


MARK	SIZE	BASE PLATE	ANCHOR ROD (1/2" dia. 36)	REMARKS
C1	W2x72	1 1/2 x 20 x 1'-8"	(4) 3/4"	
C1A	W2x72	1 1/2 x 20 x 1'-8"	(4) 3/4"	OFFSET BASE "7" FROM COL. ©
C2	W2x136	1 1/2 x 20 x 1'-8"	(4) 1"	
C3	W2x45	3/4 x 18 x 1'-6"	(4) 3/4"	
C3A	W2x45	3/4 x 18 x 1'-6"	(4) 3/4"	OFFSET BASE "7" FROM COL. ©
C4	W2x65	1 1/2 x 20 x 1'-8"	(4) 3/4"	
C4A	W2x65	1 1/2 x 20 x 1'-8"	(4) 3/4"	OFFSET BASE "7" FROM COL. ©

COLUMN FOOTING SCHEDULE (4,000 psf SOIL BRG. PRESSURE)				
MARK	DIMENSIONS			REINFORCING
	LENGTH	WIDTH	THICKNESS	
F60	5'-0"	5'-0"	1'-2"	(5) #5 ENB
F76	7'-6"	7'-6"	2'-0"	(7) #6 ENB
F80	9'-0"	9'-0"	2'-4"	(10) #6 ENB
F90D	10'-0"	10'-0"	2'-4"	(9) #7 ENB
F90B	8'-6"	7'-0"	2'-0"	(8) #6 ENB
F90B6	9'-6"	9'-0"	2'-4"	(11) #6 SWB, (8) #7 LWB

PIER SCHEDULE			
MARK	SIZE	REINFORCING	Comments
P26	26" x 26" CONC.	(12) #8 VERT. w/ #3 TIES @ 12"	
P26A	26" x 26" CONC.	(12) #8 VERT. w/ #3 TIES @ 12"	OFFSET CL OF PIER SO EXTERIOR FACE MATCHES EX. FTG. (V.I.F.) (5" MAX. OFFSET FROM COL. CL.)

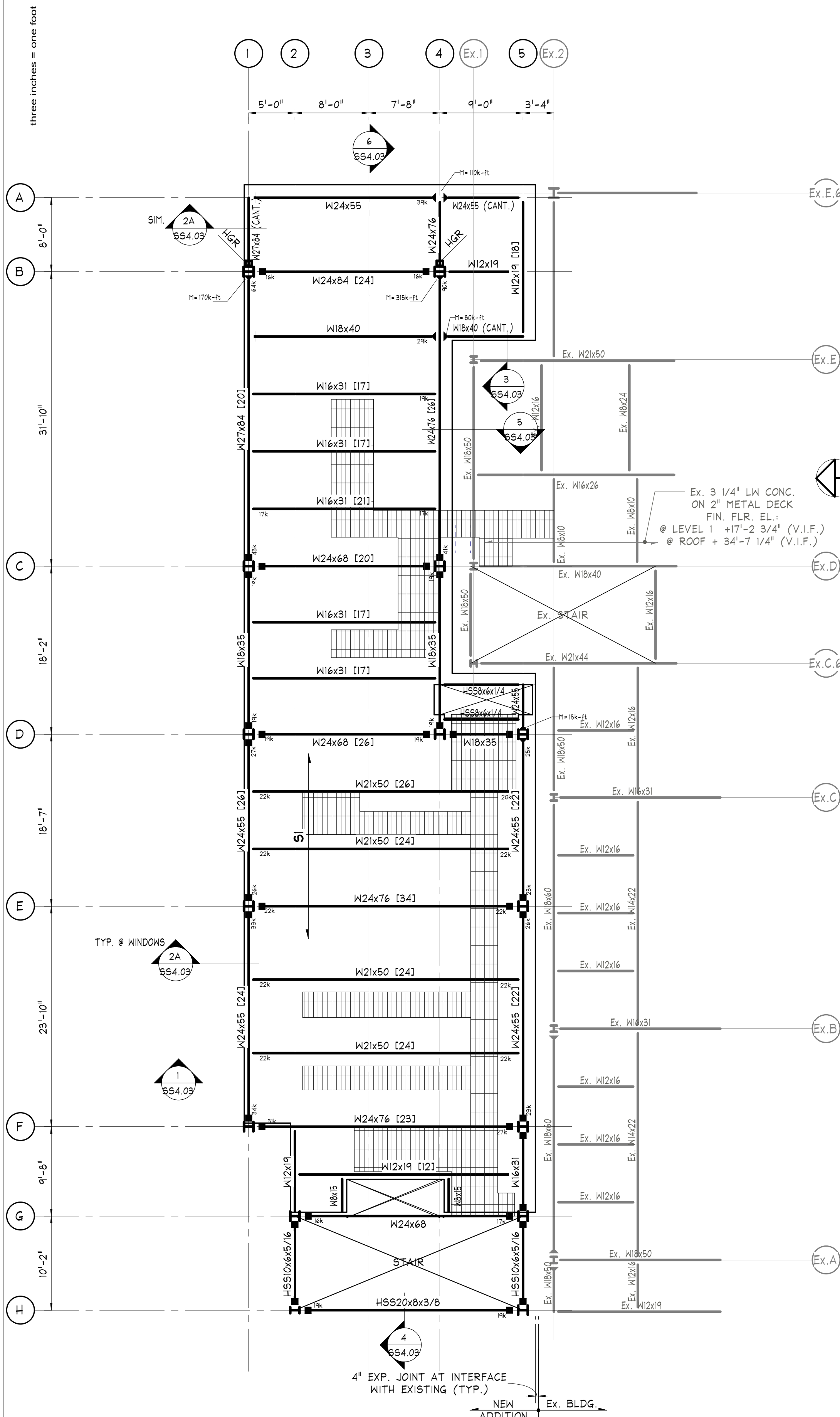
Project Title <b>AE - UNIVERSITY DRIVE RESEARCH BUILDING ADDITION</b>			Project Number <b>VA244-P-1749</b>		Office of Construction and Facilities Management
			Building Number <b>NO. 30</b>		
Location    VA HEALTHCARE, PITTSBURGH PA			Drawing Number <b>SS1.01</b>		
Date 04/30/14	Checked JMG	Drawn DEF	Dwg. 71 of 161		 Department of Veterans Affairs

 Department of  
Veterans Affairs

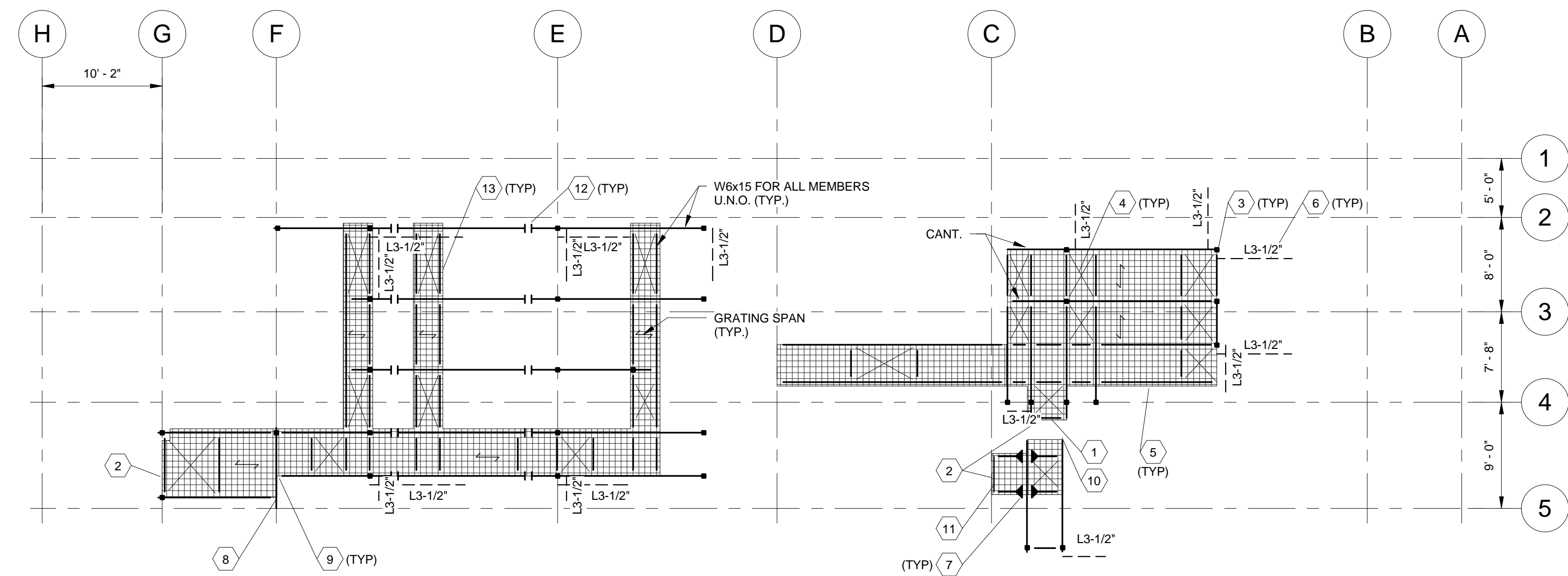
C



three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one eighth inch = one foot

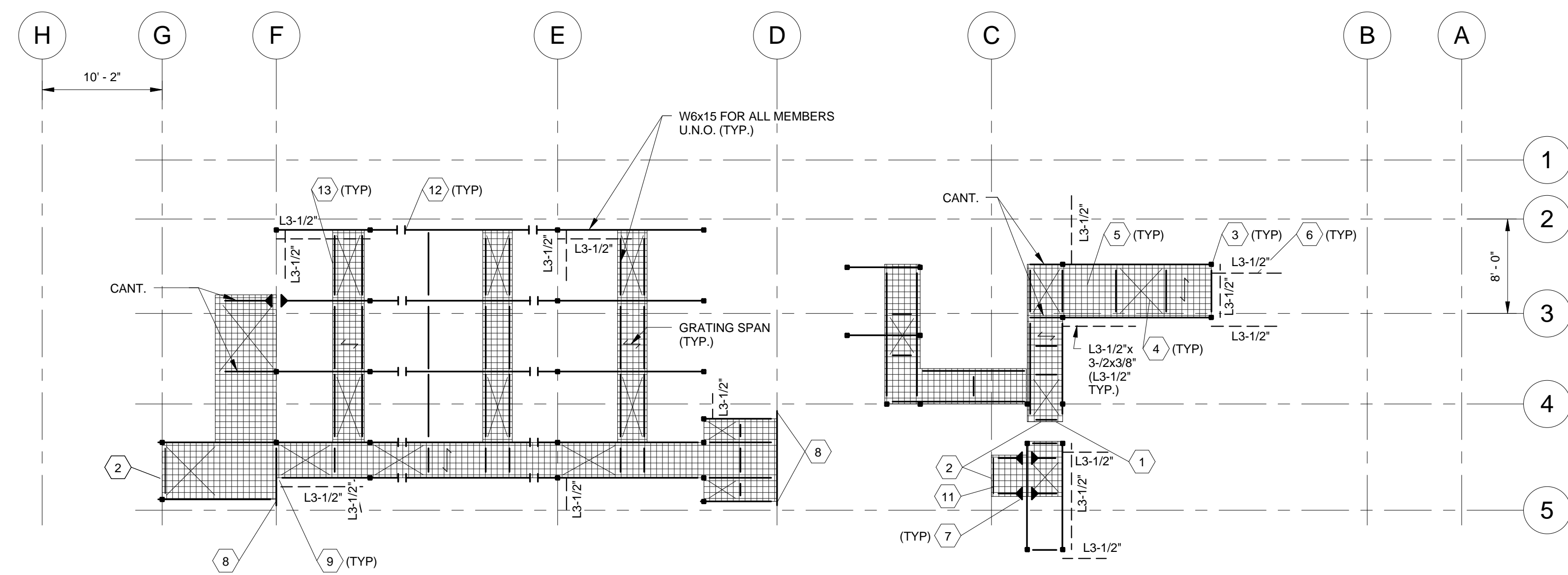






1 CATWALK FRAMING - BASEMENT LEVEL  
1/8" = 1'-0"

DO NOT SCALE DRAWINGS



2 CATWALK FRAMING - GROUND LEVEL  
1/8" = 1'-0"

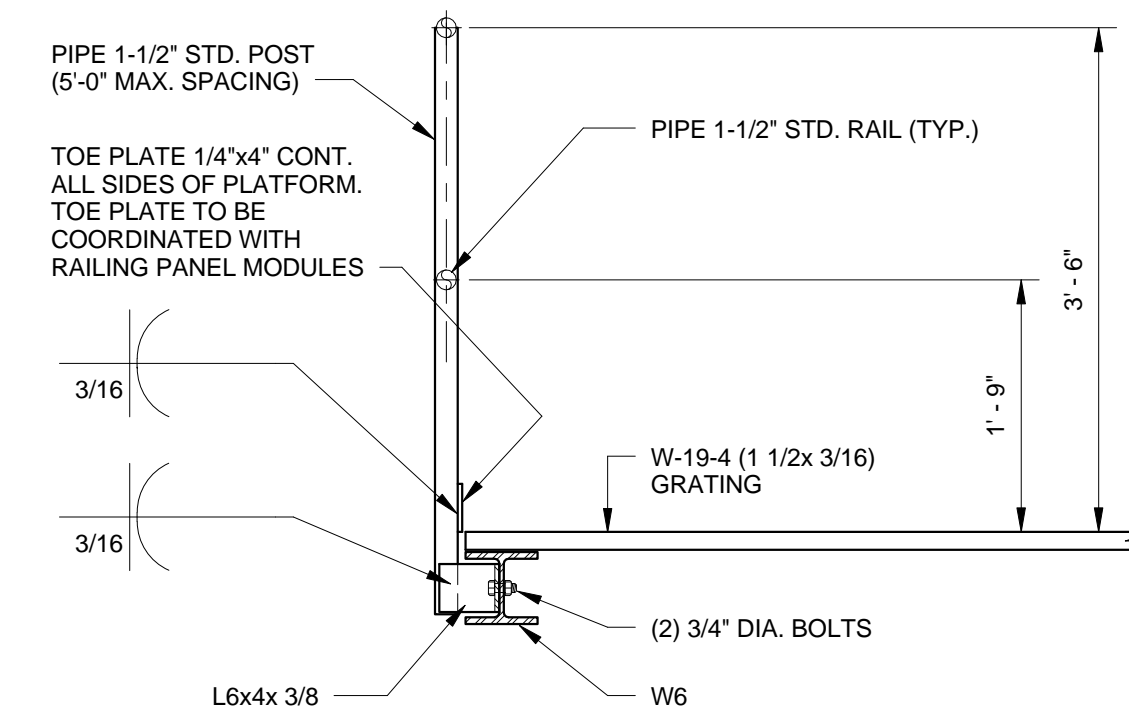
DO NOT SCALE DRAWINGS

#### GENERAL NOTES:

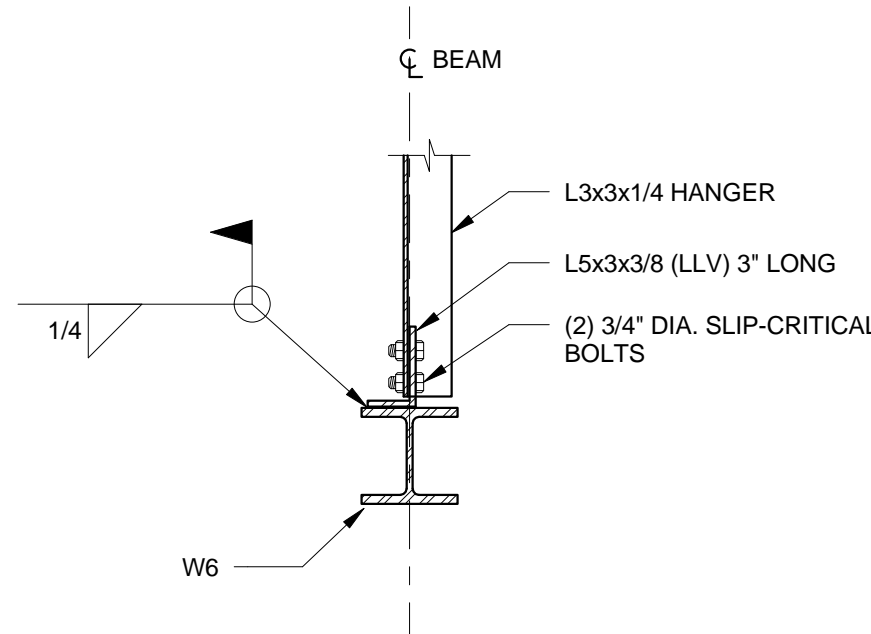
- ALL ELEVATIONS REFERENCED FROM DATUM ELEVATION 0'-0" (GROUND LEVEL).
- TOP OF BASEMENT LEVEL CATWALK GRATING ELEVATION = -5'-10 1/2".
- TOP OF GROUND LEVEL CATWALK GRATING ELEVATION = 10'-1 1/2".
- ALL BRACING LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND SHALL BE COORDINATED WITH MEP DUCTS, PIPING AND UTILITIES FOR ADEQUATE CLEARANCE.
- DIMENSIONS PROVIDED AND LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD IN CONJUNCTION WITH THE ARCHITECTURAL AND MEP DRAWINGS. COORDINATE EQUIPMENT PLATFORM LOCATION WITH MECHANICAL DRAWINGS.
- THE CONTRACTOR SHALL VERIFY AND/OR ESTABLISH ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. FAILURE TO NOTIFY THE ENGINEER OF UNSATISFACTORY CONDITIONS CONSTITUTES ACCEPTANCE OF THE UNSATISFACTORY CONDITIONS.
- IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. DO NOT COMMENCE WORK UNTIL THE CONDITION IS RESOLVED AND THE ENGINEER APPROVES MODIFICATION.
- SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF STRUCTURAL STEEL. CLEARLY INDICATE COORDINATED DIMENSIONS OF MECHANICAL UNIT AND PENETRATION SIZES. SHOP AND ERECTION DRAWINGS MUST SHOW ALL SHOP FLOOR AND FIELD WELDS. INITIAL SHOP DRAWING SUBMITTAL SHALL INCLUDE PROPOSED CONNECTION DETAILS AND JOB STANDARDS. PROVIDE SIGNED AND SEALED CALCULATIONS FOR ALL NON-STANDARD CONNECTION DETAILS SHOWING DESIGN CAPACITIES.
- ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVED. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTANCE AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE DETAILS SHOWN ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH PROPOSES.

#### SHEET KEYNOTES:

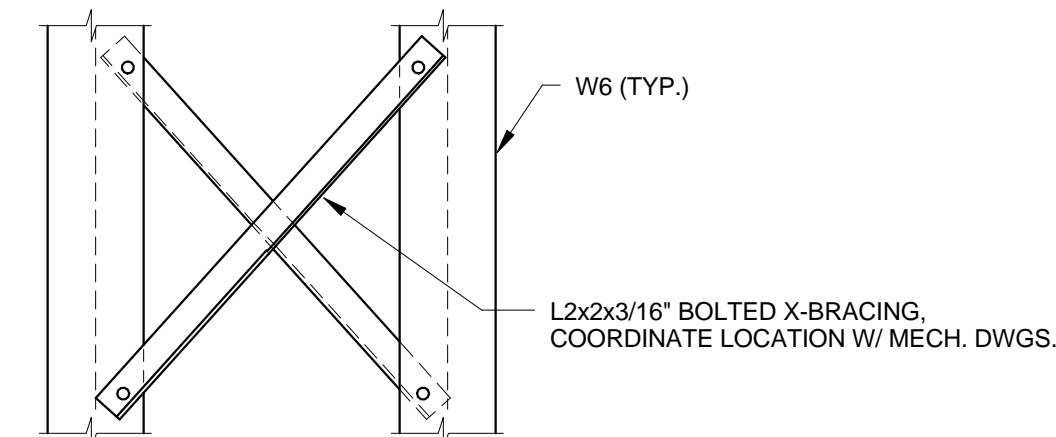
- PROVIDE 2" (+/-) GAP BETWEEN PLATFORM AND EXISTING BUILDING.
- SEE ARCHITECTURAL DRAWINGS FOR ACCESS PANEL.
- INDICATES HANGING CONNECTION. PROVIDE L3x3x1/4 ANGLE HANGER TO CONNECT EQUIPMENT PLATFORM TO STEEL FRAMING ABOVE. SEE DETAILS 5 AND 6 ON DRAWING SS1.03.
- INDICATES 1/2" DIA STEEL ROD HORIZONTAL X-BRACING BETWEEN EQUIPMENT PLATFORM W6x15 MEMBERS. SEE DETAIL 7 ON DRAWING SS1.03.
- INDICATES W-19-4 (1-1/2x3/16) STEEL BAR GRATING EQUIPMENT PLATFORM. BAR GRATING SURFACE SHALL BE NON-SLIP, MANUFACTURED IN ACCORDANCE WITH THE METAL BAR GRATING MANUAL BY THE NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS. ALL GRATING SHALL BE GALVANIZED AND ATTACHED WITH REMOVABLE-TYPE FASTENERS. PANELS SHOULD BE SIZED TO ALLOW FOR REMOVAL. SEE DETAIL 8 ON DRAWING SS1.03.
- L3-1/2 INDICATES STEEL L3 1/2 x 3 1/2 x3/8 KNEE BRACING BETWEEN EQUIPMENT PLATFORM FRAMING AND STEEL FRAMING STRUCTURE ABOVE. SEE DETAIL 6 ON DRAWING SS1.03.
- INDICATES BEAM TO BEAM MOMENT CONNECTION. SEE DETAIL 10 ON DRAWING SS1.03.
- PROVIDE BEAM TO COLUMN CONNECTION. SEE DETAIL 11 ON DRAWING SS1.03.
- PROVIDE BEAM TO BEAM CONNECTION. SEE DETAIL 4 ON DRAWING SS1.03.
- PROVIDE BEAM CONNECTION TO EXISTING CONCRETE WALL. SEE DETAIL 12 ON DRAWING SS1.03.
- PROVIDE L3x3x3/8 LEDGER AT EXISTING STAIRWELL WALL. ATTACH TO WALL W/ 1/2" DIA. EXPANSION BOLTS @ 12" O.C. SEE DETAIL 9 ON DRAWING SS1.03.
- INDICATES BEAM SHEAR SPLICE. SEE DETAIL 13 ON DRAWING SS1.03.
- SURROUNDING PERIMETER OF EQUIPMENT PLATFORM TO HAVE RAILING WITH TOE PLATE. SECTIONS OF RAILING SHALL BE SIZED TO ALLOW FOR REMOVAL. COORDINATE WITH MECHANICAL DRAWINGS FOR ANY INTERFERENCES BETWEEN RAILING AND MECHANICAL EQUIPMENT.



