GENERAL NOTES

CODE:

INTERNATIONAL BUILDING CODE, 2018 EDITION

GENERAL NOTES:

1. THE DRAWINGS REPRESENT THE FINISHED STRUCTURE, NOT THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, BRACING, SHORING FOR CONSTRUCTION LOADS AND EQUIPMENT, ETC. THE ARCHITECT-ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS AND METHODS, SEQUENCES OF CONSTRUCTION, OR THE SAFETY PROGRAM. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT-ENGINEER WILL NOT INVOLVE REVIEW OF THESE ITEMS.

2. CONTRACTOR IS TO ESTABLISH AND VERIFY OPENINGS AND INSERTS FOR ITEMS TO BE INSTALLED BY OTHER TRADES PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND CONSTRUCTION.

3. CONSTRUCTION MATERIAL AND EQUIPMENT PLACED ON FRAMED CONSTRUCTIONS SHALL BE SUCH THAT THE LOAD DOES NOT EXCEED THE DESIGN LIVE LOAD OF THE CONSTRUCTION. PROVIDE SHORING OF CONSTRUCTIONS WHERE NECESSARY FOR LOADS.

4. DETAILS THAT ARE NOTED AS "TYP." ON DETAIL TITLES ARE TO BE APPLIED TO THE PROJECT CONSTRUCTION AS GENERAL CONSTRUCTION METHODS UNLESS NOTED OTHERWISE. THESE DETAILS ARE NOT CUT AT ALL LOCATIONS THEY OCCUR AND MAY NOT BE CUT AT ALL. WHERE NO SPECIFIC DETAILS ARE SHOWN CONSTRUCTION SHALL CONFORM TO SIMILAR CONDITIONS ELSE WHERE ON THE PROJECT.

5. DO NOT SCALE DRAWINGS

6. THESE NOTES SHALL SUPPLEMENT THE PROJECT SPECIFICATIONS, WHICH SHALL BE REFERRED TO FOR ADDITIONAL REQUIREMENTS.

7. WHERE DISCREPANCIES OCCUR BETWEEN GENERAL NOTES, PLANS, DETAILS, AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN, UNLESS VERIFIED OTHERWISE BY THE ARCHITECT AND ENGINEER IN WRITING.

8. THESE DOCUMENTS SHALL NOT BE CONSTRUED AS STAND-ALONE DOCUMENTS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER CONSULTANTS WORK.

9. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE OF SHOP DRAWINGS SUBMITTALS OR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT BY DLR GROUP.

10. IF THE STRUCTURAL ENGINEER'S SEAL AND SIGNATURE IS NOT AFFIXED TO THESE DRAWINGS, THESE DRAWINGS ARE INTENDED FOR PRELIMINARY PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION.

DESIGN DEAD LOADS:

ROOF: 25 PSF
FLOOR: 25 PSF (SUPERIMPOSED)

DESIGN LIVE LOADS:

ROOF: 20 PSF (REDUCIBLE IN ACCORDANCE WITH IBC 1607.12)
ROOF: SNOW LOADS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE SECTION 1608, INCLUDING AND CHAPTER 7 OF ASCE 7, INCLUDING DRIFT SNOW LOADS.
Pf = Ce x I x Pg   Ce = 1.0   I = 1.10   Pg = 20 PSF   Pf = 22 PSF
AT AUXILIARY GYM (STORM SHELTER)
I = 1.20   Pf = 24 PSF
DRIFTING SNOW LOADS - SEE SNOW DRIFT PLANS: DRIFT LOADS ARE IN ADDITION TO FLAT ROOF SNOW LOADS AND SHALL BE COMBINED WITH OTHER LOADS NOTED IN ACCORDANCE WITH THE BUILDING CODE PRESCRIBED COMBINATIONS. SEE S0.3 FOR DRIFT PLAN.

FLOORS:

40 PSF (CLASSROOMS)
50 PSF (OFFICE)
100 PSF (CORRIDORS)
125 PSF (STORAGE ROOMS)
125 PSF (MECHANICAL ROOMS)

WIND LOAD:

RISK CATEGORY III
BASIC WIND SPEED, V = 120 MPH
RISK CATEGORY IV AT AUXILIARY GYM (STORM SHELTER)
BASIC WIND SPEED, V = 125 MPH
EXPOSURE "C"

STORM SHELTER LOADS & CRITERIA:

1. SEE STRUCTURAL PLANS FOR LOCATION OF STORM SHELTER. SEE S0.4 FOR ADDITIONAL CRITERIA. STRUCTURAL DESIGN IS BASED ON STRUCTURAL RECOMMENDATIONS LISTED IN ICC 500-2014 "STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS".

2. REFER TO ARCHITECTURAL, CIVIL, AND MEP DRAWINGS FOR DOOR AND WINDOW HARDWARE, ETC TO COMPLY WITH HARDENED AREA REQUIREMENTS.

3. ALL COMPONENTS THAT MAKE UP THE HARDENED AREA INCLUDING DEFERRED SUBMITTALS SHALL BE DESIGNED IN STRICT ACCORDANCE ICC 500-2014. CALCULATIONS SHALL BE PROVIDED AT EACH CONNECTION FOR VERIFICATION OF LOAD PATH.

4. STORM SHELTER WALL AND SLAB ASSEMBLIES HAVE BEEN SELECTED BASED ON ICC 500 RECOMMENDATIONS. NO ADDITIONAL TESTING OR ANALYSIS HAS BEEN PERFORMED TO ESTIMATE DYNAMIC IMPACT OF OBJECTS FOUND IN THE ACTUAL ENVIRONMENT AGAINST THE HARDENED STRUCTURE.

SEISMIC LOAD:

SEISMIC DESIGN IS IN ACCORDANCE WITH IBC, RISK CATEGORY PER TABLE 1604.5 IS CATEGORY III,
S1 = 0.069
SS = 0.101
I = 1.25
I = 1.50 AT AUXILIARY GYM (STORM SHELTER)
SITE CLASS = C
SDS = 0.107
SD1 = 0.110
DESIGN CATEGORY 'B'
DESIGN CATEGORY 'C' AT AUXILIARY GYM (STORM SHELTER)
R = 3.0 Ωo = 3.0 Cd = 3.0 STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
R = 4.0; Ωo = 2.5 Cd = 4.0 INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
R = 4.0; Ωo = 2.5 Cd = 4.0 INTERMEDIATE PRECAST CONCRETE SHEAR WALLS

LATERAL LOAD RESISTANCE SYSTEM:

1. LATERAL LOAD SYSTEM CONSISTS OF FLOOR/ROOF DIAPHRAGMS TRANSFERRING LATERAL LOADS TO MASONRY/CONCRETE SHEAR WALLS/STRUCTURAL STEEL X-BRACING.

2. LATERAL LOAD SYSTEM CONSISTS OF FLOOR/ROOF DIAPHRAGMS TRANSFERRING LATERAL LOADS TO MOMENT RESISTING STEEL FRAMES.

3. STEEL FRAME IS A "NON-SELF-SUPPORTING" STEEL FRAME REQUIRING INTERACTION OF THE STEEL FRAMING,FLOOR/ROOF DIAPHRAGMS AND SHEAR WALLS/X-BRACING. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS NECESSARY TO PROVIDE SUPPORT OF FRAMING UNTIL ALL ATTACHMENTS ARE COMPLETE, INCLUDING STRUCTURAL STEEL, STRUCTURAL STEEL TO DIAPHRAGM/SHEAR WALLS, AND DIAPHRAGM TO SHEAR WALLS/BRACED FRAMES.

FOUNDATIONS:

1. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL INVESTIGATION PERFORMED BY COOK, FLATT & STROBEL ENGINEERS, P.A., JOB NO. 20-1074, DATED JUNE 8, 2020. A COPY OF THE GEOTECHNICAL INVESTIGATION REPORT IS INCLUDED IN THE PROJECT SPECIFICATIONS. BASED ON THE GEOTECHNICAL REPORT, THE FOLLOWING HAS BEEN ASSUMED:

-. MINIMUM FROST DEPTH =	3'-0".
- ALLOWABLE SOIL BEARING PRESSURE =	2,500 PSF
- EQUIVALENT ACTIVE (UNRESTRAINED) FLUID PRESSURE =	55 PCF
- EQUIVALENT AT-REST (RESTRAINED) FLUID PRESSURE =	75 PCF
- EQUIVALENT PASSIVE FLUID PRESSURE =	250 PCF
- COEFFICIENT OF FRICTION =	0.27

2. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL READ AND FAMILARIZE HIMSELF WITH THE GEOTECHNICAL REPORT. IF DISCREPANCIES EXIST BETWEEN PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN, UNLESS DETERMINED OTHERWISE BY THE ENGINEER.

3. ALL FOUNDATION WALLS ARE DESIGNED TO BE RESTRAINED IN THE COMPLETED STRUCTURE, UNLESS OTHER-WISE NOTED. CONNECTING CONSTRUCTION SHALL BE INSTALLED, INCLUDING INSTALLATION OF FLOOR/ ROOF DIAPHRAGM AND THEIR ATTACHMENTS, PRIOR TO BACKFILLING WALL. CONCRETE DIAPHRAGMS SHALL REACH 75% OF REQUIRED 28 DAY COMPRESSIVE STRENGTH PRIOR TO BACKFILLING.

4. WALLS ARE NOT DESIGNED TO WITHSTAND TEMPORARY CONSTRUCTION LOADS, INCLUDING WIND AND SEISMIC. CONTRACTOR'S ENGINEER IS RESPONSIBLE FOR DESIGN OF TEMPORARY SHORING.

5. BACKFILLING AGAINST FOUNDATION WALLS WHERE GRADE IS PRESENT ON BOTH SIDES SHALL BE PERFORMED SUCH THAT THE DIFFERENCE IN SOIL HEIGHT ON EACH SIDE DOES NOT EXCEED 2 FEET.

6. TEMPORARY FROST PROTECTION SHALL BE PROVIDED DURING COLD WEATHER FOR ALL FOUNDATIONS.

7. CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF ALL EXCAVATIONS.

CONCRETE CONSTRUCTION:

1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 301 AND ACI 318.

2. PROVIDE A FORMED CONSTRUCTION KEYWAY BETWEEN ALL HORIZONTAL AND VERTICAL POUR EDGES EXCEPT CONCRETE TOPPING SLABS. PROVIDE WATERSTOPS FOR ALL CONSTRUCTION JOINTS BELOW WATER TABLE AND WHERE INTERIOR SLAB-ON-GRADE IS BELOW EXTERIOR GRADE.

3. CONCRETE SHALL BE MECHANICALLY CONSOLIDATED IN ACCORDANCE WITH ACI 309.

4. CONTROL (CONTRACTION OR CONSTRUCTION) JOINTS SHALL BOUND ALL CONCRETE SLABS ON GRADE AS SHOWN ON THE DRAWINGS.

5. PROVIDE DOVETAIL ANCHOR SLOTS WHERE MASONRY/STONE IS VENEERED TO CONCRETE. PLACE SLOTS VERTICALLY AT 32-INCHES OC MAXIMUM. PROVIDE DOVETAIL ANCHOR FOR EACH TWO SQUARE FEET OF VENEER SURFACE.

CONCRETE REINFORCEMENT:

1. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706, GRADE 60.

2. CONCRETE COVER REQUIREMENTS FOR CAST-IN-PLACE, NON-PRESTRESSED CONCRETE UNLESS OTHERWISE NOTED ON DETAILS:

a. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
b. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 BARS AND LARGER:	2"
#5 BARS AND SMALLER:	1 1/2"
c. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH:	
SLABS, WALLS, AND JOISTS:	
#14 AND #18 BARS:	1 1/2"
#11 BARS AND SMALLER:	1"
d. BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT:	2"
TIES, STIRRUPS, SPIRALS:	1 1/2"

3. REINFORCING BAR SPLICES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-14 AND THE REINFORCING SPLICE LENGTH TABLE SHOWN ON THE DRAWINGS. PROVIDE CLASS 'B' LAP SPLICE, UNO.

4. ALL REINFORCING SHALL BE PROPERLY CHAIRED BY THE CONTRACTOR. SECURE ALL REINFOCEMENT IN PLACE PRIOR TO CONCRETE POUR PER SPECIFICATIONS. DO NOT WET STICK REINFOCEMENT OR EMBEDED ITEMS INTO CONCRETE.

5. LAP ALL WELDED WIRE REINFORCING AT LEAST ONE FULL WIRE SPACING PLUS 2 INCHES.

6. MECHANICAL COUPLERS SHALL BE TYPE 2 COUPLERS CAPABLE OF SUSTAINING 125% Fy.

CAST-IN-PLACE CONCRETE:

1. PROPORTION EACH INDIVIDUAL CONCRETE MIX TO HAVE THE FOLLOWING PROPERTIES:

LOCATION	28 DAY F'c	MIX TYPE	MAX W/C	MAX AGG	EXP CLASS
CONCRETE OVER STEEL DECK	4,000 PSI	NWT	0.45	3/4"	F0, C0
FOUNDATIONS/WALLS*	4,500 PSI	NWT	0.45	3/4"	F1, C1
INTERIOR SLABS-ON-GRADE	4,000 PSI	NWT	0.45	1"	F0, C0.
EXTERIOR SLABS-ON-GRADE*	5,000 PSI	NWT	0.40	1"	F3, C2

NWT = NORMAL WEIGHT CONCRETE (UNIT WEIGHT = 145PCF)
LWT = LIGHT WEIGHT CONCRETE (UNIT WEIGHT = 110 PCF)
* 6% ±1 1/2% AIR ENTRAINED CONCRETE AT ALL EXTERIOR CONDITIONS INCLUDING SHALLOW FOUNDATIONS.

2. CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE A SLUMP NOT EXCEEDING 3" PRIOR TO ADDING ADMIXTURE AND NOT EXCEEDING 8" AT PLACEMENT

3. THE ADDITION OF WATER TO A CONCRETE BATCH WITH INSUFFICIENT SLUMP SHALL NOT BE PERMITTED

4. SUBSTITUTION OF FLYASH FOR PORTLAND CEMENT IN SLABS ON GRADE AND STRUCTURAL SLABS SHALL NOT BE PERMITTED.

5. ALL CONCRETE SHALL BE PROPORTIONED FOR A MAXIMUM ALLOWABLE UNIT SHRINKAGE OF 0.04% MEASURED AT 28 DAYS AFTER CURING IN LIME WATER AS DETERMINED BY ASTM C157 USING AIR STORAGE. PROVIDE TEST RESULTS WITH MIXTURE DESIGN.

CONTINUOUS FOOTINGS:

1. CONTINUOUS FOOTING REINFORCING SHALL CONTINUE THROUGH ISOLATED SPREAD FOOTINGS WHERE THEY OCCUR.

2. PROVIDE CLASS 'A' LAP SPLICES FOR ALL TOP AND BOTTOM BARS WHERE LAP SPLICES ARE REQUIRED.

3. TOP FOOTING REINFORCING SHALL TERMINATE AT TEE AND CORNER INTERSECTIONS WITH A STANDARD 90 DEGREE HOOK. ALL REINFORCING AT INTERSECTIONS SHALL EXTEND TO THE FAR FACE OF THE INTERSECTING FOOTING.

4. CONSTRUCTION JOINT LOCATIONS SHALL NOT OCCUR WITHIN EXTENTS OF ISOLATED SPREAD FOOTINGS

5. CONTINUOUS FOOTINGS SHALL NOT HAVE CONSTRUCTION JOINTS IN A HORIZONTAL PLANE.

6. WHERE FOOTING EXCAVATIONS ARE MADE NEATLY, SIDES MAY BE CAST AGAINST THE EARTH CUT. PROVIDE 4" MINIMUM COVER FOR ALL REINFORCING CAST AGAINST EARTH, INCLUDING BOTTOM AND SIDES OF FOOTINGS, WHERE APPLICABLE.

SLABS ON GRADE AND ELEVATED SLABS:

1. ALL SLABS ON GRADE SHALL BE CAST ON A 15 MIL VAPOR BARRIER (RE: SPECS) INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS, PLACED OVER CRUSHED ROCK DRAINAGE MATERIAL TO FORM A CAPILARY BREAK OF THICKNESS NOTED ON DRAWINGS, BUT NOT LESS THAN THAT PRESCRIBED BY THE GEOTECHNICAL ENGINEER.

2. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE PROJE CT SPECIFICATIONS. CONTRACTOR SHALL READ AND FAMILARIZE HIMSELF WITH THE GEOTECHNICAL REPORT. IF DISCREPANCIES EXIST BETWEEN PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT, THE MOST STRINGENT REQUIREMENTS SHALLGOVERN.

3. ALL SLABS SHOWN ON STRUCTURAL DRAWINGS REQUIRE REINFORCING. UNLESS OTHERWISE CALLED OUT ON DRAWINGS, REINFORCE SLABS WITH 6X6 W2.1XW2.1 WELDED WIRE REINFORCING.

4. ALL PIPING AND CONDUIT INSTALLED BELOW SLABS ON GRADE SHALL BE INSTALLED ENTIRELY BELOW THE BOTTOM OF THE SLAB, WITH NO ENCROACHMENT UP INTO THE BOTTOM OF THE SLAB.

5. PIPING AND CONDUIT SHALL NOT BE INSTALLED IN ELEVATED SLABS. ROUTE ALL PIPING AND CONDUIT BELOW STRUCTURE.

STRUCTURAL PRECAST CONCRETE:

1. FABRICATOR SHALL BE AN "APPROVED FABRICATOR" IN ACCORDANCE WITH IBC SECTION 1704.2, REGISTERED AND APPROVED BY THE LOCAL BUILDING DEPARTMENT.

2. PROVIDE UNITS AS SHOWN ON THE DRAWINGS. MINIMUM 28-DAY CONCRETE COMPRESSIVE STRENGTH SHALL NOT BE LESS THAN 5,000 PSI. HOLLOW CORE JOINTS SHALL BE GROUTED SOLID. DOUBLE TEE FLANGES SHALL BE CONNECTED IN ACCORDANCE WITH MANUFACTURER'S STANDARD DETAIL TO RESIST A SHEAR LOAD OF 1,000 LBS/FT VERTICALLY AND HORIZONTALLY.

3. A QUALIFIED ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED SHALL DESIGN THE UNITS. UNITS SHALL BE DESIGNED FOR CONSTRUCTION, HANDLING, ERECTION, AND IN-PLACE CODE PRESCRIBED LOADS AND ANY ADDITIONAL LOADS SHOWN ON THE DRAWINGS. ALL CONNECTIONS AND EMBEDS SHALL BE BY THE UNIT MANUFACTURER INCLUDING CONNECTION TO THE FOUNDATIONS.

4. DESIGN WALL PANEL UNITS FOR VERTICAL DEAD AND LIVE LOADS, WIND/SEISMIC LOADS PERPENDICULAR TO PANEL FACE, AS PREVIOUSLY NOTED, AND SEISMIC LOAD PARALLEL TO PANEL FACE TO MATCH DIAPHRAGM CONNECTION CAPACITY (SEE DETAILS FOR CONNECTION CAPACITY). IN ADDITION, DESIGN FOR SPECIAL LOADS WHERE SHOWN ON THE DRAWINGS.

5. PRECAST SUPPLIER IS RESPONSIBLE FOR DESIGN, DETAILING AND FURNISHING OF ALL HEADERS, POUR STRIPS, UNIT LAYOUT, OPENINGS THROUGH FLOOR, ETC., AS NECESSARY TO PROVIDE FOR A COMPLETE INSTALLATION.

6. UNITS SHALL HAVE ONE HOUR UNRESTRAINED FIRE RESISTANCE RATING IN ACCORDANCE WITH UL J949 AND SHALL HAVE UL LABELS.

7. ALL OPENINGS REQUIRING CUTTING OF STRANDS SHALL BE BY UNIT MANUFACTURER. COORDINATE WITH MECHANICAL, ELECTRICAL AND OTHER TRADES INVOLVED.

8. DEFLECTION OF PRECAST FLOOR FRAMING MEMBERS NOT SUPPORTING MASONRY BEARING OR PARTITION WALLS ABOVE SHALL NOT EXCEED SPAN/480 FOR FULL DEAD AND LIVE LOAD INCLUDING LONG TERM DEFLECTIONS DUE TO ALL SUSTAINED LOADS.

9. DEFLECTION OF PRECAST ROOF OR FLOOR FRAMING MEMBERS SUPPORTING MASONRY WALLS ABOVE SHALL NOT EXCEED SPAN/600 FOR LIVE LOAD ONLY, AND NOT TO EXCEED SPAN/240 FOR DEAD AND LIVE LOADS.

10. PRECAST DESIGN SHALL COMPLY WITH ALL ICC 500-2014 REQUIREMENTS AND A SET OF CALCULATIONS SHALL BE SUBMITTED FOR REVIEW.

11. PRECAST SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE LICENSED ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

12. COORDINATE WITH ALL OTHER TRADES WHICH PRECAST CONCRETE INTERACTS. THIS INCLUDES BUT IS NOT LIMITED TO COORDINATING WITH MASONRY, STEEL, CAST-IN-PLACE CONCRETE, JOIST, AND METAL DECK SUPPLIERS. WHERE MISALIGNMENT OF STEEL EMBEDDED PLATES DUE IMPROPER COORDINATION OCCURS, THE CONTRACTOR SHALL HIRE AN ENGINEER LICENSED IN THE STATE WHICH THE PROJECT IS LOCATED TO PRODUCE A REPAIR AND SUBMIT THE REPAIR DETAIL WITH CALCULATIONS TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION..

13. INSULATED PRECAST "SANDWICH" PANELS SHALL BE DESIGNED BY THE PRECAST SUPPLIER AS A NON-COMPOSITE WALL SYSTEM COMPRISED OF AN INTERIOR LOAD-BEARING STRUCTURAL WYTHE, AND LAYER OF RIGID INSULATION, AND AN EXTERIOR NON-LOAD BEARING ARCHITECTURAL WYTHE. EVERY EFFORT SHALL BE MADE BY THE PRECAST SUPPLIER TO DETAIL WALL PANELS AND CONNECTIONS TO AVOID THERMAL BRIDGING BETWEEN ARCHITECTURAL AND STRUCTURAL WYTHES.

CONCRETE TOPPING SLABS:

1. TOPPING THICKNESS SHOWN ON PLAN IS NOMINAL. ACTUAL THICKNESS WILL VARY DUE TO PRECAST CAMBER AND/OR STRUCTURE DEFLECTIONS. PROVIDE THICKNESS AS REQUIRED TO ACHIEVE A LEVEL FLOOR WITH A MINIMUM ACTUAL THICKNESS THE THICKNESS CALLED OUT ON PLAN MINUS 1/2-INCH.

2. UNLESS OTHERWISE NOTED ON PLAN OR DETAIL, PROVIDE 1 #4 IN TOPPING SLAB EACH SIDE OF OPENINGS EXCEEDING 12 INCHES IN SIZE. EXTEND REINFORCING 1'-6" PAST CORNER OF OPENING.

3. ALL TOPPING SLABS SHALL BE REINFORCED WITH #4 @ 12" O.C. EW, UNLESS OTHERWISE NOTED. WELDED WIRE FABRIC IN THE TOPPING SHALL BE FLAT SHEETS CENTERED IN THE TOPPING THICKNESS AND CHAIRED TO MAINTAIN ITS CORRECT LOCATION. LAP ONE FULL MESH AT SPLICES AND WIRE TOGETHER.

4. PROVIDE CONTROL JOINTS IN TOPPING SLAB ONLY WHERE SHOWN ON THE STRUCTURAL DRAWINGS. CONTROL JOINT DEPTH SHALL BE NO MORE THAN 1/4 TOPPING THICKNESS.

CONCRETE MASONRY UNITS (CMU):

1. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF THE CONCRETE MASONRY UNITS SHALL BE 2,650 PSI ON THE NET AREA, PROVIDING A STRUCTURAL DESIGN COMPRESSIVE STRENGTH OF 2,000 PSI PER THE INTERNATIONAL BUILDING CODE, SECTION 2105.1 SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 602 TABLE 2).

2. NOT USED

3. MORTAR SHALL BE TYPE N ABOVE BASE FLASHING AND TYPE S BELOW BASE FLASHING IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, SECTION 2103.9 MORTAR PROPORTIONS. RE: SPECIFICATIONS (MASONRY CEMENT IS NOT ACCEPTABLE).

4. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF GROUT SHALL BE THE GREATER OF 3,000 PSI OR THE COMPRESSIVE STRENGTH OF THE MASONRY UNITS, TESTED PER ASTM C 1019. GROUT SHALL CONFORM TO ASTM C476. DO NOT USE AIR ENTRAINMENT AND OTHER ADDITIVES UNLESS ACCEPTABLE IN GROUT MIX. GROUT SHALL HAVE A SLUMP OF 8 TO 11 INCHES. EXCEPT FOR SELF CONSOLIDATING GROUT.

5. MASONRY REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706, GRADE 60.

6. HORIZONTAL JOINT REINFORCING SHALL COMPLY WITH ASTM A 951 AND BE STANDARD LADDER TYPE, GALVANIZED, AT 16-INCHES ON CENTER, UNLESS OTHERWISE NOTED ON PLAN. SPACE JOINT REINFORCING AT 8-INCHES ON CENTER AT NON-CAVITY MULTIWYTHE WALLS. COLLAR JOINT BETWEEN WYTHES OF NON-CAVITY MULTIWYTHE WALLS ARE TO BE MORTARED/GROUTED SOLID.

7. MINIMUM BOND BEAM REINFORCING SHALL BE (2) #5 IN 6" AND 8" WIDE BOND BEAMS AND (2) #6 IN 12" WIDE BOND BEAMS. BOND BEAM REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS EXCEPT AS NOTED ON TYPICAL MASONRY WALL OPENING DETAIL.

8. SPLICE LENGTHS FOR MASONRY REINFORCEMENT SHALL BE IN 72 TIMES THE REINFORCING BAR DIAMETER, UNLESS NOTED OTHERWISE.

9. PROVIDE BOND BEAMS AT TOP AND BOTTOM OF ALL WALLS, AT ROOFS, STRUCTURAL FLOORS, AND WHERE SHOWN ON THE DRAWINGS.

10. REINFORCING SHALL BE HELD IN PLACE PRIOR TO GROUTING WITH WIRE POSITIONERS PLACED AT INTERVALS NOT EXCEEDING 192 BAR DIAMETERS NOR 10 FEET. PROVIDE POSITIONERS AT REINFORCING SPLICES. MININMUM 2 POSITIONERS PER GROUT POUR.

11. VERTICAL REINFORCING SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLANS OR DETAILS.

8" CONC. BLOCK	(1) #5 @ 24" OC
12" CONC. BLOCK	(2) #5 @ 24" OC

12. PROVIDE BOND BEAMS AT 48"OC (MAXIMUM) VERTICALLY WHERE STACK BOND CMU WALLS OCCUR. (REFER TO ARCHITECTURAL DRAWINGS)

13. PROVIDE VERTICAL REINFORCING AT JAMB OPENINGS, ENDS AND CORNERS OF ALL WALLS AND EACH SIDE OF CONTROL JOINTS. SPECIAL JAMB REINFORCING, WHERE REQUIRED, IS CALLED OUT ON THE PLANS.

14. VERTICAL REINFORCING REQUIRED BY THESE NOTES OR SHOWN ON THE FOUNDATION PLANS SHALL EXTEND FROM FOUNDATION TO TOP OF WALL UNLESS OTHERWISE NOTED.

15. ELECTRICAL PANELS, CONDUITS, PIPES, FIRE EXTINGUISHER CABINETS, ETC., ARE TO BE LOCATED SO AS NOT TO INTERFERE WITH REINFORCED AND/OR GROUTED CELLS. PIPES AND CONDUITS PASSING HORIZONTALLY THROUGH WALLS SHALL BE SLEEVED. MINIMUM SPACING OF SLEEVES SHALL BE THREE DIAMETERS.

16. ALL MASONRY BELOW HIGHEST ADJACENT GRADE SHALL BE GROUTED SOLID.

17. GROUT SHALL BE MECHANICALLY CONSOLIDATED IN A MANNER TO FILL THE GROUT SPACE AND RECONSOLIDATED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MASONRY BUILDINGS TM S602, SECTION 3.5E.

18. PROVIDE GROUT AND MASONRY UNIT TESTING PRIOR TO AND DURING CONSTRUCTION IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

19. TESTING LABORATORY, IN ACCORDANCE WITH IBC REQUIREMENTS, SHALL INSPECT REINFORCEMENT PLACEMENT, GROUT SPACES AND GROUTING OPERATION. MORTAR FINAL PROJECTION INTO THE GROUT SPACE SHALL NOT EXCEED 1/2 INCH.

20. WHERE STONE IS VENEERED TO MASONRY, PROVIDE TRUSS TYPE (GALV.) JOINT REINFORCING AT 16 INCHES ON CENTER WITH "EYES".

21. SPACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0". REGARDLESS OF JOINT LAYOUT SHOWN ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL NOT PLACE CONTROL JOINTS ABOVE / BELOW OPENINGS OR WITHIN SCHEDULED JAMB EXTENTS. CONTROL JOINTS SHALL NOT JOG HORIZONTALLY, UNLESS NOTED OTHERWISE.

22. SUBMIT SHOP DRAWINGS WITH PLANS AND ELEVATIONS CLEARLY INDICATING REBAR SIZE, SPACING, LAP LENGTHS, LINTELS, JAMBS, CONTROL JOINT LOCATIONS, FOOTING, SLAB, AND ROOF ELEVATIONS, WALL PENETRATIONS WITH DIMENSIONS, BOND BEAM ELEVATIONS, ETC . FOR REVIEW AND APPROVAL IN ADDITION TO ANY OTHER REQUIREMENTS LISTED INSPECIFICATIONS..

23. REFER TO ARCHITECTURAL DRAWINGS FOR ALL NON-LOAD BEARING CMU WALLS AND REINFORCE AS FOLLOWS UNLESS OTHERWISE NOTED:

6" AND 8" CMU:	(1) #4 @48" OC
12" CMU:	(2) #4 @48"OC

24. ALL CMU WALL OPENINGS REQUIRE LINTELS AS DEFINED IN THE "TYPICAL MASONRY LINTEL DETAIL/ SCHEDULE."

25. REFER TO TYPICAL DETAILS FOR MASONRY DETAILS AND REQUIREMENTS NOT SHOWN IN SECTIONS OR PLANS

26. CONTRACTOR SHALL REMOVE AND REPLACE WALL AT HIS COST IF WALL IS FOUND TO BE CONSTRUCTED WITHOUT REBAR POSITIONERS.

27. ALL CMU LOAD BEARING WALLS REQUIRE LEVEL 2 SPECIAL INSPECTION PER IBC SECTION 1705.4, AND SHALL BE SPECIAL INSPECTED FOR REINFORCING PLACEMENT, SIZE, POSITIONERS, AND LAP LENGTHS PRIOR TO POURING GROUT.

STRUCTURAL STEEL:

1. FABRICATOR QUALIFICATIONS: A QUALIFIED FABRICATOR THAT PARTICIPATES IN THE AISC QUALITY CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED PLANT, CATEGORY STD AND AN "APPROVED FABRICATOR" IN ACCORDANCE WITH IBC SECTION 1704.2, REGISTERED AND APPROVED BY THE LOCAL BUILDING DEPARTMENT. AISC CERTIFICATION SHALL BE SHOWN CLEARLY ON THE SHOP DRAWINGS TO AVOID SHOP DRAWINGS BEING REJECTED.

2. ALL COMPLETE JOINT PENETRATION WELDS SHALL BE ULTRASONIC TESTED BY THE INSPECTION AGENCY.

3. STRUCTURAL STEEL SHALL MEET ASTM A36 UNLESS NOTED OTHERWISE. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL MEET ASTM A992 (GRADE 50).

4. STEEL TUBE SHALL MEET ASTM A500, GRADE B.

5. STEEL PIPE SHALL MEET ASTM A53, TYPE E OR S.

6. BOLTS AT STEEL TO STEEL CONNECTIONS SHALL BE 3/4-INCH DIAMETER, ASTM A325-N, AND TIGHTENED TO THE SNUG TIGHT CONDITION AS DEFINED BY AISC UNLESS OTHERWISE NOTED. WHERE CONNECTIONS ARE NOTED TO BE ASTM A 325-SC, BOLTS SHALL BE TIGHTENED TO THE MINIMUM PRETENSION FOR FULLY TIGHTENED BOLTS BY ONE OF THE AISC APPROVED METHODS.

7. ANCHOR BOLTS IN CONCRETE OR MASONRY SHALL BE 3/4-INCH DIAMETER ASTM F1554 GRADE 55, WELDABLE, UNLESS NOTED OTHERWISE.

8. FIELD BOLTING INSTALLATION SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND THE AISC MANUAL.

9. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF THE AMERICAN WELDING SOCIETY CODE AWS D1.1. ELECTRODES SHALL MATCH BASE METALS AS SPECIFIED IN IBC. ALL WELDING OF ASTM A706 REINFORCING STEEL TO STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AWS D1.4 USING E70 ELECTRODES.

10. THE TESTING LABORATORY SHALL VISUALLY INSPECT ALL FIELD WELDING. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.

11. ALL BOLTS (HIGH STRENGTH, ANCHOR BOLTS, EXPANSION BOLTS, ADHESIVE ANCHORS, ETC.) SHALL BE INSTALLED WITH STEEL WASHERS.

12. ALL WELDS SHOWN ON THE DRAWINGS SHALL BE SHOP WELDS UNLESS NOTED OTHERWISE. CONTRACTOR MAY SUBSTITUTE FIELD WELDS FOR SHOP WELDS AT HIS DISCRETION. SHOP DRAWINGS SHALL CLEARLY NOTE SHOP AND FIELD WELDS.

13. THE CONTRACTOR SHALL RETAIN AN PROFESSIONAL ENGINEER LICENSED IN THE STATE WHICH THE PROJECT IS LOCATED TO DESIGN ALL STEEL CONNECTIONS NOT FULLY DETAILED IN THE DRAWINGS. CONNECTION DESIGN CALCULATIONS BEARING THE SEAL AND SIGNATURE OF THE ENGINEER RESPONSIBLE FOR THEIR PREPARATION SHALL BE SUBMITTED WITH THE SHOP DRAWING SUBMITTAL.

14. CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE BUILDING SYSTEM AT ALL TIMES DURING THE ERECTION PROCESS. CONTRACTOR SHALL CONSIDER EFFECTS FROM WIND, SEISMIC, AND OTHER LOADING DURING CONSTRUCTION.

15. CONNECTIONS SHALL BE DESIGNED TO SUSTAIN THE FACTORED (LRFD) REACTIONS NOTED. WHERE NO REACTION HASBEEN PROVIDED, THE CONNECTION CAPACITY SHALL NOT BE LESS THAN ONE-HALF THE MAXIMUM FACTORED UNIFORMLOAD LISTED IN THE AISC CONSTRUCTION MANUAL FOR THE GIVEN SPAN.

16. ALL BOLTED MOMENT CONNECTIONS SHALL UTILIZE HIGH STRENGTH SLIP CRITICAL BOLTS.

17. CONNECTIONS SHOWN ON CONSTRUCTION DOCUMENTS ARE FOR CONCEPTUAL PURPOSES ONLY.

18. COORDINATE WITH ALL OTHER TRADES WHICH STEEL INTERACTS. THIS INCLUDES BUT IS NOT LIMITED TO COORDINATING WITH MASONRY, PRECAST CONCRETE, CAST-IN-PLACE CONCRETE, JOIST, AND METAL DECK SUPPLIERS. WHERE MISALIGNMENT OF STEEL CONNECTIONS DUE IMPROPER COORDINATION OCCURS, THE CONTRACTOR SHALL HIRE AN ENGINEER LICENSED IN THE STATE WHICH THE PROJECT IS LOCATED TO PRODUCE A REPAIR AND SUBMIT THE REPAIR DETAIL WITH CALCULATIONS TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

19. CONTRACTOR IS RESPONSIBLE FOR DESIGNING ALL STEEL BRACE CONNECTIONS FOR THE ULTIMATE MEMBER FORCES SHOWN IN ACCORDANCE WITH AISC LRFD SPECIFICATIONS. IF A MEMBER FORCE IS NOT SHOWN, THE CONNECTION SHALL BE DESIGNED FOR THE FULL TENSION CAPACITY OF THE MEMBER. CONNECTIONS SHALL BE DESIGNED TO TRANSFER THE MAXIMUM COMBINATION OF THE FORCES OF ALL MEMBERS, FRAMING INTO THE JOINT.

20. ALL MEMBER FORCES SHOWN ARE TO BE TRANSFERRED TO THE WORK POINT. THE WORK POINT IS DEFINED AS THE INTERSECTION OF ALL CENTROIDS OF THE MEMBERS FRAMING INTO THE JOINT. AT BRACED FRAMES WHERE HORIZONTAL MEMBERS FRAMING INTO THE JOINT HAVE VARYING DEPTHS, AND SIMILAR TOP OF STEEL ELEVATIONS, THE WORK POINT SHALL BE BASED ON THE CENTER LINE OF THE HORIZONTAL MEMBER OF LEAST DEPTH (IE, THE WORKPOINT WILL NOT NECESSARILY CORRESPOND TO THE DEEPER MEMBER).

21 THE MEMBER SIZES SHOWN ON THE DRAWINGS DO NOT ACCOUNT FOR NET AREA REDUCTION DUE TO BOLT HOLES. PROVIDE SHOP WELDED MEMBER END SUPPLEMENT PLATES WHERE REQUIRED FOR BOLT HOLE NET-AREA REDUCTION. ALL MEMBER END SUPPLEMENT PLATES, SPLICE PLATES, FILLER PLATES AND GUSSET PLATES OF TRUSS CONNECTIONS SHALL BE ASTM A572, GRADE 50.

COMPOSITE BEAM SHEAR CONNECTOR STUDS:

1. SHEAR STUDS SHALL BE 3/4-INCH DIAMETER 5" LENGTH SHOWN ON PLANS, WITH A FINAL LENGTH NOT LESS THAN DEPTH OF DECK PLUS 1.5" CONFORMING TO AWS D1.1. PROVIDE SHEAR STUDS AT 2'-0" OC MAXIMUM FOR BEAMS ALL BEAMS SUPPORING SLAB WITHOUT A DESIGNATED STUD QUANTITY.

2. NUMBER OF SHEAR STUDS INDICATED THUS (#) ON PLAN. WHERE THE NUMBER OF STUDS FOR A BEAM IS INDICATED ON THE PLAN BY ONE NUMBER, STUDS SHALL BE PLACED SYMMETRICALLY WITH RESPECT TO THE BEAM CENTER LINE WITH 1/2 OF THE STUDS ON EACH HALF OF THE BEAM. WHERE NUMBER OF STUDS IS INDICATED BY MORE THAN ONE NUMBER, PLACE THE NUMBER OF STUDS INDICATED BY EACH NUMBER UNIFORMLY IN THAT PORTION OF THE BEAM.

3. STUD PLACEMENT WHEN DECK VALLEYS ARE PERPENDICULAR TO BEAM:

a. PLACE ONE STUD IN DECK VALLEYS, UNIFORMLY ALONG THE BEAM OR PORTION OF BEAM INDICATED, CENTERED OVER THE BEAM WEB. IF THE REQUIRED NUMBER OF STUDS IS LESS THAN THE NUMBER OF DECK VALLEYS, ADD STUDS AS REQUIRED TO PROVIDE A MAXIMUM STUD SPACING OF 2'-0". IF THE REQUIRED NUMBER OF STUDS EXCEEDS THE NUMBER OF DECK VALLEYS, SEE FOLLOWING NOTE.

b. WHEN THE REQUIRED NUMBER OF STUDS EXCEEDS THE NUMBER OF DECK VALLEYS, ADD A SECOND STUD IN DECK VALLEYS UNIFORMLY ALONG THE BEAM OR PORTION OF BEAM INDICATED UNTIL THE REQUIRED NUMBER OF STUDS IS REACHED. WHEN TWO STUDS ARE REQUIRED IN A DECK VALLEY, PLACE THE STUDS 1 1/2" EACH SIDE OF THE BEAM WEB CENTERLINE.

4. STUD PLACEMENT WHEN DECK VALLEYS ARE PARALLEL TO BEAM:

a. PLACE STUDS UNIFORMLY ALONG THE BEAM OR PORTION OF BEAM INDICATED. CENTER THE STUDS OVER THE WEB AND PROVIDE A MAXIMUM SPACING OF 2'-0" AND A MINIMUM SPACING OF 4 1/2". IF THE REQUIRED NUMBER OF STUDS EXCEEDS THE NUMBER OF STUDS PLACED AT A SPACING OF 4 1/2", SEE FOLLOWING NOTE.

b. WHEN THE REQUIRED NUMBER OF STUDS EXCEEDS WHAT CAN BE PLACED AT 4 1/2", PLACE A SECOND ROW OF STUDS AT 4 1/2", STARTING AT THE POINT NEAREST THE END OF THE BEAM, UNTIL THE REQUIRED NUMBER OF STUDS IS REACHED. WHEN TWO STUDS ARE REQUIRED, PLACE STUDS 1 1/2" EACH SIDE OF THE BEAM WEB CENTERLINE.

5. CAMBER BEAMS NOTED THUS (+1"). THIS EXAMPLE INDICATES A POSITIVE (UPWARD) CAMBER OF 1 INCH.

STEEL DECK:

1. STEEL DECK AND ACCESSOCRES SHALL BE FROM STEEL CONFORMING TO ASTM A1008 OR ASTM A653. ALL METAL DECKING SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS.

2. ROOF DECK SHALL HAVE A MINIMUM YIELD STRENGTH, FY =33 KSI

3. COMPOSITE DECK SHALL HAVE A MIMIMUM YIELD STRENGTH, FY = 50 KSI

4 ALL STEEL DECK SHALL HAVE ONE COAT OF MANUFACTURER'S STANDARD PRIMER PAINT, UNLESS OTHERWISE NOTED. COORDINATE ALL LOCATIONS, IF ANY, SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE SPRAY APPLIED FIREPROOFING TO BE ADHERED TO THE METAL DECK. AT SUCH LOCATIONS, HOT DIP GALVANIZE DECK IN ACCORDANCE WITH ASTM A653 WITH MINIMUM COATING OF G60, UNLESS OTHERWISE NOTED.

5. COMPOSITE DECK SHALL BE 18 GAGE MINIMUM, UNLESS OTHERWISE NOTED. REFER TO DRAWINGS AND SPECIFICATIONS FOR OTHER REQUIREMENTS.

6. DECK WELDING SHALL COMPLY WITH THE BUILDING CODE AND AWS D1.3 USING E70XX ELECTRODES.

7. ROOF DECK SHALL BE ATTACHED TO SUPPORTING STRUCTURAL MEMBERS TO RESIST 300PLF DIAPHRAGM SHEAR, UNLESS OTHERWISE NOTED ON DRAWINGS. ATTACH DECK AT PERIMETER TO MEET OR EXCEED THE MINIMUM FACTORY MUTUAL REQUIREMENTS DESIGNATED BY THE ARCHITECT WHERE APPLICABLE.

8. COMPOSITE DECK SHALL BE ATTACHED TO SUPPORTING STRUCTURAL MEMBERS BY 5/8" PUDDLE WELDS PLACED AT EACH DECK RIB OR 12 INCHES ON CENTER MAX, DEPENDING ON THE DECK ORIENTATION RELATIVE TO THE SUPPORTINGMEMBERS. THIS WELD CAN BE OMITTED IN RIBS THAT HAVE SHEAR STUD CONNECTORS. SIDE LAPS BETWEEN ADJACENT UNITS ARE TO BE ATTACHED WITH #10 TEK SCREWS AT 36 INCHES MAXIMUM (MINIMUM 2 SCREWS PER SPAN).

9. PROVIDE 2 INCHES MINIMUM BEARING AT DECK SUPPORTS.

10. ALL DECK SHALL BE CONTINUOUS OVER 3 SPANS UNLESS OTHERWISE NOTED. WHERE LESS THAN 3 SPANS IS AVAILABLE, PROVIDE, FOR THE ACTUAL SPAN CONDITION, DECK GAGE CAPABLE OF SUPPORTING PUBLISHED DEAD AND LIVE LOAD CAPACITIES AND CONSTRUCTION SPANS NOTED FOR 3 SPAN CONDITIONS. THE DECK SUPPLIER SHALL VERIFY THAT THE DECK SUPPLIED MEETS OR EXCEEDS THE REQUIRED CLEAR SPANS FOR THE ACTUAL PROJECT AND SHALL POST THE ALLOWABLE CONSTRUCTION CLEAR SPANS CLEARLY ON THE SHOP DRAWINGS. IF LOCATIONS EXIST ON THE PROJECT THAT EXCEED THE ALLOWABLE CONSTRUCTION CLEAR SPAN, THE SUPPLIER SHALL INCREASE THE DECK THICKNESS AS NECESSARY TO ACCOMMODATE ACTUAL SPAN CONDITION.

11. COMPOSITE DECK DESIGN IS INTENDED TO BE UNSHORED UNLESS OTHERWISE NOTED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK ALL DECKING CONDITIONS TO DETERMINE IF THE DECKING HAS SUFFICIENT STRENGTH AND STIFFNESS FOR CONSTRUCTION LOADING.

12. CONCRETE REQUIRED FOR COMPOSITE ACTION SHALL MEET 28-DAY COMPRESSIVE STRENGTH PRIOR TO SUPPORTING TOPPING SLABS AND/OR MASONRY WALLS OR OTHER HEAVY LOADS.

13. LOADS EXCEEDING 50 LBS SHALL NOT BE PERMITTED TO BE HUNG FROM METAL DECKING. HANGERS FOR DUCTWORK, PIPING, ELECTRICAL CONDUITS, ETC SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL OR ANCHORS EMBEDDED IN CONCRETE. SUBMIT HANGING LOAD LAYOUT FOR REVIEW.

14. CONCRETE TOPPING SLABS AND THICKNESSES SHOWN ON PLANS AND DETAILS ARE NOMINAL THICKNESSES. ACTUAL THICKNESSES WILL VARY DUE TO BEAM CAMBERS AND DECK/ BEAM DEFLECTIONS. PROVIDE THICKNESSES AS REQUIRED TO ACHIEVE A LEVEL FLOOR WITH A MINIMUM ACTUAL THICKNESS NOT LESS THAN THE THICKNESS CALLED OUT ON PLANS MINUS 1/4".

15. METAL DECK ATTACHMENTS SHALL BE INSPECTED BY TESTING LABORATORY.

STEEL JOISTS:

1. FABRICATOR SHALL BE AN "APPROVED FABRICATOR" IN ACCORDANCE WITH IBC SECTION 1704.2, REGISTERED AND APPROVED BY THE LOCAL BUILDING DEPARTMENT.

2. ALL STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH IBC SECTION 2207, OPEN WEB STEEL JOISTS AND THE STANDARD SPECIFICATIONS FOR STEEL JOIST, K-SERIES, LH-SERIES, DLH-SERIES AND JOIST GIRDERS, PUBLISHED BY THE STEEL JOIST INSTITUTE.

3. SIZE, TYPE AND SPACING OF JOIST BRIDGING TO BE IN ACCORDANCE WITH STEEL JOIST INSTITUTE RECOMMENDATIONS. USE 'X'-BRIDGING AT DISCONTINUOUS ENDS OF BRIDGING. LOCATE BRIDGING TO AVOID MECHANICAL OPENINGS.

4. DESIGN JOISTS AND BRIDGING TO RESIST A NET UPLIFT OF 15 PSF. JOISTS WITHIN 10'-0" OF BUILDING EDGES AND RIDGES SHALL BE DESIGNED FOR A NET WIND UPLIFT LOAD OF 35 PSF.

5. JOIST SHOE DEPTH SHALL BE 2 1/2" AT K SERIES JOIST, 5" LH SERIES JOISTS, UNLESS OTHERWISE NOTED. JOIST SUPPLIER SHALL COORDNATE TOP OF STEEL BEAM ELEVATIONS WITH STEEL SUPPLIER PRIOR TO FABRICATION.

6. MANUFACTURER SHALL SUBMIT CALCULATIONS AND DRAWINGS SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED FOR ALL JOISTS. CALCULATIONS SHALL INCLUDE DEFLECTION AND CAMBER REQUIREMENTS AND CLEARLY SHOW ALL DESIGN LOADS. SHOP DRAWINGS SUBMITTED WITHOUT SIGNED AND SEALED CALCULATIONS ARE GROUNDS FOR REJECTION.

7. LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/360 AT SIMPLE SPAN ROOF MEMBERS AND TO SPAN/360 AT SIMPLE SPAN FLOOR MEMBERS. ALL JOISTS SHALL BE CAMBERED PER SJI STANDARDS.

8. ALL JOISTS SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE APPLICABLE U.L. LISTINGS PER THE ARCHITECTURAL DRAWINGS.

9. PROVIDE SLOPED AND/OR SLOPED AND SKEWED BEARING SEATS AS REQUIRED FOR ROOF SLOPE.

10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR REVIEW PRIOR TO FABRICATION.

11. STEEL JOISTS ARE CALLED OUT ON PLAN SIMILAR TO THUS: "20LHSP". THIS EXAMPLE INDICATES A SPECIAL 20-INCH DEEP LH SERIES JOIST WITH A NON-UNIFORM LOAD SHOWN ON THE DOCUMENTS.

12. STEEL JOISTS ARE CALLED OUT ON PLAN SIMILAR TO THUS: "20KSP ". THIS EXAMPLE INDICATES A SPECIAL 20-INCH DEEP STEEL JOIST WITH A NON-UNIFORM LOAD SHOWN ON THE DOCUMENTS.

13. REFER TO SNOW DRIFT DIAGRAM FOR SNOW DRIFT LOADS. LOADS SHALL BE COMBINED WITH OTHER ROOF LOADS INDICATED IN ACCORDANCE WITH THE BUILDING CODE. SNOW DRIFT LOADS SHALL BE DISTRIBUTED OVER THE TRIBUTARY WIDTH OF ROOF SUPPORTED BY THE JOIST.

14. MANUFACTURER SHALL DESIGN JOISTS FOR THE LOADS NOTED ON THE DRAWINGS PLUS AN ADDITIONAL 500 POUND CONCENTRATED DEAD LOAD TO OCCUR ANYWHERE ALONG THE SPAN. DO NOT ALTER DEPTHS SHOWN ON PLANS UNLESS REQUESTED AND APPROVED IN WRITING PRIOR TO SHOP DRAWING SUBMITTAL. ADDITIONAL LOAD MAY BE ASSUMED TO ACT AT TOP CHORD ONLY.

15. COORDINATE EXACT MECHANICAL EQUIPMENT WEIGHT AND LOCATION WITH MECHANICAL CONTRACTOR AND DESIGN JOISTS FOR TRIBUTARY LOADS. COORDINATE JOIST WEBS WHERE MECHANICAL DUCTS SHOWN ON MECHANICAL DRAWINGS ARE DESIGNED TO PENETRATE THROUGH JOIST WEBS.

16. JOISTS SHALL BE DESIGNED FOR A 500 LBS CONCENTRATED SERVICE WIND LOAD AT ALL STEEL ANGLE BRACES. REFERENCE THE ROOF SECTIONS FOR ANGLE BRACE SPACING REQUIREMENTS. JOIST SUPPLIER SHALL COORDINATE WITH THE STEEL SUPPLIER FOR EXACT BRACE LOCATIONS.

COLD-FORMED STEEL FRAMING:

1. FABRICATE AND ERECT COLD-FORMED STEEL STRUCTURAL MEMBERS PER THE REQUIREMENTS OF THE LATEST EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE. WHERE REQUIRED, THE SEISMIC DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS SHALL BE IN ACCORDANCE WITH THE ADDITIONAL PROVISIONS OF SECTION 2211 OF THE IBC.

2. MINIMUM YIELD STRENTH FOR 43 AND 33 MILS STUDS, JOISTS, STRAPS, BRIDGING, ETC., SHALL BE 33,000-PSI MINIMUM. YIELD STRENGTH FOR 97, 68, AND 54 MILS STUDS, JOISTS, STRAPS, BRIDGING, ETC., SHALL BE 50,000-PSI MINIMUM. ALL MEMBERS SHALL BE GALVANIZED.

3. PROVIDE COLD-FORMED METAL FRAMING MEMBERS WITH SECTION PROPERTIES AS MANUFACTURED BY MEMBERS OF THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA COMPLYING WITH ICBO REPORT 4943P AND THE INTERNATIONAL BUILDING CODE.

4. WELDERS EXPERIENCED IN WELDING LIGHT GAGE STEEL SHALL PERFORM ALL WELDING.

POST-INSTALLED ANCHORS:

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.

2. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN -PLACE ANCHORS.

3. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR WHEN DRILLING HOLES.

4. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) AND ICC EVALUATION REPORTS CORRESPONDING TO THAT ANCHOR. INSTALL ANCHORS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.

5. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE LISTED BELOW, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE. PRODUCT ICC-ES CODE REPORTS SHALL BE INCLUDED WITH SUBMITTAL PACKAGE.

6. CONTINUOUS SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL ADHESIVE ANCHORS. PERIODIC SPECIAL INSPECTION SHALL BE PERFORMED FOR MECHANICAL ANCHORS.

7. ALL ANCHORS SHALL HAVE EMBEDMENT NOTED ON THE DRAWINGS OR EMBEDMENT AS RECOMMENDED BY MANUFACTURER WHERE NO EMBEDMENT IS SHOWN. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. ADHESIVE ANCHORS MUST BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.

9. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS

10. INSTALLATION OF ADHESIVE ANCHORS IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI AND IN ACCORDANCE WITH ACI 318. PROOF OF CURENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.

11. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION BY AN INSPECTOR SPECIALLY APPROVED FOR THAT PURPOSE BY THE BUILDING OFFICIAL.

12. PROVIDE SPECIAL INSPECTION FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE BUILDING CODE AND PER THE CURRENT ICC-ES REPORT FOR THE ANCHOR.

13. EXPANSION BOLTS IN MASONRY SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE WEDGE-ALL (ESR-1396)
b. HILTI KWIK BOLT 3 MASONRY ANCHORS (ESR-1385)

14. SCREW ANCHORS IN MASONRY SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE TITEN HD SCREW ANCHORS (ESR-1056)
b. HILTI KH-EZ SCREW ANCHOR (ESR-3056)

15. ADHESIVE ANCHORS IN MASONRY SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE SET-XP ADHESIVE ANCHORING SYSTEM (ER-265)
b. HILTI HY-70 FAST CURE ADHESIVE ANCHORS (ESR-2682)

16. EXPANSION BOLTS IN CONCRETE, ANCHORS SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE STRONG-BOLT 2 (ESR-3037)
b. HILTI KWIK BOLT TZ CONCRETE ANCHORS (ESR-1917)

17. SCREW ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE TITEN HD SCREW ANCHORS (ESR-2713)
b. HILTI KH-EZ SCREW ANCHOR (ESR-3027)

18. ADHESIVE ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING:

a. SIMPSON STRONG-TIE SET-3G ADHESIVE ANCHORING SYSTEM (ESR-4057)
b. SIMPSON STRONG-TIE AT-XP ADHESIVE ANCHORING SYSTEM (ER-263)
c. HILTI HY-200 SAFE SET SYSTEM ADHESIVE ANCHORS (ESR-3187)
d. HILTI RE-500 SD ADHESIVE ANCHORS (ESR-2322)

19. ANCHORS ARE NOT TO BE INSTALLED UNTIL CONCRETE OR GROUT HAS REACHED ITS DESIGN STRENGTH. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS.

FIRE RATINGS:

1. FOR FIRE-RATING REQUIREMENTS AND METHODS, SEE ARCHITECTURAL DRAWINGS.

EXISTING CONDITIONS:

1. CONTRACTOR IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING ALL WORK AND MATERIALS NECESSARY TO INSTALL NEW WORK IN EXISTING BUILDING SHALL BE INCLUDED.

2. NOTIFY ARCHITECT/ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DO NOT MATCH, OR SEEM IN CONFLICT WITH, INFORMATION SHOWN ON DRAWINGS.

3. DISCREPANCIES: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AND SHALL CONTACT THE ENGINEER OF RECORD IF ANY DISCREPANCIES ARE FOUND BEFORE PROCEEDING.

4. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION TO THE OWNER'S OPERATION AND TO PROVIDE PATRON, FACILITY STAFF AND WORKERS SAFETY.

5. EXCESSIVE NOISE AND VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE.

6. PROVIDE PROTECTION FOR ALL EXISTING BUILDING MATERIALS AND EQUIPMENT TO REMAIN FROM DAMAGE DUE TO DEMOLITION OR CONSTRUCTION OPERATIONS PERFORMED UNDER THIS CONTRACT.

7. THE SEQUENCE OF CONSTRUCTION SHALL BE THE RESPONSIBILITY THE CONTRACTOR AND THEY SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY GUYS, BRACING, AND OTHER SUPPORTS AS NEEDED TO SAFELY RESIST ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING LOADS ERECTION EQUIPMENT AND ERECTION OPERATIONS, AND WIND OR SEISMIC FORCES COMPARABLE IN INTENSITY FOR WHICH THE STRUCTURE AS DESIGNED.

8. ALL ERECTION AND CONSTRUCTION PROCEDURES SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES AND ORDINANCES,

9. ALL FRAMING CONNECTION TO EXISTING STRUCTURE SHALL BE FIELD VERIFIED PRIOR TO SHOP DRAWING PRODUCTION AND FABRICATION.

SUBMITTALS GENERAL

1. THE CONTRACTOR SHALL DEVELOP AND SUBMIT A SUBMITTAL SCHEDULE CLEARLY INDICATING THE NUMBER OF STEEL SHOP DRAWINGS, CONCRETE REINFORCING DRAWINGS, AND OTHER SHOP DRAWINGS TO BE SUBMITTED EACH WEEK OVER THE DURATION OF THE PROJECT.

2. THE SUBMITTAL SCHEDULE PROVIDED BY THE CONTRACTOR IS NECESSARY TO PROVIDE REASONABLE TIME TO STAFF APPROPRIATELY FOR THE SCHEDULED SUBMITTALS. THE SUBMITTAL ENGINEER'S REVIEW SCHEDULE IS SUBJECT STRICTLY TO THE SUBMITTAL SCHEDULE PROVIDED BY THE CONTRACTOR.

3. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMANCE WITH THE INTENT OF THE DRAWINGS. REVIEW DOES NOT IMPLY OR STATE THAT THE FABRICATOR HAS CORRECTLY INTERPRETTED THE CONSTRUCTION DOCUMENTS.

4. CONTRACTOR SHALL SUBMIT CALCULATIONS WITH THE SHOP DRAWINGS DESIGNATED AS DEFERRED SUBMITTALS, SIGNED AND SEALED BY THE ENGINEER, LICENSED IN THE STATE WHICH THE PROJECT IS LOCATED, RESPONSIBLE FOR THEIR PREPARATION WHEN REQUIRED IN THE SPECIFICATIONS (SEE ALSO 'DEFERRED SUBMITTALS').

5. COPIES OF THE CONTRACT DOCUMENTS SHALL NOT BE SUBMITTED AS SHOP DRAWINGS. CONTRACT DRAWINGS SHOW ONLY GENERAL DESIGN INTENT. FINAL SHOP DRAWING SECTIONS SHALL PROVIDE SIZES, LAYOUT, EXACT DIMENSIONS, ELEVATIONS, GRADES OF MATERIALS, ETC., SPECIFIC TO EACH LOCATION.

6. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO SUBMITTING TO DLR GROUP. REQUEST FOR INFORMATION FOR ITEMS SUCH AS OVERALL BUIDLING GEOMETRY, ELEVATIONS, ETC. SUBMITTED THROUGH SHOP DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. IF GEOMETRY CANNOT BE DETERMINED FROM THE DRAWINGS, THE CONTRACTOR SHALL SUBMIT AN RFI AND COORDINATE THE RESPONSE WITH ALL AFFECTED TRADES PRIOR TO FABRICATION.

DEFERRED SUBMITTALS:

1. THE FOLLOWING ARE DEFERRED SUBMITTAL ITEMS:
   - CONCRETE MIXTURE DESIGN
   - GROUT MIXTURE DESIGN
   - PRECAST CONCRETE UNITS, INCLUDING WALL PANELS AND DOUBLE TEES
   - STEEL JOISTS
   - METAL STAIRS AND RAILINGS
   - STRUCTURAL STEEL CONNECTIONS
   - COLD FORMED METAL FRAMING

2. DEFERRED SUBMITTAL CALCULATIONS AND/OR SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE ENGINEER RESPONSIBLE FOR THEIR PREPARATION AND SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW WITH THE SHOP DRAWING SUBMITTAL. ONCE REVIEWED, CONTRACTOR SHALL FORWARD TO THE BUILDING DEPARTMENT FOR APPROVAL. FABRICATION AND/OR INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT OCCUR UNTIL APPROVAL OF THE BUILDING DEPARTMENT IS RECEIVED.

3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

FOUNDATION NOTES

1. FINISHED FLOOR ELEVATION VARIES PER PLAN. 100'-0" EQUAL TO SURVEY ELEVATION = 1011.00', CONFIRM WITH CIVIL DRAWINGS.

2. REFER TO ARCHITECTURAL DRAWINGS FOR OVERALL BUILDING GEOMETRY, WALL LOCATIONS, AND ADDITIONAL PARTITION WALL REQUIREMENTS. CONFIRM WALL OPENINGS, TOP OF WALL ELEVATIONS AND BRICK LEDGE ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

3. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF SLOPED, RAISED, DEPRESSED SLABS AND DRAINS.

4. REFER TO SPECIFICATIONS FOR ALL SUBGRADE PREPARATION REQUIREMENTS. REFER TO GENERAL NOTES FOR BACKFILL AND TEMPORARY SHORING REQUIREMENTS.

5. COORDINATE ALL PENETRATIONS THRU FOUNDATIONS WITH MEP DRAWINGS. REFERENCE TYPICAL FOUNDATION DETAILS FOR SLEEVE DETAILING.

6. ALL EXTERIOR EXPOSED STEEL (IN UNCONDITIONED SPACE) SHALL BE HOT DIP GALVANIZED.

7. SHADED REGION ON PLAN ▨ INDICATES ICC500 STORM SHELTER.

FRAMING PLAN NOTES

1. TOP OF STEEL ELEVATION ARE SHOWN ON PLANS. TOP OF STEEL NOT SPECIFICALLY NOTED ON THE PLANS SHALL BE LINEARLY INTERPOLATED FROM TOP OF STEEL NOTED ON THE PLANS.

2. REFER TO ARCHITECTURAL DRAWINGS FOR OVERALL BUILDING GEOMETRY, WALL LOCATIONS, AND ADDITIONAL PARTITION WALL REQUIREMENTS.

3. COORDINATE ALL SLAB OPENINGS AND PENETRATIONS WITH MECHANICAL DRAWINGS. REINFORCE FLOOR PER TYPICAL DETAILS.

4. REACTIONS SHOWN AT THE END OF BEAMS AND JOISTS ARE MINIMUM FACTORED LOAD REACTIONS.

5. COORDINATE ALL ROOF OPENINGS AND PENETRATIONS WITH MEP DRAWINGS. PROVIDE ADDITIONAL FRAMING PER TYPICAL DETAILS.

6. ALL HSS MEMBERS SHALL HAVE 1/4" CAP PLATES AT EACH END, TYPICAL.

7. ALL EXTERIOR EXPOSED STEEL (IN UNCONDITIONED SPACE) SHALL BE HOT DIP GALVANIZED.

8. SHADED REGION ON PLAN ▨ INDICATES ICC500 STORM SHELTER.

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Missouri State Certificate of Authority #000939

DEREK JOSEPH SMITH

LEE'S SUMMIT MIDDLE SCHOOL #4
LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS
1   ASI-01   10/08/20

13-20102-00

STRUCTURAL NOTES

S0.1

SPECIAL STRUCTURAL INSPECTIONS:

1. IN ACCORDANCE WITH IBC, SECTION 1704, AS NOTED BELOW. TESTING AND INSPECTION SHALL BE BY AN INDEPENDENT TESTING/INSPECTION FIRM UNDER THE SUPERVISION OF A LICENSED ENGINEER EMPLOYED BY THAT FIRM. THIS ENGINEER SHALL BE DEEMED THE DESIGNATED ENGINEER OF RECORD FOR SPECIAL INSPECTIONS PERFORMED BY HIS FIRM OR HIS CONSULTANTS. INSPECTORS SHALL BE ICBO CERTIFIED AND APPROVED BY THE BUILDING OFFICIAL.

2. THE DESIGNATED ENGINEER OF RECORD FOR SPECIAL INSPECTIONS SHALL BE RESPONSIBLE FOR DEFINING THE ACTIVITIES OF THE INSPECTORS, FOR CERTIFYING THE QUALIFICATIONS OF THE INSPECTORS WITH THE BUILDING OFFICIAL, AND TO ATTEND THE PRECONSTRUCTION MEETING TO DEFINE THEIR SCOPE OF SERVICES AND THE TESTING OR TEST PROCEDURES THAT ARE REQUIRED AS OUTLINED IN THE INTERNATIONAL BUILDING CODE.

3. SPECIAL INSPECTION IS TO BE PROVIDED IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE LOCAL DEPARTMENT OF BUILDING SAFETY AND SHALL NOT BE CONSTRUED TO RELIEVE THE OWNER OR HIS AUTHORIZED AGENT FROM REQUESTING THE PERIODIC AND CALLED INSPECTIONS REQUIRED BY SECTION 110 OF THE INTERNATIONAL BUILDING CODE.

4. CONCRETE: PER SECTION 1705.3 WITH EXCEPTIONS, THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION: ALL CONCRETE EXCEPT SLAB-ON-GRADE, SIDEWALKS, AND DRIVEWAYS. ALL SLABS REQUIRE TESTING FOR FLOOR FLATNESS AND LEVELNESS PER PROJECT SPECIFICATIONS.

8. STEEL CONSTRUCTION: SPECIAL INSPECTIONS SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360. SPECIAL INSPECTION FOR SEISMIC RESISTANCE SHALL BE IN ACCORDANCE WITH AISC 341AND SHALL COMPLY WITH IBC SECTION 1705.12. PROVIDE INSPECTION PER IBC SECTION 1704.2.5 FOR STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES FABRICATED ON THE PREMISES OF A FABRICATOR'S SHOP. THESE INSPECTIONS SHALL BE AT THE CONTRACTOR'S EXPENSE IF THE FABRICATOR IS NOT AN APPROVED FABRICATOR PER IBC SECTION 1704.2.5.1.

7. WELDING: WELDING INSPECTION SHALL BE IN COMPLIANCE WITH AWS D1.1. THE BASIS FOR WELDING INSPECTOR QUALIFICATIONS SHALL BE AWS D1.1. PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH AISC TABLE N5.4-1 THROUGH TABLE N5.4-3

8. HIGH STRENGTH BOLTING: INSTALLATION OF HIGH STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH AISC TABLE N5.6-1 THROUGH TABLE N5.6-3.

9. INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT SHALL BE PER AISC TABLE N5-1.

10. STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL SHALL BE PER IBC SECTION 1705.2.2 AND REQUIREMENTS OF SDI QA/QC, AND 1705.2.3 FOR OPEN-WEB STEEL JOISTS AND JOIST GIRDERS.

11. STRUCTURAL MASONRY: MASONRY CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6 AS FOLLOWS:

a. ENGINEERED MASONRY IN RISK CATEGORY I, II, OR III STRUCTURES: THE MINIMUM SPECIAL INSPECTION PROGRAM FOR MASONRY SHALL COMPLY WITH LEVEL B QUALITY ASSURANCE, TABLE 4.

b. ENGINEERED MASONRY IN RISK CATEGORY IV STRUCTURES: THE MINIMUM SPECIAL INSPECTION PROGRAM FORMASONRY SHALL COMPLY WITH LEVEL C QUALITY ASSURANCE, TABLE 5.

12. GRADING, EXCAVATION AND FILLING: PER SECTION 1705.6. SEE CIVIL DRAWINGS AND SPECIFICATION DIVISION 2.

13. SPRAY-APPLIED FIREPROOFING: PER SECTION 1705.14. SEE ARCHITECTURAL DRAWINGS FOR ALL FIREPROOFING METHODS AND REQUIREMENTS.

14. FIRE RESISTANT PENETRATIONS AND JOINTS: PER SECTION 1705.17

15. NONBEARING EXTERIOR STUD WALLS AND EXTERIOR VENEER: PER SECTION 1705.12.5 WITH EXCEPTIONS.

16. EXPANSION BOLT, SCREW ANCHOR AND ADHESIVE ANCHOR INSTALLATION TO VERIFY INSTALLATION IN ACCORDANCE WITH ICBO REPORTS NOTED PREVIOUSLY OR APPROVED EQUAL.

17. HEADED CONCRETE SHEAR CONNECTORS: INSPECTED AND TESTED PER AMERICAN WELDING SOCIETY CODE AWS D1.1.

18. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR THE INSTALLATION OF ALL STORM SHELTER DOOR, WINDOW AND PROTECTIVE OPENING DEVICES, INCLUDING THE ANCHORAGE TO WALL/ROOF.

19. THE INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

20. THE INSPECTOR SHALL FURNISH DAILY INSPECTION REPORTS ON THE WORK TO THE BUILDING OFFICIAL AND TO THE ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND, IF UNCORRECTED, TO THE ENGINEER AND THE BUILDING OFFICIAL.

21. THE TESTING/INSPECTION FIRM'S ENGINEER SHALL COMPLETE, SIGN AND SEAL A FINAL REPORT CERTIFYING THAT TO THE BEST OF HIS KNOWLEDGE, THE WORK IS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

22. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONSTRUCTION SCHEDULE WITH THE OWNER'S SPECIAL INSPECTION REPRESENTATIVE IN A TIMELY MANNER AND SHALL NOT PROCEED WITH CONSTRUCTION OF COMPONENTS THAT MAY INTERFERE WITH THE INSPECTORS ABILITY TO PERFORM CODE REQUIRED INSPECTIONS. ANY COST INCURRED ASSOCIATED WITH REMOVAL OF WORK TO PERFORM INSPECTIONS WILL BE BORNE BY THE CONTRACTOR.

23. STEEL DETAILING: THE SPECIAL INSPECTOR SHALL PERFORM AN INSPECTION OF THE STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS, SUCH AS BRACING, STIFFENING, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION

TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD a	IBC REFERENCE
1. Inspect reinforcement, including prestressing tendons, and verify placement	-	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706 b. Inspect single-pass fillet welds, maximum 5/16", and c. Inspect all other welds	- - X	X X	AWS D1.4 ACI 318: 26.6.4	-
3. Inspection of anchors cast in concrete	-	X	ACI 318: 17.8.2	-
4. Inspection of anchors post-installed in hardened concrete members a. Adhesive anchors installed in. horizontally or upward inclined orientations to resist sustained tension loads b. Mechanical anchors and adhesive anchors not defined in 4.a	X -	- X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	-
5. Verify use of required design mix.	-	X	ACI 318: Ch. 19 26.4.3, 26.4.4	1904.1,1904.2, 1908.2 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests. and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 26.5	1908.6,1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons in the seismic force-resisting system.	X X	- -	ACI 318: 26.10	-
10. Inspect erection of precast concrete members.	-	X	ACI 318: 26.9	-
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 26.11.2	-
12. Inspect formwork for shape, location, and dimensions of the concrete member being formed.	-	X	ACI 318: 26.11.1.2(b)	-

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705.12, Special inspections for seismic resistance.

b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI318 or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK LISTED	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
I. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	-	X
2. Verify excavations are extended to proper depth and have reached proper material.	-	X
3. Perform classification and testing of compacted fill materials	-	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X	-
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	-	X

MASONRY: TMS 402/602-16:
Table 3 - Level 2 Quality Assurance

MINIMUM TESTS	
Prior to construction, verification of compliance of submittals	Art 1.5
Prior to construciton, verification of f'm and FACC, except where specifically exempted by the Code.	Art 1.4 B
During construction, verification of Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project.	Art 1.5 & 1.6.3

MINIMUM INSPECTION				
Inspection Task	**Frequency (a)**		**Reference for Criteria**	
	Continuous	Periodic	TMS 402	TMS 602
1. As masonry construction begins, verify that the following are in compliance:				
a. Proportions of site-prepared mortar		X		Art. 2.1, 2.6 A & 2.6.C
b. Grade and size of prestressing tendons and anchorages		X		Art. 2.4 B, 2.4 H.
c. Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages		X		Art. 3.4 & 3.6 A
d. Prestressing technique		X		Art. 3.6 B
e. Properties of thin-bed mortar for AAC masonry	X(b)	X(c)		Art. 2.1 C.1
f. Sample panel construction		X		Art. 1.6 D
2. Prior to grouting, verify that the following are in compliance:				
a. Grout space		X		Art. 3.2 D & 3.2 F
b. Placement of prestressing tendons and anchorages.		X	Sec 10.8 & 10.9	Art 2.4 & 3.6
c. Placement of reinforcement, connectors, and anchor bolts		X	Sec. 6.1, 6.3.1 & 6.3.6 & 6.3.7	Art. 3.2 E, 3.4
d. Proportions of site-prepared grout and prestressing grout for bonded tendons		X		Art. 2.6 B, & 2.4 G.1.b
3. Verify compliance of the following during construction:				
a. Materials and procedures with the approved submittals		X		Art. 1.5
b. Placement of masonry units and mortar joint construction		X		Art. 3.3 B
c. Size and location of structural elements		X		Art. 3.3 F
d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction		X	Sec. 1.2.1(e) 6.2.1 & 6.3.1	
e. Welding of reinforcement	X		Sec. 6.1.6.1.2	
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C)) or hot weather (temperature above 90°F (32.2°C))		X		Art. 1.8 C, & 1.8 D
g. Application and measurement of prestressing force	X			Art. 3.6 B
h. Placement of grout and prestressing grout for bonded tendons is in compliance	X			Art. 3.5 & 3.6 C
i. Placement of AAC masonry units and construction of thin-bed mortar joints	X(b)	X(c)		Art. 3.3 B.9 & 3.3 F.1.b
4. Observe preparation of grout specimens, mortar specimens, and/or prisms		X		Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3 & 1.4 B.4

(a) Frequency refers to the frequency of inspection, which may be continuous during the task listed or periodically during the listed task, as defined in the table.
(b) Required for the first 5000 square feet (465 square meters) of AAC masonry.
(c) Required after the first 5000 square feet (465 square meters) of AAC masonry.

