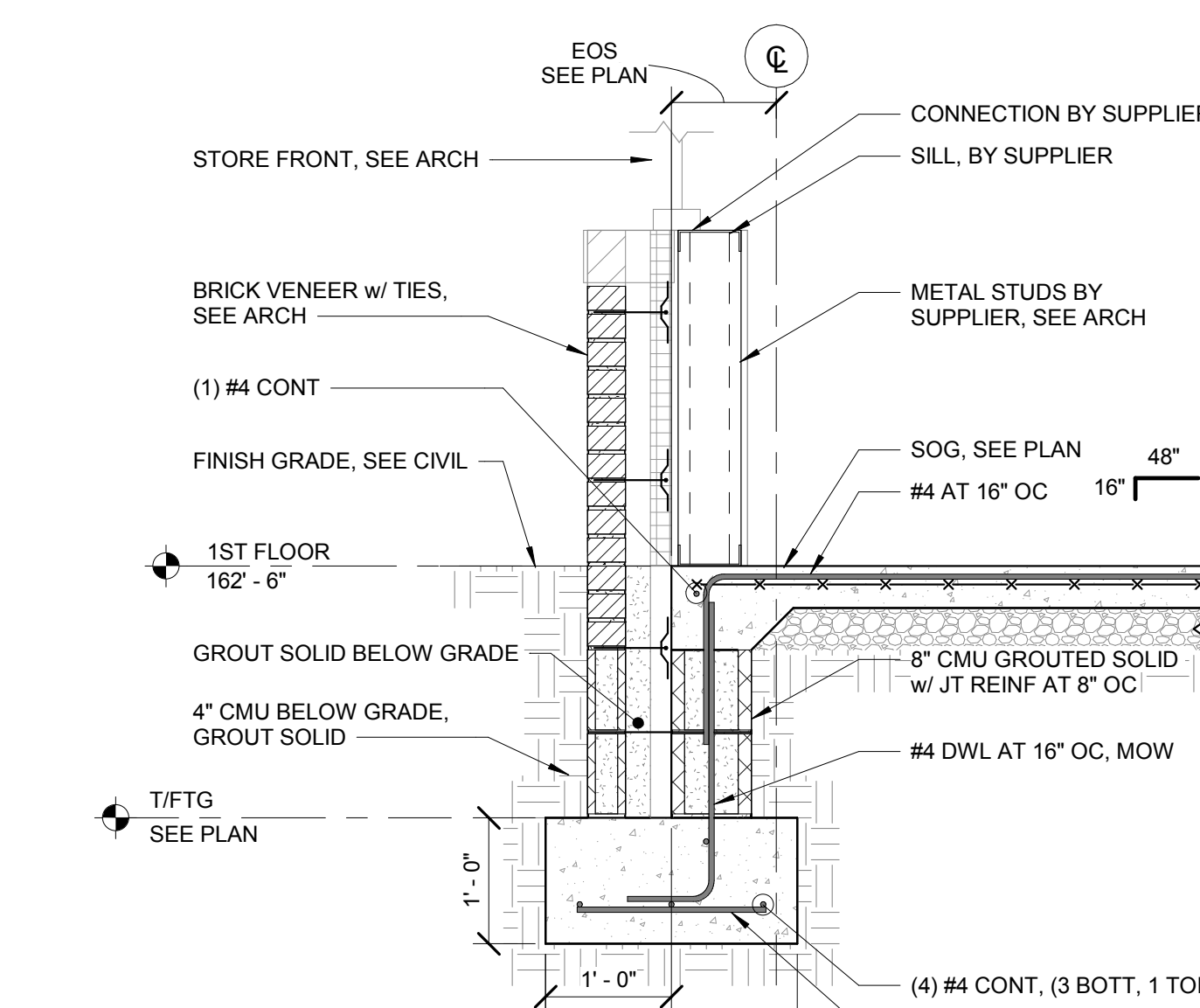
2A TYPICAL FOOTING STEP DETAIL

NOT TO SCALE



4A SECTION

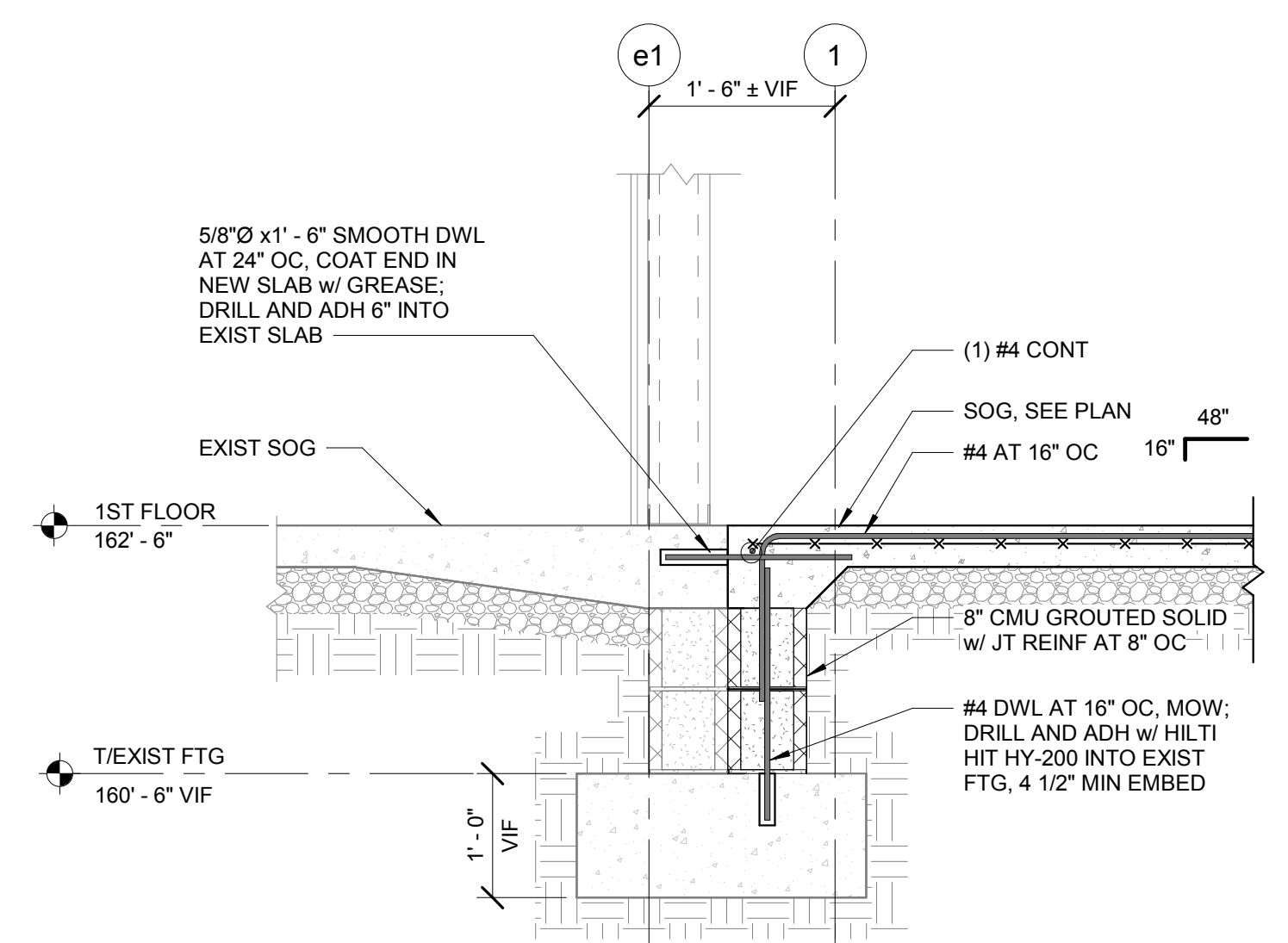
NOT TO SCALE



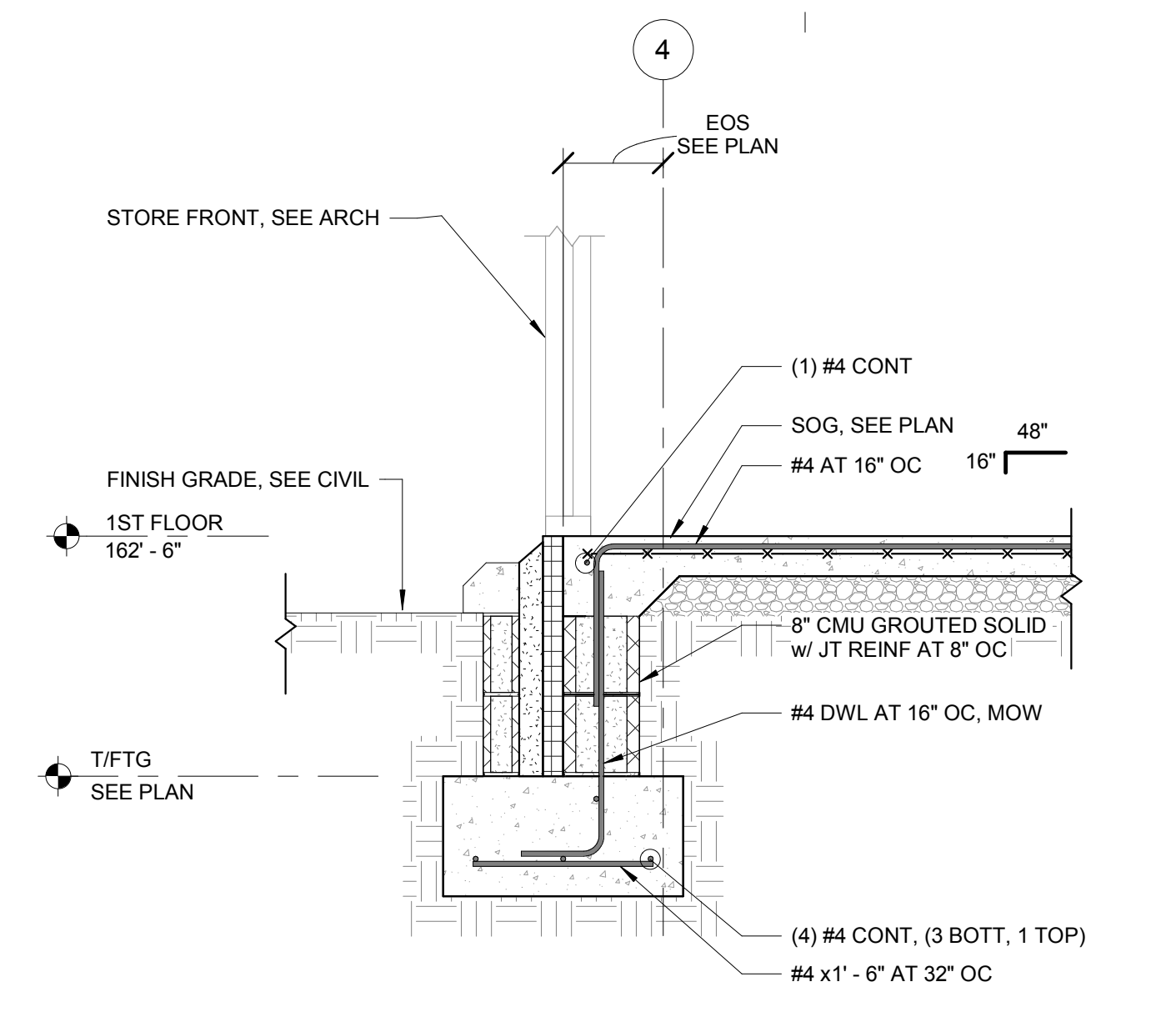
6A SECTION

NOT TO SCALE





1E SECTION
S302 3/4" = 1'-0"
NOTES:
1. DEMO EXISTING BRICK VENEER AND 6" CMU TO TOP OF EXISTING FOOTING.
2. REMOVE DIRT AND DEBRIS FROM TOP OF FOOTING FOR NEW 8" CMU FOUNDATION WALL INSTALLATION.