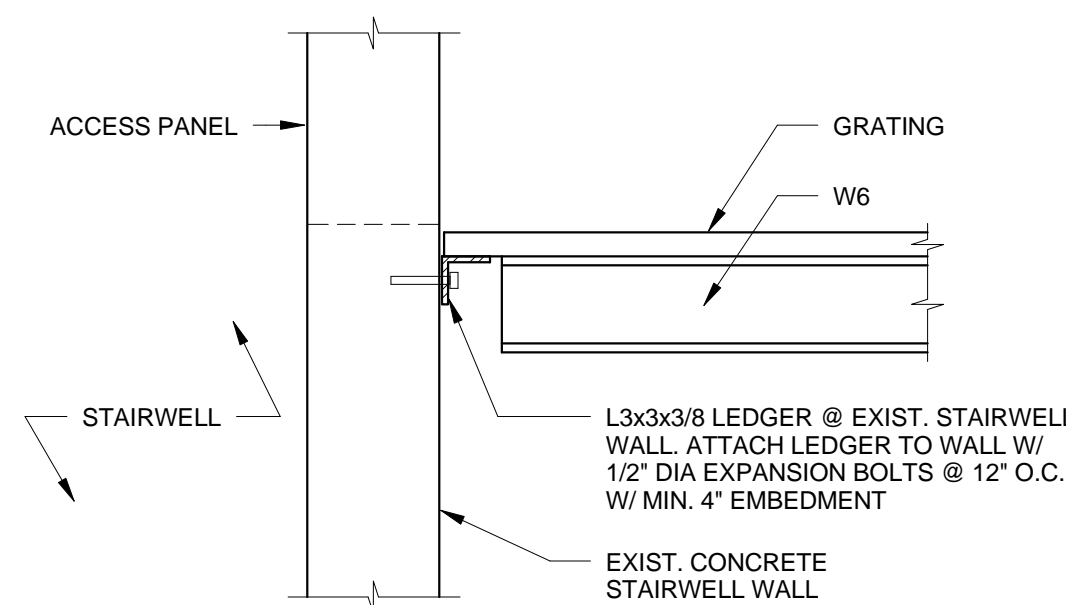
3 CATWALK RAILING DETAIL  
3/4" = 1'-0"



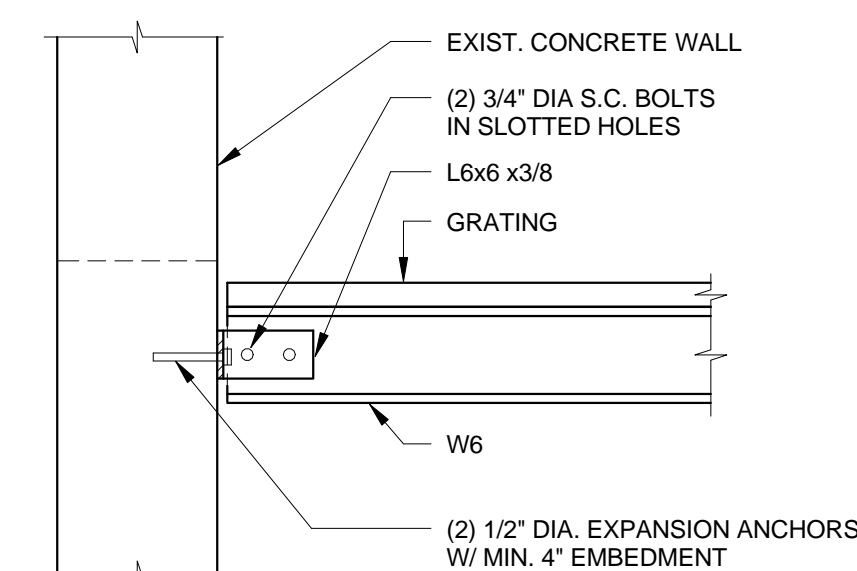
CATWALK HANGER ANGLE CONNECTION  
DETAIL  
1" = 1'-0"



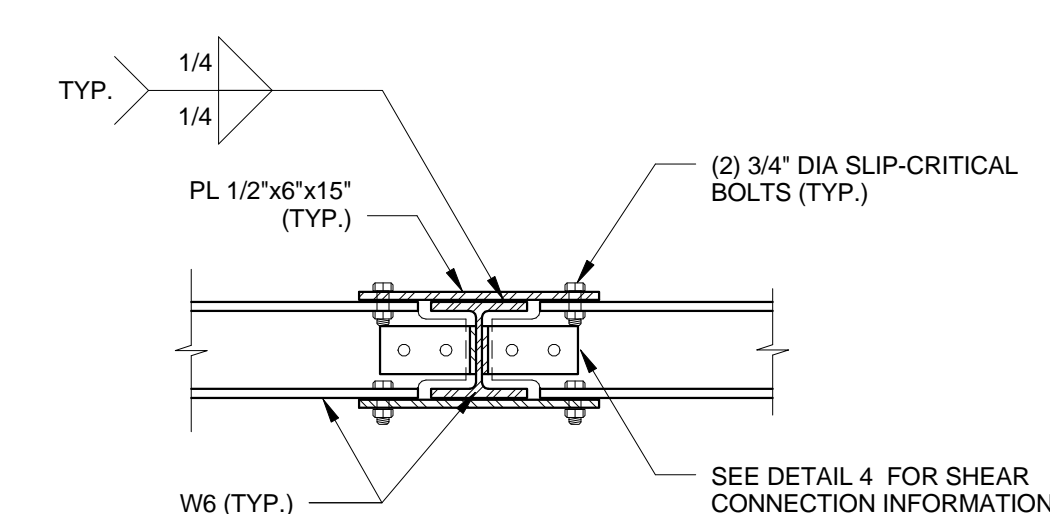
7 TYPICAL STEEL X-BRACING DETAIL  
1" = 1'-0"



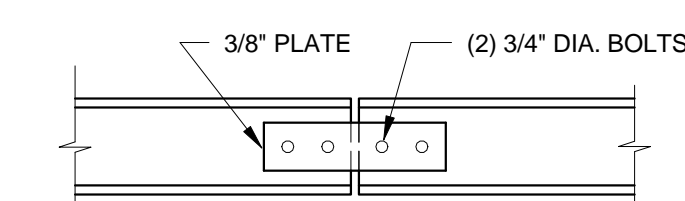
9 PLATFORM EDGE AT EXISTING WALL  
DETAIL  
1" = 1'-0"



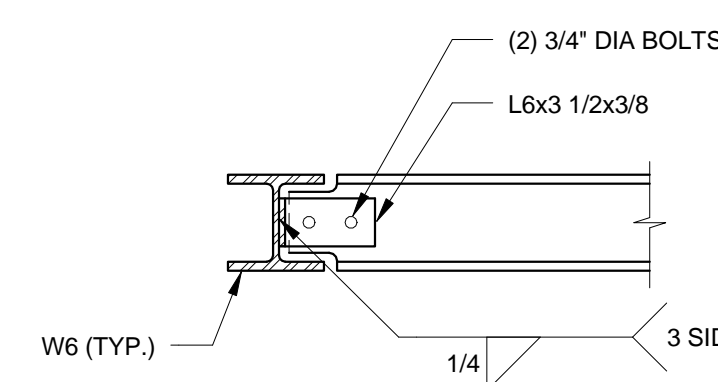
12 BEAM TO EXISTING WALL CONNECTION  
DETAIL  
1" = 1'-0"



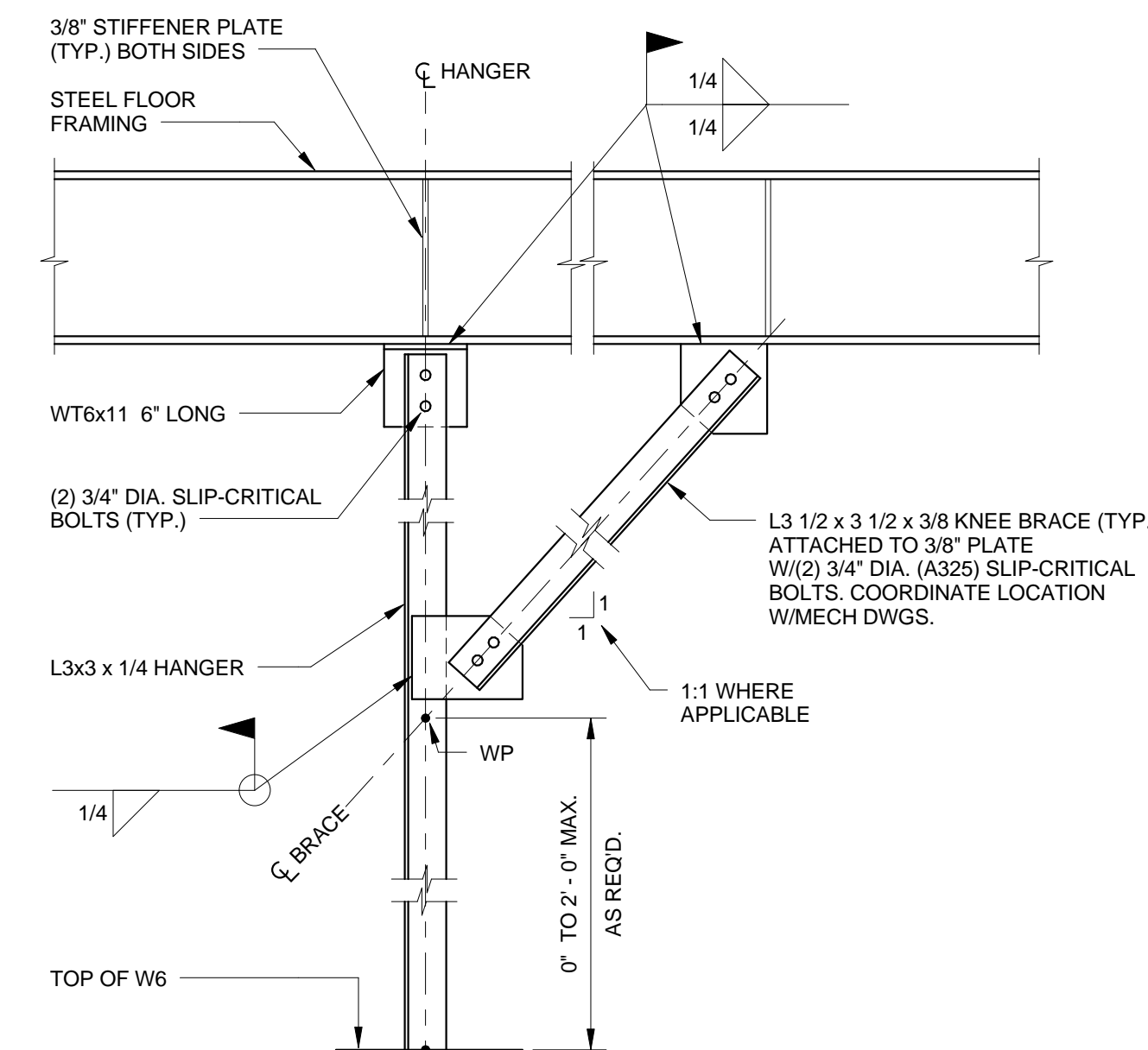
10 MOMENT CONNECTION TYPICAL DETAIL  
1" = 1'-0"



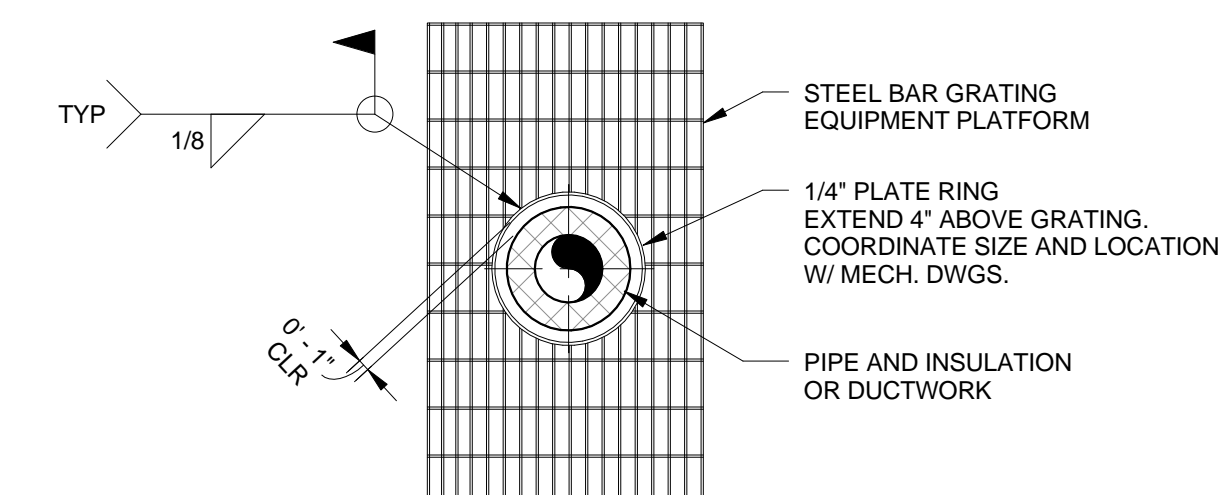
13 BEAM TO BEAM SHEAR SPLICE DETAIL  
1" = 1'-0"



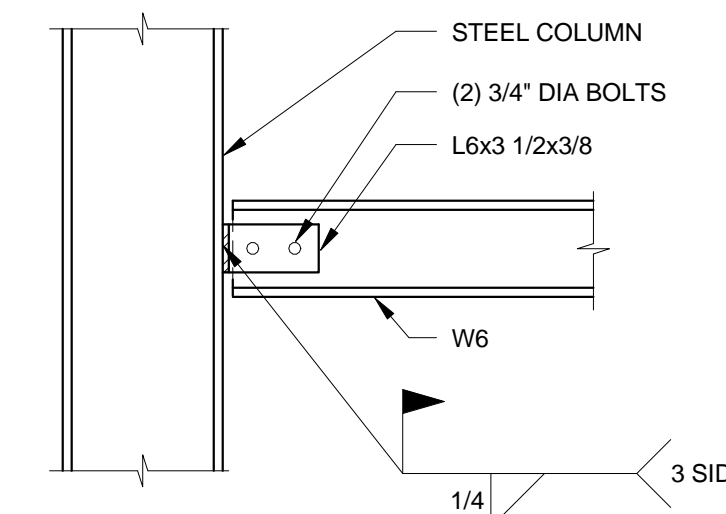
4 BEAM TO BEAM CONNECTION DETAIL  
1" = 1'-0"



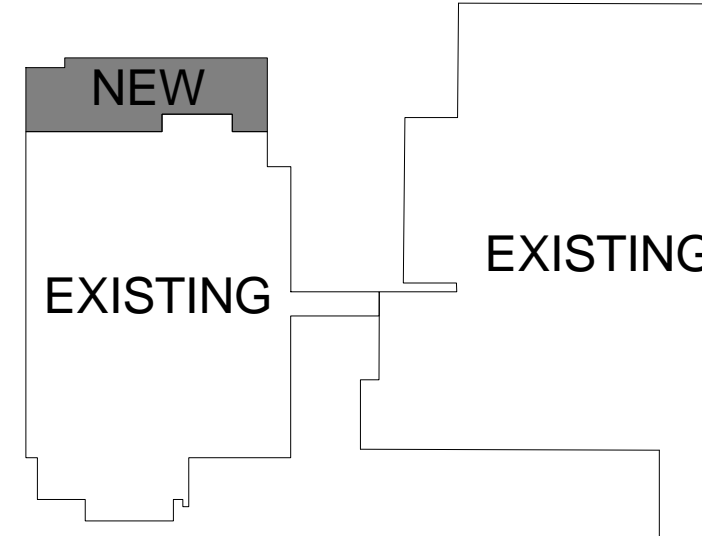
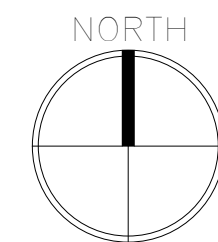
6 TYPICAL HANGER AND KNEE BRACE  
CONNECTION DETAIL (L3V)  
1" = 1'-0"



8 REINFORCING AT BAR GRATING  
PENETRATION DETAIL  
3/4" = 1'-0"



11 BEAM TO COLUMN CONNECTION DETAIL  
1" = 1'-0"



"THIS ELEMENT (THIS SHEET) OF THE PROJECT HAS BEEN IDENTIFIED AS WORK TO BE INCLUDED IN DETAIL AS A BID ITEM. SEE SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS FOR A DETAILED LISTING OF THESE ITEMS AND THE ASSOCIATED SCOPES OF WORK."

**BID DOCUMENTS - NOT FOR CONSTRUCTION  
FULLY SPRINKLERED**

REV.	DESCRIPTION	DATE
REV. 1	DELETE SECOND LEVEL CATWALK/GEN. REV.	04/25/14
NO.	DESCRIPTION	DATE

#### CONSULTANTS:

MILLER-REMICK CORPORATION  
PROFESSIONAL ENGINEER

THOMAS L. CHAPMAN, P.E.  
PENNSYLVANIA LICENSE NO. PED40408R

SIGNATURE: \_\_\_\_\_

#### ARCHITECT/ENGINEERS:

**Miller-Remick LLC**  
M.E.P. & Structural Engineering  
A Veteran Owned Small Business  
1010 KINGS HIGHWAY SOUTH  
BUILDING ONE - 1st FLOOR  
CHERRY HILL, NEW JERSEY 08034  
PHONE: (856) 429-4000  
FAX: (856) 429-5000

**ARCHITECTS**  
**NK**  
ARCHITECTURAL  
PLANNING  
INTERIORS  
95 HANBROOKTON STREET, HOBOKEN, NJ 07030  
P: 973.329.5331 F: 973.329.6918  
THE HOBOKEN OFFICE BUILDING  
233 BROOKDAVE SUITE 210 NEW YORK, NY 10014  
P: 212.512.7864 F: 212.512.6111  
www.nkarchitects.com

Drawing Title  
**BASEMENT AND GROUND  
FLOOR CATWALK  
FRAMING PLANS**

Approved: Project Director

Project Title  
**AE - UNIVERSITY  
RESEARCH BUILDING  
ADDITION**

Location  
VA HEALTHCARE, PITTSBURGH PA

Date  
04/30/2014

Checked  
NM

Drawn  
DS

Project Number  
**VA244-P-1749**

Building Number  
NO. 30

Drawing Number

**SS1.03**

Dwg. 73 of 161

Office of  
Construction  
and Facilities  
Management

**VA** Department of  
Veterans Affairs







three inches = one foot

one and one half inches = one foot

one inch = one foot

three quarters inch = one foot

one half inch = one foot

one quarter inch = one foot

three eighths inch = one foot

one eighth inch = one foot

- APPLICABLE CODES AND STANDARDS
- INTERNATIONAL BUILDING CODE - 2006 EDITION
  - AMERICAN SOCIETY OF CIVIL ENGINEERS - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES - ASCE 7-05
  - DEPARTMENT OF VETERANS AFFAIRS SEISMIC DESIGN REQUIREMENTS H-18-1
  - VA PROGRAM GUIDE FOR BUILDING
  - VA STRUCTURAL DESIGN MANUAL FOR HOSPITAL PROJECTS - AUGUST 2006
  - ACI 318 - AMERICAN CONCRETE INSTITUTE - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE - 318-08
  - ACI 308 - AMERICAN CONCRETE INSTITUTE - BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES - 308-08
  - ASCE - MANUAL OF STEEL CONSTRUCTION - TENTH EDITION (ASCE 360-05)
  - AWSD 1 - STRUCTURAL WELDING CODE FOR STEEL
  - ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS
  - STEEL DECK INSTITUTE SPECIFICATIONS AND LOAD TABLES