AISC 360 TABLE N5.4-1
Inspection Tasks Prior to Welding

Inspection Tasks Prior to Welding	QC	QA
Welder qualification records and continuity records	P	O
Welding procedure specifications (WPSs) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (type/grade)	O	O
Welder identification system 1	O	O
Fit-up of groove welds (including joint geometry) · Joint preparation · Dimensions (alignment, root opening, root face, bevel) · Cleanliness (condition of steel surfaces) · Tacking (tack weld quality and location) · Backing type and fit (if applicable)	O	O
Configuration and finish of access holes	O	O
Fit-up of fillet welds · Dimensions (alignment, gaps at root) · Cleanliness (condition of steel surfaces) · Tacking (tack weld quality and location)	O	O
Check welding equipment	O	-

1 The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

AISC 360 TABLE N5.4-2
Inspection Tasks During Welding

Inspection Tasks During Welding	QC	QA
Control and handling of welding consumables · Packaging · Exposure control	O	O
No welding over cracked tack welds	O	O
Environmental conditions · Wind speed within limits · Precipitation and temperature	O	O
WPS followed · Settings on welding equipment · Travel speed · Selected welding materials · Shielding gas type/flow rate · Preheat applied · Interpass temperature maintained (min./max.) · Proper position (F, V, H, OH)	O	O
Welding techniques · Interpass and final cleaning · Each pass within profile limitations · Each pass meets quality requirements	O	O
Placement and installation of steel headed stud anchors	P	P

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

AISC 360 TABLE N5.4-3
Inspection Tasks After Welding

Inspection Tasks After Welding	QC	QA
Welds cleaned	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria · Crack prohibition · Weld/base-metal fusion · Crater cross section · Weld profiles · Weld size · Undercut · Porosity	P	P
Arc strikes	P	P
k-area [a]	P	P
Weld access holes in rolled heavy shapes and built-up heavy shapes [b]	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P
No prohibited welds have been added without the approval of the EOR	O	O

[a] When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld.
[b] After rolled heavy shapes (see Section A3.1c) and built-up heavy shapes (see Section A3.1d) are welded, visually inspect the weld access hole for cracks

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

AISC 360 TABLE N5.6-1
Inspection Tasks Prior to Bolting

Inspection Tasks Prior to Bolting	QC	QA
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Correct fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Correct bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

AISC 360 TABLE N5.6-2
Inspection Tasks During Bolting

Inspection Tasks During Bolting	QC	QA
Fastener assemblies placed in all holes and washers and nuts are positioned as required	O	O
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

AISC 360 TABLE N5.6-3
Inspection Tasks After Bolting

Inspection Tasks After Bolting	QC	QA
Document acceptance or rejection of bolted connections	P	P

O- Observe these items on a random basis. Operations need not be delayed pending these inspections.
P- Perform these tasks for each welded joint or member.

TABLE 1705.2.3
REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

TYPE	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
I. Installation of open-web steel joists and joist girders.		
a. End Connections - welding or bolted.	-	X
b. Bridging - Horizontal or diagonal.		
1. Standard bridging.	-	X
2. Bridging that differs from the SJI specifications listed in Section 2207.1	-	X

ABBREVIATIONS:
ABBREVIATIONS ARE AS SHOWN IN THE CONTRACT DOCUMENTS WITH THE FOLLOWING EXCEPTIONS:

@	AT
&	AND
AR	ANCHOR ROD
ADDN	ADDITION OR ADDITIONAL
AHU	AIR HANDLING UNIT
ADDL	ADDITIONAL
ANCH	ANCHOR
APPROX	APPOXIMATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BM (S)	BEAM (S)
BO	BOTTOM OF
BOT	BOTTOM
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN
C	CHANNEL
CANT	CANTILEVER
CIP	CAST-IN-PLACE CONCRETE
CJ	CONSTRUCTION/CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN(S)	CONNECTION (S)
CONST	CONSTRUCTION
CONT	CONTINUOUS
db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DIA	DIAMETER
DWA	DEFORMED WIRE ANCHOR
DWL (S)	DOWEL (S)
DWG (S)	DRAWING (S)
EA	EACH
EE	EXTENDED END
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EMBED	EMBEDMENT
ENGR	ENGINEER
EOS	EDGE OF SLAB
EOD	EDGE OF DECK
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EW	EACH WAY
EXST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FA	FACE
FAB	FABRICATE
Fc	28 DAY CONCRETE STRENGTH
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH (ED)
FL	FLOOR
FS	FAR SIDE
FTG	FOOTING
FV	FIELD VERIFY
FY	YEILD STENGTH
GALV	GALVANIZED
GEN	GENERAL
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SHAPE
INT	INTERIOR
JT	JOINT
k	KIPS
KSF	KIPS PER SQUARE FOOT
2L	DOUBLE ANGLE
L	ANGLE
LLBB	LONG LEG BACK TO BACK
LB (S)	POUND (S)
Ld	DEVELOPMENT LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LWC	LIGHT WEIGHT CONCRETE
MAS	MASONRY
MAX	MAXIMUM
MC	MOMENT CONNECTION
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURE (R)
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SACLE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OPG(S)	OPENING (S)
OPP	OPPOSITE
OH	OPPOSITE HAND
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PRELIM	PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSION (ED)(ING)
QTY	QUANTITY
RAD / R	RADIUS
RE / REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISION
RTU	ROOF TOP UNIT
SC	SHEAR CONNECTOR (S)
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLBB	SHORT LEG BACK TO BACK
SPA	SPACE (ING)
SPEC	SPECIFICATION (S)
SQ	SQUARE
STD	STANDARD
STL	STEEL
STIR	STIRRUP
STRUCT	STRUCTURE
SYM	SYMMETRICAL
t	PLATE THICKNESS
THRD	THREADED
T&B	TOP AND BOTTOM
TO	TOP OF
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W	WIDE FLANGE
WGT	WEIGHT
WP	WORK POINT
WT	STEEL TEE SECTION
WWR	WELDED WIRE REINFORCEMENT
X-STR	EXTRA STRONG
XX-STR	DOUBLE EXTRA STRONG

SYMBOLS AND NOTATIONS

MOMENT CONNECTION	SHEAR (k) / AXIAL (k) MOMENT (kft) — SHEAR (k) / AXIAL (k) MOMENT (kft)
BEAM SPLICE	SHEAR (k)
COLLECTOR BEAM AXIAL CONNECTION (TENSION OR COMPRESSION, 15k MIN WHERE AXIAL LOAD NOT INDICATED PER PLAN).	SHEAR (k) / AXIAL (k) — SHEAR (k) / AXIAL (k)
COLUMN CENTER LINE	#
CMU	SECTION — PLAN
COMPOSITE BEAM	NUMBER OF SHEAR CONNECTORS FOR UNIFORM SPACING; CAMBER; LEFT END VERT REACTION (KIPS) 12k; W16x26 (15) c=1/2" 12k; RIGHT END VERT REACTION (KIPS); (5) (8) (5); NUMBER OF SHEAR CONNECTORS FOR POINT LOADING (IF APPLICABLE)
CONCRETE	SECTION — PLAN
EARTH (UNDISTURBED)	SECTION
FLOOR OR ROOF SLOPE	SLOPE
FLOOR STEP IN ELEVATION	
GRAVEL	SECTION
STRUCTURED SLAB OR METAL DECK SPAN DIRECTION	
PRECAST CONCRETE	SECTION — PLAN
GROUT	SECTION
ROCK	SECTION
TOP OF STEEL ELEVATION FROM NOTED TOS	<+2 1/2"> OR <-2 1/2">
WELDED WIRE REINFORCEMENT	
KEYNOTE MARK	#
COLUMN MARK	C#
FOOTING MARK	F#
CONCRETE COLUMN MARK	CC#
STEEL BRACED FRAME BAY	
MATCHLINE	MATCHLINE
REVISION MARK	#
CROSS REFERENCE	12 / S3.1 — DETAIL NUMBER; SHEET ON WHICH DRAWN
DETAIL REFERENCE	12 / S3.1
DETAIL OR WALL SECTION	12 / S3.1
FRAME OR SHEAR WALL ELEVATION	12 / S3.1
ELEVATION DATUM MARK	FLOOR 100'-0"
FLOOR OPENING	SLAB EDGE
ARCHITECTURAL EXTERIOR/CLADDING LINE	

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LEE'S SUMMIT MIDDLE SCHOOL #4
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PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
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STRUCTURAL NOTES

S0.2

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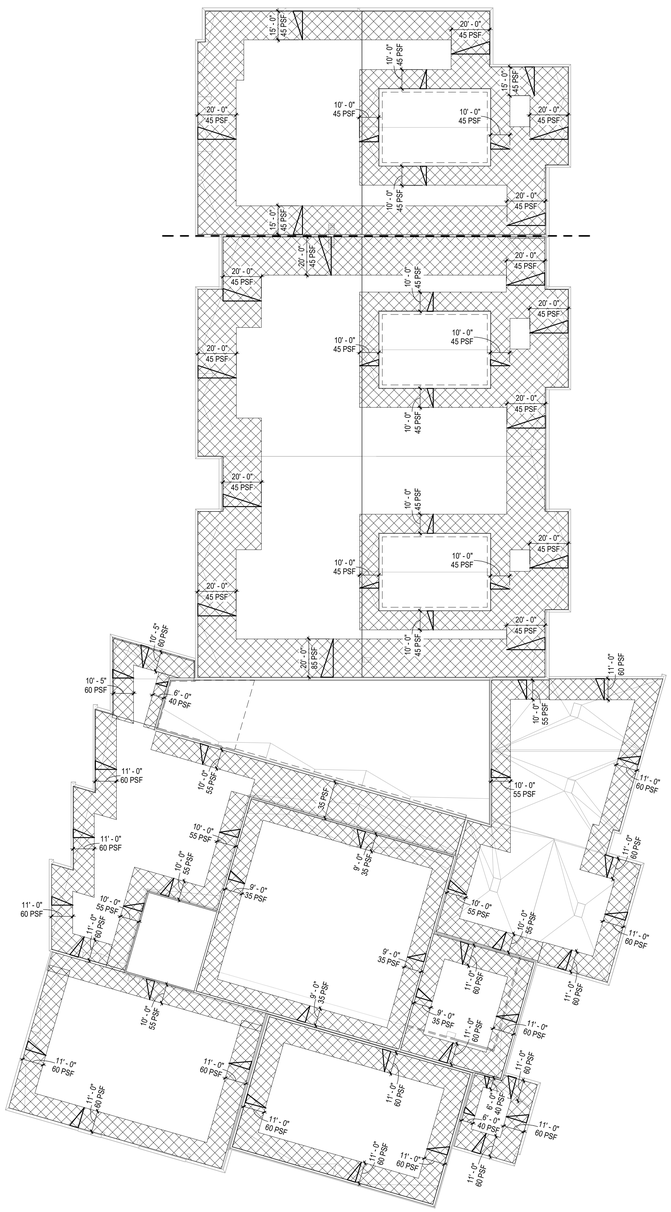
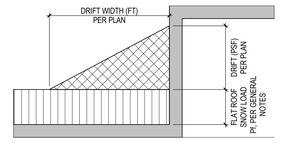
SNOW DRIFT NOTES:

1. JOIST SUPPLIER SHALL DISTRIBUTE LOADS TO JOIST BASED ON TRIBUTARY SPACING OF JOISTS
2. ALL SPECIAL JOIST CALCULATIONS MUST BE SIGNED AND SEALED BY THE ENGINEER RESPONSIBLE FOR THE WORK AND SUBMITTED WITH HSOP DRAWINGS FOR REVIEW. SUBMIT A REQUEST FOR INFORMATION (RFI) FOR INFORMATION NOT SPECIFICALLY NOTED ON THE DRAWINGS
3. JOIST SUPPLIER SHALL DESIGN JOISTS FOR ALL LOADS INDICATED IN THE GENERAL NOTES (S0.1, S0.2), ROOF SNOW DRIFT PLAN (S0.3), ON THE PLAN SHEETS AND ON THE DETAILS / SECTION SHEETS. CONTRACTOR TO COORDINATE ALL WEIGHTS AND LOCATIONS OF EQUIPMENT WITH THE JOSIT SUPPLIER PRIOR TO SUBMITTING JOIST SHOP DRAWINGS
4. SNOW DRIFT LOADS ARE IN ADDITION TO FLAT ROOF SNOW LOADS ON SHEET S0.1





SNOW DRIFT PLAN
SCALE: 1/32" = 1'-0"
NORTH

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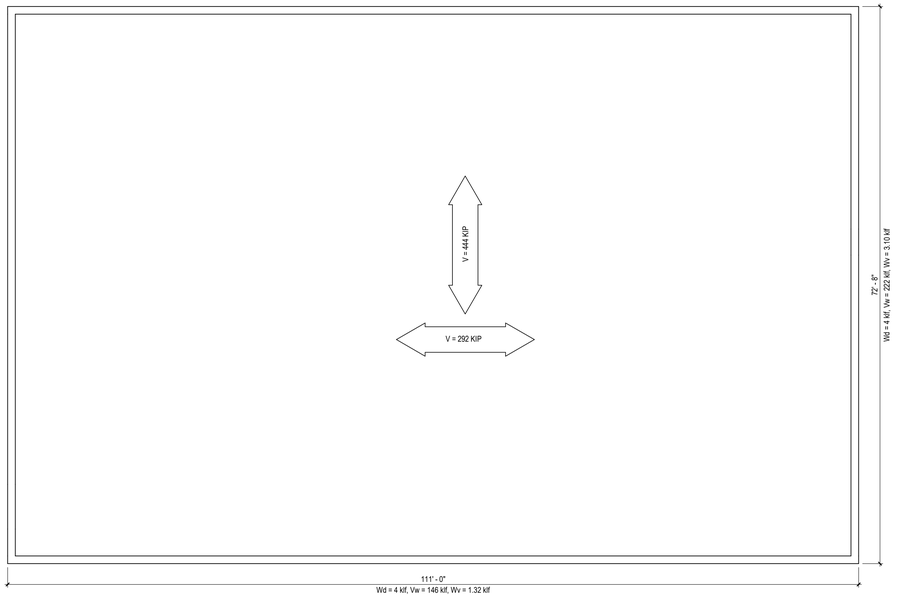
SNOW DRIFT PLAN

S0.3



SHELTER ROOF PLAN (MWFRS)

NORTH

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

STRUCTURAL NOTES

GENERAL STORM SHELTER NOTES:

1. THE PORTION OF STRUCTURE SHOWN ON THIS SHEET IS BASED ON STRUCTURAL RECOMMENDATIONS LISTED IN ICC 500-2014 "ICC/NSSA STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS". SHELTER HAS NOT BEEN CONSTRUCTED WITHIN AN AREA SUSCEPTIBLE TO FLOODING.

2. ALL COMPONENTS THAT MAKE UP THE STORM SHELTER AREA, INCLUDING DEFERRED SUBMITTALS, SHALL BE DESIGNED IN STRICT ACCORDANCE WITH ICC 500 STANDARDS. CALCULATIONS SHALL BE PROVIDED AT EACH CONNECTION FOR VERIFICATION OF LOAD PATH.

3. STORM SHELTER WALL AND SLAB ASSEMBLIES HAVE BEEN SELECTED BASED ON ICC 500 AND FEMA 361 RECOMMENDATIONS. NO ADDITIONAL TESTING OR ANALYSIS HAS BEEN PERFORMED TO ESTIMATE THE DYNAMIC IMPACT OF OBJECTS FOUND IN THE ACTUAL ENVIRONMENT AGAINST THE STRUCTURE.

4. REFER TO ARCHITECTURAL, CIVIL, MEP DRAWINGS FOR STORM SHUTTERS, DOORS, WINDOWS AND ATTACHMENT OF THESE COMPONENTS TO THE BUILDING STRUCTURE.

5. DIAPHRAGM SHEARS HAVE BEEN DISTRIBUTED BASED ON A RIGID DIAPHRAGM ASSUMPTION AND ARE SHOWN AS STRENGTH (ULTIMATE) LEVEL WIND FORCES.

6. LOWER LEVEL SLAB-ON-GRADE IS USED AS A STRUCTURAL DIAPHRAGM DISTRIBUTING FORCES TO THE FOUNDATIONS. CONTRACTOR SHALL SUBMIT A POUR PLAN FOR REVIEW SHOWING PLANED LOCATIONS FOR CONSTRUCTION JOINTS.

SHELTER TYPE:
COMMUNITY TORNADO

WIND LOADS:
IN ACCORDANCE WITH ASCE 7-10, CHAPTER 26 AND 27 DIRECTIONAL PROCEDURE
BASIC WIND SPEED V = 250 MPH
Iw=1.0
PARTIALLY ENCLOSED, EXPOSURE CATEGORY = "C"
Kzt = 1.0
Kd= 1.0
GCpi = +-0.55

LIVE LOAD:
ROOF: 100 PSF
COLLAPSE OF UPPER STRUCTURES WAS CONSIDERED IN THE DESIGN OF THE STORM SHELTERS.

LOAD COMBINATIONS:
1. ALL WIND LOADS SHOWN ON THIS SHEET ARE STRENGTH (ULTIMATE) LEVEL LOADS AND SHALL BE APPLIED WITH THE FOLLOWING LOAD COMBINATIONS IN ADDITION TO THE STANDARD LOAD COMBINATIONS OF ASCE7-05 CHAPTER 2. COMBINATIONS INDICATED AS N/A ARE SEISMIC LOAD CONDITIONS THAT WILL NOT GOVERN IN THE DESIGN.

LRFD	ASD
1) 1.4D	1) D
2) 1.2D + 1.6L + 0.5(Lr or S)	2) D + L
3) 1.2D + 1.6(Lr or S) + (L or 0.5Ww)	3) D + (Lr or S)
4) 1.2D + 1.0Wx + L +0.5(Lr or S)	4) D + 0.75L + 0.75(Lr or S)
5) NA	5) D + 0.6Wx
6) 0.9D + 1.0Wx	6) D + 0.75L + 0.75(0.6Wx) + 0.75(Lr or S)
7) NA	7) 0.6D + 0.6Wx
	8) N/A

ALL LOAD CONDITION DESIGNATIONS ARE PER ASCE 7-10 EXCEPT THE FOLLOWING:
Wx = EXTREME WIND EVENT WIND LOAD

TORNADO MISSILE IMPACT CRITERIA:
1. MANUFACTURERS SHALL PROVIDE DATA INDICATING THAT ALL STRUCTURAL PRODUCTS MEET THE IMPACT CRITERIA TEST REQUIRED BY ICC-500 INCLUDING THE IMPACT FROM THE END OF A 15-LB 2x4 AT THE FOLLOWING VELOCITY:

a. VERTICAL SURFACES = 100 MPH

b. HORIZONTAL SURFACES = 67 MPH

2. ALL COMPONENTS OF THE STORM SHELTER ENVELOPE SHALL BE TESTED IN ACCORDANCE WITH ICC-500, SECTION 304 (PRESSURE) AND SECTION 305 (IMPACT).

QUALITY ASSURANCE, SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS FOR STORM SHELTER (ICC 500-2014):
THE FOLLOWING SPECIAL INSPECTION REQUIREMENTS SHALL BE PREFORMED ON ALL STORM SHELTER COMPONENTS IN ADDITION TO SPECIAL INSPECTION REQUIREMENTS AS STATED IN 2015 IBC ON SHEET S0.2.

1. QUALITY ASSURANCE FOR WIND REQUIREMENTS PLAN SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1705 FOR ALL COMPONENTS MAKING UP THE STRUCTURAL SYSTEM OF THE STORM SHELTER AS FOLLOWS:

a. THE MAIN WIND-FORCE-RESISTING SYSTEM THAT IS SUBJECT TO QUALITY ASSURANCE ARE THE
1. CAST-IN-PLACE CONCRETE ROOF DIAPHRAGM INCLUDING REINFORCEMENT, CHORDS, COLLECTORS, AND CONNECTIONS TO SHEAR WALLS.
2. PRECAST CONCRETE ROOF STRUCTURE
3. PRECAST CONCRETE SHEAR WALLS INCLUDING CONNECTION TO DIAPHRAGMS, WALL PANEL TO PANEL CONNECTIONS AND PANEL TO FOOTING CONNECTIONS.
4. CONCRETE FOUNDATIONS
5. FABRICATION AND INSTALLATION OF COMPONENTS AND ASSEMBLIES AT SHELTER ENVELOPE REQUIRED TO MEET MISSILE IMPACT TESTING OF ICC 500 INCLUDING DOORS, WINDOWS, AND OPENING PROTECTION DEVICES.

b. THE SPECIAL INSPECTIONS REQUIRED ARE INDICATED UNDER SPECIAL INSPECTION ON SHEET S0.2 AND THE ADDITIONAL REQUIREMENTS OF SECTION 1706 OF THE IBC. MATERIALS TESTING REQUIRED IS INDICATED UNDER THE SPECIFICATION FOR EACH MATERIAL.

c. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A REGISTERED DESIGN PROFESSIONAL EMPLOYED BY THE OWNER TO CONDUCT VISUAL OBSERVATIONS OF THE CONSTRUCTION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE CONSTRUCTION OF THE STRUCTURAL SYSTEM.

d. DISTRIBUTION OF OBSERVATION, TESTING AND SPECIAL INSPECTION REPORTS SHALL BE WITHIN TWENTY-FOUR (24) HOURS AFTER EACH SPECIAL INSPECTION, SUBMIT TWO (2) COPIES OF INSPECTION REPORTS TO THE CONTRACTOR, ARCHITECT AND BUILDING OFFICIAL.

2. CONTRACTOR RESPONSIBILITY: EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN-FORCE RESISTING SYSTEM, OR A WIND-RESISTING COMPONENT LISTED IN THE QUALITY ASSURANCE PLAN, SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND TO THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENTS. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL INCLUDE THE FOLLOWING:

a. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE QUALITY ASSURANCE PLAN.

b. ACKNOWLEDGE THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITHIN THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.

c. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION THE METHOD AND FREQUENCY OF REPORTING, AND DISTRIBUTION OF THE REPORTS.

d. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION IN THE ORGANIZATION.

COMPONENT AND CLADDING WIND LOADS:
ALL LOADS SHALL BE CONSIDERED AS POSITIVE OR NEGATIVE.

1. WALLS: Wx = 250 PSF (ZONE 4, TYP)
Wx = 300 PSF (ZONE 5, WITHIN 8'-0" OF CORNERS)

2. PARAPETS: Wx = 520 PSF (CASE A ZONE 2)
Wx = 520 PSF (CASE A ZONE 3)
Wx = 310 PSF (CASE B INTERIOR)
Wx = 350 PSF (CASE B CORNER)

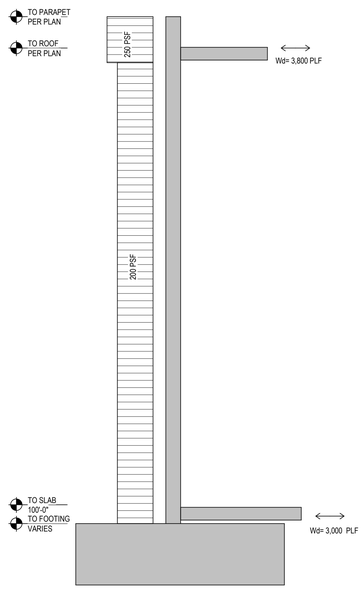
3. ROOFS: Wx = 360 PSF (UPLIFT ZONE 1)
Wx = 240 PSF (UPLIFT ZONE 1')
Wx = 460 PSF (UPLIFT ZONE 2)
Wx = 460 PSF (UPLIFT ZONE 3)
Wx = 140 PSF (POSITIVE ZONE 1 & 1')
Wx = 240 PSF (POSITIVE ZONE 2 & 3)

MAIN WIND FORCE RESISTING SYSTEM LOADS (MWFRS):

Wx = 200 PSF (WINDWARD)
Wx = 160 PSF (LEEWARD)
Wx = 185 PSF (SIDE WALL)
USE 200 PSF AGAINST WALL IN EACH ORTHOGONAL DIRECTION

Wx = 210 PSF (ROOF UPLIFT PRESSURE)
Wx = 250 PSF (WINDWARD NET PARAPET PRESSURE)
Wx = 170 PSF (LEEWARD NET PARAPET PRESSURE)

NOTATIONS:
V = TOTAL DIAPHRAGM SHEAR DUE TO EXTREME WIND EVENT IN DIRECTION INDICATED.
Wd = UNIFORMLY DISTRIBUTED LOAD APPLIED TO ROOF DIAPHRAGM (PERPENDICULAR TO WALL)
Vw = TOTAL SHEAR LOAD RESISTED BY THE ENTIRE LENGTH OF SHEAR WALL FROM DIAPHRAGM FORCE DISTRIBUTION
Wv = DIAPHRAGM SHEAR WALL FORCE OVER THE LENGTH OF THE WALL (PARALLEL TO WALL)



1 / S0.4 SHELTER WINDWARD WALL SECTION (MWFRS)

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

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STORM SHELTER STRUCTURAL CRITERIAL

S0.4

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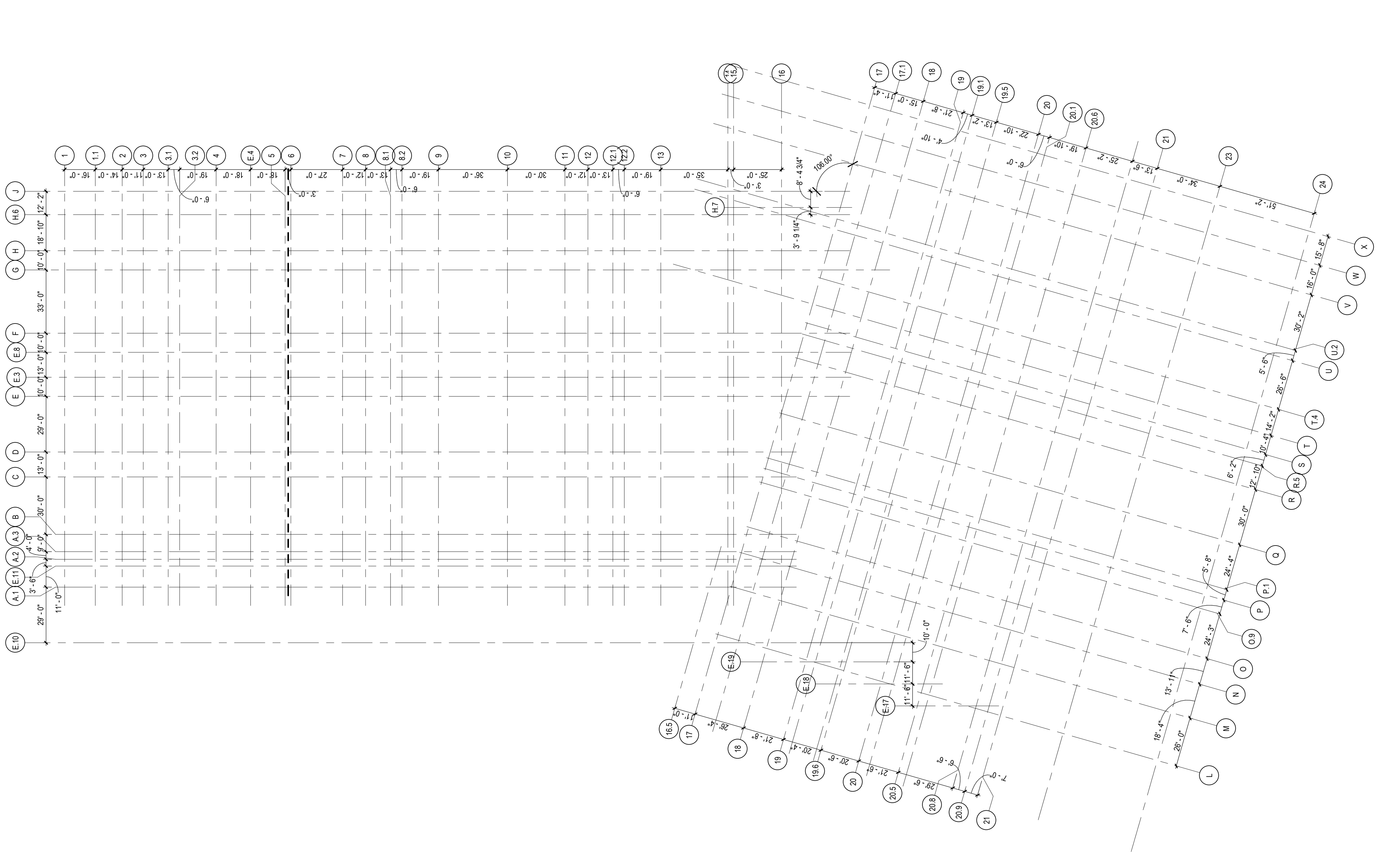
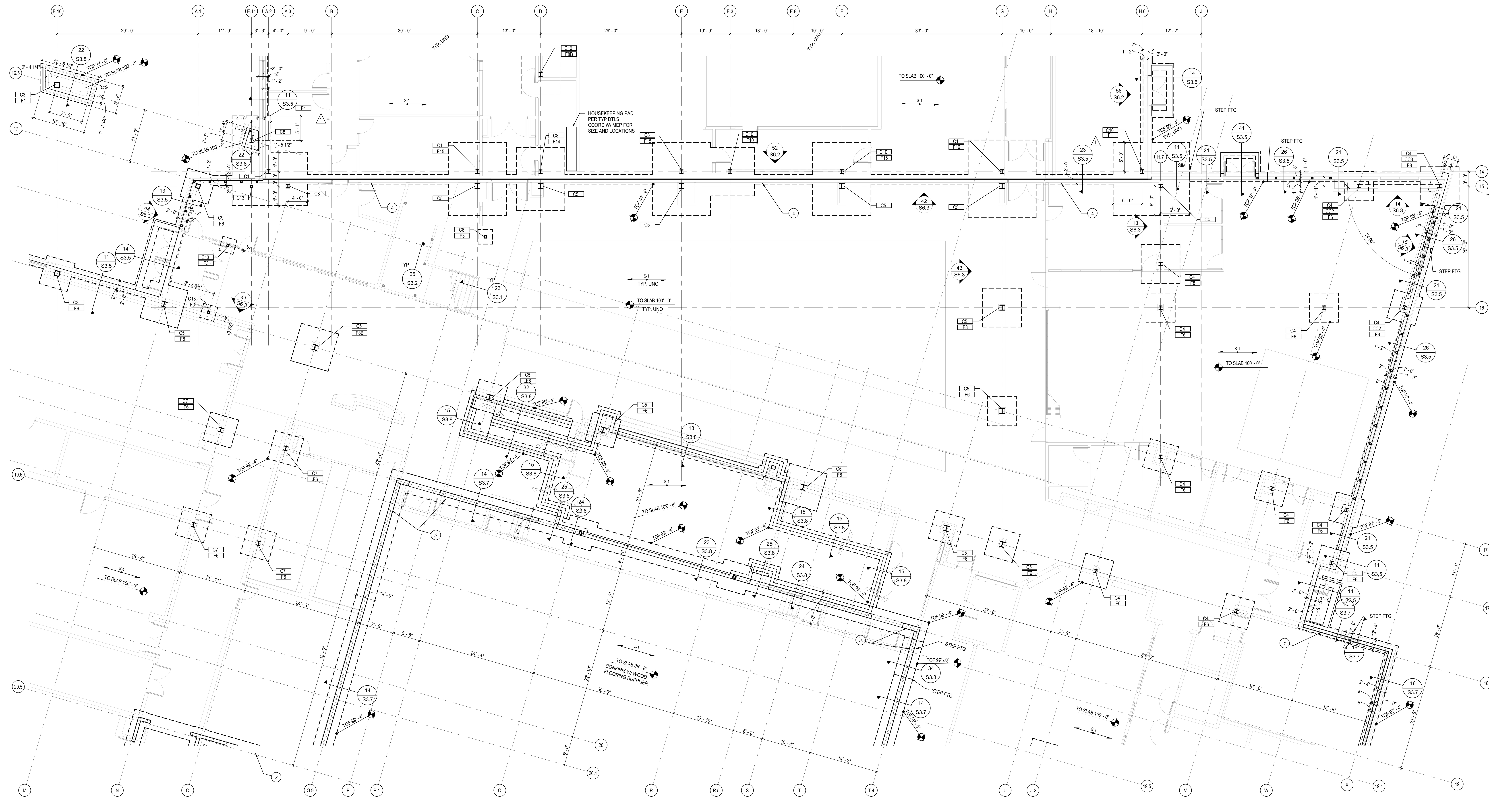
GRID GEOMETRY
PLAN

S0.5



GRID GEOMETRY
SCALE: 1/32" = 1'-0"

NORTH



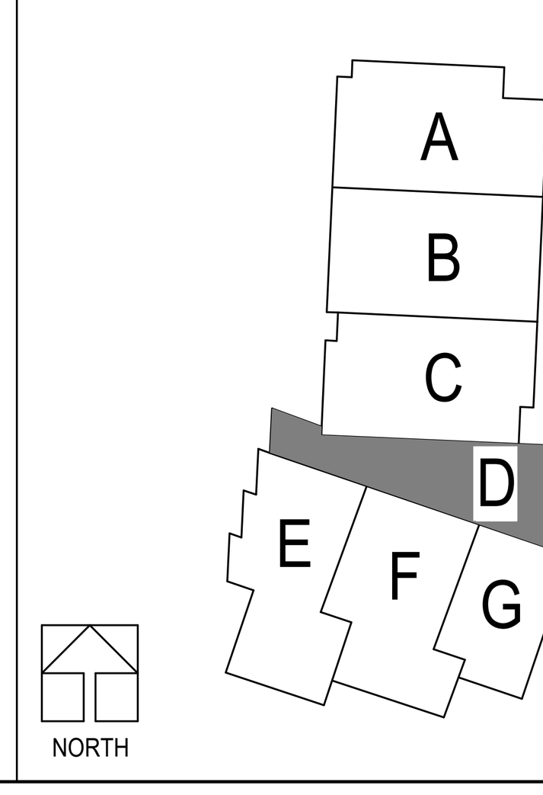
FOUNDATION PLAN - AREA D

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

NORTH

1 8" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
2 12" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
3 8" CMU LOAD-BEARING WALL, REINFORCE WITH (1) #5 VERTICAL @ 16" OC.
4 8" CMU LOAD-BEARING WALL, REINFORCE WITH (2) #5 VERTICAL @ 8" OC.

KEY PLAN



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DEREK JOSEPH SMITH NUMBER PE-2007012527 PROFESSIONAL

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FOUNDATION PLAN - AREA D

S1.1D

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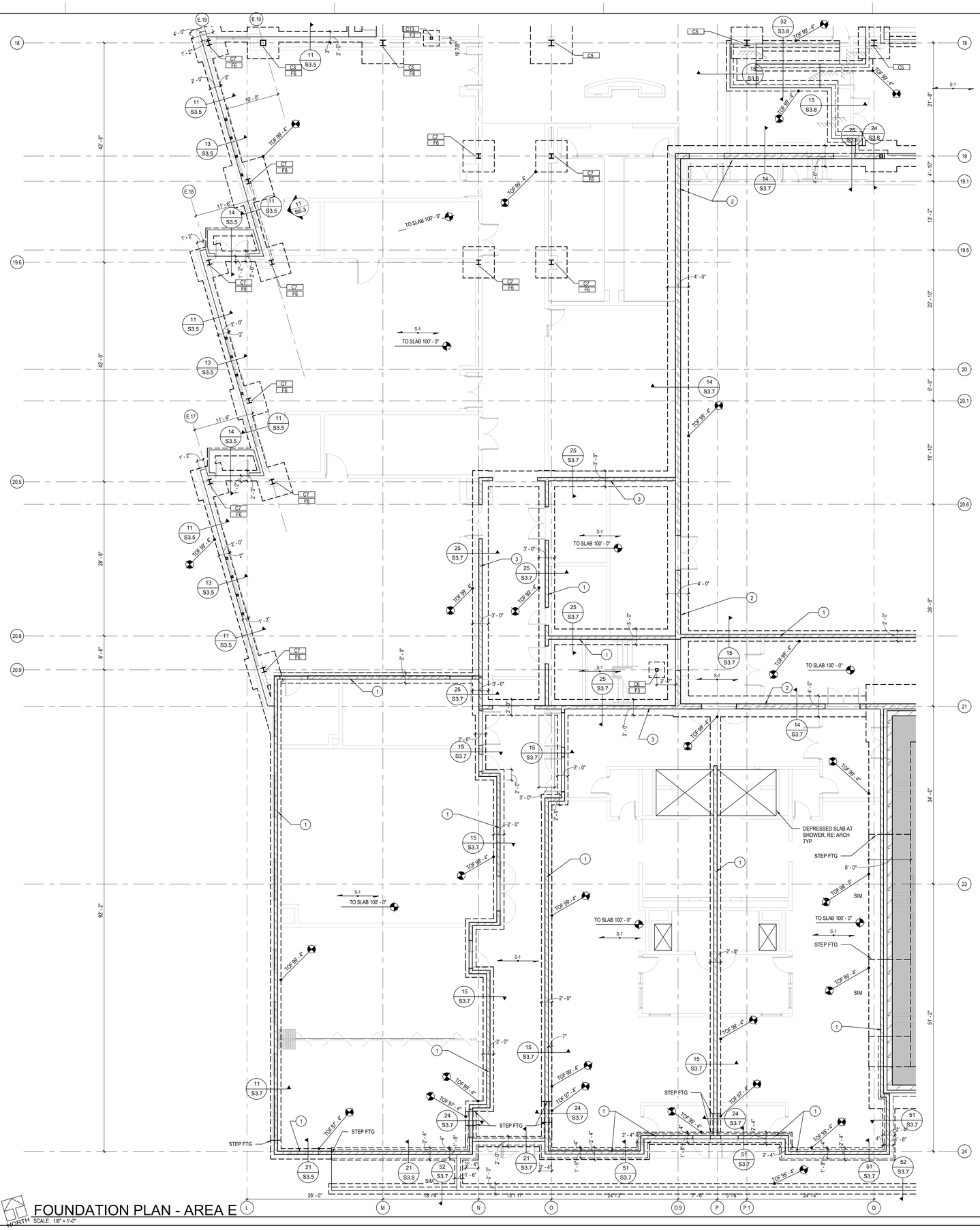
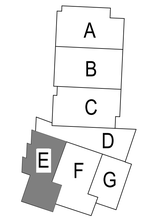


FOUNDATION PLAN - AREA E

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

1 8" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
2 12" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
3 8" CMU LOAD-BEARING WALL, REINFORCE WITH (1) #5 VERTICAL @ 16" OC.
4 8" CMU LOAD-BEARING WALL, REINFORCE WITH (2) #5 VERTICAL @ 8" OC.

KEY PLAN



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FOUNDATION PLAN - AREA E

S1.1E

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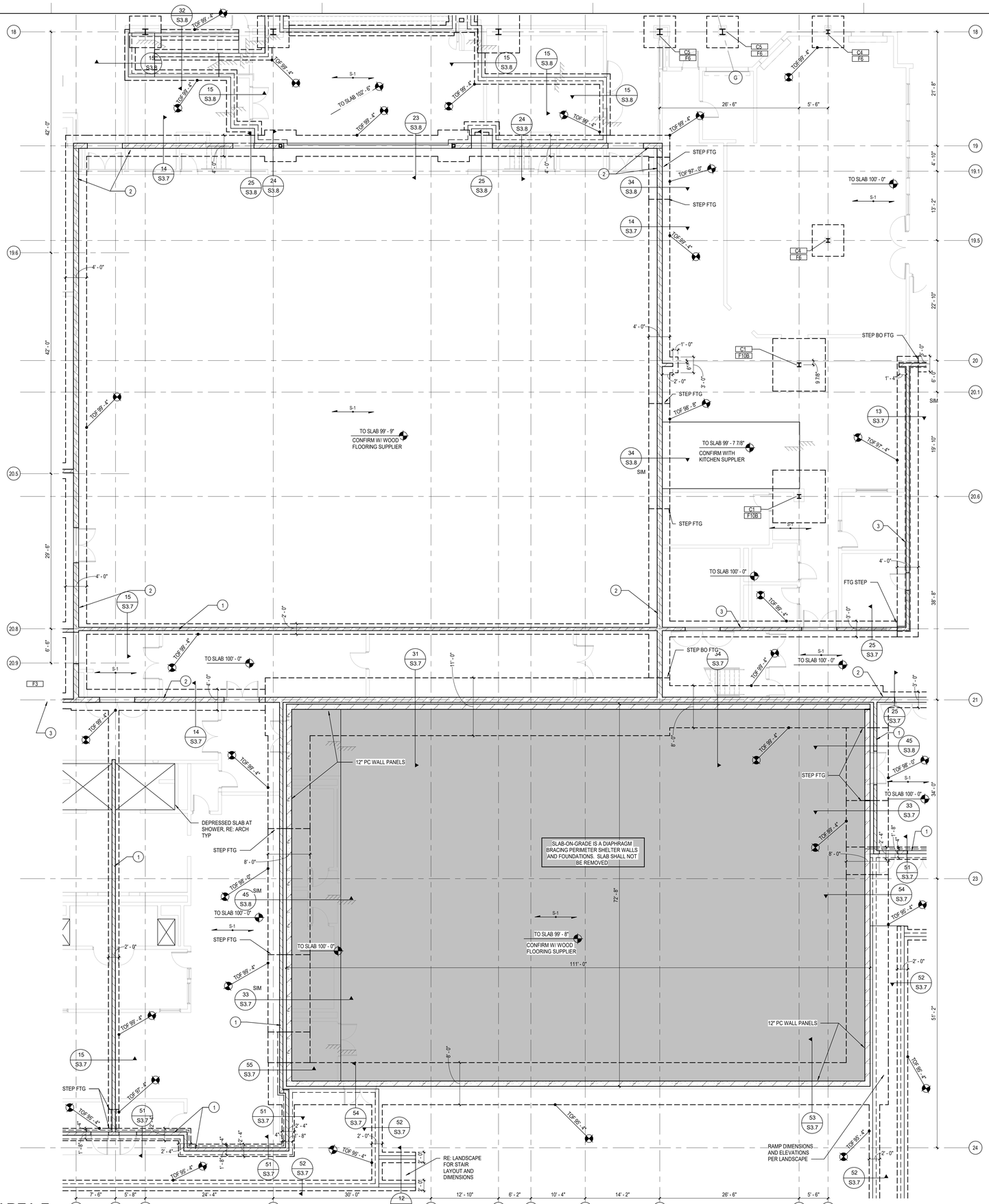

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2 12" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
3 8" CMU LOAD-BEARING WALL, REINFORCE WITH (1) #5 VERTICAL @ 16" OC.
4 8" CMU LOAD-BEARING WALL, REINFORCE WITH (2) #5 VERTICAL @ 8" OC.

FOUNDATION PLAN - AREA F
SCALE: 1/8" = 1'-0"

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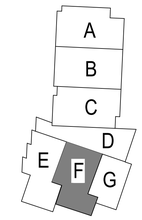

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FOUNDATION PLAN - AREA F

S1.1F

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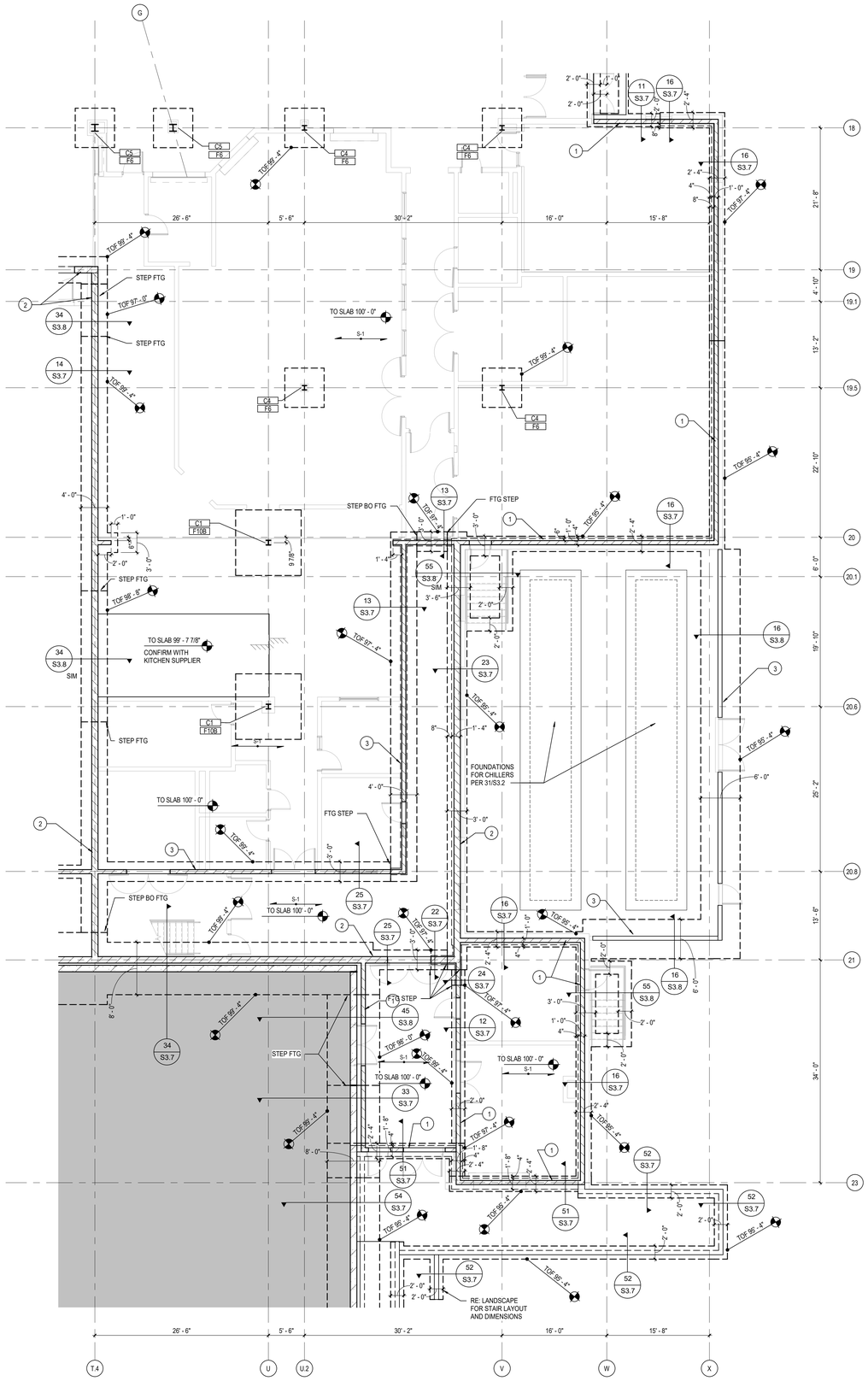

FOUNDATION PLAN - AREA G

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

NORTH

1 8" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
2 12" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
3 8" CMU LOAD-BEARING WALL, REINFORCE WITH (1) #5 VERTICAL @ 16" OC.
4 8" CMU LOAD-BEARING WALL, REINFORCE WITH (2) #5 VERTICAL @ 8" OC.

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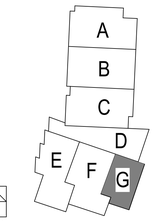

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FOUNDATION PLAN - AREA G

S1.1G

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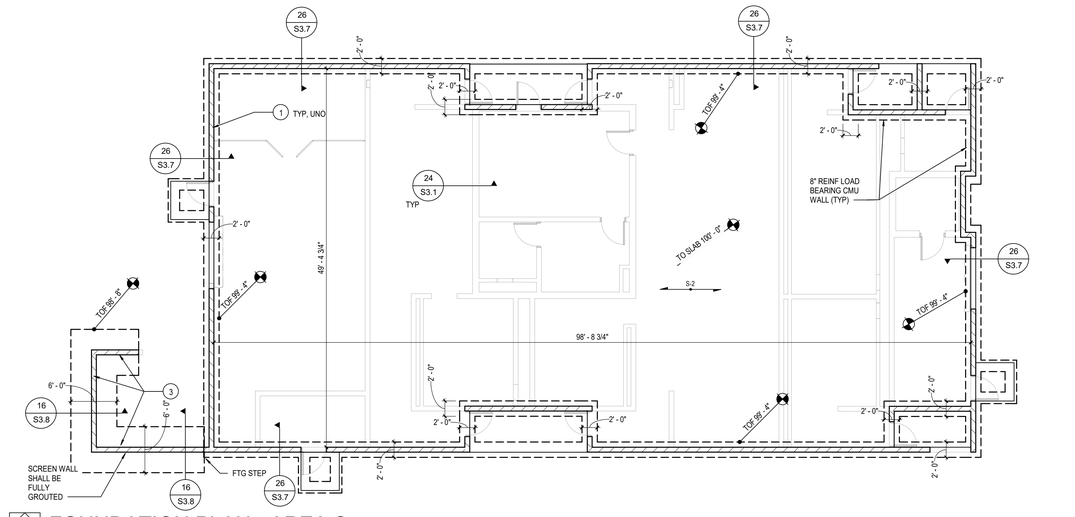

FOUNDATION PLAN - AREA S

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

NORTH

FOUNDATION PLAN - AREA T

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

NORTH

1 8" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
2 12" CMU LOAD-BEARING WALL, REINFORCE PER GENERAL NOTES.
3 8" CMU LOAD-BEARING WALL, REINFORCE WITH (1) #5 VERTICAL @ 16" OC.
4 8" CMU LOAD-BEARING WALL, REINFORCE WITH (2) #5 VERTICAL @ 8" OC.

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FOUNDATION PLAN AREAS S & T

S1.1S

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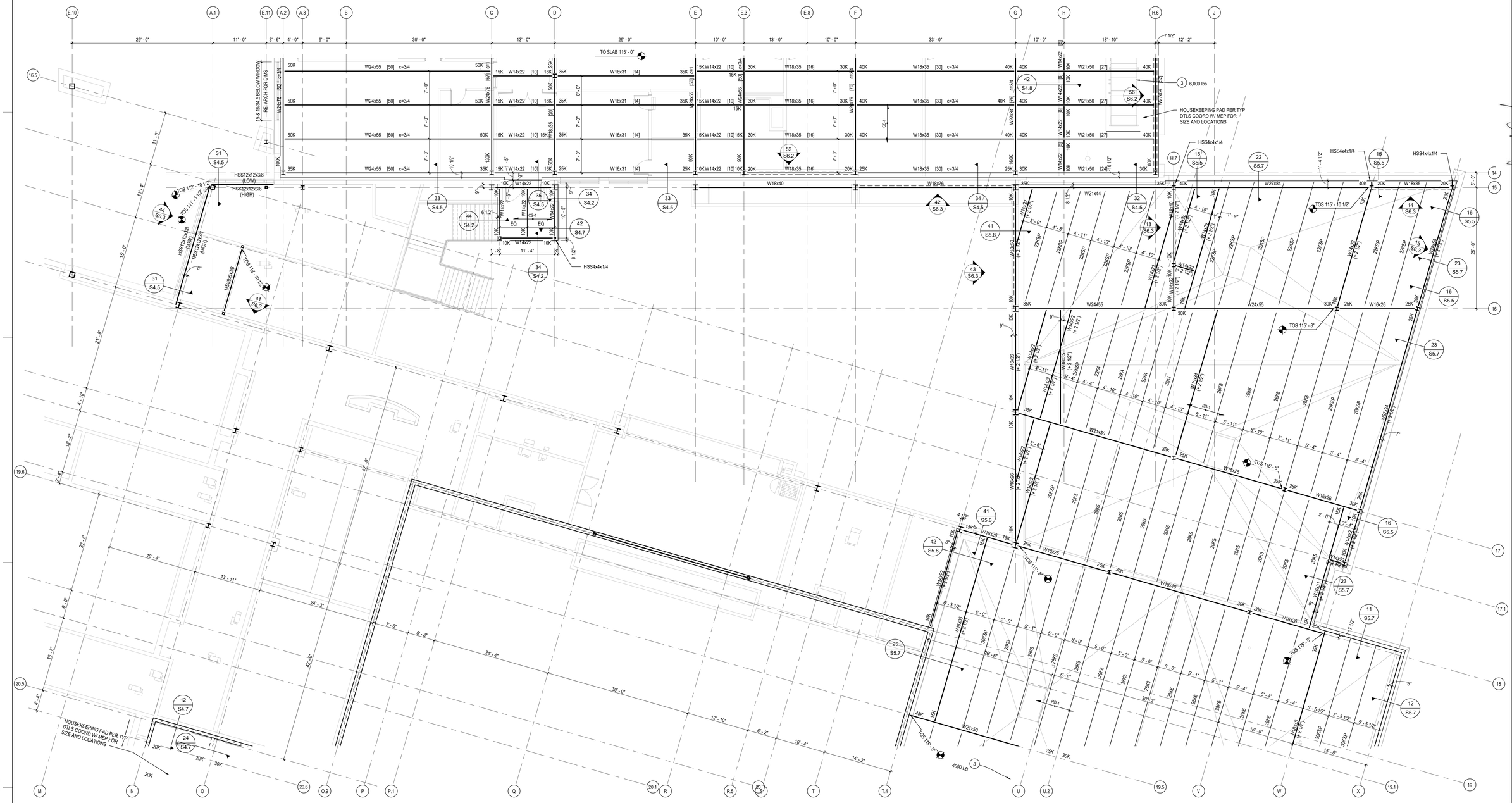


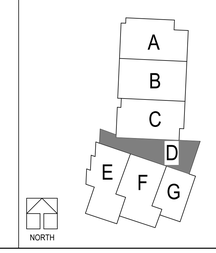
FLOOR FRAMING PLAN - AREA D

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

NORTH

1. BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2. ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3. MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
4. GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

KEY PLAN



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LOW ROOF FRAMING PLAN - AREA D

S2.1D

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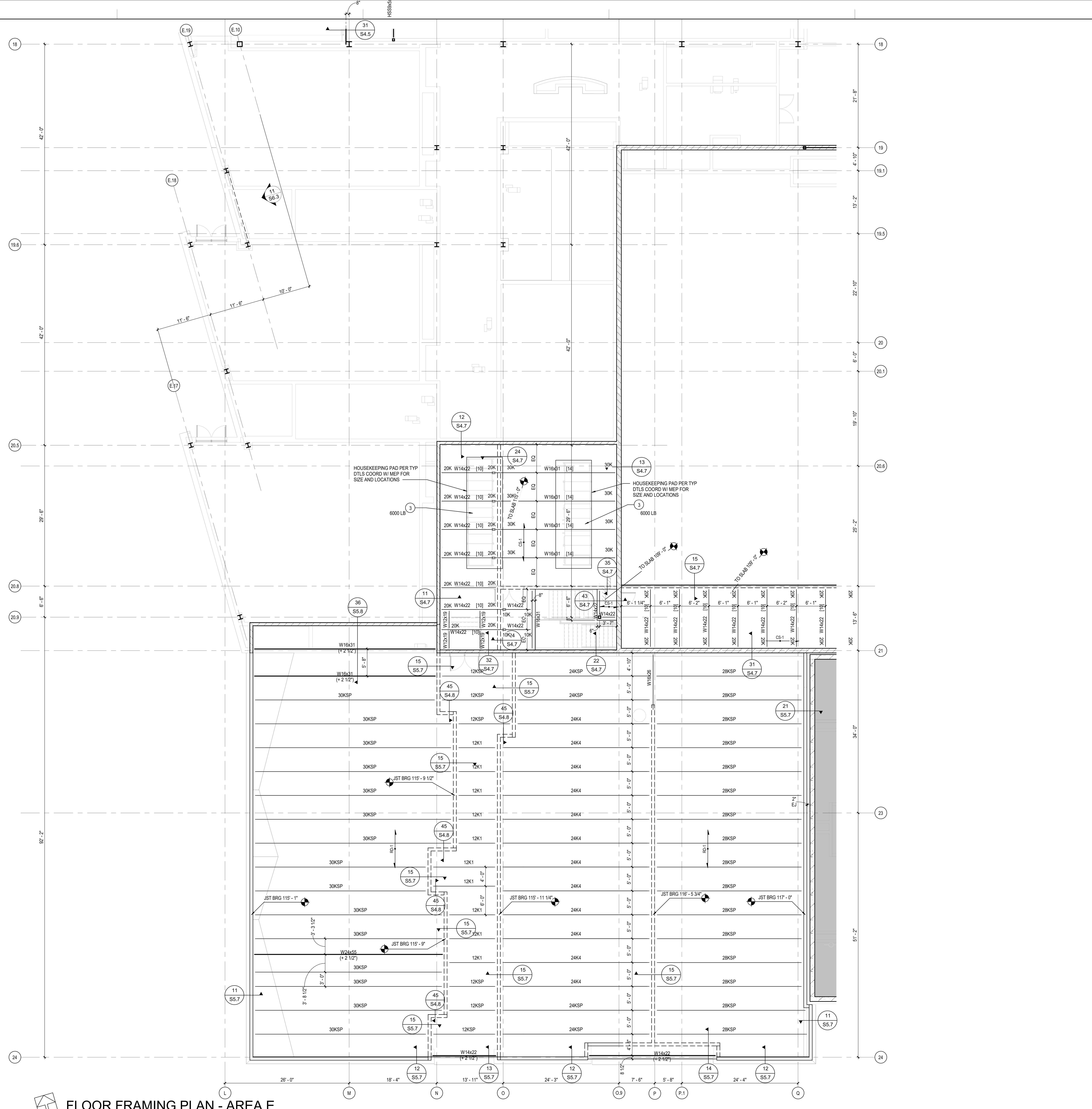

FLOOR FRAMING PLAN - AREA E

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

1 BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2 ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3 MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
4 GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

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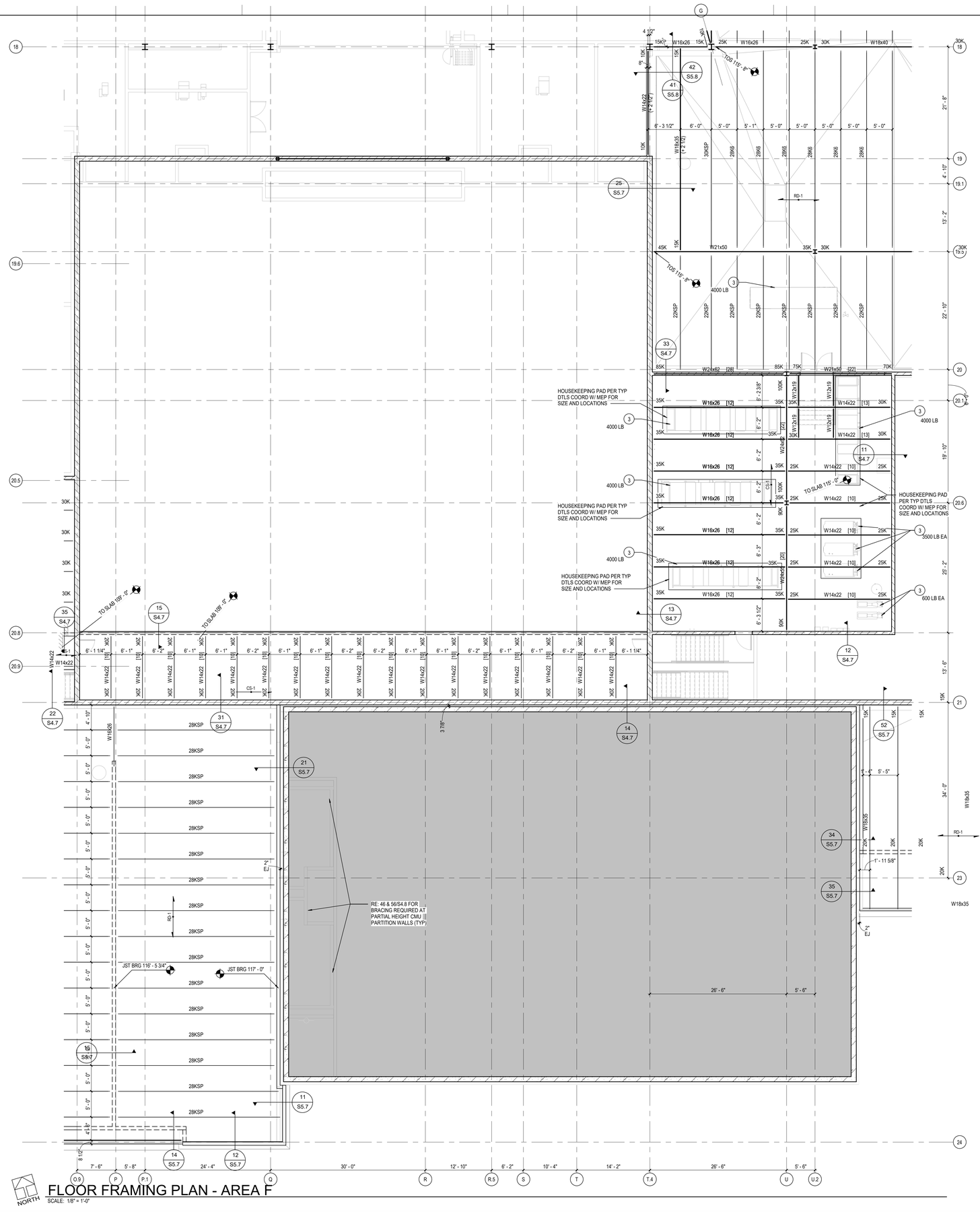
FLOOR AND LOW ROOF FRAMING PLAN - AREA E

S2.1E



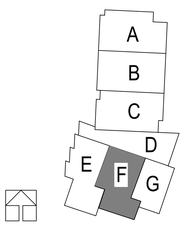
1 BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1

2 ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.

3 MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.

4 GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

KEY PLAN



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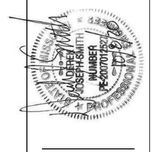

LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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FLOOR AND LOW ROOF FRAMING PLAN - AREA F

S2.1F

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
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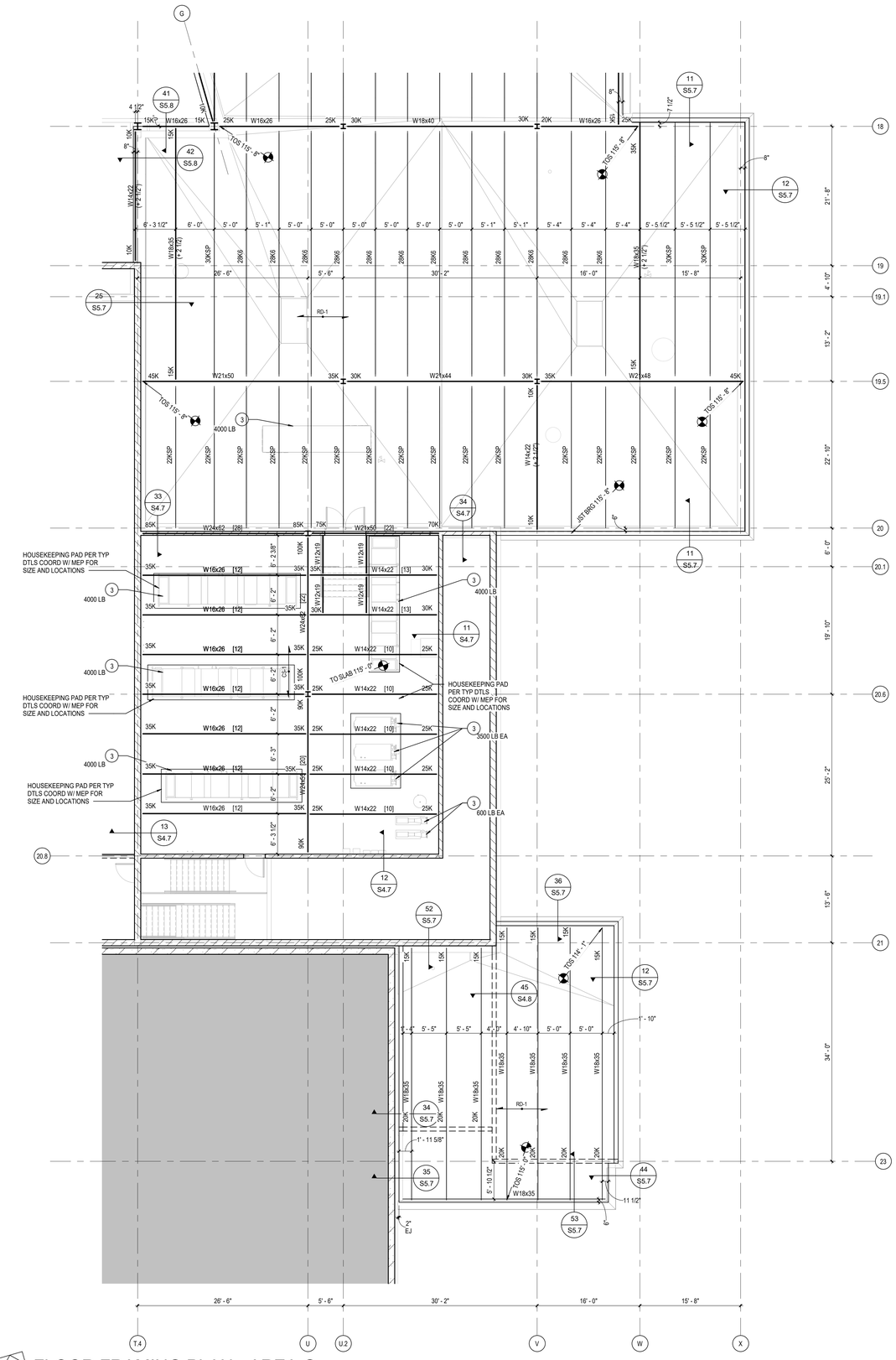


FLOOR FRAMING PLAN - AREA G

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

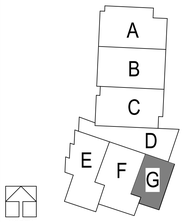
1 BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1

2 ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.