3E SECTION
S302 3/4" = 1'-0"

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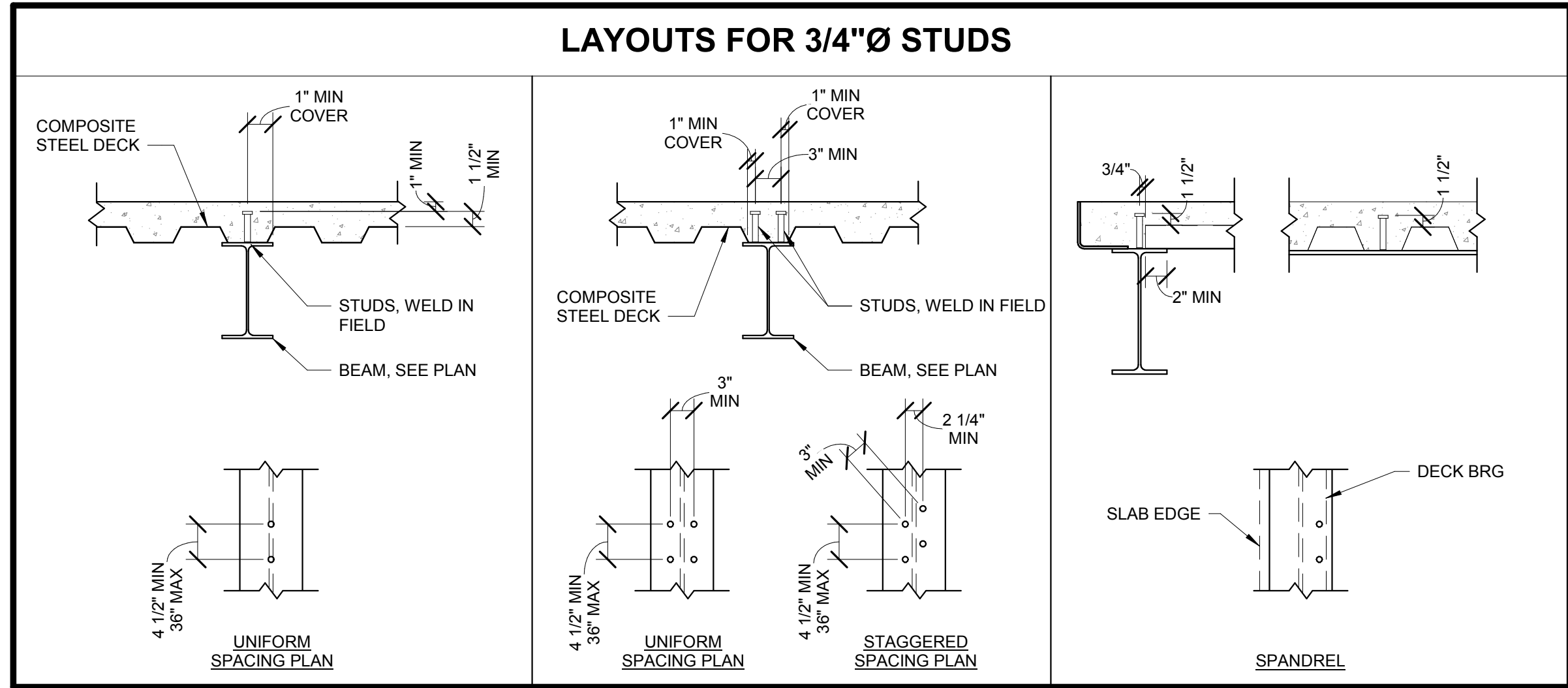
PROJECT TEAM
PRINCIPAL IN CHARGE
Julie M. McLaurin, AIA
PROJECT MANAGER
Eric Schoenagel, AIA
DESIGN TEAM
Sarah Musser, PE

PROJECT NAME
HARNETT COUNTY DSS ADDITION

PROJECT NO.
514806600
SHEET TITLE
FOUNDATION DETAILS

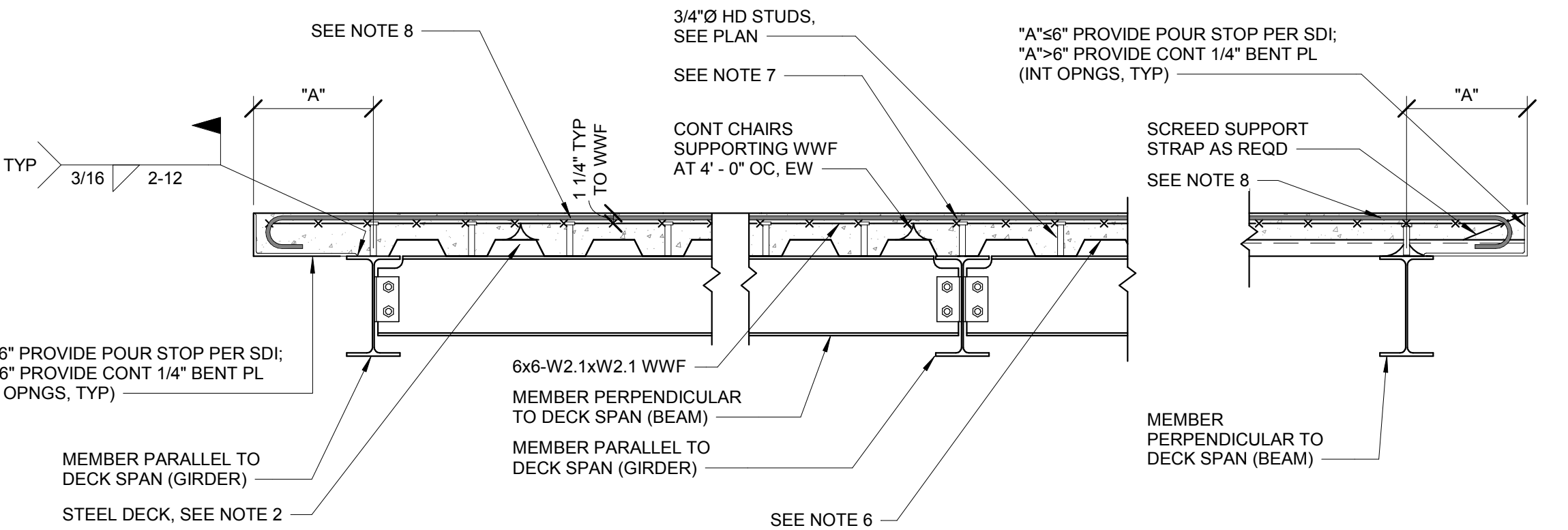
SHEET NUMBER
S302

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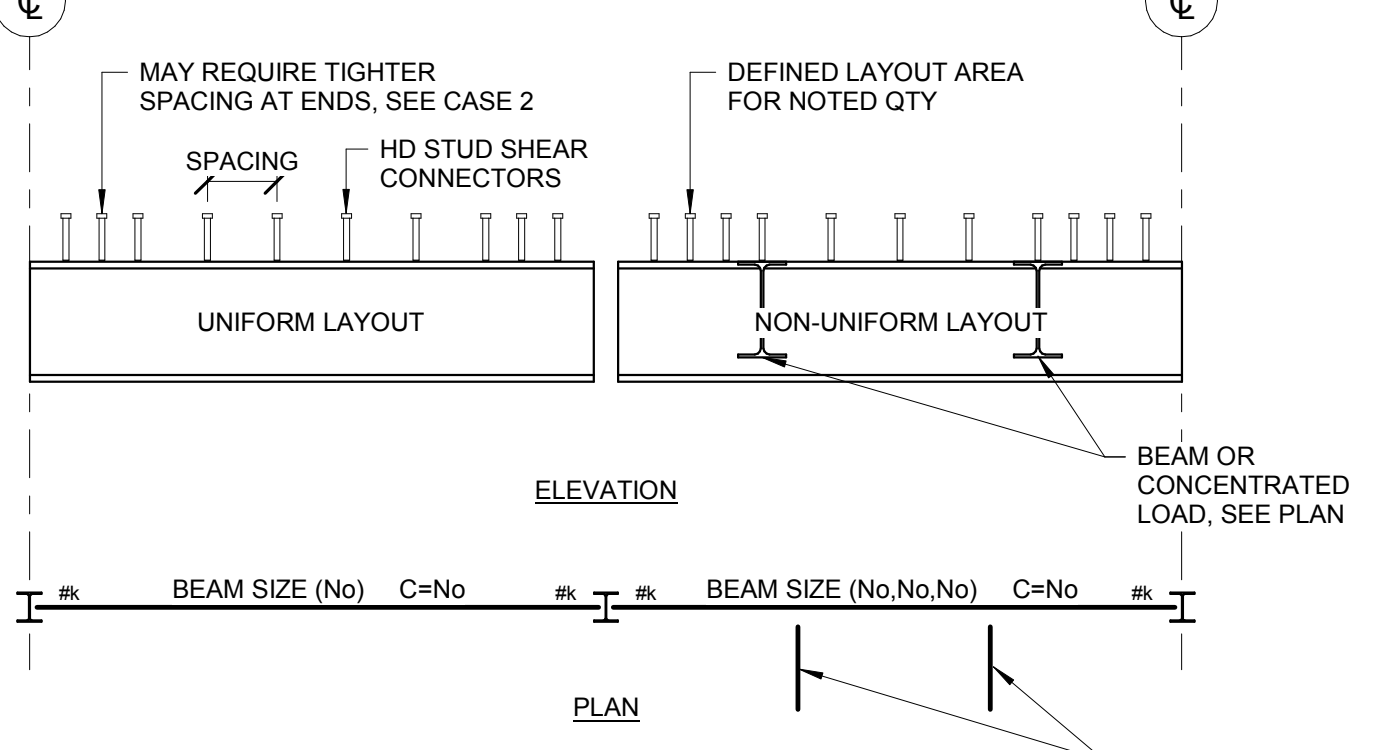
STUD CLEARANCES AND SPACING

NOTES:
1. WHEN DOUBLE ROW OF STUDS IS REQUIRED, USE A STAGGERED PATTERN IF SPACING PERMITS. SEE UNIFORM AND STAGGERED SPACING PLANS.



COMPOSITE FLOOR CONSTRUCTION DETAIL

NOTES:
1. THIS DETAIL APPLIES TO DECK SUPPORTED COMPOSITE SLABS, AS INDICATED ON PLANS. SEE GENERAL NOTES FOR ADDITIONAL DETAILS.
2. MINIMUM STEEL DECK PROPERTIES: 2'-20" GAGE COMPOSITE DECK WITH $I_p=0.409$ in⁴/ft, $I_n=0.406$ in⁴/ft, $S_p=0.341$ in³/ft, $S_n=0.346$ in³/ft, AND $F_y=50$ ksi.
3. WELD DECK TO SUPPORTS PER FLOOR DECKING ATTACHMENT DETAIL.
4. SUPPORT DECK AROUND COLUMNS WITH COLUMN CLOSURE. OPEN ENDS OF RIBS, SIDES OF DECKING AND OTHER LOCATIONS NECESSARY TO CONTAIN CONCRETE DURING PLACEMENT. WHERE PLUMBING LINES ARE ADJACENT TO COLUMNS, PROVIDE ANGLES TO SUPPORT DECK PER PLUMBING PENETRATION DETAIL.
5. COMPOSITE SLABS HAVE BEEN DESIGNED AS "UNSHORED CONSTRUCTION".
6. DECK SHALL BE CONTINUOUS OVER (2) OR MORE SPANS, TYPICAL. IF A SINGLE SPAN CONDITION IS REQUIRED AND SUPPORT BEAM SPACING EXCEEDS 8'-5", CONTRACTOR SHALL SHORE AREA.
7. PROVIDE #4 AT 12" OC 8'-0" LONG TOP BARS CENTERED OVER ALL GIRDERS RUNNING PARALLEL TO DECK SPAN. PLACE BARS OVER WWF AND PROVIDE 3/4" MINIMUM COVER. PROVIDE SUPPORT CHAIRS AT 4'-0" OC EACH WAY. ROTATE IF REQUIRED TO FIT IN SLAB THICKNESS.
8. AT INTERIOR SLAB EDGES, PROVIDE #4 AT 12" OC 8'-0" LONG TOP BARS WITH STANDARD 180° HOOKS AT ONE END AS SHOWN WHERE DIMENSION "A" EXCEEDS 10". PROVIDE 3/4" MINIMUM COVER. DIMENSION "A" SHALL NOT EXCEED 2'-0" UNLESS SPECIFICALLY DETAILED OTHERWISE.