- GENERAL CONSTRUCTION
- NOTES, TYPICAL DETAILS, AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS NOTED OTHERWISE. TYPICAL DETAILS ARE TO BE USED FOR ALL CONDITIONS WHERE THE DETAIL IS APPLICABLE, WHETHER OR NOT NOTED ON PLAN. TYPICAL DETAILS MAY BE SLIGHTLY ALTERED IF REQUIRED DUE TO PROJECT CONDITIONS, ONLY WHEN SUBMITTED AND THE ENGINEER'S APPROVAL IS OBTAINED PRIOR TO PERFORMING THE WORK.
  - ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS, WITH THE EXCEPTION OF STRUCTURAL MEMBER SIZES, ARE GENERATED BY OTHER DISCIPLINES. ANY DIMENSIONS OR ELEVATIONS OMITTED OR NOT SHOWN ON THE STRUCTURAL DRAWINGS SHOULD BE OBTAINED FROM THE DRAWINGS OF THE OTHER DISCIPLINES. STRUCTURAL DRAWINGS ARE NOT TO BE USED IN CONJUNCTION WITH, AND COORDINATED WITH, THE SPECIFICATIONS, ARCHITECTURAL DRAWINGS AND ALL OTHER DISCIPLINE DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER AND ARCHITECT PRIOR TO PERFORMING THE WORK.
  - IF DIFFERENCES OCCUR WITHIN OR BETWEEN DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, STRENGTHS OR QUANTITIES, THE BETTER MATERIAL, HIGHER STRENGTH, AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.
  - REPRODUCTIONS OF STRUCTURAL DRAWINGS FOR SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED, UNLESS WRITTEN APPROVAL IS REQUESTED BY THE CONTRACTOR AND IT IS GRANTED BY O'DONNELL & NACCARATO, INC.
  - DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION.
  - THESE DRAWINGS DO NOT DEFINE SCOPE OF CONTRACTOR OR SUBCONTRACTOR CONTRACTS.
  - AT ALL TIMES, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING MEANS AND METHODS OF CONSTRUCTION AND SAFETY OF PERSONS AND PROPERTY. THE ENGINEER'S PRESENCE OR REVIEW OF WORK AT THE JOBSITE IS FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT ONLY AND IS NOT TO BE CONSTRUED AS A REVIEW OF MEANS AND METHODS OF CONSTRUCTION OR SAFETY METHODS.
  - THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR PROTECTING THE COMPLETED OR INCOMPLETED STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS.
  - COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.
  - ANY APPROVED CONTRACTOR REQUESTED CHANGES TO THESE DRAWINGS WILL BE DONE AT NO COST TO THE OWNER. APPROVAL OF CONTRACTOR REQUESTED CHANGES IN NO WAY STATES OR IMPLIES A CHANGE IN SCOPE OR CHANGE IN CONTRACT COST.
  - UNLESS EXPLICITLY NOTED AS "ISSUED FOR BID", THESE DRAWINGS ARE NOT SUITABLE FOR OBTAINING BIDS FROM GENERAL OR SUBCONTRACTORS. BIDDING OF DRAWINGS PRIOR TO DESIGN COMPLETION AND "ISSUED FOR BID" IS DONE AT THE SOLE RISK OF THE BIDDING CONTRACTOR. THESE DRAWINGS THAT ARE "ISSUED FOR BID" WILL NOT BE CONSIDERED AS DESIGN ERRORS OR OMISSIONS. STRUCTURAL DESIGN BY NATURE, CANNOT BE COMPLETE PRIOR TO COMPLETION OF ARCHITECTURAL AND MECHANICAL DRAWINGS.
  - ALL REFERENCES TO WATERDAMP-PROOFING, FIRE-PROOFING, AND UTILITIES ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS FOR ALL WATERDAMP-PROOFING, FIRE-PROOFING AND UTILITY DETAILS AND REQUIREMENTS.
  - IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY. THE CONTRACTOR MUST PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. THIS SKETCH MUST BE SUBMITTED TO AND APPROVAL MUST BE GRANTED BY THE ENGINEER PRIOR TO PERFORMING THE WORK.
  - SUBMIT SHOP DRAWINGS SUCH THAT BY THE TIME THEY ARE RECEIVED BY O'DONNELL & NACCARATO, INC., THERE WILL BE AT LEAST 14 DAYS BEFORE REVIEWED SUBMITTALS WILL BE NEEDED. ANY REVIEW THAT IS REQUIRED MORE EXPEDIENTLY WILL BE AT THE CONTRACTOR'S EXPENSE. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL CERTIFYING THAT HE HAS REVIEWED ALL FIELD MEASUREMENTS, CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. IF REVIEW OF AN INCOMPLETE SHOP DRAWING IS REQUIRED, THAT SHOP DRAWING SHALL BE CLEARLY MARKED AS INCOMPLETE. THE AREA THAT NEEDS TO BE REVISITED SHALL BE CLEARLY NOTED WITH AN EXPLANATION FOR THE REASON FOR REVISION.
  - IN NO CASE SHALL NEW EQUIPMENT BE PERMITTED CLOSER THAN 8" FROM ANY FOUNDATION/BASEMENT WALL. IF THE CONTRACTOR DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND, AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
  - SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC. SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO COORDINATE ALL CONTRACT DOCUMENTS TO DETERMINE THE SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC.
  - SEE AND/OR LOCATION OF EXISTING STRUCTURES AND UTILITIES SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY BY FIELD MEASUREMENTS/INVESTIGATION THE SIZE AND/OR LOCATION OF ALL EXISTING STRUCTURES AND UTILITIES.
  - THE CONTRACTOR SHALL SUBMIT SEALED AND SEALED CALCULATIONS BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED, SHOWING DESIGN OF METAL STAIRS, METAL RAILINGS AND CONNECTIONS TO STRUCTURAL TACKING INTO ACCOUNT THE WEIGHT AND A LATERAL LOAD STATED IN THE GOVERNING CODES. WHERE HEADERS OR OTHER TYPES OF STRUCTURAL MEMBERS HAVE BEEN DESIGNATED ON THE STRUCTURAL CONTRACT DOCUMENTS TO SUPPORT THE STAIRS, THE CONNECTIONS FROM THE STAIRS SHALL BE DESIGNED SO THAT NO ECCENTRIC OR TORSIONAL FORCES ARE IMPOSED ON THESE STRUCTURAL MEMBERS. IF ECCENTRIC CONNECTIONS ARE USED, CONTRACTOR SHALL PROVIDE BACKER ELEMENTS FOR THE PORTING STAIR, TO ELIMINATE THE TORSIONAL EFFECTS OF THE ECCENTRIC CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND INSTALLING ALL EMBEDDED ITEMS AND HARDWARE AS REQUIRED PER THE STAIR DESIGN.

- EXISTING CONDITIONS/DEMOLITION
- SHORING, BRACING, PROTECTION, AND UNDERPINNING OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION, INCLUDING ALL DESIGN RESPONSIBILITIES, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STRUCTURES, BUILDINGS AND STREETS.
  - ALL EXISTING DIMENSIONS, ELEVATIONS, AND LOCATIONS OF EXISTING STRUCTURES, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PERFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.
  - THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION, EXCAVATION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED.
  - ALL STRUCTURAL DEMOLITION MUST BE COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
  - SELECTIVE VIBROCASTING STRUCTURAL COMPONENTS AS REQUIRED TO CORRECT NEW WORK. PRIOR TO ANY DEMOLITION WORK, AN ENGINEERING SURVEY REPORT OF THE STRUCTURE SHALL BE PREPARED BY THE CONTRACTOR TO DOCUMENT THE CONDITION OF THE FRAMING, FLOORS, AND WALLS. ANY ADJACENT STRUCTURE WHERE OCCUPANTS MAY BE EXPOSED SHALL BE SIMILARLY REVIEWED.
  - WHERE NEW FRAMING IS TO BE CONNECTED TO AN EXISTING STRUCTURE WITH BRICK OR CMU VENEER, THE VENEER SHALL BE REMOVED SUFFICIENTLY TO PERMIT CONNECTION OF THE NEW FRAMING DIRECTLY TO THE BUILDING SUPERSTRUCTURE. NEW BRICK OR CMU SHALL BE INSTALLED TO MATCH THE EXISTING ADJACENT SURFACES. MAINTAIN A 1" SEPARATION BETWEEN THE BRICK OR CMU AND THE NEW FRAMING, UNLESS NOTED OTHERWISE OR DRAWINGS. FILL GAPS WITH BACKER RODS AND SEALANTS.
- FOUNDATIONS
- PERFORM ALL SITE PREPARATION AND EXCAVATION WORK IN STRICT ACCORDANCE WITH THE SOILS REPORT PREPARED BY GAI CONSULTANTS, DATED DECEMBER 2006.
  - EXCAVATE THE BUILDING SITE TO THE DEPTH AND EXTENT INDICATED IN THE SOILS REPORT. ALL SUBGRADES SHALL BE APPROVED IN WRITING BY THE SOILS ENGINEER PRIOR TO BACKFILLING.
  - BOTTOM OF FOOTINGS SHALL BEAR ON UNDISTURBED VIRGIN SOIL OR ROCK CAPABLE OF SAFELY SUPPORTING 4,000 PSF.
  - SUBGRADE OF ALL FOOTINGS MUST BE INSPECTED UNDER THE SUPERVISION OF AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE PLACING ANY CONCRETE. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SPECIFIED SOIL BEARING PRESSURE.
  - BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF THREE FEET BELOW EXTERIOR FINISH GRADE. ALL FOOTING ELEVATIONS SHOWN ON PLAN ARE THE BEST APPROXIMATIONS BASED ON AVAILABLE DATA. GENERAL CONTRACTOR MAY ALTER FOOTING ELEVATIONS FOR REASONS INCLUDING, BUT NOT LIMITED TO, REVISD GEOTECHNICAL OR CIVIL INFORMATION, UNFORESEEN CONDITIONS, ACTUAL INVERT ELEVATIONS, CONSTRUCTABILITY, ETC. CONTRACTOR SHALL NOTIFY ARCHITECT AND OBTAIN WRITTEN APPROVAL PRIOR TO ANY MODIFICATIONS.
  - DO NOT BACKFILL ANY BASEMENT WALLS WITH AN UNBALANCED HEIGHT OF SOIL GREATER THAN THREE FEET UNTIL ELEVATED FLOOR IS IN-PLACE AND THE WALL HAS REACHED ITS DESIGN STRENGTH OR THE WALLS ARE ADEQUATELY BRACED.
  - EXPPOSED CONCRETE/CMU WALLS SHALL HAVE CONTROL JOINTS AT 30 FEET MAXIMUM ON CENTER UNLESS NOTED OTHERWISE. WALLS WITH INTEGRAL COLUMNS, PERS OR PLASTERS SHALL BE POURED MONOLITHICALLY AND SHALL HAVE A FORMED CONTROL JOINT ON ONE SIDE OF EACH PIEN ON THE EXPOSED FACE OF THE WALL. JOINTS SHALL BE FILLED WITH AN APPROVED SEALANT.

- CONCRETE
- REINFORCING STEEL SHALL BE WITHIN TOLERANCES SET FORTH IN ACI 117, AND HAVE THE SPECIFIED CLEAR COVER, UNLESS NOTED OTHERWISE ON DRAWINGS.  
CONCRETE POURED AGAINST EARTH  
3"  
CONCRETE EXPOSED TO EARTH OR WEATHER  
#5 OR SMALLER 1 1/2"  
#6 OR LARGER 2"
  - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:  
COLUMNS, TIES AND MAIN REINFORCING 1 1/2"  
SLABS, WALLS, JOISTS #14 OR #18 BARS 1 1/2"  
#11 OR SMALLER 3/4"  
BEAMS (STIRRUPS AND MAIN REINFORCING) 1 1/2"
  - CLEAR COVER SHALL BE CLEARLY SHOWN ON ALL REINFORCING BAR DETAIL DRAWINGS.
  - ALL CONCRETE SHALL BE READY-MIX AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF:  
A. SPREAD FOOTINGS/WALL FOUNDATION WALL/  
BASEMENT WALLS/RETAINING WALLS 4,000 PSI  
B. PIER/SMALL WALL STRENGTH (MINIMUM OF 4,000 PSI)  
C. SLAB ON GRADE 4,000 PSI  
D. CONCRETE SLABS ON METAL DECK 4,000 PSI
  - HAVE A MINIMUM OF 500 LBS. OF CEMENT PER CUBIC YARD. SLUMP (AT POINT OF CONCRETE PLACEMENT) SHALL BE 3 INCH MINIMUM AND 6 INCH MAXIMUM. CONCRETE EXPOSED TO WEATHER SHALL HAVE 5 PERCENT AIR ENTRAINMENT. CONCRETE NOT EXPOSED TO WEATHER SHALL NOT CONTAIN AN AIR-ENTRAINING AGENT. SUBMIT MIX DESIGNS FOR REVIEW.
  - NORMAL-WEIGHT CONCRETE TO BE GIVEN A HARD-TROWELED FINISH SHALL NOT CONTAIN AN AIR-ENTRAINING AGENT. TOTAL AIR CONTENT FOR THIS CONCRETE SHOULD NOT EXCEED 1 PERCENT (AT POINT OF CONCRETE PLACEMENT). ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST ACI BUILDING CODE (ACI 318), THE ACI DETAILING MANUAL (ACI 315), AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).
  - ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60. WVF SHALL COMPLY WITH ASTM A185.
  - DEVELOPMENT LENGTHS, NOTED AS L<sub>d</sub> ON DRAWINGS, AND SPLICE/SPICE LENGTHS OF AIR REINFORCING STEEL, TO BE PER DETAIL, WITH NOTES ENTITLED "TABLE FOR REINFORCING DEVELOPMENT LENGTH AND LAP SPICE LENGTH".
  - ALL INSERTS AND SLEEVES SHALL BE CAST IN PLACE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED BY ALL TRADES BEFORE THE CONCRETE IS POURED. THE CONTRACTOR SHALL CORRECT THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AS WELL AS THE STRUCTURAL DRAWINGS FOR THE LOCATION, NUMBER, AND SIZE OF ALL OPENINGS, SLEEVES, ETC. HOWEVER, OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER IS OBTAINED. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING LOCATIONS AND DIMENSIONS OF ALL OPENINGS, SLEEVES, ETC. IN CAST-IN-PLACE CONCRETE SLABS, BEAMS, WALLS, COLUMNS, AND FOUNDATIONS. THESE DRAWINGS SHALL BE COORDINATED BY THE CONTRACTOR. OPENINGS AND SLEEVES THROUGH CAST-IN-PLACE CONCRETE FRAMING IS PROHIBITED EXCEPT WHERE THOSE SLEEVES AND OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS OR WHERE THEY ARE SHOWN ON THE APPROVED ELEVATION AND OPENING DRAWINGS THAT HAVE BEEN SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. SAW-CUTTING, CORING, OR DRILLING OF SLEEVES OR OPENINGS THROUGH PREVIOUSLY CAST CONCRETE IS NOT PERMITTED EXCEPT WHERE SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER.
  - LIGHTWEIGHT CONCRETE SHALL BE USED FOR FRAMED FLOORS AS NOTED ON THE DRAWINGS. TOTAL AIR CONTENT AT POINT OF CONCRETE PLACEMENT SHALL BE LIMITED TO 5.5 PERCENT (PLUS OR MINUS 1.5 PERCENT) FOR HARD TROWELED FINISHED AREAS. THIS CONCRETE IS TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND AN IN-PLACE DRY DENSITY OF 107 - 113 POUNDS PER CUBIC FOOT OR PER THE REQUIREMENTS SET FORTH IN THE FIRE RATING SPECIFICATIONS.
  - SUBMIT ALL REINFORCING SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION.
  - FOR CONCRETE SLABS ON METAL DECK, FLOORS SHALL BE POURED TO THE THICKNESS SHOWN ON DOCUMENTS, NOT TO A LEVEL LINE.
  - THE CONTRACTOR SHALL SUPPLY FLOOR LEVELING MATERIAL AND OTHER CORRECTIVE MEASURES IN AREAS WHERE FLOOR FINISH PROVISIONS EXCEED THE FLATNESS AND LEVELNESS REQUIREMENTS.
  - THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE END OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF ALL REINFORCING SHOP DRAWINGS.

- STEEL
- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE. ALL CONNECTIONS, INCLUDING AT HSS SECTIONS, SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE LATEST AISC CODE. UNLESS INDICATED OTHERWISE ON CONTRACT DOCUMENTS, IN ADDITION TO THE SHEAR CONNECTION, INCLUDE AS A MINIMUM, 4X4X8 ANGLES TOP AND BOTTOM OR ENLARGE AT ALL HSS BEAM/ORDERS TO COLUMN CONNECTIONS. ALL WIDE FLANGE SHAPES SHALL BE ASTM A992. ALL OTHER STRUCTURAL STEEL SHALL BE ASTM A36 UNLESS NOTED OTHERWISE.
  - ALL STEEL RECTANGULAR/QUARE HOLLOW STRUCTURAL SECTIONS SHALL BE ASTM A500 GRADE B, F<sub>y</sub> = 48 KSI. ALL STEEL PIPE SECTIONS SHALL BE ASTM A401 OR ASTM A53, TYPE E OR S GRADE B. ALL STEEL SHALL HAVE A SHOP COAT OF RUST INHIBITIVE PAINT. DELETE PAINT ON ALL STEEL TO RECEIVE SPRAYED OR PREPARED OR CONCRETE ENGAGEMENT, AS NOTED ON ARCHITECTURAL DOCUMENTS. ORIENT ALL MILL CAMBER UPWARD DURING FABRICATION AND ERECTION. ALL STEEL SHALL BE THOROUGHLY CLEANED IN ACCORDANCE WITH SSPC-SP9 PRIOR TO PAINTING.
  - ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS, AS DESCRIBED IN "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" A5S D1.1, LATEST EDITION, TO PERFORM THE TYPE OF WORK REQUIRED.
  - UNLESS OTHERWISE NOTED, ALL CONNECTIONS SHALL BE BOLTED WITH MINIMUM 3/4-INCH DIAMETER A325 OR A490 HIGH STRENGTH BEARING TYPE BOLTS OR WELDED. THE FABRICATOR IS RESPONSIBLE FOR THE SELECTION, DESIGN, AND DETAILING OF ALL CONNECTIONS NOT FULLY DETAILED ON THE CONTRACT DRAWINGS.
  - USE FULL DEPTH DOUBLE ANGLE CONNECTIONS ON ALL ORDER AND BEAM CONNECTIONS TO COLUMNS. BOLTS SHALL BE AT 3 INCH O.C. VERTICALLY. INFLP BEAM CONNECTIONS MAY BE ONE-SIDED CONNECTIONS, UNLESS NOTED OTHERWISE.
  - ALL GRAVITY MOMENT CONNECTIONS SHALL BE BOLTED WITH MINIMUM 3/4-INCH DIAMETER A325 OR A490 HIGH STRENGTH SLIP CRITICAL BOLTS OR WELDED.
  - ALL ANCHOR RODS TO BE ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.
  - ALL ALUMINUM AND STEEL MEMBERS SHALL BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND CORROSIVE EFFECTS.
  - ALL STEEL WELDING RODS SHALL BE E70XX.
  - SUBMIT ALL STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION. SHOP DRAWINGS SHALL SHOW COMPLETE BOLTING AND WELDING INFORMATION, BOTH SHOP AND FIELD. ALL WELDING INFORMATION SHALL USE AMERICAN WELDING SOCIETY SYMBOLS. SHOP OR FIELD SPLICING OF ANY STRUCTURAL STEEL SECTION WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
  - CONNECTIONS FOR ALL NON-COMPOSITE AND COMPOSITE BEAM/GIRDERS NOT CONNECTED TO COLUMNS SHALL BE DESIGNED FOR A MINIMUM UNFACTORED REACTION OF 15 KIPS, UNLESS NOTED GREATER ON DRAWINGS.
  - STEEL FABRICATOR IS SOLELY RESPONSIBLE FOR SURVEYING AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO THE LOCATION, ELEVATION, AND DIMENSIONS OF EXISTING WALLS AND FRAMING.
  - ALL LINTELS AND SHELF ANGLES WITHIN EXTERIOR WALLS SHALL BE HOT DIP GALVANIZED. ANY POINTS OF WELDING SHALL BE TOUCHED UP IN THE FIELD WITH A ZINC-RICH PAINT BY THE STEEL ERECTOR.
  - ALL EXPOSED STEEL, INCLUDING BUT NOT LIMITED TO DUNNAGE FRAMING, CANOPY FRAMING, ETC.) SHALL BE HOT DIP GALVANIZED. ANY POINTS OF WELDING SHALL BE TOUCHED UP IN THE FIELD WITH A ZINC-RICH PAINT BY THE STEEL ERECTOR.
  - SPANDREL ANGLE AT PERIMETER EDGE OF FLOOR SLAB/ROOF SHALL BE ADJUSTABLE. SHIP ANGLE LOOSE AND SET WITH STRING LINE IN FIELD FOR VERTICAL AND HORIZONTAL ALIGNMENT AFTER STEEL IS FULLY ERECTED TO A MAXIMUM TOLERANCE OF 1/4 INCH HORIZONTAL PER BAY/FLOOR AND MUST BE SET PLUMB BY STEEL ERECTOR PRIOR TO STUD ERECTION. ANGLE MUST BE INSTALLED IN ONE LENGTH PER BAY. SEE TYPICAL SPANDREL ANGLE DETAIL.
  - PROVIDE WELDED STIFFENER PLATES ON BOTH SIDES OF THE WEB OF BEAMS AT POINTS OF CONCENTRATED LOADS INCLUDING BEAMS SUPPORTING COLUMNS OR RUNNING OVER THE TOPS OF COLUMNS, OR OTHER BEAMS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 3/16 INCH OR FLANGE THICKNESS OF COLUMN AND/OR BEAM WEB THICKNESS ABOVE OR BELOW, WHICHEVER IS GREATER.
  - ALL POST-INSTALLED EXPANSION ANCHORS FASTENED INTO CONCRETE SHALL BE HITL KWIK LIT 12 WITH MATERIAL, TYPE, DIAMETER, AND EMBEDMENT PER DOCUMENTS, UNLESS NOTED OTHERWISE. ALL POST-INSTALLED ADHESIVE ANCHORS FASTENED INTO CONCRETE SHALL USE HITL HIT-800 SD EPOXY ADHESIVE ANCHORING SYSTEM WITH ROD TYPE, DIAMETER AND EMBEDMENT PER DOCUMENTS, UNLESS NOTED OTHERWISE.
  - THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE END OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF ALL STEEL ERECTION DRAWINGS SHOP DRAWINGS.