3 MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.

4 GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

KEY PLAN



NORTH

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FLOOR AND LOW ROOF FRAMING PLAN - AREA G

S2.1G

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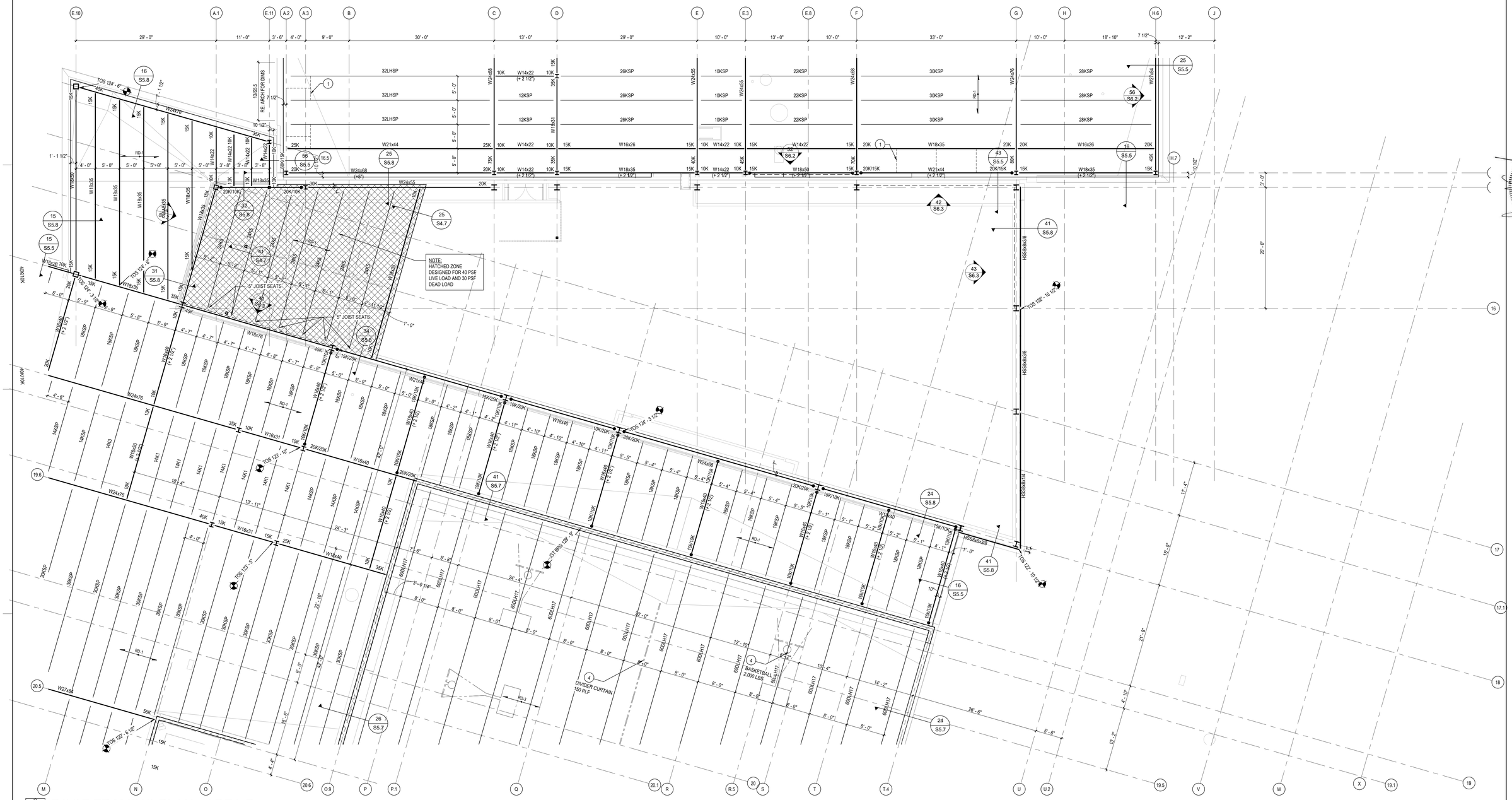


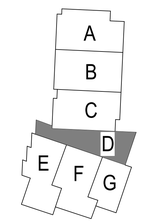
ROOF FRAMING PLAN - AREA D

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

NORTH

1. BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2. ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3. MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
4. GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

KEY PLAN



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ROOF FRAMING PLAN - AREA D

S2.2D

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
10/7/2020 4:34:58 PM

1. BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/SS.1
2. ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/SS.1.
3. MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
4. GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

CONDUIT PER ELECTRICAL DRAWINGS. PROVIDE BLOCKOUT IN WEBS OF PRECAST DOUBLE TEES PER DETAIL 25/S4.9

ROOF FRAMING PLAN - AREA E

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

NORTH

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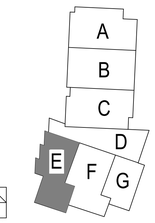
KEY PLAN



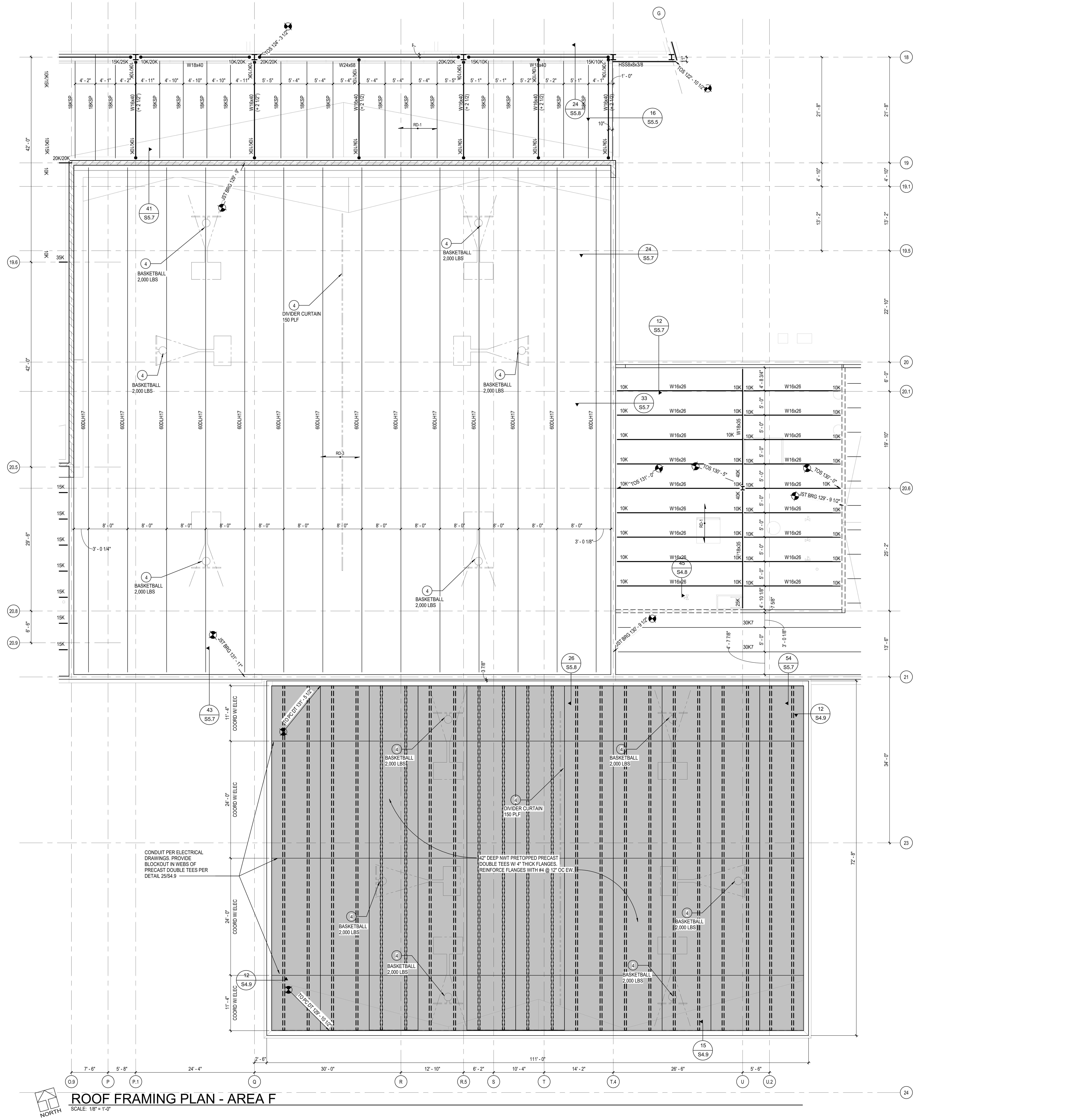
13-20102-00

ROOF FRAMING PLAN - AREA E

S2.2E

BIM 360://13-20102-00 Lee's Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
10/7/2020 4:35:16 PM

1. BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2. ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3. MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
4. GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

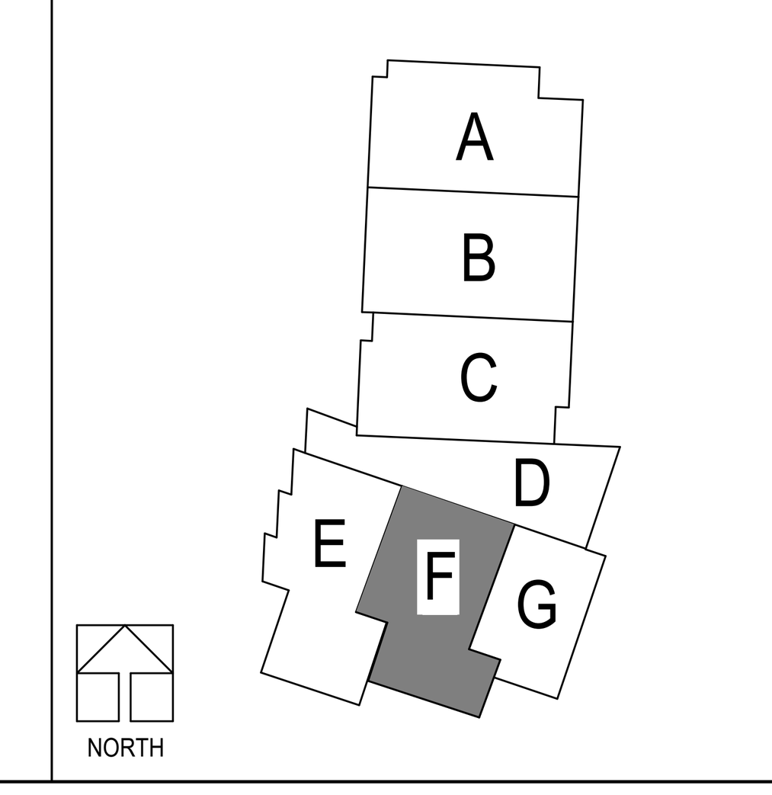


ROOF FRAMING PLAN - AREA F

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

NORTH

KEY PLAN



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ROOF FRAMING PLAN - AREA F

S2.2F

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
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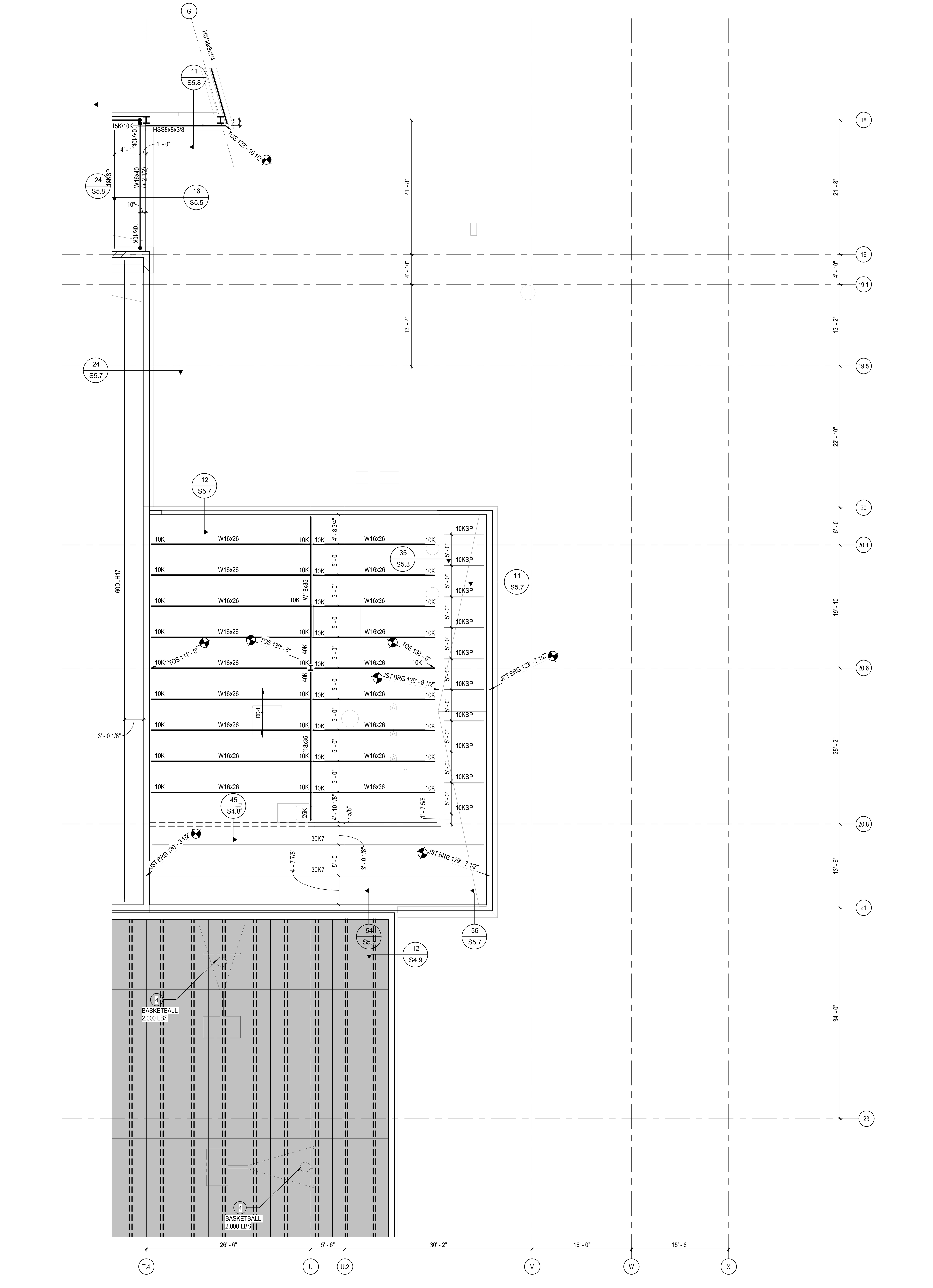

ROOF FRAMING PLAN - AREA G

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

1 BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2 ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3 MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
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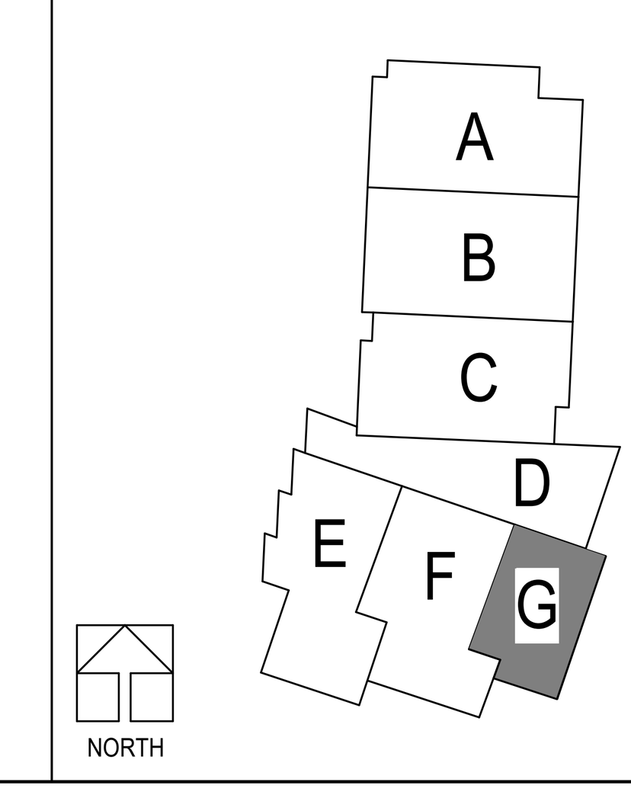
KEY PLAN



13-20102-00

ROOF FRAMING PLAN - AREA G

S2.2G

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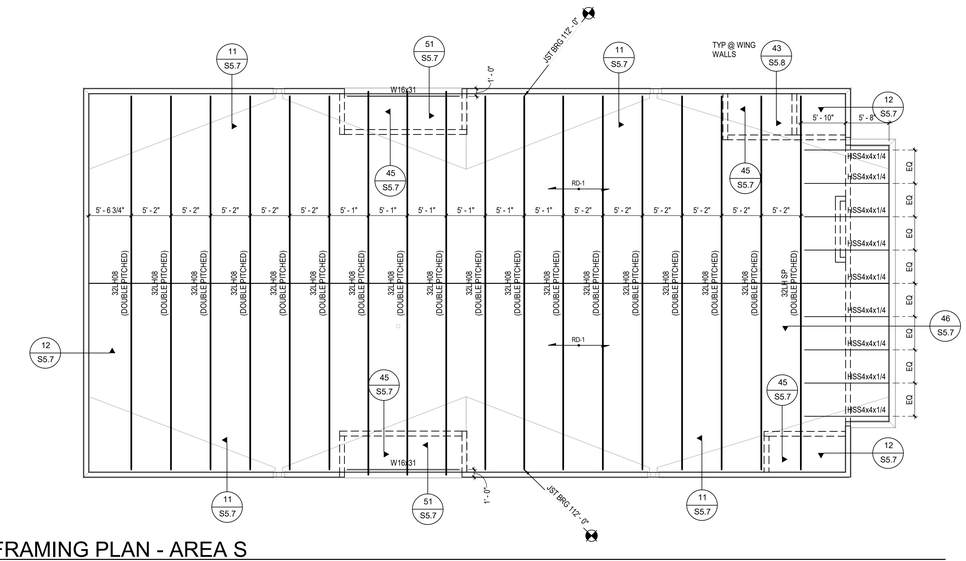
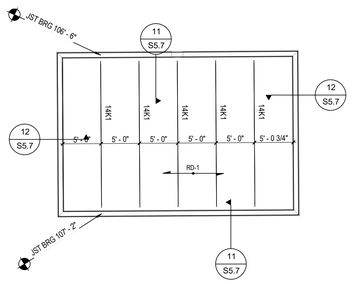


ROOF FRAMING PLAN - AREA S

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



ROOF FRAMING PLAN - AREA T

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

1 BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1

2 ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.

3 MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.

4 GYM EQUIPMENT ALLOWANCE OF WEIGHT INDICATED, CONFIRM WEIGHT AND DETAILS WITH ACTUAL EQUIPMENT SELECTED. CONNECTIONS TO ROOF STRUCTURE IS BY THE GYM EQUIPMENT SUPPLIER.

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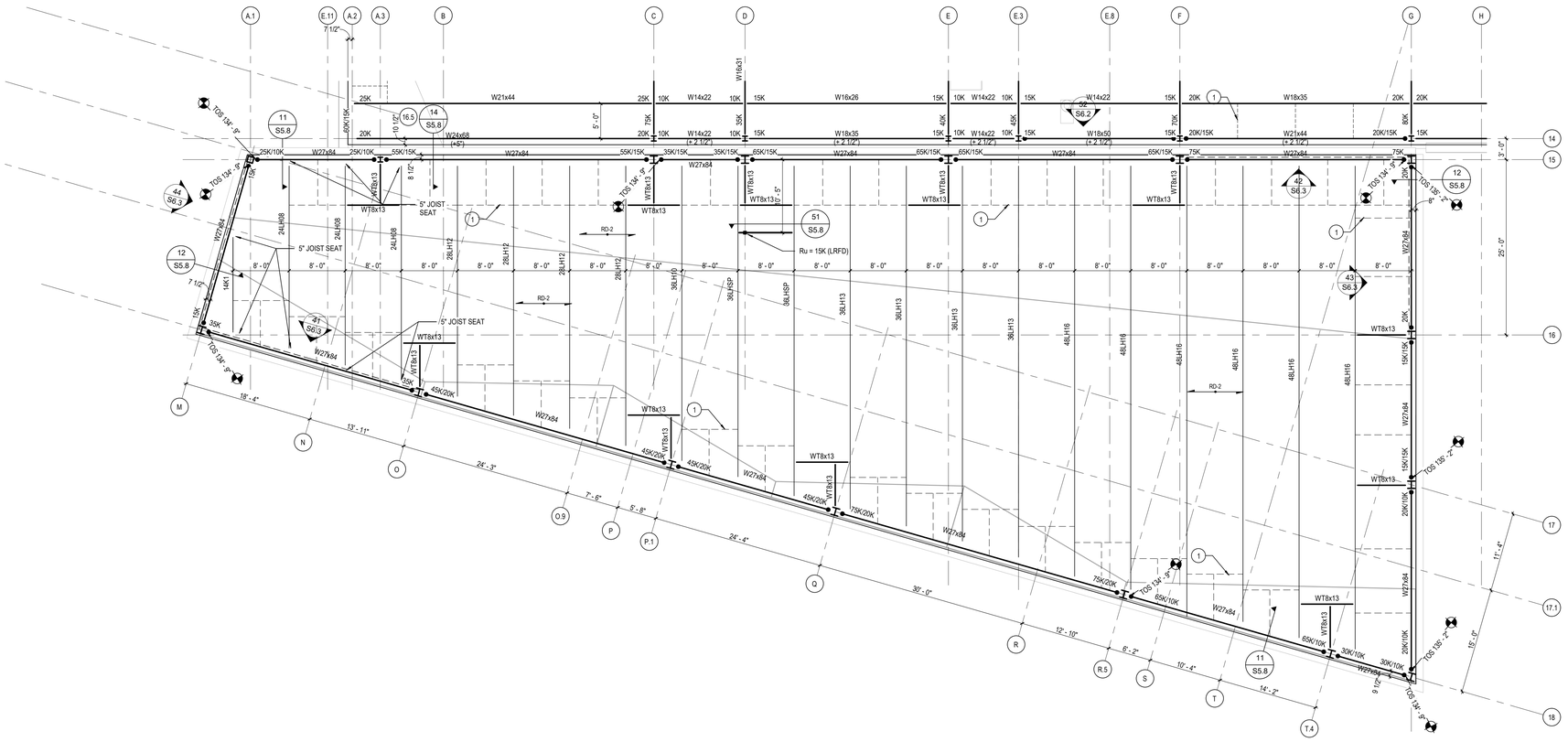
ROOF FRAMING PLAN - AREAS S & T

S2.2S

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
10/7/2020 4:36:15 PM



ROOF FRAMING PLAN - AREA D

NORTH

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

1. BOTTOM FLANGE BRACE PER TYPICAL DETAIL PER 56/S4.2 AND 51/S5.1
2. ROOF HATCH PER ARCHITECTURAL DRAWINGS. PROVIDE 22/S5.1.
3. MECHANICAL UNIT OF MAXIMUM WEIGHT INDICATED, CONFIRM WITH MECHANICAL SUPPLIER.
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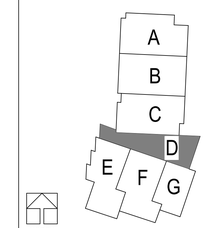
KEY PLAN



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HIGH ROOF FRAMING PLAN - AREA D

S2.3D

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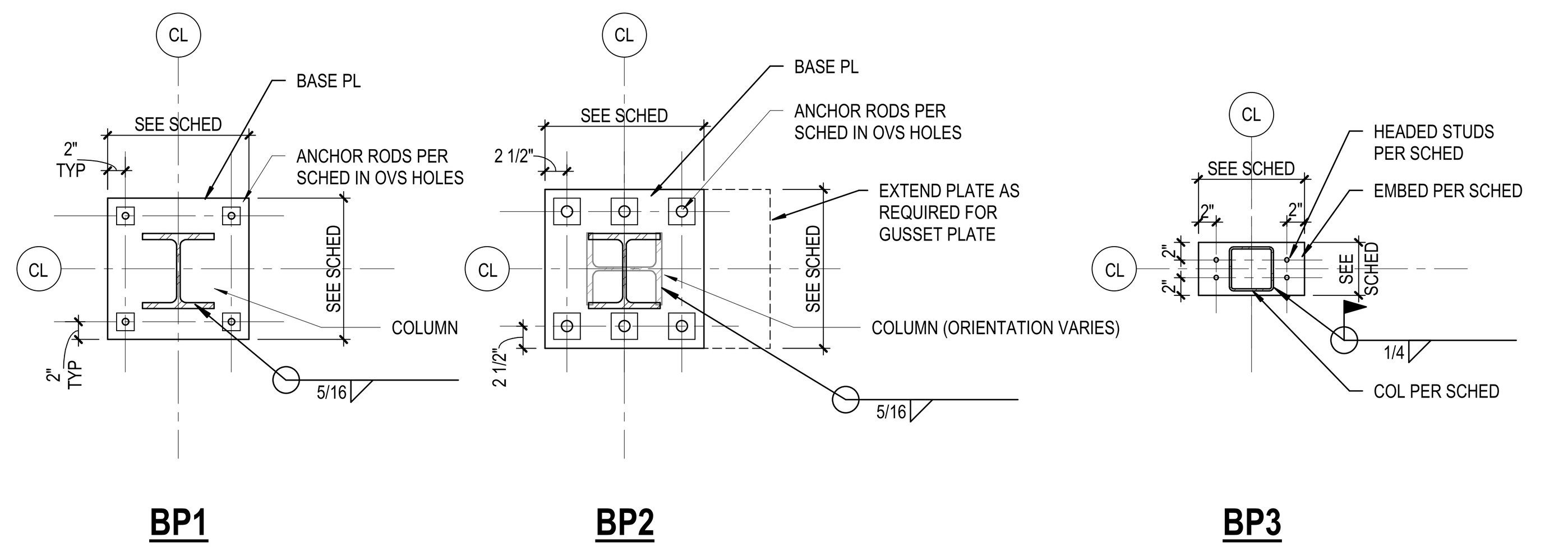
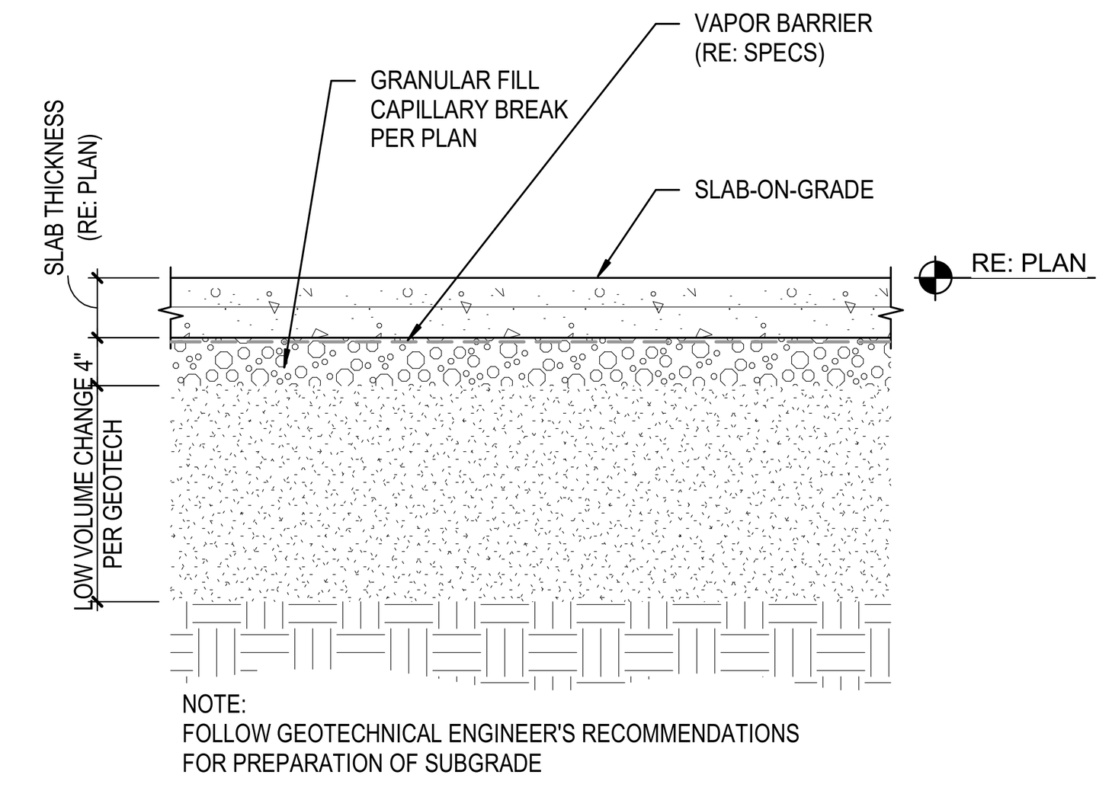
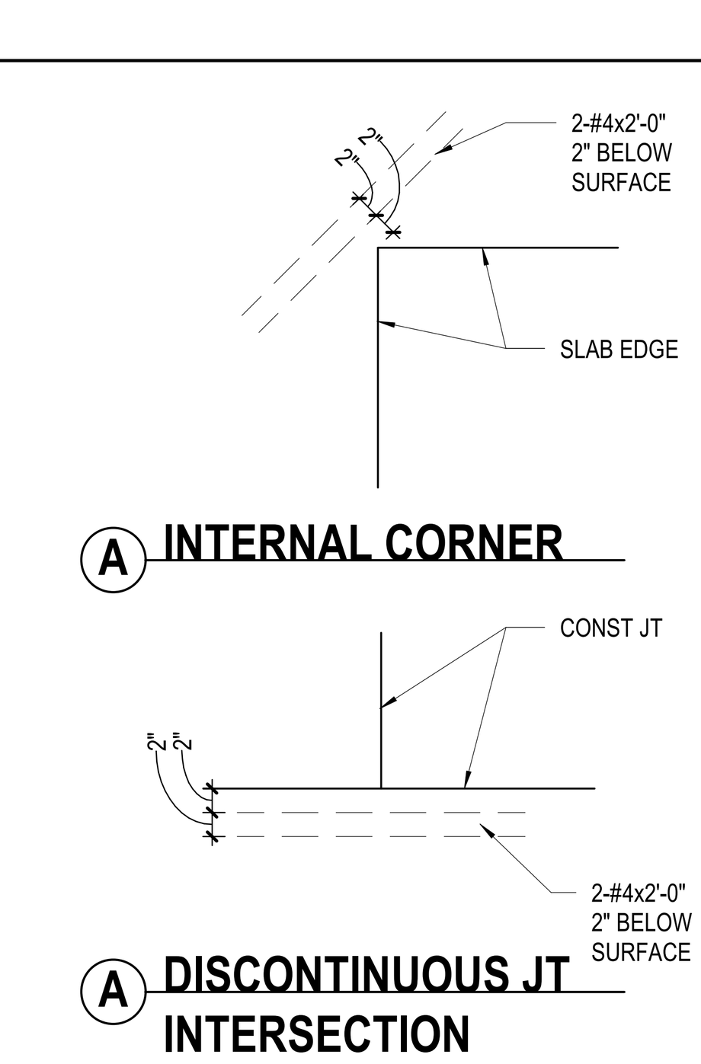
10/7/2020 4:36:29 PM



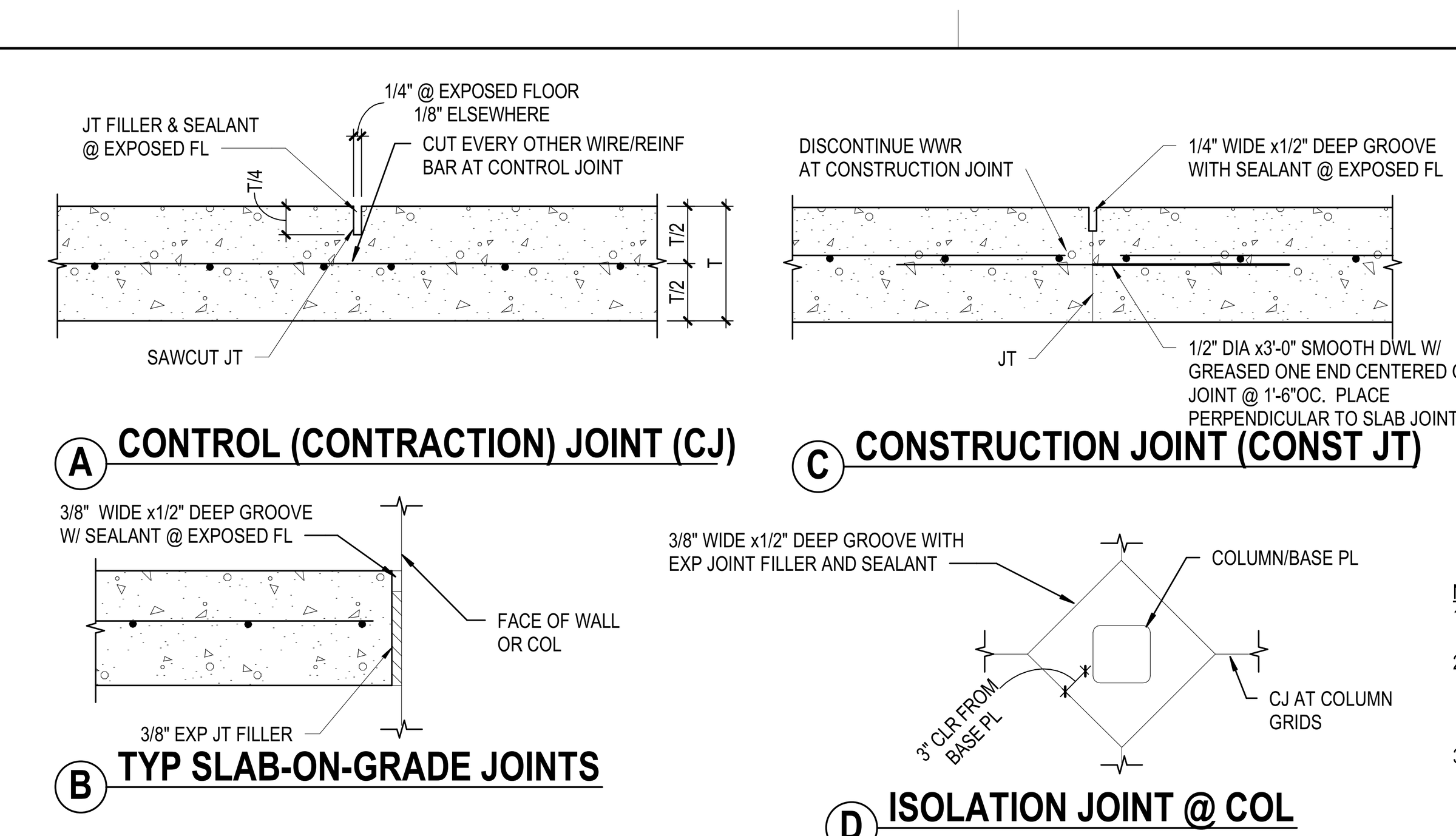
11 S3.1 COLUMN BASE PLATE DETAILS
SCALE: 3/4" = 1'-0"



13 S3.1 TYP SLAB-ON-GRADE DETAIL
SCALE: 3/4" = 1'-0"

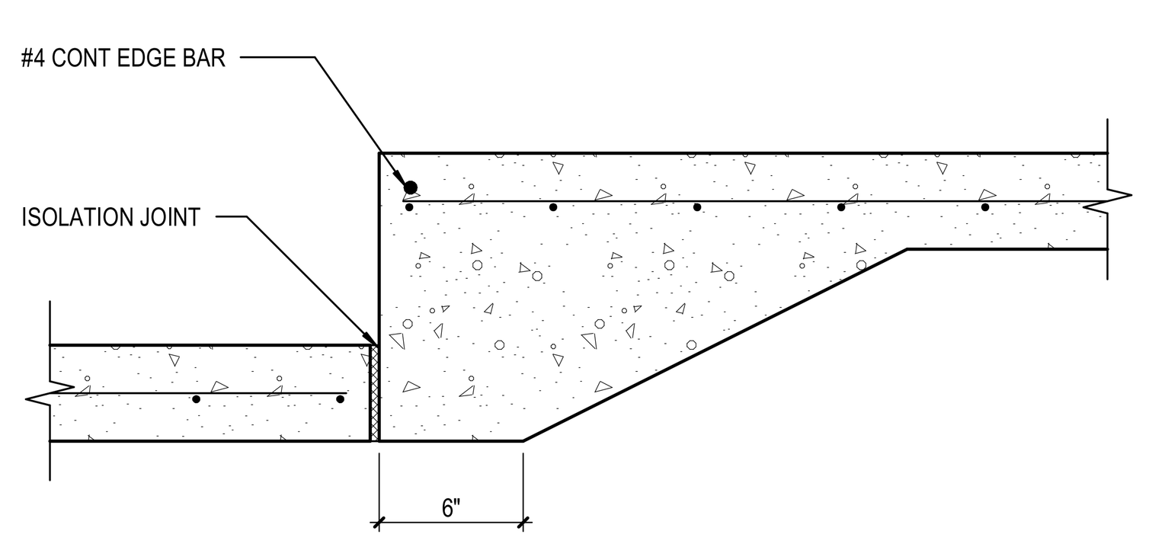


14 S3.1 TYP SLAB-ON-GRADE
SCALE: 3/4" = 1'-0"

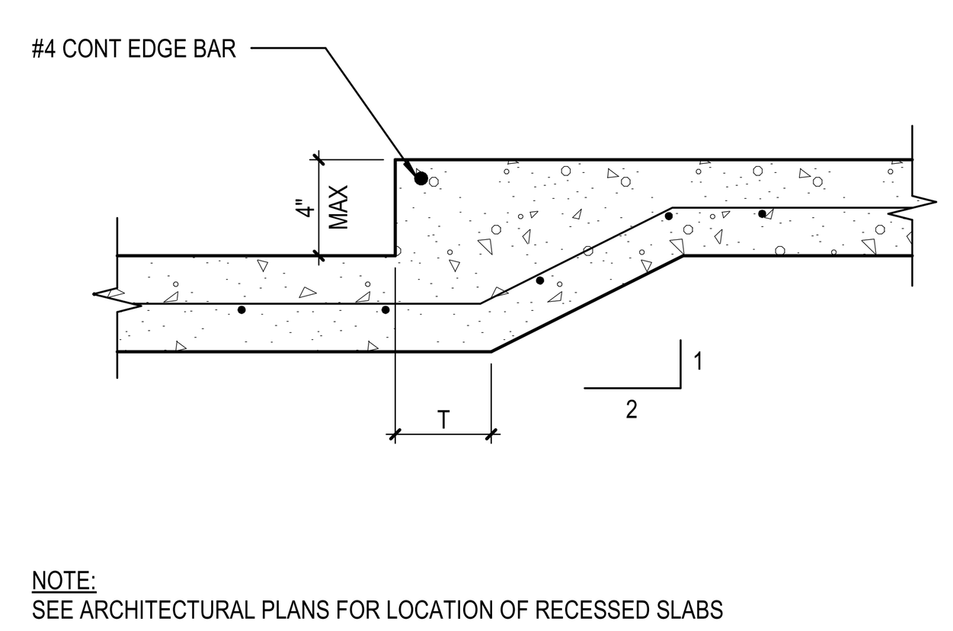


NOTES:
1. CONTROL JOINTS SHALL BE SPACED AT INTERVALS < 12'-0" OC IN EACH DIRECTION.
2. CONTRACTOR SHALL COORDINATE JOINT SPACING WITH ARCHITECTURAL REQUIREMENTS AS APPLICABLE. SUBMIT JOINT LAYOUT FOR ARCHITECT / ENGINEER'S REVIEW.
3. JOINT LAYOUT SHOULD BE RELATIVELY SQUARE WHENEVER POSSIBLE. LENGTH / WIDTH ASPECT RATIO SHALL BE LESS THAN 2:1.

15 S3.1 TYP SLAB-ON-GRADE JOINTS
SCALE: 3/4" = 1'-0"

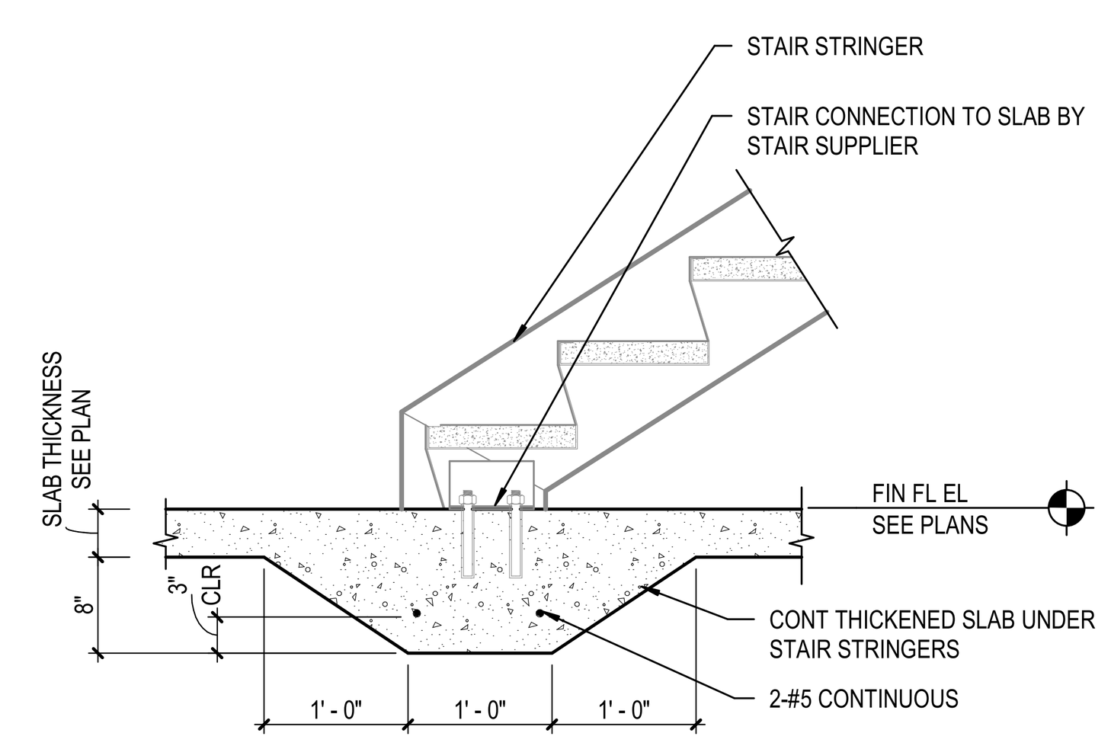


21 S3.1 TYP FLOOR SLAB RECESS DETAIL
SCALE: 1 1/2" = 1'-0"

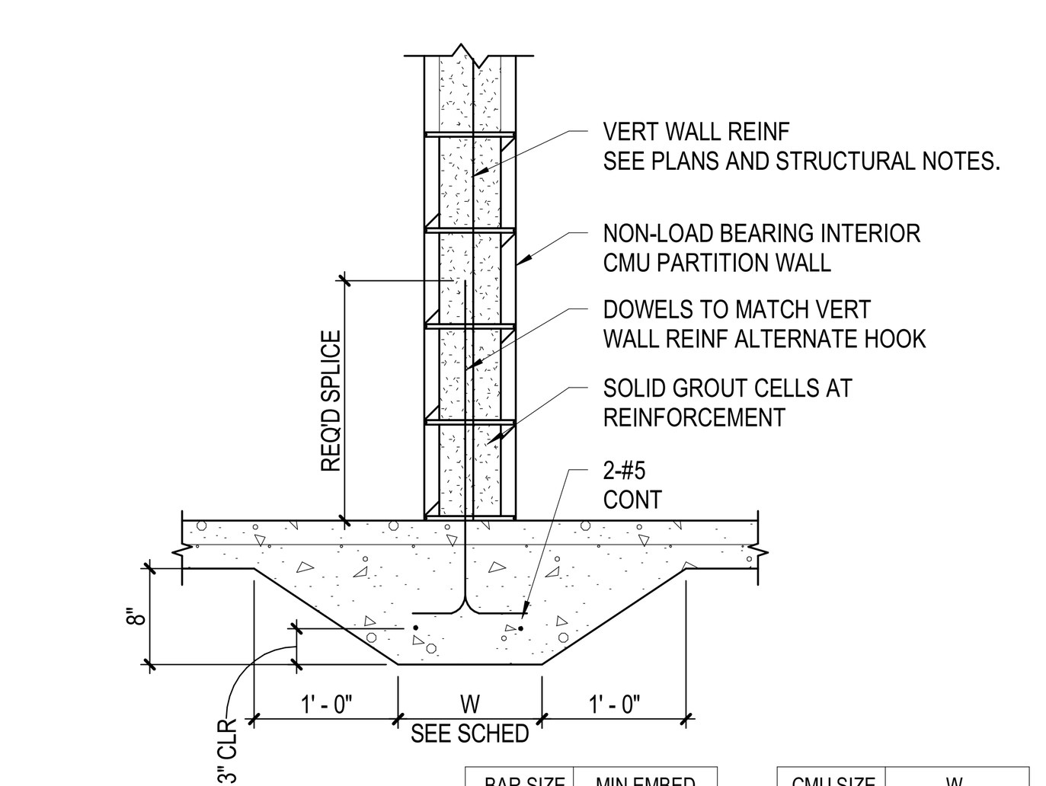


NOTE:
SEE ARCHITECTURAL PLANS FOR LOCATION OF RECESSED SLABS

22 S3.1 TYP FLOOR SLAB RECESS DETAIL
SCALE: 1 1/2" = 1'-0"



23 S3.1 TYP STRINGER FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

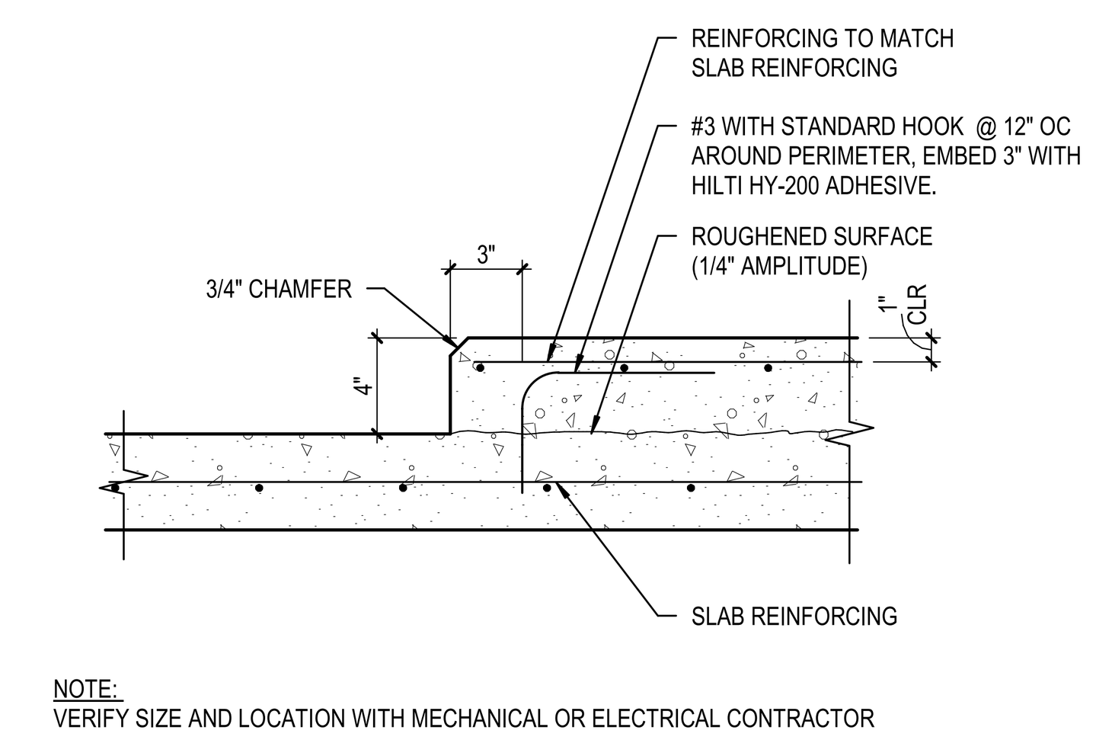


BAR SIZE	MIN EMBED
#4	5"
#5	6"
#6	7"
#7	8"

CMU SIZE	W
6" CMU	1'-0"
8" CMU	1'-0"
12" CMU	2'-0"

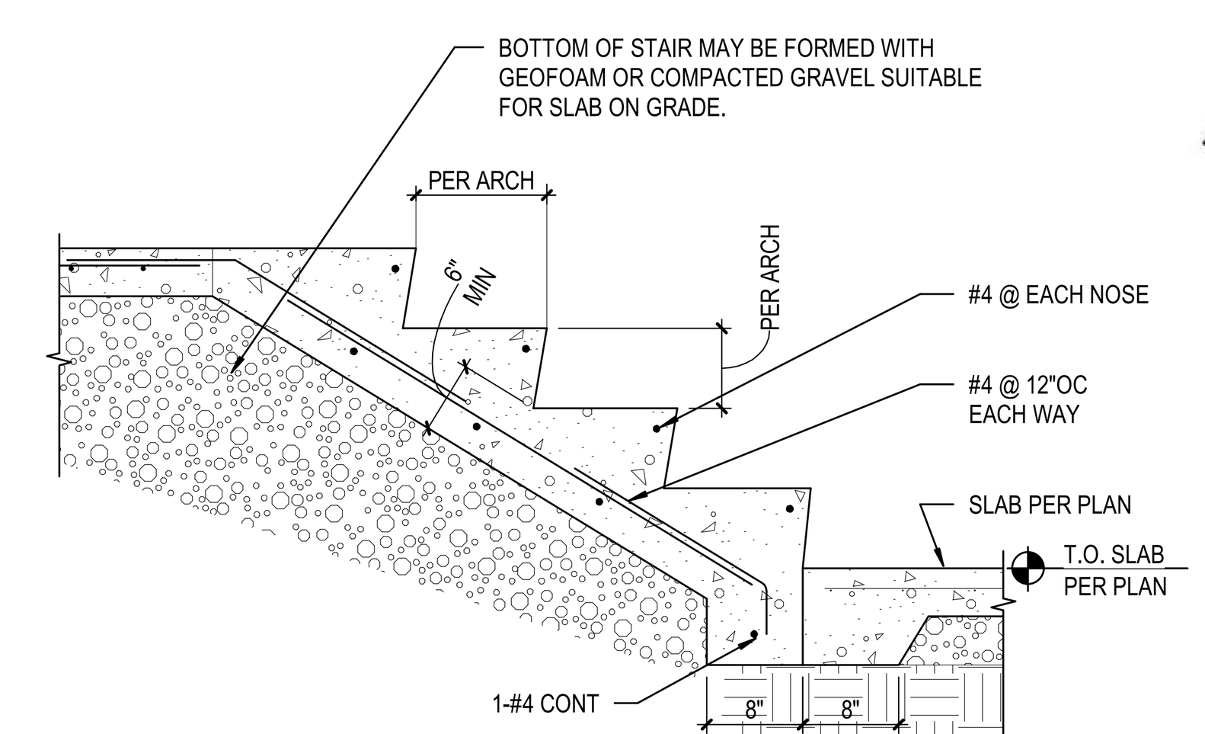
NOTE: AT CONTRACTORS OPTIONS, DOWELS MAY BE EPOXIED INTO THICKENED SLAB PER SCHEDULE IN LIEU OF HOOKED DOWELS.

24 S3.1 TYP CMU PARTITION WALL DETAIL
SCALE: 3/4" = 1'-0"



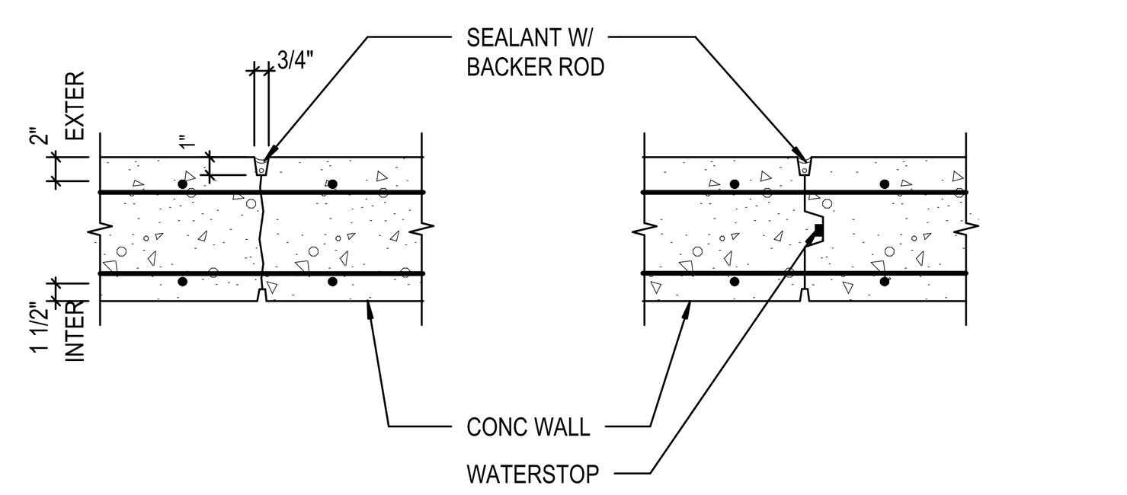
NOTE:
VERIFY SIZE AND LOCATION WITH MECHANICAL OR ELECTRICAL CONTRACTOR

25 S3.1 TYP CONC PAD DETAIL
SCALE: 1 1/2" = 1'-0"



NOTE: SEE ARCH PLANS FOR NUMBER OF TREADS AND RISERS

26 S3.1 TYP INTERIOR ON-GRADE CONCRETE STAIR DETAIL
SCALE: 3/4" = 1'-0"

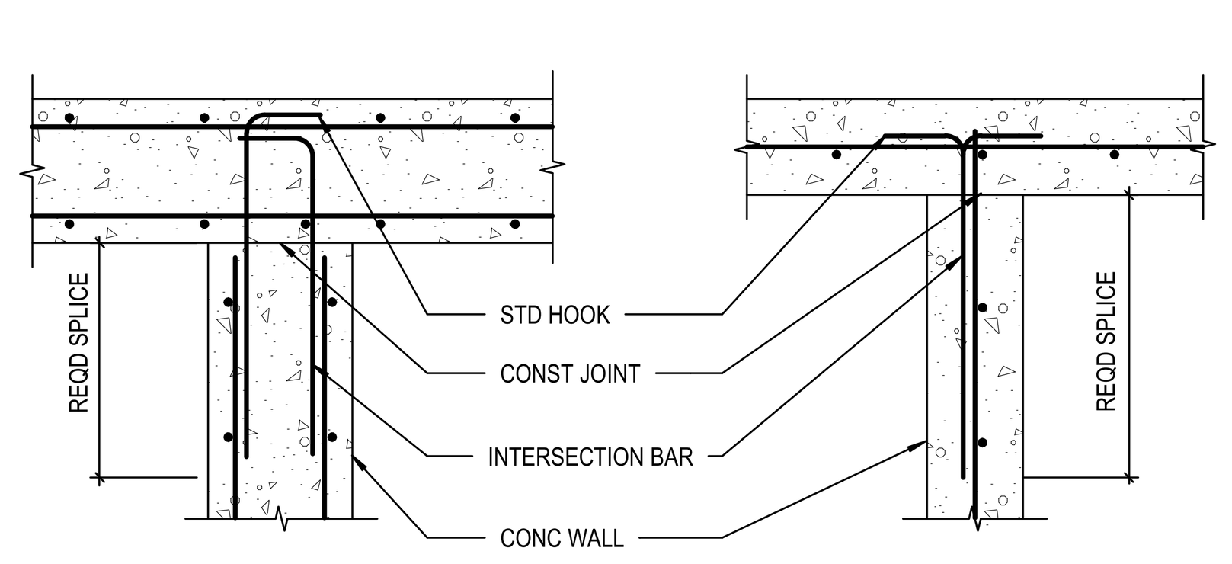


NOTE: STOP ALTERNATE HORIZONTAL BARS AT JOINT. SEE ARCH FOR CJ LOCATIONS.

A WALL CONTROL JT
B WALL CONST JT

NOTE:
JOINTS SPACING SHALL NOT EXCEED THE SMALLER OF 25 FEET OR 3 TIMES THE WALL HEIGHT.

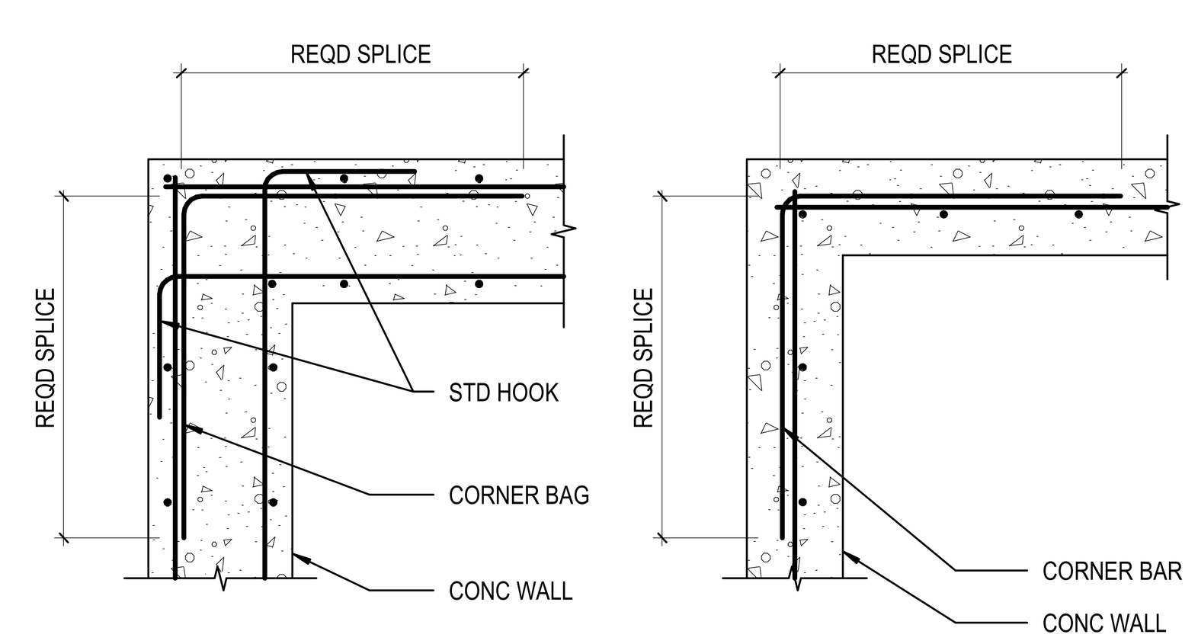
31 S3.1 TYP CONC WALL JOINT DETAIL
SCALE: 3/4" = 1'-0"



NOTE: INTERSECTION BARS TO BE SAME SIZE AND SPACING AS THE HORIZONTAL BARS.

A DOUBLE LAYER
B SINGLE LAYER

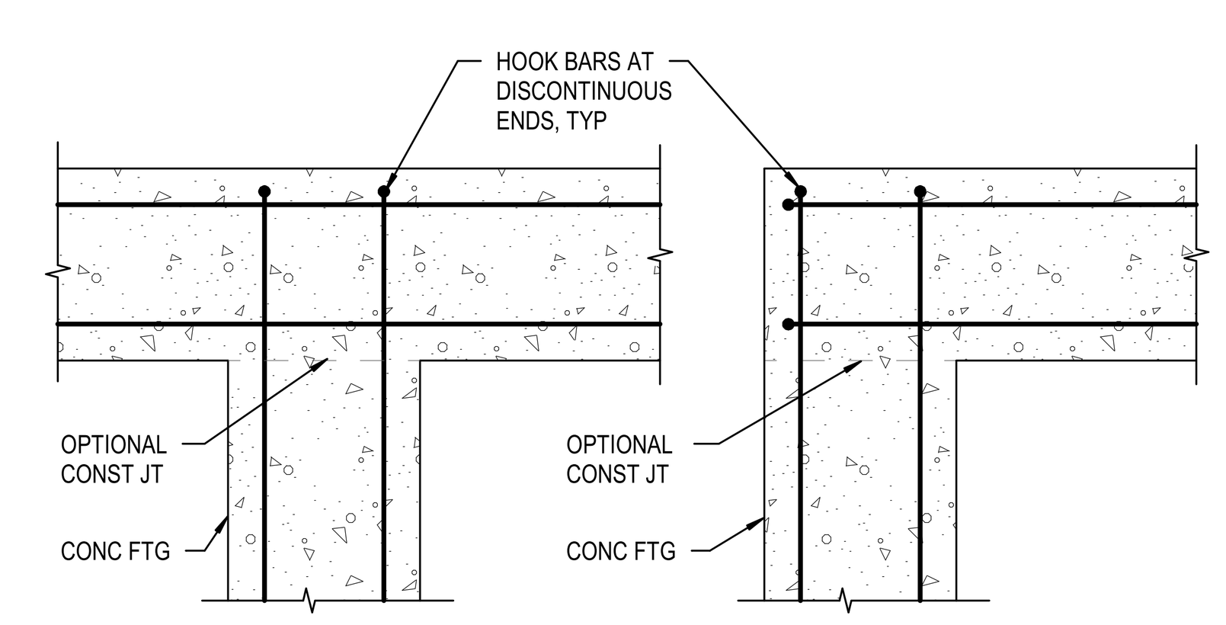
32 S3.1 TYP WALL INTERSECTION REINF DETAIL
SCALE: 3/4" = 1'-0"



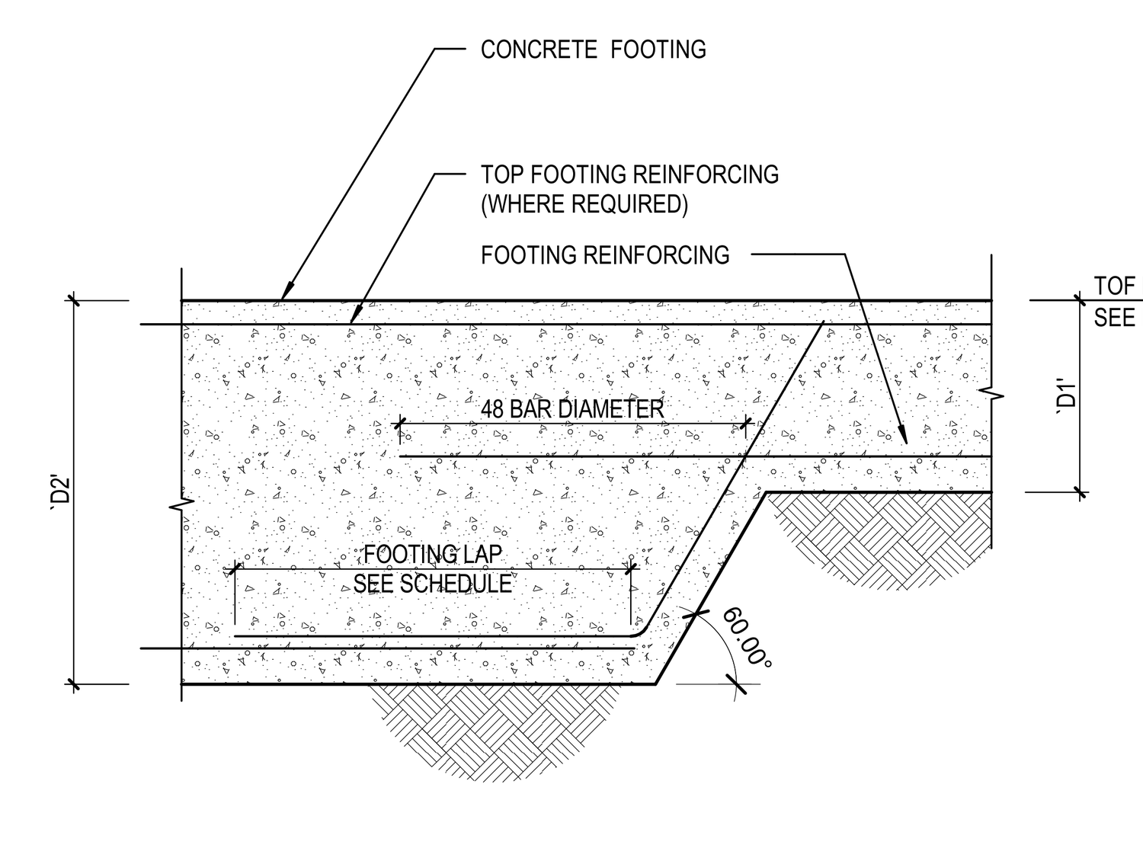
NOTE: CORNER BARS TO BE SAME SIZE AND SPACING AS THE HORIZONTAL BARS.

A DOUBLE LAYER
B SINGLE LAYER

33 S3.1 TYP WALL REINF DETAIL
SCALE: 3/4" = 1'-0"

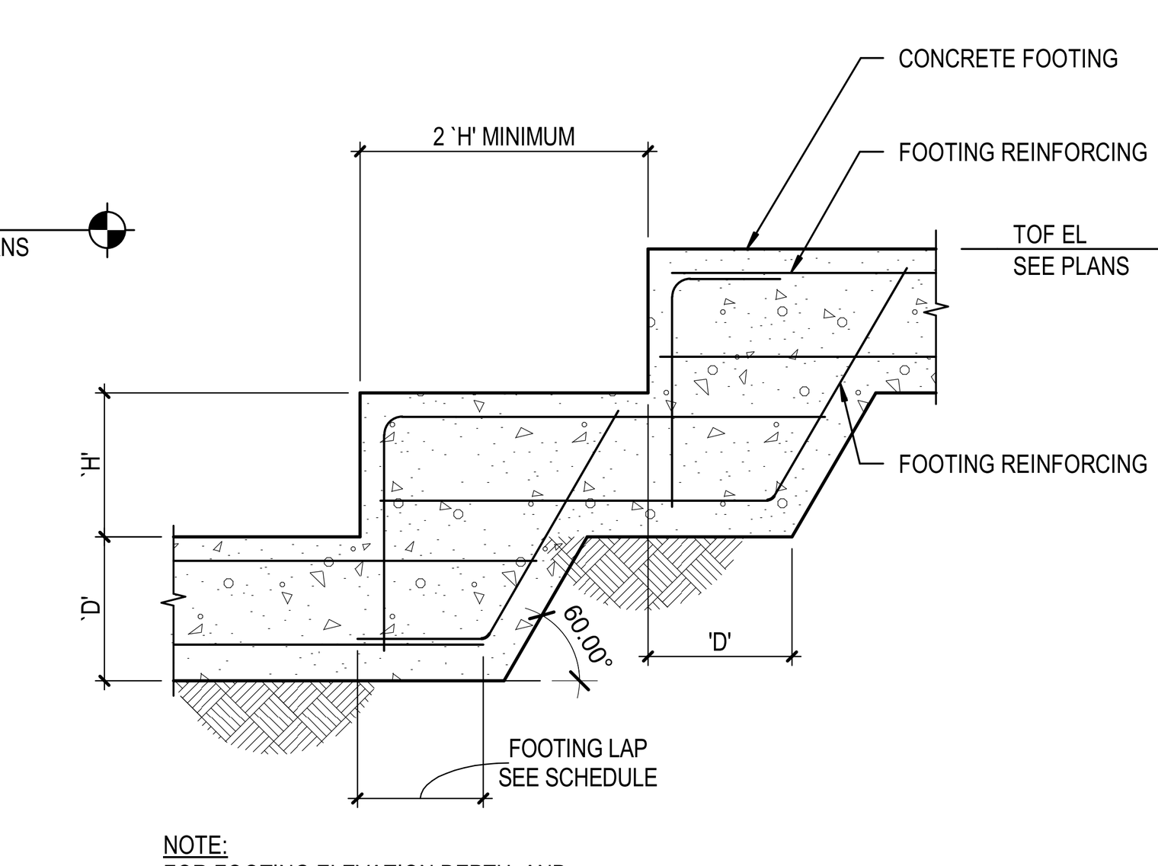


34 S3.1 TYP FTG REINF DETAIL
SCALE: 3/4" = 1'-0"



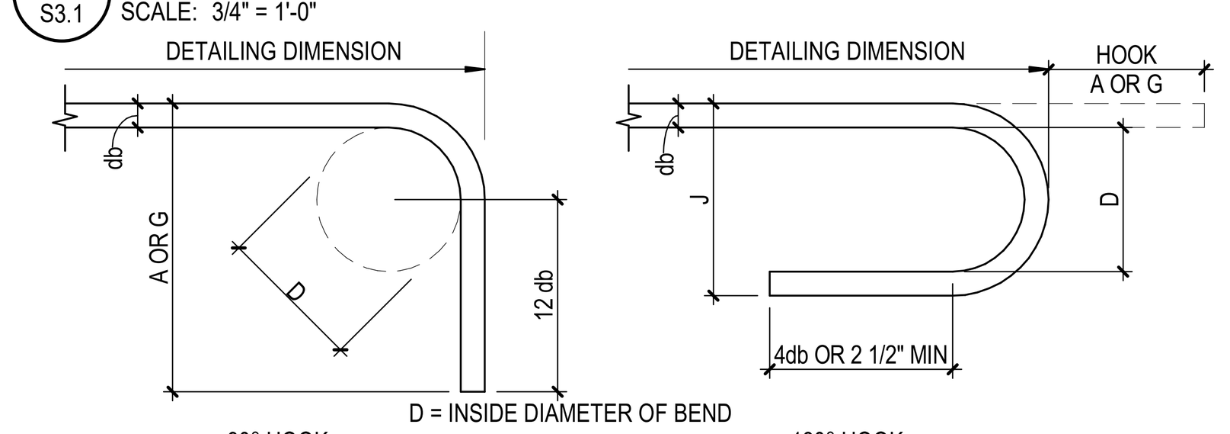
NOTE:
FOR FOOTING ELEVATIONS, DEPTH AND REINFORCING, SEE PLANS AND TYPICAL FOOTING DETAIL.

35 S3.1 TYP BOT STEP FTG DETAIL
SCALE: 3/4" = 1'-0"



NOTE:
FOR FOOTING ELEVATION DEPTH, AND REINFORCING, SEE PLANS AND TYP FOOTING DETAIL.

36 S3.1 TYP STEP FOOTING DETAIL
SCALE: 3/4" = 1'-0"

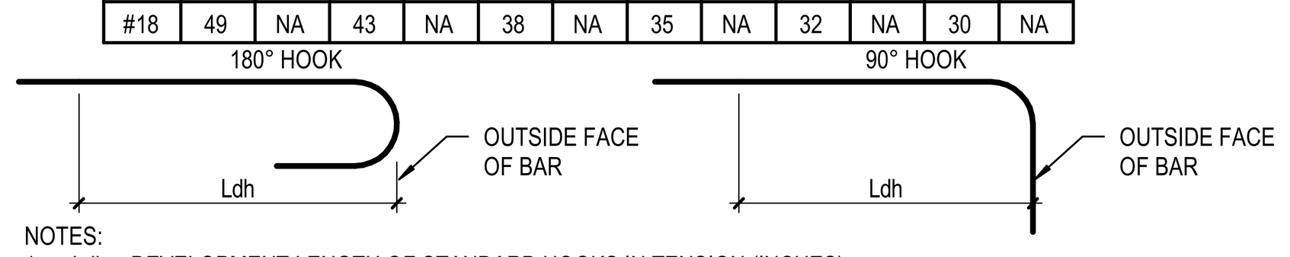


RECOMMENDED END HOOKS, ALL GRADES				
BAR SIZE	FINISHED BEND DIAMETER (D)(IN)	180° HOOKS		90° HOOKS
		A OR G (IN)	J (IN)	A OR G (IN)
#3	2 1/4	5	3	6
#4	3	6	4	8
#5	3 3/4	7	5	10
#6	4 1/2	8	6	12
#7	5 1/4	10	7	14
#8	6	11	8	16
#9	9 1/2	15	11 3/4	19
#10	10 3/4	17	13 1/4	22
#11	12	19	14 3/4	24
#14	18 1/4	27	21 3/4	31
#18	24	36	28 1/2	41

41 S3.1 END HOOK TYPES
SCALE: 3/4" = 1'-0"

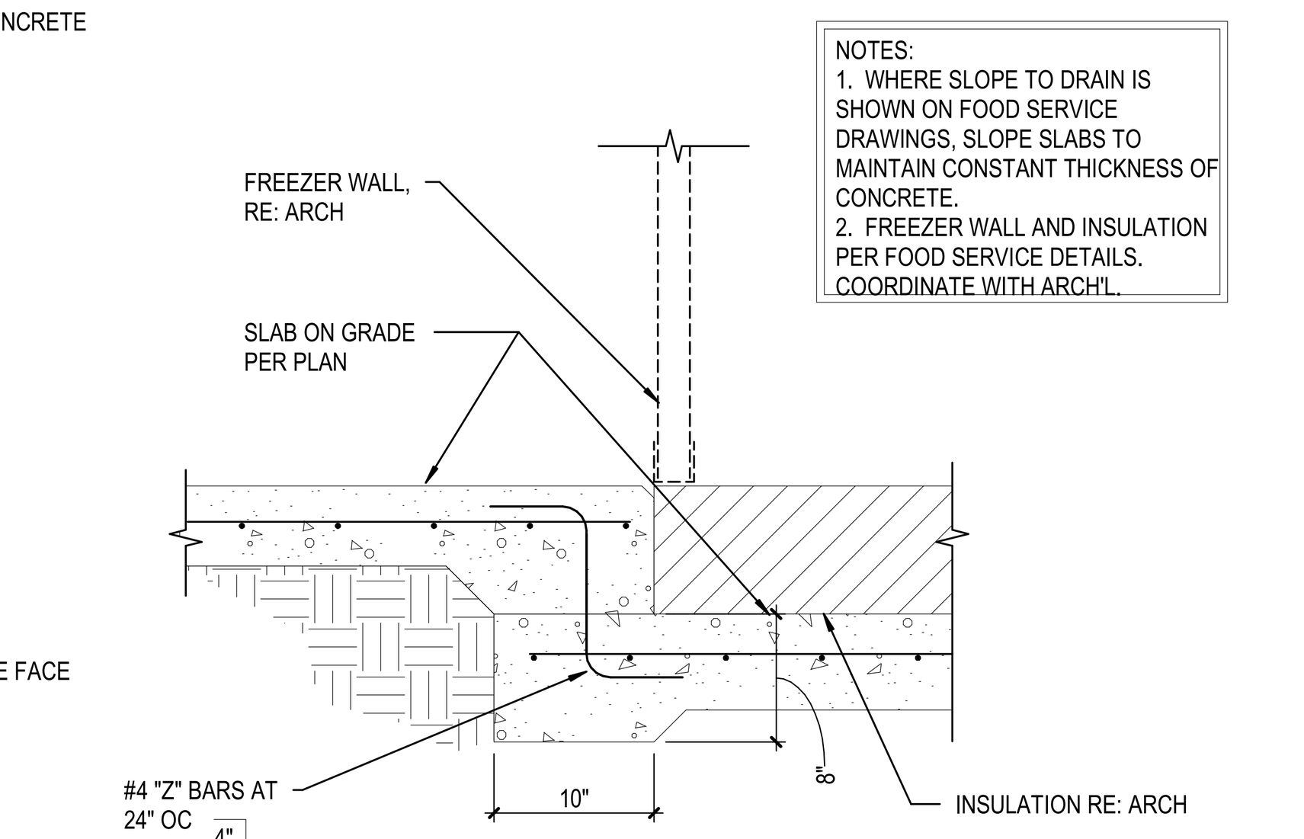
DEVELOPMENT LENGTHS OF STANDARD HOOKS IN TENSION , GRADE 60 REINFORCEMENT IN NORMAL WEIGHT CONCRETE

BAR SIZE	F'c = 3,000		F'c = 4,000		F'c = 5,000		F'c = 6,000		F'c = 7,000		F'c = 8,000	
	Lhb	0.7Lhb	Lhb	0.7Lhb	Lhb	0.7Lhb	Lhb	0.7Lhb	Lhb	0.7Lhb	Lhb	0.7Lhb
#3	8	6	7	6	6	6	6	6	6	6	6	6
#4	11	8	9	7	8	6	8	6	7	6	7	6
#5	14	10	12	8	11	7	10	7	9	6	8	6
#6	16	12	14	10	13	9	12	8	11	8	10	7
#7	19	13	17	12	15	10	14	9	13	9	12	8
#8	22	15	19	13	17	12	15	11	14	10	13	9
#9	25	17	21	15	19	13	17	12	16	11	15	11
#10	28	19	24	17	22	15	20	14	18	13	17	12
#11	31	22	27	19	24	17	22	15	20	14	19	13
#14	37	NA	32	NA	29	NA	26	NA	24	NA	23	NA
#18	49	NA	43	NA	38	NA	35	NA	32	NA	30	NA

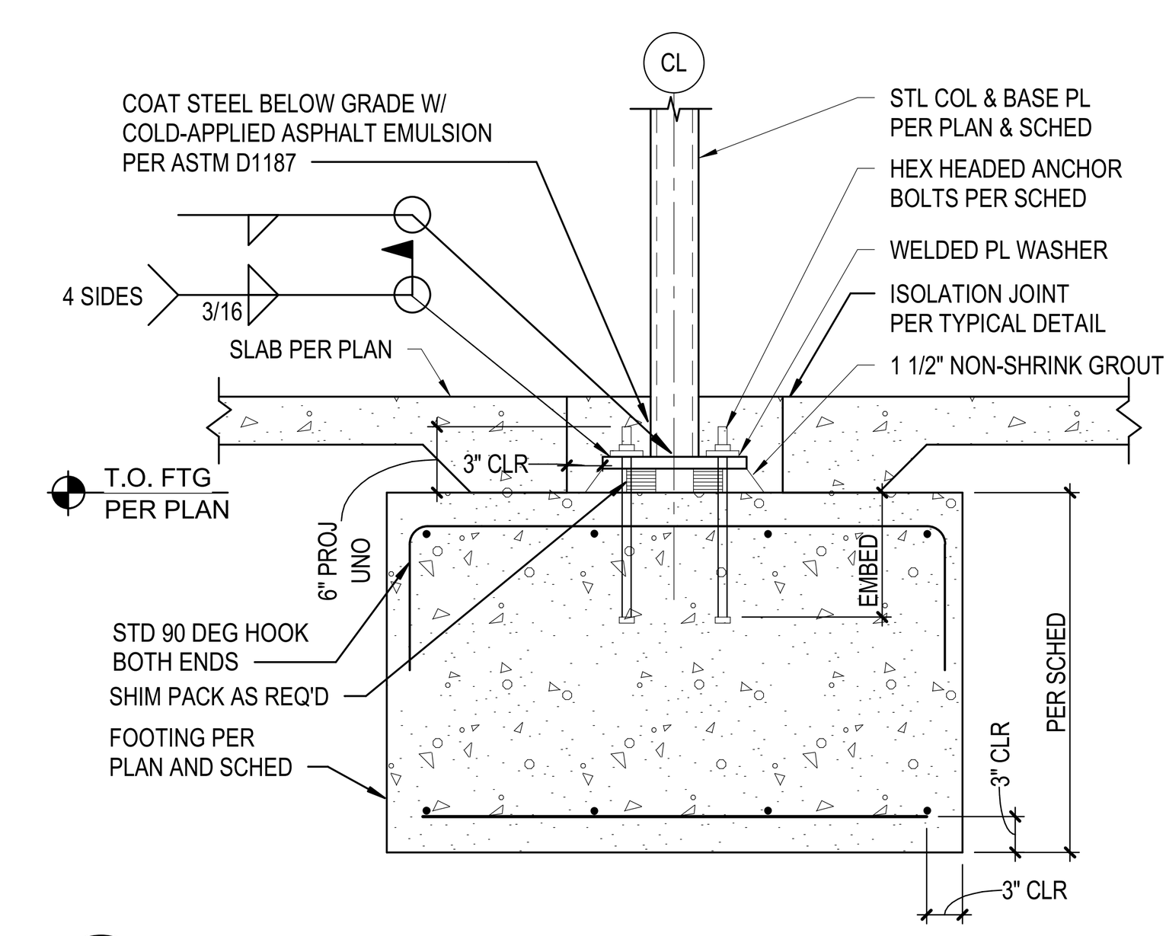


NOTES:
1. Ldh = DEVELOPMENT LENGTH OF STANDARD HOOKS IN TENSION (INCHES).
2. Ldh = Lhd UNLESS CONDITIONS OF ITEM 3 ARE SATISFIED.
3. Ldh = 0.7 Lhd FOR #11 BARS AND SMALLER WHEN SIDE COVER (NORMAL TO PLANE OF HOOK) IS NOT LESS THAN 2 1/2" AND FOR 90° HOOKS, COVER ON BAR EXTENSION BEYOND HOOK IS NOT LESS THAN 2".
4. HOOKS ARE NOT CONSIDERED EFFECTIVE FOR DEVELOPING BARS IN COMPRESSION.
5. Ldh SHALL BE MULTIPLIED BY 1.2 FOR EPOXY-COATED HOOKED BARS.