STUD LAYOUT

NOTES:
1. ALL STUDS SHALL BE FIELD WELDED TO CENTERLINE OF BEAMS, UNO.
2. "(No)" INDICATES NUMBER OF SHEAR STUDS REQUIRED FOR ENTIRE BEAM LENGTH IF ONLY ONE QUANTITY IS NOTED. IF MULTIPLE QUANTITIES ARE NOTED, THEN NON-UNIFORM SPACING IS REQUIRED.
3. "N" INDICATES BEAM DESIGN END REACTION IN KIPS SEE GENERAL NOTES FOR MINIMUM REACTION.
4. "C-N" INDICATES REQUIRED BEAM CAMBER IN INCHES.

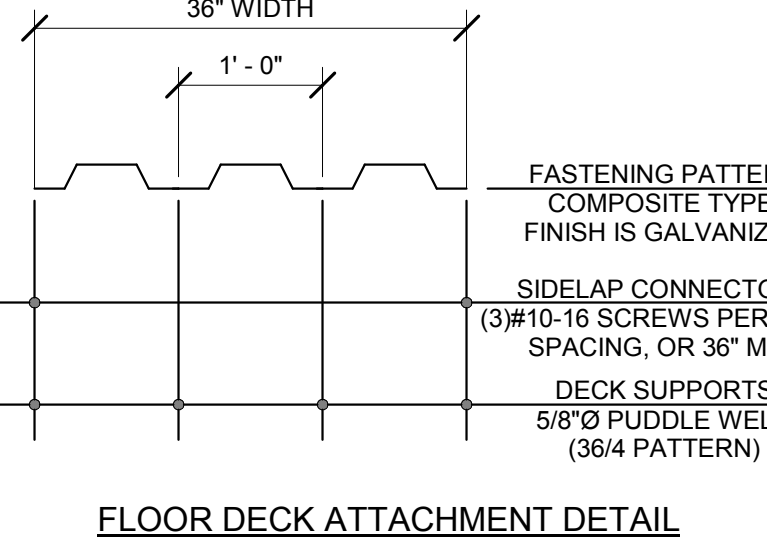
DECK PERPENDICULAR TO BEAM
CASE 1 UNIFORM SPACING- FEWER STUDS THAN DECK RIBS
-PLACE STUDS SYMMETRICALLY ABOUT MID-POINT OF BEAM.
-PLACE A STUD IN ALTERNATING RIBS NEAR BEAM ENDS AND CONTINUE PLACING
-PLACE REMAINING STUDS IN RIBS NOT ALREADY HAVING A STUD STARTING NEAR BEAM ENDS

CASE 2 UNIFORM SPACING- MORE STUDS THAN RIBS
-PLACE STUDS SYMMETRICALLY ABOUT MID-SPAN OF BEAM.
-PLACE A STUD IN ALL AVAILABLE RIBS.
-IF STUDS REMAIN PLACE A SECOND STUD IN RIBS NEAR BEAM ENDS AND CONTINUE PLACING
-IF STUDS REMAIN PLACE A THIRD STUD IN RIBS NEAR BEAM ENDS AND CONTINUE PLACING A THIRD STUD IN EACH RIB TOWARD BEAM CENTER.
-IF THERE ARE MORE STUDS THAN RIBS PLACE ADDITIONAL STUDS IN RIBS STARTING AT INTERSECTING BEAMS. FOLLOW SAME PROCEDURE AS CASE 2.

CASE 3 NON-UNIFORM SPACING
-UNIFORMLY SPACE STUDS BETWEEN INTERSECTING BEAMS OR CONCENTRATED LOAD.
-IF THERE ARE MORE STUDS THAN RIBS PLACE ADDITIONAL STUDS IN RIBS STARTING AT INTERSECTING BEAMS. FOLLOW SAME PROCEDURE AS CASE 2.

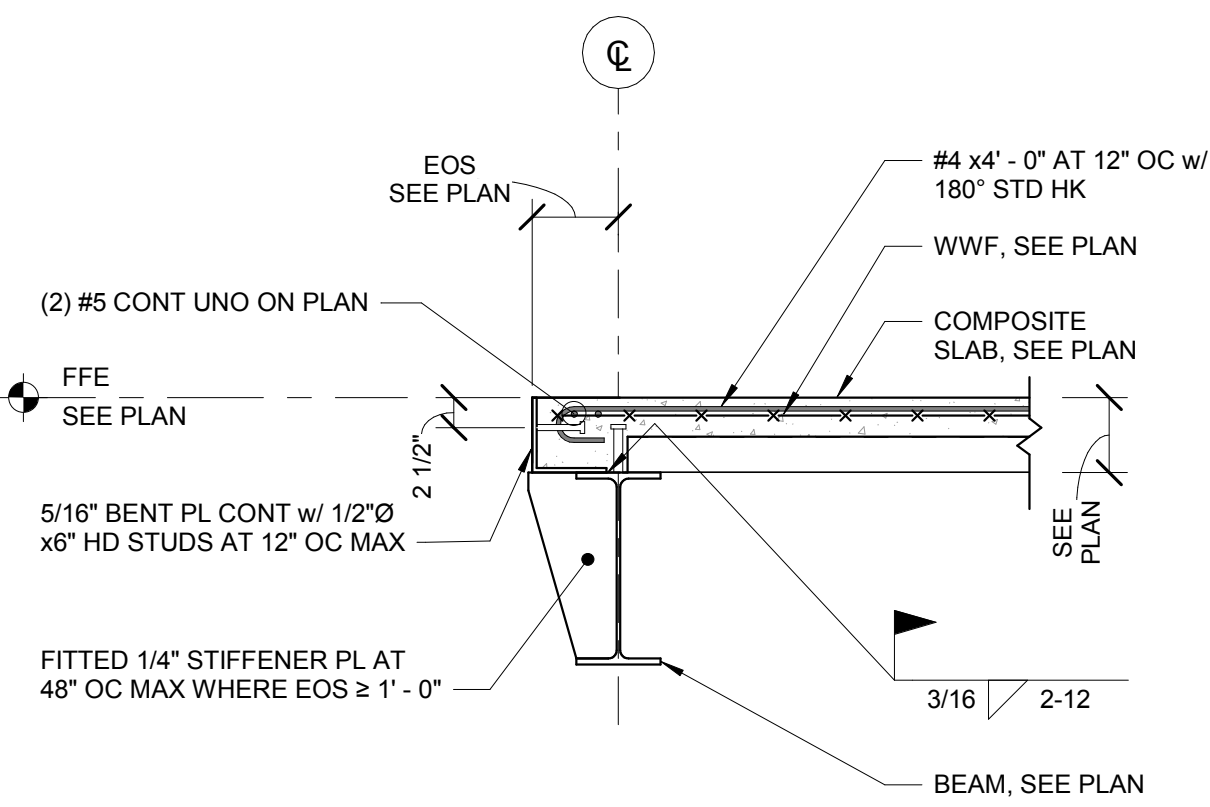
DECK PARALLEL TO BEAM
CASE 4 UNIFORM SPACING
-PLACE STUDS SYMMETRICALLY ABOUT MID-POINT OF BEAM.
-PLACE A SINGLE ROW OF STUDS ALONG LENGTH OF BEAM AT EQUAL SPACING. FOLLOW MAXIMUM AND MINIMUM SPACING NOTED.
-IF MULTIPLE ROWS OF STUDS ARE REQUIRED START PLACEMENT OF ADDITIONAL ROWS NEAR BEAM ENDS.

CASE 5 NON-UNIFORM SPACING
-UNIFORMLY SPACE STUDS BETWEEN INTERSECTING BEAMS OR CONCENTRATED LOAD.
-IF MULTIPLE ROWS OF STUDS ARE REQUIRED START PLACEMENT OF EACH ADDITIONAL ROWS NEAR BEAM ENDS. FOLLOW MAXIMUM AND MINIMUM SPACINGS NOTED.