- DECK
- STEEL ROOF DECK SHALL BE AS SHOWN ON DRAWINGS AND AS MANUFACTURED BY UNITED STEEL DECK, INC. OR APPROVED EQUAL. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE. ROOF DECK FABRICATION AND INSTALLATION MUST COMPLY WITH STEEL DECK INSTITUTE STANDARDS. ALL ROOF DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS. SUSPENDED CEILING, LIGHT FIXTURES, DUCTS, PIPES, OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE STEEL DECK.
  - IN AREAS OF WARPED ROOF DECK USE, SELF-DRILLING SCREWS FOR CONNECTIONS OF STEEL ROOF DECK TO STRUCTURAL STEEL SUPPORTS. SCREW SIZES SHALL COMPLY WITH MANUFACTURER'S REQUIREMENTS. ATTACH DECK TO ALL SUPPORTING MEMBERS.
  - FLOOR DECK SHALL BE GALVANIZED 7. 18 GAGE LOW-FLOOR COMPOSITE METAL DECK AS MANUFACTURED BY UNITED STEEL DECK, INC. OR APPROVED EQUAL. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE. FLOOR DECK FABRICATION AND INSTALLATION MUST COMPLY WITH STEEL DECK INSTITUTE STANDARDS. ALL FLOOR DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.
  - COMPOSITE SHEAR STUDS SHALL BE WELDED THROUGH STEEL DECK. SHEAR STUDS SHALL BE HEADED STUDS MADE FROM LOW CARBON STEEL, F<sub>y</sub>=60 KSI, CONFORMING TO ASTM A108 AND SHALL BE RE-INSTALLED IN ACCORDANCE WITH AWS D1.1.
  - FLOORS HAVE BEEN DESIGNED AS COMPOSITE BEAM AND COMPOSITE DECK. BEAM/DECK SHORING IS NOT REQUIRED. LARGE DEAD LOAD DEFLECTIONS ARE ANTICIPATED IN UNCAMBERED MEMBERS. THE CONTRACTOR MAY, AT HISHER OPTION AND COST, UTILIZE BEAM AND/OR DECK SHORING.
  - ATTACH LOW-FLOOR COMPOSITE METAL DECK TO STRUCTURAL STEEL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS (4 WELDS PER 36" WIDE SHEET PER SUPPORT). FASTEN SIDE JOINTS WITH #10 SELF-DRILLING SCREW, OR WELD, AT 9" ON-CENTER MAXIMUM BETWEEN SUPPORTS.
  - NO CONDUT SHALL BE PLACED WITHIN CONCRETE SLABS ON METAL DECK WITHOUT COMPLIANCE WITH THE LATEST VERSION OF THE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND OBTAIN WRITTEN APPROVAL PRIOR TO ANY INSTALLATION.
  - THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, AT THE END OF THE JOB, ONE (1) ELECTRONIC VERSION OF THE FINAL FIELD COPIES OF ALL DECK LAYOUT SHOP DRAWINGS.
  - ATTACH TYPE B METAL ROOF DECK TO STRUCTURAL STEEL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS (4 WELDS PER 36" WIDE SHEET PER SUPPORT). FASTEN SIDE JOINTS TOGETHER WITH #10 SELF-DRILLING SCREW, OR WELD, AT 18" SPAN BETWEEN SUPPORTS. INCREASE FASTENER SIDE AND/OR DECREASE FASTENER SPACING AS REQUIRED PER FACTORY MUTUAL REQUIREMENTS IF ROOF ASSEMBLY IS REQUIRED TO MEET FACTORY MUTUAL STANDARDS.
  - USE WELDING WAREHOUSE ON ALL CONNECTIONS OF STEEL DECK WITH METAL THICKNESS LESS THAN 22 GAGE TO STRUCTURAL STEEL SUPPORTS.
  - THE ROOF STRUCTURE HAS BEEN DESIGNED AS A FUTURE FLOOR. FUTURE ROOF STRUCTURE HEIGHT TO ALIGN W/ EXISTING ADJACENT BUILDING.
  - CONTRACTOR SHALL PROVIDE COMPLETE DRAWINGS AND CALCULATIONS FOR ALL EXTERIOR STEEL STUD WALL FRAMING. ALL FRAMING MEMBERS, SPACING AND CONNECTIONS SHALL BE DESIGNED, DETAILED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.
  - COMPLY WITH ALL LOADING REQUIREMENTS AS ESTABLISHED BY THE BUILDING CODE.
  - LIMIT MAXIMUM LATERAL DEFLECTION TO 1/600 OF SPAN WHERE EXTERIOR FINISH MATERIAL IS STONE OR MASONRY AND 1/360 OF SPAN OTHERWISE.
  - REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL REQUIREMENTS, OPENING LOCATIONS, ETC. AND TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS. STUDS SHALL BE DETAILED TO ACCOMMODATE MOVEMENT OF THE STRUCTURE THROUGH THE USE OF VERTICAL SLIDE CLIPS, SLIP CONNECTIONS, ETC.

- STEEL STUD EXTERIOR WALL FRAMING
- CONTRACTOR SHALL PROVIDE COMPLETE DRAWINGS AND CALCULATIONS FOR ALL EXTERIOR STEEL STUD WALL FRAMING. ALL FRAMING MEMBERS, SPACING AND CONNECTIONS SHALL BE DESIGNED, DETAILED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.
  - COMPLY WITH ALL LOADING REQUIREMENTS AS ESTABLISHED BY THE BUILDING CODE.
  - LIMIT MAXIMUM LATERAL DEFLECTION TO 1/600 OF SPAN WHERE EXTERIOR FINISH MATERIAL IS STONE OR MASONRY AND 1/360 OF SPAN OTHERWISE.
  - REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL REQUIREMENTS, OPENING LOCATIONS, ETC. AND TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS. STUDS SHALL BE DETAILED TO ACCOMMODATE MOVEMENT OF THE STRUCTURE THROUGH THE USE OF VERTICAL SLIDE CLIPS, SLIP CONNECTIONS, ETC.

CONCRETE/STEEL LINTEL SCHEDULE (NON-BEARING WALLS)			
WIDTH OF OPENING	STEEL FOR EACH 4" OF WALL THICKNESS	REINF. CONC. FOR EACH 4" OF WALL THICKNESS	REMARKS
UP TO 2'-11"	4x3 1/2x5/16	(1) #4 TOP & BOTTOM	
3'-0" TO 3'-11"	4x4x 1/2x5/16	(1) #4 TOP & BOTTOM	
4'-0" TO 5'-11"	4x5x 1/2x5/16	(1) #4 TOP & BOTTOM	
6'-0" TO 8'-0"	4x6x 1/2x5/16	(1) #5 TOP & BOTTOM	

- NOTES:
- IF 'A' > L<sub>dh</sub>, THEN USE A 12@ STANDARD, 90° HOOK.
  - IF 'A' < L<sub>dh</sub>, THEN USE L<sub>d</sub> PER TABLES FOR DEVELOPMENT LENGTH.

METAL STUD HEADER SCHEDULE (NON-BEARING WALLS)			
WIDTH OF OPENING	METAL STUD LINTEL SIZE	JAMB STUDS	BRACING
UP TO 7'-0"	(2) 6SW16	(2) STUD	N.R.
7'-0" TO 10'-0"	(2) 8SW14	(2) STUD	N.R.
10'-0" TO 12'-0"	(2) 10SW14	(2) STUD	WIDERS READ 8x4x 9@ 8"
12'-0" TO 16'-0"	(2) 12SW12	(2) STUD	WIDERS READ 8x4x 9@ 8"
16'-0" TO ABOVE	(2) 14J12	(2) STUD	WIDERS READ 8x4x 9@ 8"

BAR #	BEAMS						COLUMNS						WALLS												SLABS/MATS								
	BOTTOM BARS			OTHER BARS			LCE	LCS	VERTICAL BARS						HORIZONTAL BARS						THICKNESS < 12"			THICKNESS > 12"									
									OUTER LAYER			INNER LAYER			OUTER LAYER			INNER LAYER															
4 ksi	5 ksi	6 ksi	4 ksi	5 ksi	6 ksi	2 3 ksi		4 ksi	5 ksi	6 ksi	3 ksi	4 ksi	5 ksi	3 ksi	4 ksi	5 ksi	3 ksi	4 ksi	5 ksi	3 ksi	4 ksi	5 ksi	4 ksi	5 ksi	6 ksi	4 ksi	5 ksi	6 ksi	4 ksi	5 ksi	6 ksi		
#3	15	13	13	19	17	16	9	12	15	13	12	17	15	13	17	15	13	22	19	17	22	19	17	15	13	12	15	13	12	19	17	15	
#4	19	17	16	27	24	23	11	15	19	17	15	22	19	17	22	19	17	30	26	23	30	26	23	19	17	15	19	17	15	26	23	21	
#5	25	22	21	31	28	27	14	19	25	22	20	28	25	22	28	25	22	36	31	28	36	31	28	25	22	20	25	22	20	31	28	25	
#6	29	26	25	38	34	33	17	23	29	26	24	34	29	26	34	29	26	44	38	34	44	38	34	29	26	24	29	26	24	38	34	31	
#7	43	38	37	55	49	48	20	26	43	38	35	72	63	56	49	43	38	82	73	63	82	73	63	56	49	63	56	51	63	56	51	66	
#8	48	43	42	63	56	54	22	30	48	43	39	83	72	64	55	48	43	107	93	83	72	63	56	72	64	58	72	64	58	93	83	76	
#9	54	48	47	71	63	61	25	34	54	48	44	93	81	72	62	54	48	121	105	94	81	71	63	61	72	66	81	72	66	105	94	86	
#10	60	54	52	80	71	69	28	38	60	54	49	104	91	81	104	91	81	137	119	106	137	119	106	91	81	74	91	81	74	119	106	96	
#11	67	60	58	87	78	76	31	42	67	60	55	116	101	90	116	101	90	151	131	117	151	131	117	101	90	82	101	90	82	131	117	106	

- NOTES:
- FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
  - FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5.
  - COMBINATIONS OF EFFECTS DUE TO CONCRETE HEIGHT AND EPOXY BARS ARE CUMULATIVE. L<sub>d</sub> SHALL BE MULTIPLIED BY EACH FACTOR TO FIND THE CORRECT VALUE.
  - ACI DOES NOT PERMIT LAP SPLICES OF #14 OR #18 BARS. BARS OF THIS SIZE SHALL BE COUPLED BY ACCEPTABLE MECHANICAL MEANS, WHICH ARE RATED TO DEVELOP 125 PERCENT OF F<sub>y</sub> OF THE BAR.
  - "LCE" INDICATES COMPRESSION EMBEDMENT LENGTH. USE ONLY WHERE "LCE" IS INDICATED ON DRAWINGS.
  - "LCS" INDICATES COMPRESSION LAP SPICE LENGTH. USE ONLY WHERE "LCS" IS INDICATED ON DRAWINGS. DO NOT MULTIPLY BY 1.3.

- ALL LAP SPLICES SHALL BE 1.3L<sub>d</sub>, UNLESS NOTED OTHERWISE ON DRAWINGS.
- DIMENSIONS "L<sub>d</sub>" AS NOTED ON DRAWINGS SHALL CORRESPOND TO THE FOLLOWING LENGTHS IN INCHES AS SHOWN IN THE TABLES BELOW.