42 S3.1 DEVELOP LENGTHS OF STD HOOKS
SCALE: 3/4" = 1'-0"



43 S3.1 FREEZER/COOLER FLOOR SLAB
SCALE: 1" = 1'-0"



46 S3.1 TYP COLUMN BASE DETAIL
SCALE: 3/4" = 1'-0"

ACI TENSION LAP SPLICE LENGTHS (IN) FOR f'c = 4,000 PSI

BAR SIZE	LAP CLASS	f'c=4000 PSI			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	18	28	14	21
	B	24	36	18	28
#4	A	25	37	19	28
	B	32	48	25	37
#5	A	31	46	24	36
	B	40	60	31	46
#6	A	37	55	28	43
	B	48	72	37	55
#7	A	54	81	42	62
	B	70	105	54	81
#8	A	62	92	47	71
	B	80	120	62	92
#9	A	70	104	54	80
	B	90	136	70	104
#10	A	78	117	60	90
	B	102	153	78	117
#11	A	87	130	67	100
	B	113	170	87	130

NOTES:
1. TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
2. TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPLICE LENGTHS ARE BASED ON ACI 318-02, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY. TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING THE MIN CODE REQUIREMENTS. LENGTHS ARE IN INCHES.
3. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS, ARE DEFINED AS:

BEAMS OR COLUMNS	CASE 1	COVER AT LEAST 1db AND c-c SPACING AT LEAST 2db
	CASE 2	COVER LESS THAN 1db AND c-c SPACING LESS THAN 2db
ALL OTHERS	CASE 1	COVER AT LEAST 1db AND c-c SPACING AT LEAST 3db
	CASE 2	COVER LESS THAN 1db AND c-c SPACING LESS THAN 3db

4. LAP CLASS A VALUES ARE THE REQUIRED TENSION DEVELOPMENT LENGTH, ld; LAP SPLICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS. CLASS A = 1.0 ld AND CLASS B = 1.3 ld ACI 138-02, SECTION 12.15.1.
5. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
6. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3; OR WHEN fct IS SPECIFIED, THE FACTOR IS 6.7√fc/fct≥1.0.
7. FOR EPOXY COATED BARS, MULTIPLY THE TABULATED VALUES BY ONE OF THE FOLLOWING FACTORS:

CONCRETE COVER AND SPACING	TOP BARS	OTHER BARS
COVER < 3db OR c-c SPACING < 7db	1.7/1.3=1.31	1.50
COVE ≥ 3db AND c-c SPACING ≥ 7db R	1.20	1.20

51 S3.1 CONCRETE REINFORCING LAP SPLICE SCHEDULE
SCALE: 3/4" = 1'-0"

SLAB ON GRADE SCHEDULE

MARK	DESCRIPTION
S-1	4" NORMAL WEIGHT CONCRETE SLAB-ON-GRADE W/ 6x6-W2.1xW2.1 WELDED WIRE REINF ON 15 MIL VAPOR BARRIER OVER 4" GRANULAR FILL
S-2	6" NORMAL WEIGHT CONCRETE SLAB-ON-GRADE W/ #4 @ 16" EW REINF ON 15 MIL VAPOR BARRIER OVER 4" GRANULAR FILL

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND ELEVATIONS OF DRAINS.

1

STEEL COLUMN SCHEDULE

MARK	SIZE	BASE PLATE TYPE	BASE PLATE DIMENSIONS	ANCHOR BOLTS	NOTES
C1	W8x48	TYPE 1	PL1"x16"x1'-4	(4) 3/4"Ø, 12" EMBED	
C2	W12x72	TYPE 1	PL1"x20"x1'-8"	(4) 3/4"Ø, 12" EMBED	
C3	HSS12x12x3/8	TYPE 1	PL1"x20"x1'-8"	(4) 3/4"Ø, 12" EMBED	
C4	W8x31	TYPE 1	PL1"x16"x1'-4	(4) 3/4"Ø, 12" EMBED	
C5	W12x79	TYPE 1	PL1"x20"x1'-8"	(4) 3/4"Ø, 12" EMBED	
C6	HSS6x6x1/4	TYPE 1	PL1"x14x1'-2"	(4) 3/4"Ø, 12" EMBED	
C7	W10X49	TYPE 1	PL1"x20"x1'-8"	(4) 3/4"Ø, 12" EMBED	
C8	W8x35	TYPE 1	PL1"x16"x1'-4	(4) 3/4"Ø, 12" EMBED	
C9	HSS10x10x3/8	TYPE 1	PL1"x16"x1'-4	(4) 3/4"Ø, 12" EMBED	
C10	W8x48	TYPE 2	PL1-1/2"x16"x1'-4	(6) 1-1/4"Ø, 18" EMBED	
C11	W12x72	TYPE 2	PL1-1/2"x20"x1'-8"	(6) 1-1/4"Ø, 18" EMBED	
C12	HSS5x5x3/8	TYPE 3	PL1/2x6x1'-0"	(4) 1/2"Ø HSA 5" EMBED	
C13	HSS5x5x5/16	TYPE 1	PL1"x13x1'-1"	(4) 3/4"Ø, 12" EMBED	

NOTES:
1. REFER TO STRUCTURAL GENERAL NOTES AND SPECIFICATIONS FOR ANCHOR BOLT TYPE.
2. ALL ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 55, WELDABLE, UNLESS NOTED OTHERWISE.
3. PROVIDE AISC STANDARD PLATE WASHERS WITH STD HOLES FOR ALL ANCHOR BOLTS.
4. REFERENCE 11/S3.01 FOR COLUMN BASE PLATE DETAILS.
5. ALL EXTERIOR EXPOSED COLUMNS, BASE PLATES, AND ANCHOR BOLTS SHALL BE GALVANIZED.

SPREAD FOOTING SCHEDULE

MARK	SIZE	REINFORCEMENT
F1	PER PLAN x 3'-0" THICK	#6 @ 12" OC EW T/B
F3	3'-0"x3'-0"x3'-0"	(4) #6 EW T/B
F6	6'-0"x6'-0"x3'-0"	(6) #6 EW T/B
F6B	6'-0"x6'-0"x2'-0"	(6) #6 EW T/B
F8	8'-0"x8'-0"x3'-0"	(8) #6 EW T/B
F8B	8'-0"x8'-0"x2'-0"	(8) #6 EW T/B
F9	9'-0"x9'-0"x3'-0"	(9) #6 EW T/B
F10	10'-0"x10'-0"x3'-0"	(10) #6 EW T/B
F10B	10'-0"x10'-0"x2'-0"	(12) #8 EW T/B
F12	12'-0"x12'-0"x3'-0"	(13) #6 EW T/B
F12B	12'-0"x12'-0"x2'-6"	(16) #6 EW T/B
F14	10'-0"x13"-0"x3'-0"	(12) #8 EW T/B
F15	12'-0"x15'-0"x3'-0"	(15) #8 EW T/B
F16	14'-0"x16'-0"x3'-0"	(16) #8 EW T/B

1

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DEREK JOSEPH SMITH NUMBER PE-2007012527 PROFESSIONAL

LEE'S SUMMIT MIDDLE SCHOOL #4
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PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
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FOUNDATION TYPICAL DETAILS

S3.1

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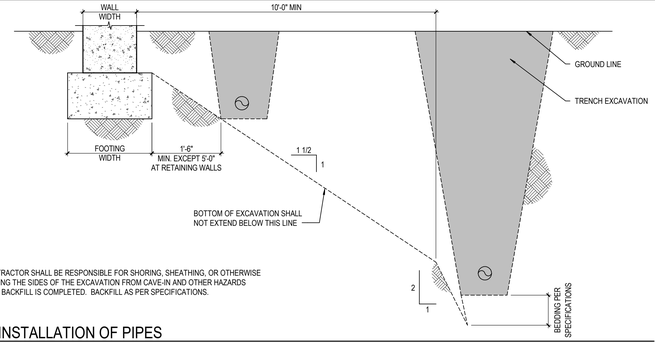
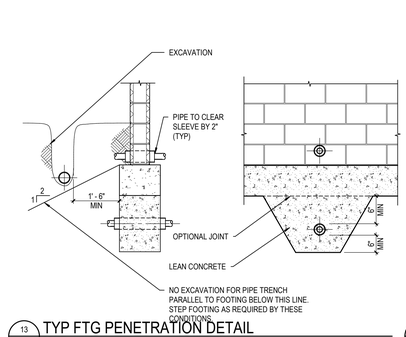
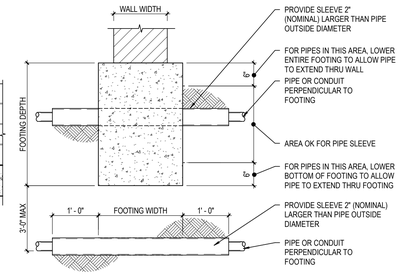


NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING, SHEATHING, OR OTHERWISE MAINTAINING THE SIDES OF THE EXCAVATION FROM CAVE-IN AND OTHER HAZARDS UNTIL ALL BACKFILL IS COMPLETED. BACKFILL AS PER SPECIFICATIONS.

11 S3.2 TYP INSTALLATION OF PIPES
SCALE: 3/4" = 1'-0"

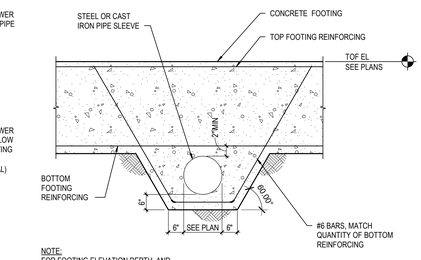


13 S3.2 TYP FTG PENETRATION DETAIL
SCALE: 1/2" = 1'-0"



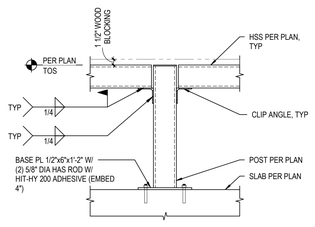
NOTE:
1. FOR PIPES 3'-0" OR LESS BELOW FOOTING, PROVIDE SLEEVE AS SHOWN.
2. FOR PIPES AND CONDUITS MORE THAN 3'-0" BELOW FOOTING, PIPE SLEEVE MAY BE ELIMINATED.
3. COORDINATE WITH MECHANICAL, ELECTRICAL, AND ALL OTHER EFFECTED TRADES.

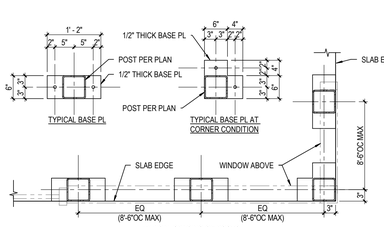
14 S3.2 TYP INSTALLATION OF PIPES
SCALE: 3/4" = 1'-0"



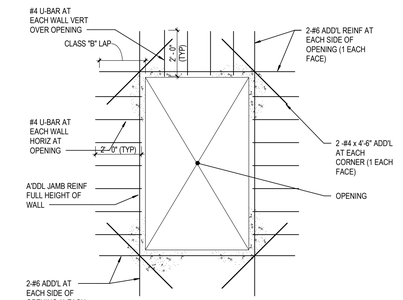
NOTE:
FOR FOOTING ELEVATION DEPTH, AND REINFORCING, SEE PLANS AND TYP FOOTING DETAIL

15 S3.2 TYP PIPE SLEEVE DETAIL
SCALE: 1/2" = 1'-0"

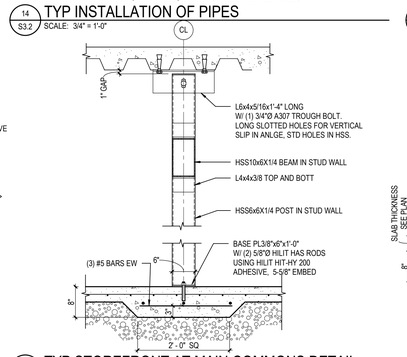




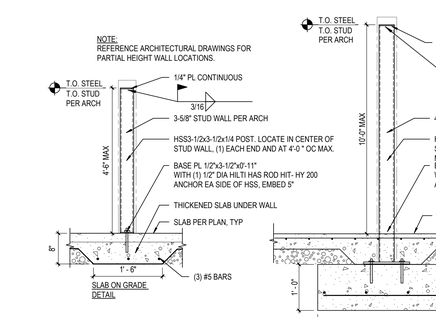
21 S3.2 TYP WINDOW OR LOUVER FRAMING SUPPORTS
SCALE: 3/4" = 1'-0"



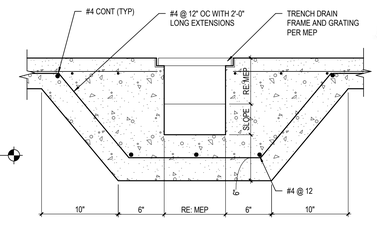
23 S3.2 TYPICAL WF POST CONNECTION DETAIL
SCALE: 1" = 1'-0"



24 S3.2 TYP STOREFRONT AT MAIN COMMONS DETAIL
SCALE: 3/4" = 1'-0"



25 S3.2 TYP STAIR POST BASE DETAIL
SCALE: 3/4" = 1'-0"



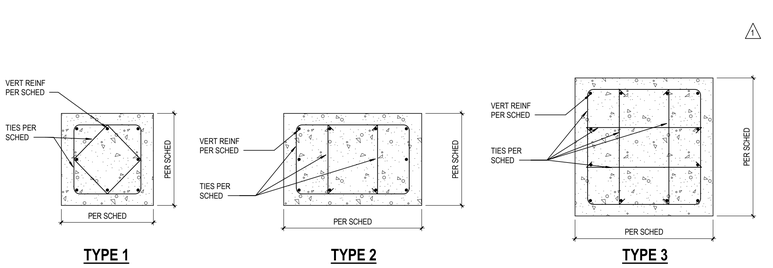
NOTE:
SEE MEP FOR DRAIN LINE

26 S3.2 TYP TRENCH DRAIN & UTILITY TRENCH DETAIL
SCALE: 1 1/2" = 1'-0"

31 S3.2 TYPICAL MECHANICAL EQUIPMENT FOUNDATION
SCALE: 3/4" = 1'-0"

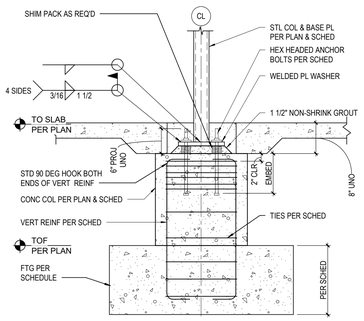
NOTE:
REFERENCE ARCHITECTURAL DRAWINGS FOR PARTIAL HEIGHT WALL LOCATIONS.

35 S3.2 TYP PARTIAL HEIGHT WALL SUPPORT DETAIL
SCALE: 3/4" = 1'-0"

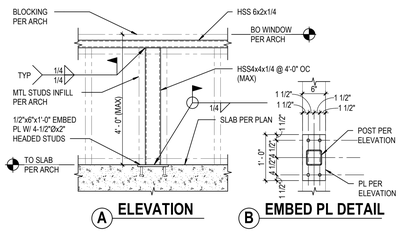


CONC COLUMN SCHEDULE				
MARK	SIZE	VERTICAL REINFORCEMENT	TIES	TYPE
CC1	24 x 24	(8) #8 VERT	#4 TIES 6@3/R@12	TYPE 1
CC2	24 x 36	(10) #8 VERT	#4 TIES 6@3/R@12	TYPE 2
CC3	36 x 36	(12) #8 VERT	#4 TIES 6@3/R@12	TYPE 3

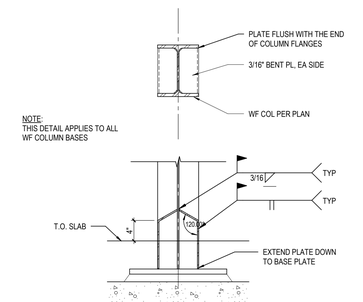
41 S3.2 CONCRETE COLUMN SCHEDULE & REINF DETAILS
SCALE: 3/4" = 1'-0"



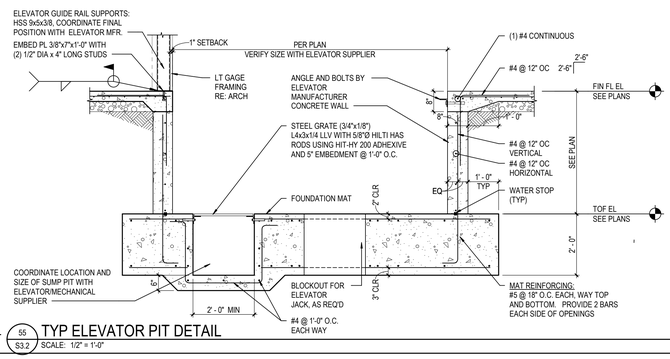
44 S3.2 TYP COLUMN BASE ON CONC COLUMN DETAIL
SCALE: 3/4" = 1'-0"



51 S3.2 TYPICAL DETAIL
SCALE: 3/4" = 1'-0"



54 S3.2 TYP WF BASE CLOSURE PLATE DETAIL
SCALE: 1" = 1'-0"



56 S3.2 TYP ELEVATOR PIT DETAIL
SCALE: 1/2" = 1'-0"

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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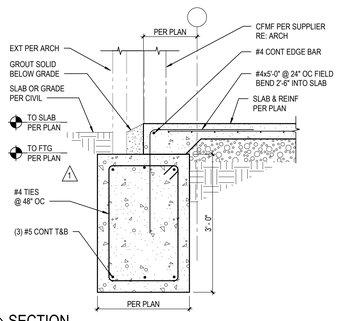
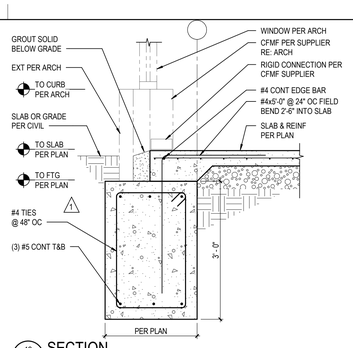
FOUNDATION TYPICAL DETAILS

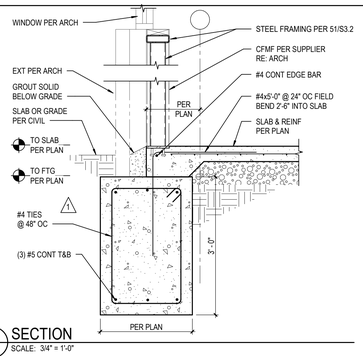
S3.2



11 S3.5 SECTION
SCALE: 3/4" = 1'-0"



12 S3.5 SECTION
SCALE: 3/4" = 1'-0"



13 S3.5 SECTION
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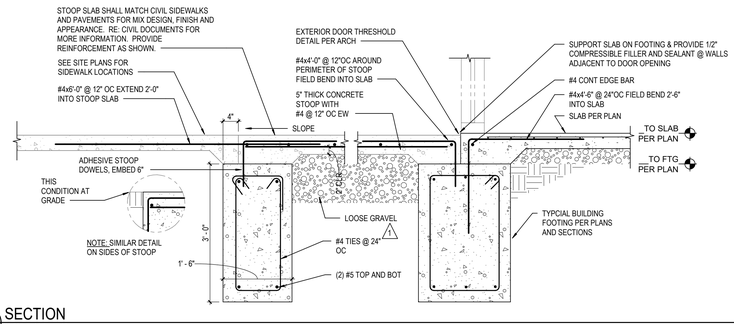

14 S3.5 SECTION
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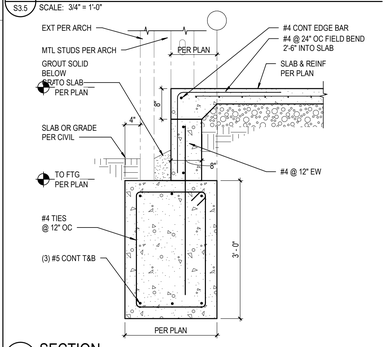

21 S3.5 SECTION
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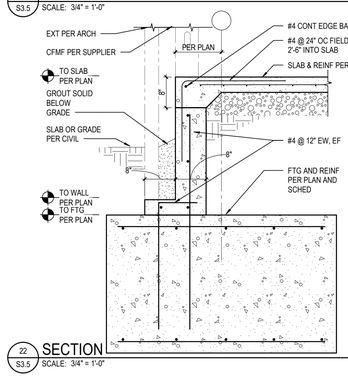
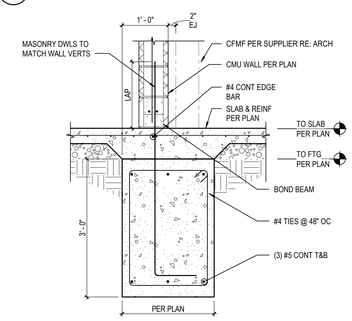
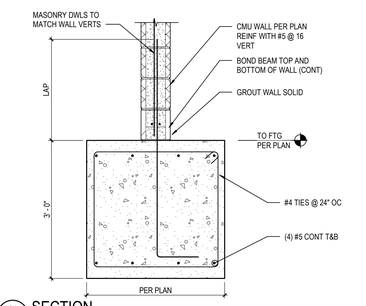


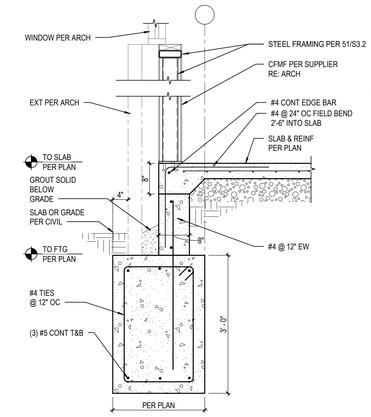
22 S3.5 SECTION
SCALE: 3/4" = 1'-0"



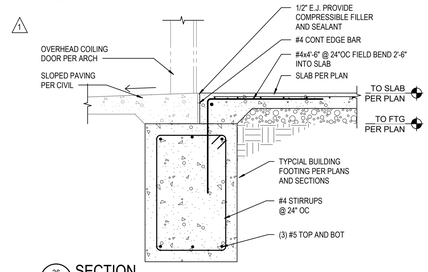
23 S3.5 SECTION
SCALE: 3/4" = 1'-0"



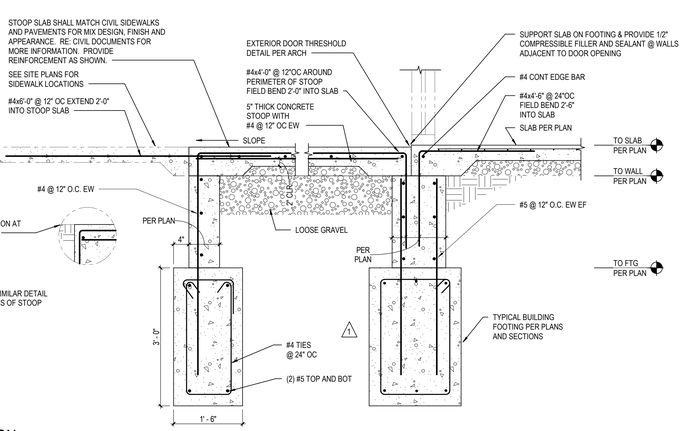
24 S3.5 SECTION
SCALE: 3/4" = 1'-0"



26 S3.5 SECTION
SCALE: 3/4" = 1'-0"



36 S3.5 SECTION
SCALE: 3/4" = 1'-0"



41 S3.5 SECTION
SCALE: 3/4" = 1'-0"

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS
1 ASI-01 10/08/20

13-20102-00

FOUNDATION SECTIONS

S3.5

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
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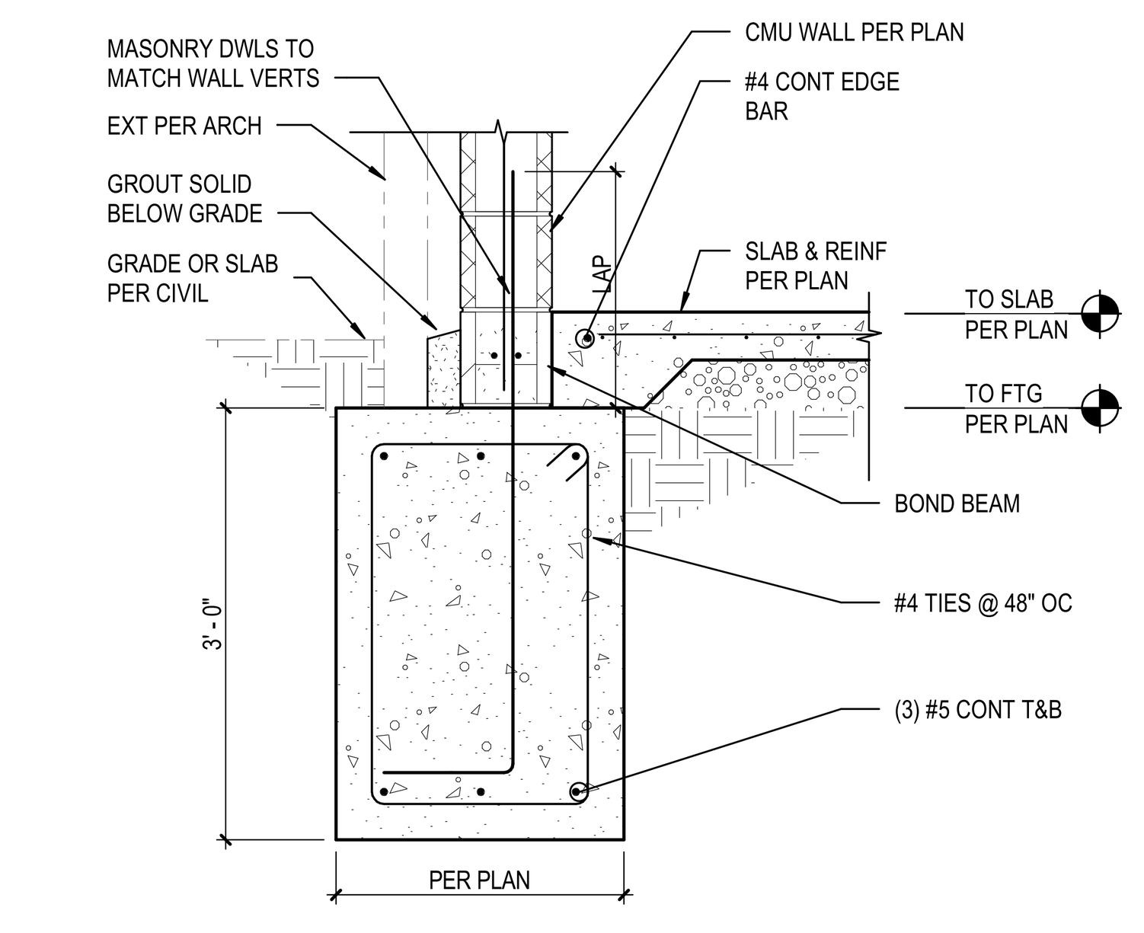

11 SECTION
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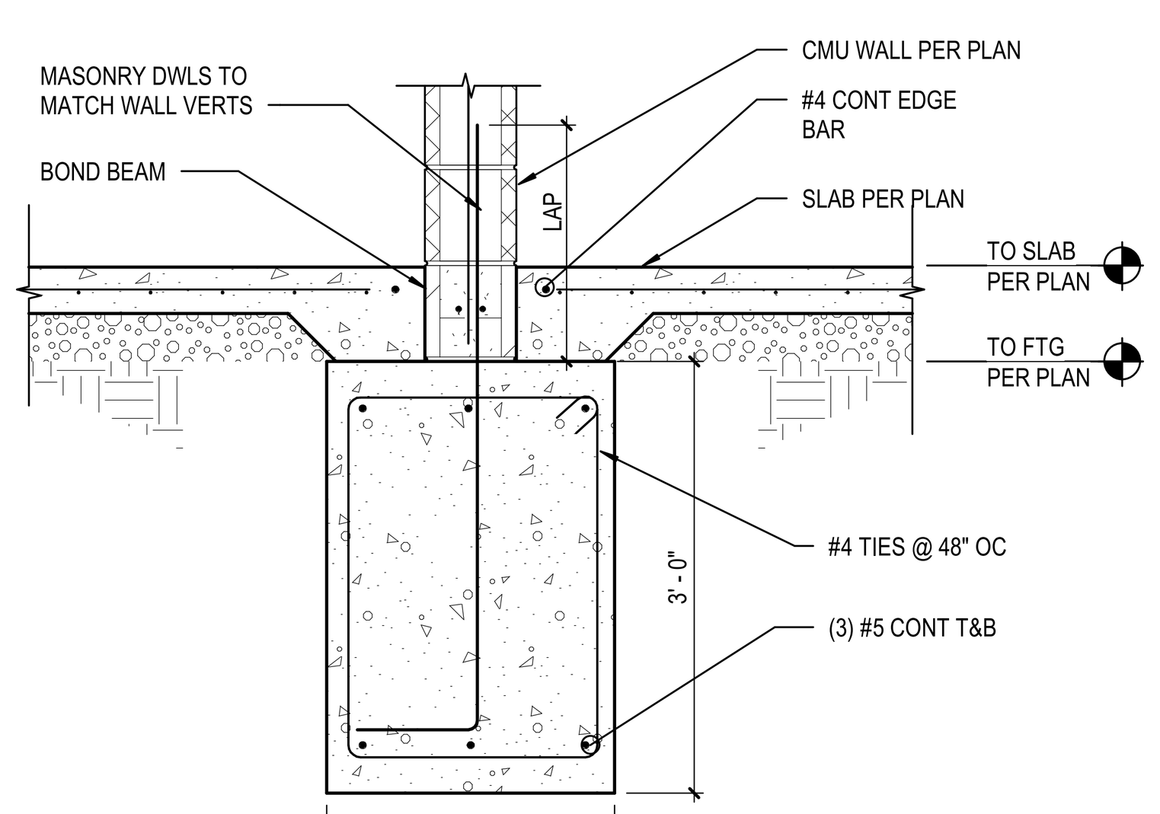

12 SECTION
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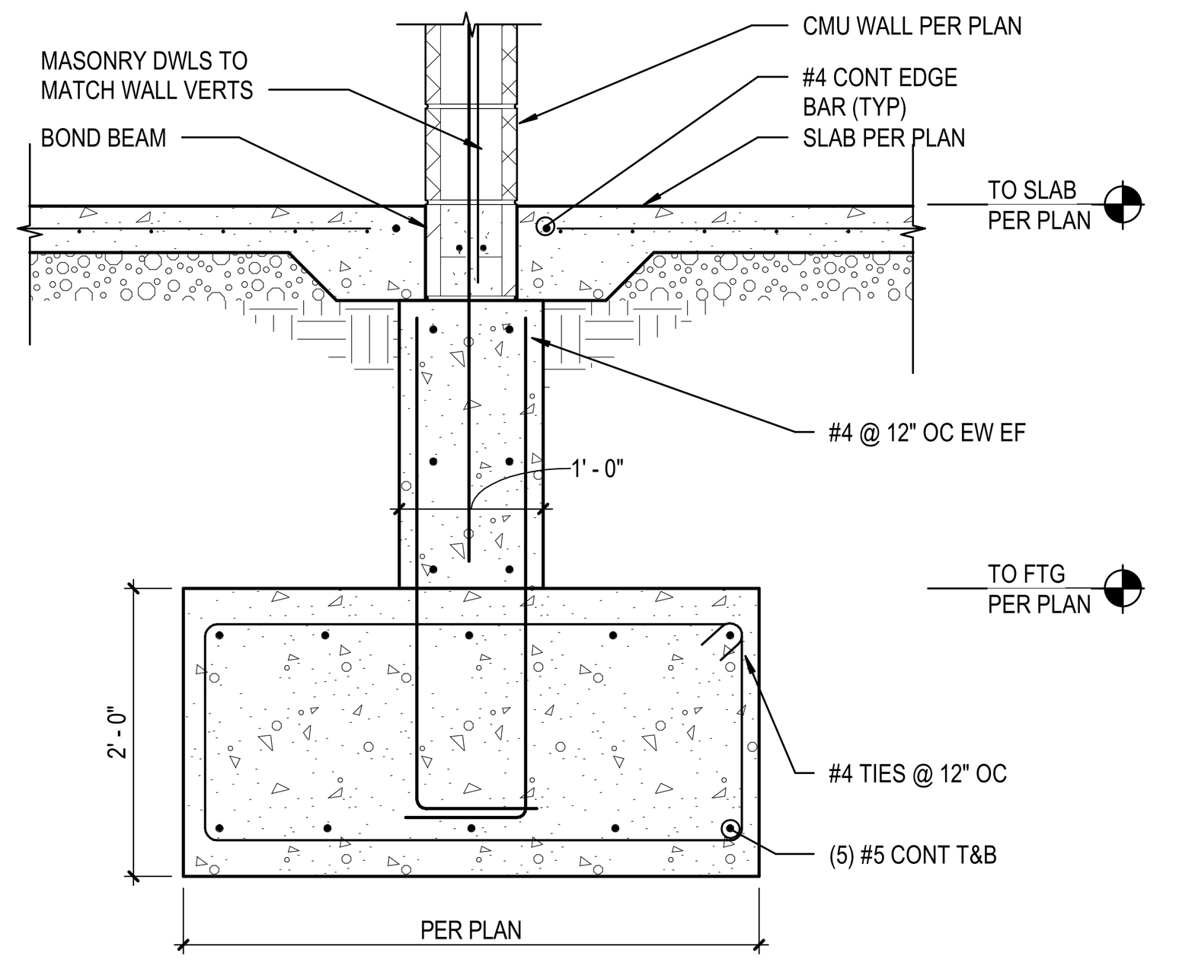

13 SECTION
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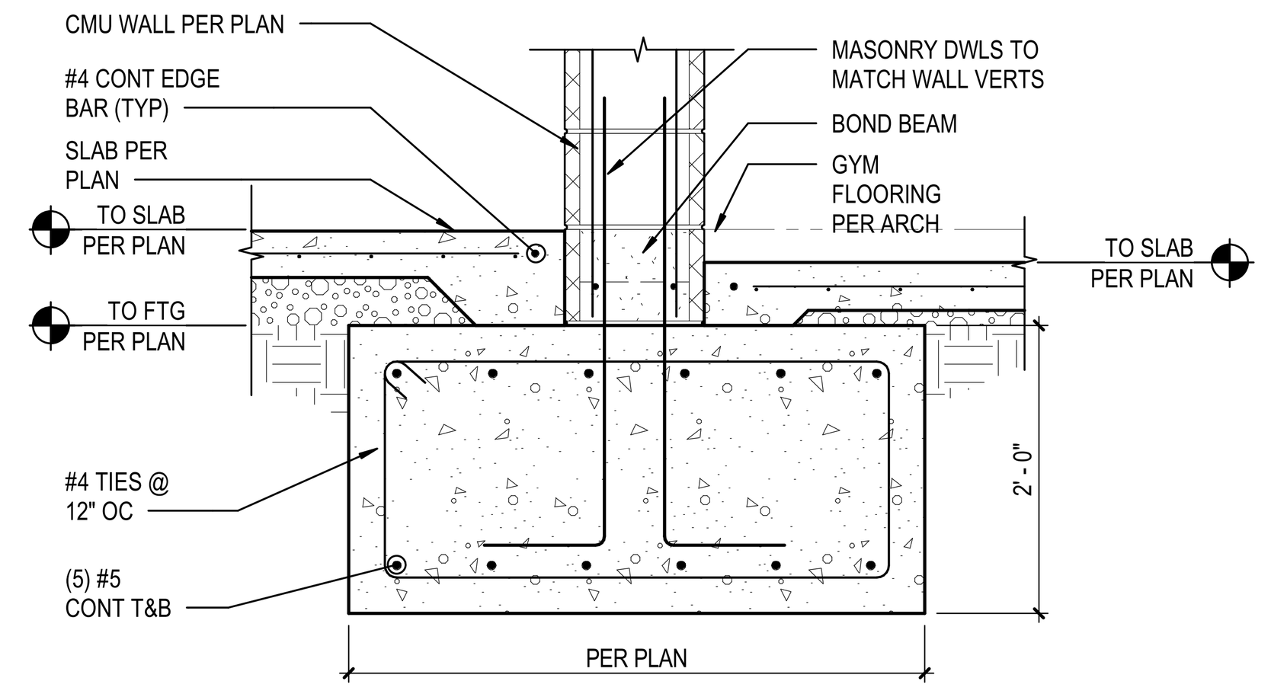

14 SECTION
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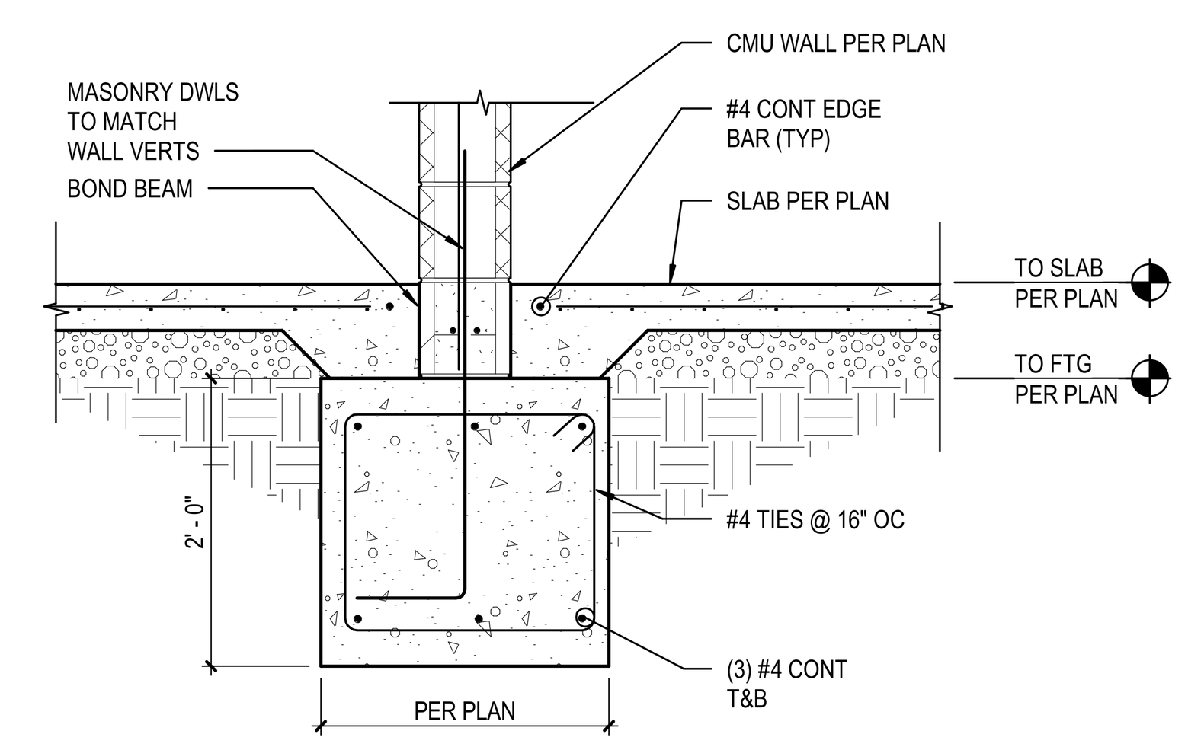
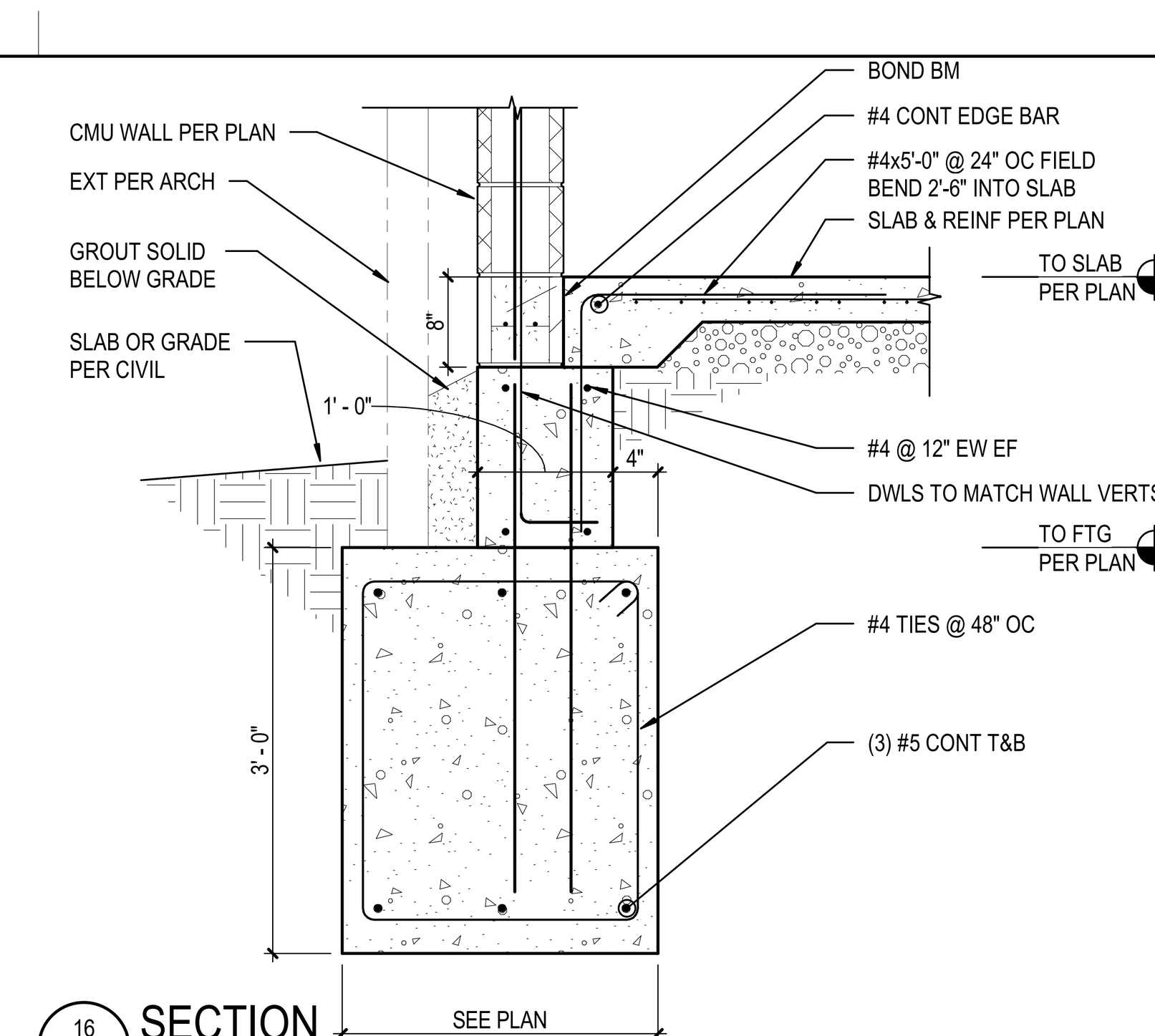
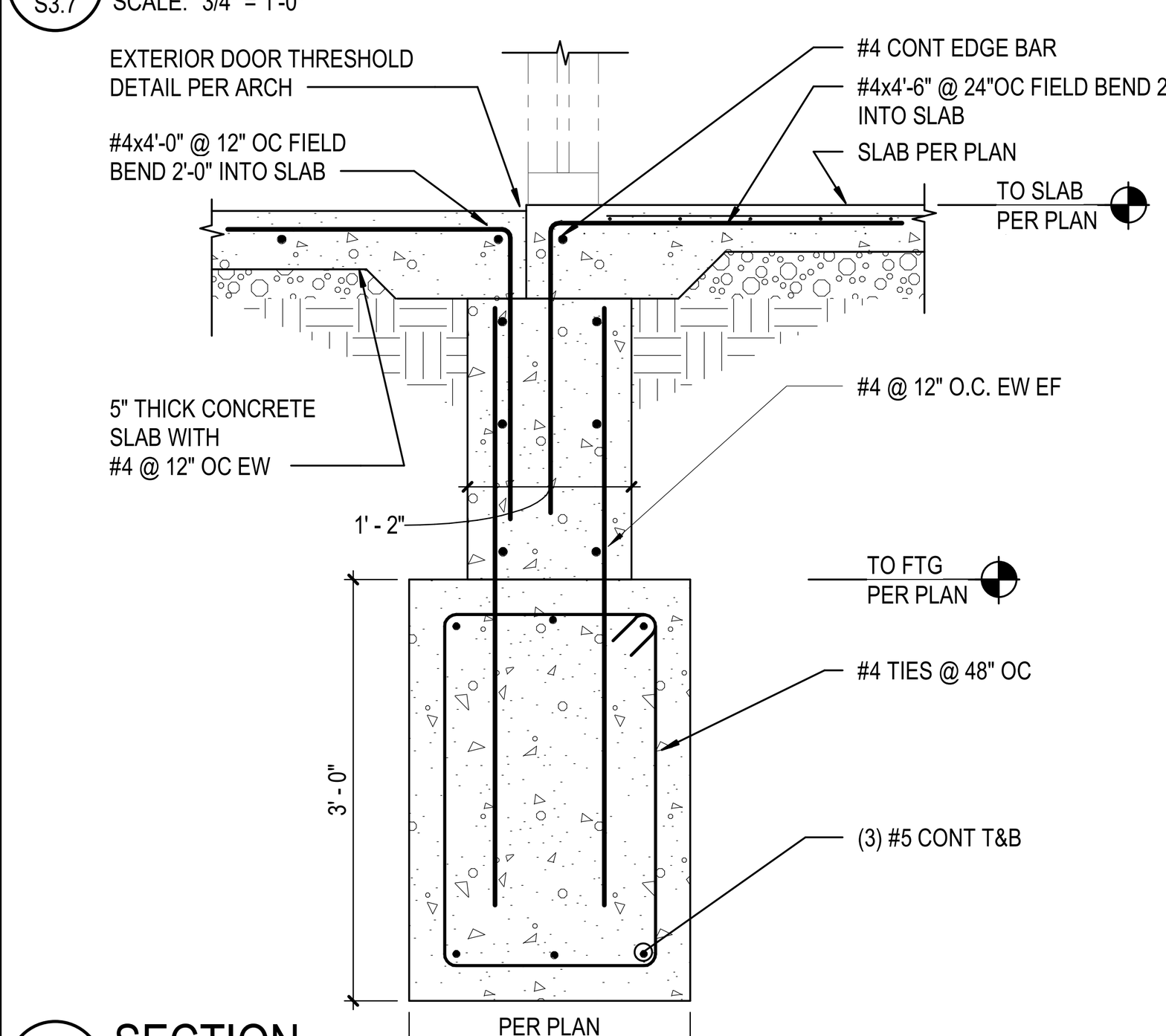


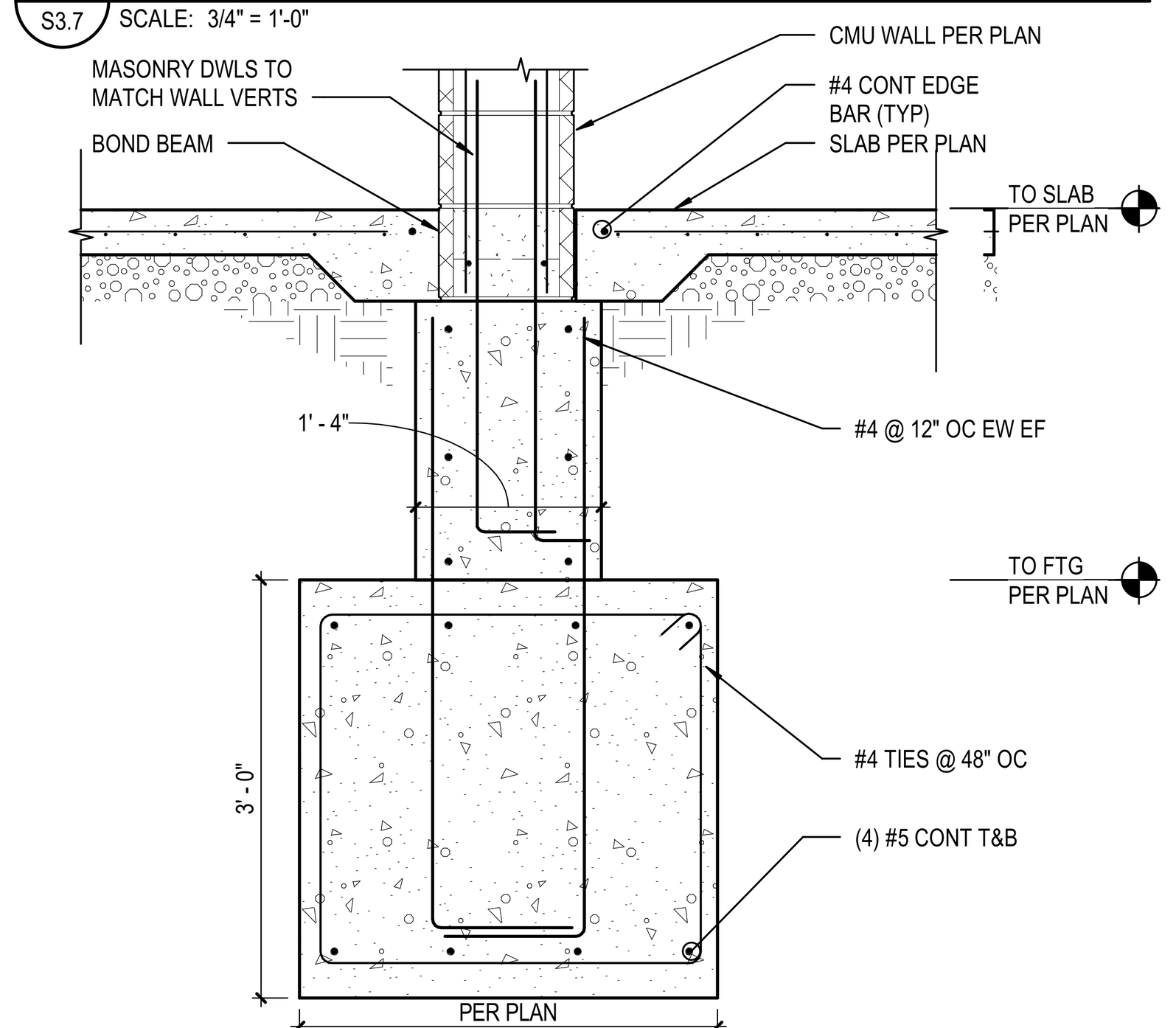
15 SECTION
S3.7 SCALE: 3/4" = 1'-0"