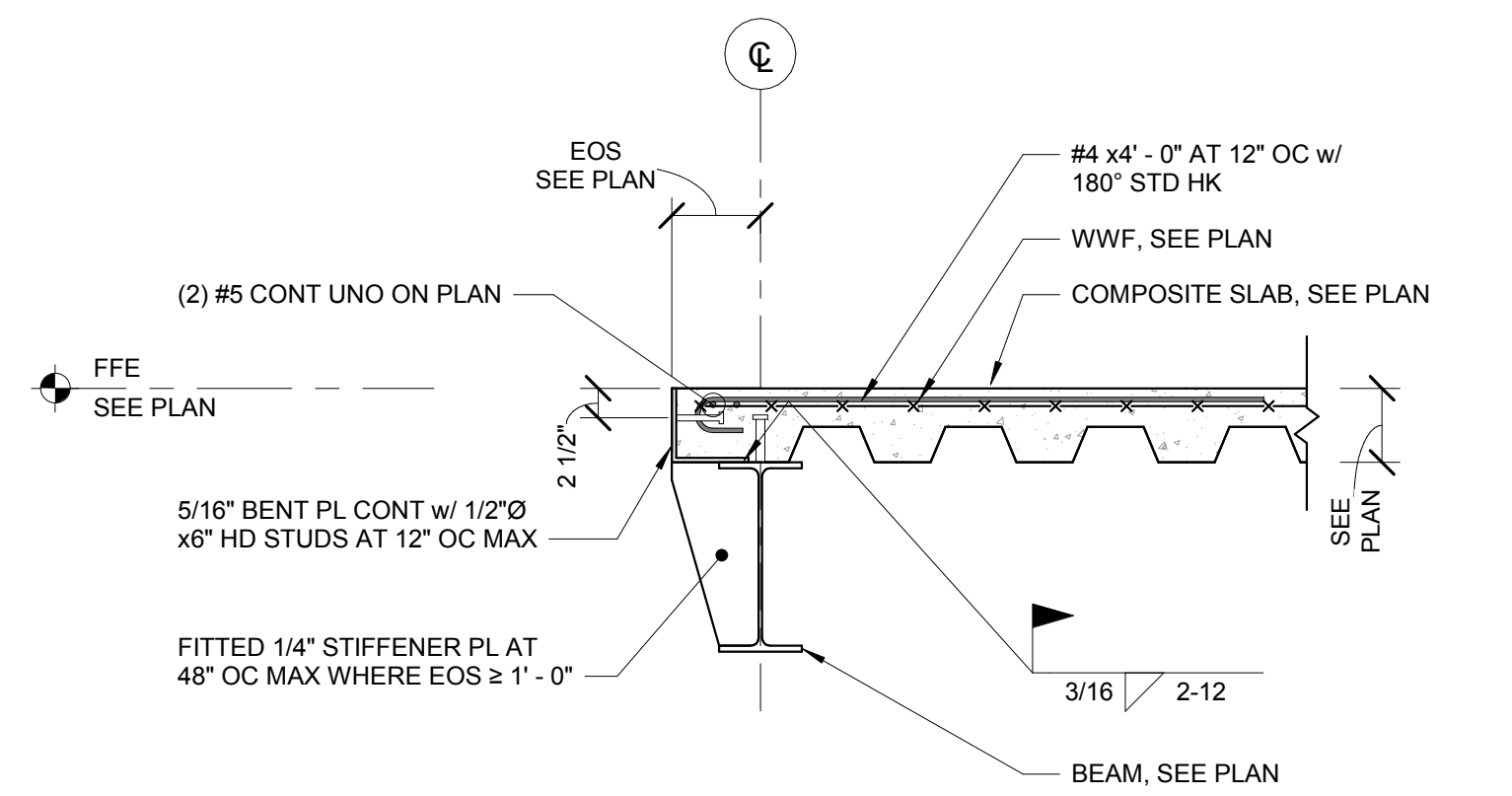


FLOOR DECK ATTACHMENT DETAIL

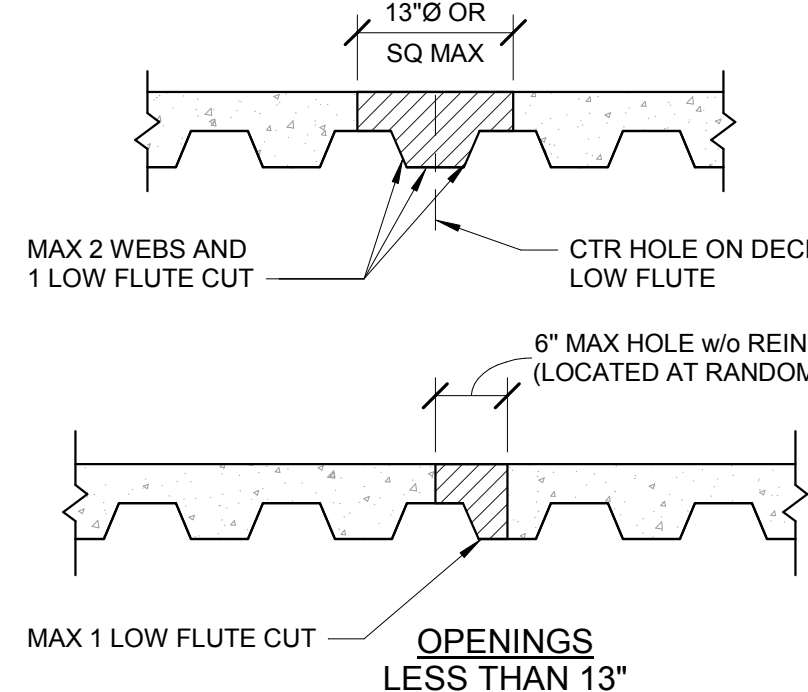
1A TYPICAL COMPOSITE SLAB DETAILS
S311 NOT TO SCALE



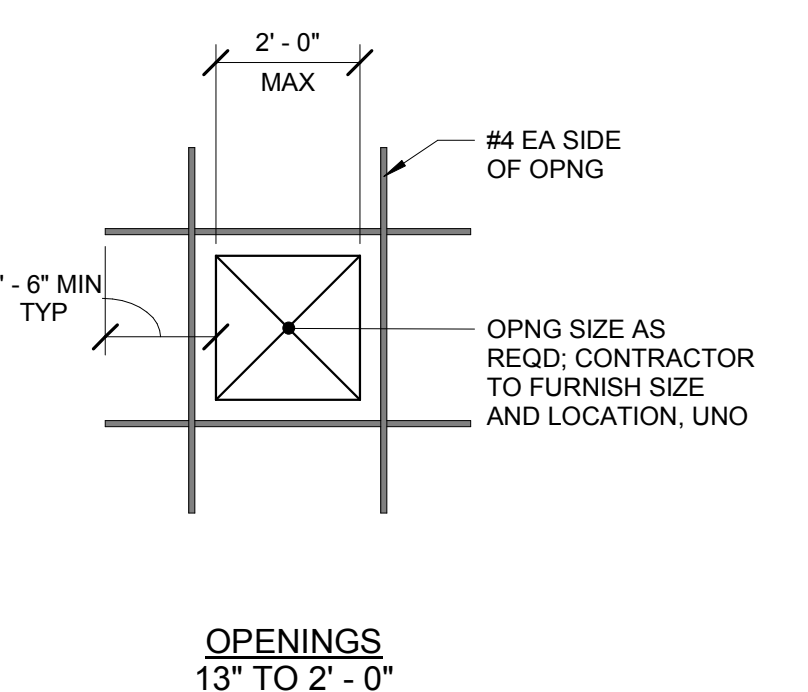
4E SLAB EDGE DETAIL PERPENDICULAR TO DECK
S311 3/4" = 1'-0"



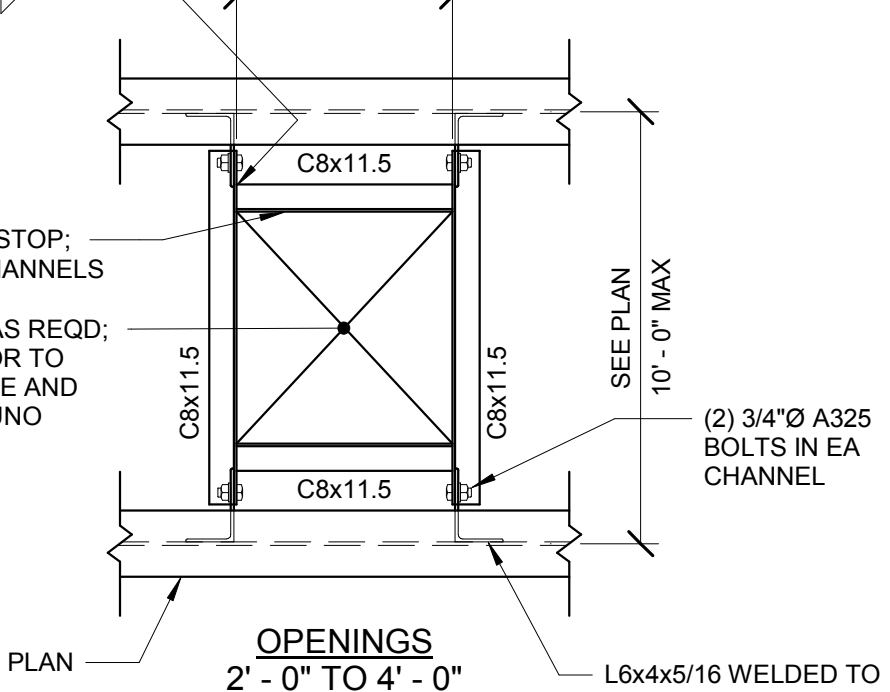
6E SLAB EDGE DETAIL PARALLEL TO DECK
S311 3/4" = 1'-0"



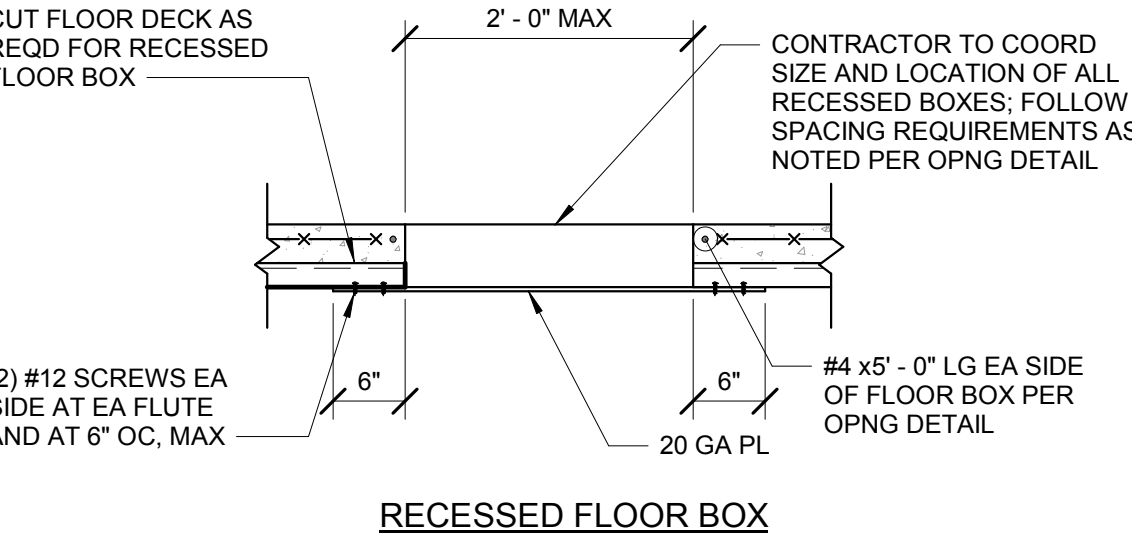
NOTES:
1. OPENINGS THAT ARE SPACED CLOSER THAN (2) TIMES THE OPENING SIZE SHALL BE CONSIDERED ONE OPENING.
2. ALL OPENINGS LESS THAN 13" WILL NOT BE SHOWN ON STRUCTURAL DRAWINGS.
3. OPENINGS THAT MEET THE REQUIREMENTS OF THIS DETAIL MAY BE FORMED PRIOR TO CONCRETE POUR OR CORE DRILLED AFTER PLACEMENT.



NOTES:
1. PROVIDE REINFORCING AROUND ALL DUCT PENETRATIONS, CHASES, ELECTRICAL BOXES, PLUMBING PIPES, AND OTHER OPENINGS IN SLABS. FOR OPENINGS FROM 1'9" X 1'9" (OR 1'9") TO 2'-0" X 2'-0" (OR 2'4" X 2'4").
2. OPENINGS THAT ARE SPACED CLOSER THAN (2) TIMES THE OPENING SIZE SHALL BE CONSIDERED ONE OPENING.
3. MINIMUM CLEAR DISTANCE BETWEEN OPENINGS IS 2'-0".
4. ALL OPENINGS 1'3" TO 2'-0" MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS. SEE ARCH AND MEP DRAWINGS.
5. OPENINGS GREATER THAN 2'-0" NOT SHOWN ON STRUCTURAL DRAWINGS REQUIRE APPROVAL BY THE ENGINEER OF RECORD. PRIOR TO CONCRETE POUR OPENINGS SHALL BE BLOCKED W/ DECK LEFT INTACT. AFTER CONCRETE HAS CURED REMOVE BLOCK OUT AND CUT DECK TO EDGE OF CONCRETE POUR.