## TABLE FOR REINFORCING DEVELOPMENT LENGTH AND LAP SPICE LENGTH

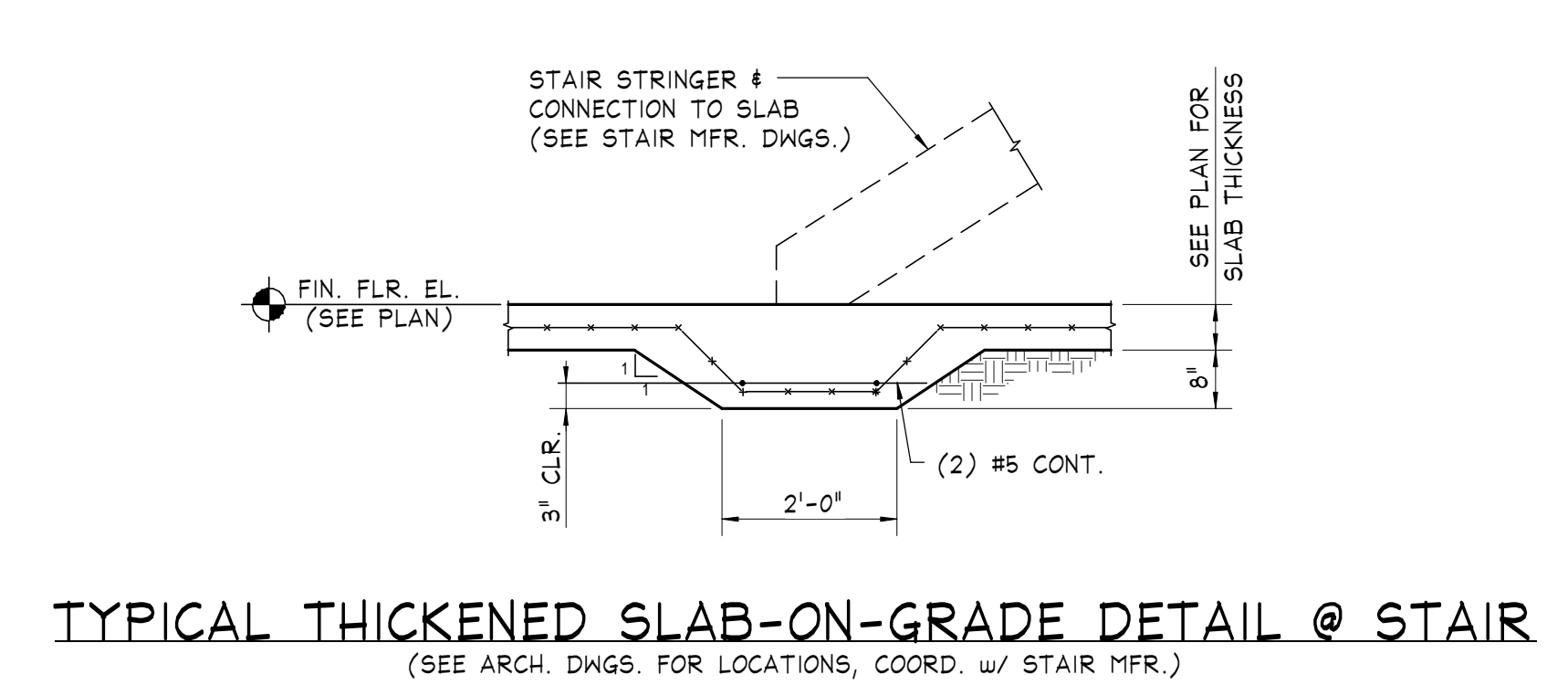
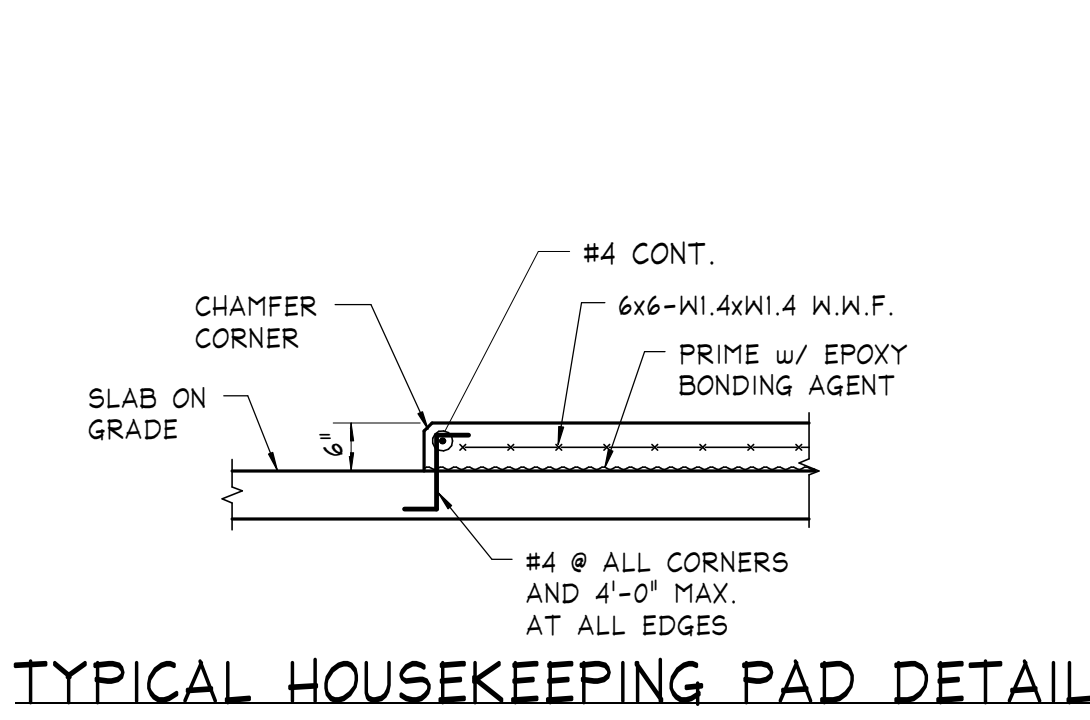
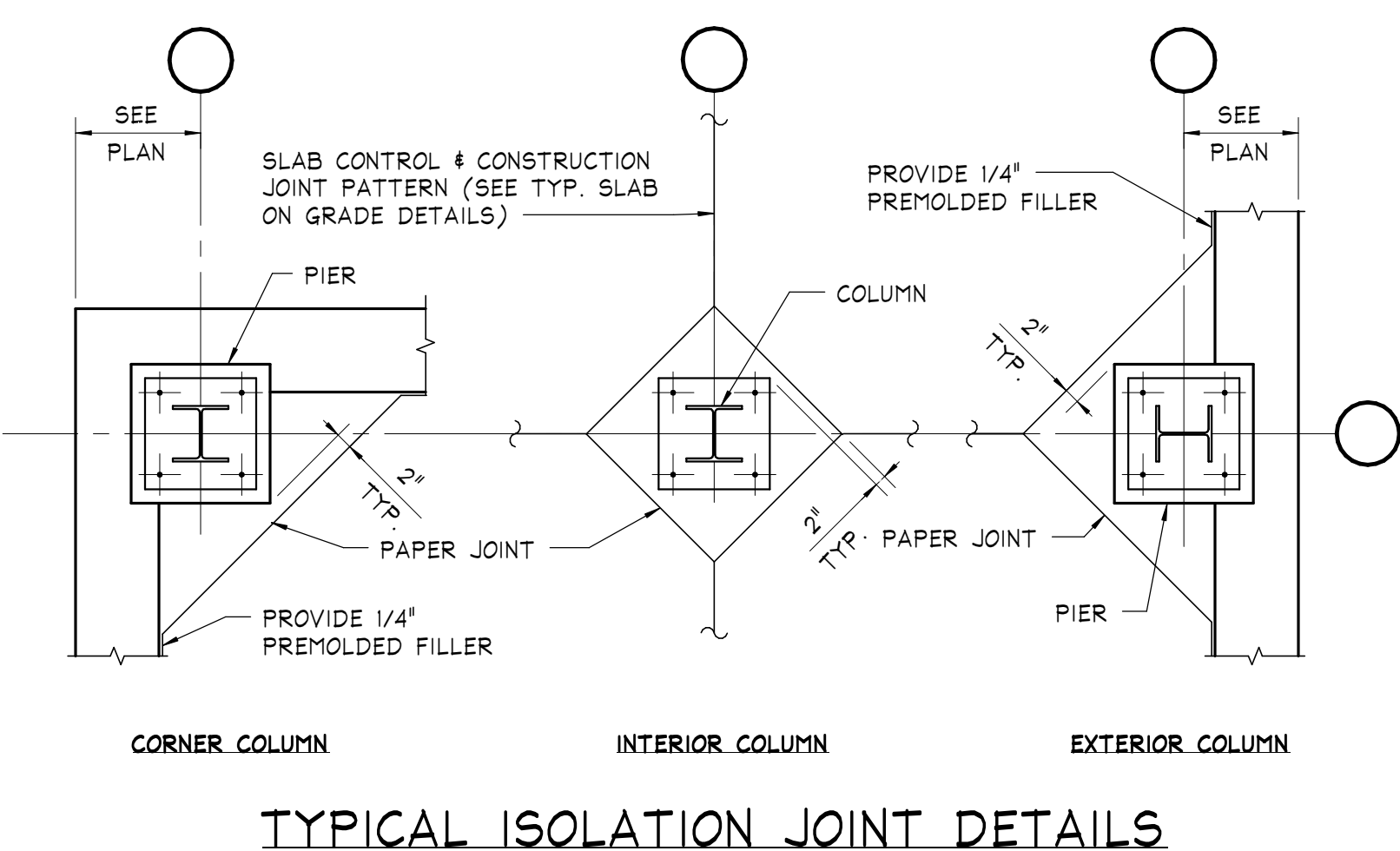
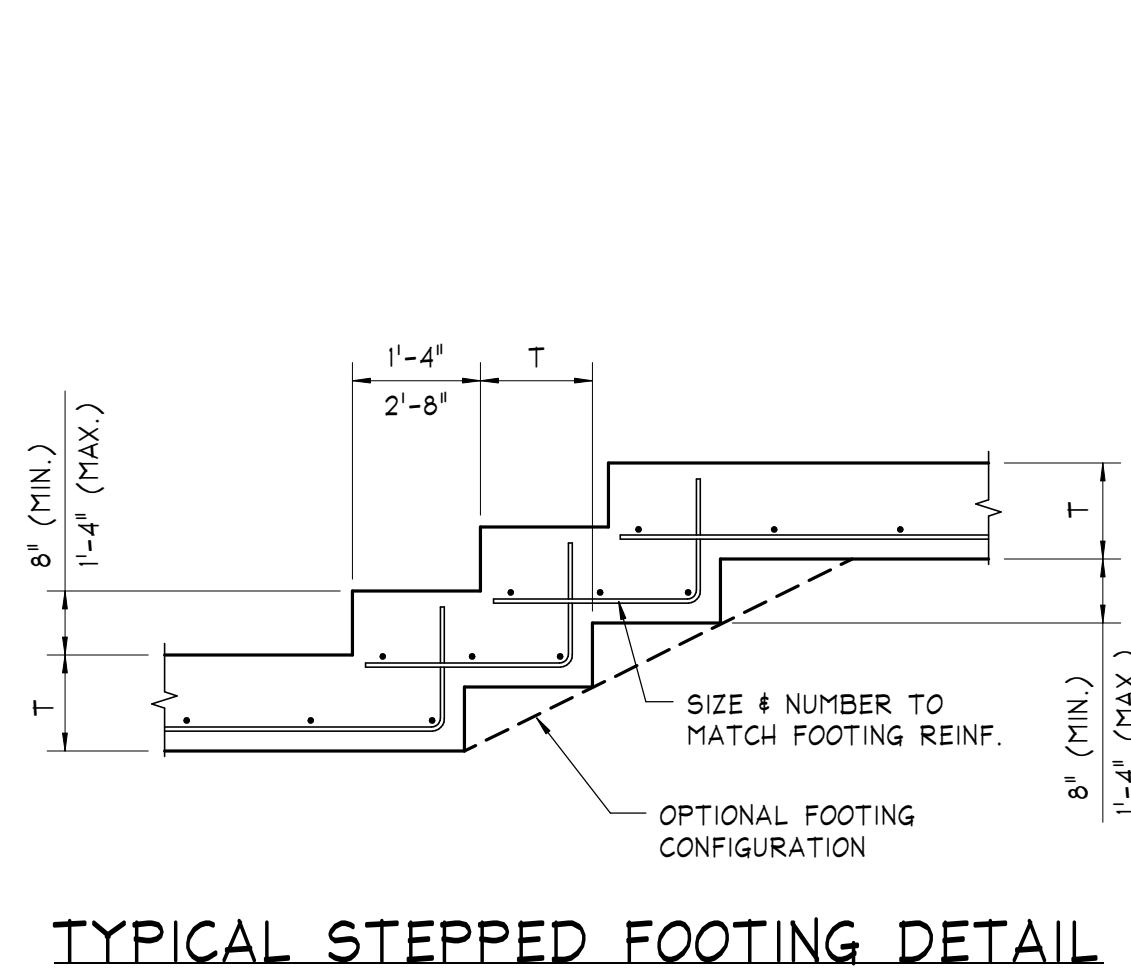
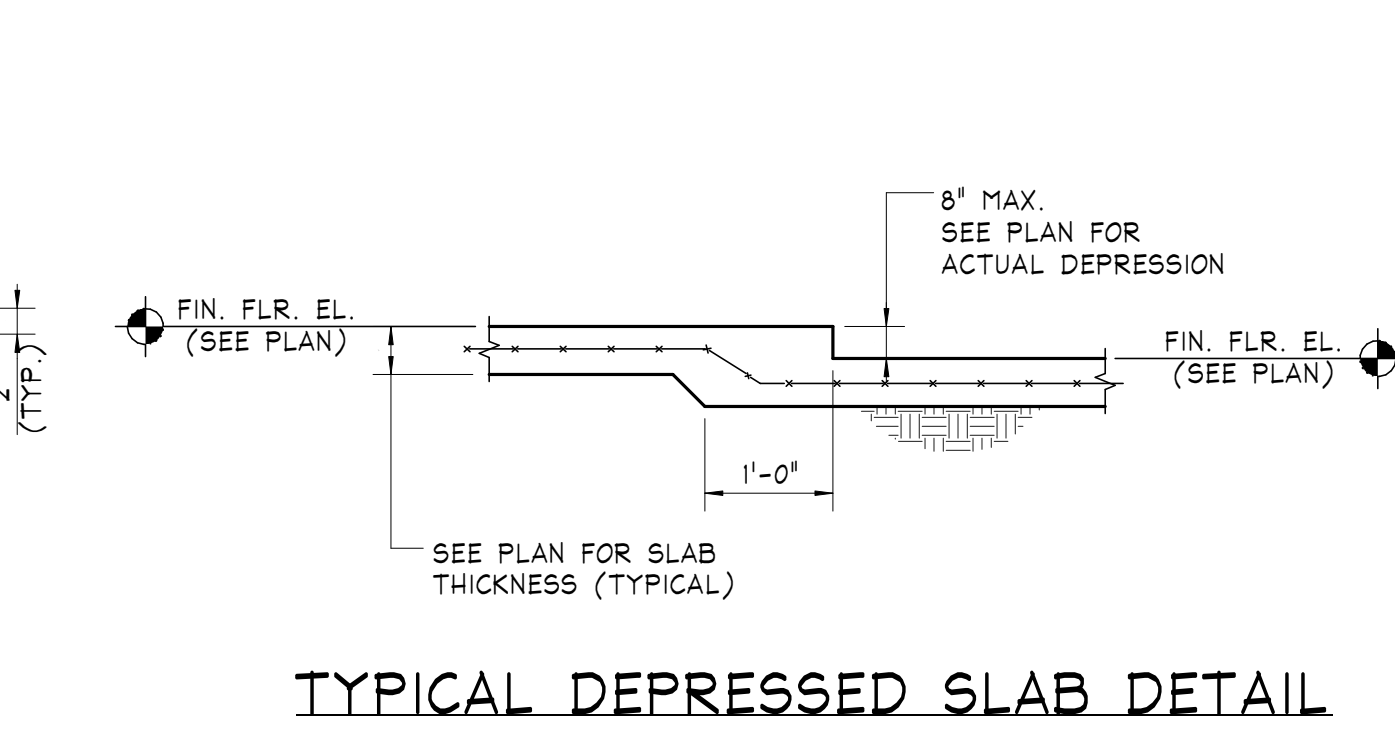
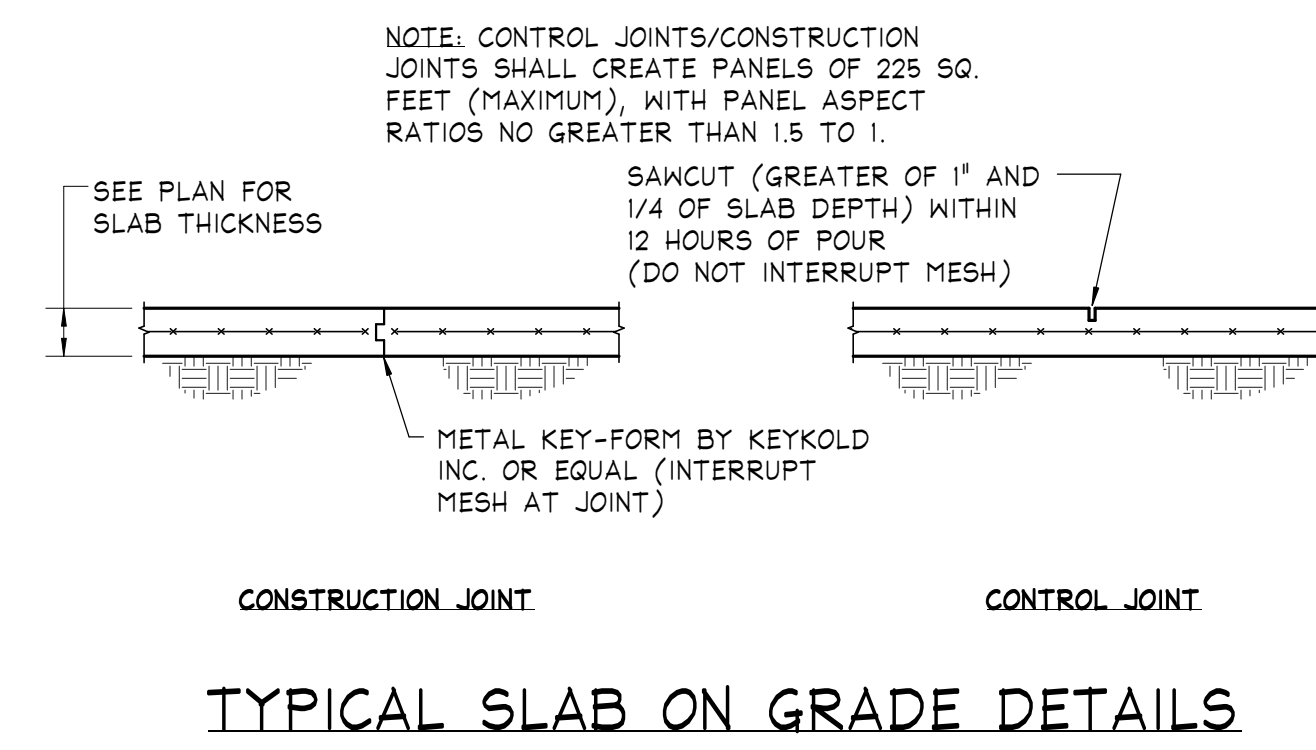
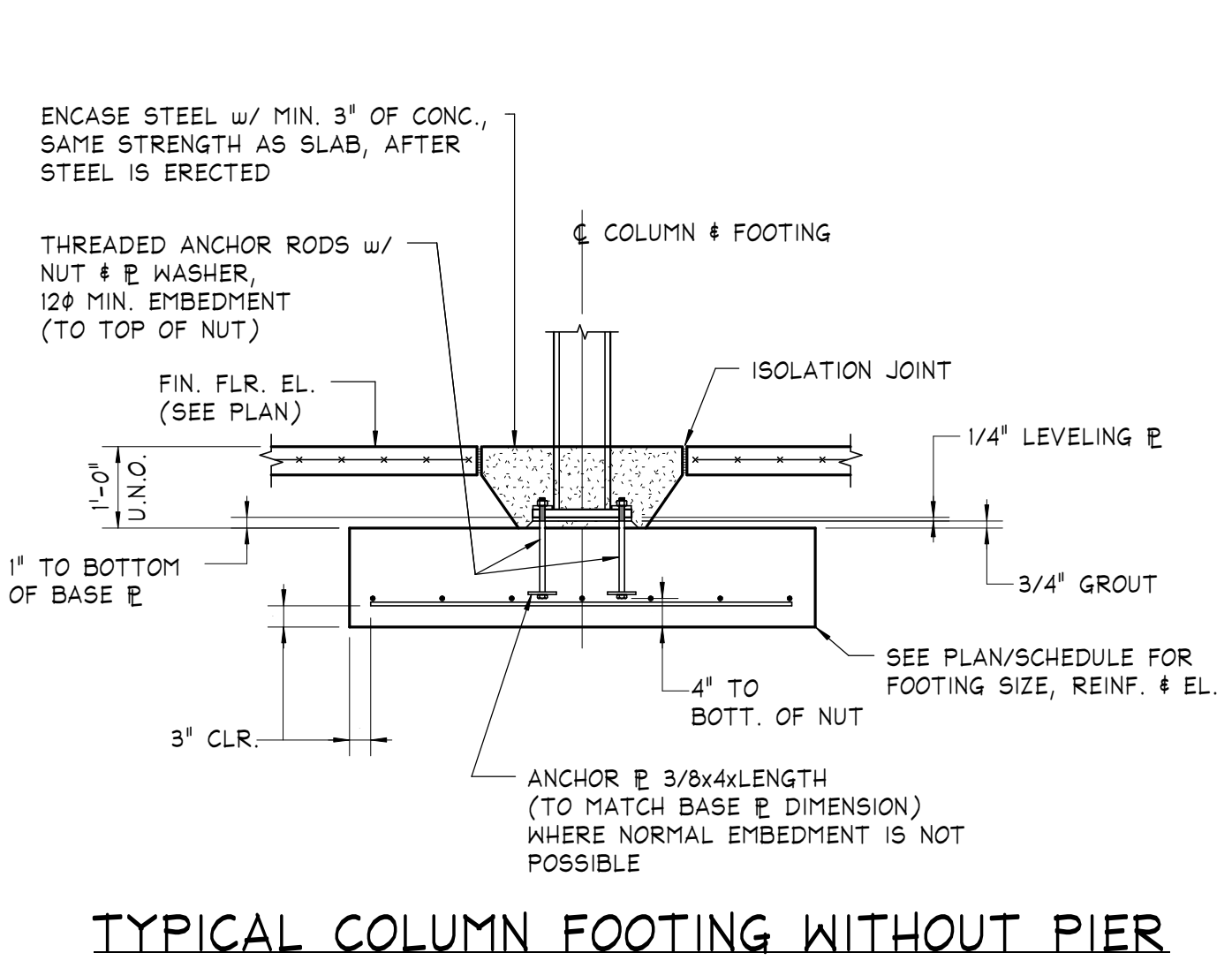
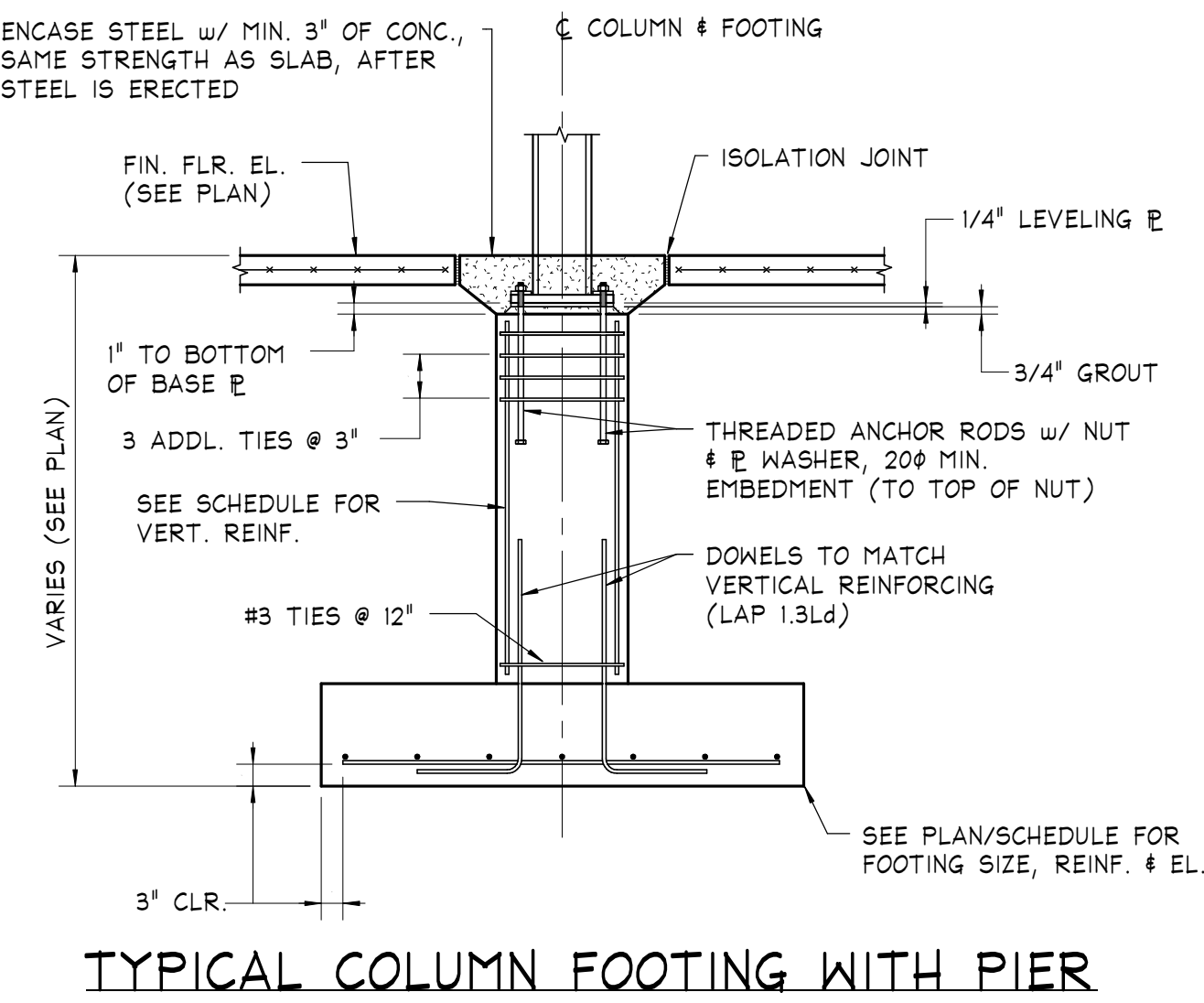
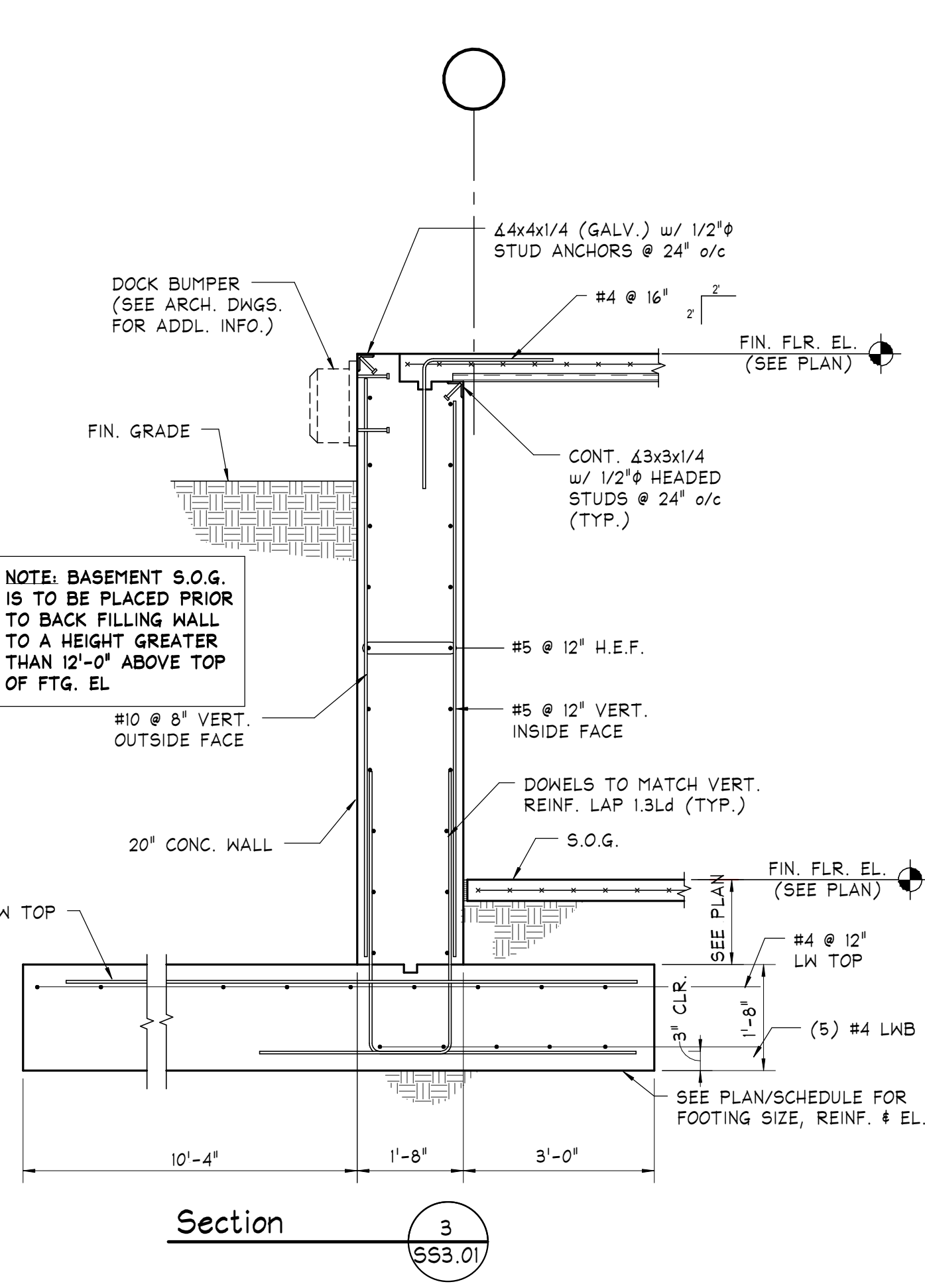
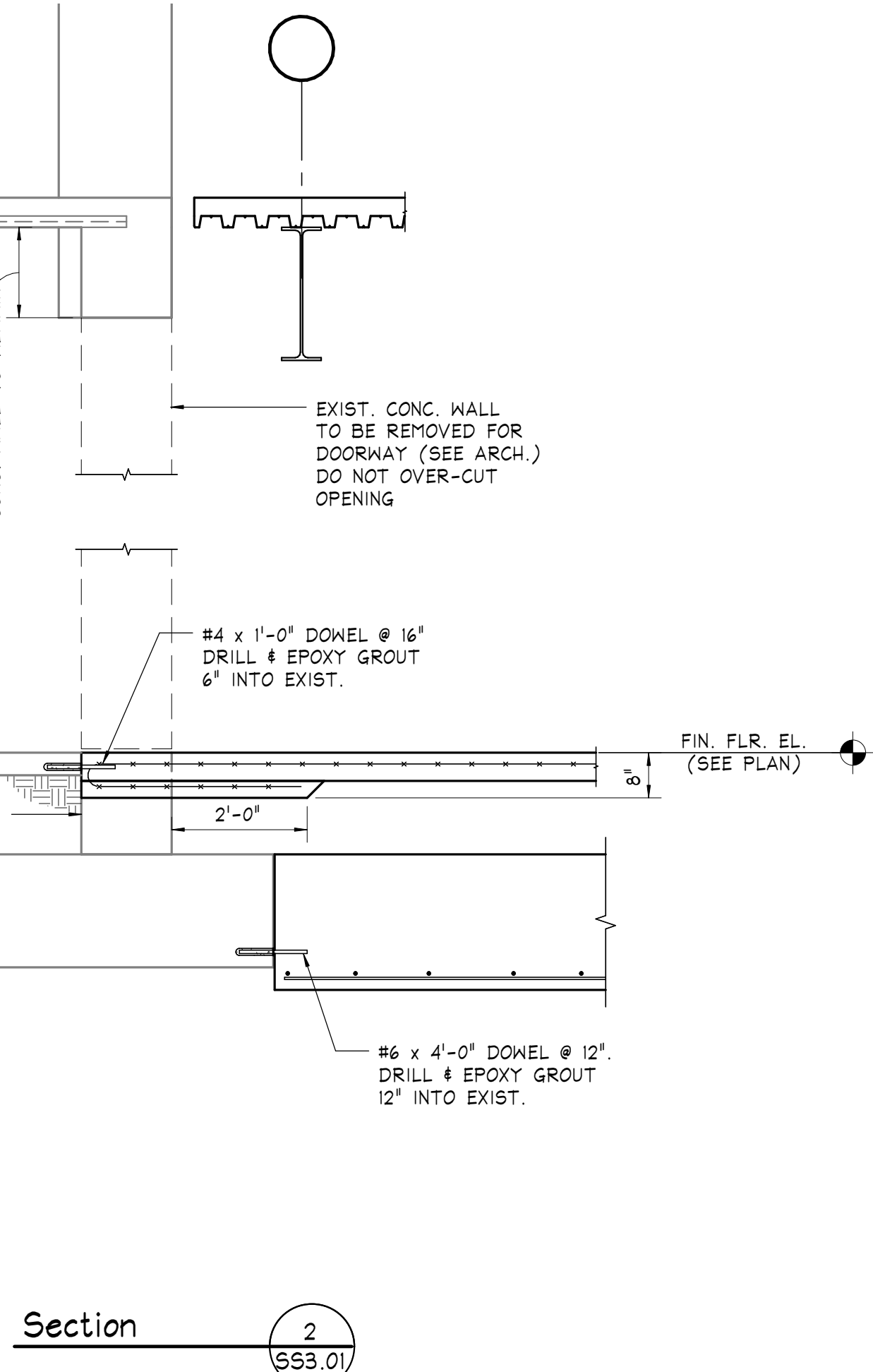
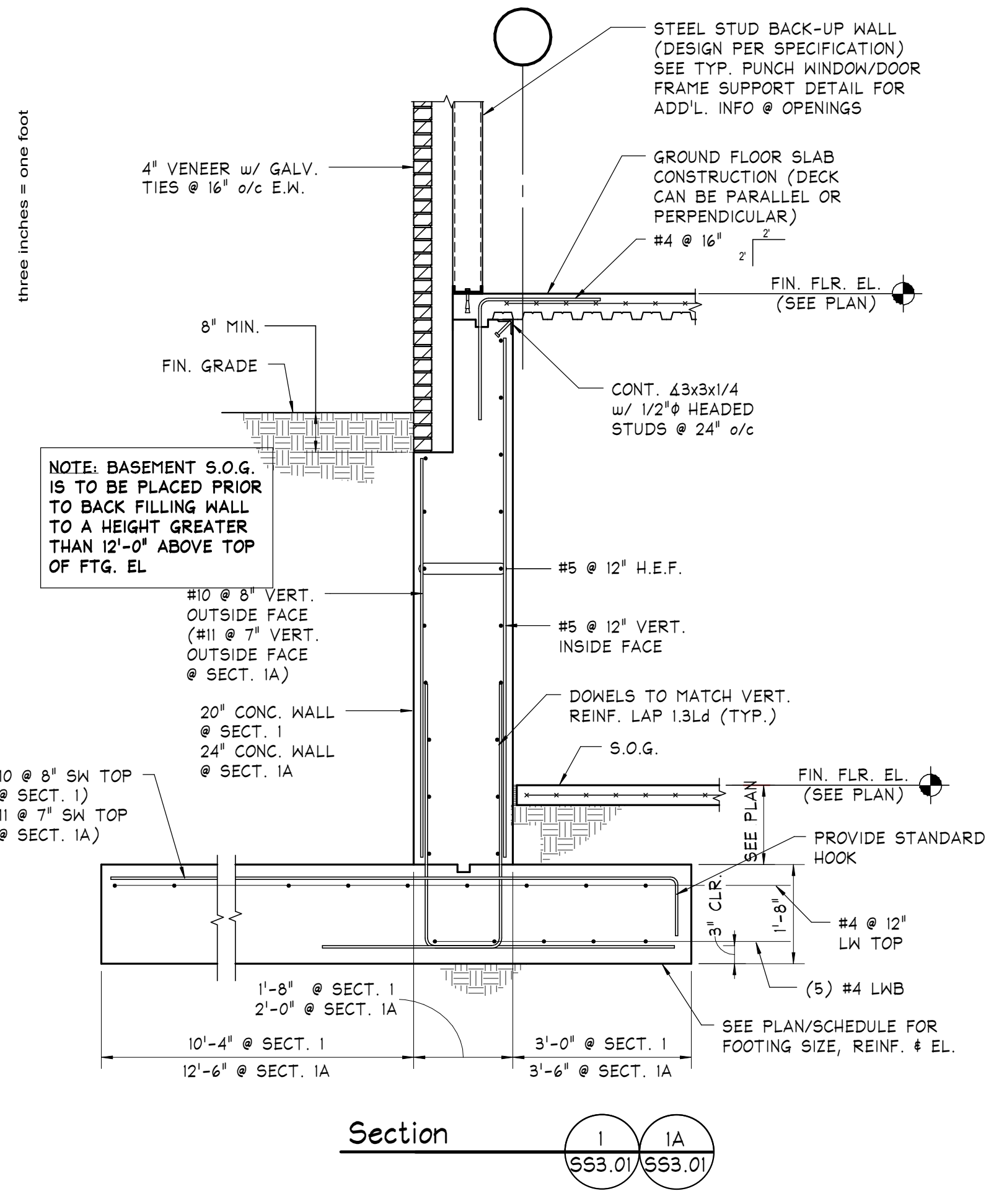
CONSULTANTS:			ARCHITECT/ENGINEERS:			Drawing Title <b>GENERAL NOTES &amp; SCHEDULES</b>			Project Title <b>AE - UNIVERSITY DRIVE RESEARCH BUILDING ADDITION</b>			Project Number <b>VA244-P-1749</b>			Office of Construction and Facilities Management					
NO. DESCRIPTION DATE			Miller-Remick LLC 111 SOUTH INDEPENDENCE MALL EAST PHILADELPHIA, PENNSYLVANIA 19106-2524 TELEPHONE: (215) 925-3788 FAX: (215) 927-1051 2928.0007.00			Approved: Project Director			Location VA HEALTHCARE, PITTSBURGH PA			Building Number NO. 30								
									Date 04/30/14			Checked JMG			Drawn DEF			Drawing Number <b>SS2.01</b> Dwg. 75 of 161		