16 SECTION
S3.7 SCALE: 3/4" = 1'-0"



21 SECTION
S3.7 SCALE: 3/4" = 1'-0"



22 SECTION
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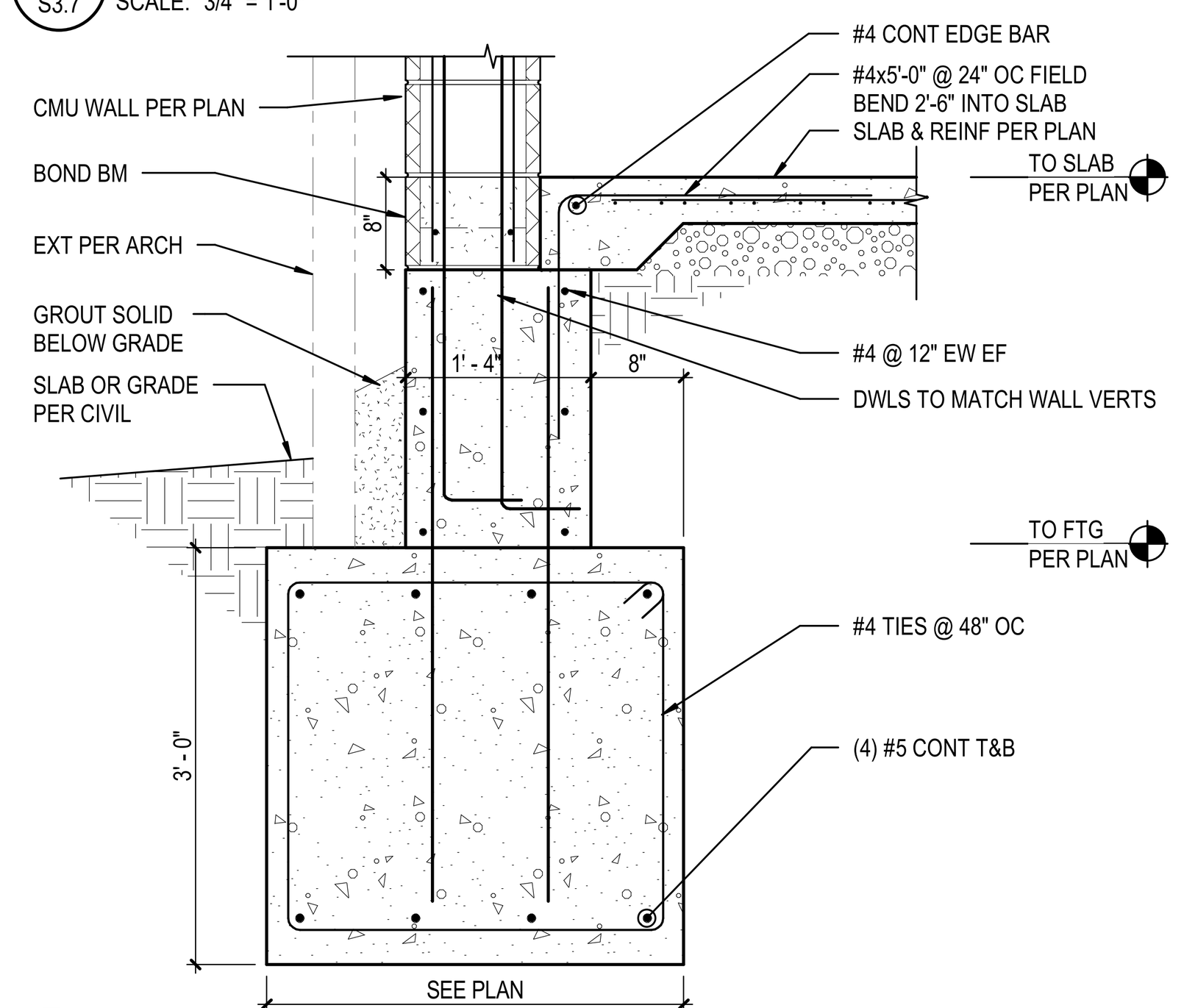

23 SECTION
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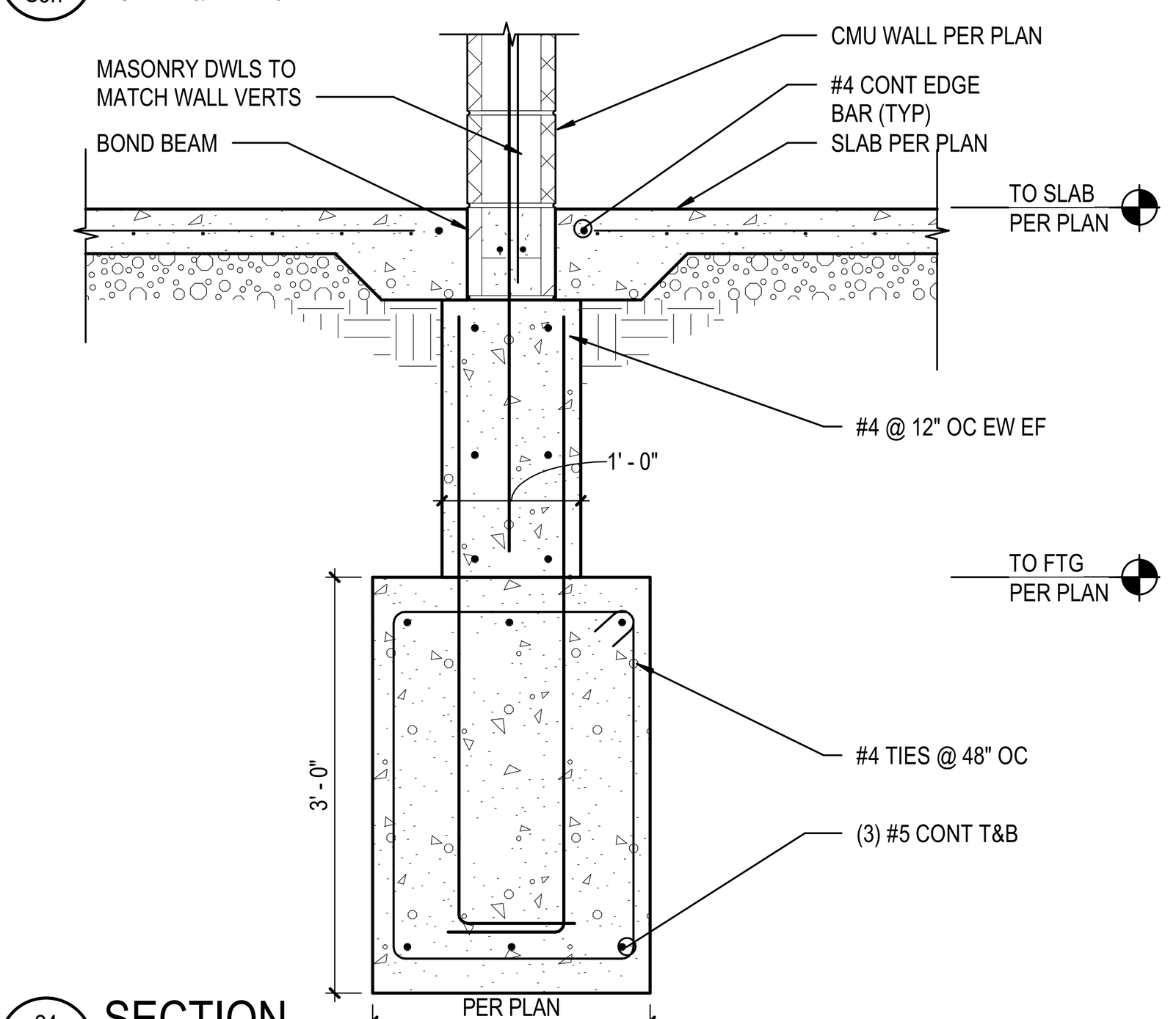

24 SECTION
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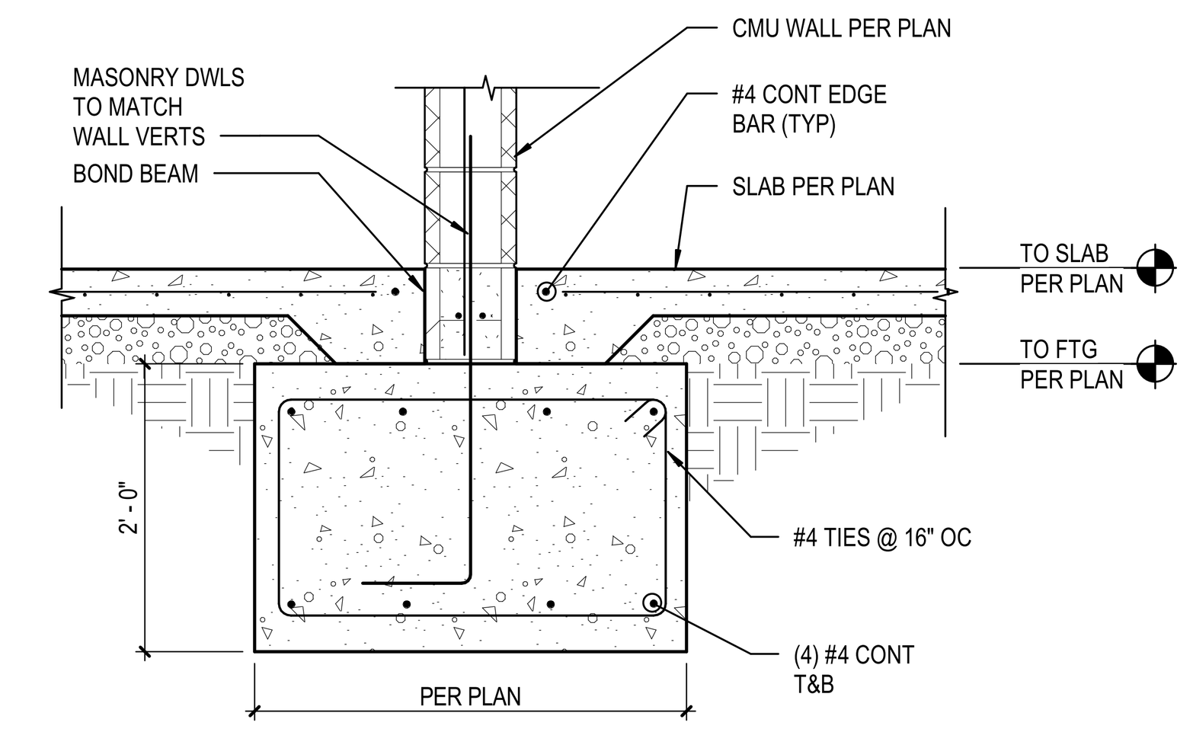

25 SECTION
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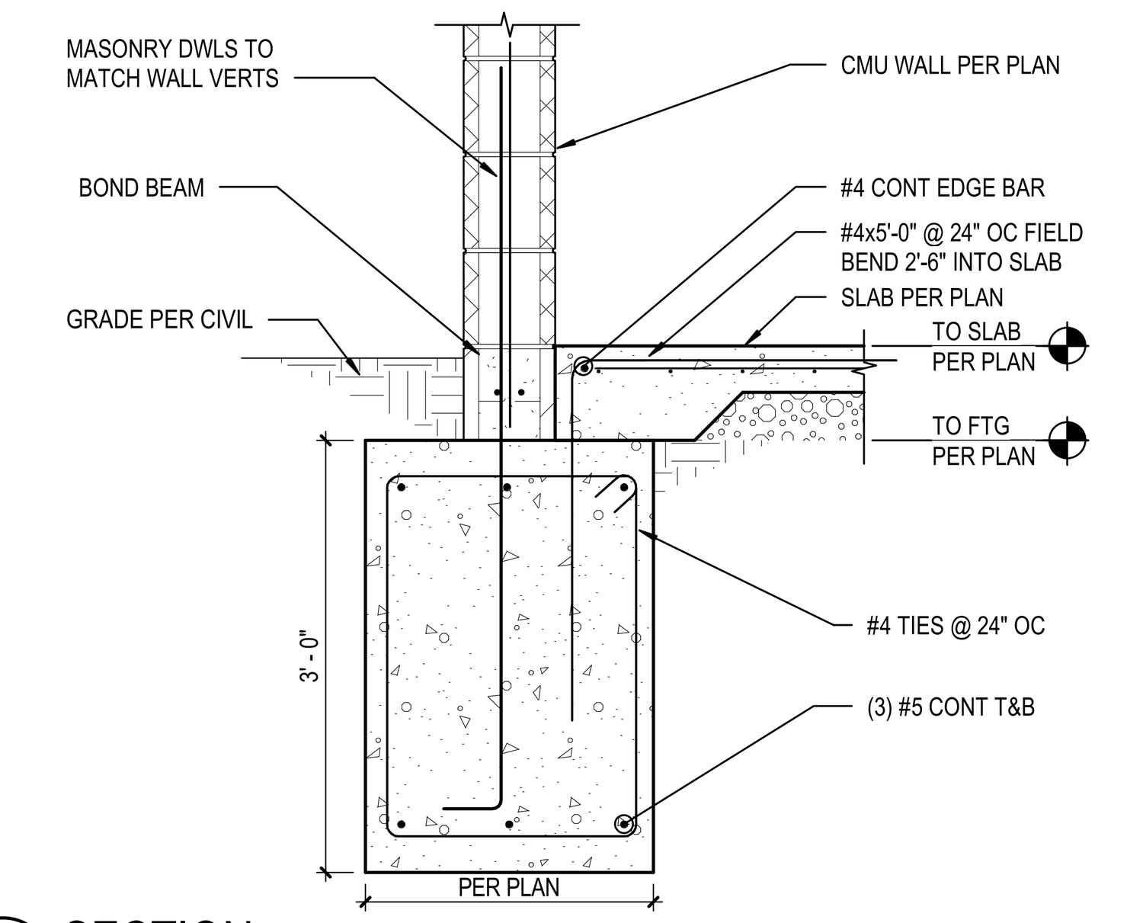

26 SECTION
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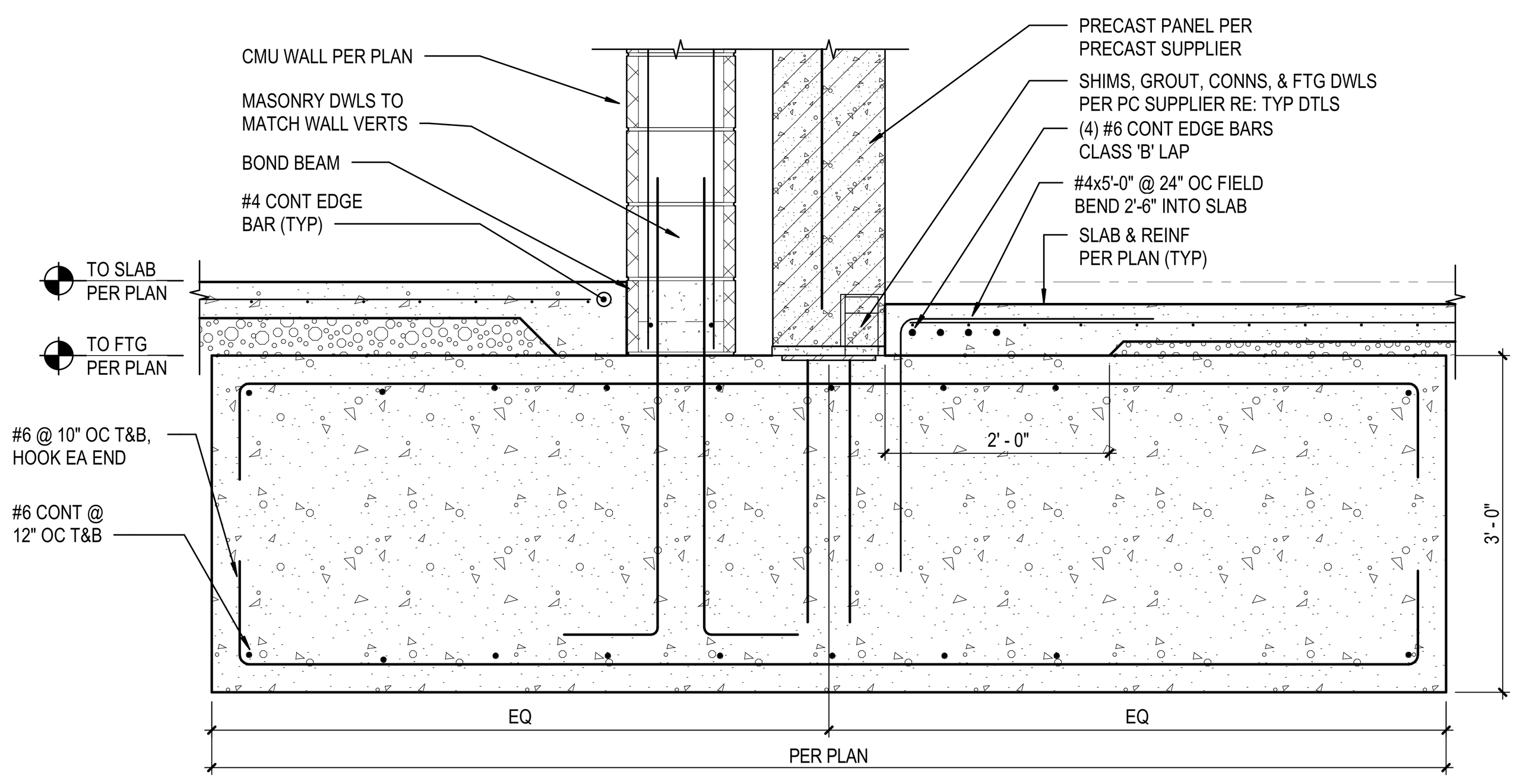

31 SECTION
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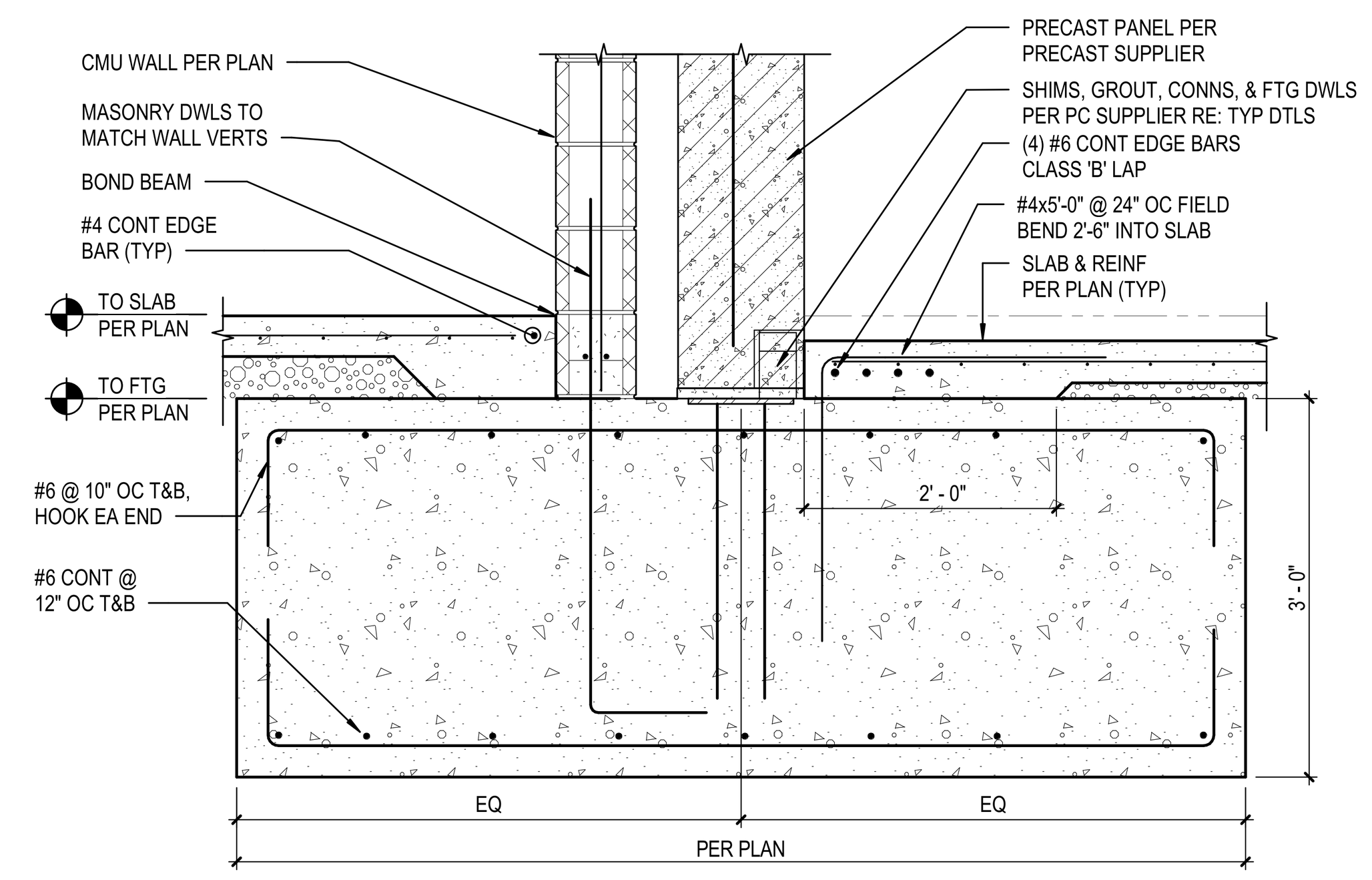

33 SECTION
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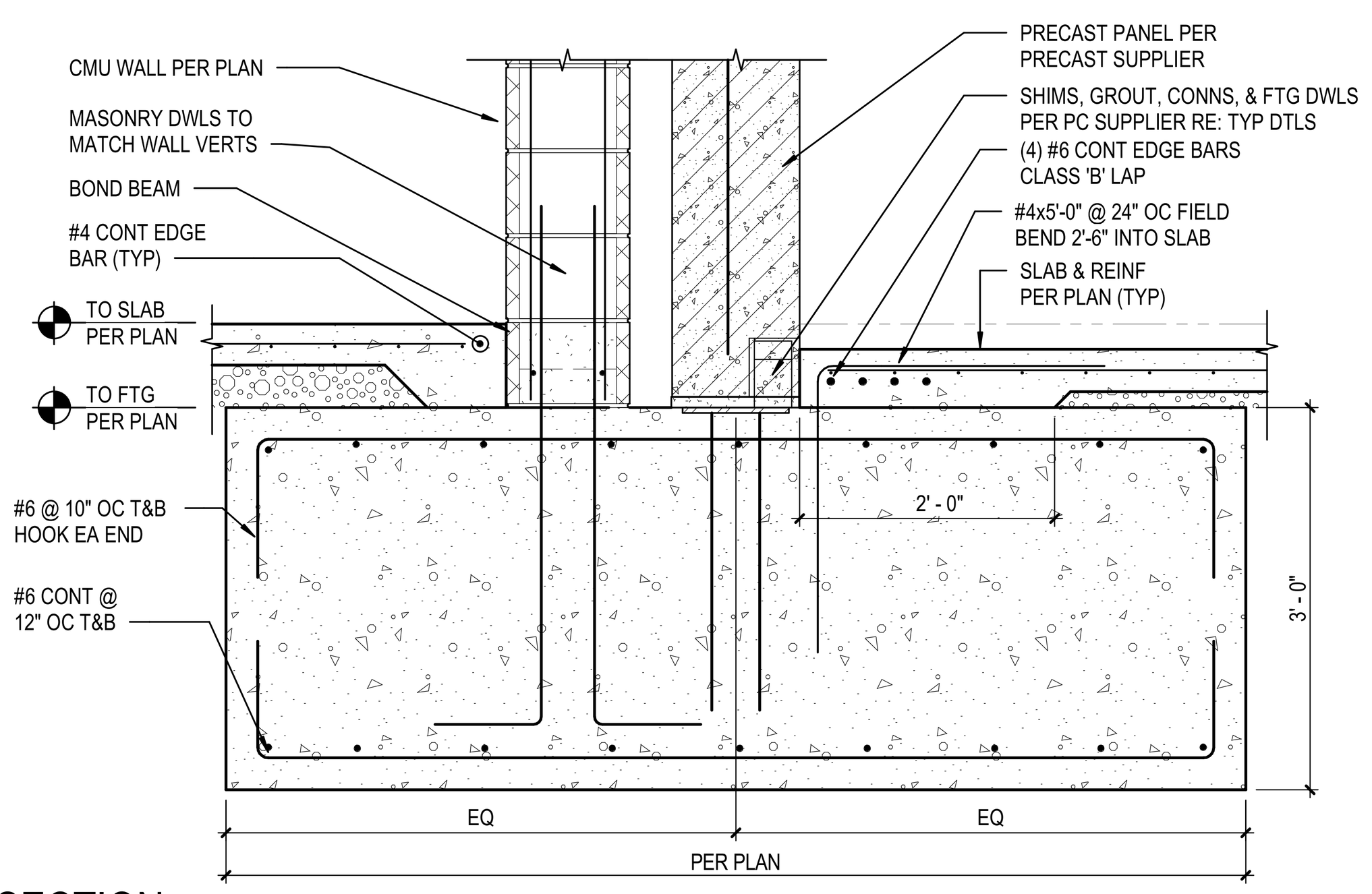

34 SECTION
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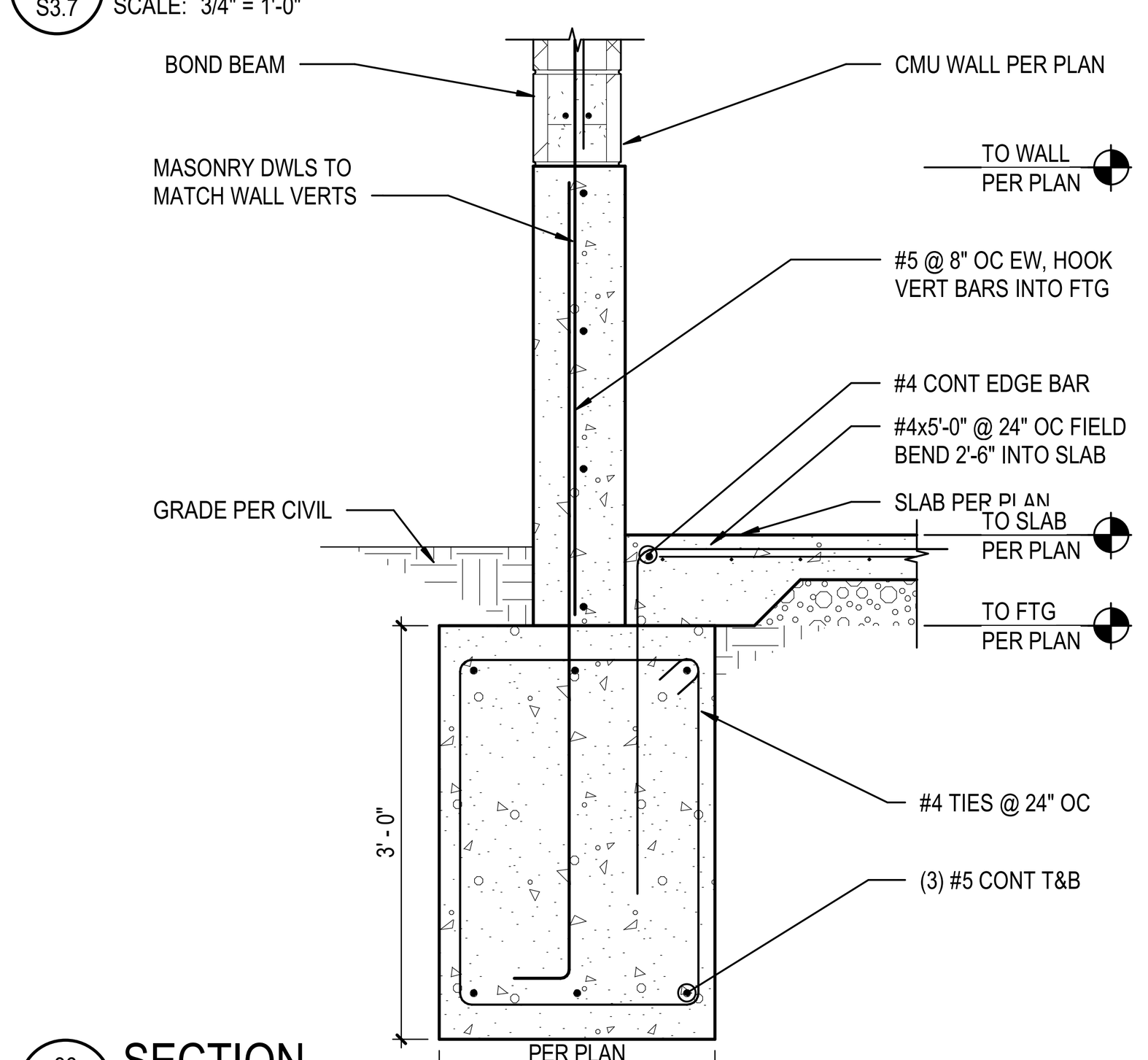

36 SECTION
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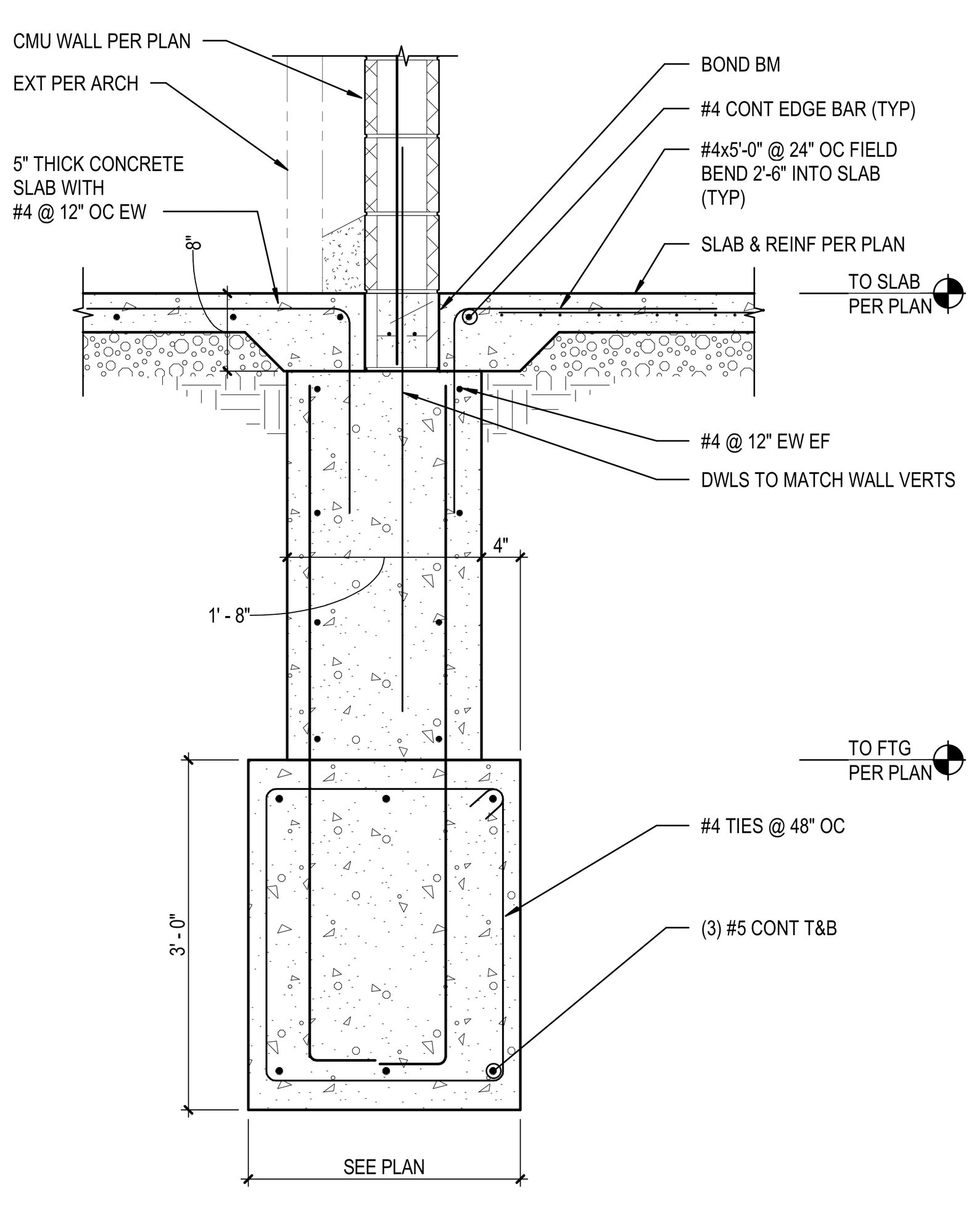

51 SECTION
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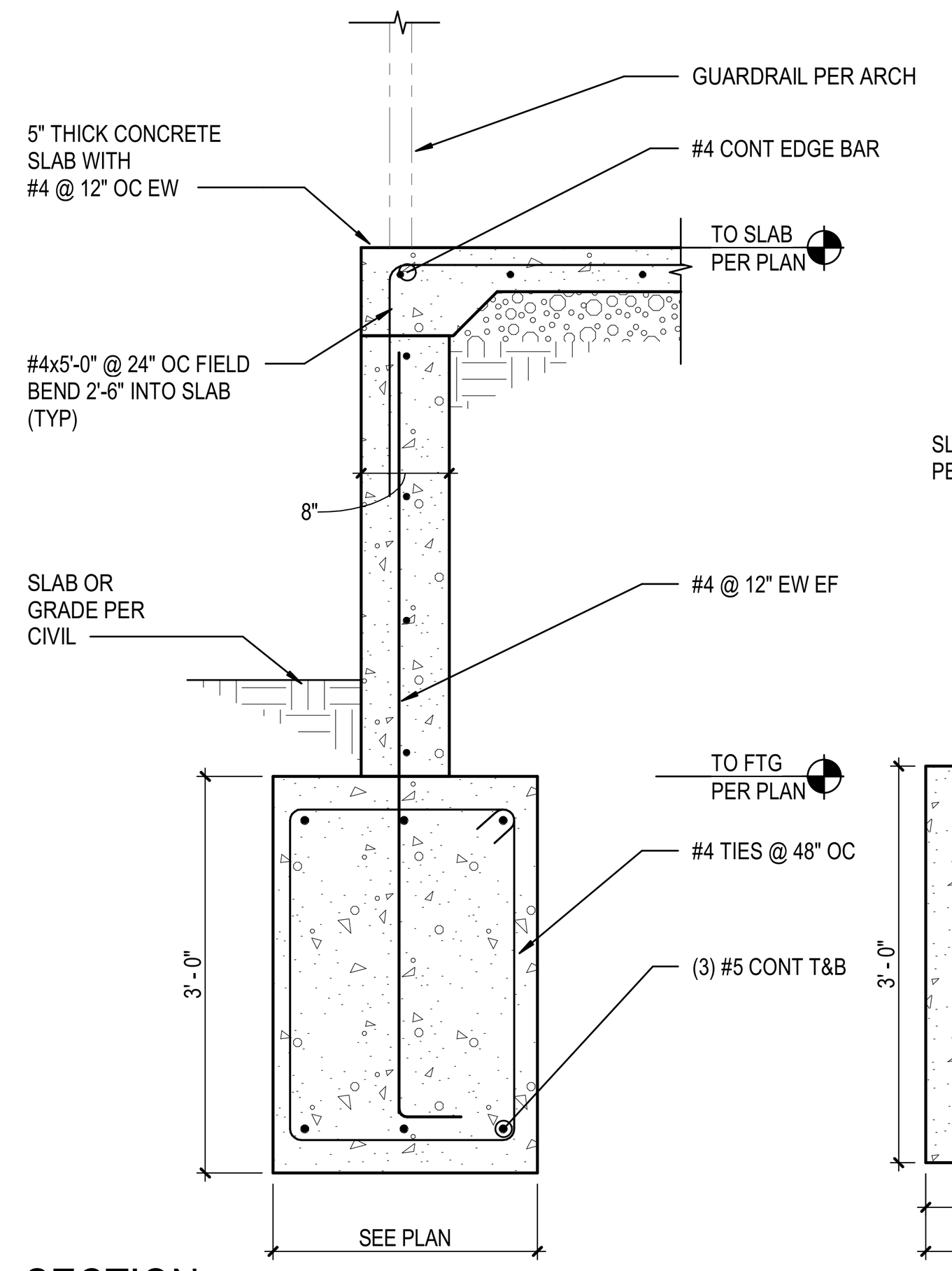

52 SECTION
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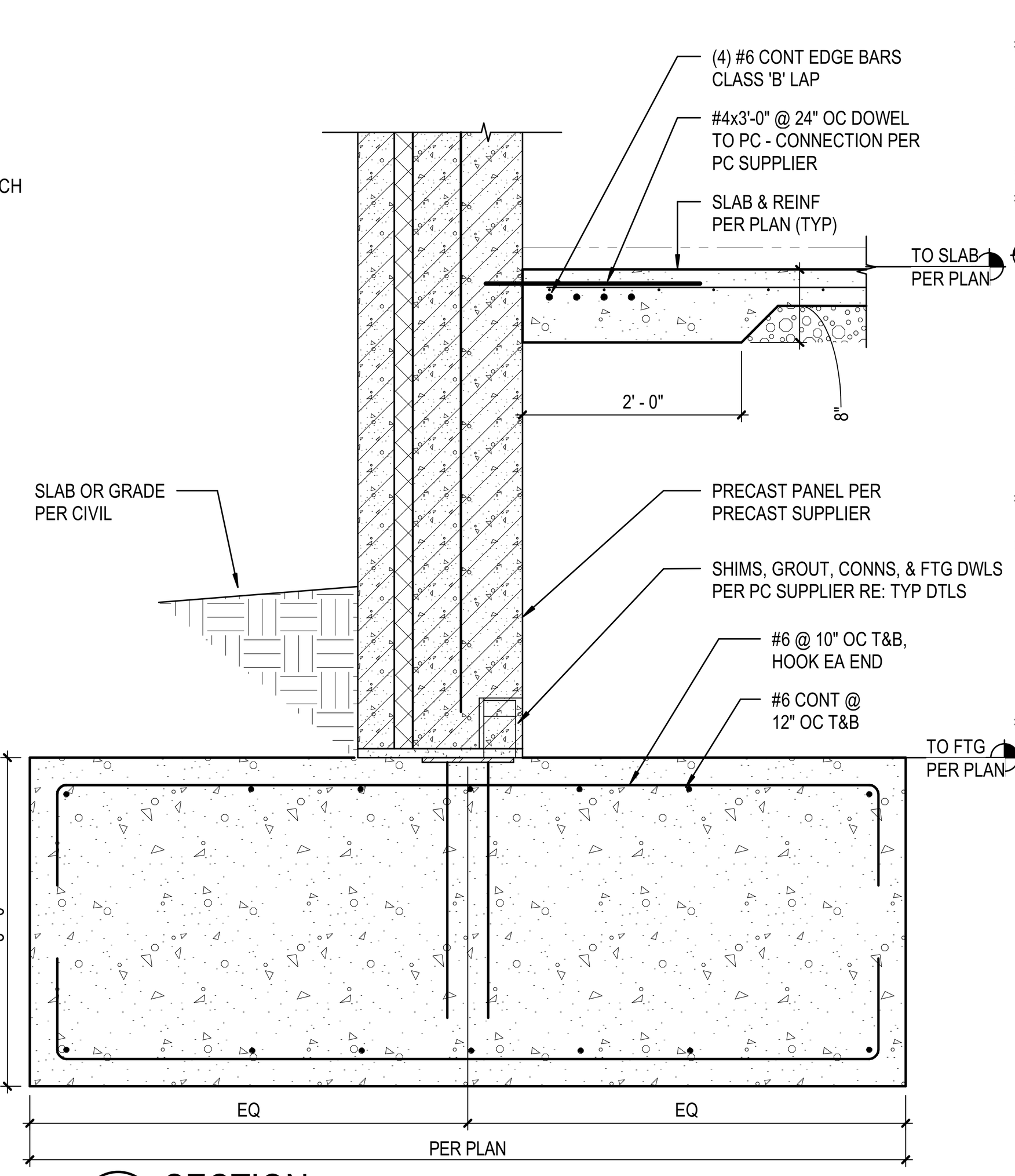

53 SECTION
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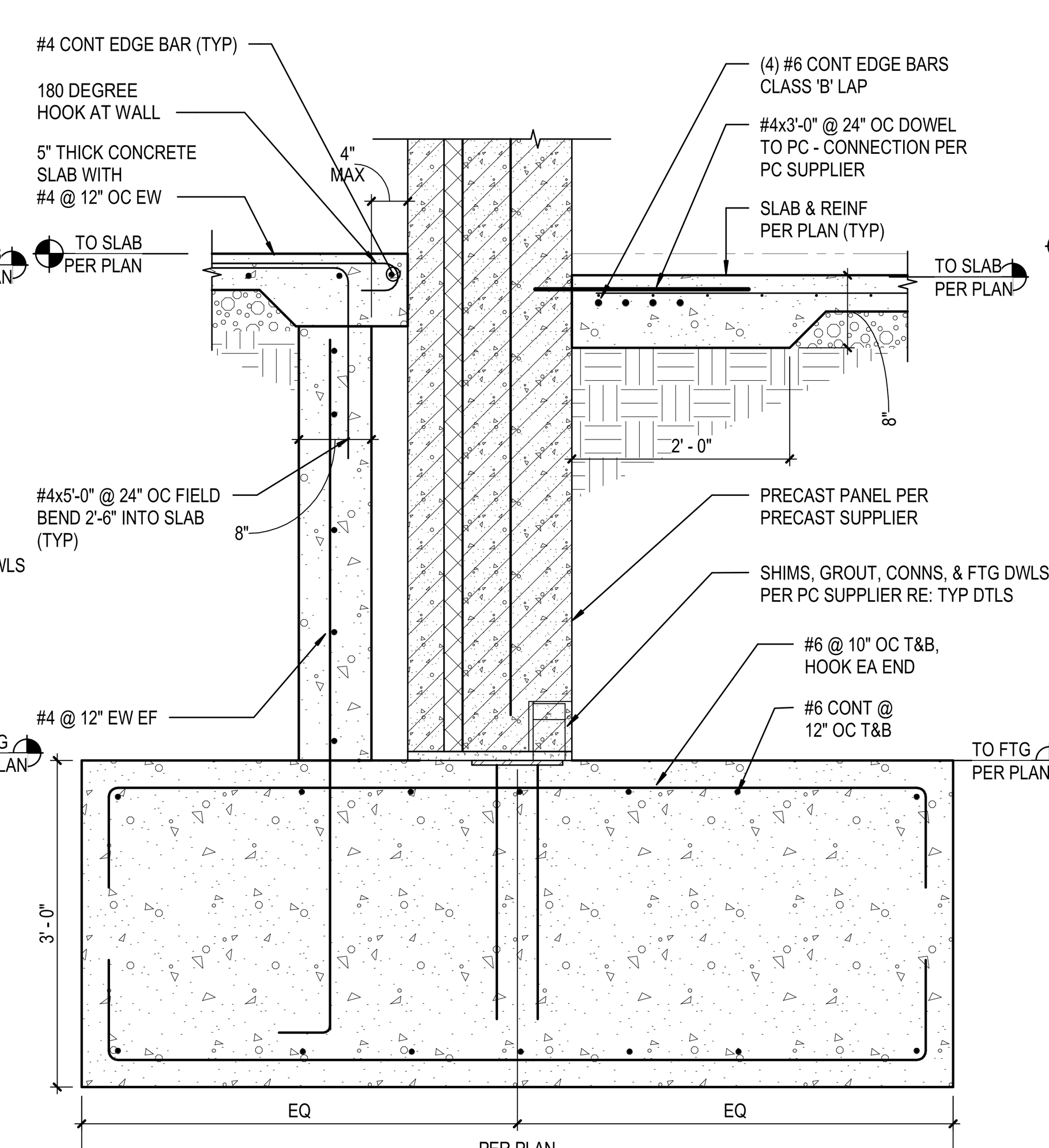

54 SECTION
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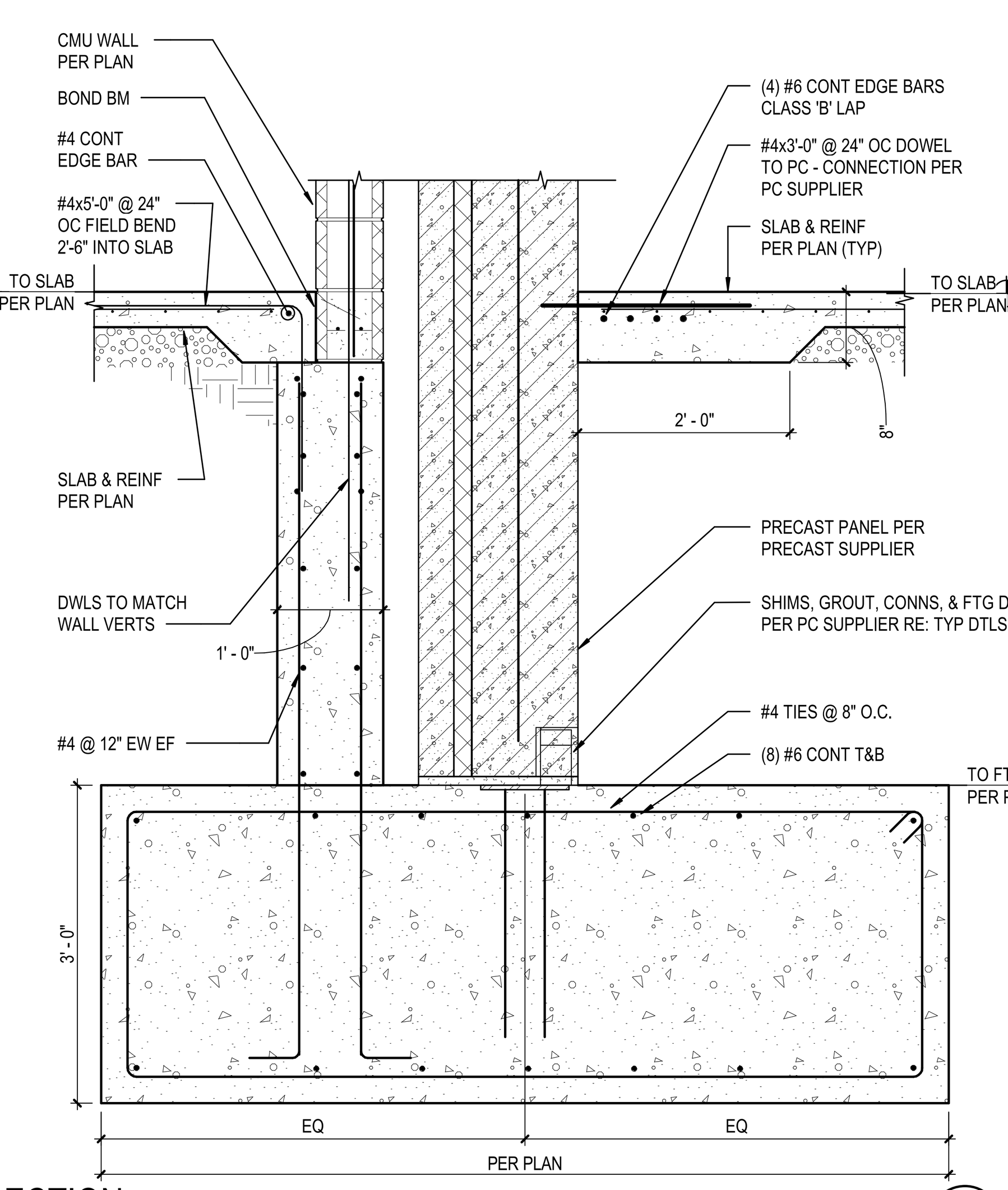

55 SECTION
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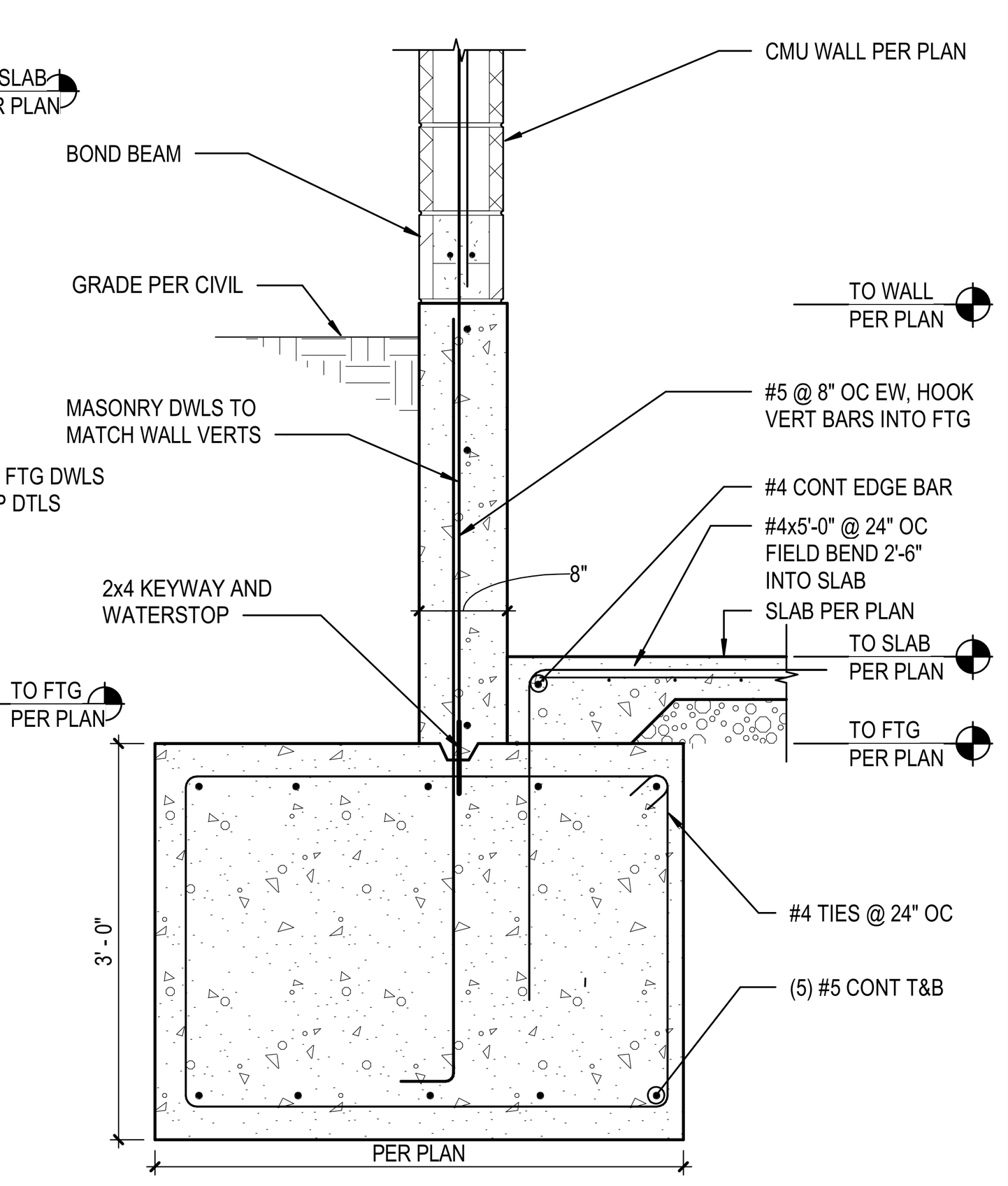

56 SECTION
S3.7 SCALE: 3/4" = 1'-0"

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS

13-20102-00

FOUNDATION SECTIONS

S3.7

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
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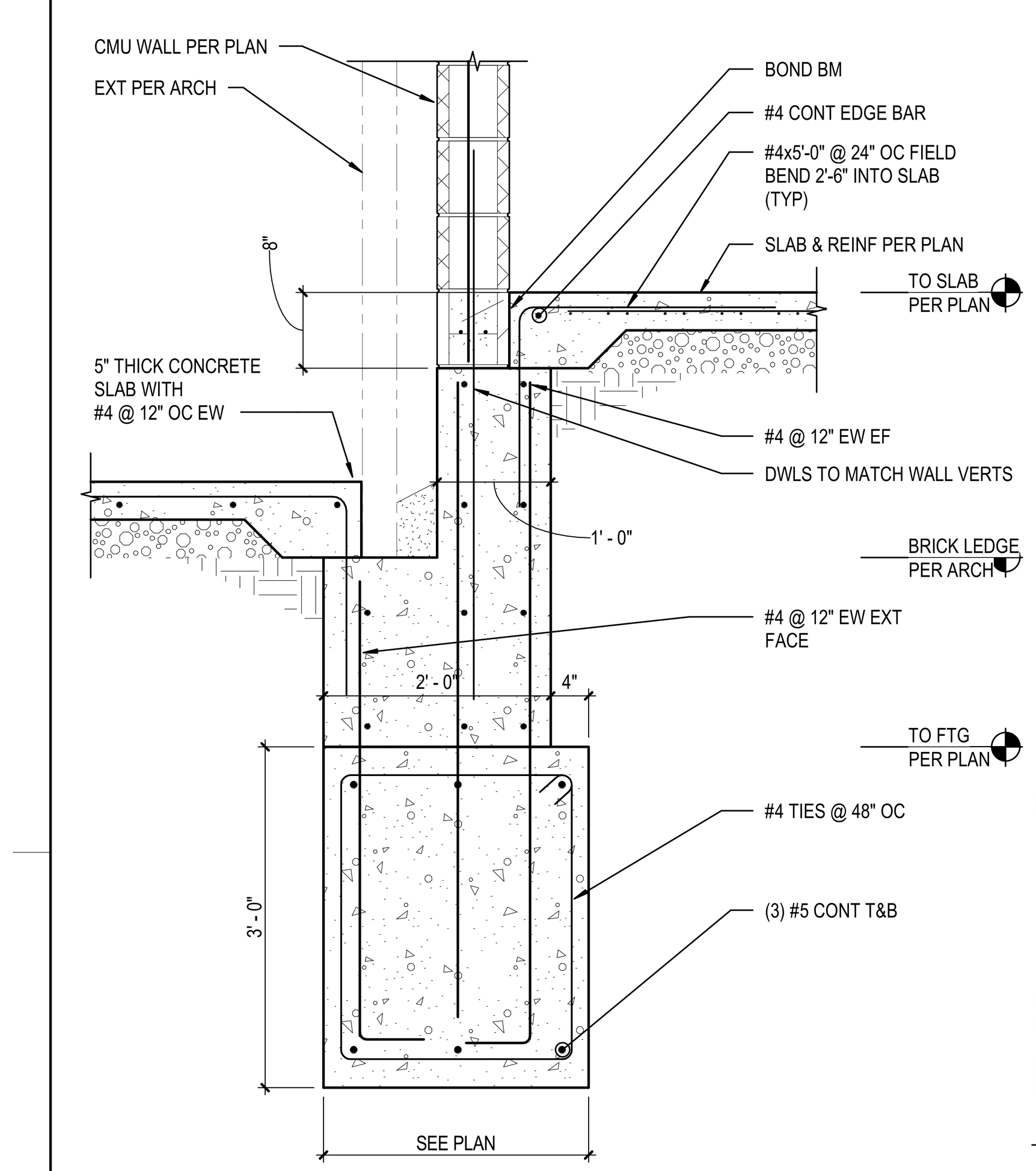

21 SECTION
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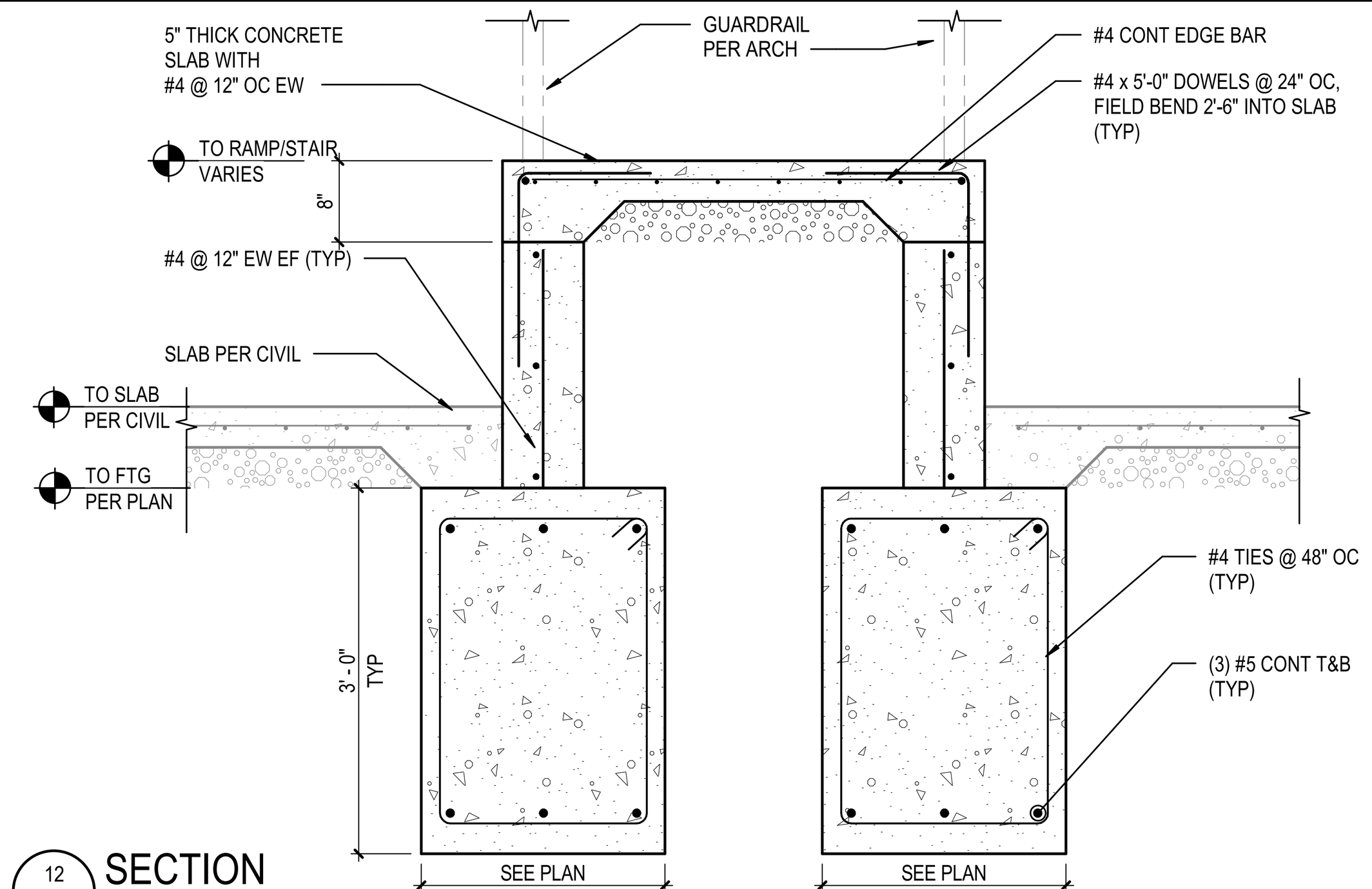

12 SECTION
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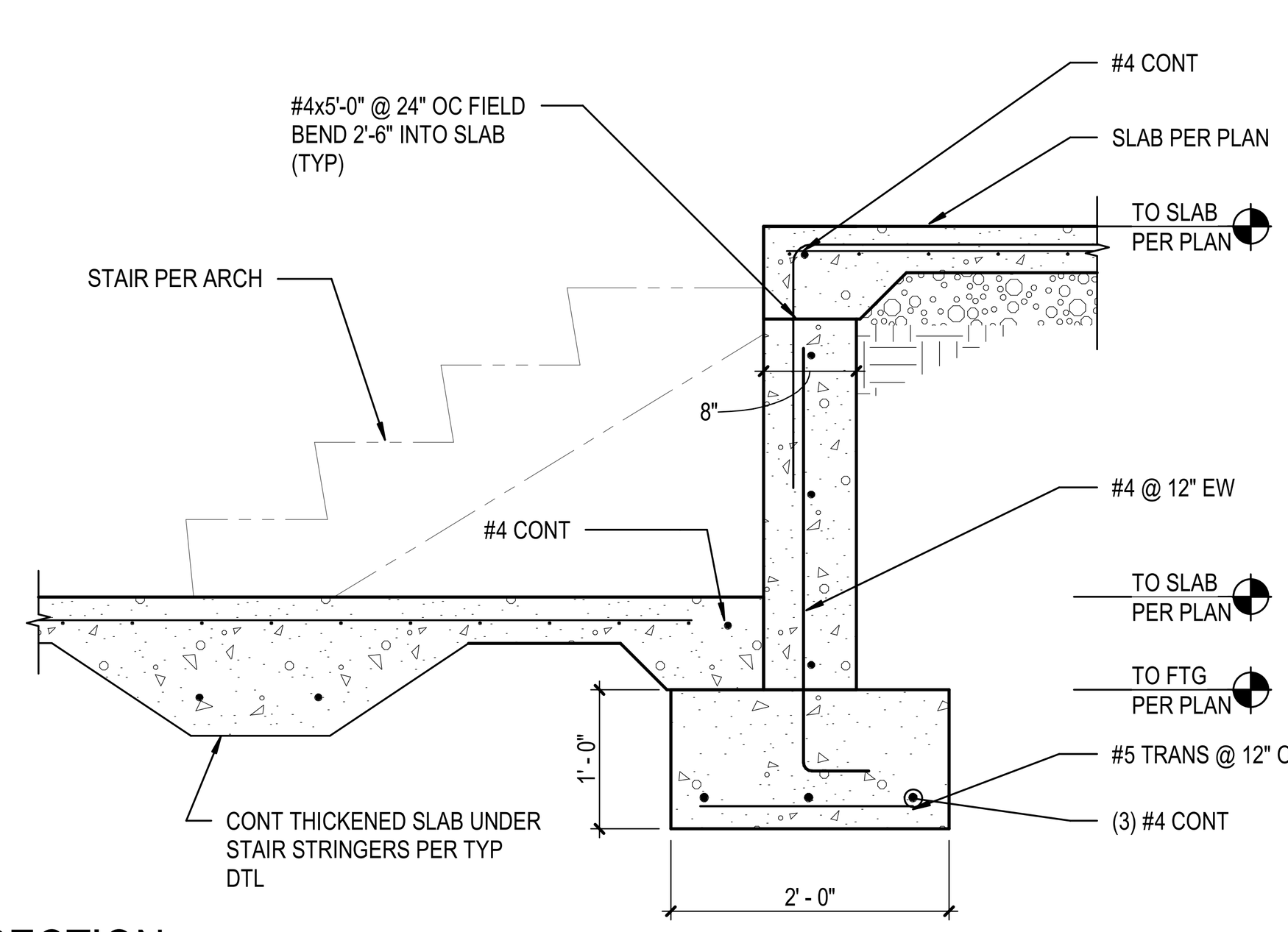

13 SECTION
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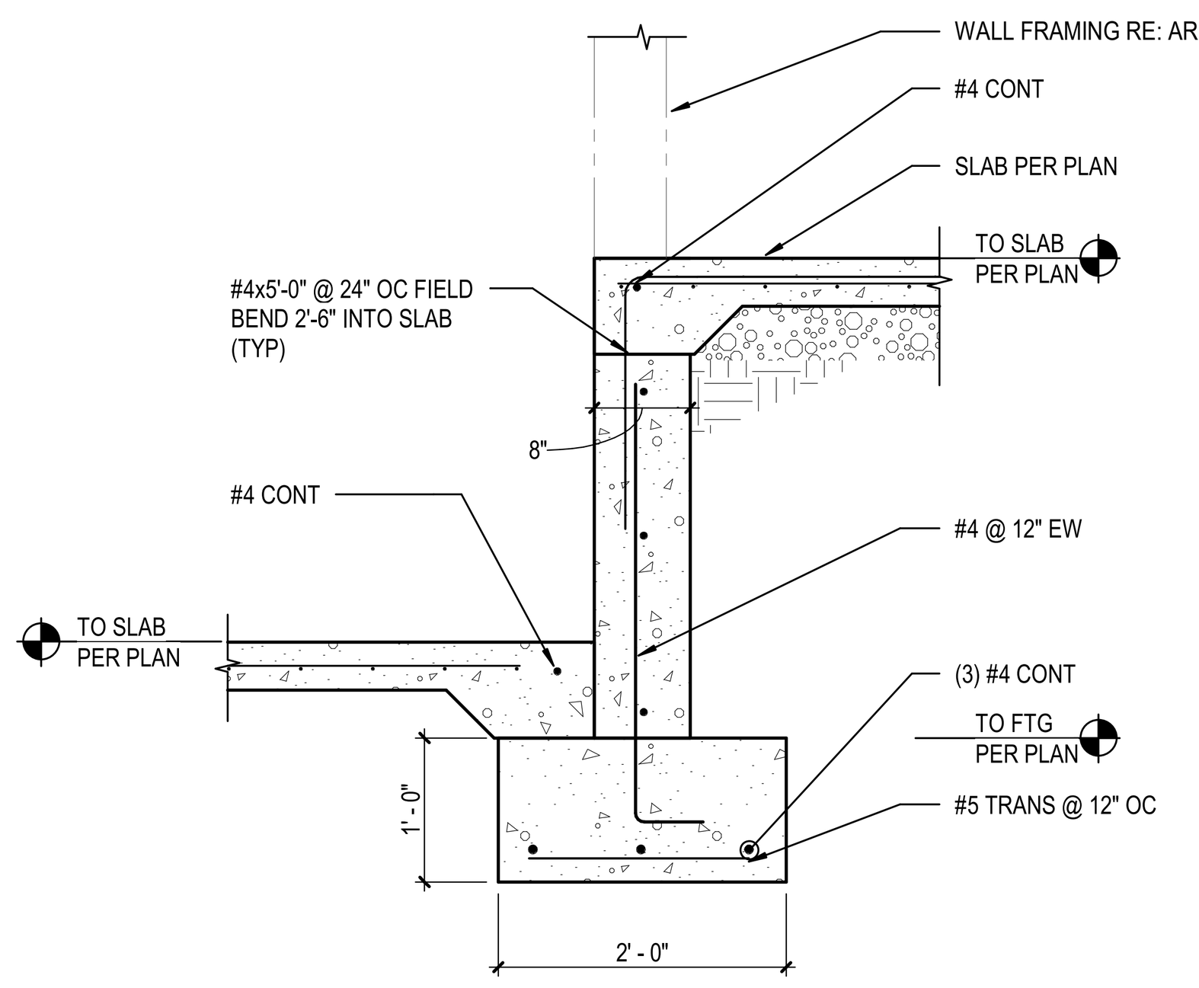

15 SECTION
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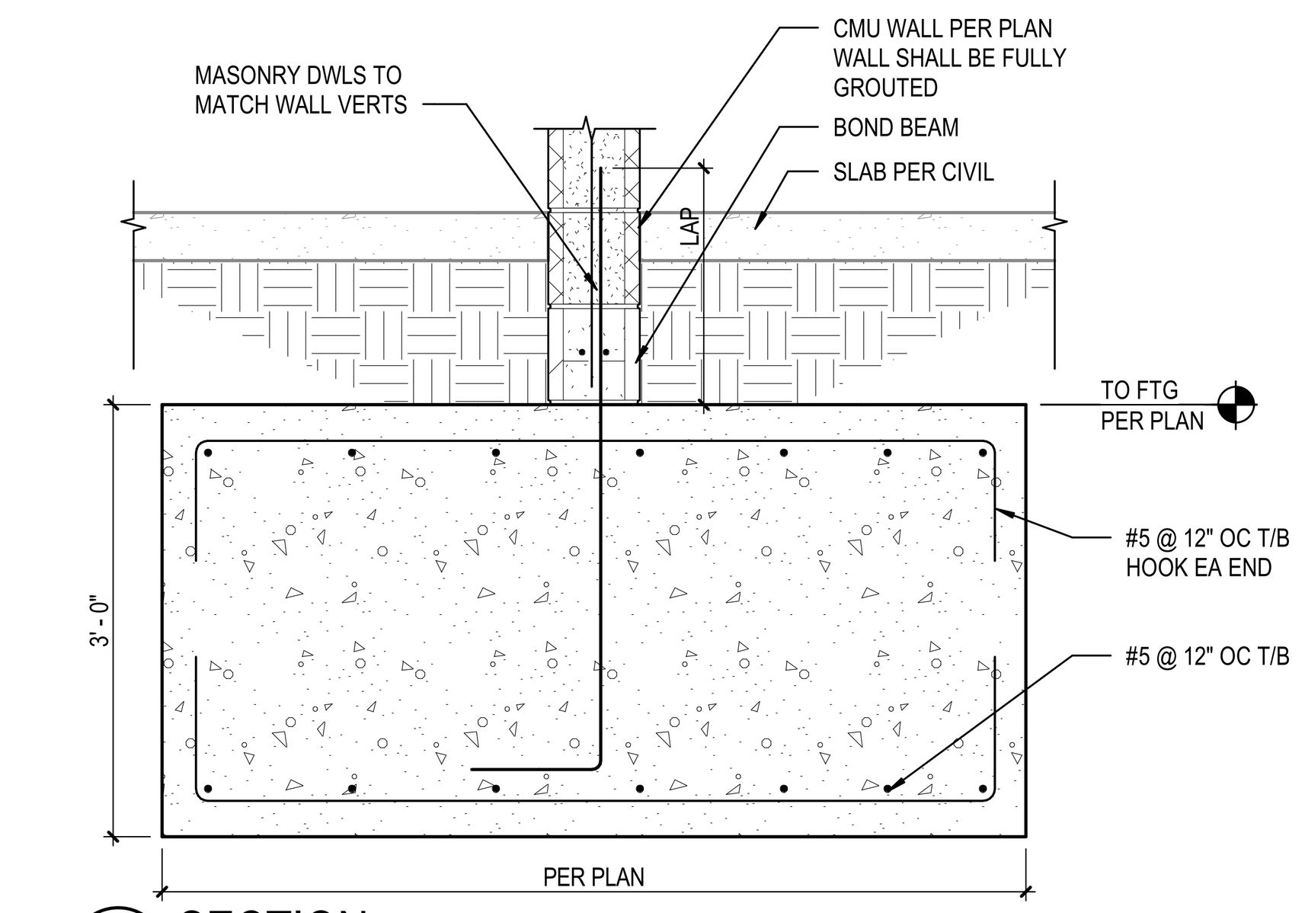

16 SECTION
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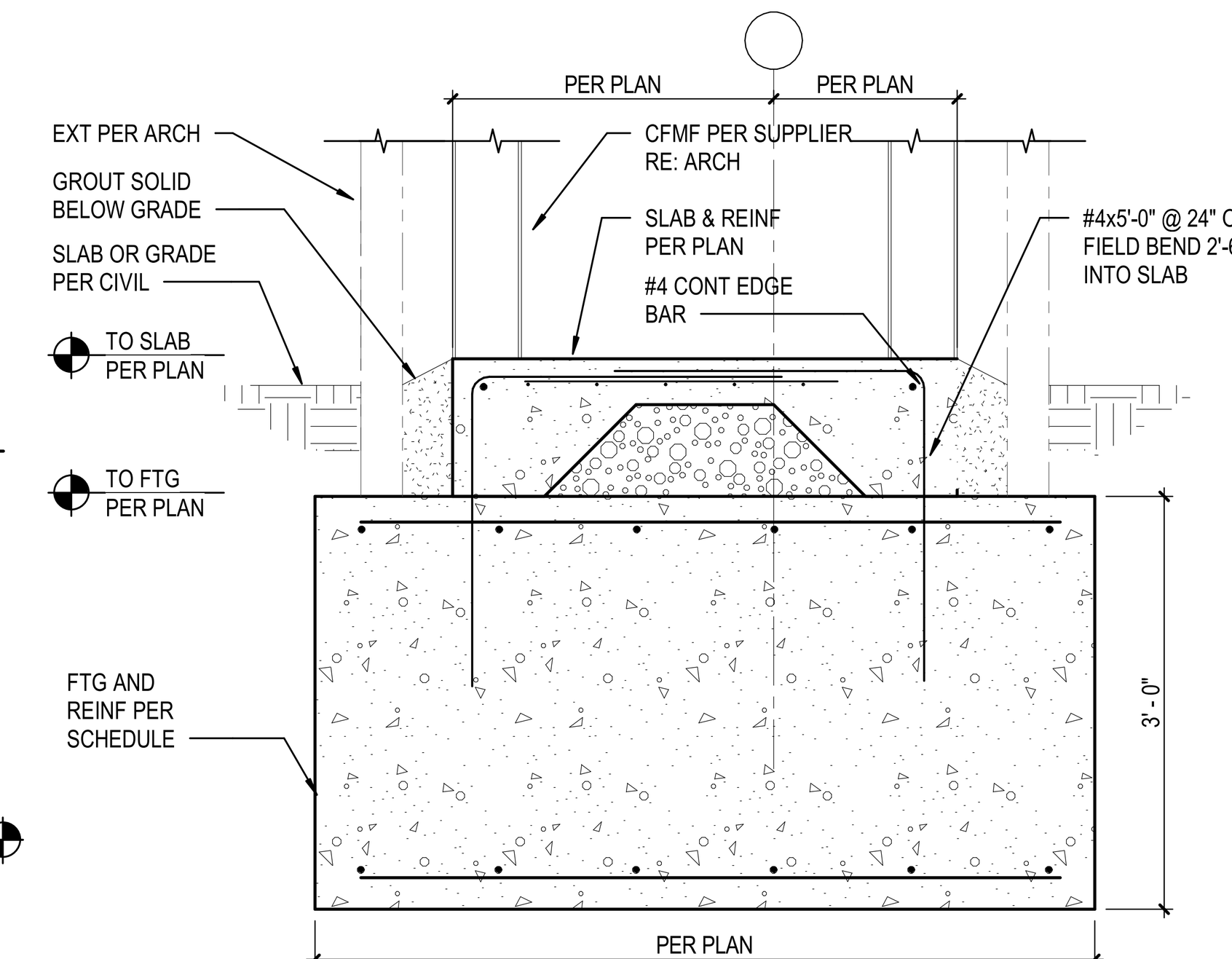

22 SECTION
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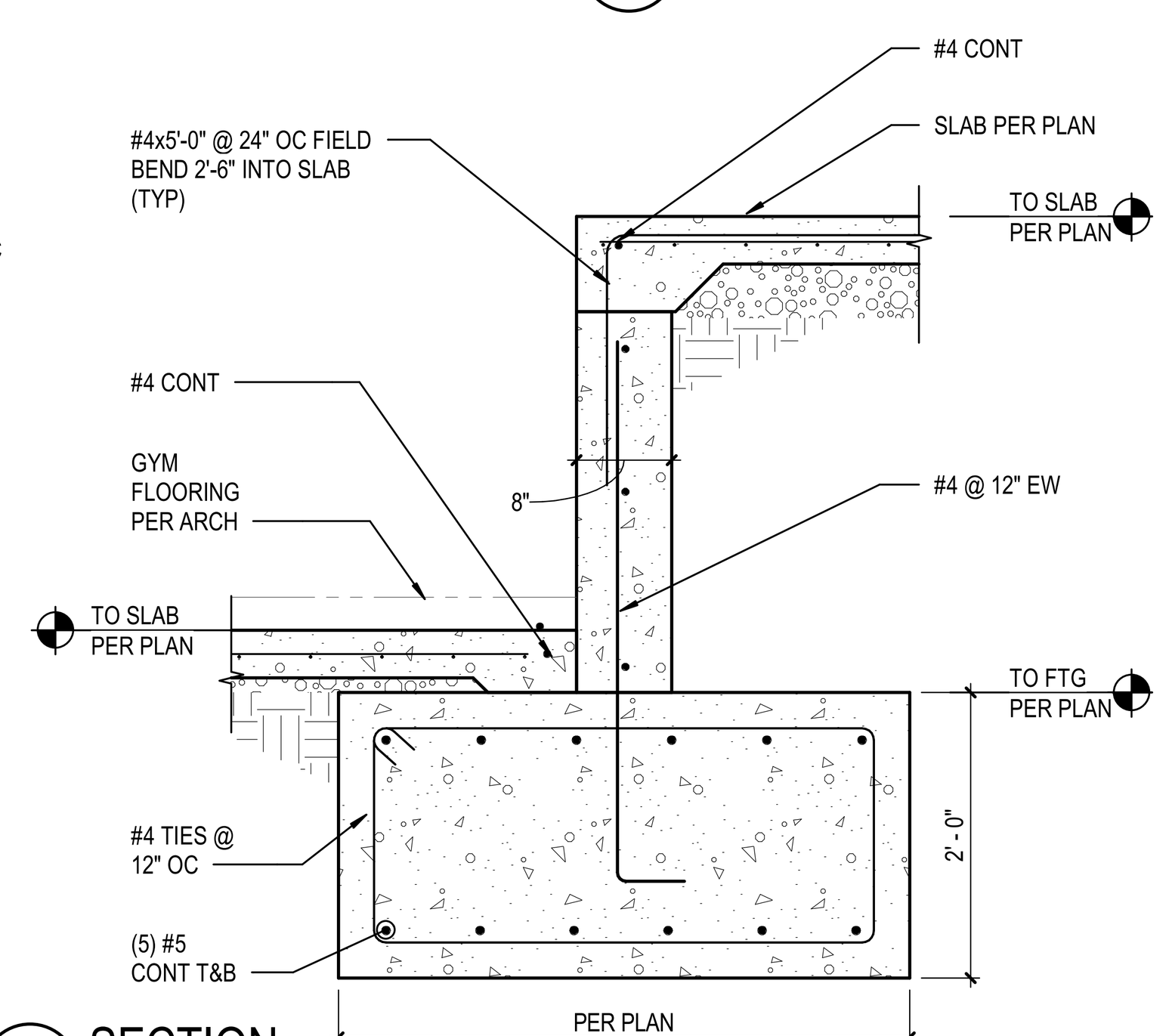

23 SECTION
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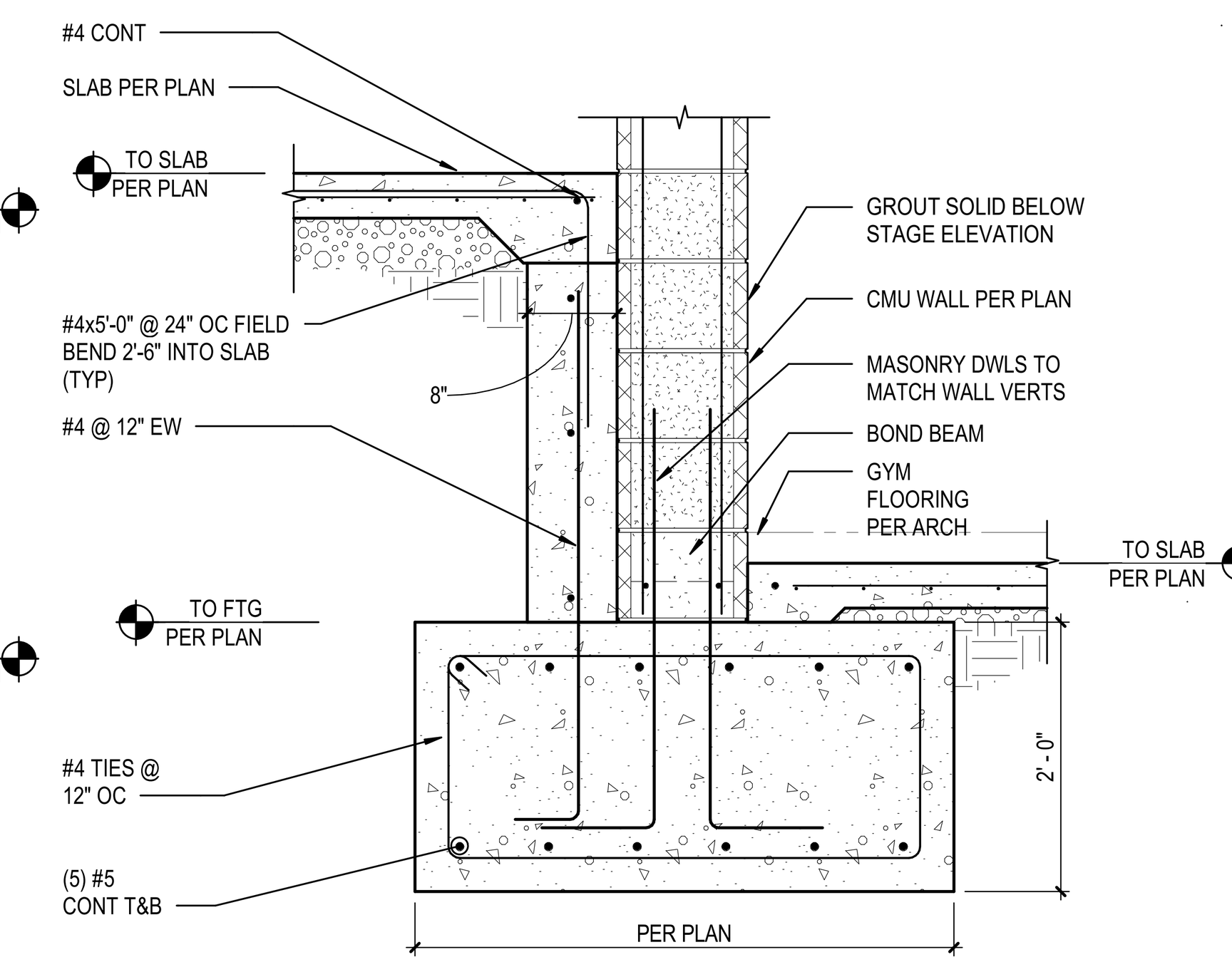
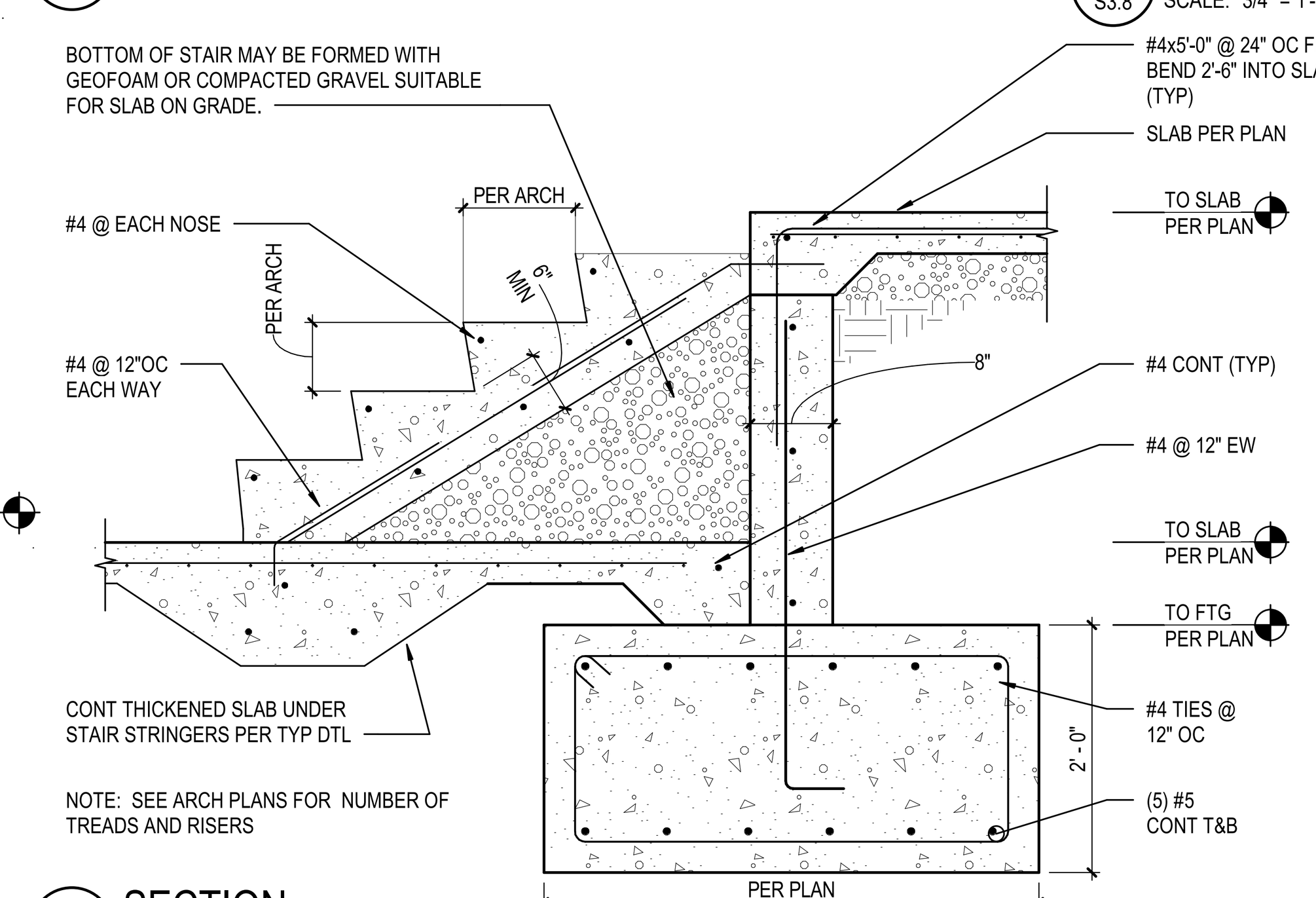
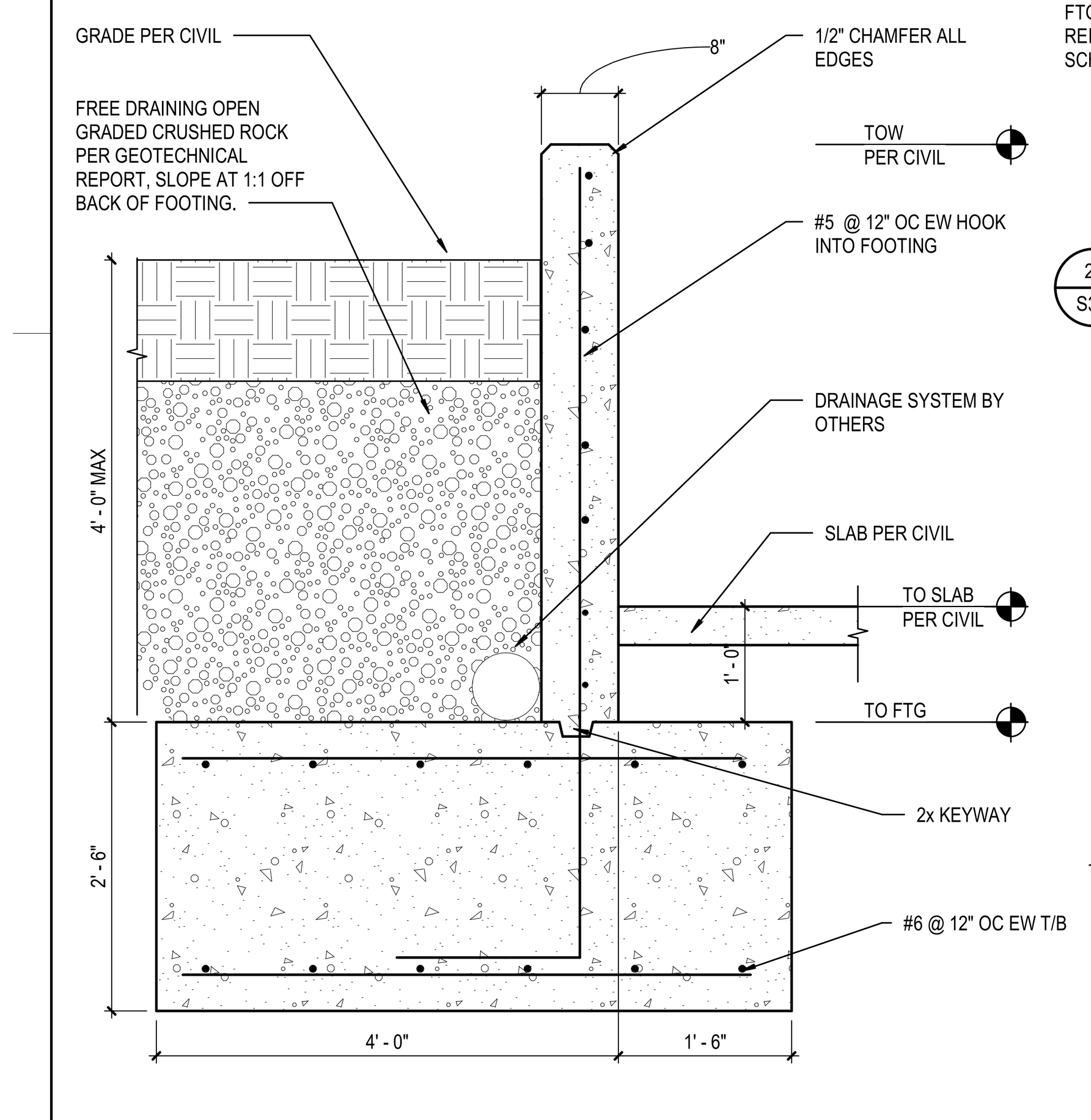


24 SECTION
S3.8 SCALE: 3/4" = 1'-0"

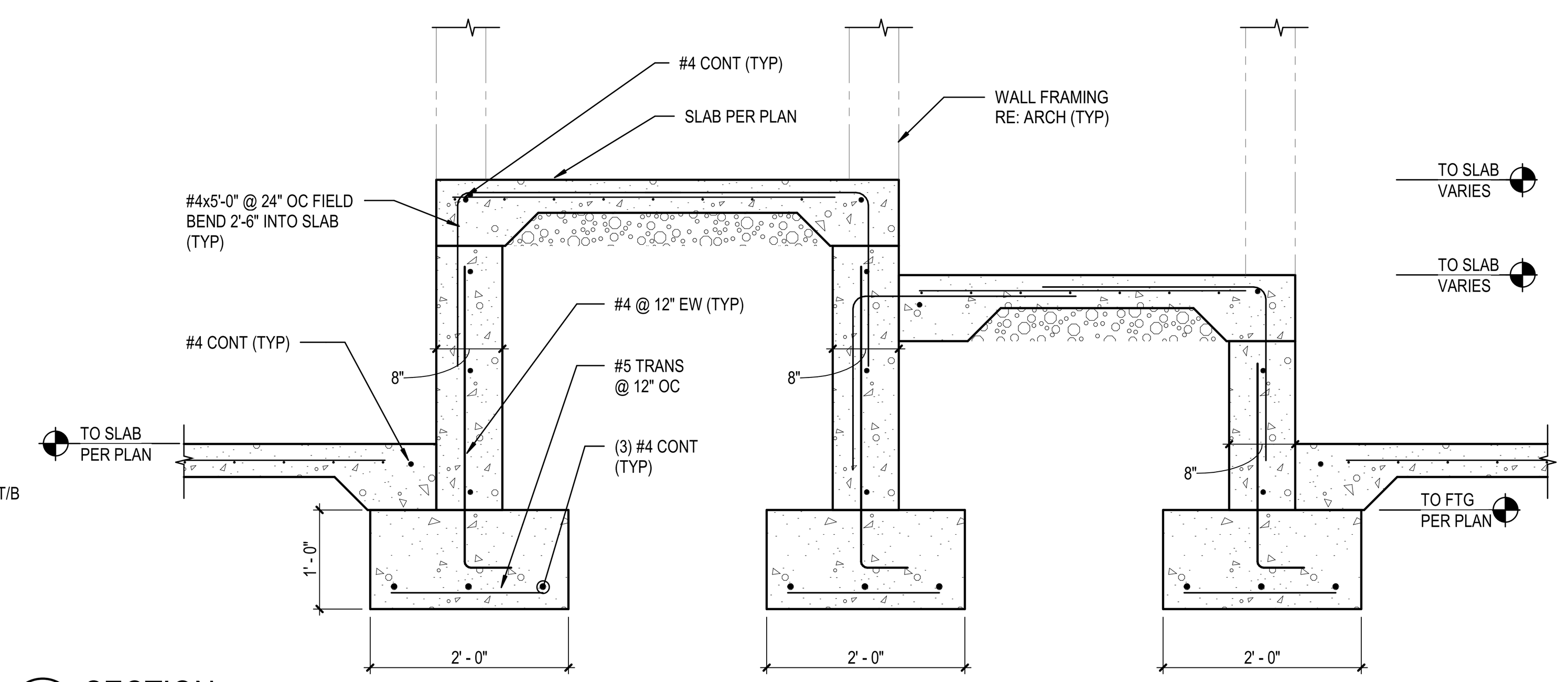


25 SECTION
S3.8 SCALE: 3/4" = 1'-0"

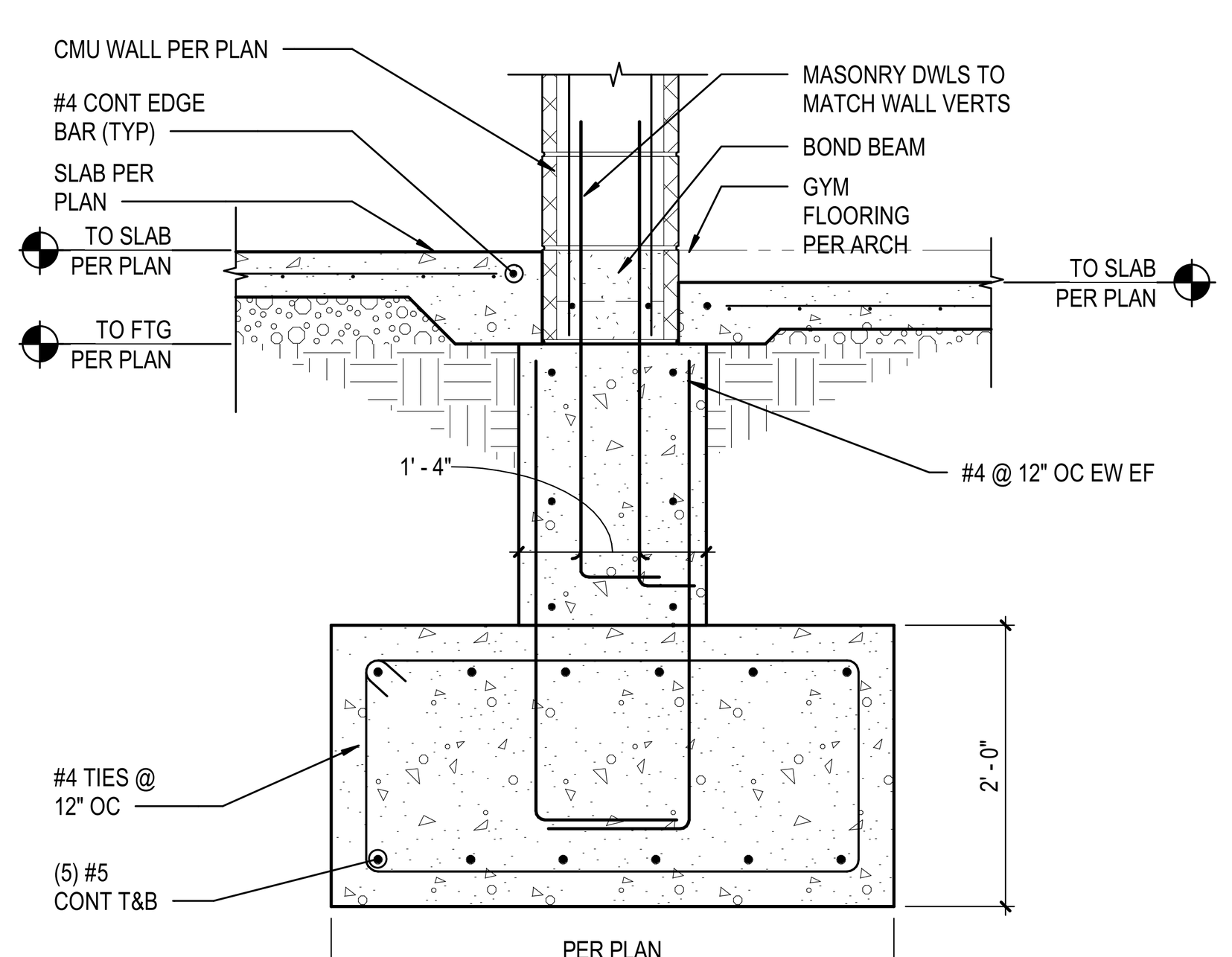
NOTE:
REFER TO CIVIL/LANDSCAPE FOR WALL LOCATION ON SITE.
WALL HEIGHT SHALL NOT EXCEED MAX SHOWN ON THIS DETAIL.