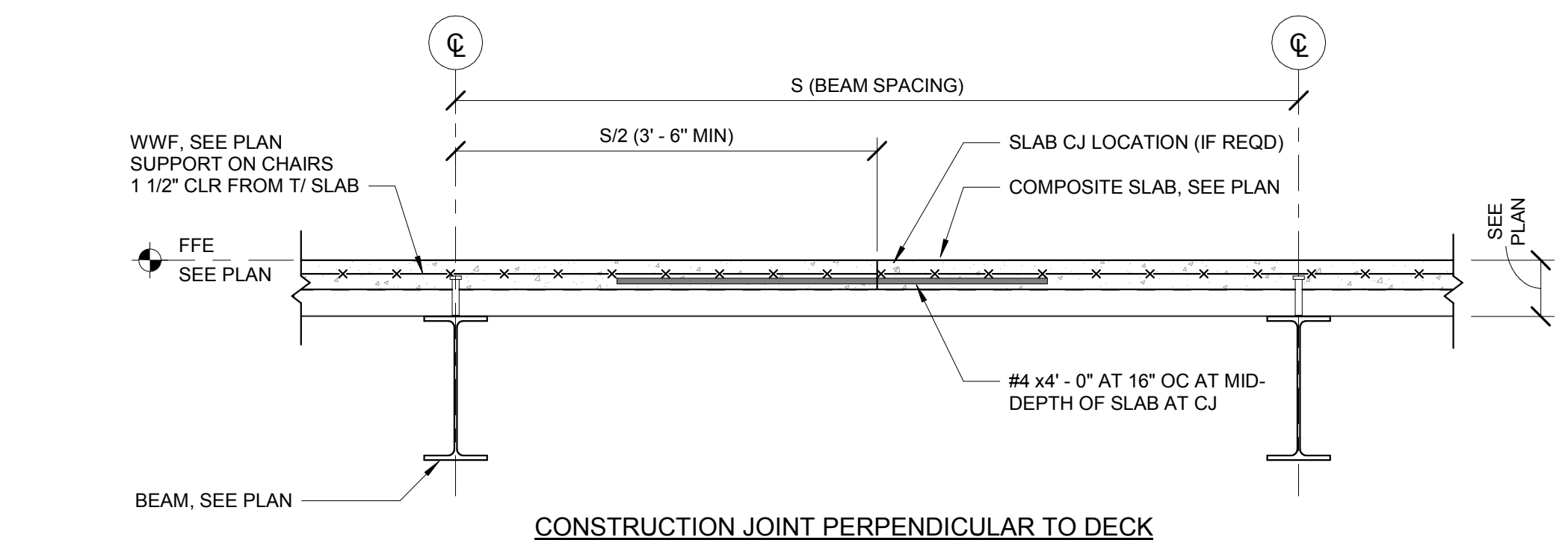


NOTES:
1. PROVIDE CHANNEL FRAMING AROUND ALL DUCT PENETRATIONS, CHASES, ELECTRICAL BOXES, PLUMBING PIPES, AND OTHER OPENINGS IN SLABS. FOR OPENINGS LARGER THAN 2'-0" X 2'-0" (OR 2'4" X 2'4").
2. OPENINGS THAT ARE SPACED CLOSER THAN (2) TIMES THE OPENING SIZE SHALL BE CONSIDERED ONE OPENING.
3. MINIMUM CLEAR DISTANCE BETWEEN OPENINGS IS 1'-0".
4. OPENINGS GREATER THAN 2'-0" NOT SHOWN ON STRUCTURAL DRAWINGS REQUIRE APPROVAL BY THE ENGINEER OF RECORD.

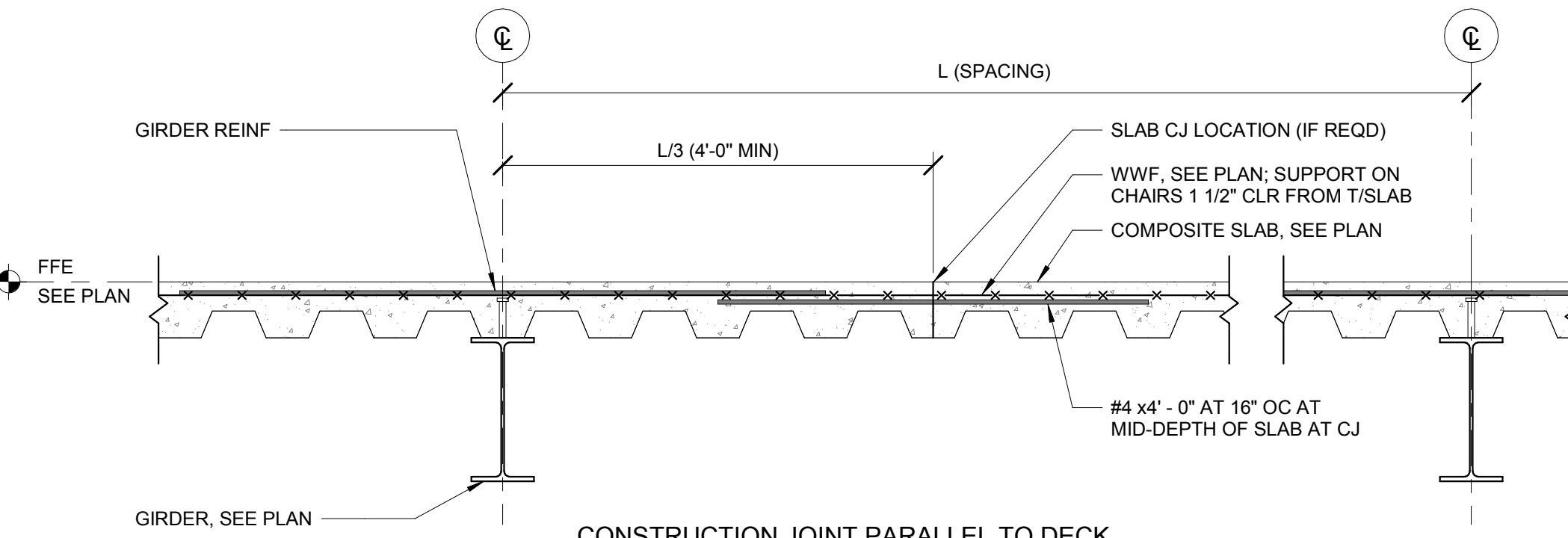


RECESSED FLOOR BOX

4C TYPICAL FRAMING AROUND SLAB OPENINGS
S311 3/4" = 1'-0"



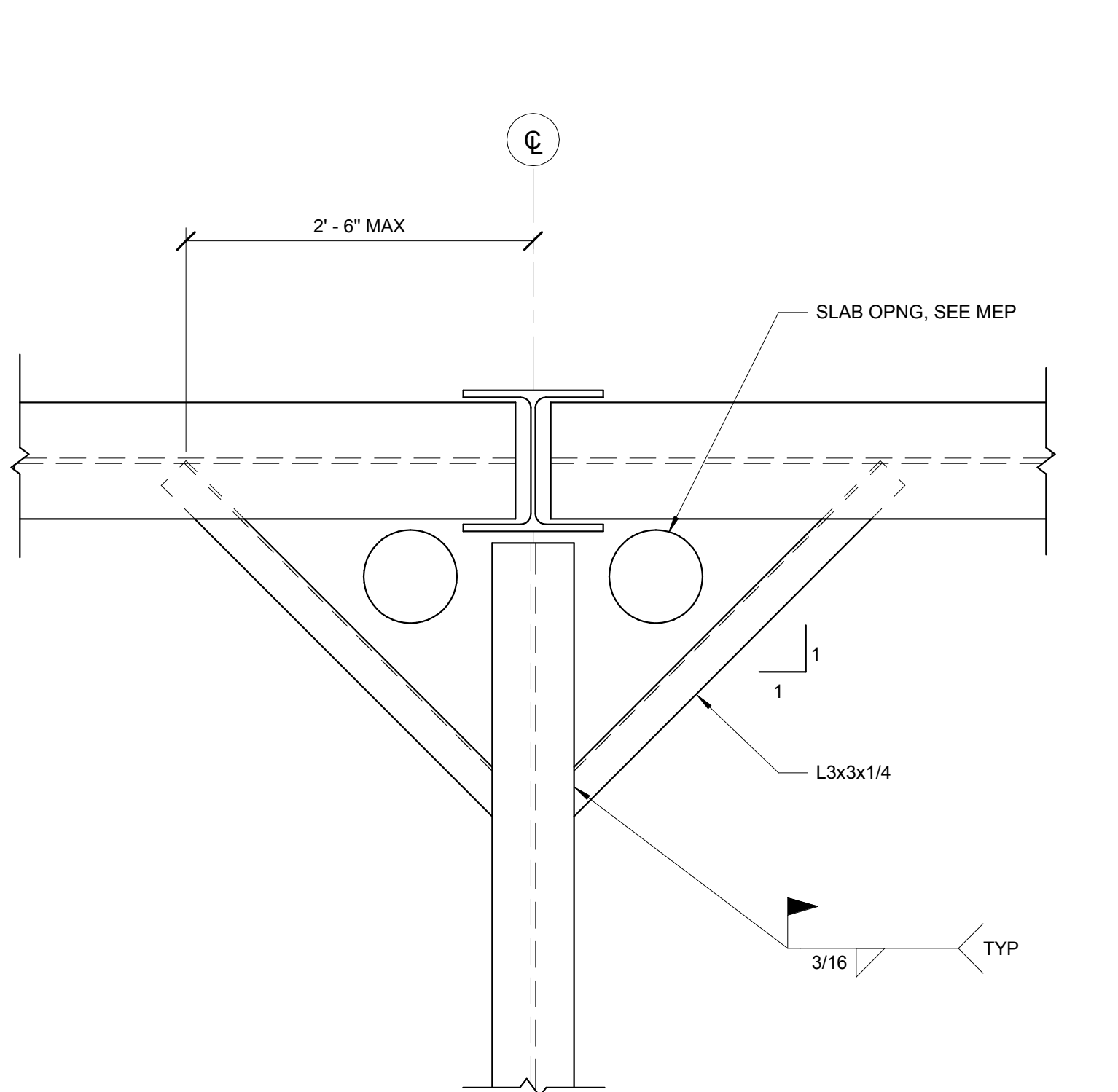
CONSTRUCTION JOINT PERPENDICULAR TO DECK



CONSTRUCTION JOINT PARALLEL TO DECK

4A SLAB CONSTRUCTION JOINT
S311 NOT TO SCALE

NOTES:
1. DO NOT PROVIDE CJ WHEN S < 7'-0".



6A PLAN VIEW OPENINGS AT COLUMN
S311 NOT TO SCALE

CORPORATE LICENSE F-0467



FINAL DRAWINGS FOR REVIEW ONLY

ISSUE FOR CONSTRUCTION DOCUMENTS

ISSUE DATE 06/28/2019

NO.	REASON	DATE

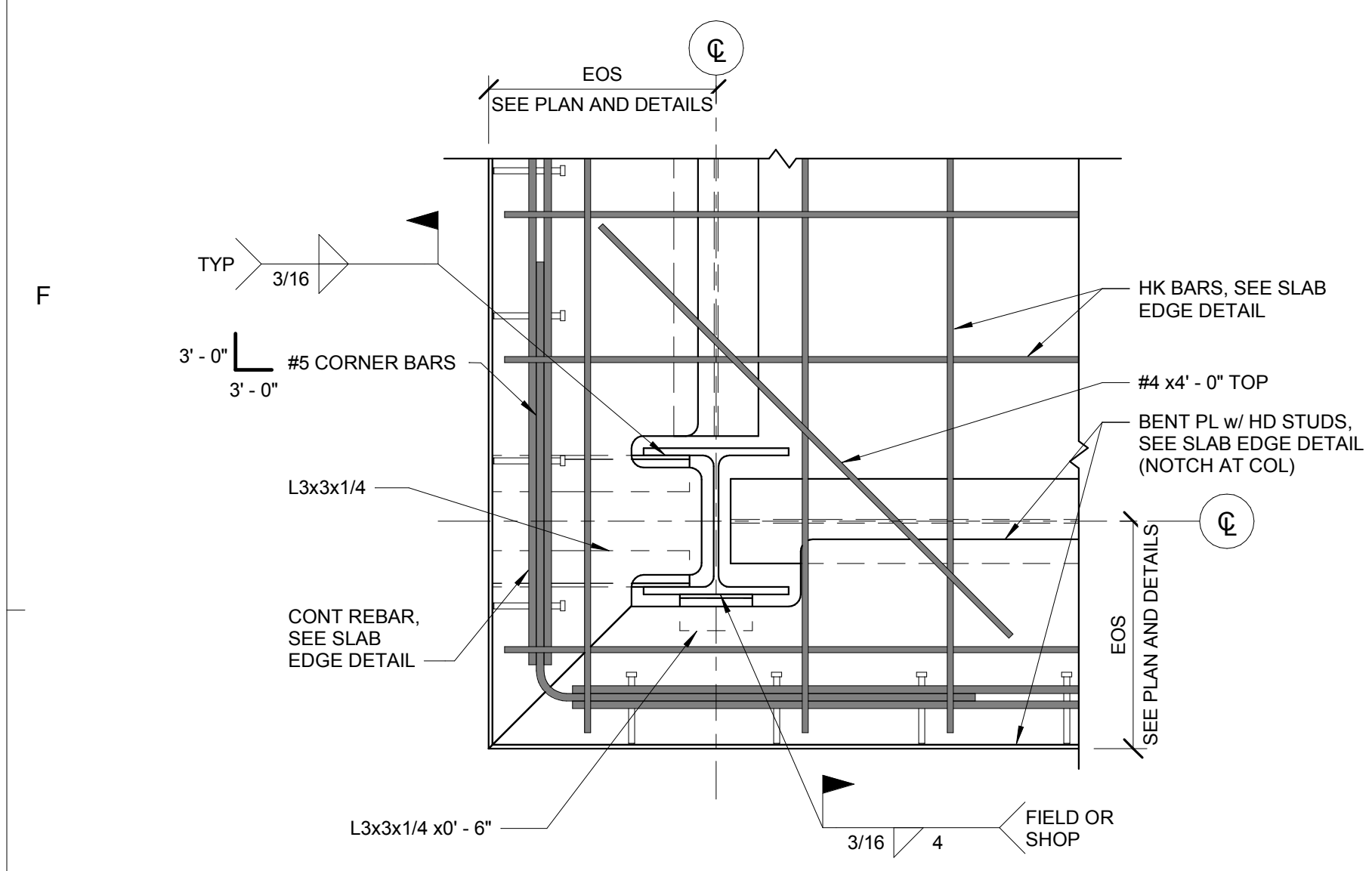
PROJECT TEAM
PRINCIPAL IN CHARGE Julie M. McLaurin, AIA
PROJECT MANAGER Eric Schoenagel, AIA
DESIGN TEAM Sarah Musser, PE