## BID DOCUMENTS - NOT FOR CONSTRUCTION FULLY SPRINKLERED





three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one eighth inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot

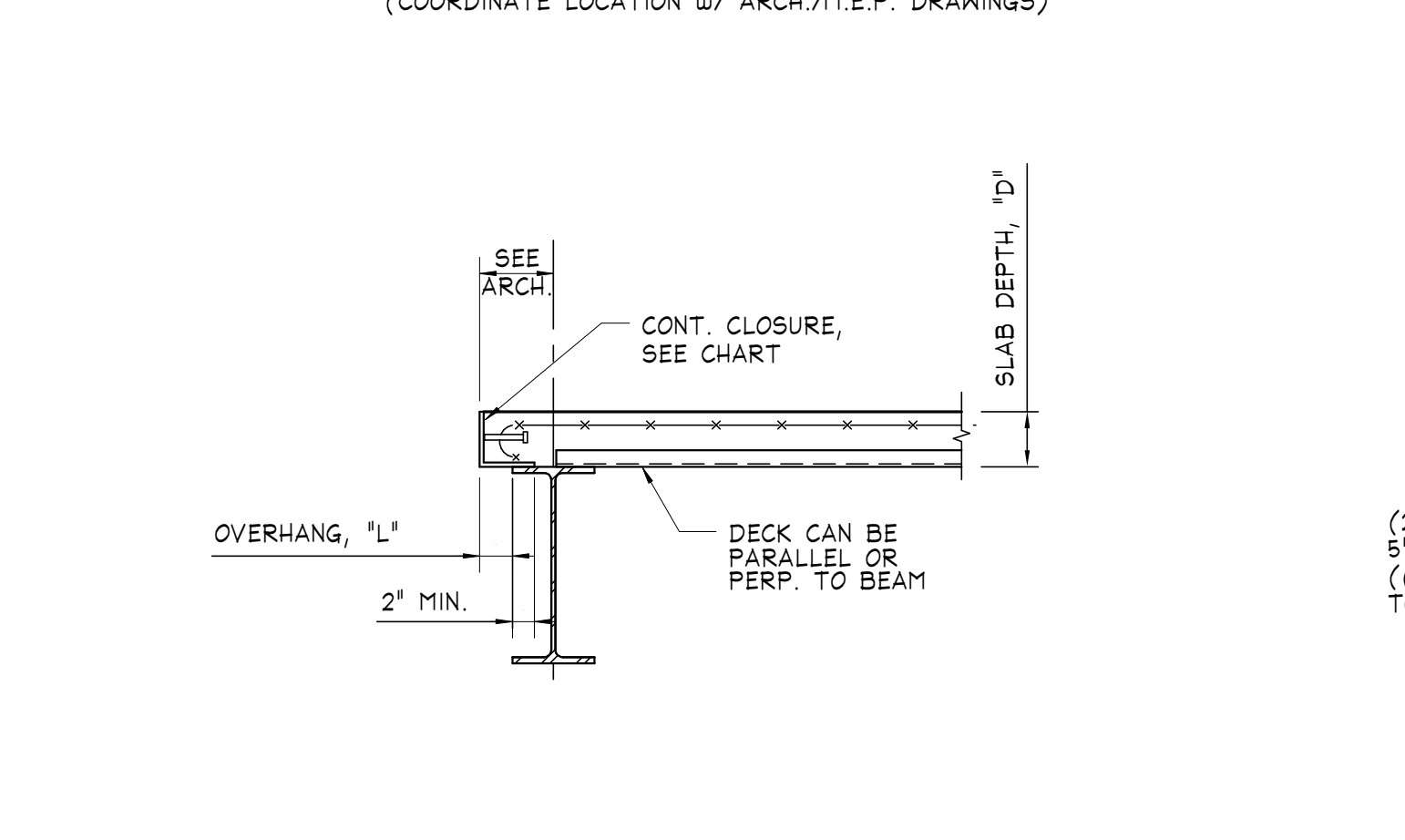
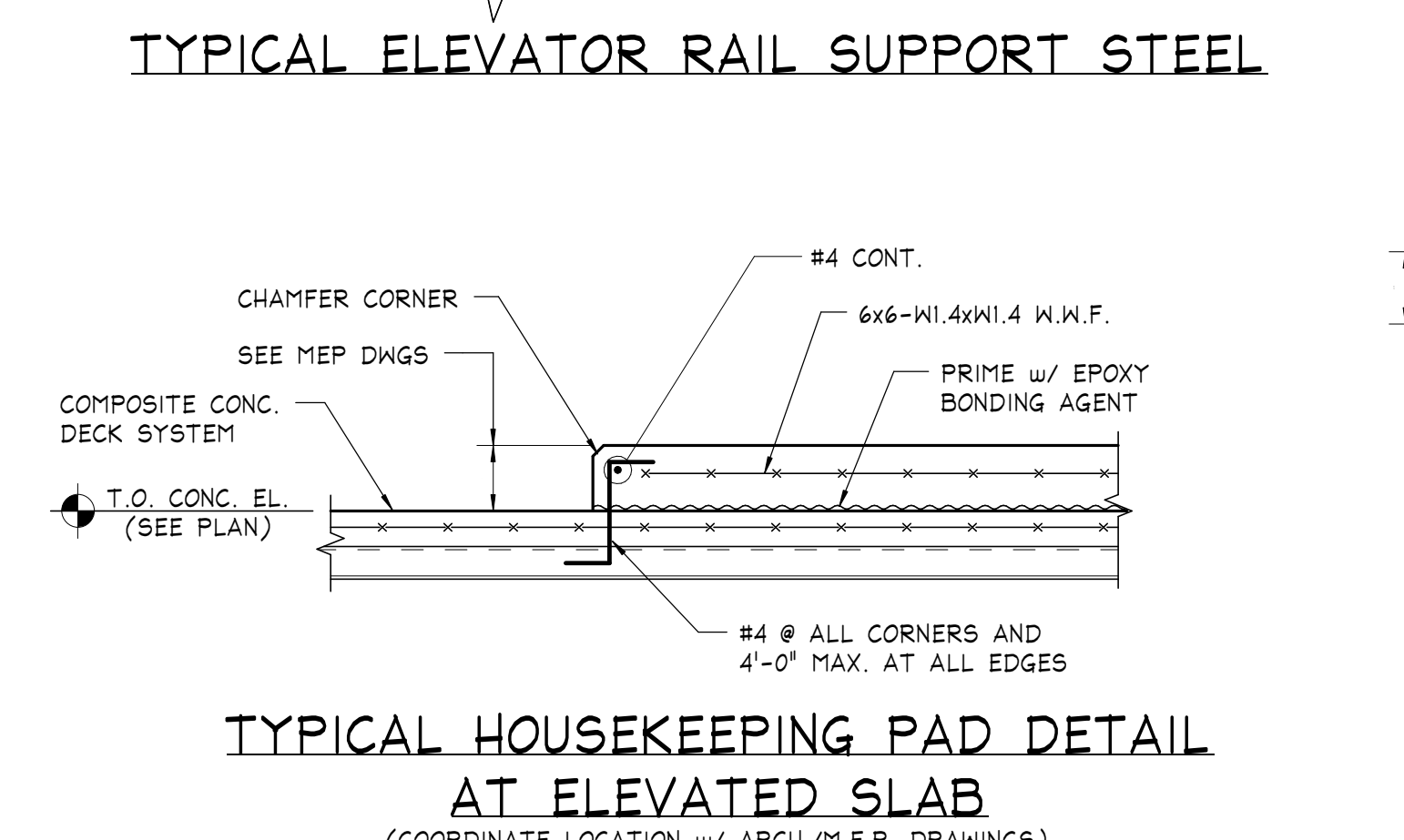
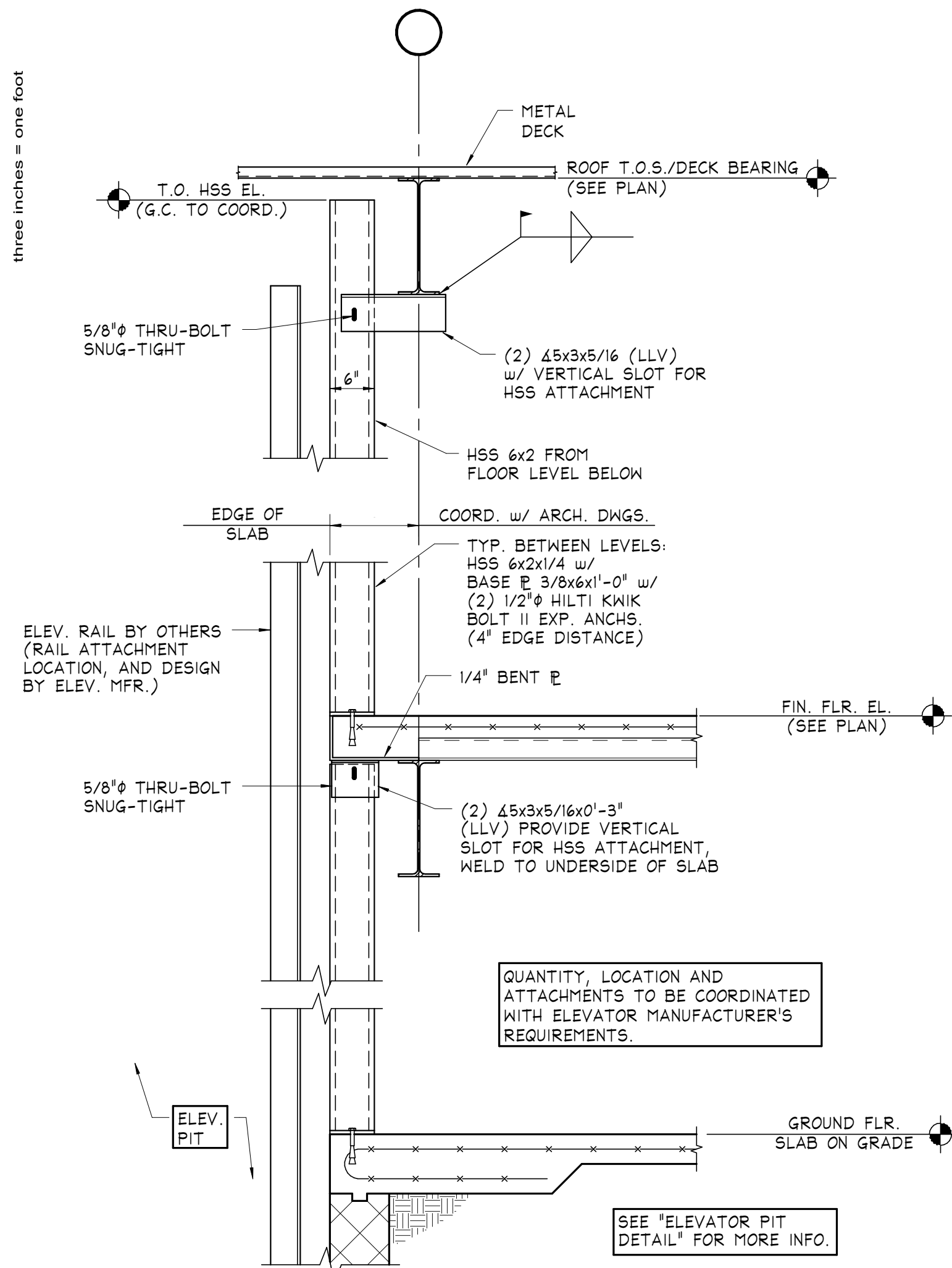


<b>CONSULTANTS:</b>			<b>ARCHITECT/ENGINEERS:</b>			<b>Drawing Title</b> FOUNDATION DETAILS		<b>Project Title</b> AE - UNIVERSITY DRIVE RESEARCH BUILDING ADDITION		<b>Project Number</b> VA244-P-1749		<b>Office of Construction and Facilities Management</b> 	
			 Miller-Remick LLC 1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002			 O'DONNELL & NACCARATO, INC. STRUCTURAL ENGINEERS 111 SOUTH INDEPENDENCE MALL EAST SUITE 900 PHILADELPHIA, PENNSYLVANIA 19106-2524 TELEPHONE: (215) 925-3788 FAX: (215) 927-1051 2926.0007.00		Approved: Project Director		Building Number NO. 30			<b>SS3.01</b> Dwg. 76 of 161
								Date 04/30/14		Checked JMG	Drawn DEF		
NO. DESCRIPTION DATE													