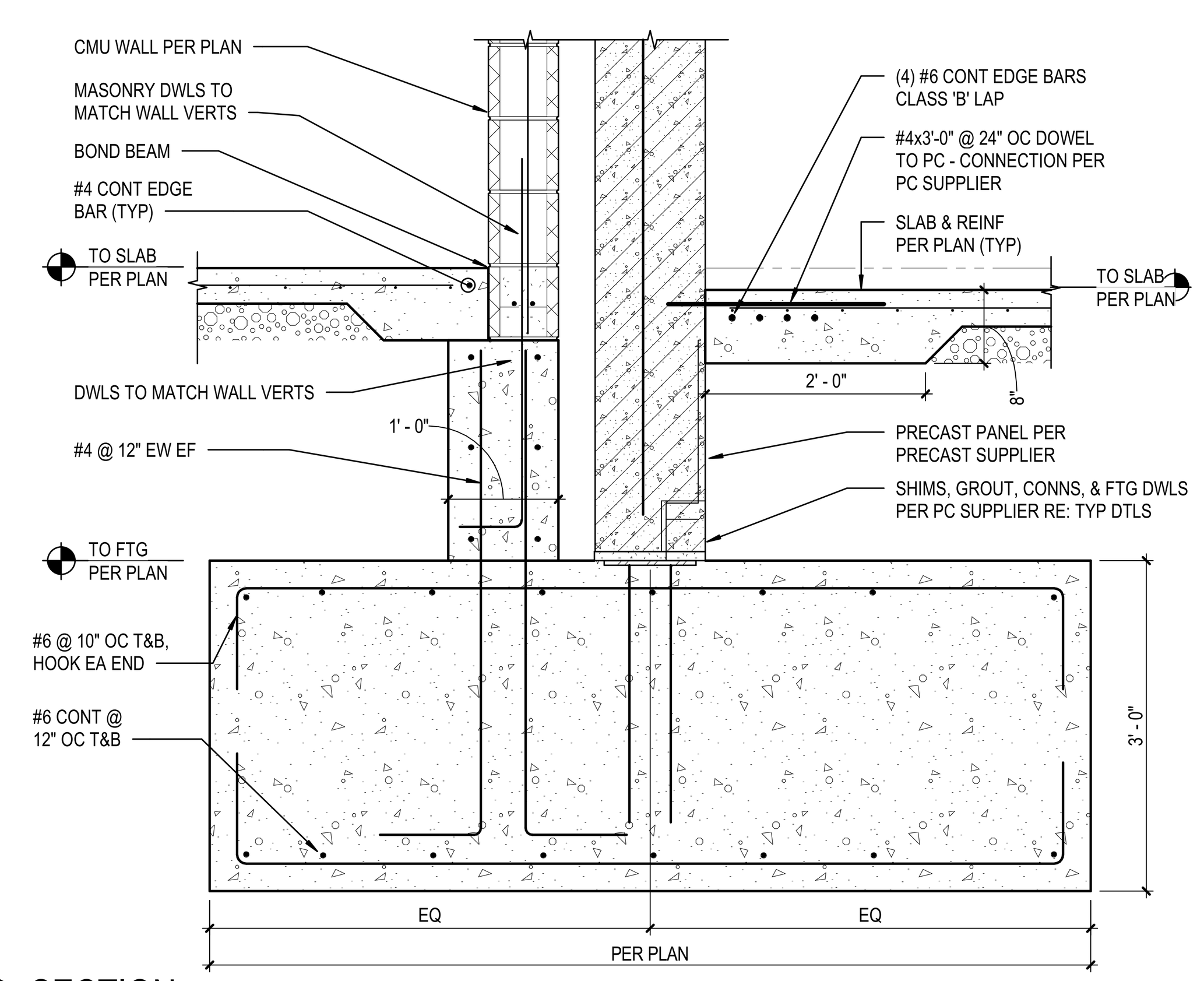
31 SECTION
S3.8 SCALE: 3/4" = 1'-0"



32 SECTION
S3.8 SCALE: 3/4" = 1'-0"



34 SECTION
S3.8 SCALE: 3/4" = 1'-0"



45 SECTION
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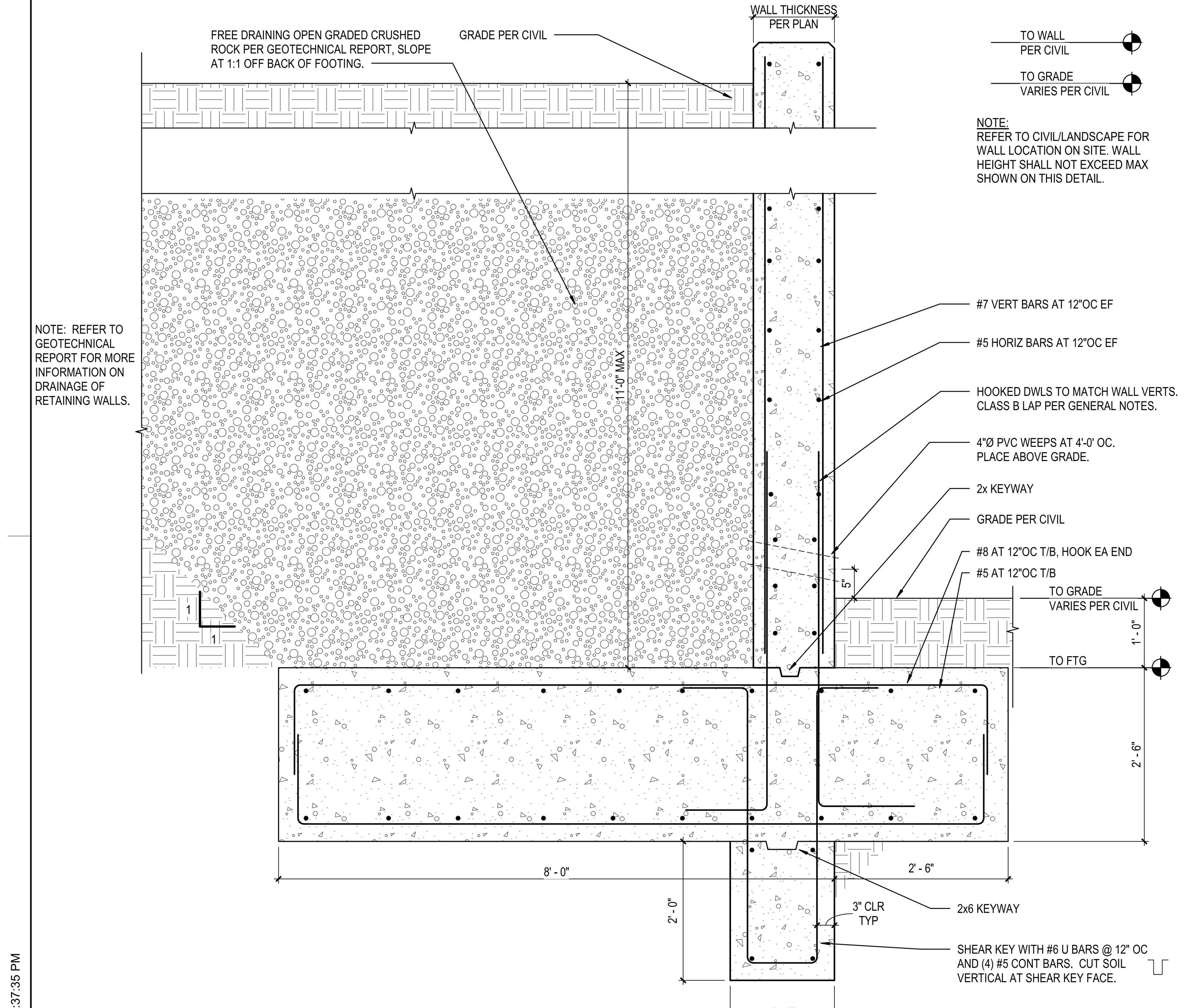
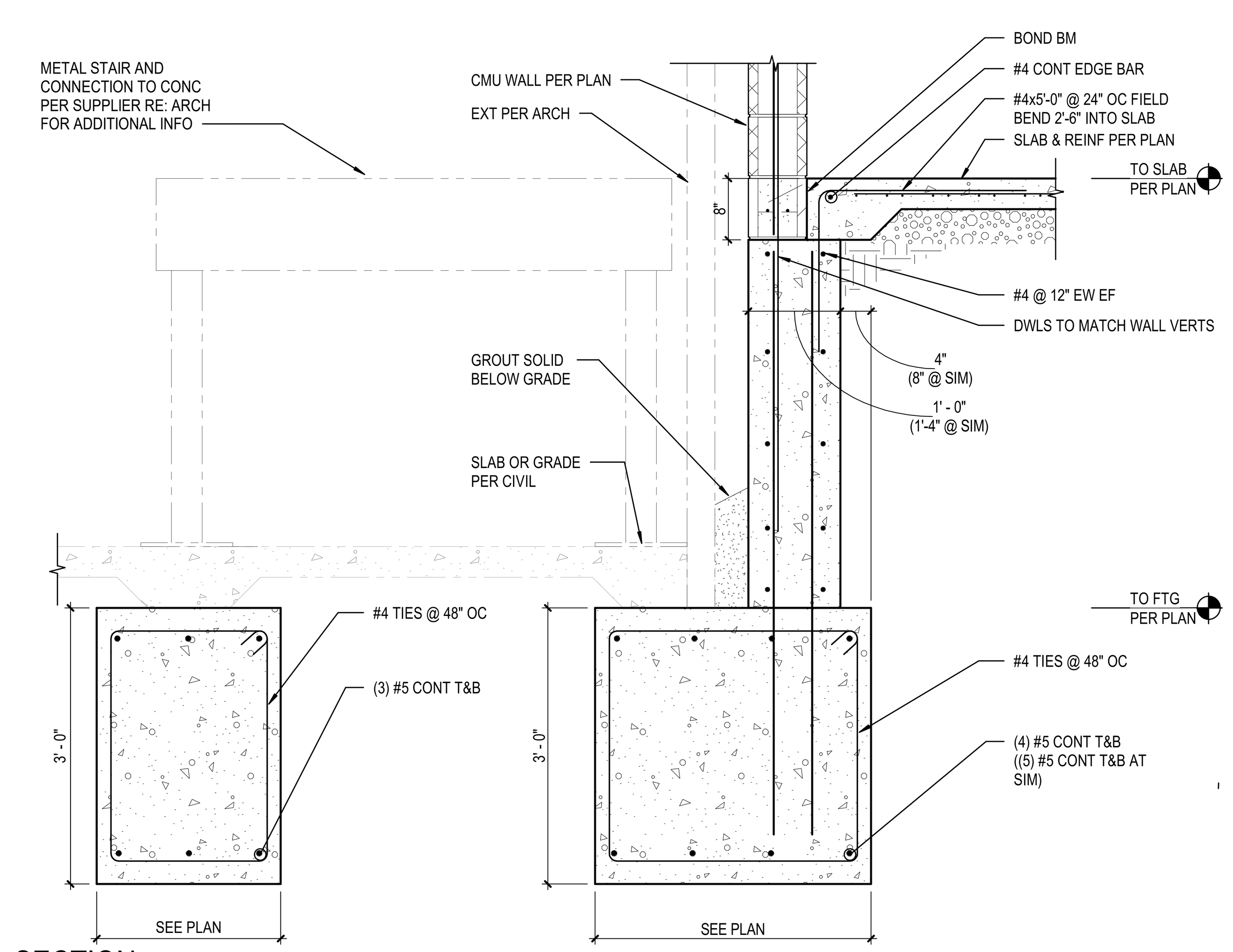


51 SECTION
S3.8 SCALE: 3/4" = 1'-0"



55 SECTION
S3.8 SCALE: 3/4" = 1'-0"

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10/7/2020 4:37:35 PM

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS

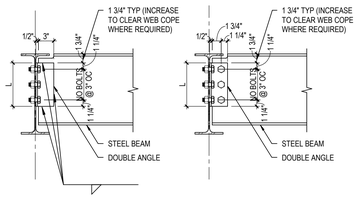
13-20102-00

FOUNDATION SECTIONS

S3.8

CONNECTION SCHEDULE		
BM SIZE	MIN NO OF BOLTS	L=ANGLE LENGTH
W8, W10	2	5 1/2"
W12, W14	3	8 1/2"
W16, W18	4	11 1/2"
W21	5	14 1/2"
W24	6	17 1/2"
W27	7	20 1/2"
W30, W33	8	23 1/2"
W36	9	26 1/2"

NOTES:
1. USE SIMILAR CONNECTION AT WIDE FLANGE COLUMN FLANGE OR WEB.
2. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN W/ MIN NUMBER OF BOLTS PER THIS SCHEDULE.
3. IF NO REACTIONS ARE PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 THE MAXIMUM TOTAL UNIFORM LRFD LOAD BASED ON SPAN LISTED IN TABLE 3-6 OF THE AISC STEEL CONNECTION MANUAL.

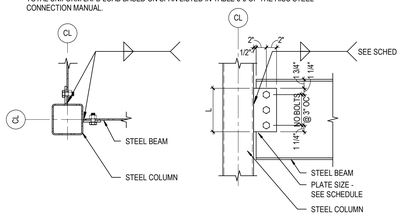


A WELDED CONN B BOLTED CONN

21 S4.1 TYP STEEL BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"

CONNECTION SCHEDULE		
EACH BM SIZE	MIN NO OF BOLTS	L=ANGLE LENGTH
W8, W10	2	5 1/2"
W12, W14	3	8 1/2"
W16, W18	4	11 1/2"
W21	5	14 1/2"
W24	6	17 1/2"
W27	7	20 1/2"
W30, W33	8	23 1/2"
W36	9	26 1/2"

NOTES:
1. USE SIMILAR CONNECTION AT WIDE FLANGE COLUMN FLANGE OR WEB.
2. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN W/ MIN NUMBER OF BOLTS PER THIS SCHEDULE.
3. IF NO REACTIONS ARE PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 THE MAXIMUM TOTAL UNIFORM LRFD LOAD BASED ON SPAN LISTED IN TABLE 3-6 OF THE AISC STEEL CONNECTION MANUAL.

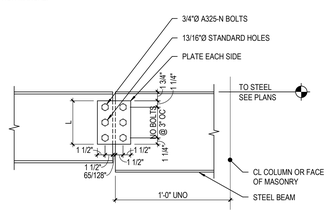


A PLAN B BOLTED CONN

22 S4.1 TYP STEEL BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"

CONNECTION SCHEDULE		
BM SIZE	MIN NO OF BOLTS	L=PLATE LENGTH
W8, W10	2	5 1/2"
W12, W14	3	8 1/2"
W16, W18	4	11 1/2"
W21	5	14 1/2"
W24	6	17 1/2"
W27	7	20 1/2"
W30, W33	8	23 1/2"
W36	9	26 1/2"

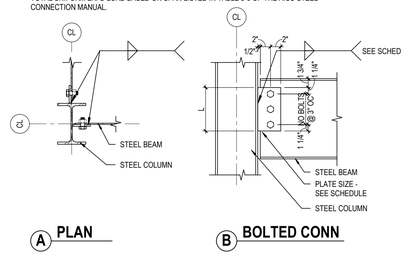
NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN W/ MIN NUMBER OF BOLTS PER THIS SCHEDULE.
2. IF NO REACTIONS ARE PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 THE MAXIMUM TOTAL UNIFORM LRFD LOAD BASED ON SPAN LISTED IN TABLE 3-6 OF THE AISC STEEL CONNECTION MANUAL.



23 S4.1 TYP STEEL BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"

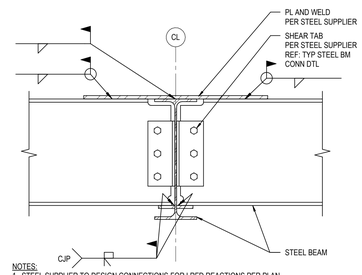
CONNECTION SCHEDULE		
EACH BM SIZE	MIN NO OF BOLTS	L=ANGLE LENGTH
W8, W10	2	5 1/2"
W12, W14	3	8 1/2"
W16, W18	4	11 1/2"
W21	5	14 1/2"
W24	6	17 1/2"
W27	7	20 1/2"
W30, W33	8	23 1/2"
W36	9	26 1/2"

NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN W/ MIN NUMBER OF BOLTS PER THIS SCHEDULE.
2. IF NO REACTIONS ARE PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 THE MAXIMUM TOTAL UNIFORM LRFD LOAD BASED ON SPAN LISTED IN TABLE 3-6 OF THE AISC STEEL CONNECTION MANUAL.



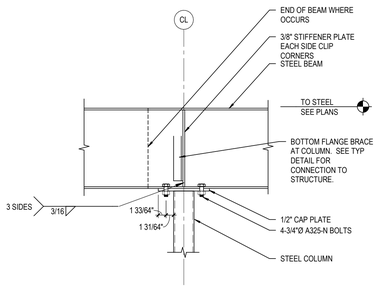
A PLAN B BOLTED CONN

24 S4.1 TYP STEEL BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"



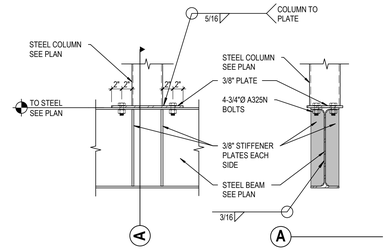
NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN.
2. IF NO REACTIONS ARE PROVIDED, DESIGN CONNECTIONS TO RESIST 1/2 THE MAXIMUM TOTAL UNIFORM LRFD LOAD BASED ON SPAN LISTED IN TABLE 3-6 OF THE AISC STEEL CONNECTION MANUAL.

15 S4.1 TYP WF BEAM MOMENT CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0"

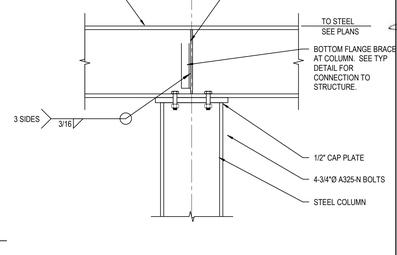


NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN.

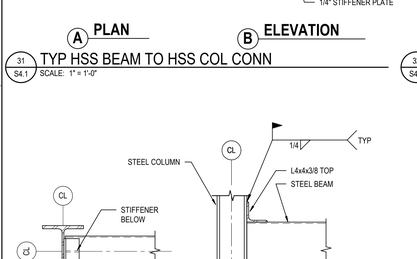
16 S4.1 TYP BEAM OVER COLUMN DETAIL
SCALE: 1" = 1'-0"



25 S4.1 COLUMN / BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"

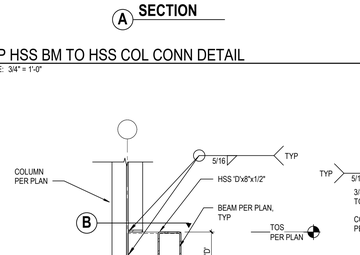


26 S4.1 TYP BEAM OVER COLUMN DETAIL
SCALE: 1" = 1'-0"

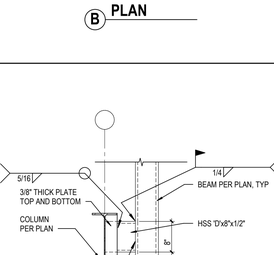


A PLAN B ELEVATION

31 S4.1 TYP HSS BEAM TO HSS COL CONN
SCALE: 1" = 1'-0"

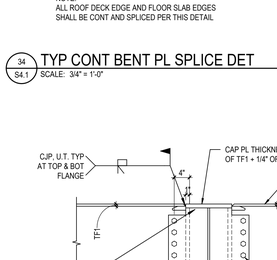


A SECTION



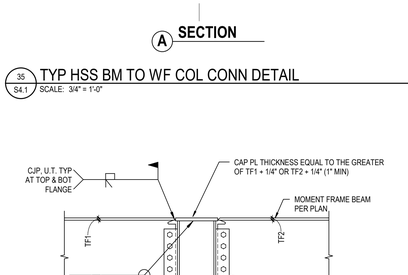
B PLAN

32 S4.1 TYP HSS BM TO HSS COL CONN DETAIL
SCALE: 3/4" = 1'-0"

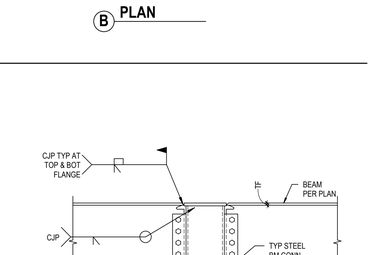


NOTE:
ALL ROOF DECK EDGE AND FLOOR SLAB EDGES SHALL BE CONT AND SPLICED PER THIS DETAIL

34 S4.1 TYP CONT BENT PL SPLICE DET
SCALE: 3/4" = 1'-0"



A SECTION



B PLAN

35 S4.1 TYP HSS BM TO WF COL CONN DETAIL
SCALE: 3/4" = 1'-0"

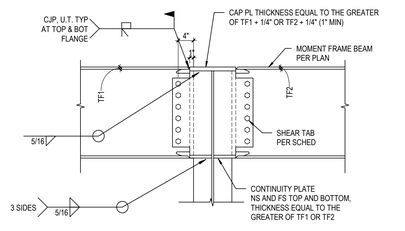
A PLAN B ELEVATION

41 S4.1 TYP HSS BEAM TO WF COL CONN
SCALE: 1" = 1'-0"

A SECTION

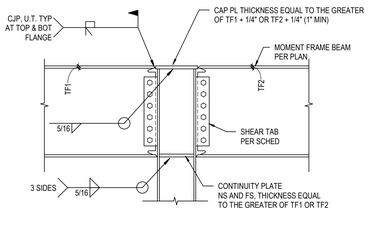
B PLAN

42 S4.1 TYP HSS BM TO WF COL CONN DETAIL
SCALE: 3/4" = 1'-0"



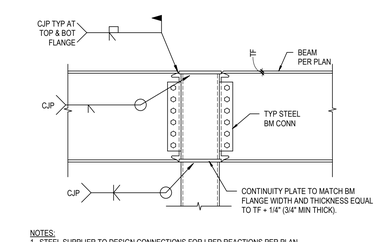
NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN.

44 S4.1 TYP WF BEAM TO WF COL WEB MOMENT CONN DTL
SCALE: 3/4" = 1'-0"



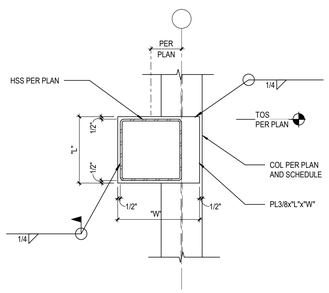
NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN.

45 S4.1 TYP WF BEAM TO WF COL FLANGE MOMENT CONN DTL
SCALE: 3/4" = 1'-0"

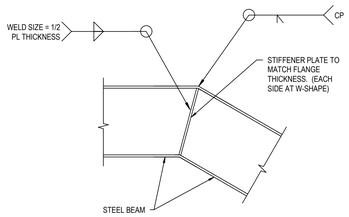


NOTES:
1. STEEL SUPPLIER TO DESIGN CONNECTIONS FOR LRFD REACTIONS PER PLAN.

46 S4.1 TYP WF BEAM TO HSS COL MOMENT CONN DETAIL
SCALE: 3/4" = 1'-0"



51 S4.1 TYP OFFSET HSS TO WF COL CONN DTL
SCALE: 1" = 1'-0"



53 S4.1 BEAM MITER OR SPLICE DETAIL
SCALE: 1" = 1'-0"

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LEE'S SUMMIT R-7 SCHOOL DISTRICT
1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS

13-20102-00

STEEL TYPICAL DETAILS

S4.1

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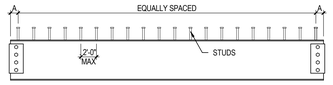
A. BEAMS:

1. THE NUMBER SHOWN THUS (NO) FOLLOWING THE BEAM SIZE INDICATES THE NUMBER OF 3/4" HEADED STUDS TO BE PLACED ON THE BEAM. ALL BEAMS (AND GIRDERS) SHALL HAVE HEADED STUDS ATTACHED TO THE TOP FLANGE. IF NO SPECIFIC STUD QUANTITY IS NOTED ON PLANS, THE MAXIMUM STUD SPACING SHALL BE 2'-0"OC. DECK VALLEYS WITHOUT STUDS SHALL BE WELDED.

2. STUD PLACEMENT SHALL BE AS FOLLOWS:
   A. NUMBER OF STUDS IS LESS THAN THE NUMBER OF DECK VALLEYS.
      UNIFORMLY SPACE STUDS SYMMETRICALLY WITH THE BEAM CENTERLINE.
   B. NUMBER OF STUDS IS GREATER THAN THE NUMBER OF DECK VALLEYS.
      PLACE ONE STUD IN EACH VALLEY STARTING AT THE ENDS OF THE BEAM. WHEN TWO STUDS ARE REQUIRED, PLACE STUDS 1 1/2" EACH SIDE OF THE BEAM WEB.

NOTE: SPACE 'A' TO COORDINATE WITH DECK LAYOUT.

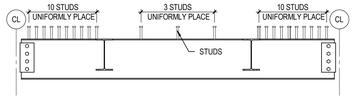


EXAMPLE LAYOUT

B. GIRDERS:

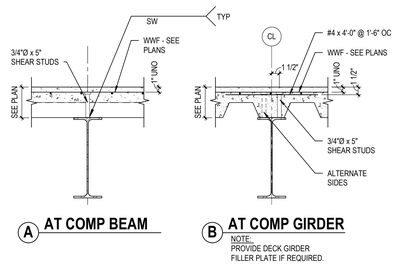
1. THE SERIES OF NUMBERS SHOWN THUS [NO-NO-NO] FOLLOWING THE GIRDER SIZE WHEN ADDED TOGETHER, REPRESENT THE TOTAL NUMBER OF STUDS TO BE PLACED ON THE GIRDER. FOR EXAMPLE, [10-3-10] REPRESENTS THE TOTAL OF 23 STUDS TO BE LOCATED ON THE GIRDER. THE FIRST AND LAST NUMBERS REPRESENTS THE NUMBER OF STUDS TO BE PLACED BETWEEN THE END OF THE GIRDER AND THE FIRST (OR LAST) INTERSECTING BEAM. THE MIDDLE NUMBER REPRESENTS THE NUMBER OR STUDS TO BE LOCATED BETWEEN THE TWO INTERSECTING BEAMS.

2. PLACE STUDS UNIFORMLY ALONG THE BEAMS OR PORTION OF BEAM INDICATED. CENTER THE STUDS OVER THE WEB AND PROVIDE A MAXIMUM SPACING OF 2'-0" AND A MINIMUM SPACING OF 4 1/2". IF THE REQUIRED NUMBER OF STUDS EXCEEDS WHAT CAN BE PLACED AT 4 1/2", PLACE A SECOND ROW OF STUDS SPACED AT 4 1/2" CENTERS STARTING AT THE END OF THE BEAM UNTIL THE REQUIRED NUMBER OF STUDS IS REACHED. WHEN TWO ROWS OF STUDS ARE REQUIRED, PLACE STUDS 1 1/2" EACH SIDE OF THE BEAM CENTER LINE.



EXAMPLE LAYOUT
EXAMPLE: [10-3-10]

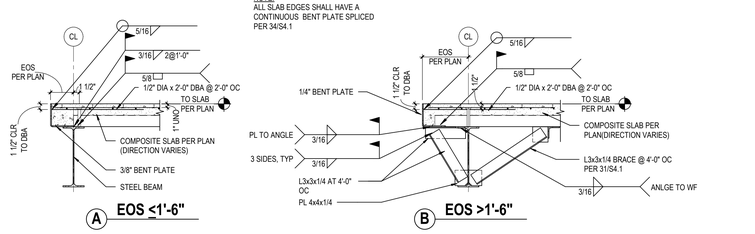
11 S4.2 TYP STUD PLACEMENT DETAIL
SCALE: 1/2" = 1'-0"



A AT COMP BEAM

B AT COMP GIRDER
NOTE:
PROVIDE DECK GIRDER FILLER PLATE IF REQUIRED.

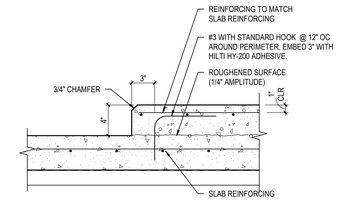
13 S4.2 TYP COMPOSITE BM & GIRDER DETAIL
SCALE: 1" = 1'-0"



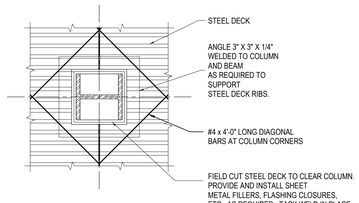
A EOS <1'-6"

B EOS >1'-6"

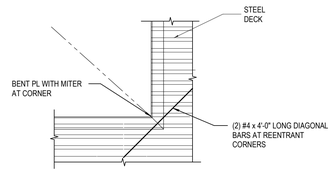
14 S4.2 TYP SLAB EDGE DETAIL
SCALE: 3/4" = 1'-0"



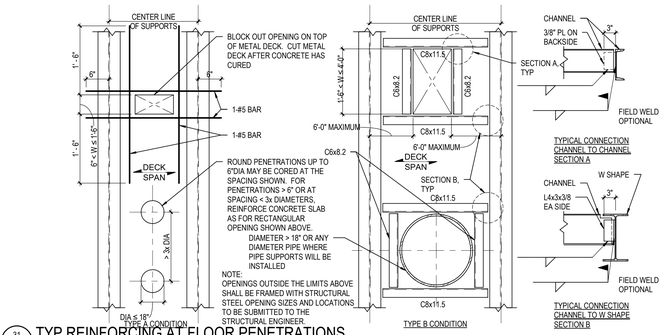
NOTE:
VERIFY SIZE AND LOCATION WITH MECHANICAL OR ELECTRICAL CONTRACTOR



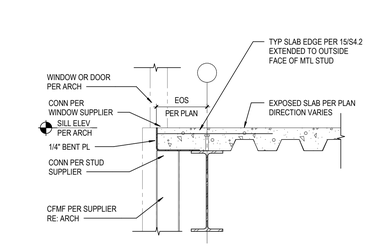
PLAN VIEW



PLAN VIEW

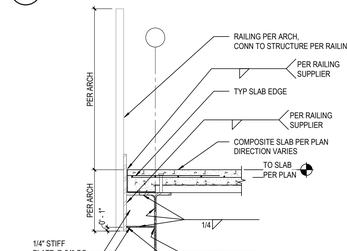


31 S4.2 TYP REINFORCING AT FLOOR PENETRATIONS
SCALE: 3/4" = 1'-0"

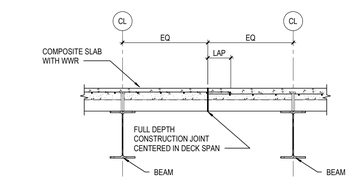


NOTE: SEE ARCHITECTURAL PLANS FOR FLOOR FINISH

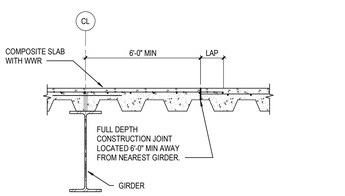
33 S4.2 TYP WINDOW AT FLOOR SLAB DETAIL
SCALE: 3/4" = 1'-0"



34 S4.2 TYP RAILING DETAIL
SCALE: 3/4" = 1'-0"



PERPENDICULAR TO DECK FLUTES



PARALLEL TO DECK FLUTES

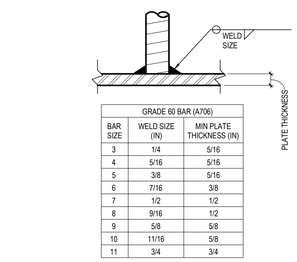
NOTE:
EXTEND WWR THROUGH CONSTRUCTION JOINT AND LAP PER SPECIFICATIONS

35 S4.2 TYP CONSTRUCTION JOINT IN COMPOSITE SLAB
SCALE: 3/4" = 1'-0"

24 S4.2 TYP CONC PAD DETAIL
SCALE: 1 1/2" = 1'-0"

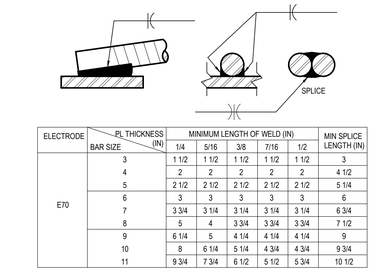
25 S4.2 TYP STEEL DECK FRAMING
SCALE: 3/4" = 1'-0"

26 S4.2 TYP SLAB REENTRANT CORNER DETAIL
SCALE: 3/4" = 1'-0"



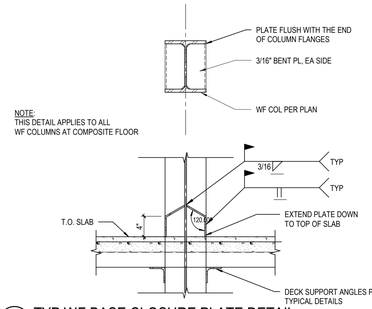
GRADE 60 BAR (A706)		
BAR SIZE	WELD SIZE (IN)	MIN PLATE THICKNESS (IN)
3	1/4	5/16
4	5/16	5/16
5	3/8	5/16
6	7/16	3/8
7	1/2	1/2
8	9/16	1/2
9	5/8	5/8
10	11/16	5/8
11	3/4	3/4

41 S4.2 BAR TO PLATE WELD SCHEDULE
SCALE: 3" = 1'-0"

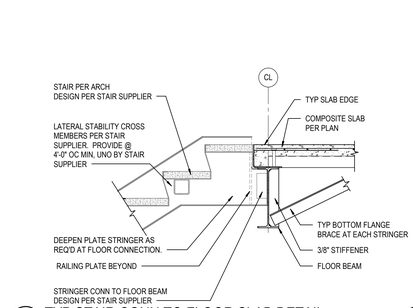


ELECTRODE	BAR SIZE	PL THICKNESS (IN)	MINIMUM LENGTH OF WELD (IN)				MIN SPLICE LENGTH (IN)
		1/4	5/16	3/8	7/16	1/2	
E70	3	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	3
	4	2	2	2	2	2	4 1/2
	5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	5 1/4
	6	3	3	3	3	3	6
	7	3 3/4	3 1/4	3 1/4	3 1/4	3 1/4	6 3/4
	8	5	4	3 3/4	3 3/4	3 3/4	7 1/2
	9	6 1/4	5	4 1/4	4 1/4	4 1/4	9
	10	8	6 1/4	5 1/4	4 3/4	4 3/4	9 3/4
	11	9 3/4	7 3/4	6 1/2	5 1/2	5 3/4	10 1/2

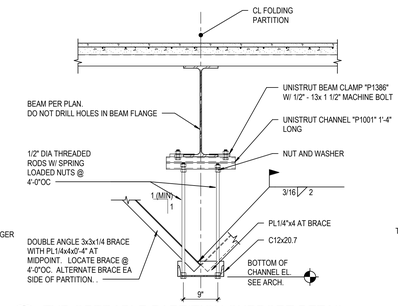
42 S4.2 WELD PARALLEL TO BAR SCHED
SCALE: 3" = 1'-0"



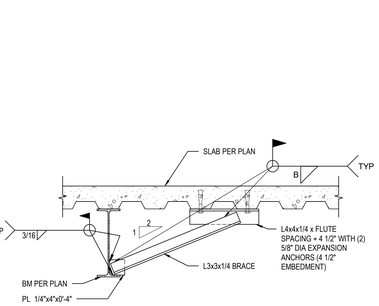
43 S4.2 TYP WF BASE CLOSURE PLATE DETAIL
SCALE: 1" = 1'-0"



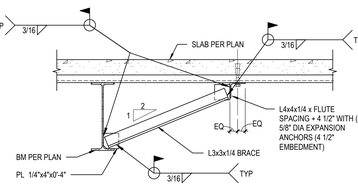
44 S4.2 TYP STAIR CONN TO FLOOR SLAB DETAIL
SCALE: 3/4" = 1'-0"



45 S4.2 TYP OPERABLE PARTITION SUPPORT DETAIL
SCALE: 3/4" = 1'-0"



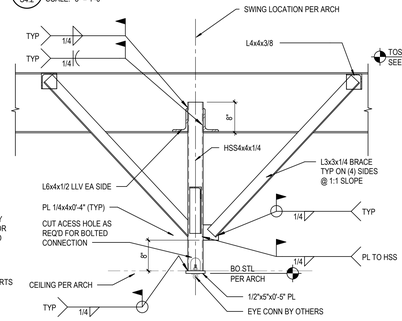
A BEAM PARALLEL TO DECK SPAN



B BEAM PERPENDICULAR TO DECK SPAN

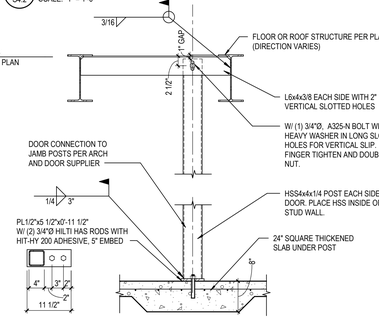
NOTES:
1. FIELD WELDING OF CONNECTION PLATES SHALL BE AT FABRICATOR'S OPTION.
2. SEE PLANS AND DETAILS FOR LOCATIONS OF BRACES.
3. CLIP CONNECTION PLATES TO CLEAR BEAM AND ANGLE FILLETS.

56 S4.2 TYP BOTTOM FLANGE BRACE DETAIL
SCALE: 3/4" = 1'-0"



51 S4.2 TYP ELEVATOR SHAFT DETAIL
SCALE: 3/4" = 1'-0"

52 S4.2 TYP SWING SUPPORT DETAIL
SCALE: 3/4" = 1'-0"



53 S4.2 TYP OVERHEAD DOOR SUPPORT DETAIL
SCALE: 3/4" = 1'-0"

COMPOSITE FLOOR SLAB SCHEDULE	
MARK	DESCRIPTION
CS-1	4-1/2" SLAB ON 2" DEEP x 18 GA GALVANIZED COMPOSITE METAL DECK (6-1/2" TOTAL THICKNESS). REINFORCE SLAB WITH 6x6-W2.9xW2.9 WELDED WIRE REINF.

NOTES:
1. REFER TO FLOOR TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT AT COMPOSITE BEAMS.
2. ALL REINFORCEMENT, INCLUDING WWR, SHALL BE PROPERLY CHAIRED BY THE CONTRACTOR.
3. REFERENCE GENERAL NOTES AND SPECIFICATIONS FOR FURTHER INFORMATION.

54 S4.2 COMPOSITE FLOOR SLAB SCHEDULE
SCALE: 3/4" = 1'-0"

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

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FLOOR FRAMING TYPICAL DETAILS

S4.2

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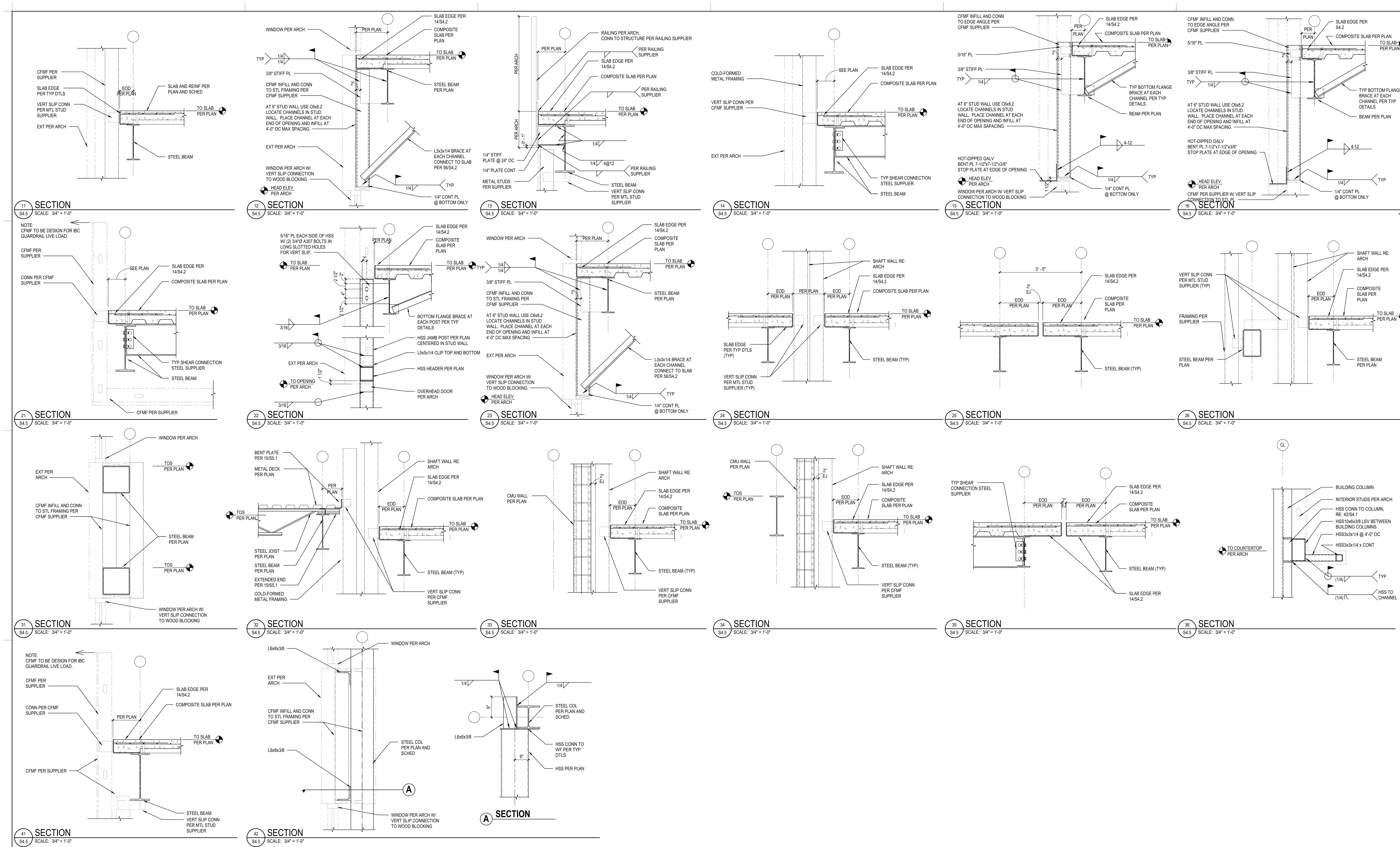

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
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REVISIONS

13-20102-00

FLOOR FRAMING SECTIONS

S4.5

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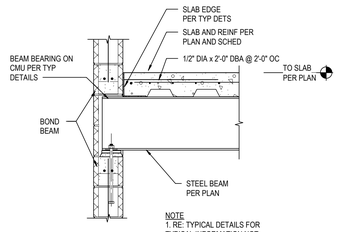
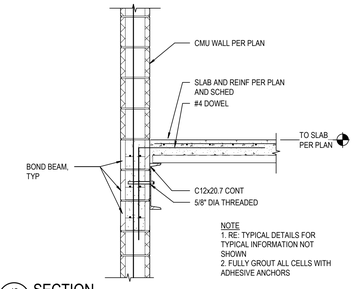
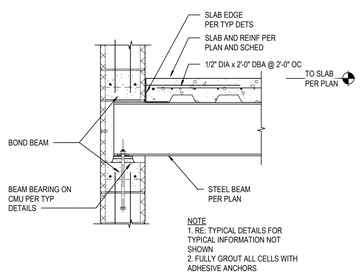


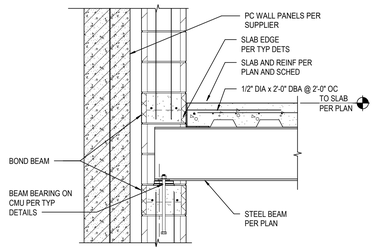
11 S4.7 SECTION
SCALE: 3/4" = 1'-0"



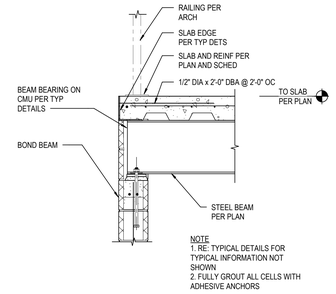
12 S4.7 SECTION
SCALE: 3/4" = 1'-0"



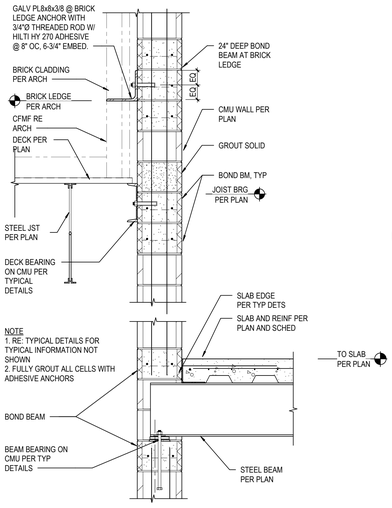
13 S4.7 SECTION
SCALE: 3/4" = 1'-0"



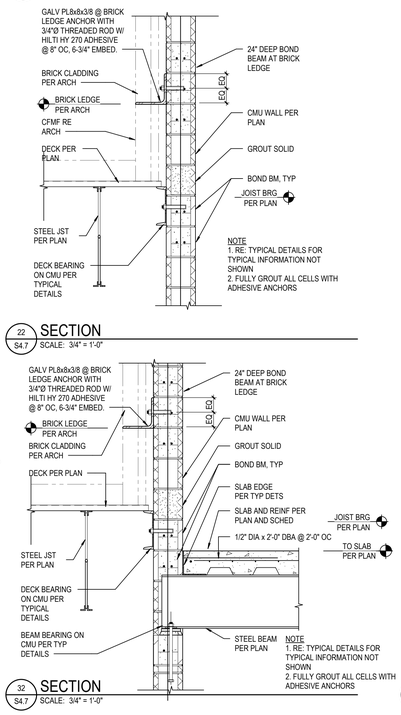
14 S4.7 SECTION
SCALE: 3/4" = 1'-0"



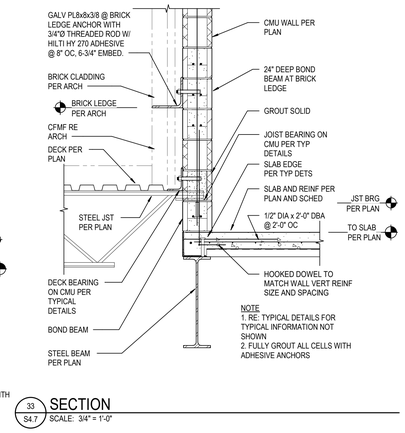
15 S4.7 SECTION
SCALE: 3/4" = 1'-0"



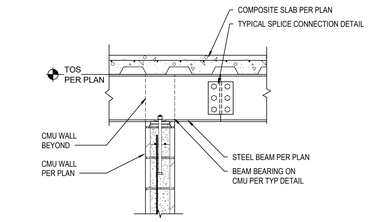
31 S4.7 SECTION
SCALE: 3/4" = 1'-0"

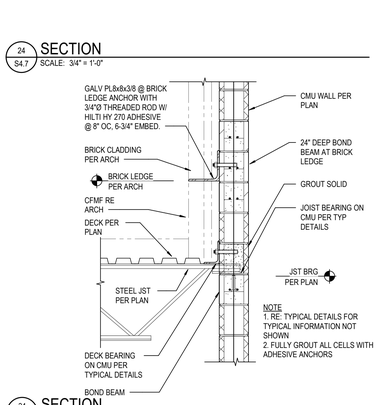


32 S4.7 SECTION
SCALE: 3/4" = 1'-0"

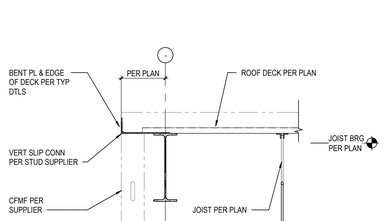


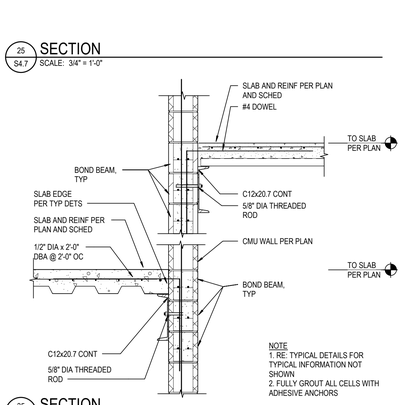
33 S4.7 SECTION
SCALE: 3/4" = 1'-0"



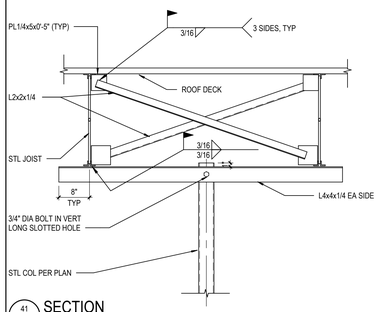


34 S4.7 SECTION
SCALE: 3/4" = 1'-0"

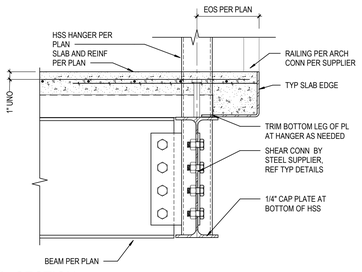




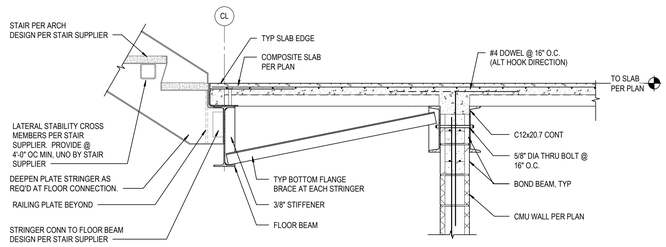
35 S4.7 SECTION
SCALE: 3/4" = 1'-0"



41 S4.7 SECTION
SCALE: 3/4" = 1'-0"



42 S4.7 SECTION
SCALE: 1 1/2" = 1'-0"



43 S4.7 SECTION
SCALE: 3/4" = 1'-0"

BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
10/7/2020 4:38:28 PM

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

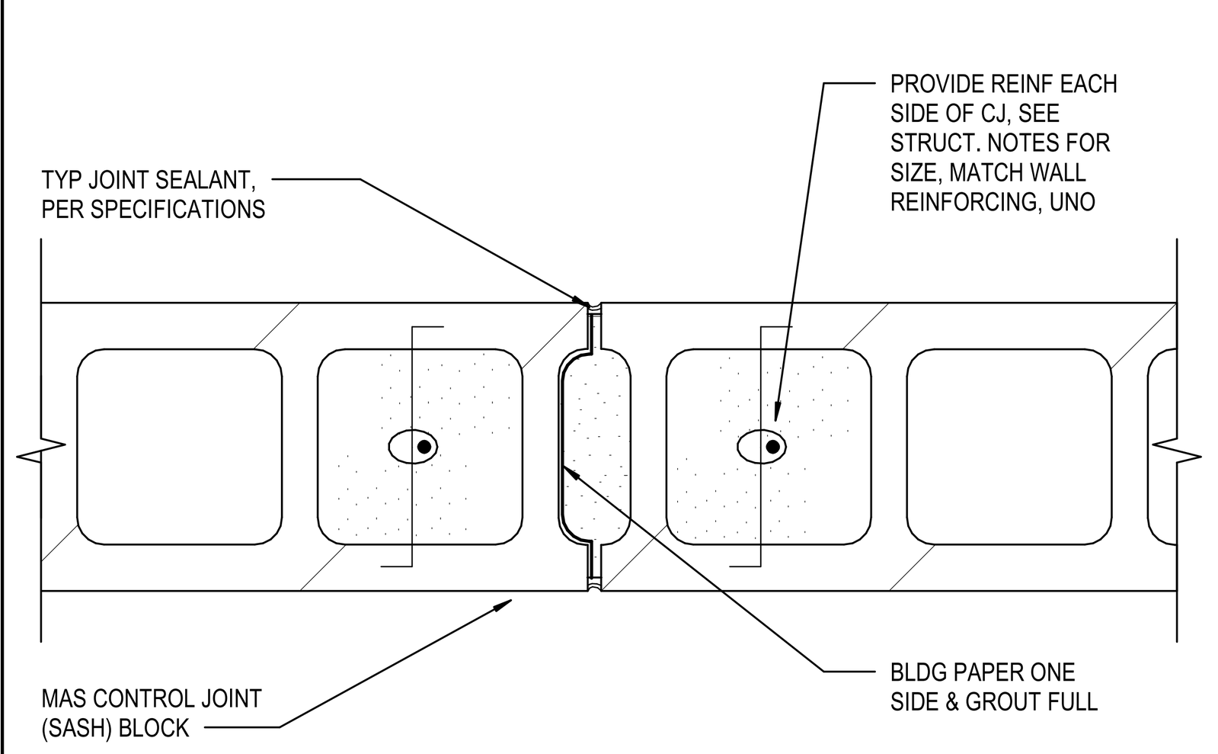
1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE
- ISSUE FOR PERMIT
10/08/20
REVISIONS

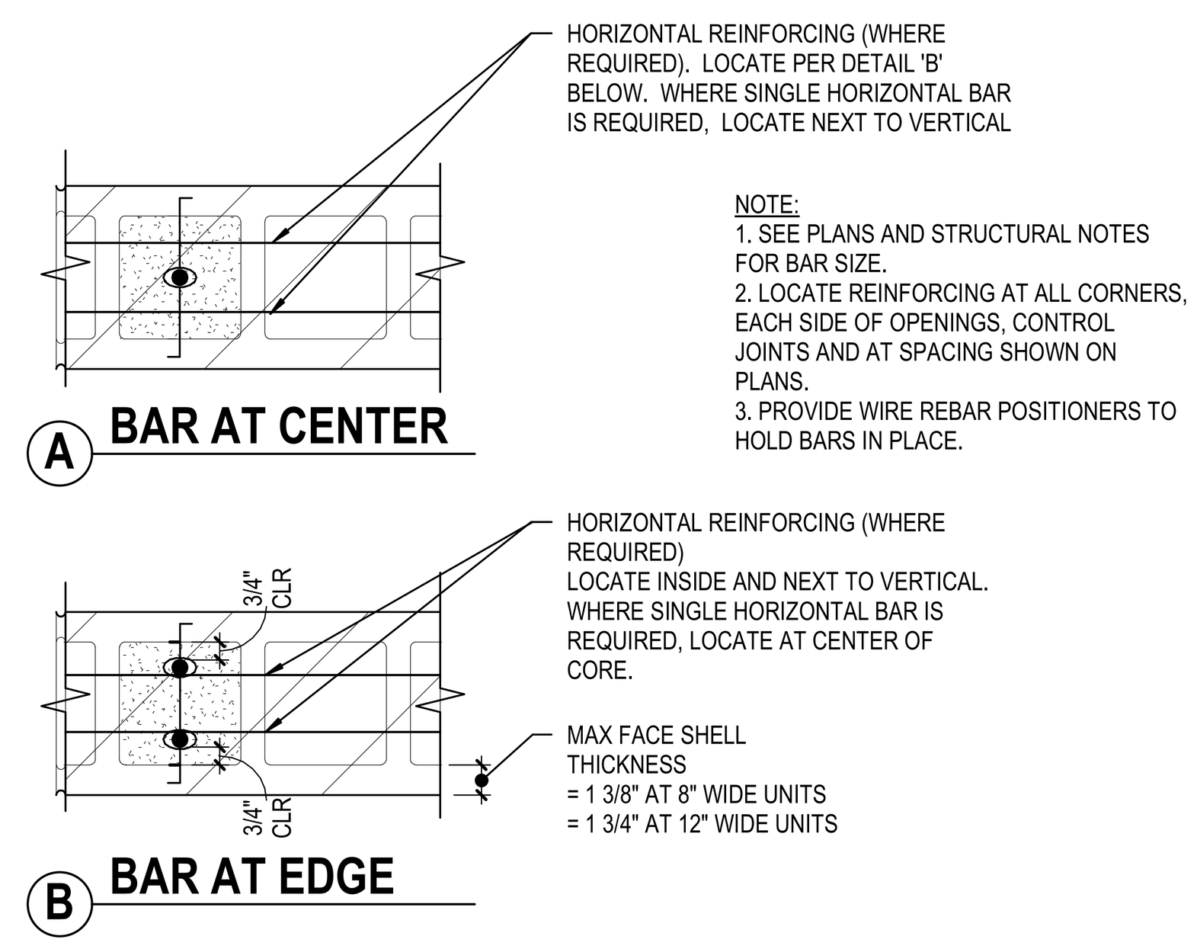
13-20102-00

FLOOR FRAMING
SECTIONS

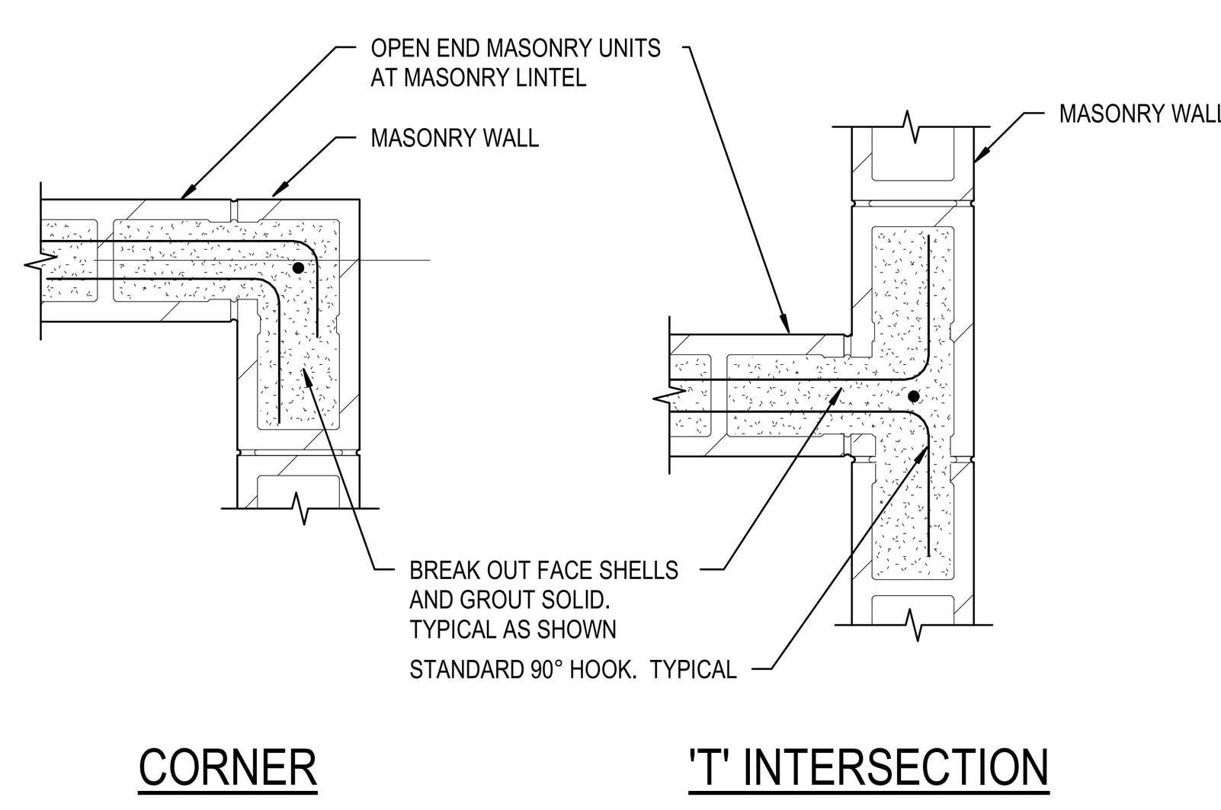
S4.7



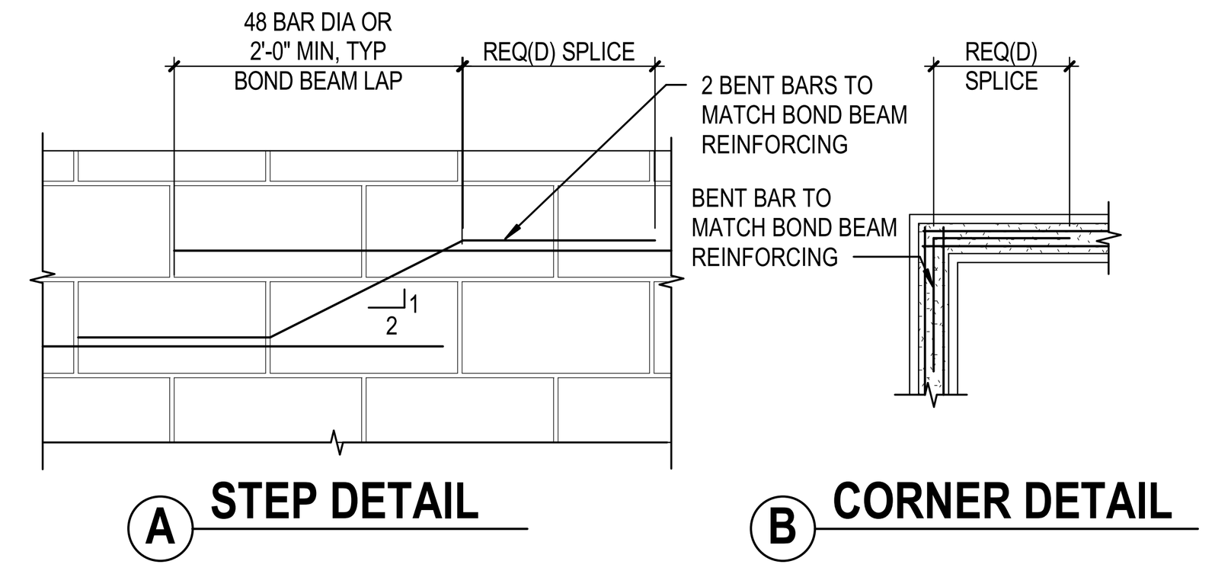
11 / S4.8 — TYP CMU WALL CJ DETAIL
SCALE: 1 1/2" = 1'-0"



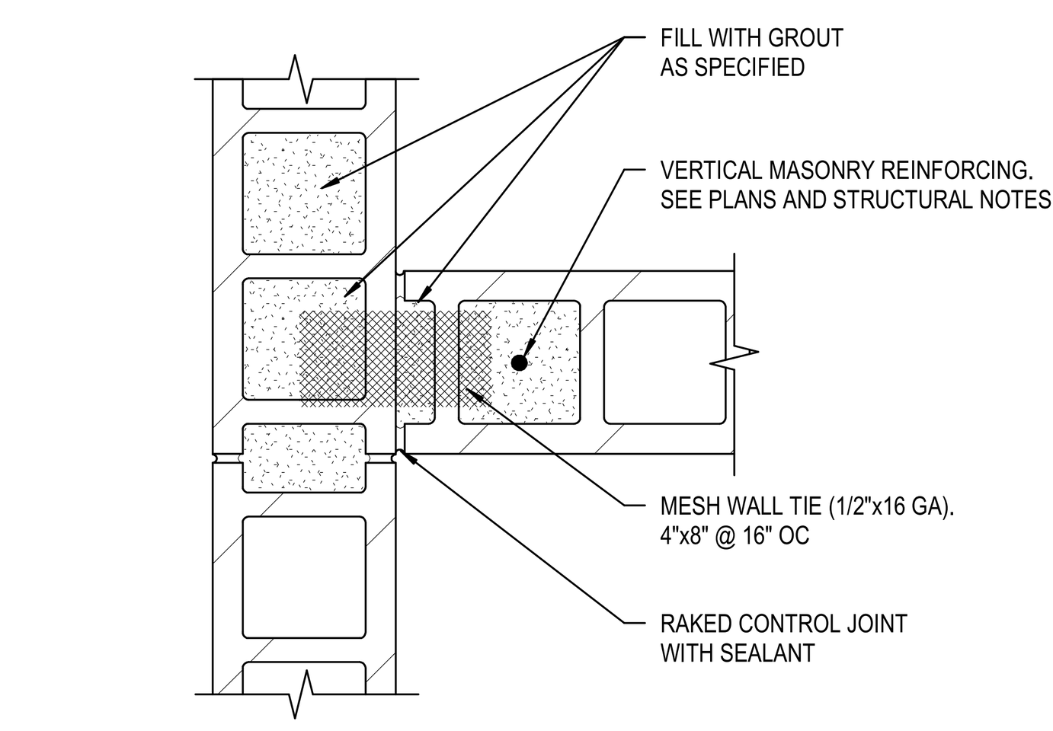
12 / S4.8 — TYP CMU WALL REINF PLACEMENT
SCALE: 1 1/2" = 1'-0"



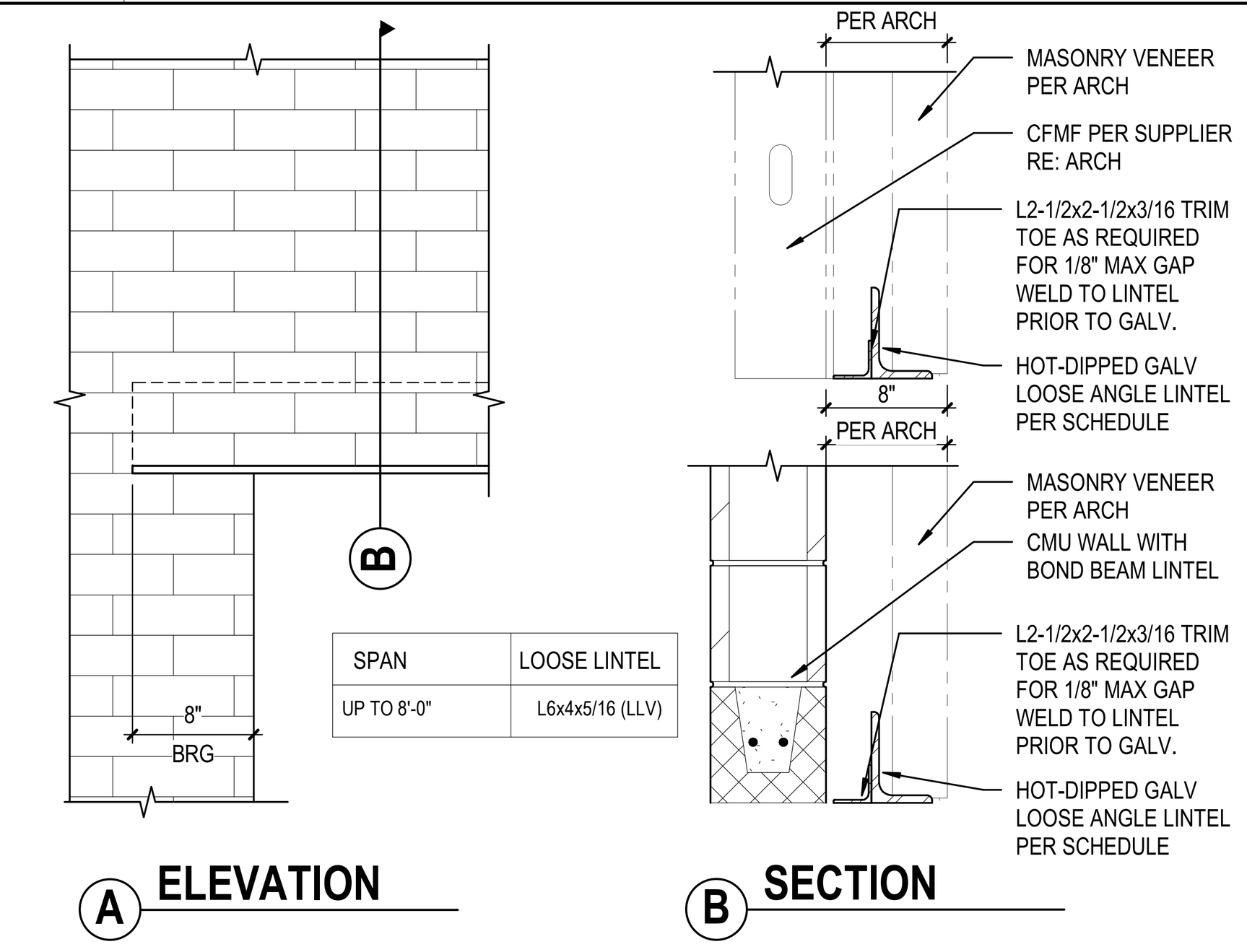
13 / S4.8 — TYP LINTEL/BOND BM @ INTERSECTION
SCALE: 1" = 1'-0"



14 / S4.8 — TYP BOND BEAM DETAIL
SCALE: 3/4" = 1'-0"



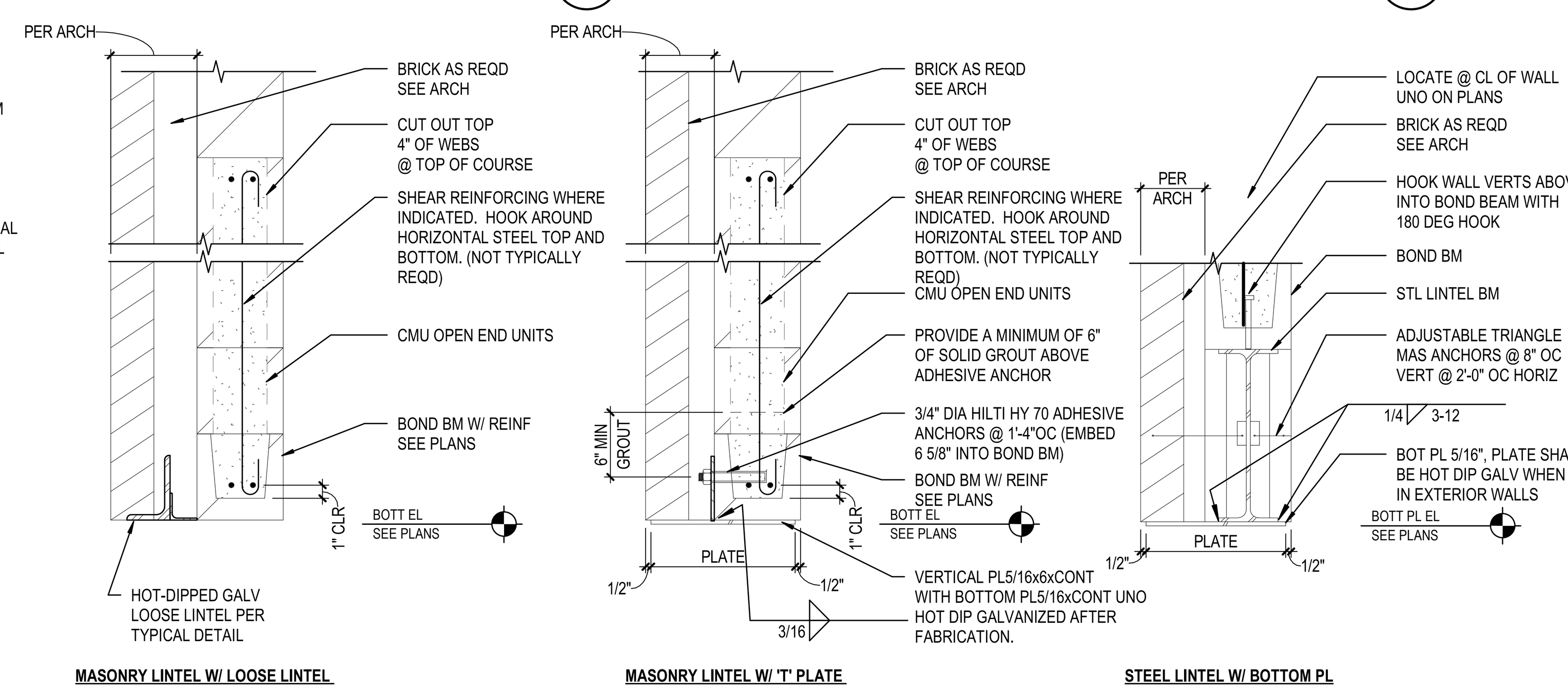
15 / S4.8 — TYP INTERSECTION REINF DETAIL
SCALE: 1 1/2" = 1'-0"



16 / S4.8 — TYP LOOSE LINTEL DETAIL
SCALE: 1" = 1'-0"

NOTE:

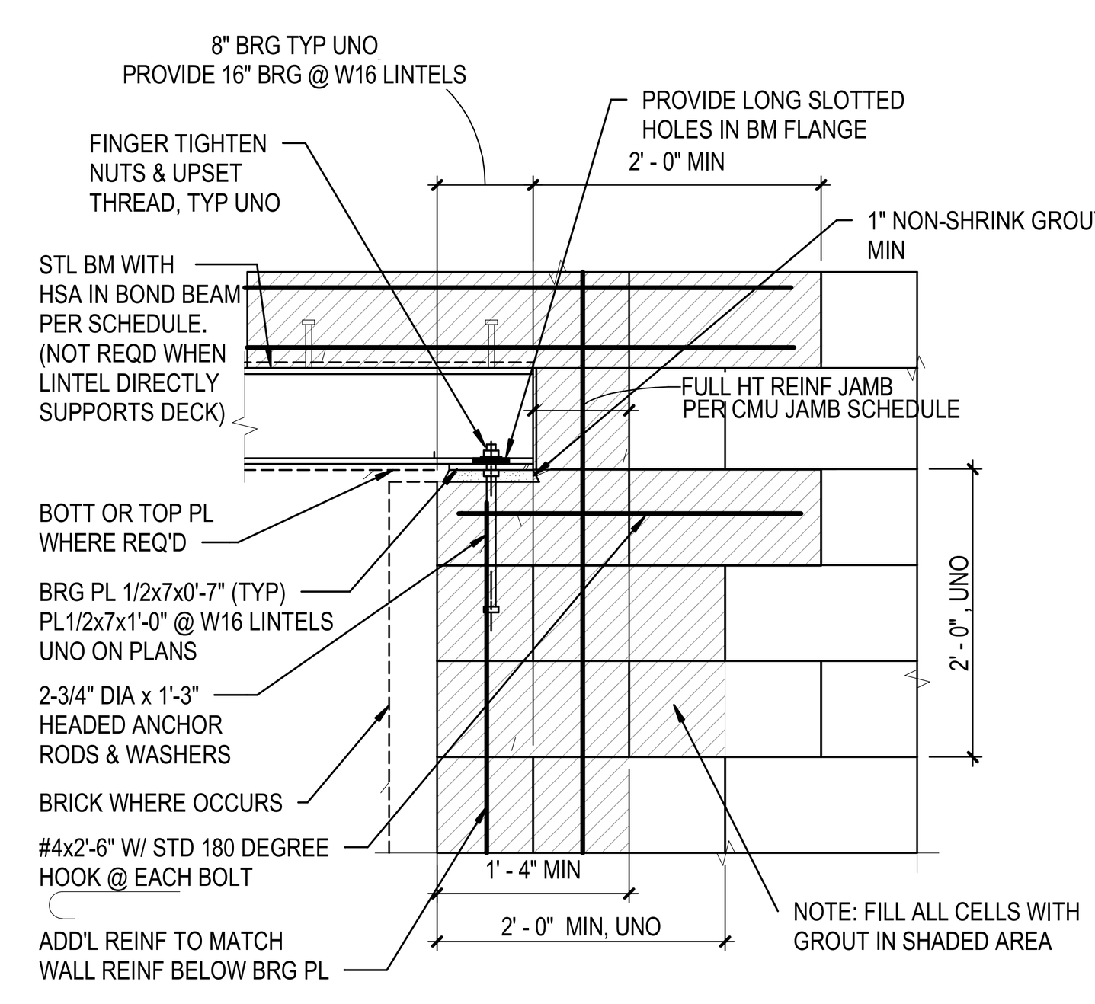
1. PROVIDE SHORING UNDER BEAM FOR A MINIMUM OF 7 DAYS AFTER GROUTING
2. MONOLITHICALLY GROUT BOND BEAM AND ALL CELLS SOLID. GROUTING SHALL HAVE NO VERTICAL OR HORIZONTAL COLD JOINTS FULL HEIGHT AND LENGTH OF LINTEL INCLUDING END BEARINGS.
3. MECHANICALLY VIBRATE GROUT.
4. SEE TYPICAL MASONRY BEAM/ LINTEL BEARING DETAIL FOR BEARING.
5. HORIZONTAL REINFORCEMENT SHALL NOT BE SPLICED.
6. 'T' PLATE TO STOP AT EDGE OF OPENING. 'T' PLATE NOT REQUIRE WHERE BRICK IS SUPPORTED BY LOOSE ANGLE LINTEL.