HARNETT COUNTY DSS ADDITION

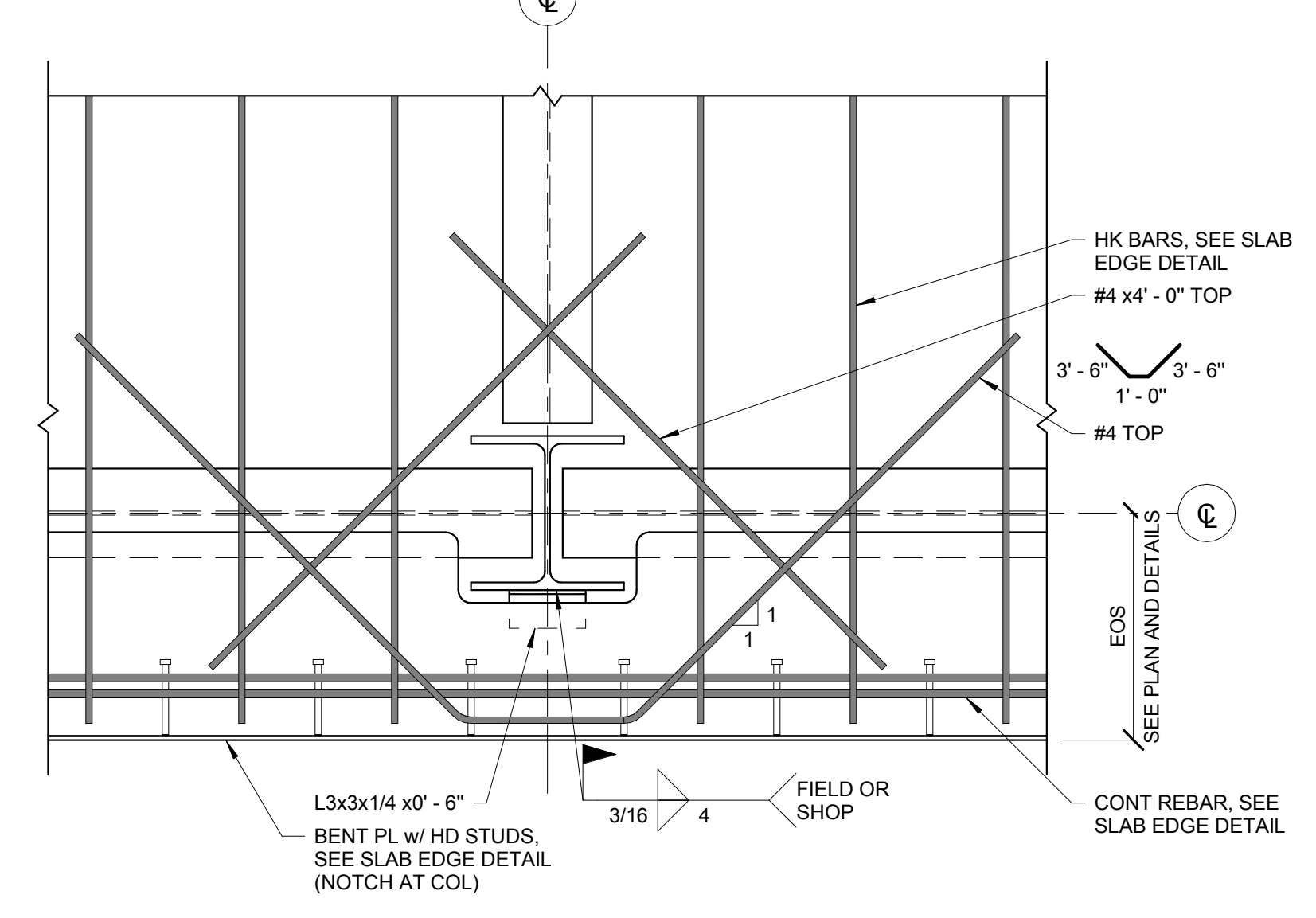
PROJECT NO. 514806600

SHEET TITLE FLOOR FRAMING DETAILS

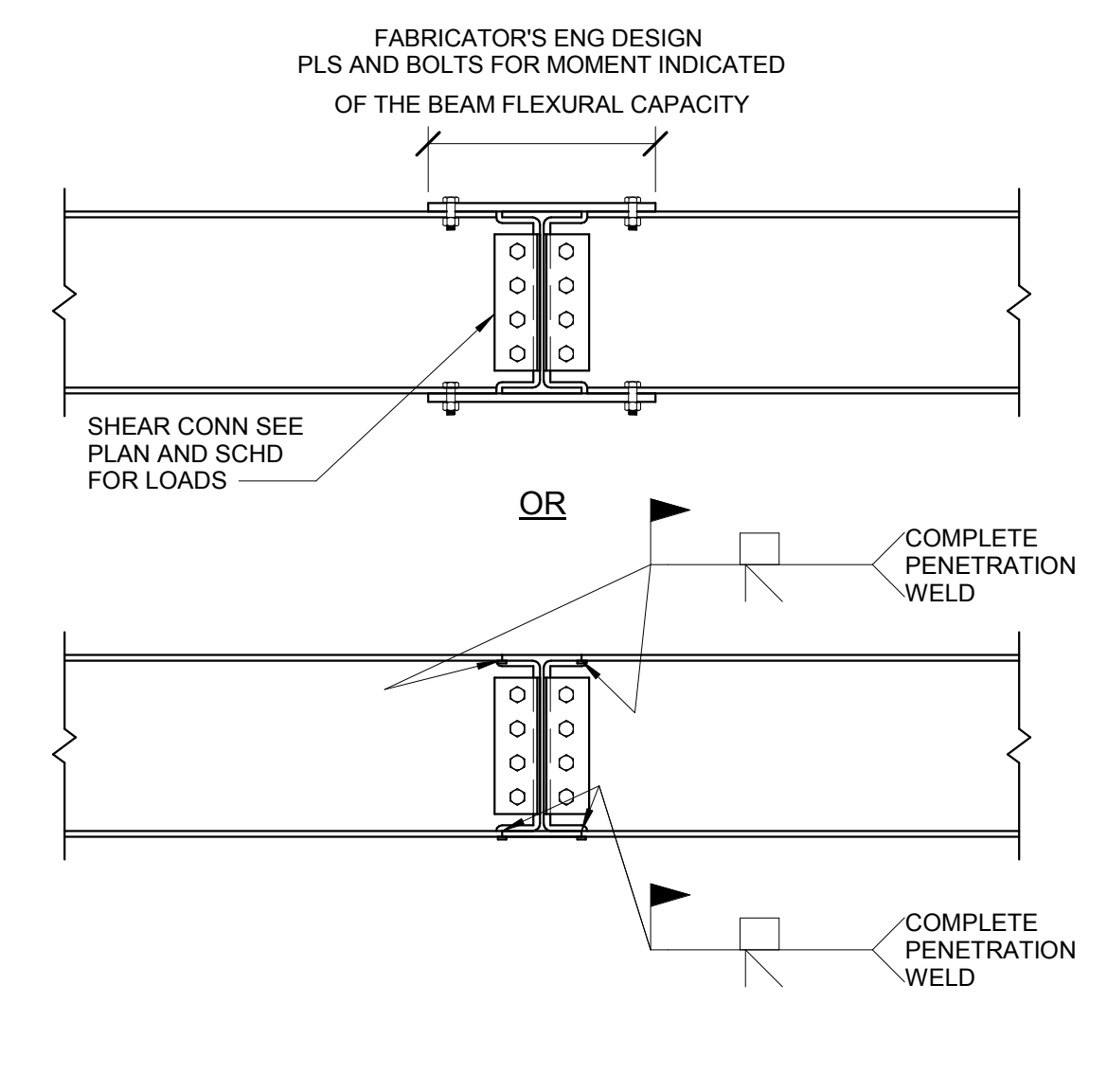
SHEET NUMBER **S311**



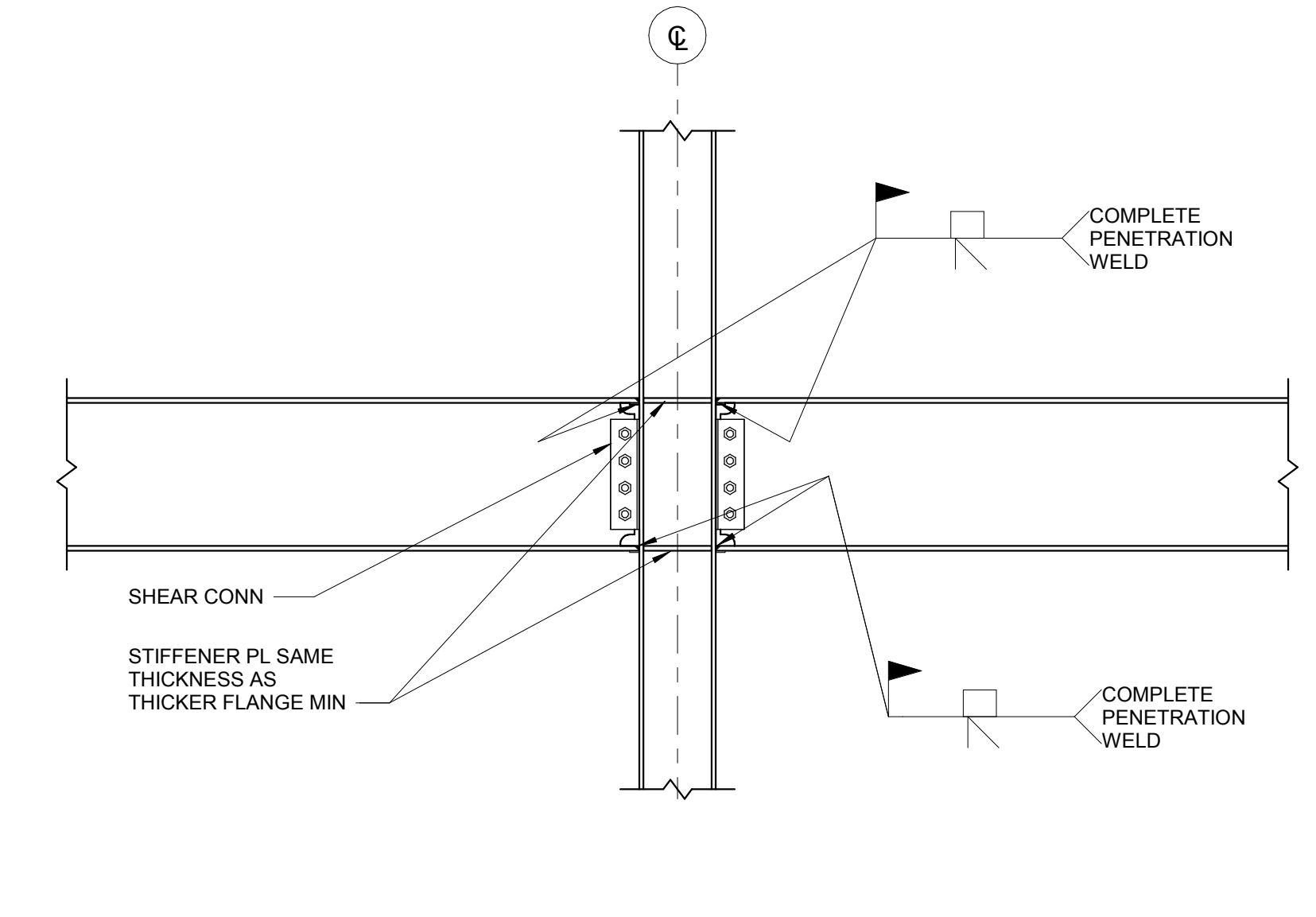
1E PLAN OF SLAB CORNER AT COLUMN
S312 NOT TO SCALE
NOTES:
1. SEE PLAN FOR MEMBER SIZES.
2. FRAMING CONNECTION NOT SHOWN FOR CLARITY.
3. SEE SLAB EDGE DETAILS FOR NOTES NOT SHOWN HERE.