VA FORM 08-6231

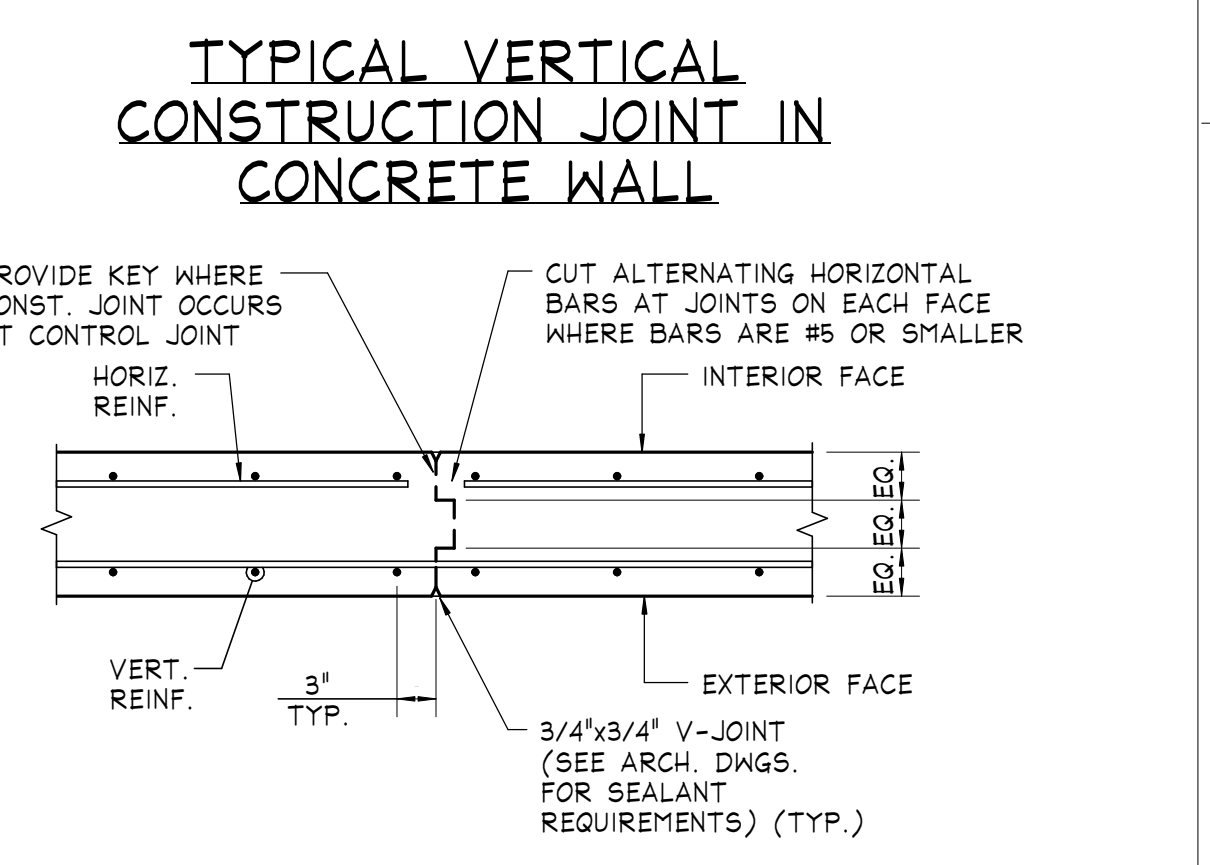
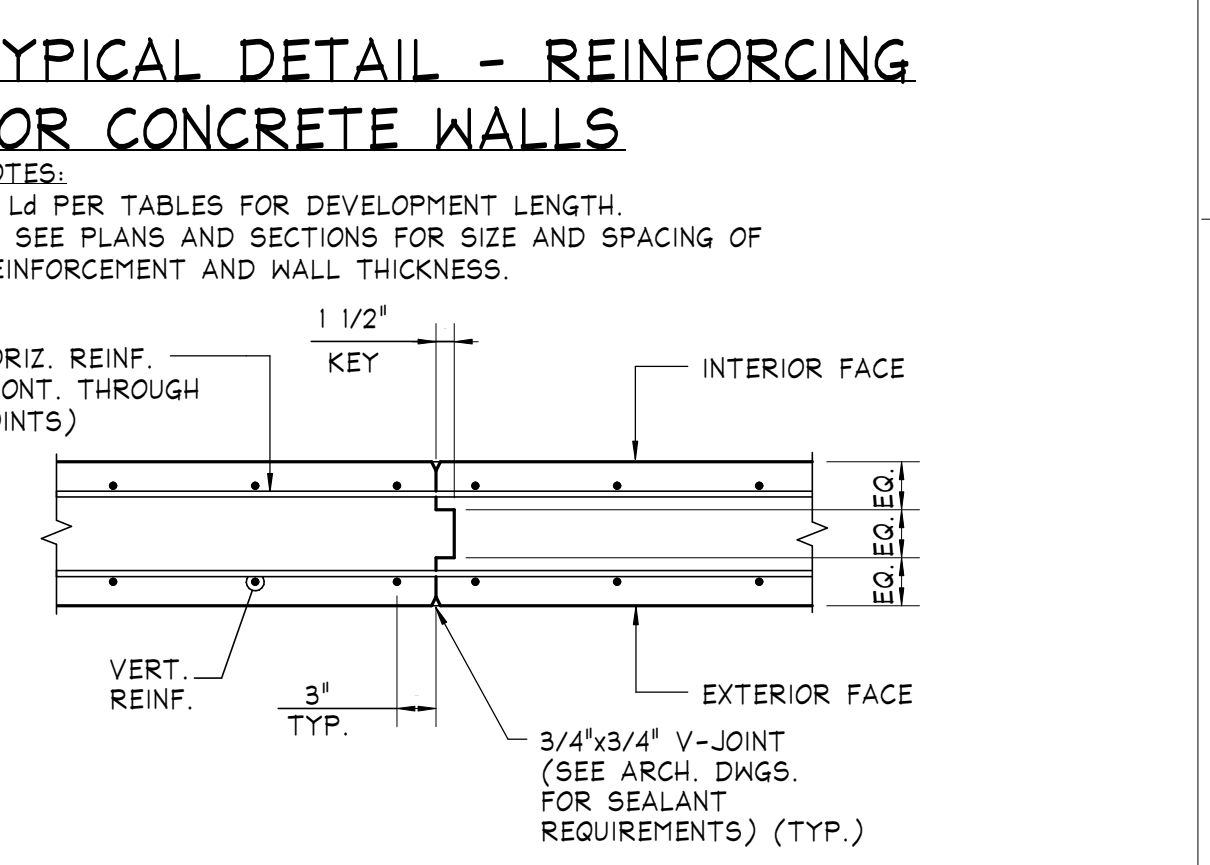
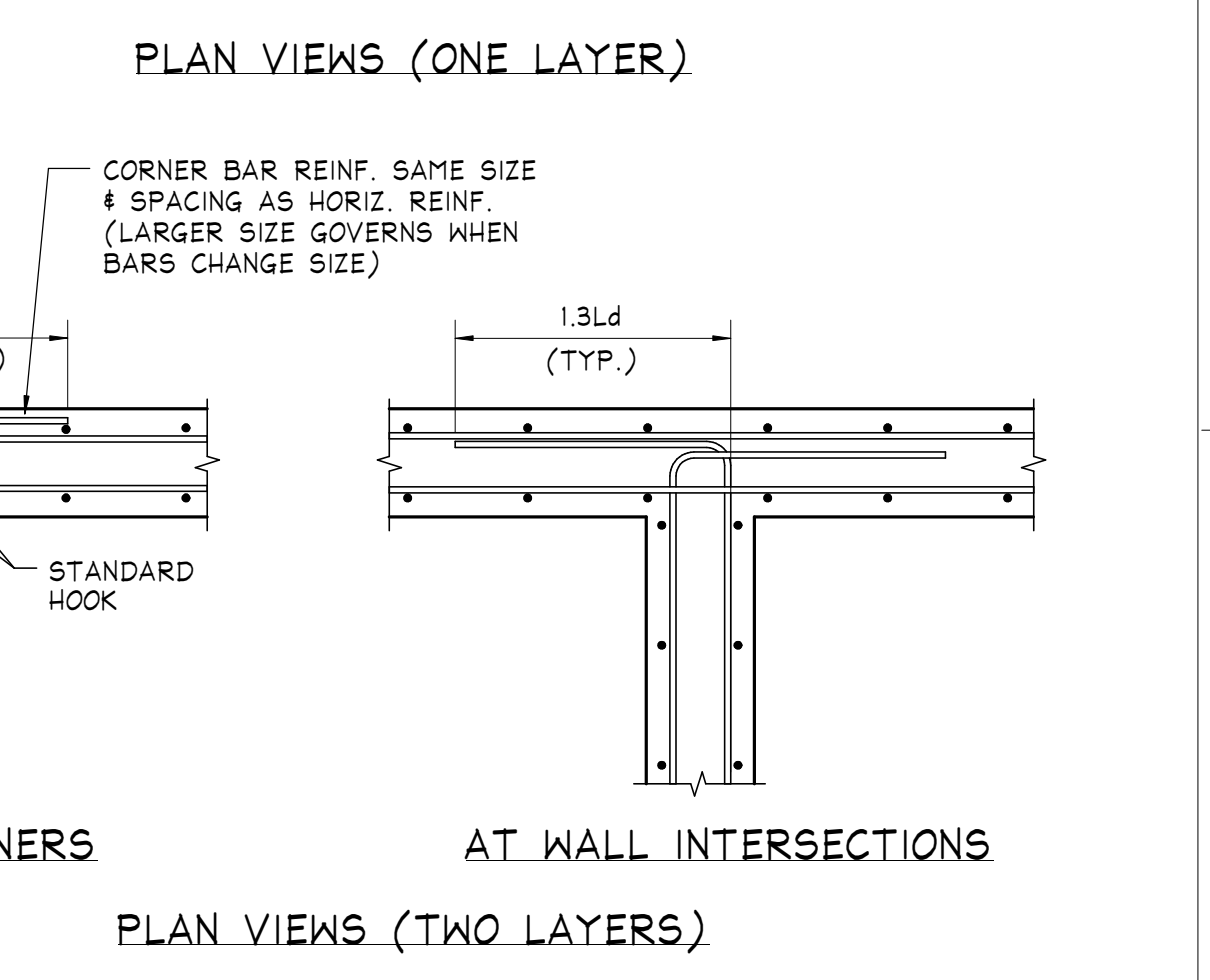
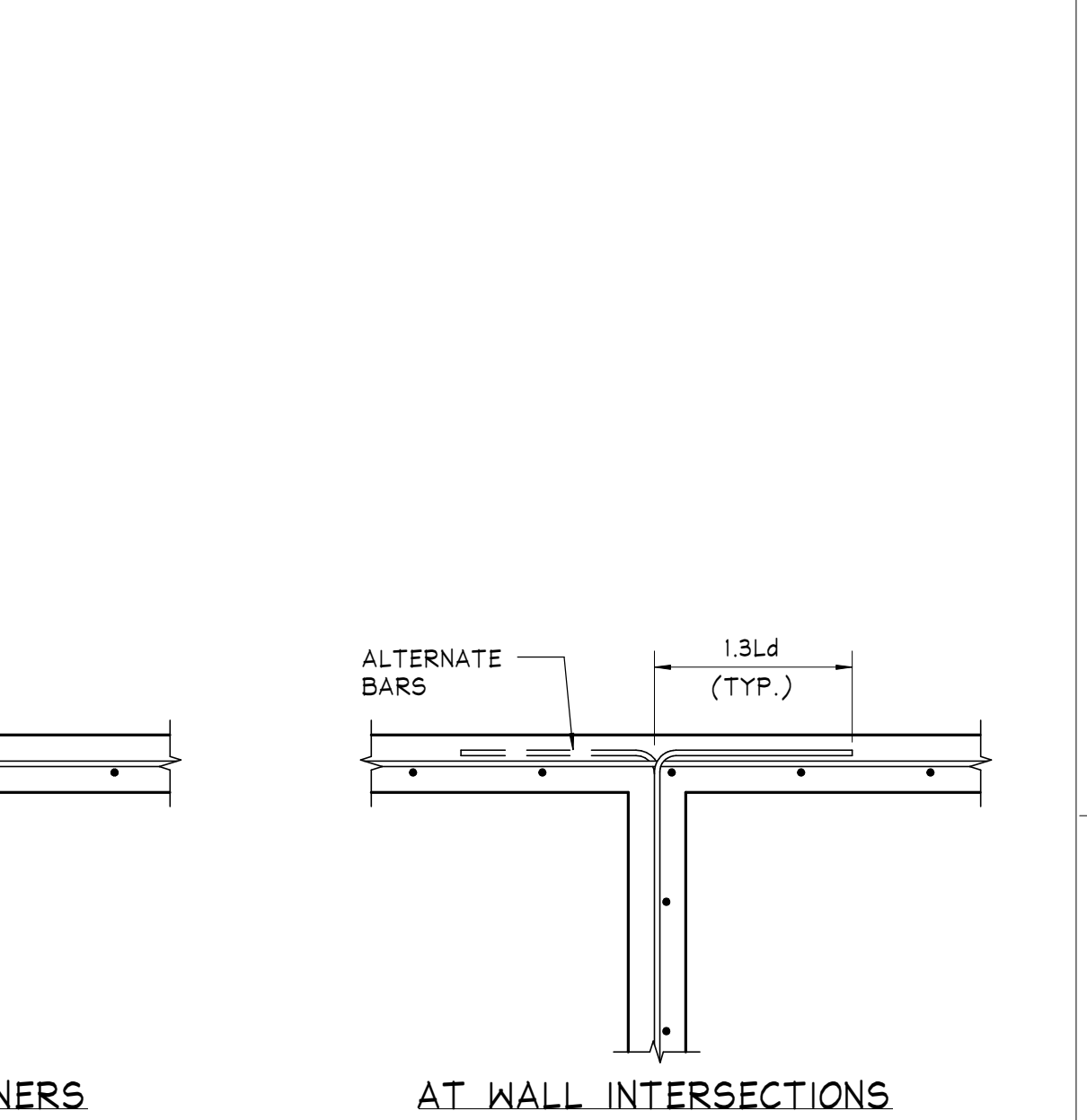
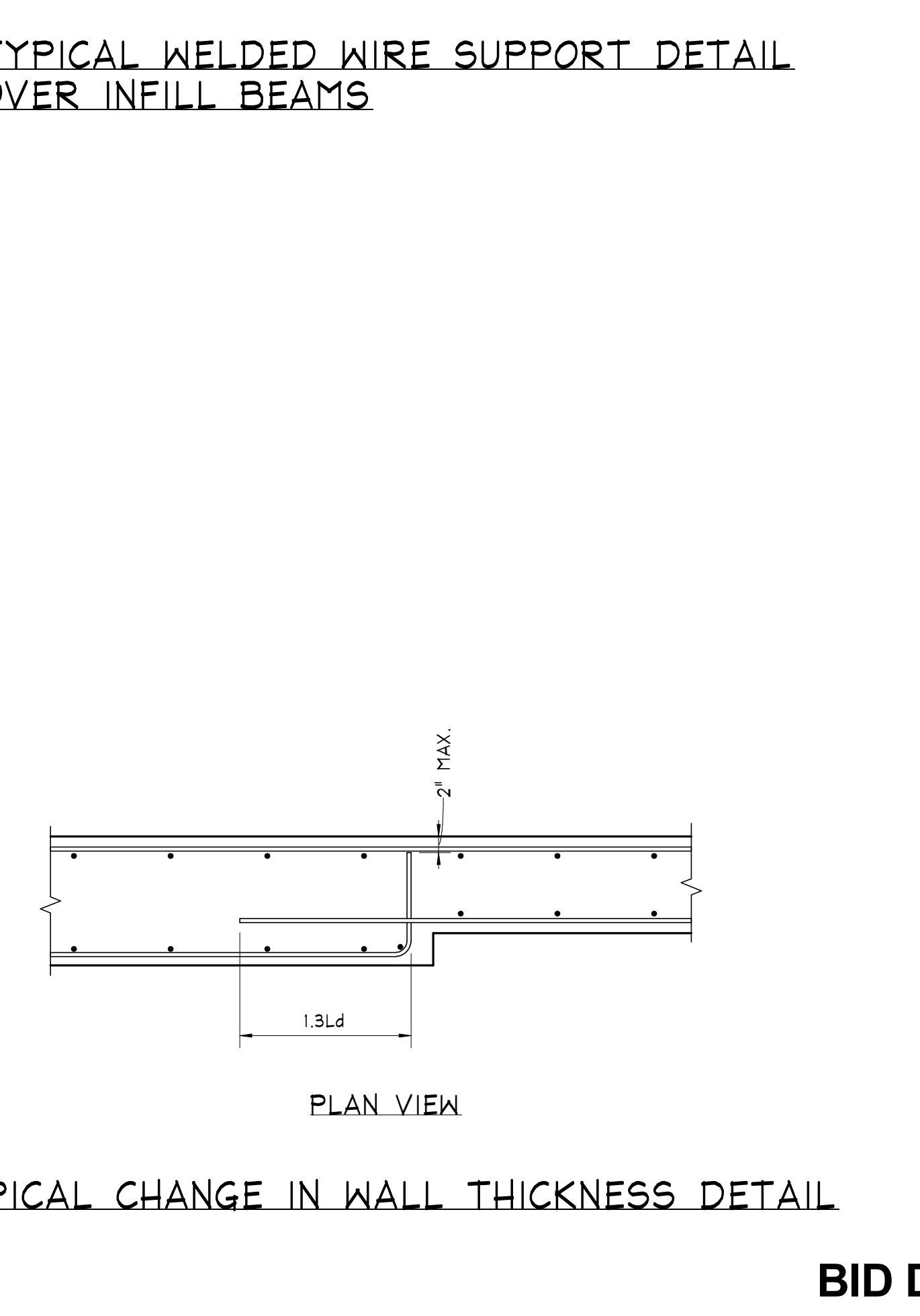
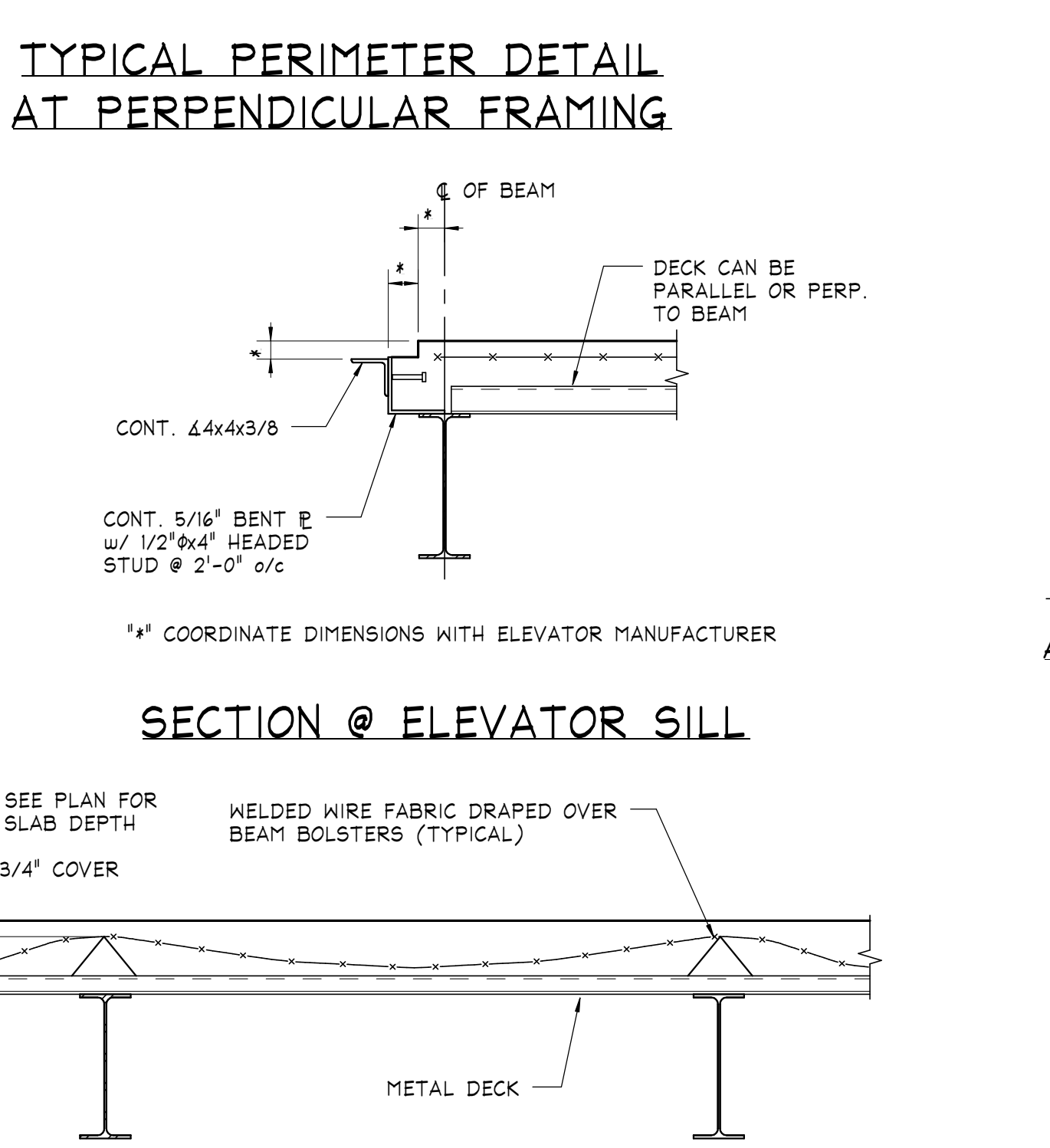