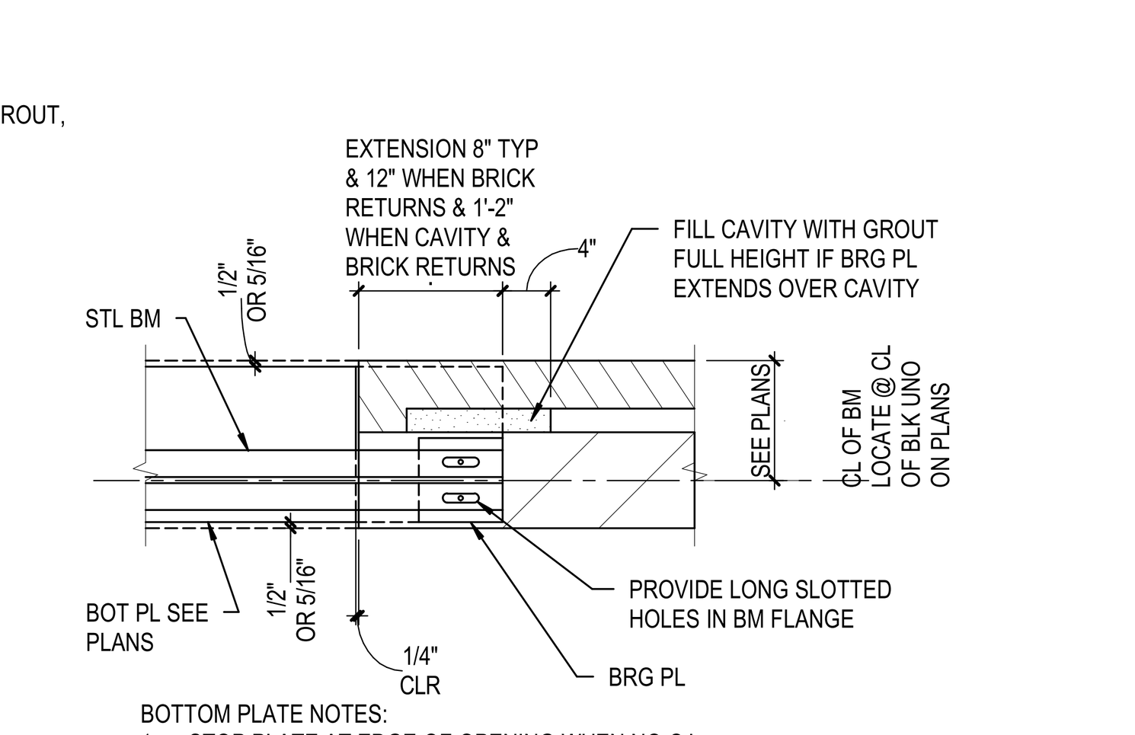
OPENING LINTEL SCHEDULE			
SPAN TABLE	8" CMU	10" OR 12" CMU	COMMENTS
0' < 4'-0"	ML-1	ML-2	8" DEEP BOND BM W/ 2-#4 T&B
4'-0" ≤ L < 6'-0"	ML-3	ML-4	16" DEEP BOND BM W/ 2-#5 T&B
6'-0" ≤ L < 9'-4"	ML-5	ML-6	24" DEEP BOND BM W/ 2-#6 T&B
9'-4" ≤ L < 11'-4"	W8X21	W8X24	PROVIDE 5/16" BOT PLATE AS REQD
11'-4" ≤ L < 13'-4"	W16X31	W16X31	PROVIDE 5/16" BOT PLATE AS REQD
13'-4" ≤ L < 20'-0"	W24X55	W24X55	PROVIDE 5/16" BOT PLATE AS REQD

NOTE:
1. ALL OPENINGS REQUIRE A LINTEL. THE CONTRACTOR SHALL COORDINATE ALL OPENING AND PENETRATION LOCATIONS WITH OTHER CONSULTANTS' WORK AND REFER TO THIS SCHEDULE FOR LINTEL SIZES.
2. BOND BEAM REINFORCING SHALL BE CONTINUOUS, WITHOUT SPLICES.
3. DO NOT LOCATE CMU CONTROL JOINTS WITHIN OPENING OR JAMB EXTENTS.
4. STEEL LINTEL BOTTOM PLATES SHALL BE 1" LESS THAN THE NOMINAL WIDTH OF WALL (INCLUDES MASONRY VENEER EXCEPT WHERE BRICK IS SUPPORTED BY LOOSE ANGLE).
5. STEEL LINTELS SHALL HAVE 5/8" DIA X 6" HEADED ANCHOR STUS @24" OC. INTO AN 8" DEEP BOND BEAM W/ 2#4 T&B.
6. REFER TO OTHER TYPICAL DETAILS FOR FURTHER INFORMATION.
7. SCHEDULE IS SUPERCEDED WHERE LINTEL SIZES ARE SPECIFICALLY NOTED ON PLANS.
8. PROVIDE #4 @ 8" OC SHEAR REINF FOR ML-5 AND ML-6. SEE TYP MASONRY LINTEL FOR ADD'L INFO.

21 / S4.8 — TYPICAL CMU LINTEL DETAIL
SCALE: 1" = 1'-0"

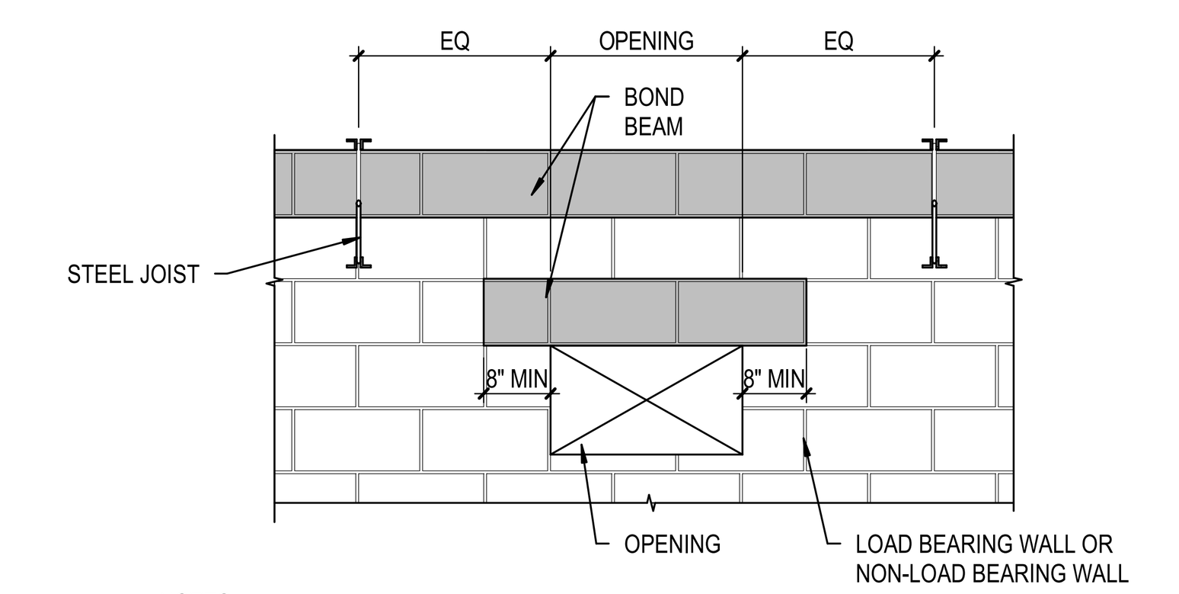


24 / S4.8 — TYP STEEL LINTEL BEARING ON MASONRY
SCALE: 3/4" = 1'-0"



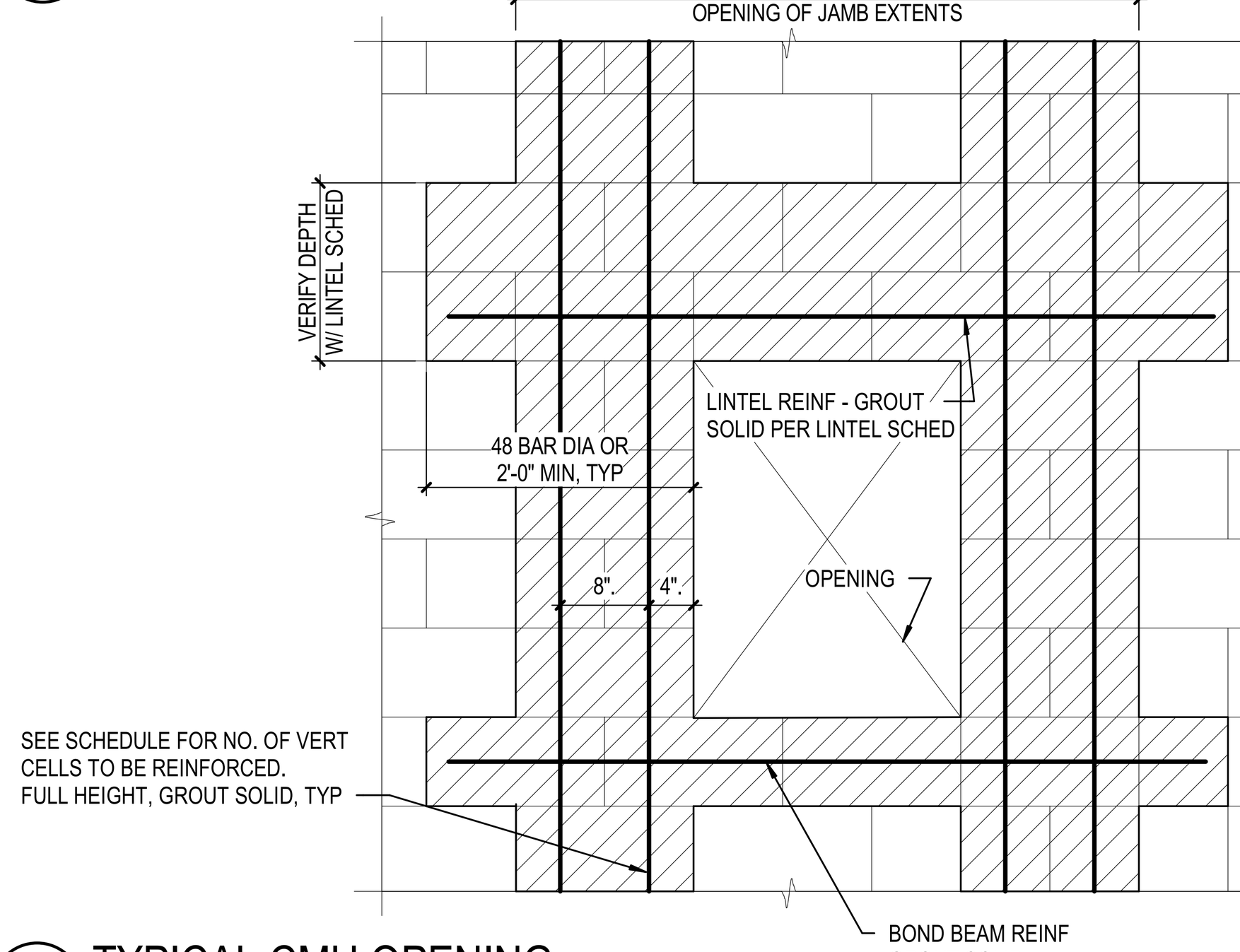
BOTTOM PLATE NOTES:
1. STOP PLATE AT EDGE OF OPENING WHEN NO CJ
2. EXTEND PLATE TO END OF BEAM WHEN THERE IS AS OFFSET CJ ABOVE THE OPENING.
3. NOTCH PLATE AROUND BRICK WHEN CJ IS AT EDGE OF OPENING IN BRICK AND OFFSET IN BLOCK.

25 / S4.8 — TYP STEEL BM BRG @ MASONRY WALL



NOTES:
1. LOAD-BEARING WALLS: LOCATE BETWEEN JOISTS AS SHOWN. IF OPENINGS MUST BE UNDER JOIST, TOP OF OPENING SHALL BE A MINIMUM OF 1/2 OF THE OPENING WIDTH + 8 INCHES BELOW THE JOIST BEARING OR CONTACT THE ENGINEER.
2. NON-BEARING WALLS: PROVIDE 8" BOND BEAM FOR OPENINGS 4'-8" AND LESS AND 16" BOND BEAM FOR OPENINGS GREATER THAN 4'-8" AND LESS THAN 6'-0". CONTACT ENGINEER FOR LARGER OPENINGS.
3. WHERE VENEER OCCURS, PROVIDE SUPPORT PER TYPICAL LINTEL DETAILS.
4. GENERAL CONTRACTOR SHALL COORDINATE LOCATION OF OPENINGS WITH MECHANICAL, ELECTRICAL AND OTHER CONTRACTORS BEFORE CONSTRUCTING WALLS.

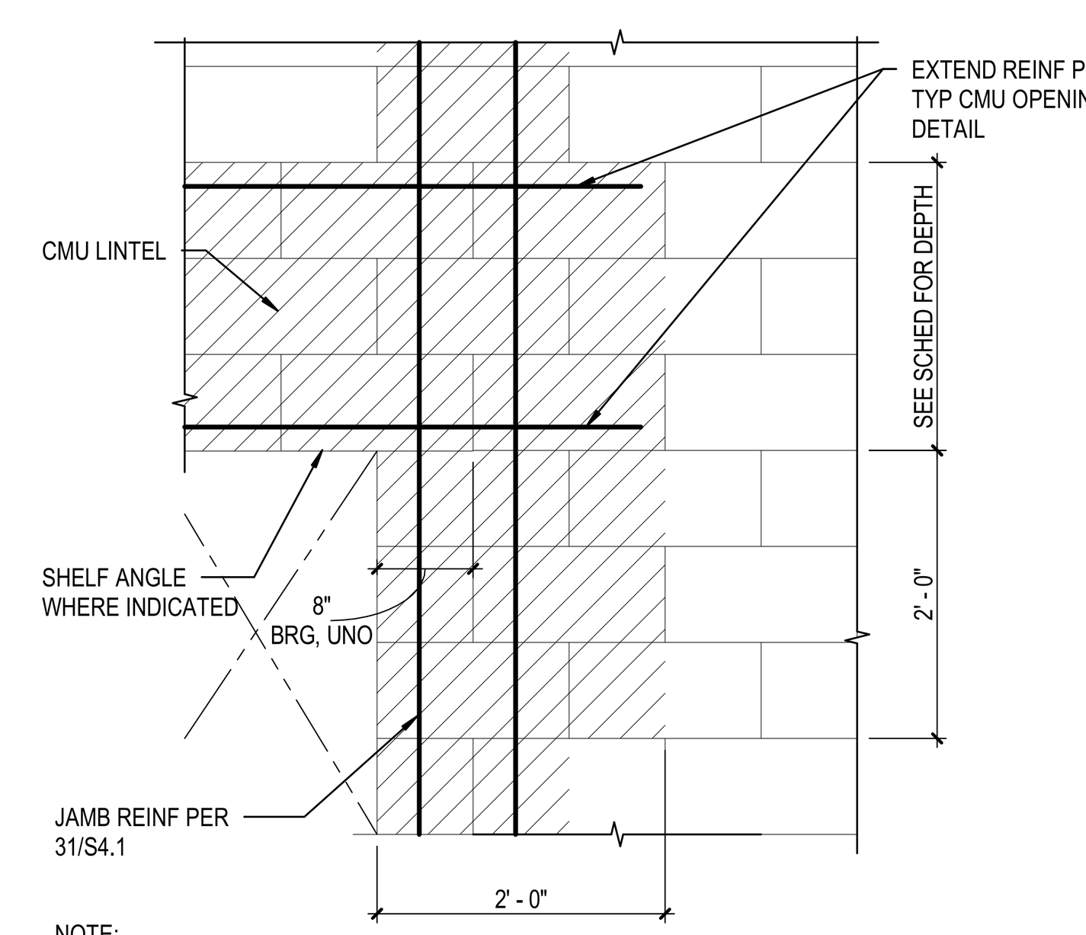
26 / S4.8 — TYP MECH PENETRATION IN CMU WALL
SCALE: 1/2" = 1'-0"



JAMB REINFORCEMENT SCHEDULE		
OPENING WIDTH	WALL REINF SPACING	NO. OF REINFORCED CELLS EACH JAMB
≤ 4'-0"	8" OC	3
	16" OC	2
	24" OC	1
	32" OC	1
	48" OC	1
> 4'-0" TO ≤ 8'-0"	8" OC	6
	16" OC	3
	24" OC	2
	32" OC	2
	48" OC	1
> 8'-0" TO ≤ 12'-0"	8" OC	9
	16" OC	5
	24" OC	3
	32" OC	3
	48" OC	2

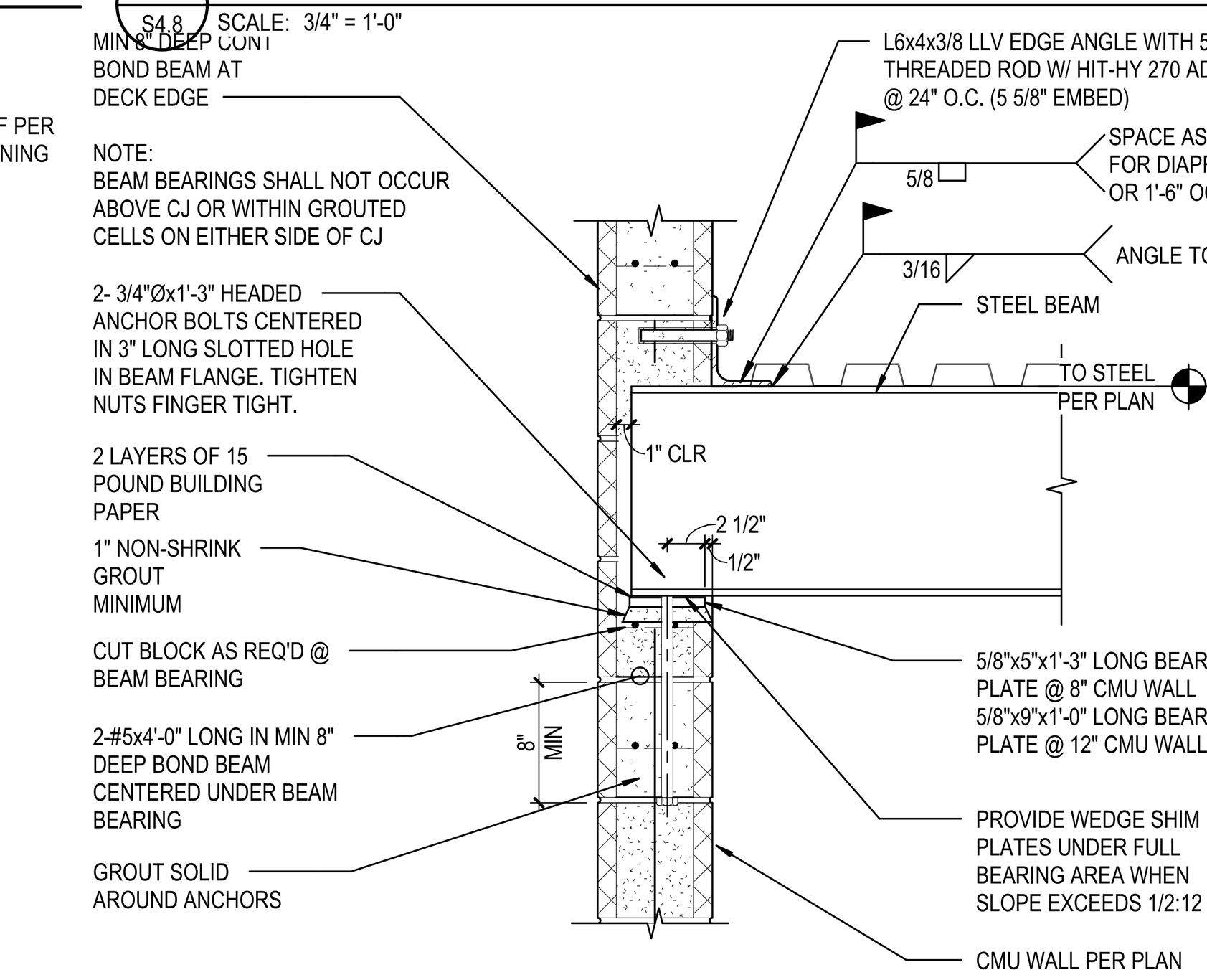
NOTES:
1. PROVIDE SAME BAR SIZE AND QUANTITY OF BARS PER CELL AS NOTED FOR WALL WHICH OPENING IS LOCATED IN.
2. SCHEDULE IS SUPERSEDED IF SPECIFICALLY NOTED OTHERWISE ON THE PLANS.
3. DO NOT LOCATE CMU CONTROL JOINTS WITHIN OPENING OR JAMB EXTENTS

31 / S4.8 — TYPICAL CMU OPENING
SCALE: 1" = 1'-0"

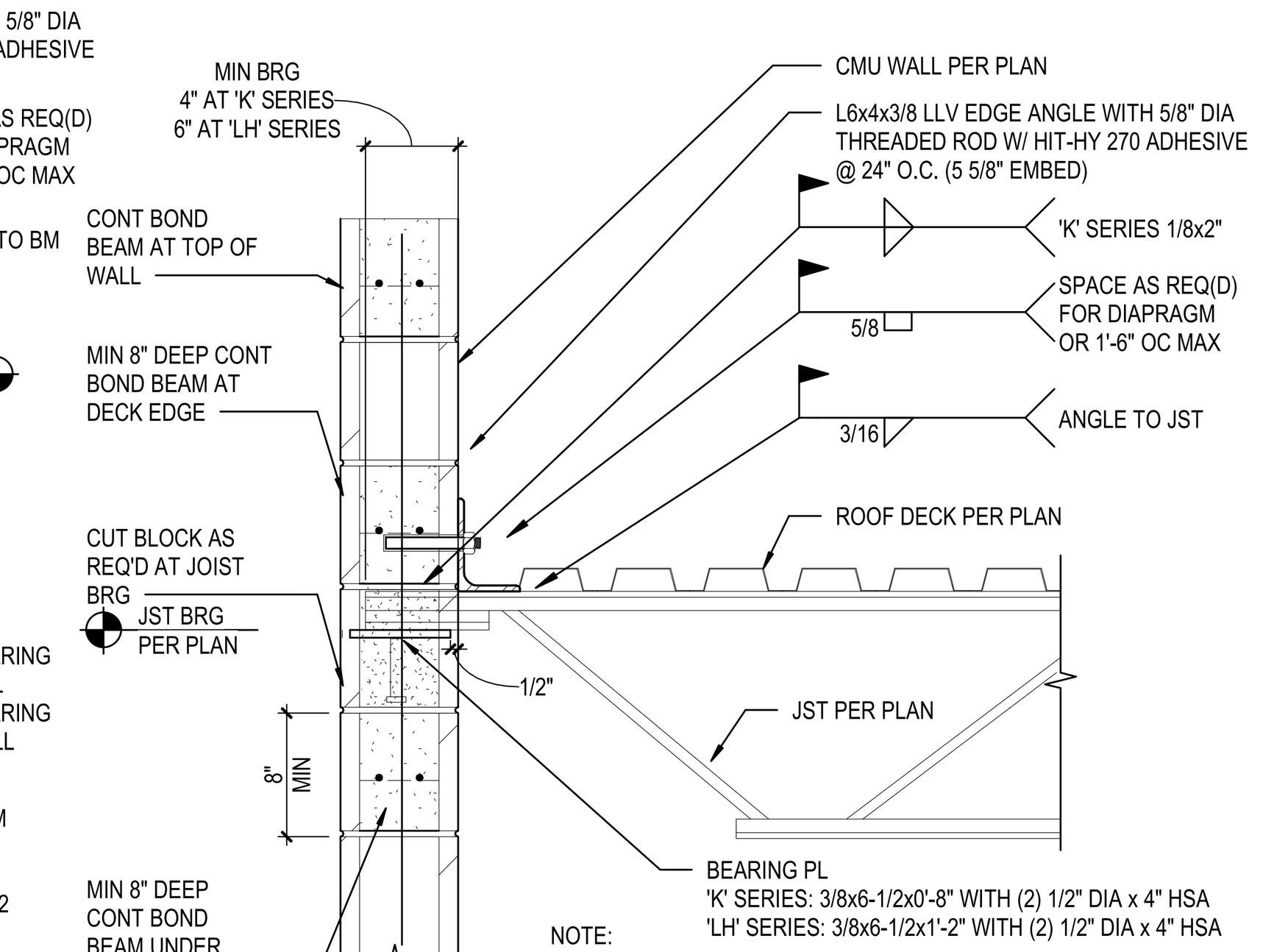


NOTE:
1. DO NOT LOCATE CMU CONTROL JOINTS WITHIN OPENING OF JAMB EXTENTS

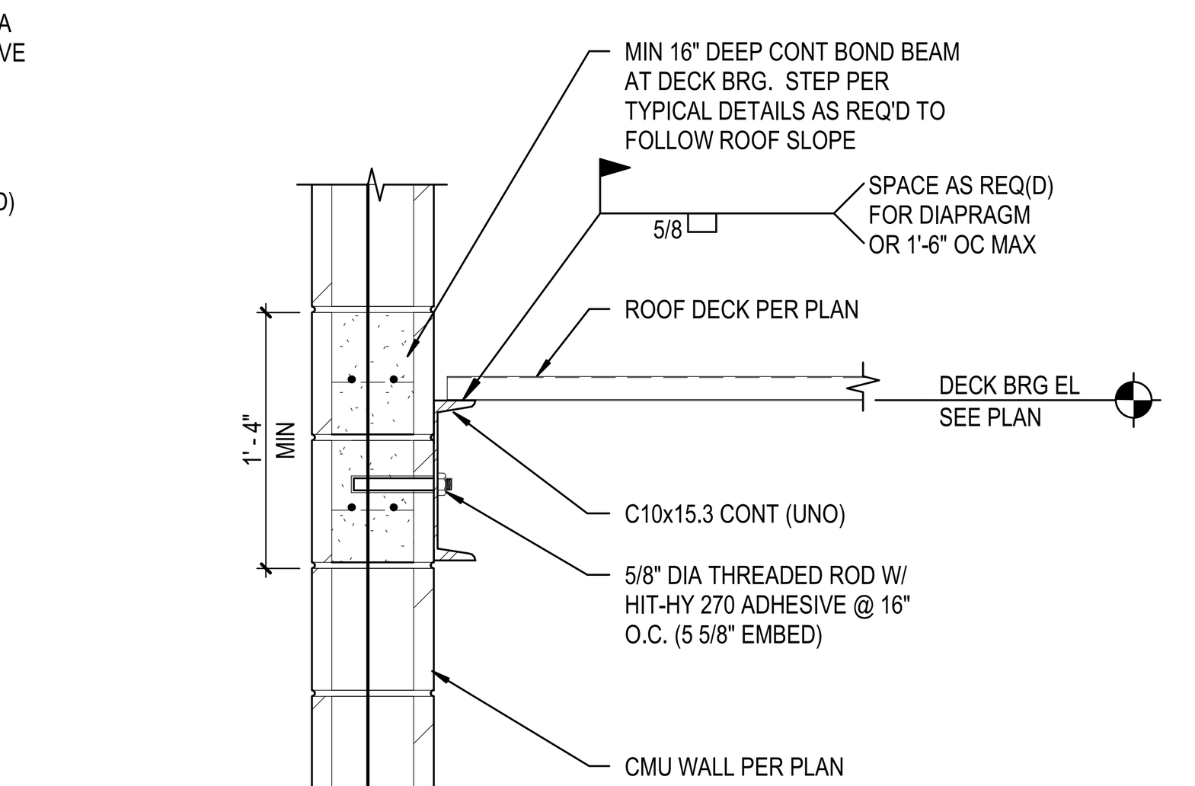
33 / S4.8 — TYP CMU LINTEL BRG
SCALE: 3/4" = 1'-0"



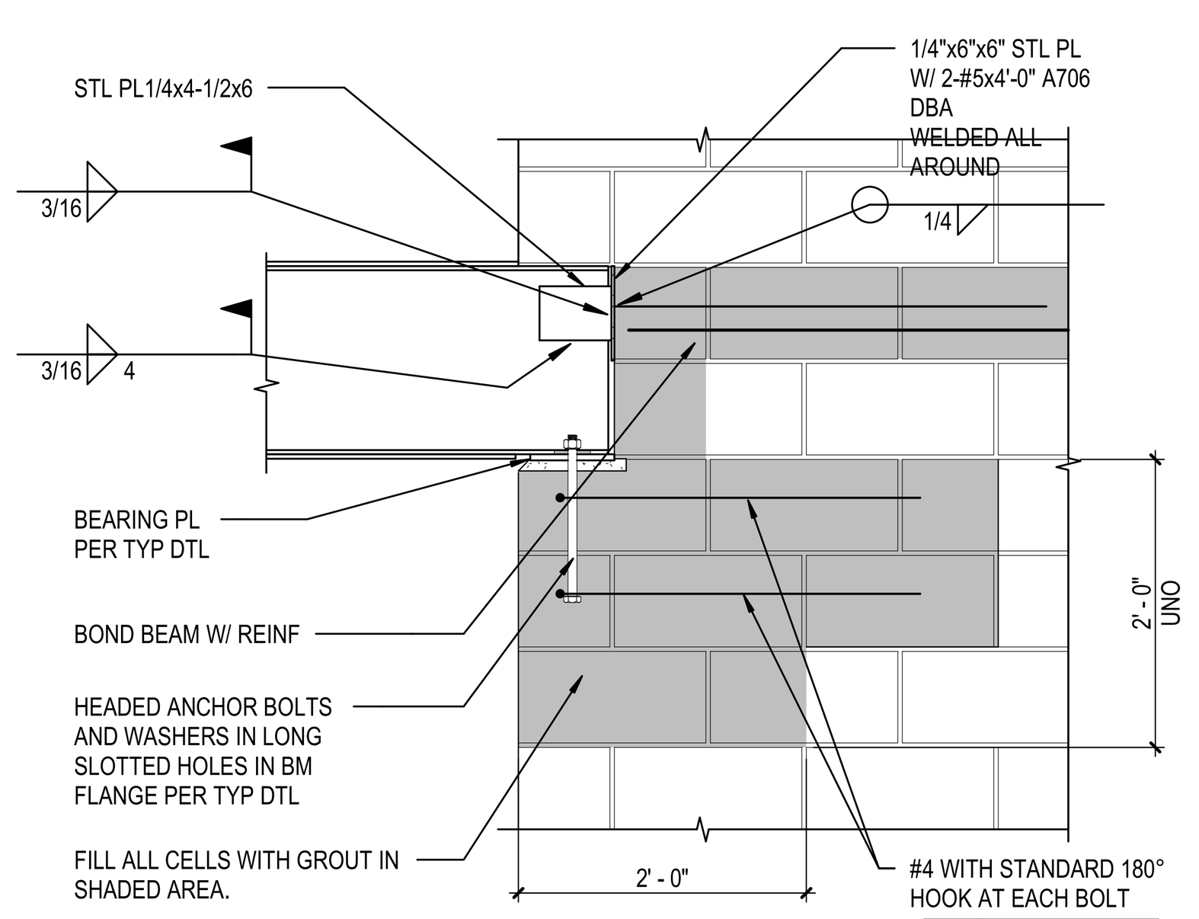
34 / S4.8 — TYP STEEL BEAM BEARING AT MASONRY WALL
SCALE: 3/4" = 1'-0"



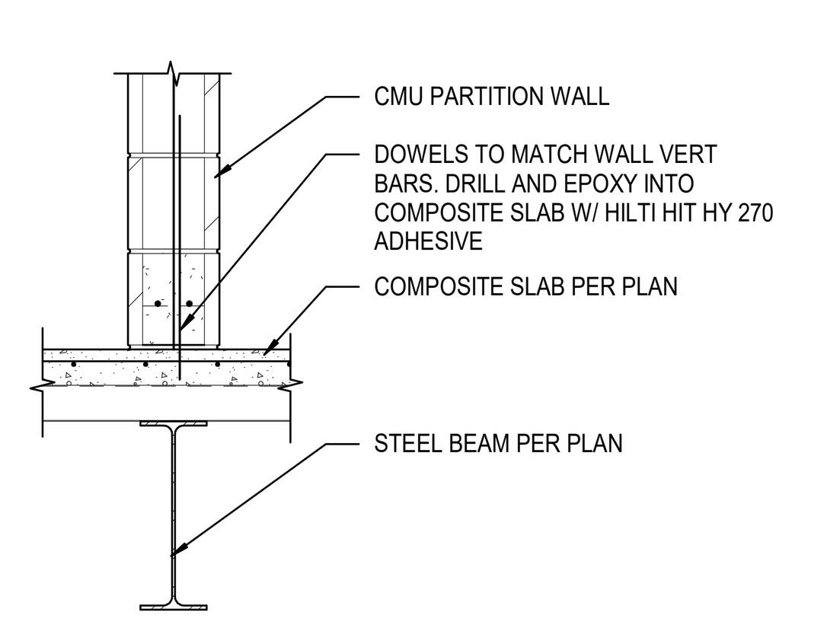
35 / S4.8 — TYP JOIST BEARING AT MASONRY WALL
SCALE: 1" = 1'-0"



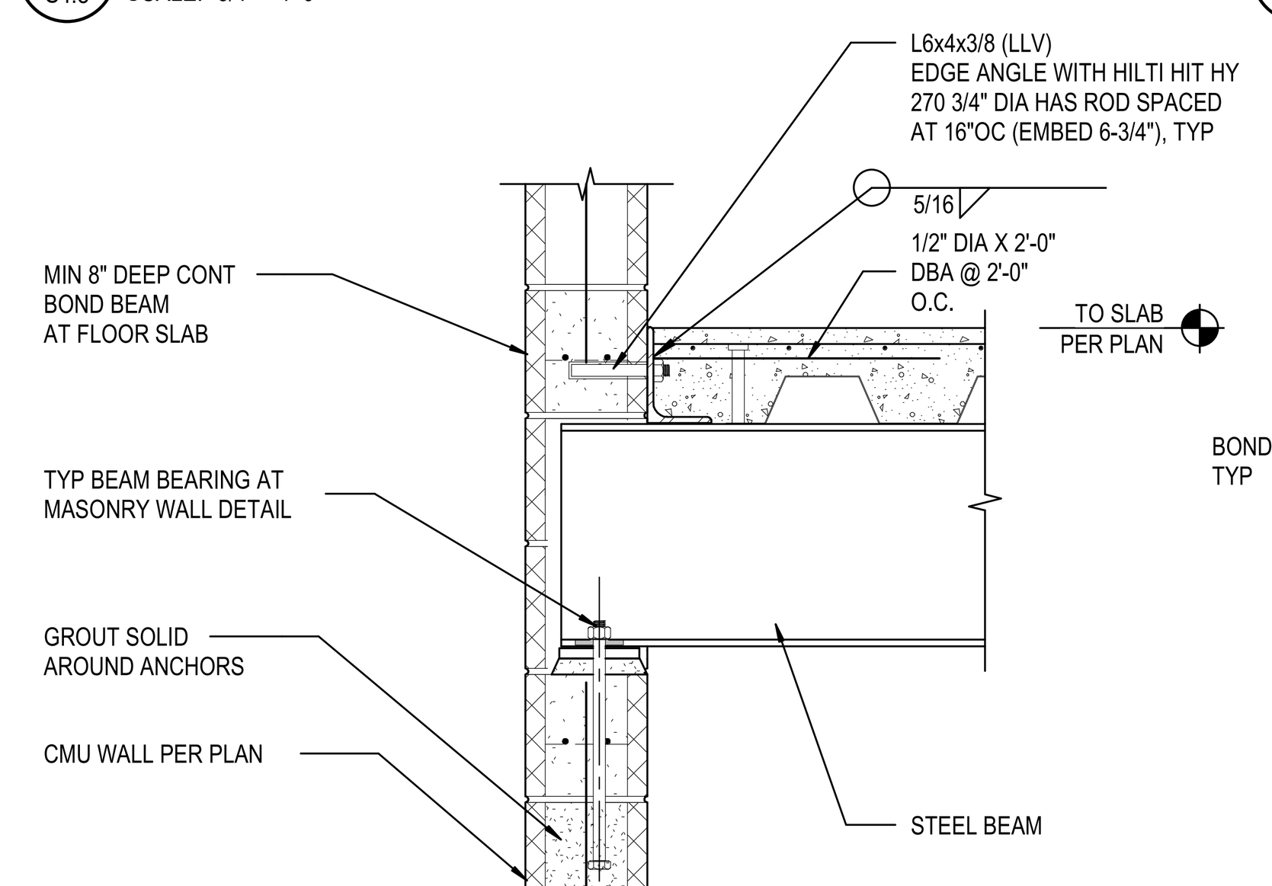
36 / S4.8 — TYP DECK TO MASONRY WALL DETAIL
SCALE: 1" = 1'-0"



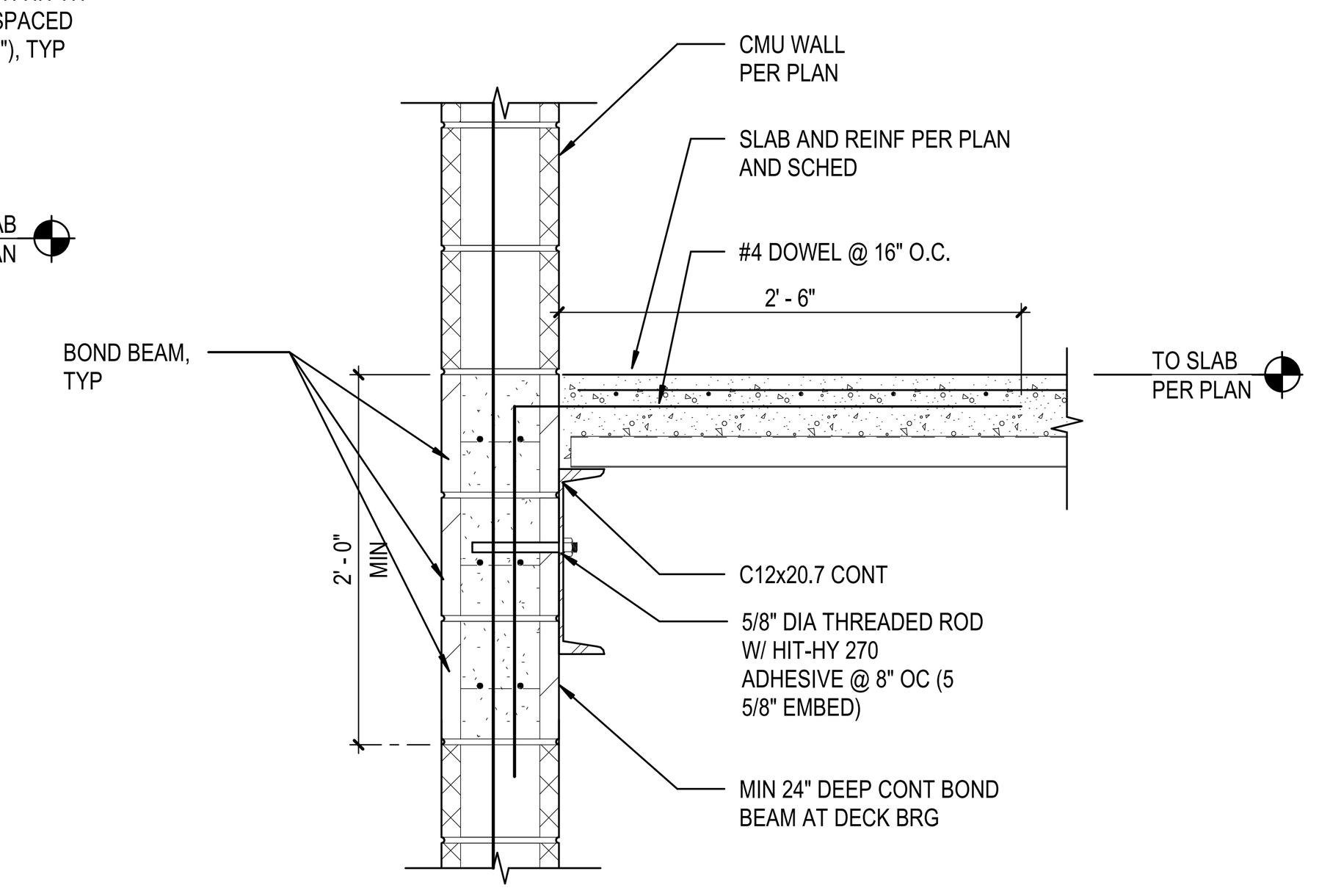
41 / S4.8 — TYP CMU COLLECTOR BEAM DETAIL
SCALE: 3/4" = 1'-0"



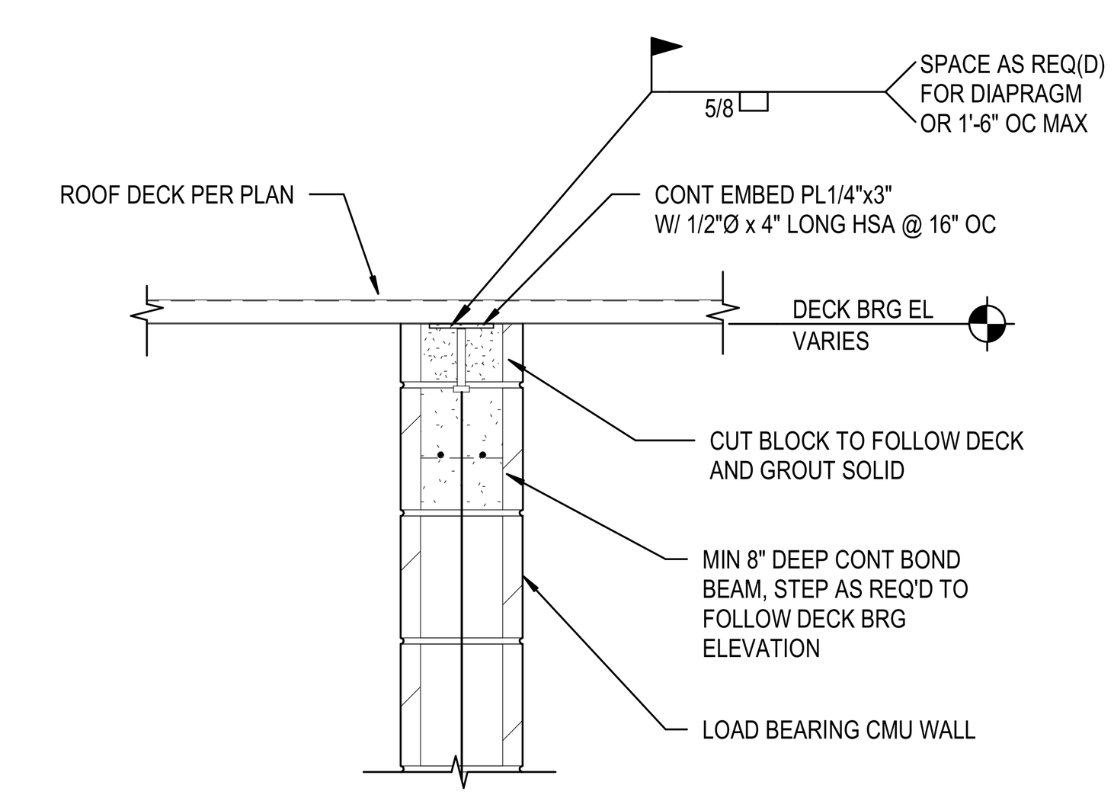
42 / S4.8 — TYP ELEVATED CMU WALLSUPPORT DETAIL
SCALE: 3/4" = 1'-0"



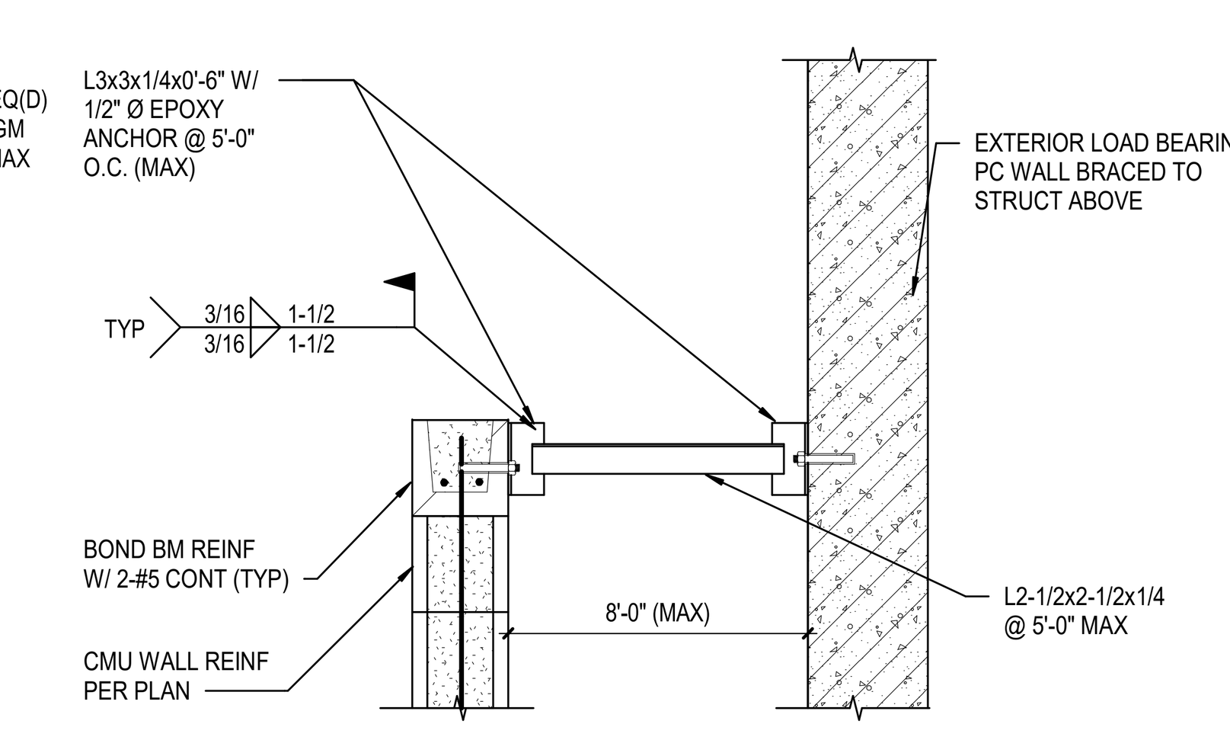
43 / S4.8 — TYP FLOOR BEAM AT MASONRY DETAIL
SCALE: 1" = 1'-0"



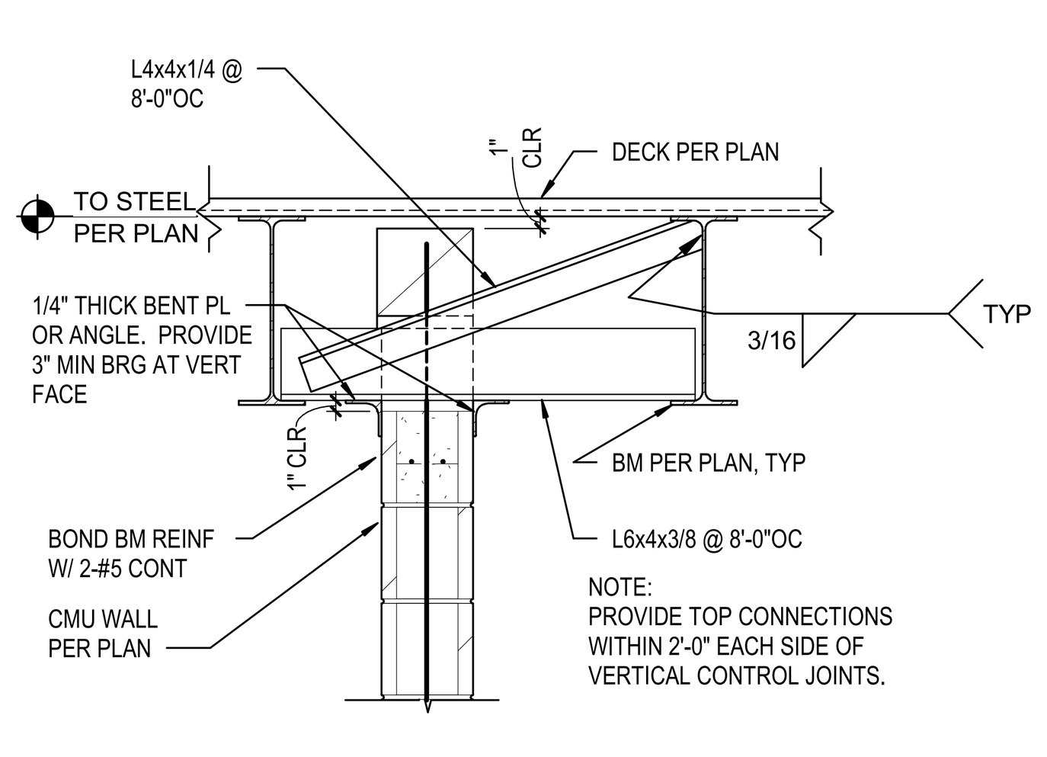
44 / S4.8 — TYP FLOOR SLAB AT MASONRY DETAIL
SCALE: 1" = 1'-0"



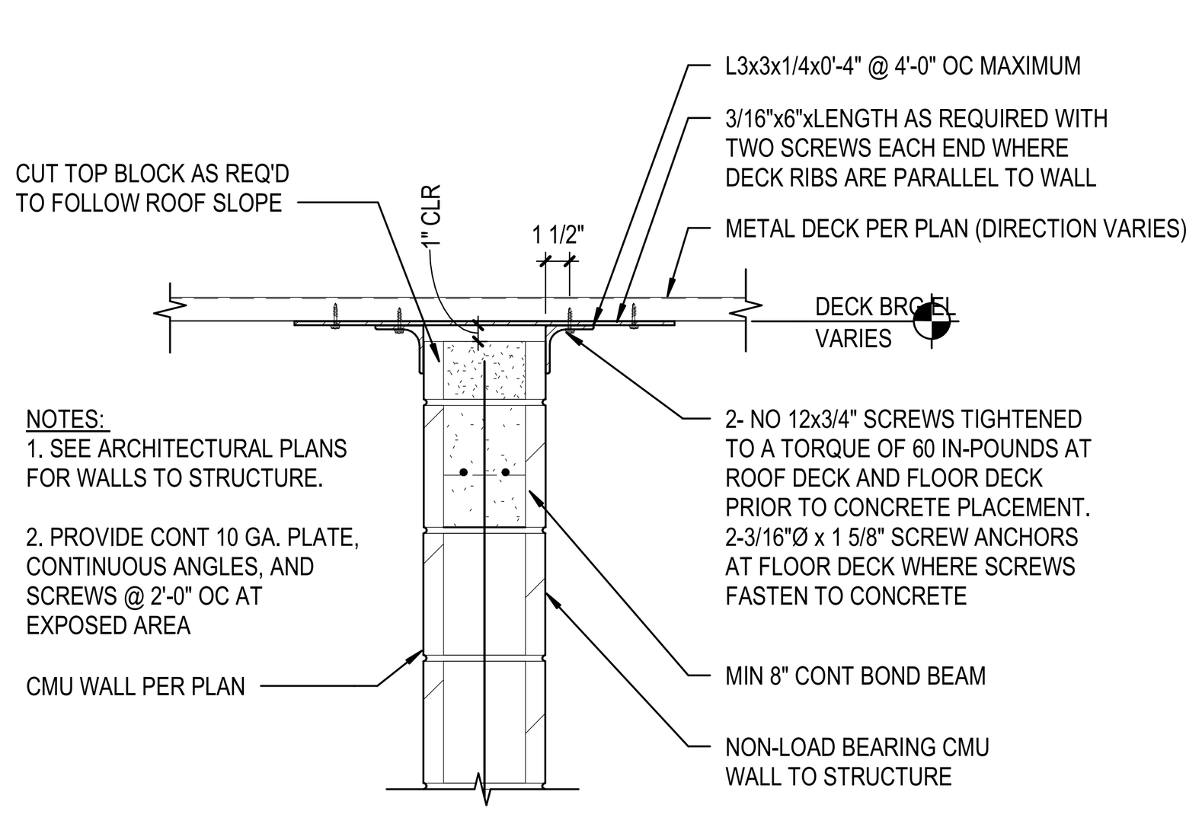
45 / S4.8 — TYP INTERIOR BRG ON CMU WALL DETAIL
SCALE: 1" = 1'-0"



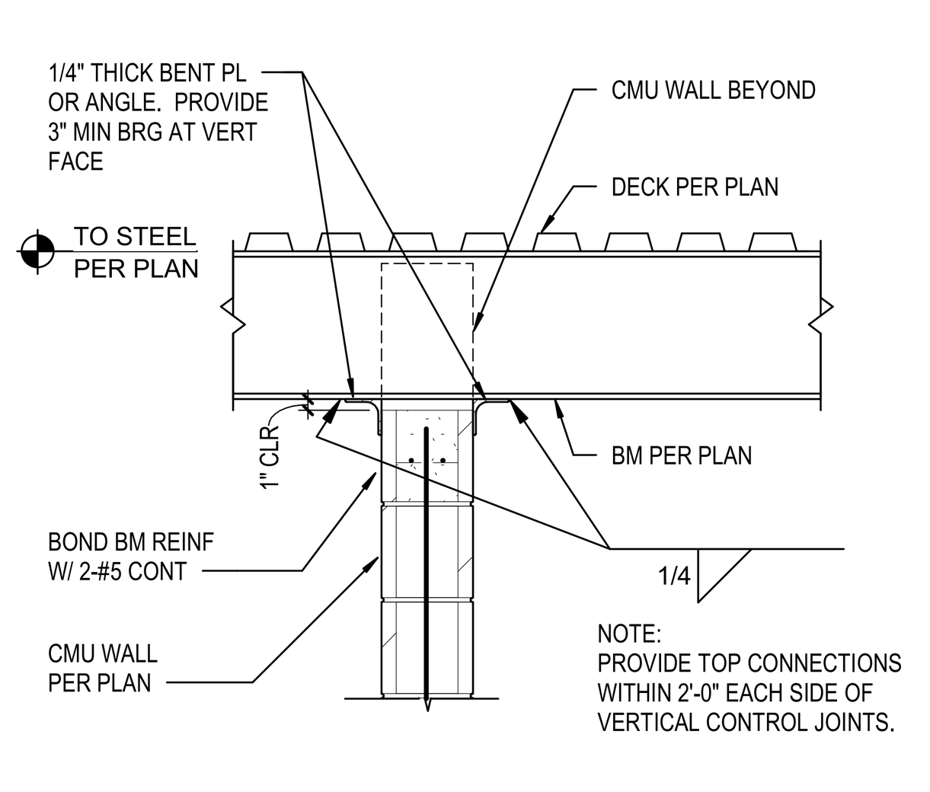
46 / S4.8 — TYP PARTITION WALL BRACE TO ADJACENT WALL
SCALE: 3/4" = 1'-0"



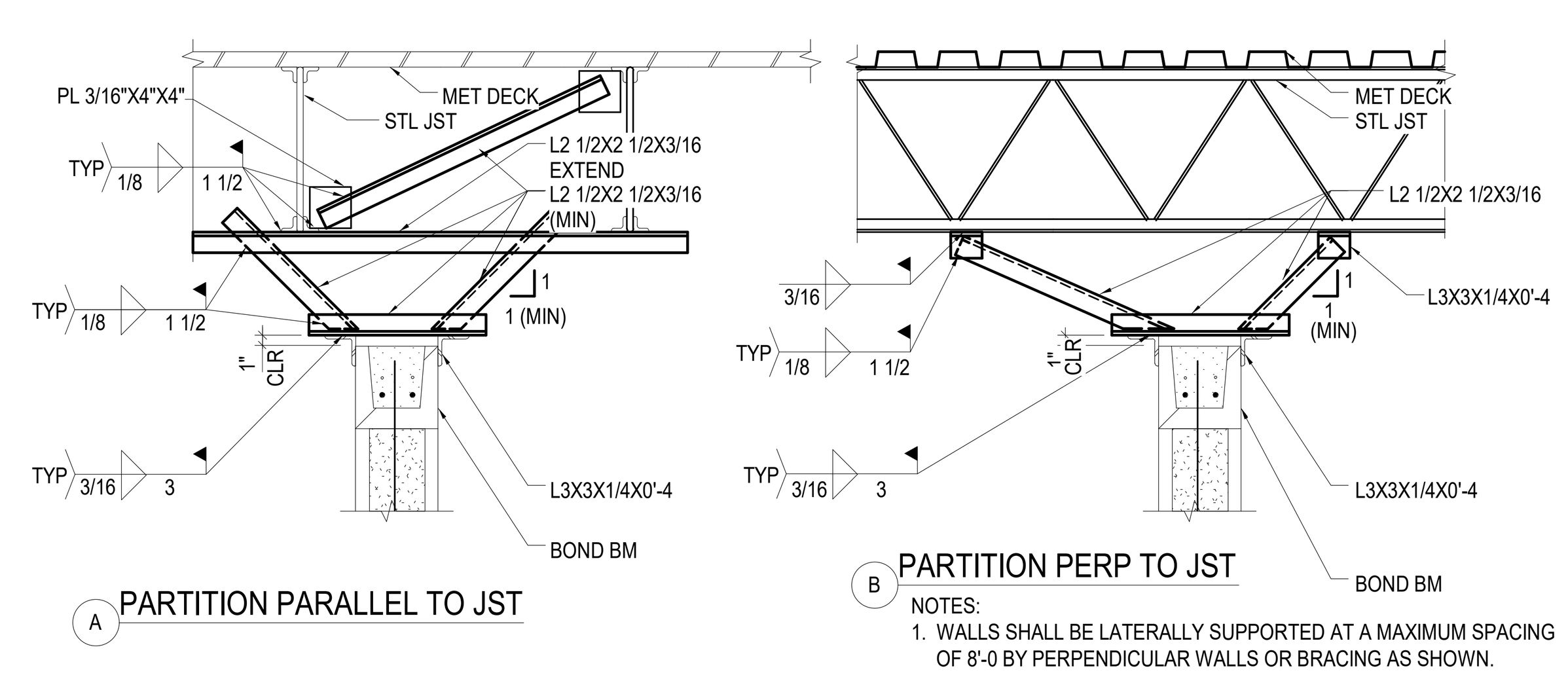
51 / S4.8 — TYP CMU PARTITION WALL BRACING DETAIL
SCALE: 3/4" = 1'-0"



52 / S4.8 — TYP CMU PARTITION WALL BRACING DETAIL
SCALE: 1" = 1'-0"

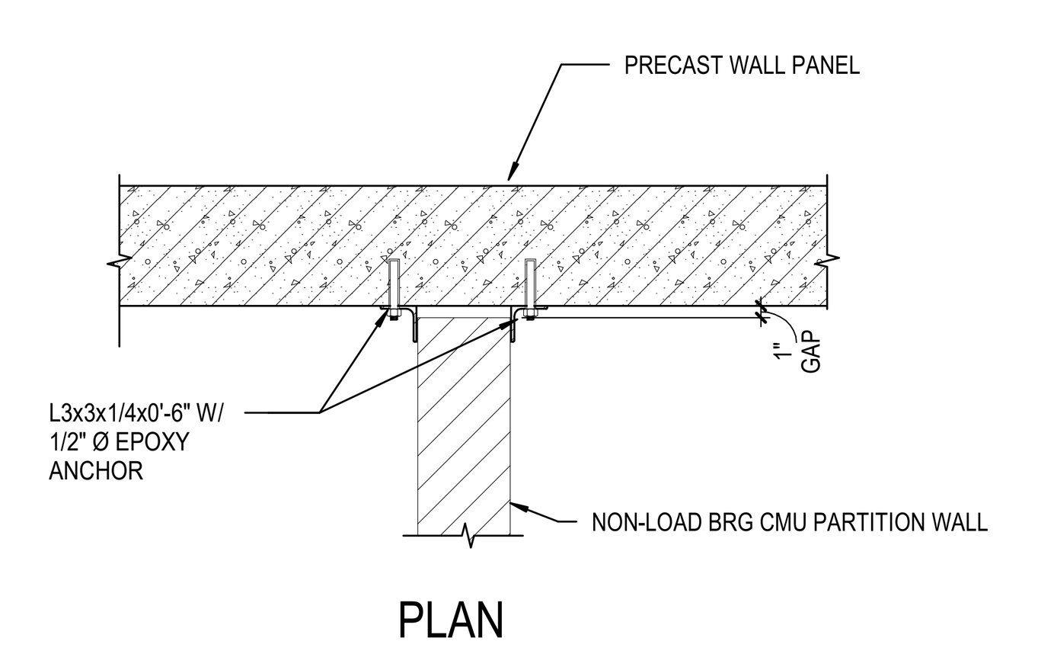


53 / S4.8 — TYP CMU PARTITION WALL BRACING DETAIL
SCALE: 3/4" = 1'-0"



NOTES:
1. WALLS SHALL BE LATERALLY SUPPORTED AT A MAXIMUM SPACING OF 8'-0 BY PERPENDICULAR WALLS OR BRACING AS SHOWN.
2. SEE ARCHITECTURAL DRAWING FOR PARTITION WALLS.
3. PROVIDE TOP CONNECTIONS WITHIN 2'-0" EACH SIDE OF VERTICAL CONTROL JOINTS.

54 / S4.8 — TYP CMU PARTITION BRACING DETAIL
SCALE: 3/4" = 1'-0"



NOTES:
1. BRACE CMU PARTITION WALL TO EXTERIOR LOAD BEARING PC WALL AT TOP OF WALL. PROVIDE CONT BOND BEAM AT TOP OF WALL

56 / S4.8 — TYP PARTITION WALL BRACE TO ADJACENT WALL
SCALE: 3/4" = 1'-0"

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PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
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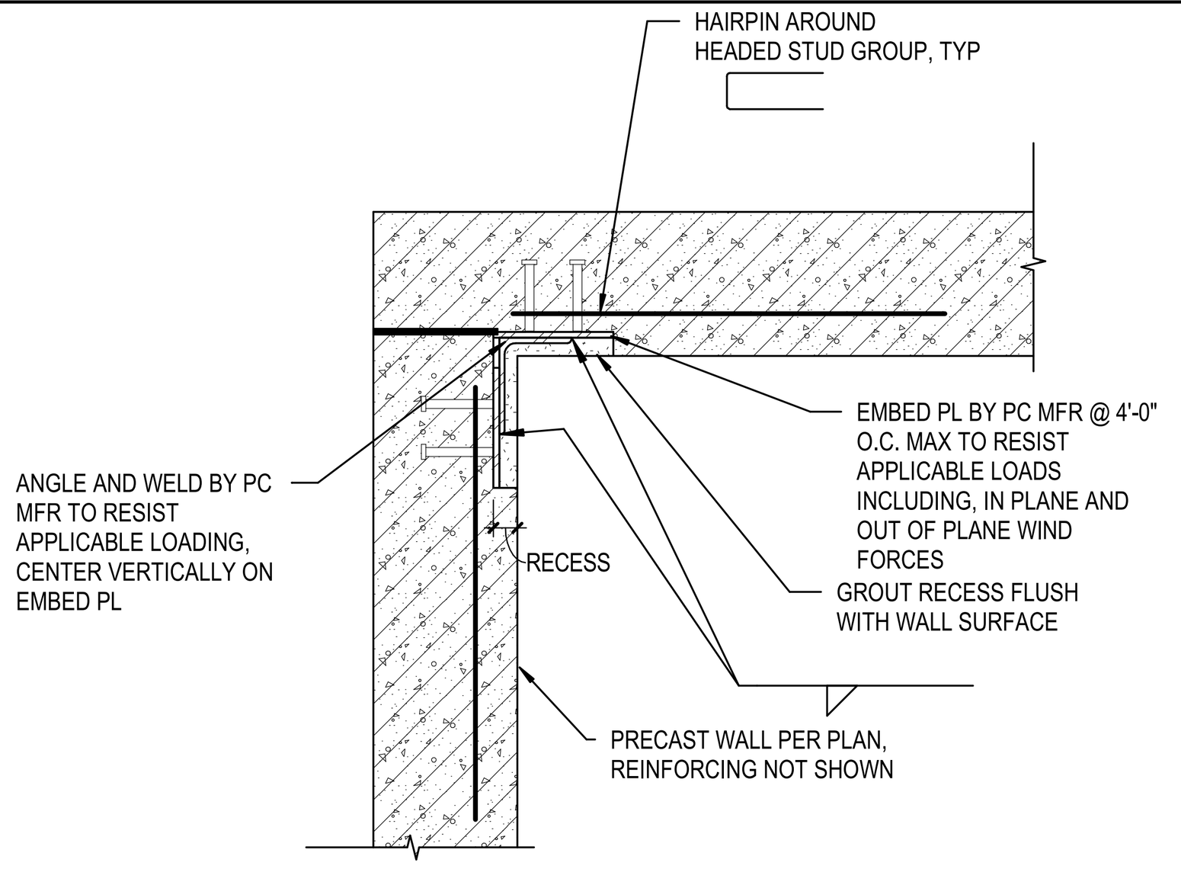
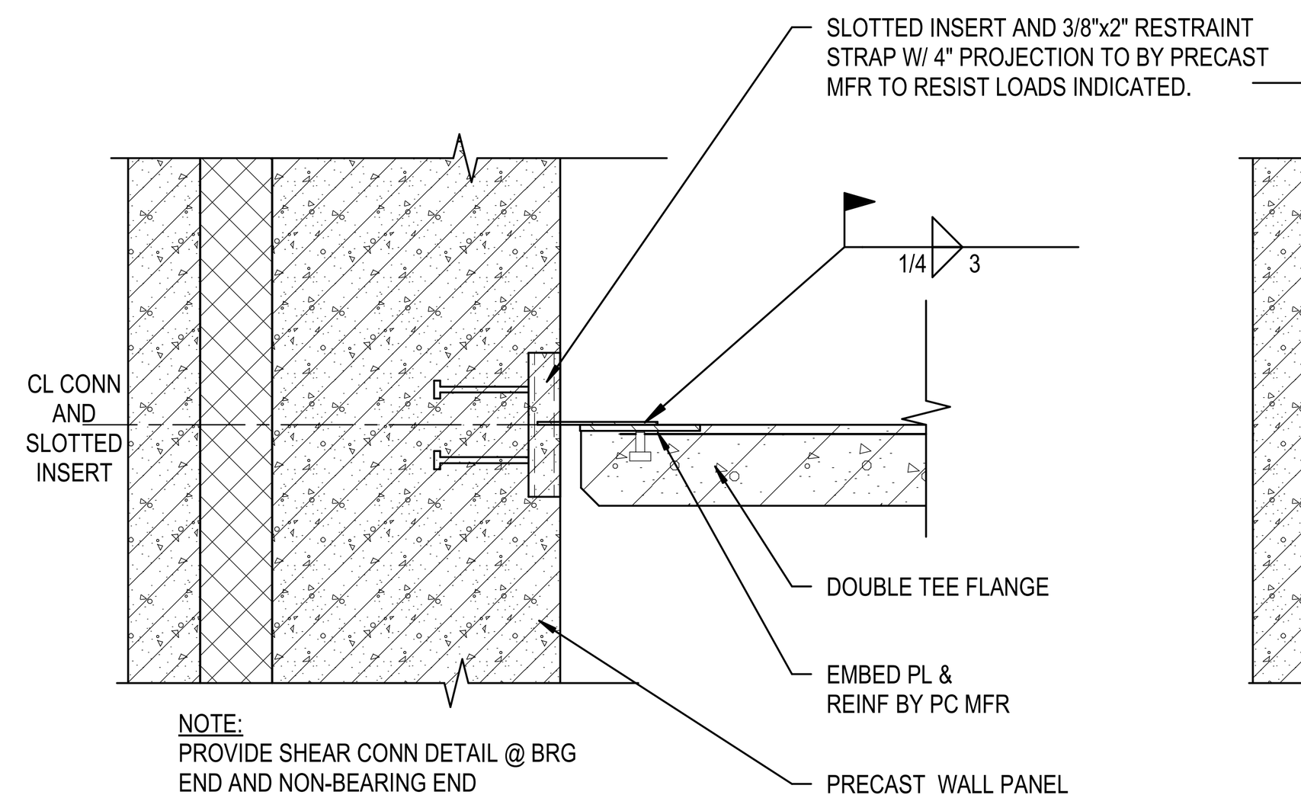
MASONRY TYPICAL DETAILS

S4.8



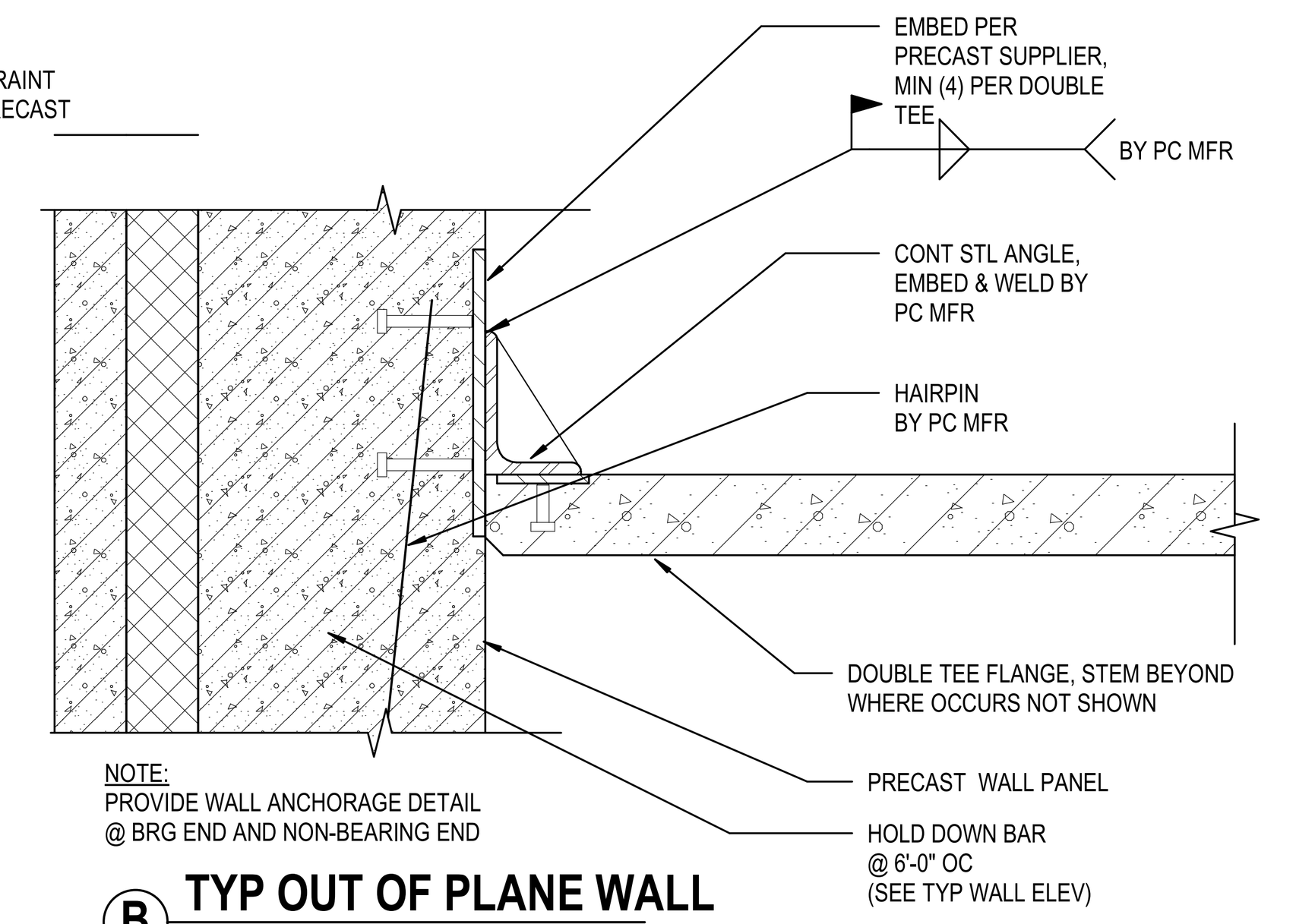
NOTE: PROVIDE CONNECTION 2' - 0" AFF (TO CENTER OF CONN) AND AT 4'-0" O.C. ABOVE, MINIMUM. ACTUAL SPACING AND QUANTITY OF CONNECTIONS IS TO BE DETERMINED BY PRECASTER AS DICTATED BY PANEL DESIGN.