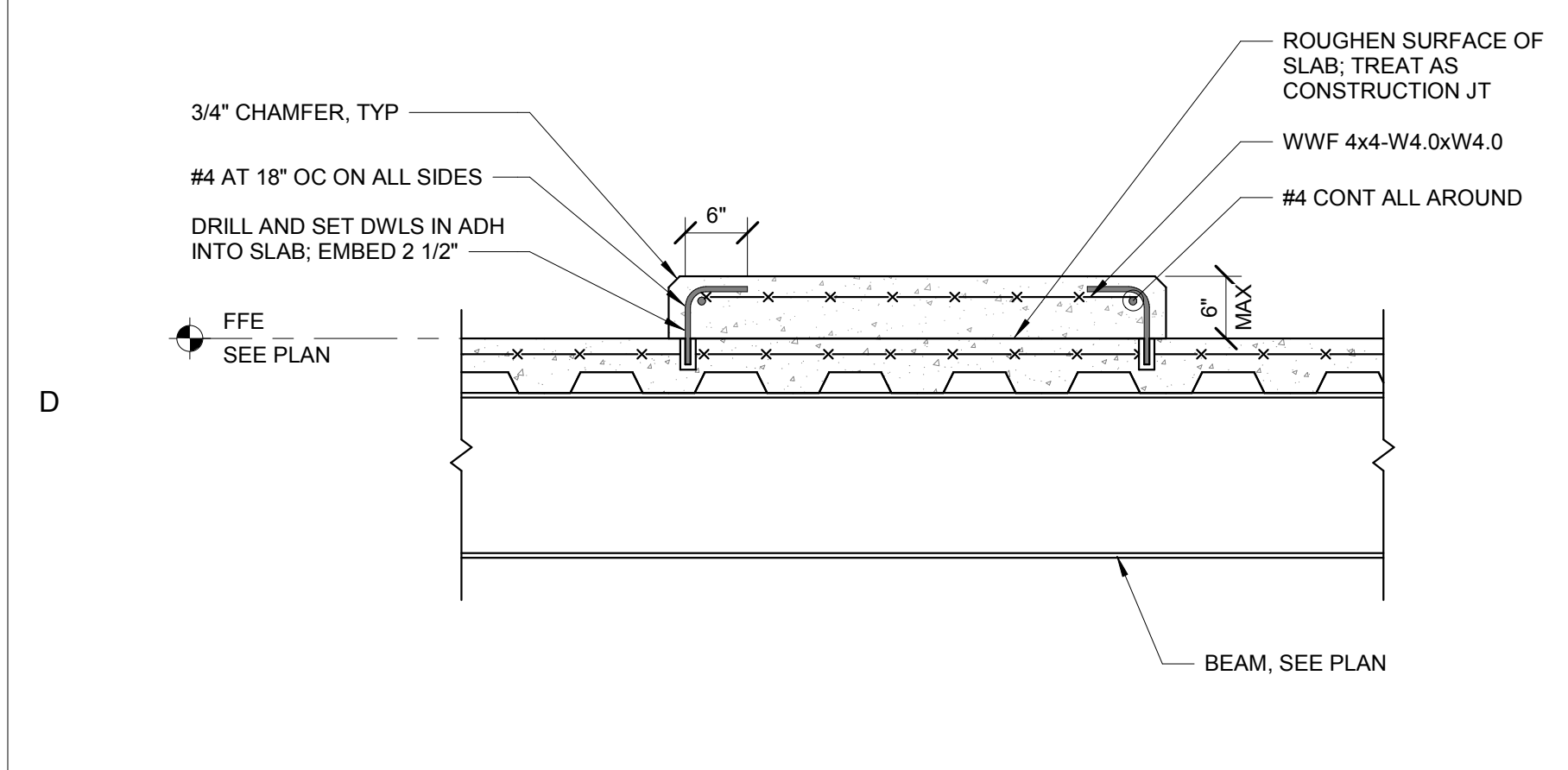
3E PLAN AT SLAB EDGE REINFORCEMENT
S312 NOT TO SCALE
NOTES:
1. SEE PLAN FOR MEMBER SIZES.
2. FRAMING CONNECTION NOT SHOWN FOR CLARITY.
3. SEE SLAB EDGE DETAILS FOR NOTES NOT SHOWN HERE.



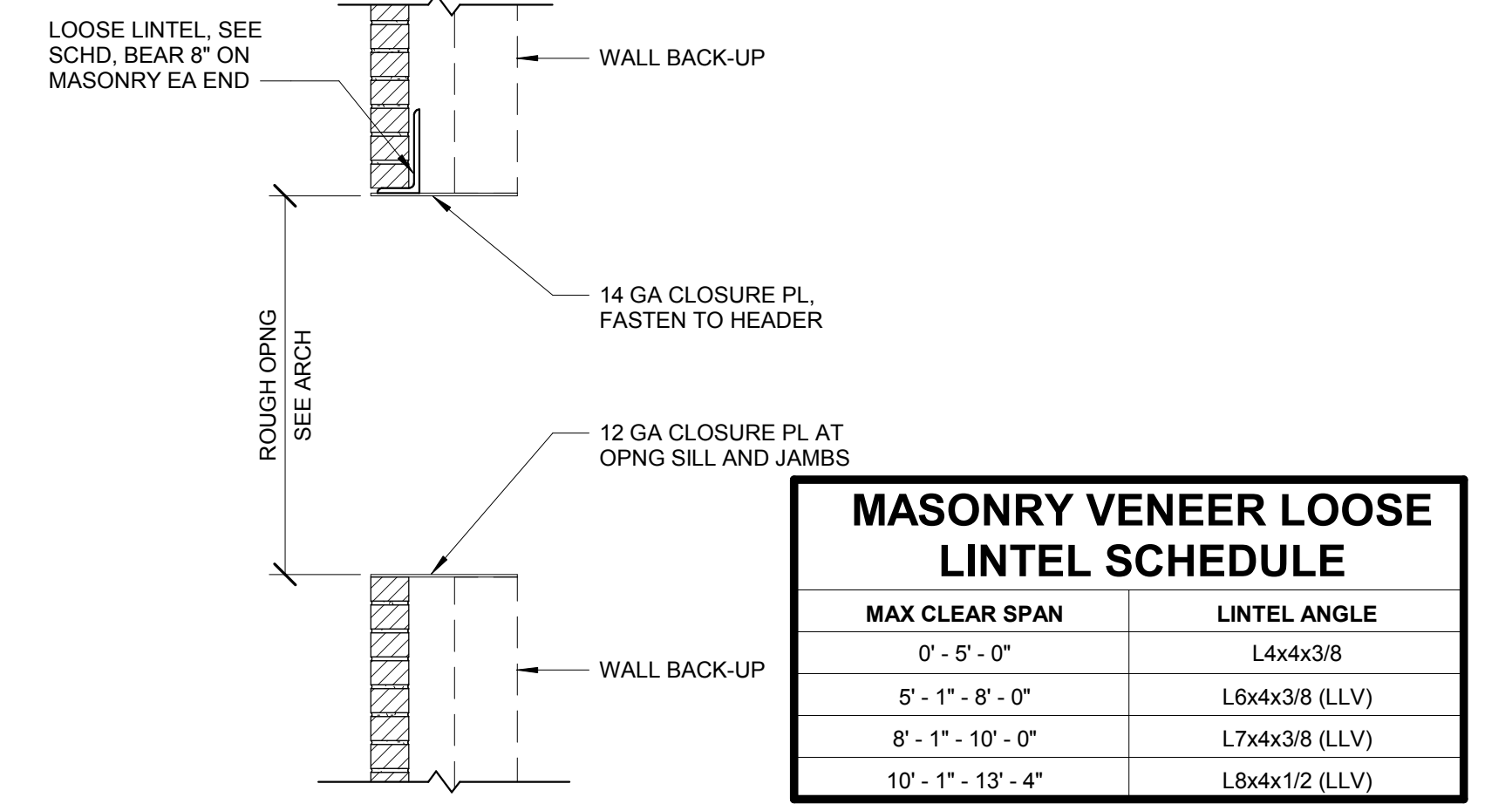
4E BEAM TO BEAM MOMENT CONNECTION DETAIL
S312 NOT TO SCALE
NOTES:
1. SEE PLAN FOR BEAM SIZES, UNO
2. ALL BOLTS TO BE SLIP-CRITICAL



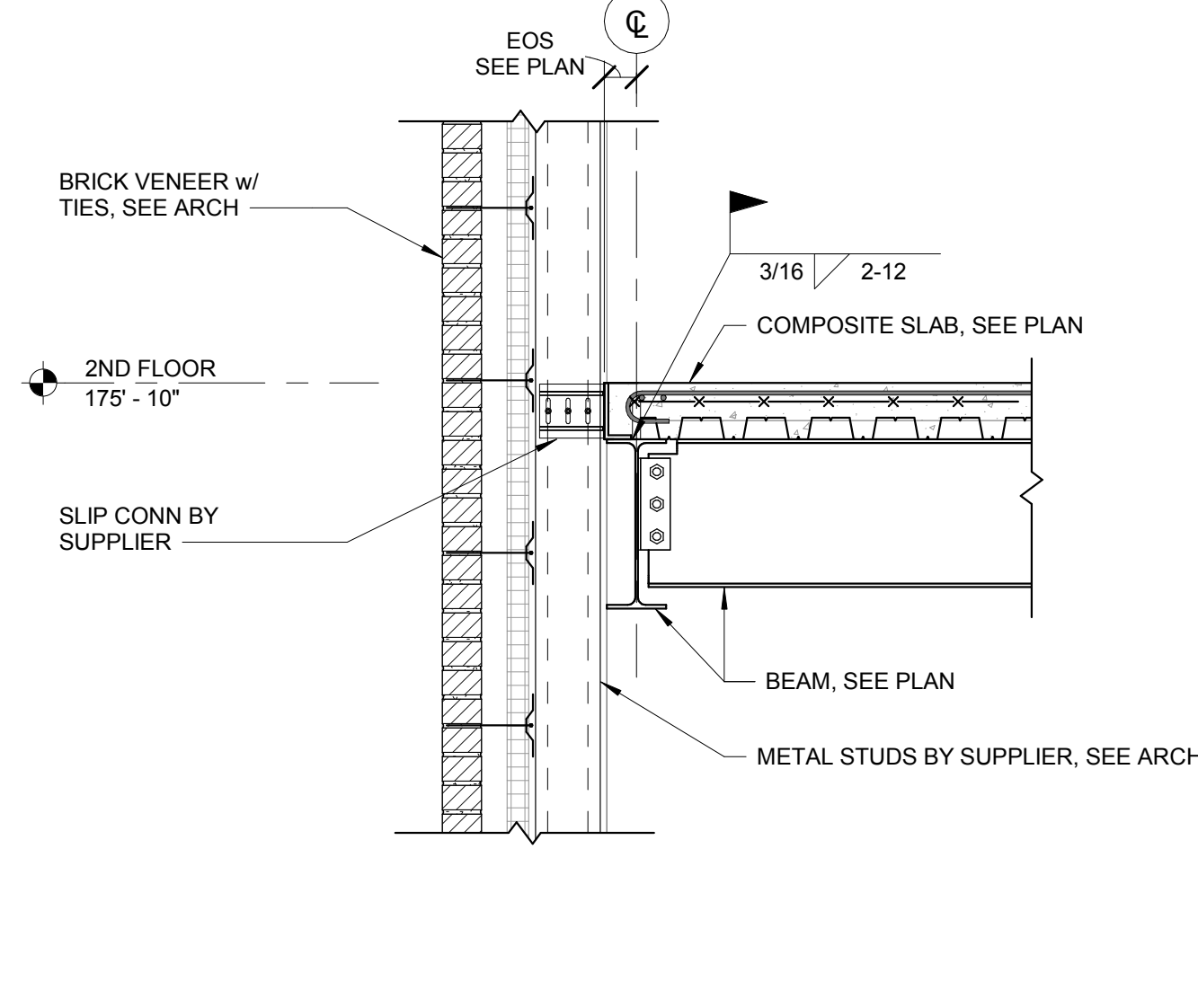
6E MOMENT CONNECTION DETAIL
S312 NOT TO SCALE
NOTES:
1. SEE PLAN FOR BEAM SIZES AND CONNECTION LOADS, UNO.
2. ALL BOLTS TO BE SLIP-CRITICAL.
3. FABRICATOR'S ENGINEER TO CHECK COL FOR STIFFENER AND DOUBLER REQUIREMENTS FOR MOMENT INDICATED.



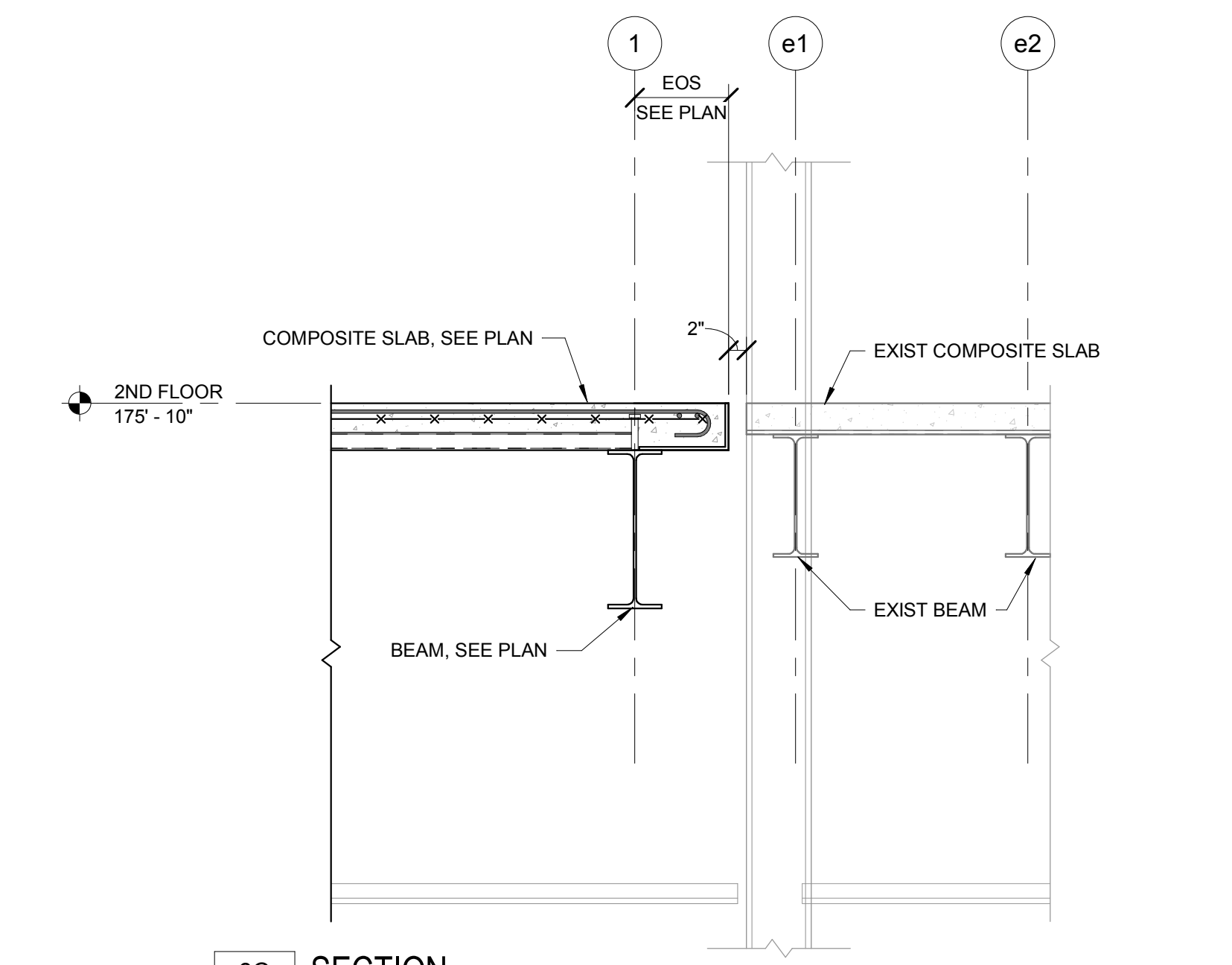
1C TYPICAL CONCRETE EQUIPMENT PAD, ELEVATED SLAB ON METAL DECK
S312 3/4" = 1'-0"
NOTES:
1. THE EXACT SIZE, SHAPE, AND LOCATION OF EQUIPMENT (HOUSEKEEPING) PADS SHALL BE DETERMINED BY THE CONTRACTOR AFTER APPROVAL OF EQUIPMENT SHOP DRAWINGS, ANCHOR RODS, WHERE REQUIRED, SHALL BE SIZED AND LOCATED ACCORDING TO THE SUPPLIER'S REQUIREMENTS.



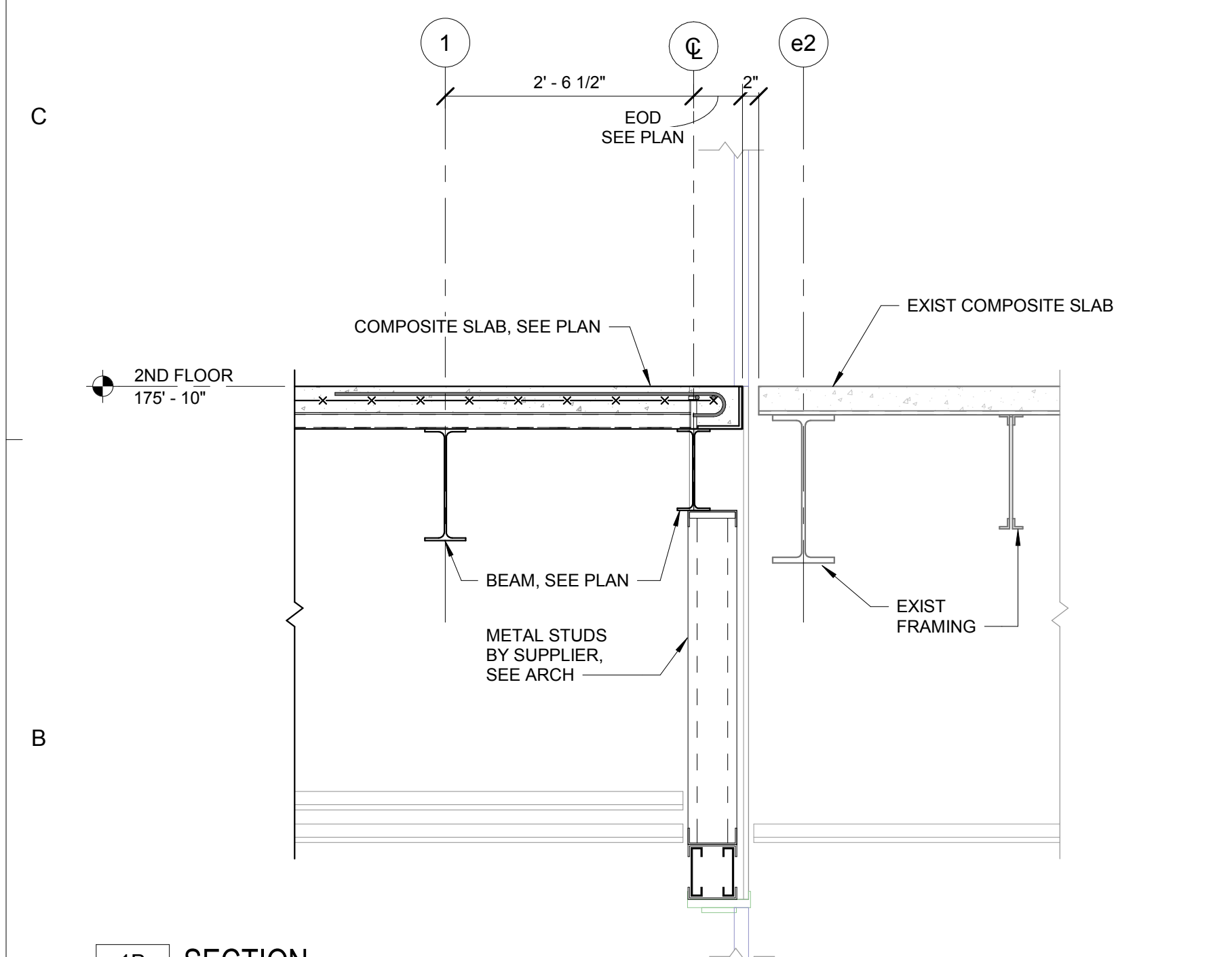
3C MASONRY VENEER LOOSE LINTEL SCHEDULE
S312 NOT TO SCALE
NOTES:
1. USE THIS SCHEDULE AT OPENINGS IN MASONRY VENEER WHERE LINTELS ARE NOT INDICATED ON PLANS OR DETAILS.
2. BEAR LINTEL ANGLES 8° MINIMUM ON MASONRY EACH END.
3. ALL EXTERIOR LINTELS TO BE HOT-DIPPED GALVANIZED.
4. SEE ARCHITECTURAL DRAWINGS FOR OPENING LOCATIONS AND DIMENSIONS.



4C SECTION
S312 3/4" = 1'-0"



6C SECTION
S312 3/4" = 1'-0"



1B SECTION
S312 3/4" = 1'-0"