11 / S4.9 TYPICAL CORNER CONNECTION
SCALE: 3/4" = 1'-0"



NOTE:
PROVIDE SHEAR CONN DETAIL @ BRG END AND NON-BEARING END

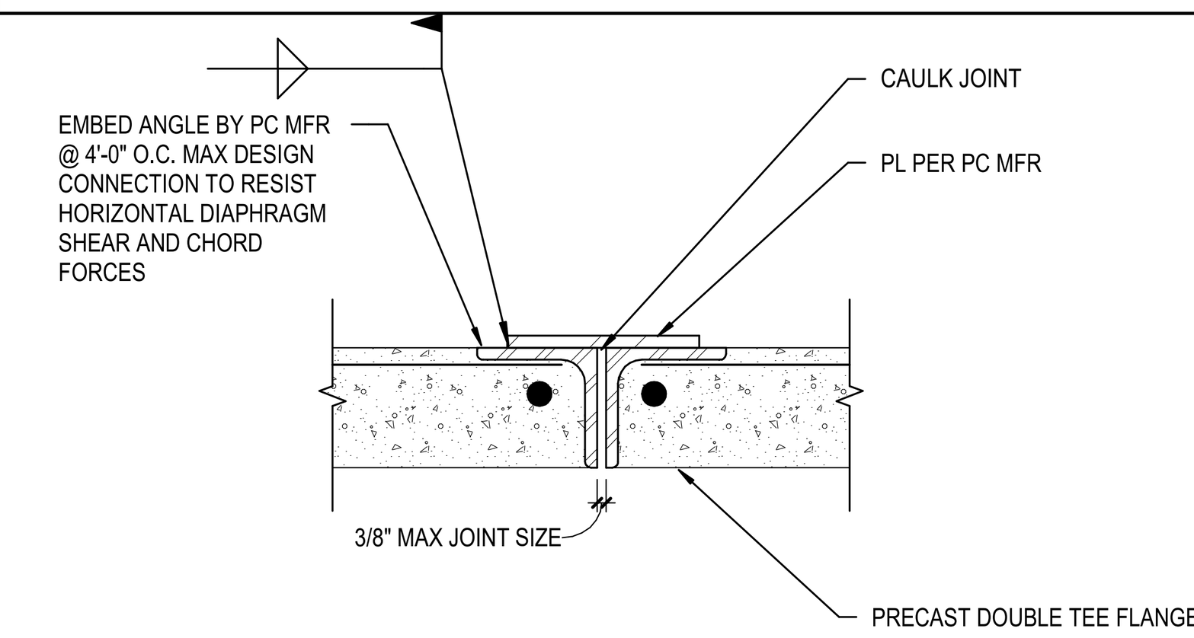
A TYP DIAPHRAGM SHEAR CONN



NOTE:
PROVIDE WALL ANCHORAGE DETAIL @ BRG END AND NON-BEARING END

B TYP OUT OF PLANE WALL ANCHORAGE CONN

12 / S4.9 TYP PRECAST WALL TO DIAPHRAGM CONN DET
SCALE: 1 1/2" = 1'-0"



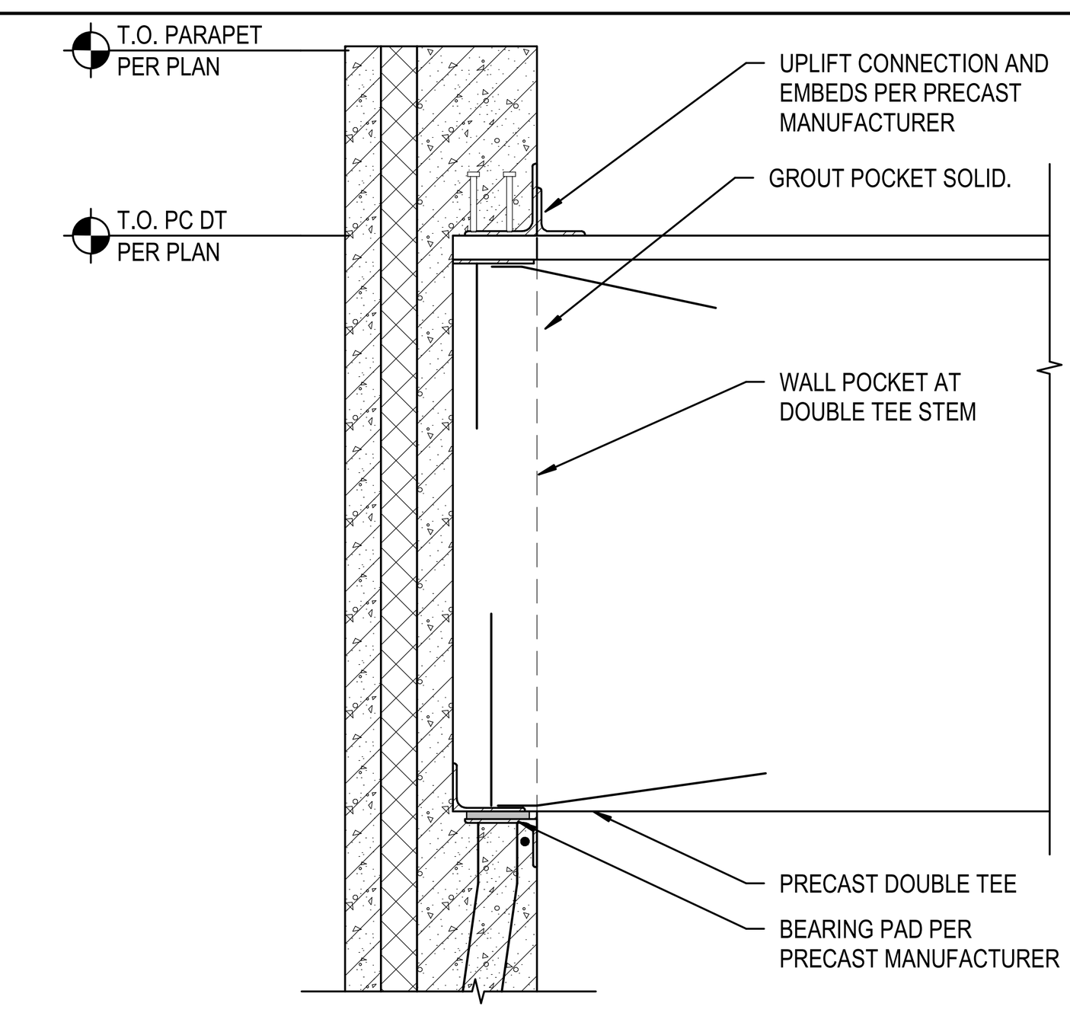
NOTES:
1. DOUBLE TEE ROOF SLAB STITCH PLATE DETAIL IS REQUIRED AT ALL ROOF SLAB JOINTS UNLESS NOTED OTHERWISE ON ROOF PLAN.

2. PROVIDE CONNECTION 2' - 0" FROM EACH END OF SLAB AND AT 4'-0" O.C., MINIMUM ALONG THE SPAN LENGTH. ACTUAL SPACING AND QUANTITY OF CONNECTIONS IS TO BE DETERMINED BY PRECASTER AS DICTATED BY DOUBLE TEE DESIGN AND DIAPHRAGM LOADING REQUIREMENTS.

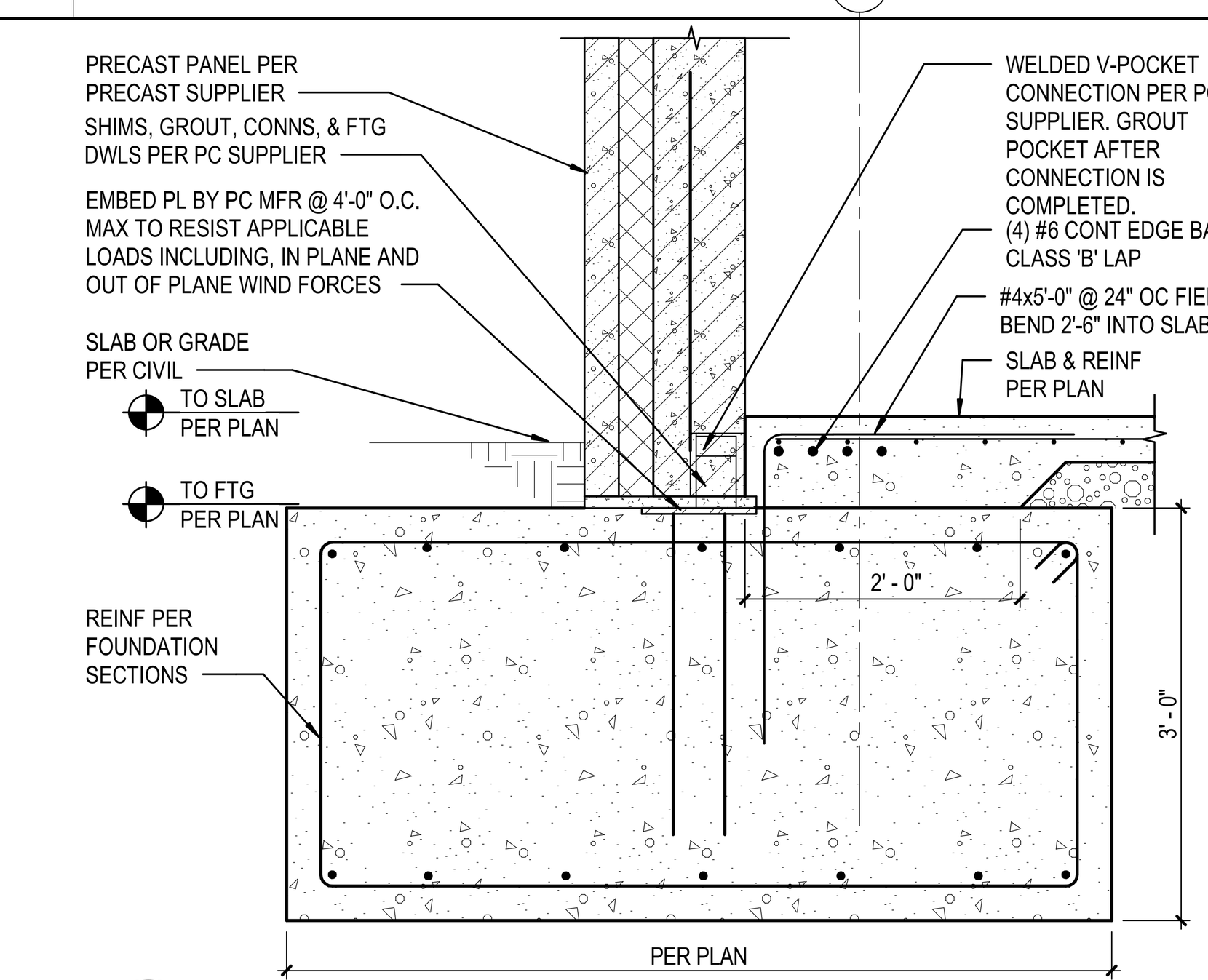
3. CONNECTION SHALL BE DESIGNED BY PRECAST MFR TO ACCOUNT FOR ALL VOLUME CHANGES.

4. ALTERNATE JOINT SIZES MAY BE CONSIDERED BASED ON MANUFACTURES ICC-500 TESTING, RE: S0.4.

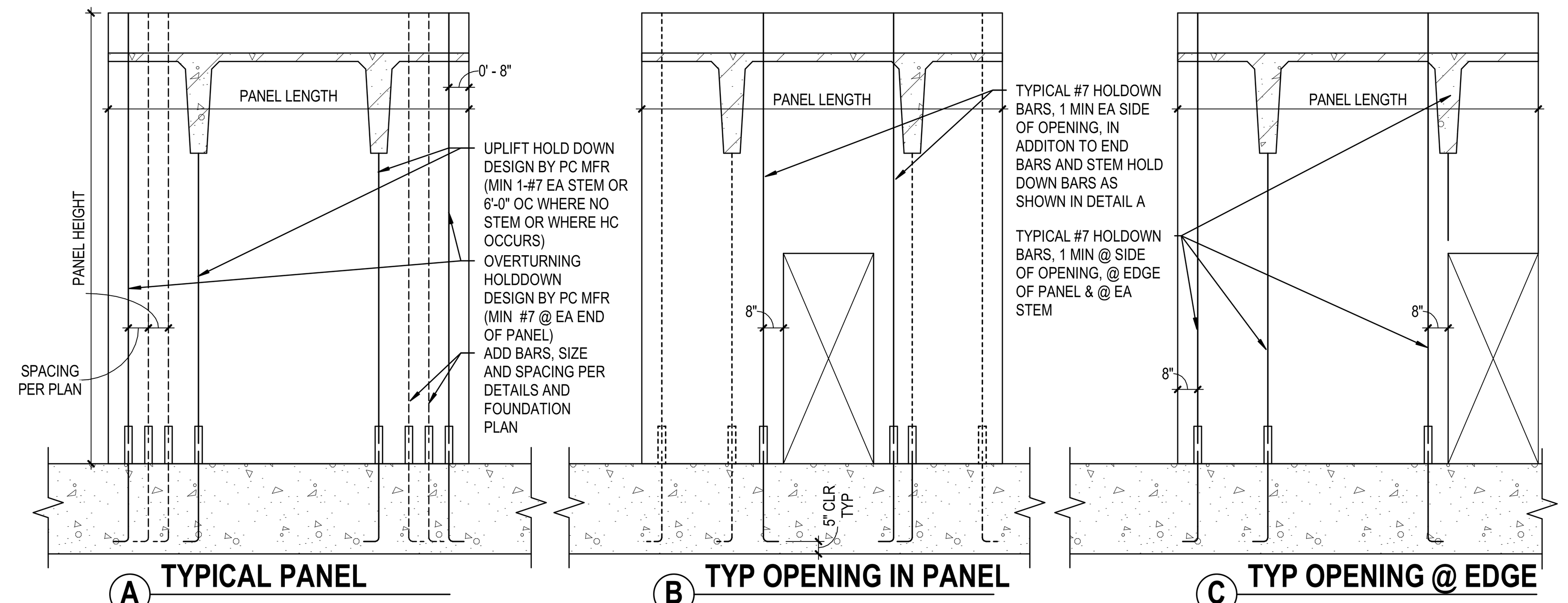
14 / S4.9 TYP DIAPHRAGM CHORD DETAIL
SCALE: 3" = 1'-0"



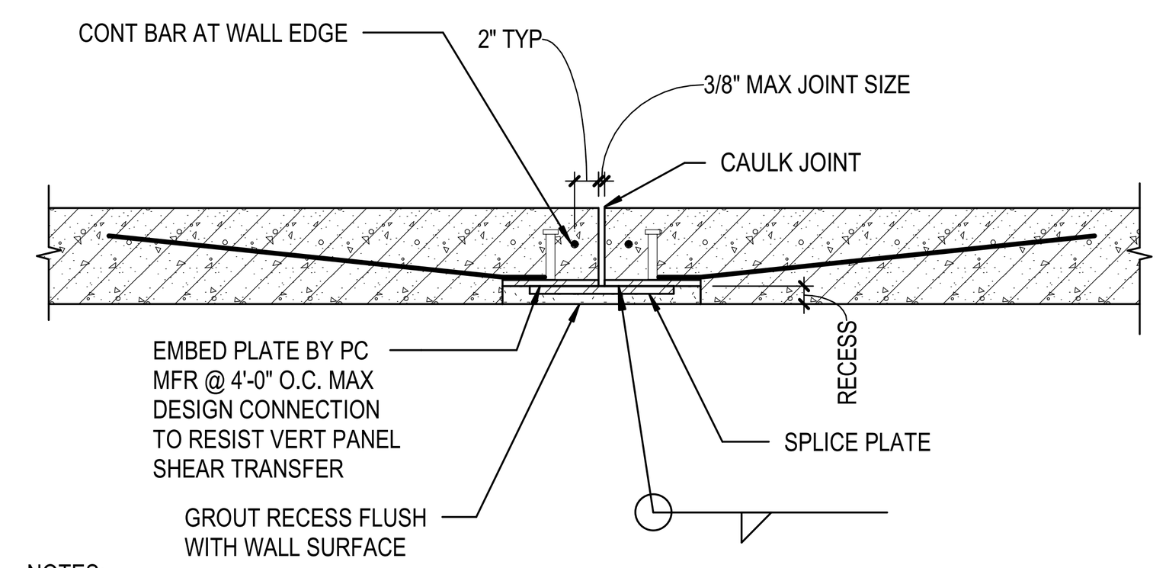
15 / S4.9 TYP DOUBLE TEE / WALL DETAIL
SCALE: 3/4" = 1'-0"



16 / S4.9 TYP PRECAST FOUNDATION CONNECTION
SCALE: 3/4" = 1'-0"



21 / S4.9 TYP HOLD DOWN LOCATIONS
SCALE: 1/4" = 1'-0"

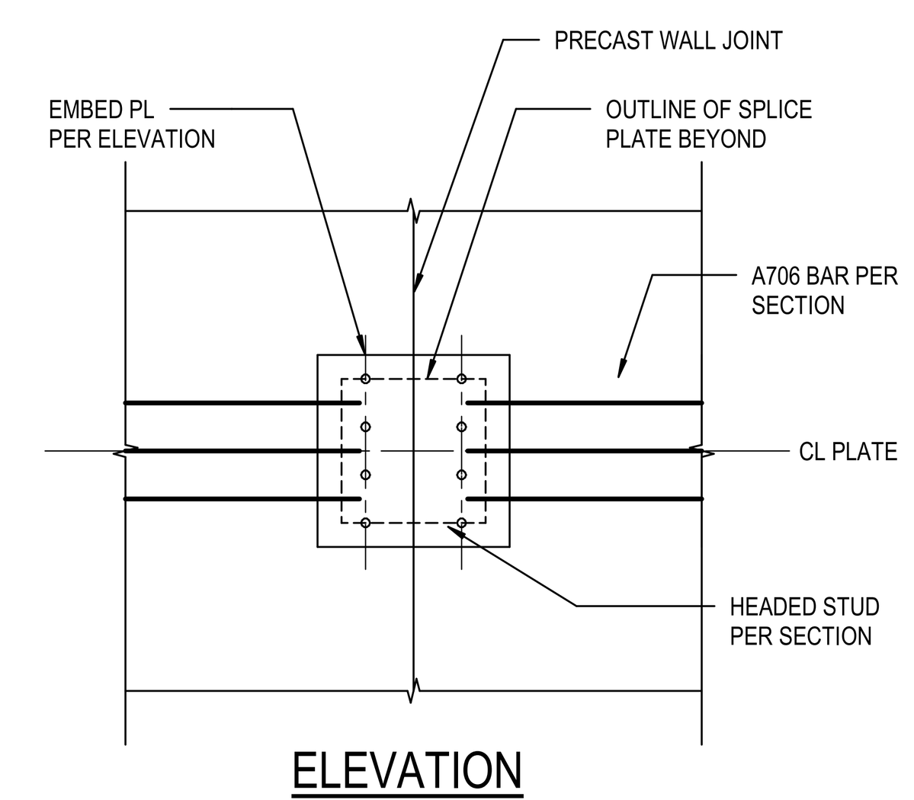


NOTES:
1. WALL STITCH PLATE DETAIL IS REQUIRED AT ALL PANEL JOINTS.

2. PROVIDE CONNECTION 2' - 0" AFF (TO CENTER OF CONN) AND AT 4' O.C. ABOVE, MINIMUM. ACTUAL SPACING AND QUANTITY OF CONNECTIONS IS TO BE DETERMINED BY PRECASTER AS DICTATED BY PANEL DESIGN. WALL PANELS ARE TO BE CONNECTED AND DESIGNED TO ACT AS ONE SHEAR WALL, NOT INDIVIDUAL PANELS.

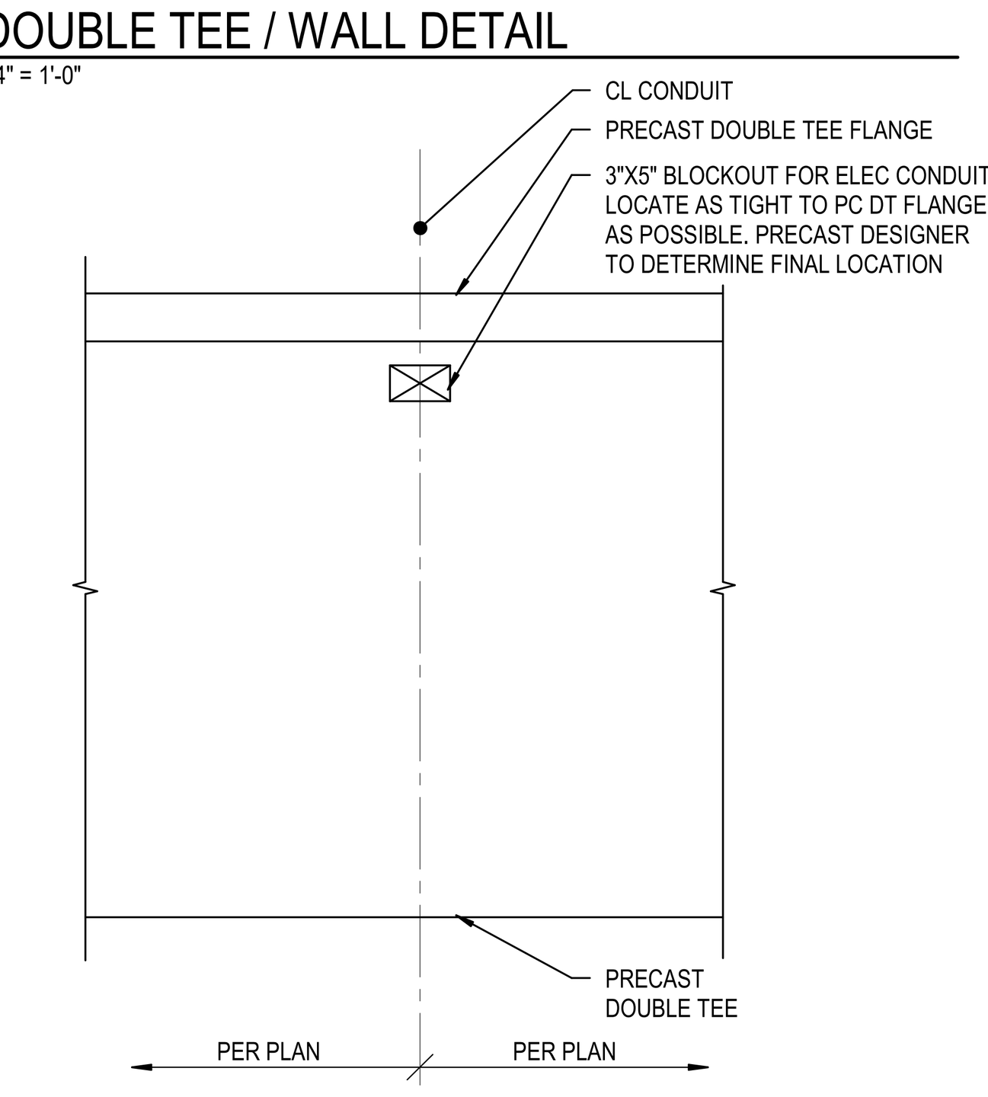
3. CONNECTION SHALL BE DESIGNED BY PRECAST MFR TO ACCOUNT FOR ALL VOLUME CHANGES.

4. ALTERNATE JOINT SIZES MAY BE CONSIDERED BASED ON MANUFACTURES ICC-500 TESTING, RE: S0.4.

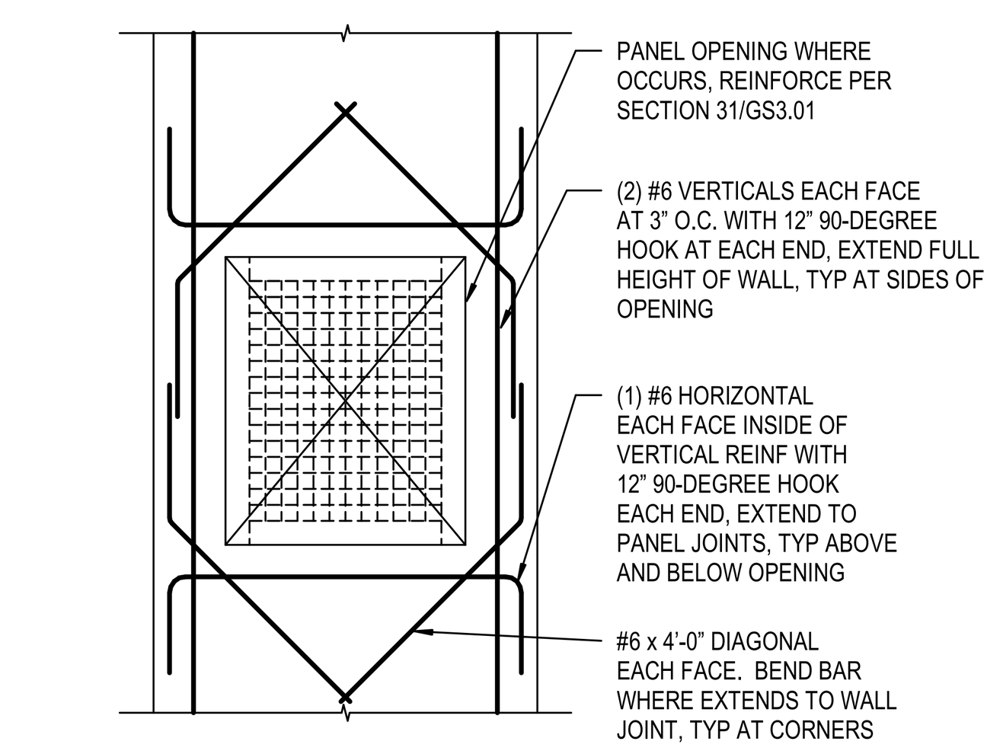


ELEVATION

23 / S4.9 WALL STITCH PLATE
SCALE: 3/4" = 1'-0"

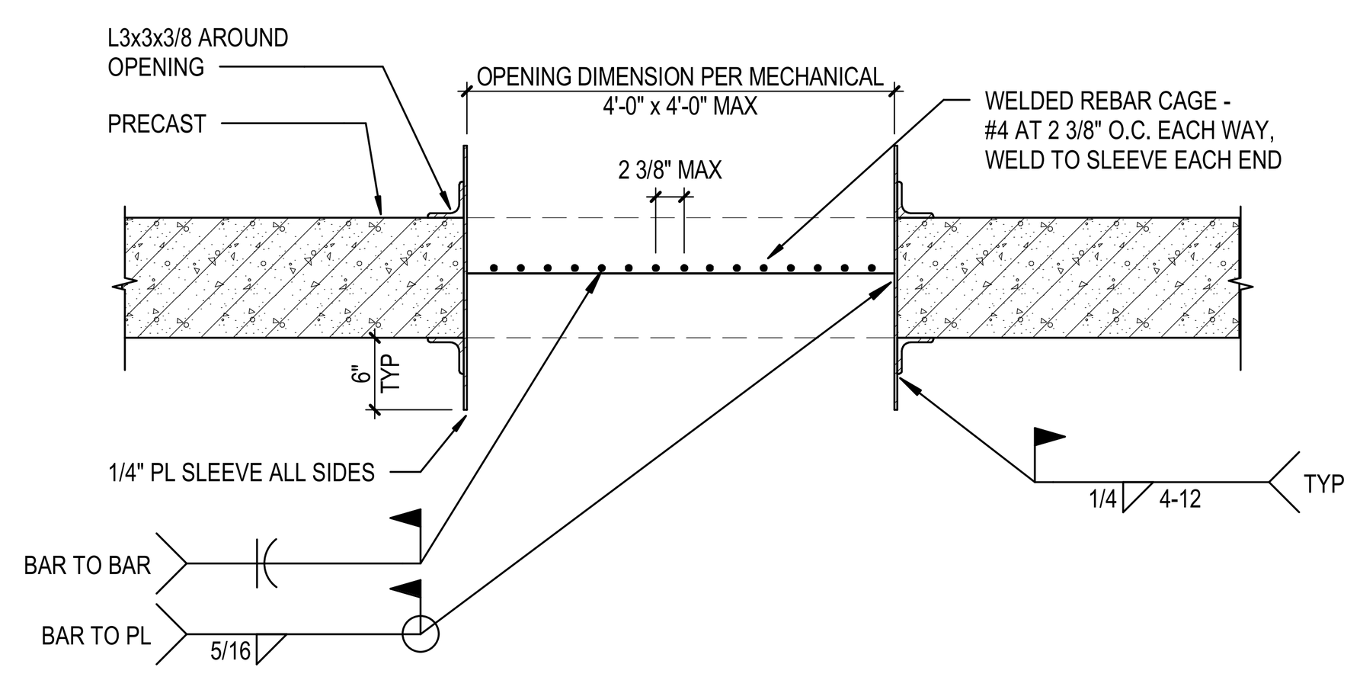


25 / S4.9 TYP BLOCKOUT FOR ELEC CONDUIT DETAIL
SCALE: 3/4" = 1'-0"



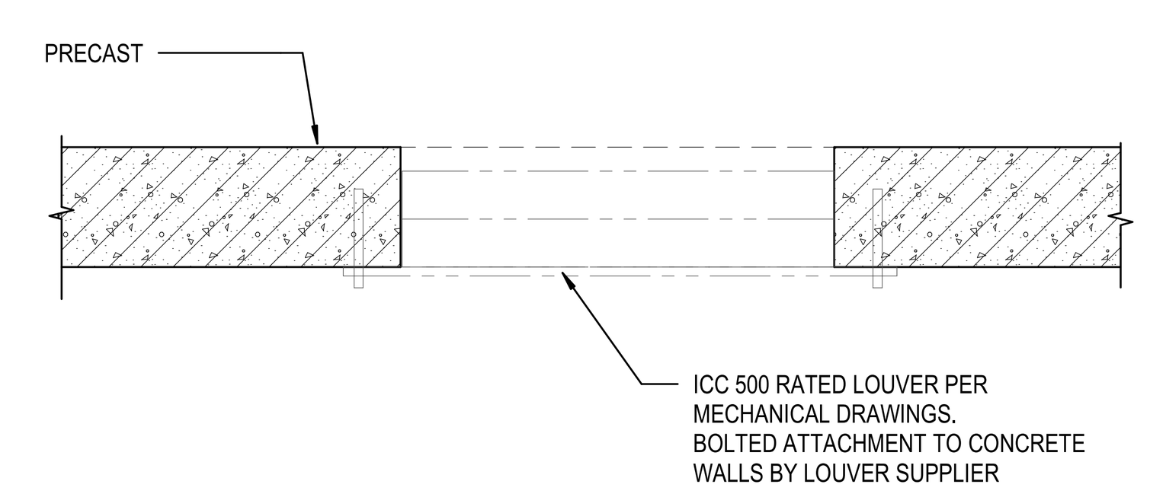
NOTES:
1. REINFORCING SHALL BE DESIGNED BY PC MFR TO RESIST THE FORCES PROVIDED. PROVIDE REINFORCING AND SPACING NO LESS THAN THAT INDICATED.

31 / S4.9 ELEVATION - WALL PENETRATION
SCALE: 1/2" = 1'-0"



NOTE:
COORDINATE SIZE AND LOCATIONS OF OPENINGS WITH MECHANICAL DRAWINGS PRIOR TO STEEL FABRICATION AND PRECAST SHOP DRAWINGS. GALVANIZE STEEL ALL STEEL.

32 / S4.9 TYP WALL/ROOF OPENING PROTECTION DET
SCALE: 3/4" = 1'-0"



NOTE:
COORDINATE SIZE AND LOCATIONS OF OPENINGS WITH MECHANICAL DRAWINGS PRIOR TO PRECAST SHOP DRAWINGS. GALVANIZE STEEL AT EXTERIOR WALLS.

33 / S4.9 TYP WALL/ROOF OPENING PROTECTION DET
SCALE: 3/4" = 1'-0"

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LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
LEE'S SUMMIT, MO 64081

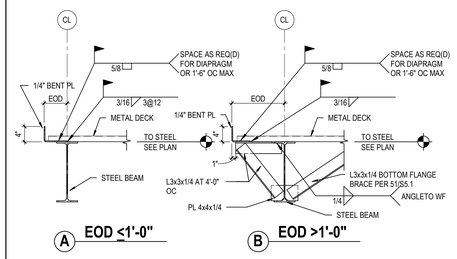
PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20
REVISIONS

13-20102-00

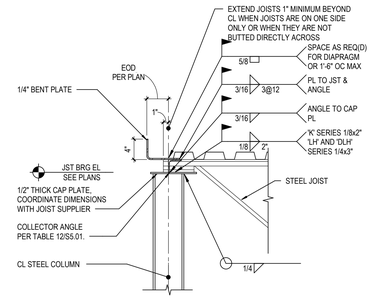
PRECAST TYPICAL DETAILS

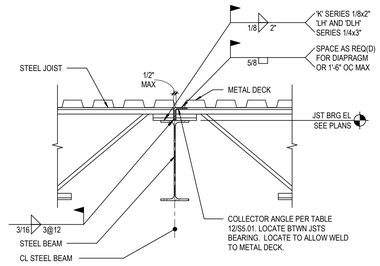
S4.9

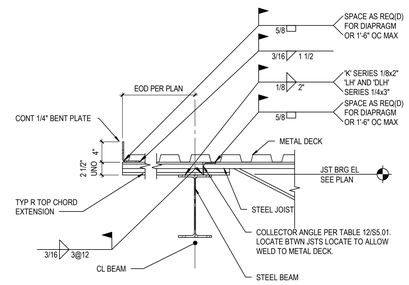
BIM 360://13-20102-00 Lees Summit Middle School 4/13-20102-00_Lee's Summit Middle School 4_ST_2020.rvt
10/7/2020 4:38:52 PM

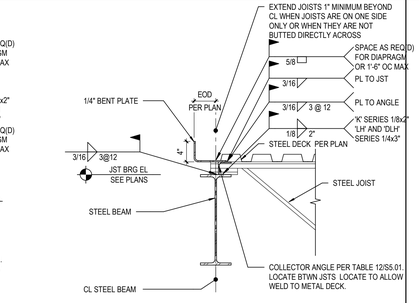


JST SEAT DEPTH	ANGLE SIZE
2-1/2"	L2-1/2x2-1/2x3/16
3-1/2"	L3-1/2x3x1/4 LLV
5"	L5x3x1/4 LLV









11 S5.1 TYP EDGE OF DECK DETAIL
SCALE: 3/4" = 1'-0"

12 S5.1 COLLECTOR ANGLE TABLE
SCALE: 1" = 1'-0"

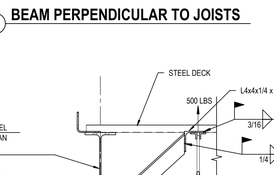
13 S5.1 TYP JOIST BEARING DETAIL
SCALE: 1" = 1'-0"

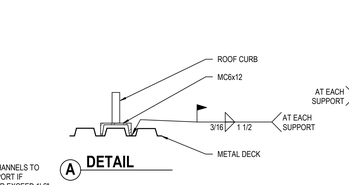
14 S5.1 TYP JOIST BEARING DETAIL
SCALE: 1" = 1'-0"

15 S5.1 TYP EXTENDED END JST BEARING DETAIL
SCALE: 1" = 1'-0"

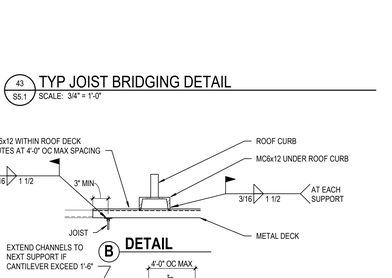
16 S5.1 TYP JOIST BEARING DETAIL
SCALE: 1" = 1'-0"

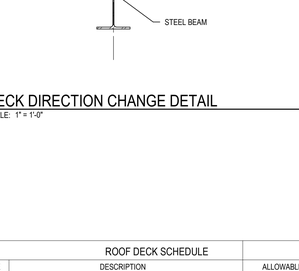
NOTE:
1. JOIST SUPPLIER TO DESIGN ROOF JOISTS FOR A UNIFORMLY DISTRIBUTED LIVE LOAD OF 250 PLF AND A CONCENTRATED Xk DEAD LOAD AT STACK LOCATIONS.
2. LIMIT LIVE LOAD DEFLECTION OF JOISTS TO 1/4"



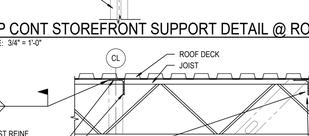


NOTE:
TYPICAL DETAIL APPLIES TO ALL OPENINGS 6" AND LARGER.





NOTE:
1. DESIGN ALL JOIST TOP AND BOTTOM CHORDS FOR BEND CHECK LOADS AS SHOWN. REINFORCEMENT ONLY REQUIRED WHERE LOADS EXCEED LOADS SHOWN.
2. PROVIDE REINFORCEMENT WHEN CONCENTRATED LOAD IS MORE THAN 4" FROM PANEL POINT AND EXCEEDS LOAD SHOWN.



NOTE:
1. USE ONLY WHERE DUCTS ARE SHOWN BETWEEN JOISTS ON MECHANICAL DRAWINGS. VERIFY LOCATION WITH CONTRACTOR.
2. DO NOT INSTALL DUCTS IN TWO ADJACENT JOIST SPACES.
3. COORDINATE BRIDGING WITH JOIST SUPPLIER.

21 S5.1 TYP WT BRACE DETAIL
SCALE: 3/4" = 1'-0"

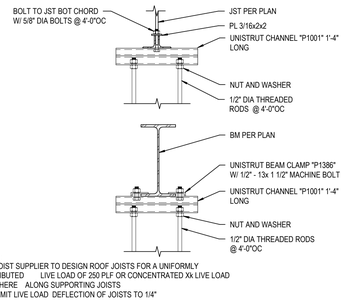
22 S5.1 TYP ROOF OPENING DETAIL
SCALE: 3/4" = 1'-0"

23 S5.1 TYP JOIST BEARING DETAIL
SCALE: 1" = 1'-0"

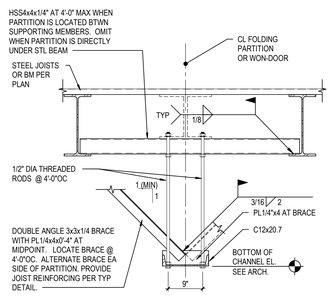
24 S5.1 TYP JOIST REINFORCING DETAIL
SCALE: 1" = 1'-0"

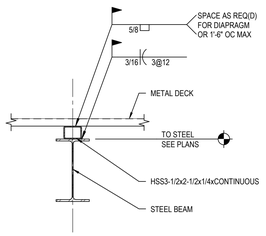
25 S5.1 TYP JOIST BEARING DETAIL
SCALE: 3/4" = 1'-0"

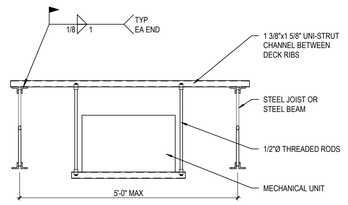
26 S5.1 TYP OPERABLE PARTITION WALL CONN DTL
SCALE: 3/4" = 1'-0"



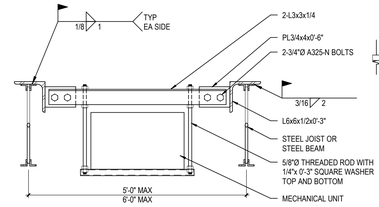
NOTE:
1. JOIST SUPPLIER TO DESIGN ROOF JOISTS FOR A UNIFORMLY DISTRIBUTED LIVE LOAD OF 250 PLF OR CONCENTRATED Xk LIVE LOAD ANYWHERE ALONG SUPPORTING JOISTS
2. LIMIT LIVE LOAD DEFLECTION OF JOISTS TO 1/4"



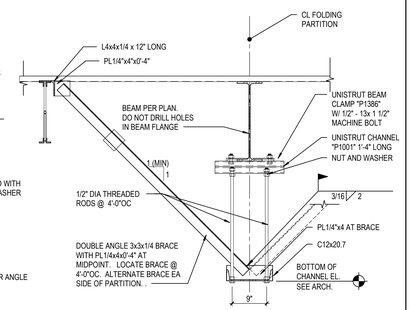




NOTE:
1. GENERAL CONTRACTOR SHALL VERIFY SIZE AND LOCATION WITH MECHANICAL CONTRACTOR.
2. PROVIDE SEISMIC BRACING IN ACCORD WITH MECHANICAL SPECIFICATIONS AND DETAILS.
3. WEIGHT OF MECHANICAL UNIT EQUAL TO OR LESS THAN 400LBS PER CHANNEL



NOTE:
1. GENERAL CONTRACTOR SHALL VERIFY SIZE AND LOCATION WITH MECHANICAL CONTRACTOR.
2. PROVIDE SEISMIC BRACING IN ACCORD WITH MECHANICAL SPECIFICATIONS AND DETAILS.
3. WEIGHT OF MECHANICAL UNIT GREATER THAN 400 LBS PER ANGLE, BUT LESS THAN 700 LBS PER ANGLE



31 S5.1 TYP OPERABLE PARTITION WALL CONN DTL
SCALE: 1" = 1'-0"

32 S5.1 TYP OPERABLE PARTITION WALL CONN DTL
SCALE: 3/4" = 1'-0"

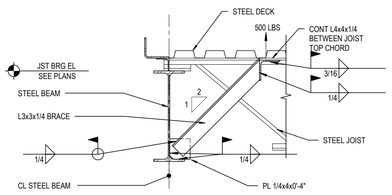
33 S5.1 TYP LOWERED BEAM DETAIL
SCALE: 1" = 1'-0"

34 S5.1 TYP HANGING MECH UNIT DETAIL
SCALE: 1" = 1'-0"

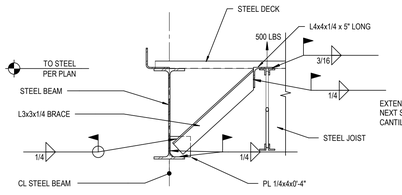
35 S5.1 TYP HANGING MECH UNIT DETAIL
SCALE: 1" = 1'-0"

36 S5.1 TYP OPERABLE PARTITION WALL CONN DTL
SCALE: 3/4" = 1'-0"

1

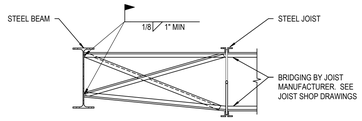


A BEAM PERPENDICULAR TO JOISTS

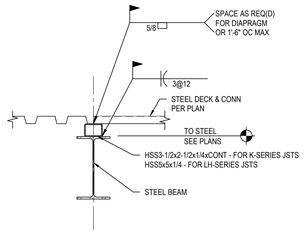


B BEAM PARALLEL TO JOISTS

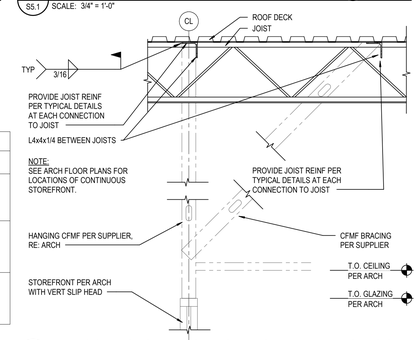
43 S5.1 TYP JOIST BRIDGING DETAIL
SCALE: 3/4" = 1'-0"

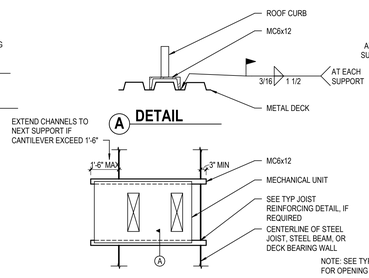


44 S5.1 DECK DIRECTION CHANGE DETAIL
SCALE: 1" = 1'-0"

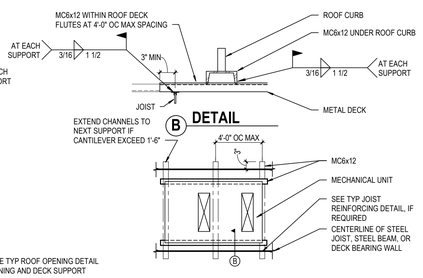


45 S5.1 TYP CONT STOREFRONT SUPPORT DETAIL @ ROOF
SCALE: 3/4" = 1'-0"





MECH UNIT PERPENDICULAR WITH ROOF FRAMING



MECH UNIT PARALLEL WITH ROOF FRAMING

ROOF DECK SCHEDULE		
MARK	DESCRIPTION	ALLOWABLE DIAPHRAGM SHEAR
RD-1	1-1/2" DEEP x 20 GA, WIDE RIB PAINTED STEEL ROOF DECK, 1.5B20. PROVIDE 5/8"Ø PUDDLE WELDS IN A 36/5 PATTERN AND 5 #10 TEK SCREW SIDE LAPS PER SPAN.	540 PLF
RD-2	2" DEEP x 20 GA, ACOUSTICAL. PAINTED DOVETAIL STEEL ROOF DECK PROVIDE 3/4" Ø PUDDLE WELDS IN A 24/8 PATTERN AND 1.5" LONG ARC SEAM WELDS OR 2" LONG FILLET WELDS AT 18" OC SIDE LAPS	525 PLF
RD-3	3" DEEP x 20 GA, WIDE RIB PAINTED STEEL ACOUSTICAL ROOF DECK, 3NA20, PROVIDE 5/8"Ø PUDDLE WELDS IN A 24/4 PATTERN AND 8 #10 TEK SCREW SIDE LAPS PER SPAN	460 PLF

51 S5.1 TYP BOTTOM FLANGE BRACE DETAIL
SCALE: 1" = 1'-0"

52 S5.1 TYP ROOF TOP UNIT SUPPORT DETAIL AT 1-1/2" DEEP ROOF DECK
SCALE: 1/2" = 1'-0"

54 S5.1 ROOF DECK SCHEDULE
SCALE: 3/4" = 1'-0"

55 S5.1 TYP CONT STOREFRONT SUPPORT DETAIL @ ROOF
SCALE: 3/4" = 1'-0"

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LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
10/08/20

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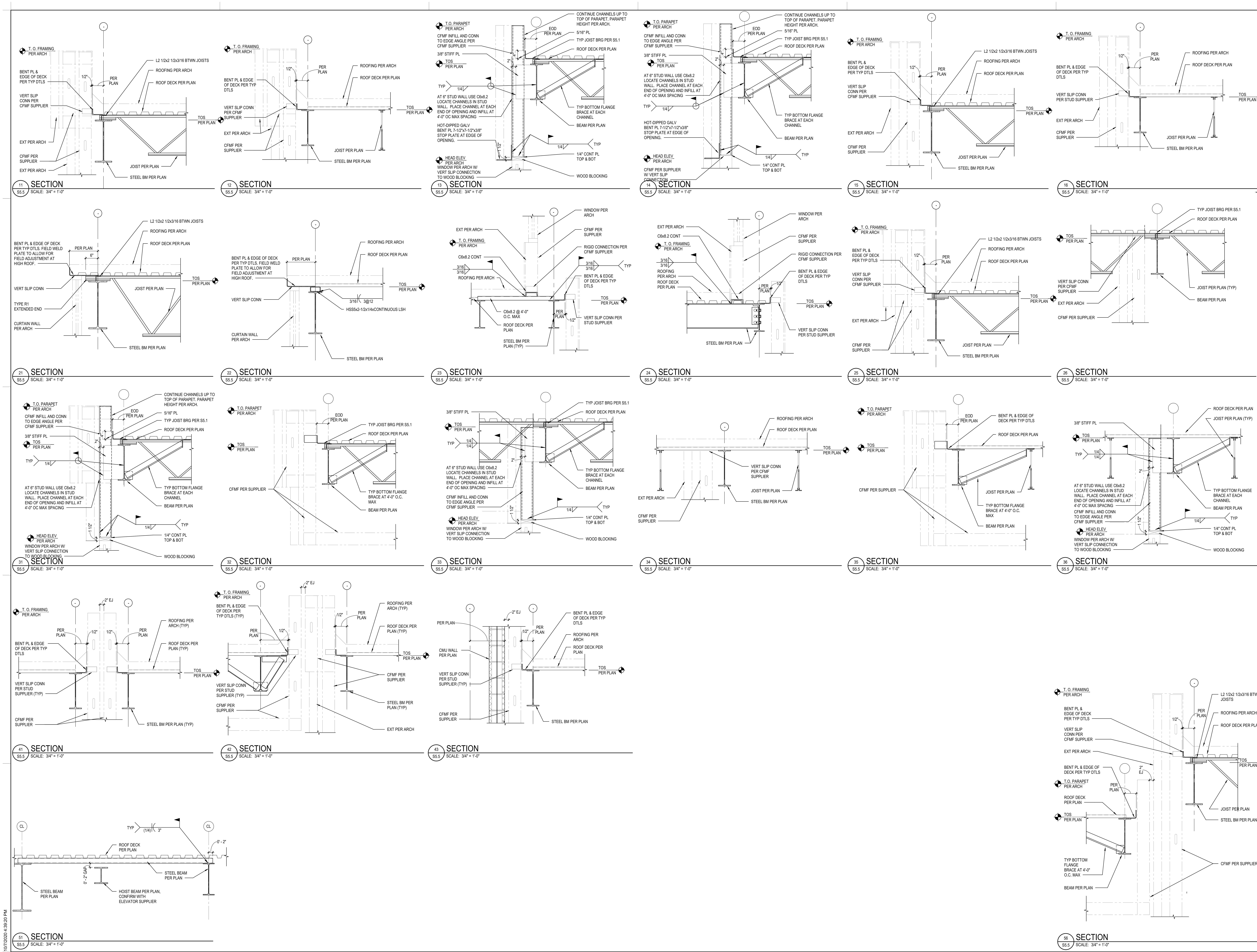
1	ASI-01	10/08/20

13-20102-00

ROOF FRAMING TYPICAL DETAILS

S5.1



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REVISIONS

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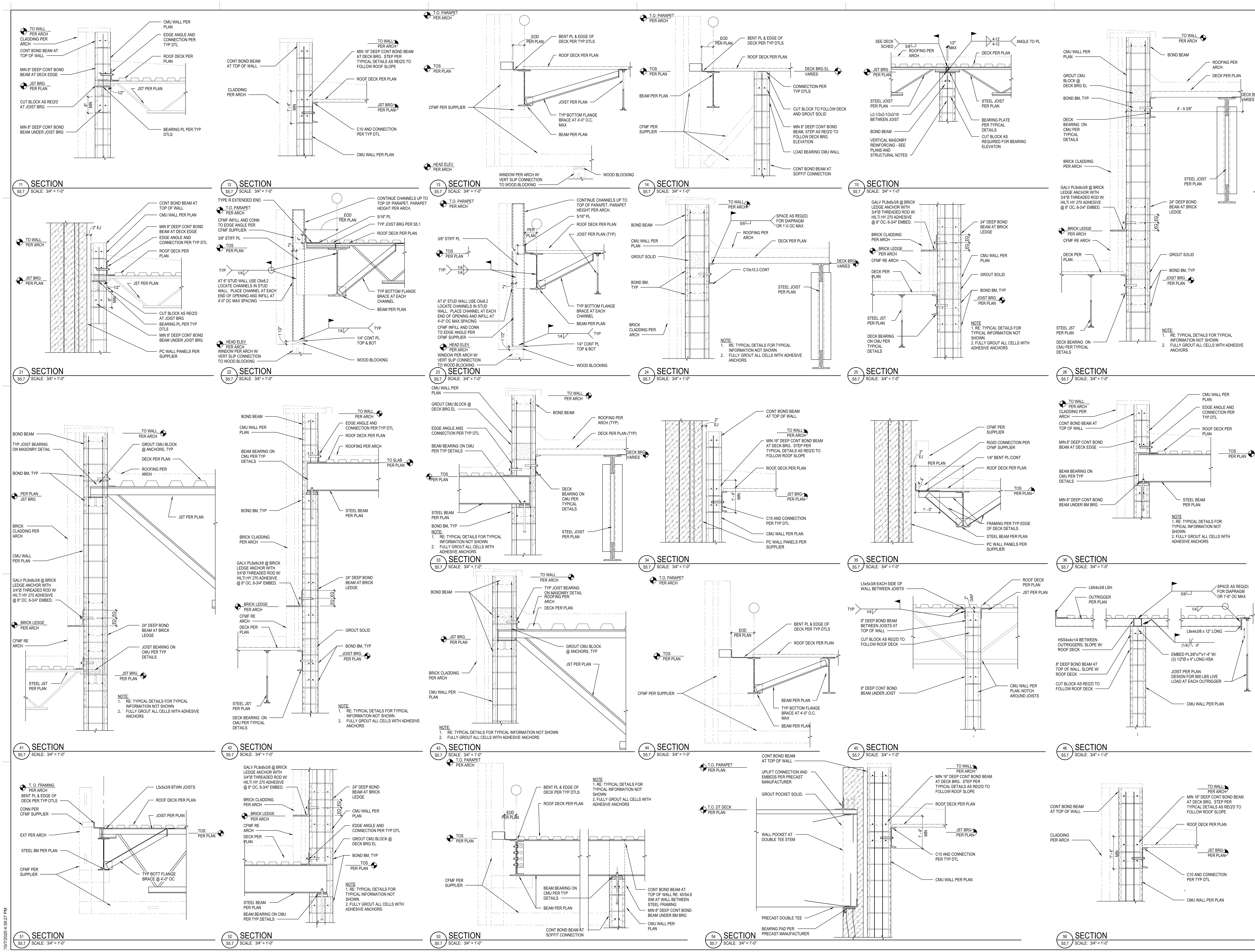
ROOF FRAMING SECTIONS

S5.5



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PACKAGE 3 - BUILDING & SITE - ISSUE FOR PERMIT
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REVISIONS

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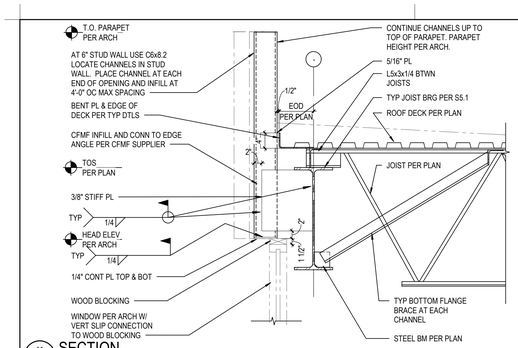
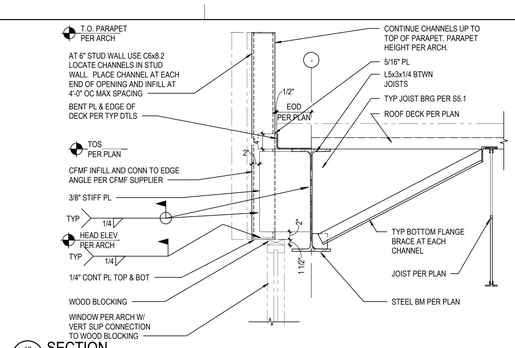
ROOF FRAMING SECTIONS

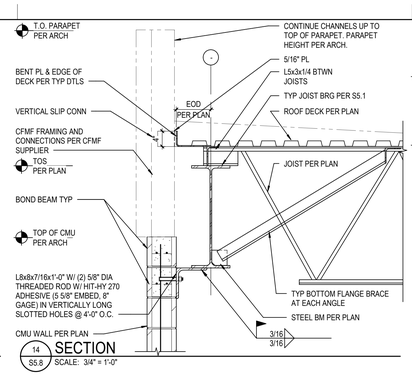
S5.7



11 SECTION
S5.8 SCALE: 3/4" = 1'-0"



12 SECTION
S5.8 SCALE: 3/4" = 1'-0"



14 SECTION
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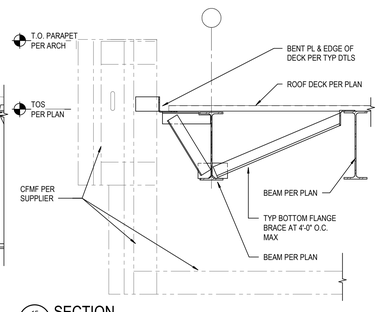
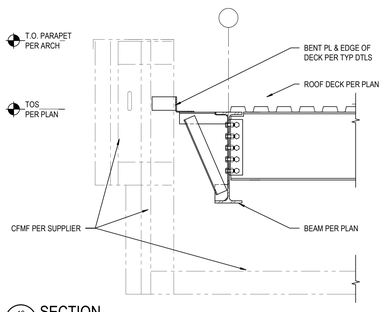
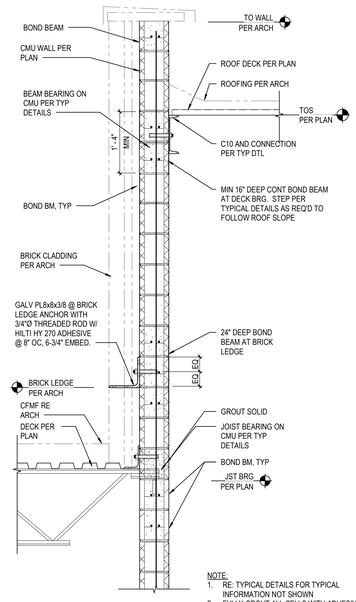


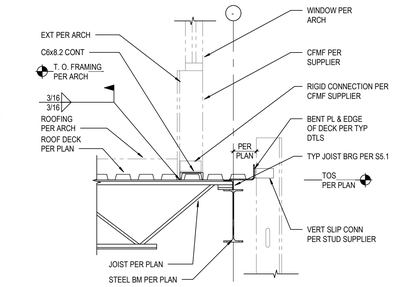
15 SECTION
S5.8 SCALE: 3/4" = 1'-0"



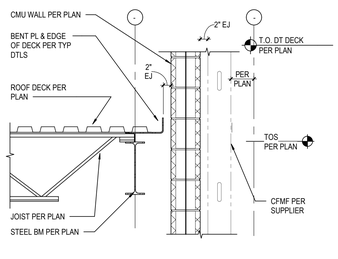
16 SECTION
S5.8 SCALE: 3/4" = 1'-0"



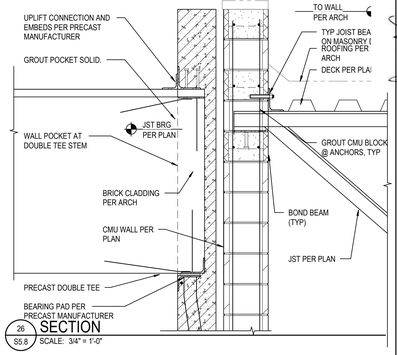
NOTE:
1. RE: TYPICAL DETAILS FOR TYPICAL INFORMATION NOT SHOWN
2. FULLY GROUT ALL CELLS WITH ADHESIVE ANCHORS



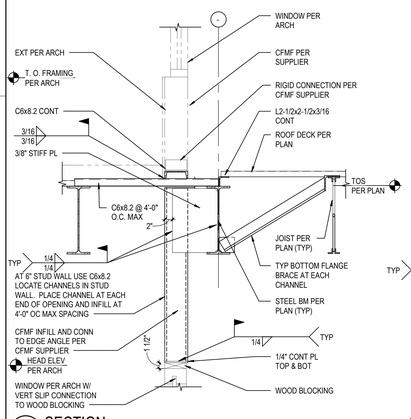
24 SECTION
S5.8 SCALE: 3/4" = 1'-0"



25 SECTION
S5.8 SCALE: 3/4" = 1'-0"



26 SECTION
S5.8 SCALE: 3/4" = 1'-0"



31 SECTION
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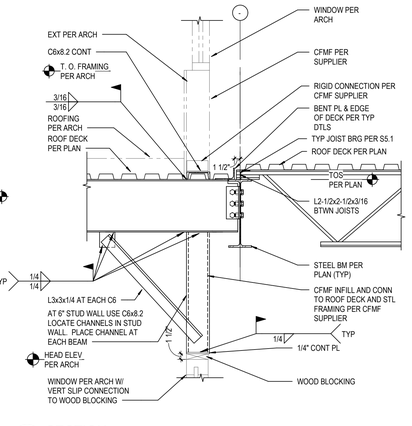
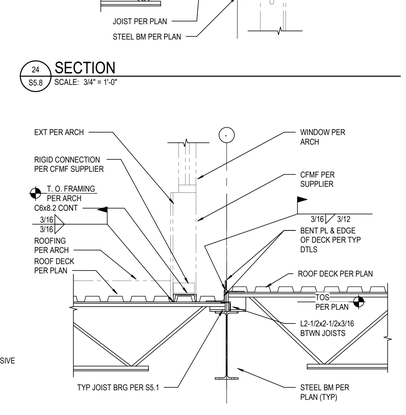
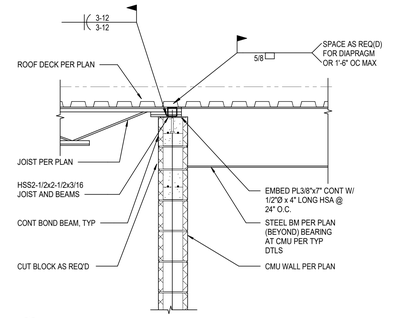


32 SECTION
S5.8 SCALE: 3/4" = 1'-0"



33 SECTION
S5.8 SCALE: 3/4" = 1'-0"

34 SECTION
S5.8 SCALE: 3/4" = 1'-0"



35 SECTION
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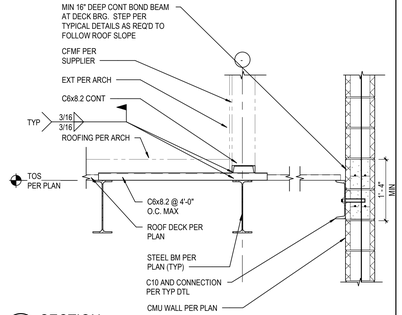
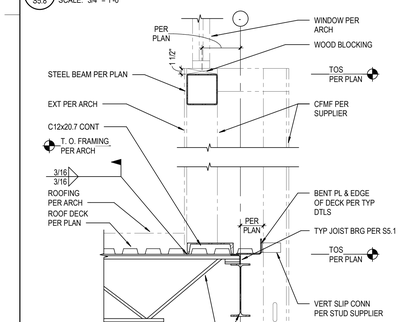
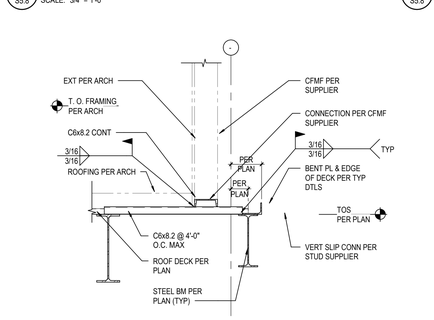


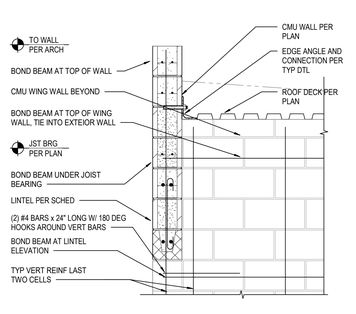
36 SECTION
S5.8 SCALE: 3/4" = 1'-0"



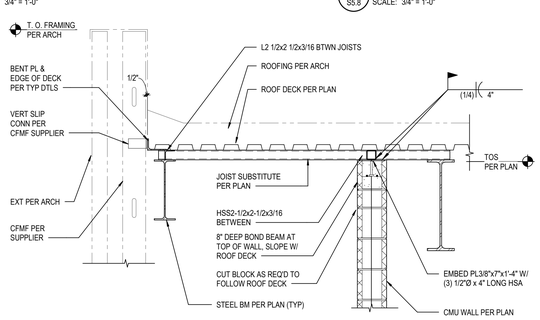
41 SECTION
S5.8 SCALE: 3/4" = 1'-0"



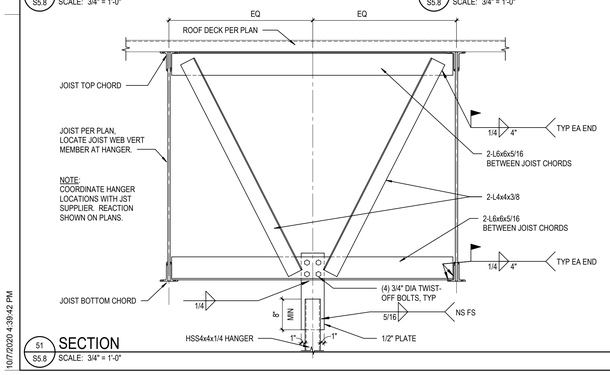
42 SECTION
S5.8 SCALE: 3/4" = 1'-0"



43 SECTION
S5.8 SCALE: 3/4" = 1'-0"



44 SECTION
S5.8 SCALE: 3/4" = 1'-0"



51 SECTION
S5.8 SCALE: 3/4" = 1'-0"

NOTE:
DESIGN JOISTS TO HAVE A MINIMUM FUNDAMENTAL NATURAL FREQUENCY GREATER THAN 4 HZ USING MASS FROM TRUSS SELF WEIGHT PLUS 5 PSF DEAD LOAD. MAXIMUM TOTAL DEFLECTION SHALL NOT EXCEED 1/4" AT HANGER LOCATION UNDER FULL DESIGN LOADS

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LEE'S SUMMIT MIDDLE SCHOOL #4

LEE'S SUMMIT R-7 SCHOOL DISTRICT

1001 SE BAILEY ROAD
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ROOF FRAMING SECTIONS

S5.8

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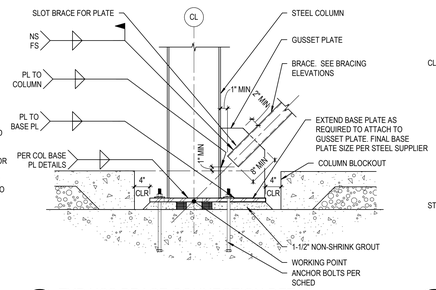
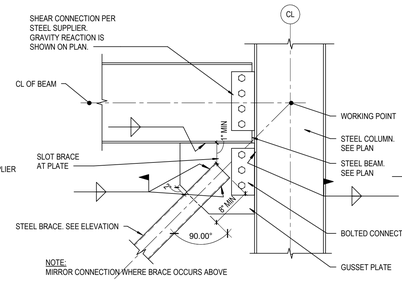
BRACING CONNECTION NOTES:

1. ALL CONNECTIONS SHOWN ARE SCHEMATIC ONLY. FINAL CONNECTION DESIGN CALCULATIONS AND DETAILING SHALL BE PROVIDED BY THE STEEL FABRICATOR'S ENGINEER.
2. REFER TO PLANS FOR ADDITIONAL SHEAR AND AXIAL REACTIONS NOT SHOWN.
3. ALL CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH AISC LOAD AND RESISTANCE FACTOR DESIGN (LRFD) TO RESIST FACTORED REACTIONS PROVIDED FOR AN R = 3 SYSTEM.
4. THE WORKPOINT SHALL BE DEFINED AS THE INTERSECTION OF ALL MEMBER CENTROIDS FRAMING INTO THE JOINT. STEEL SUPPLIER SHALL DESIGN THE CONNECITONS TO TRANSFER ALL FORCES TO THE WORKPOINT.

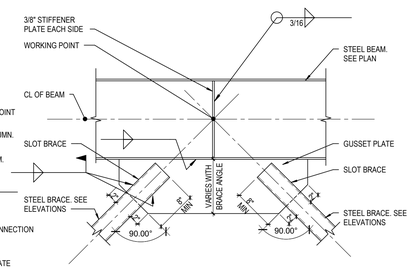
11 S6.1 BRACE CONNECTION DETAIL NOTES
SCALE: 1" = 1'-0"



12 S6.1 TYP HSS BRACE CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



13 S6.1 TYP HSS BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



14 S6.1 BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"

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BRACED FRAME TYPICAL DETAILS

S6.1

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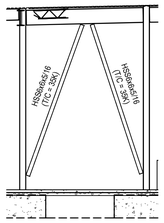
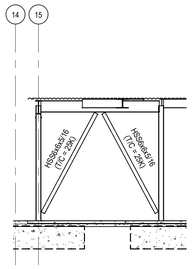
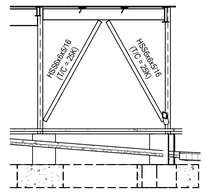


11 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



13 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



14 S6.3 ELEVATION
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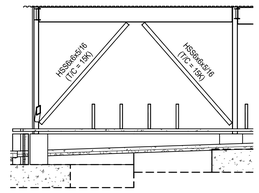
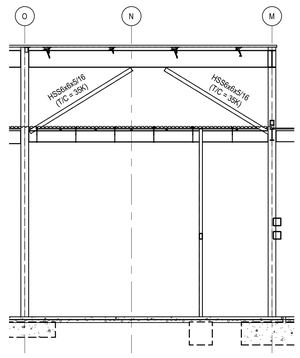
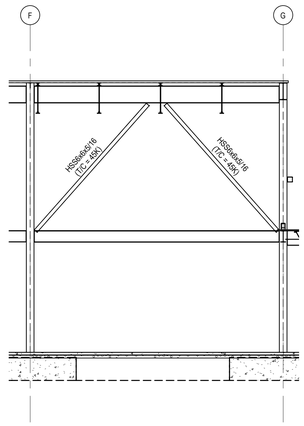


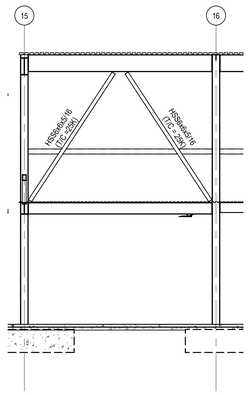
15 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



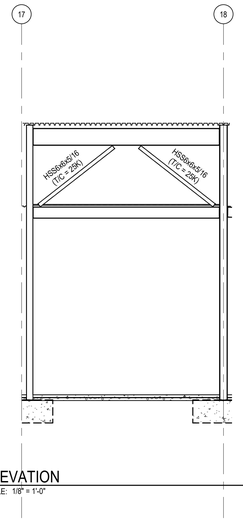
41 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



42 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



43 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"



44 S6.3 ELEVATION
SCALE: 1/8" = 1'-0"

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BRACED FRAME ELEVATIONS

S6.3

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