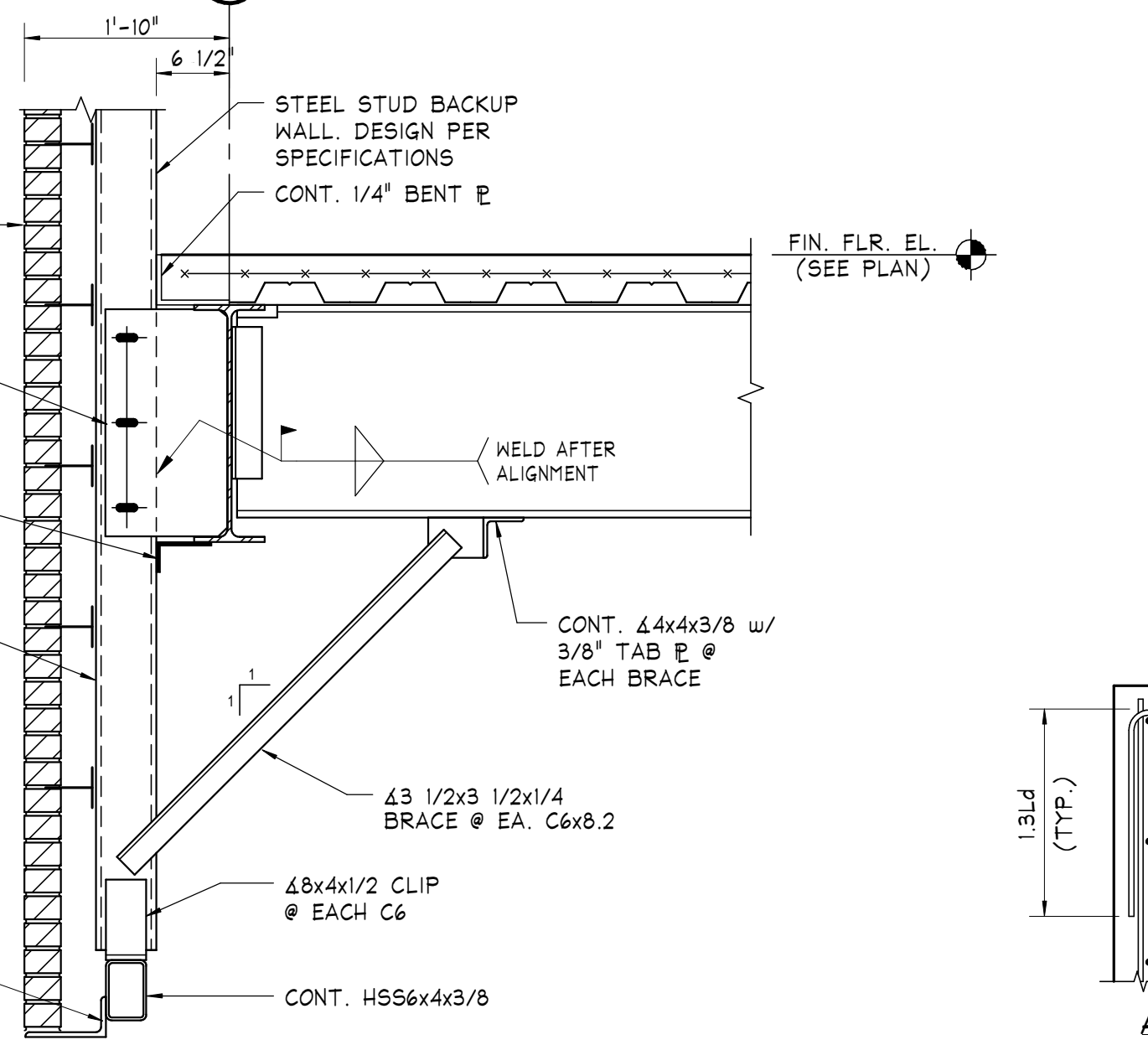
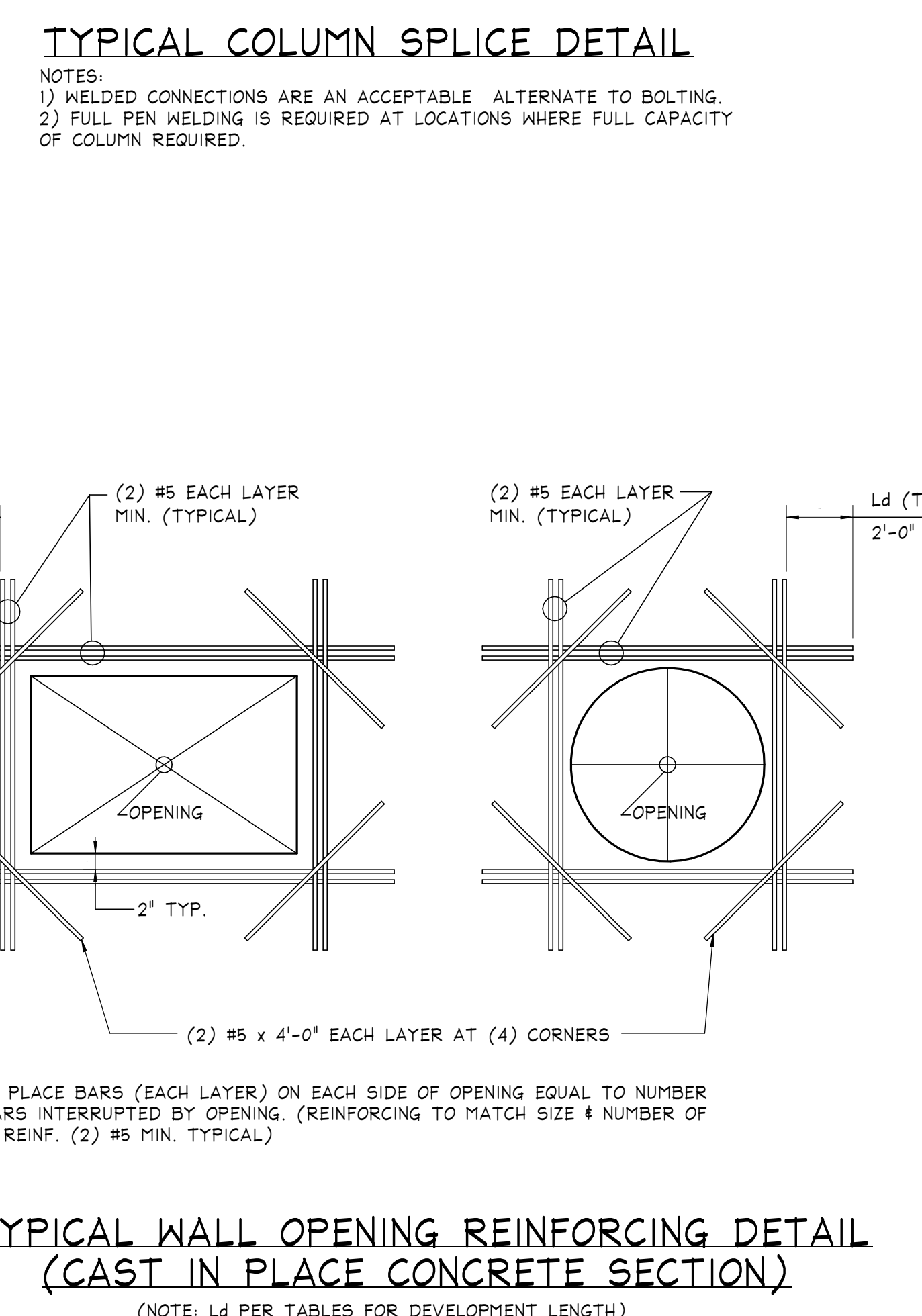
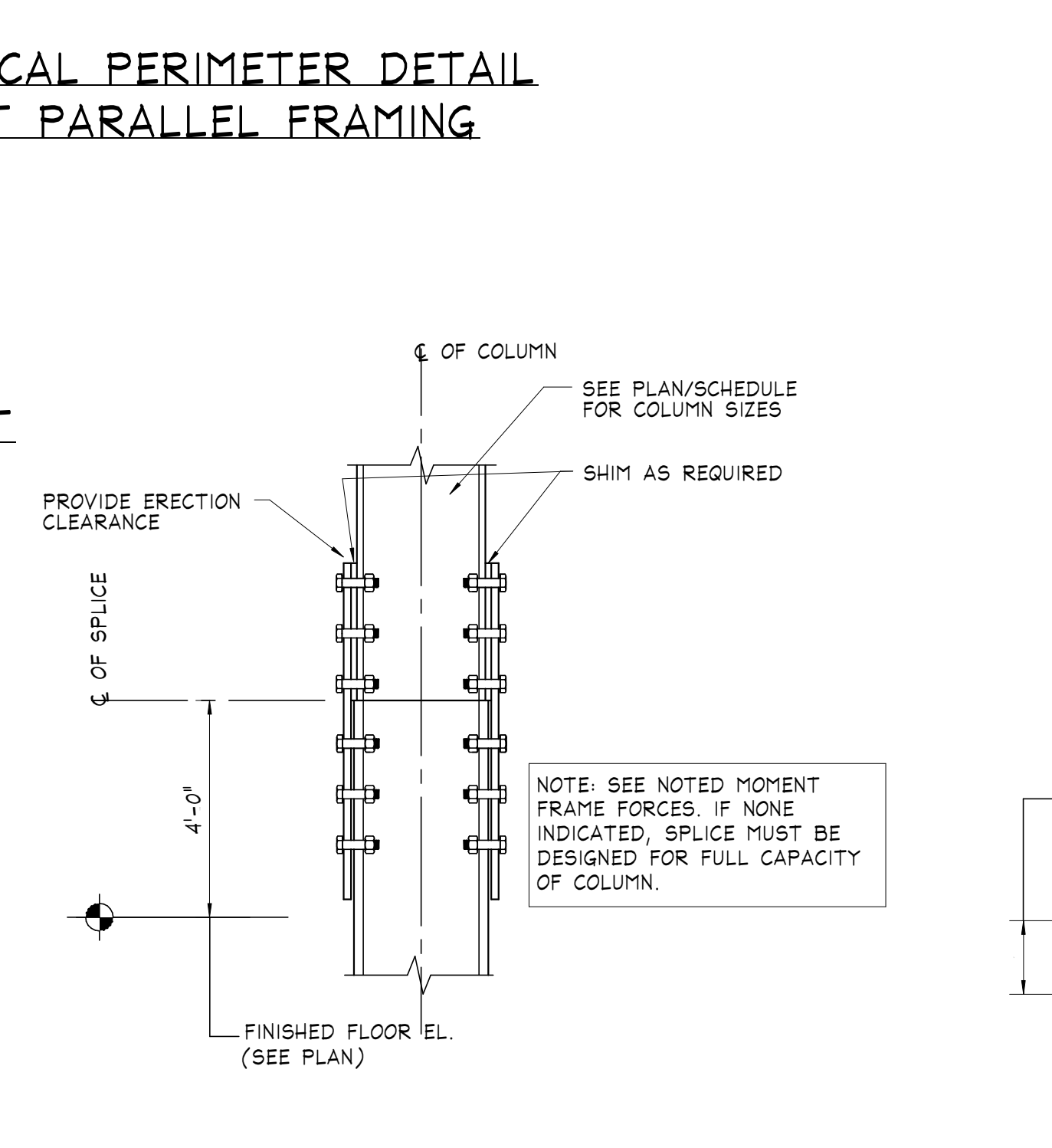
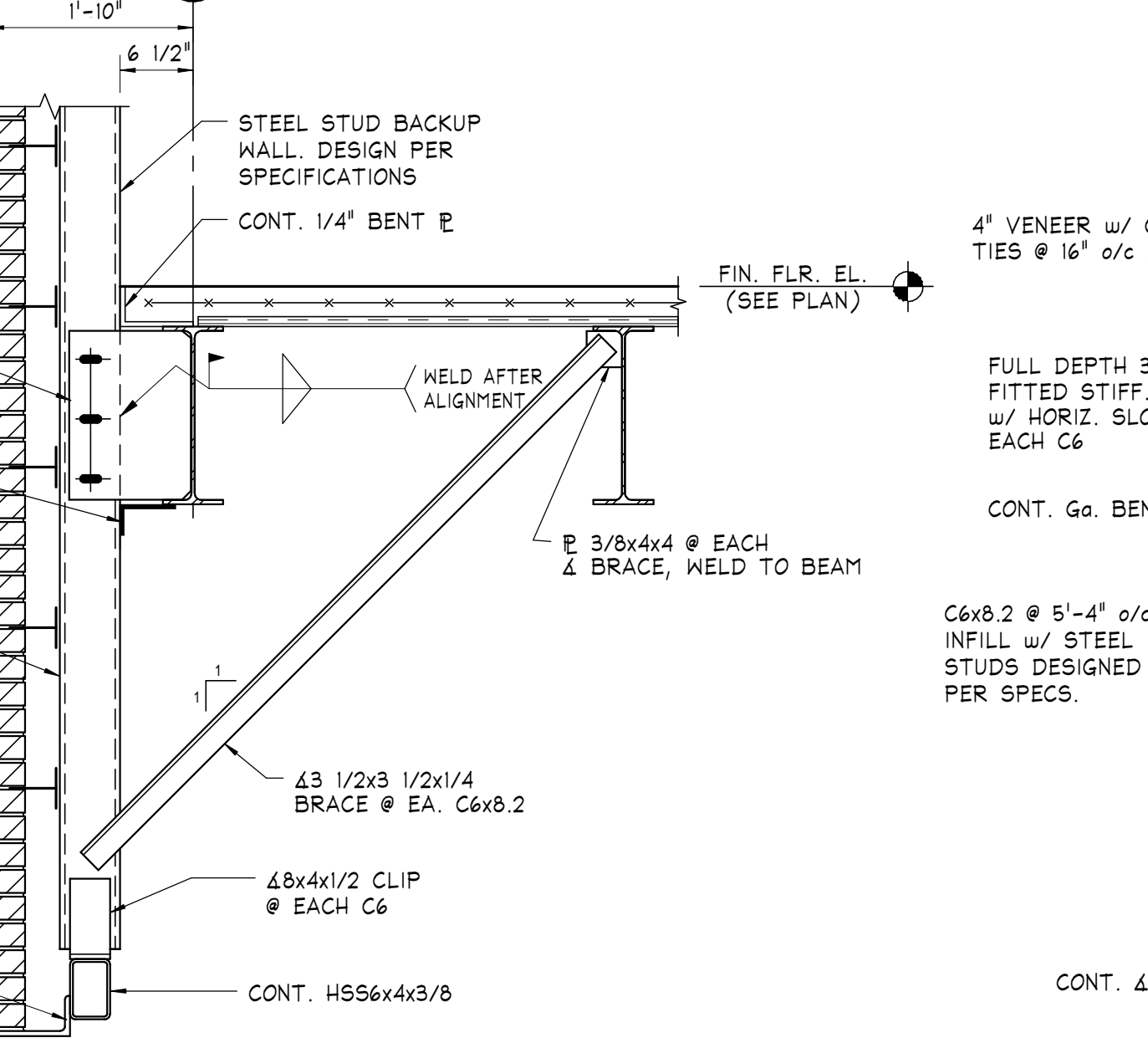
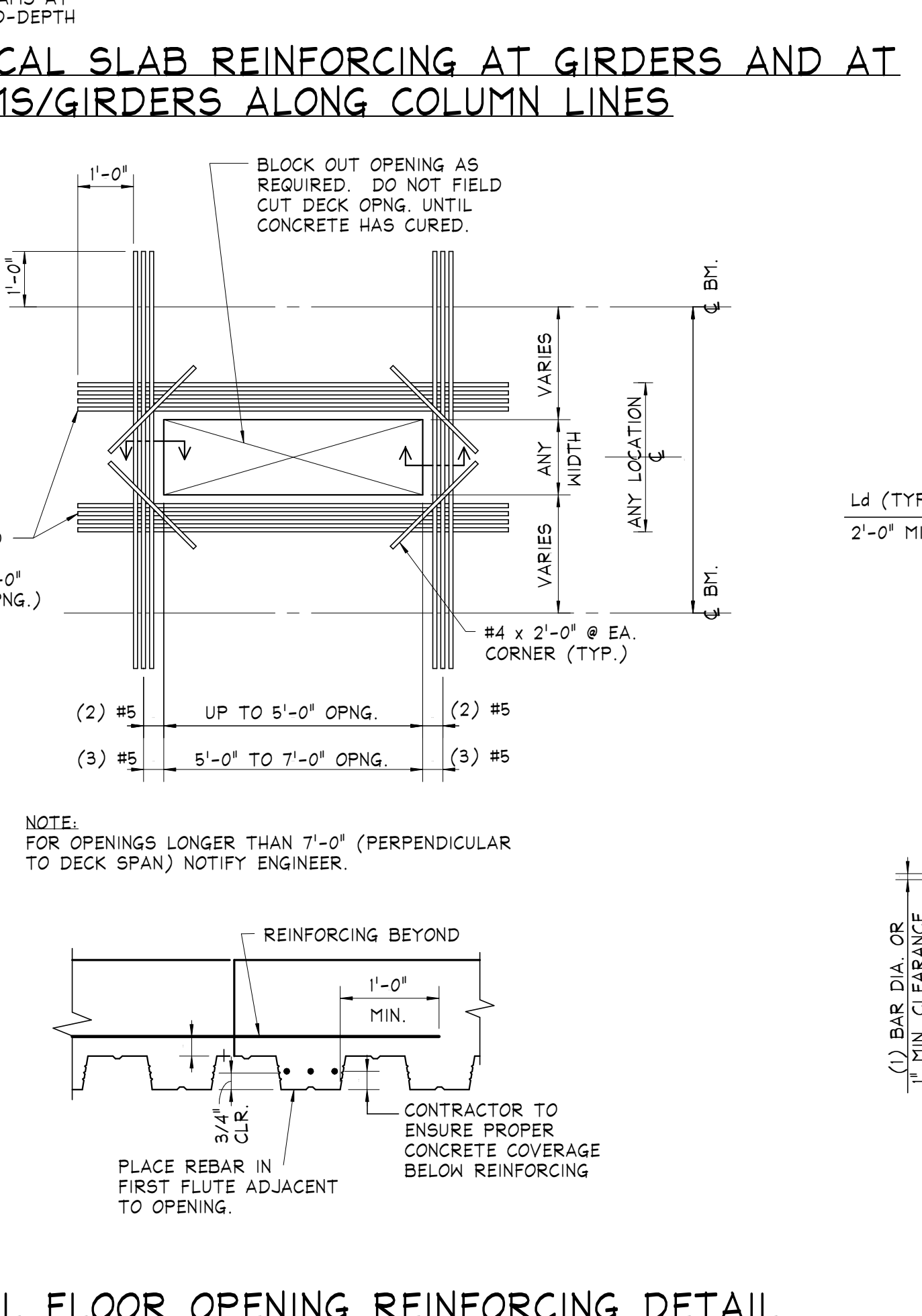
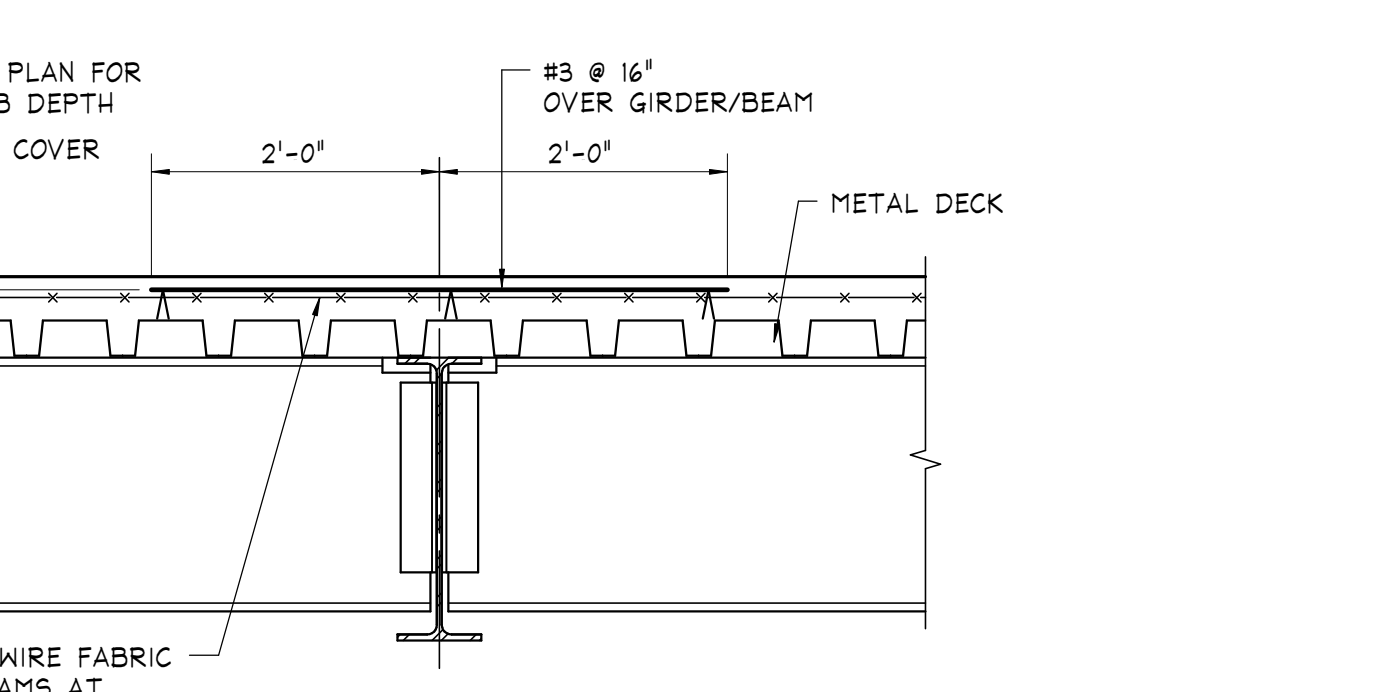
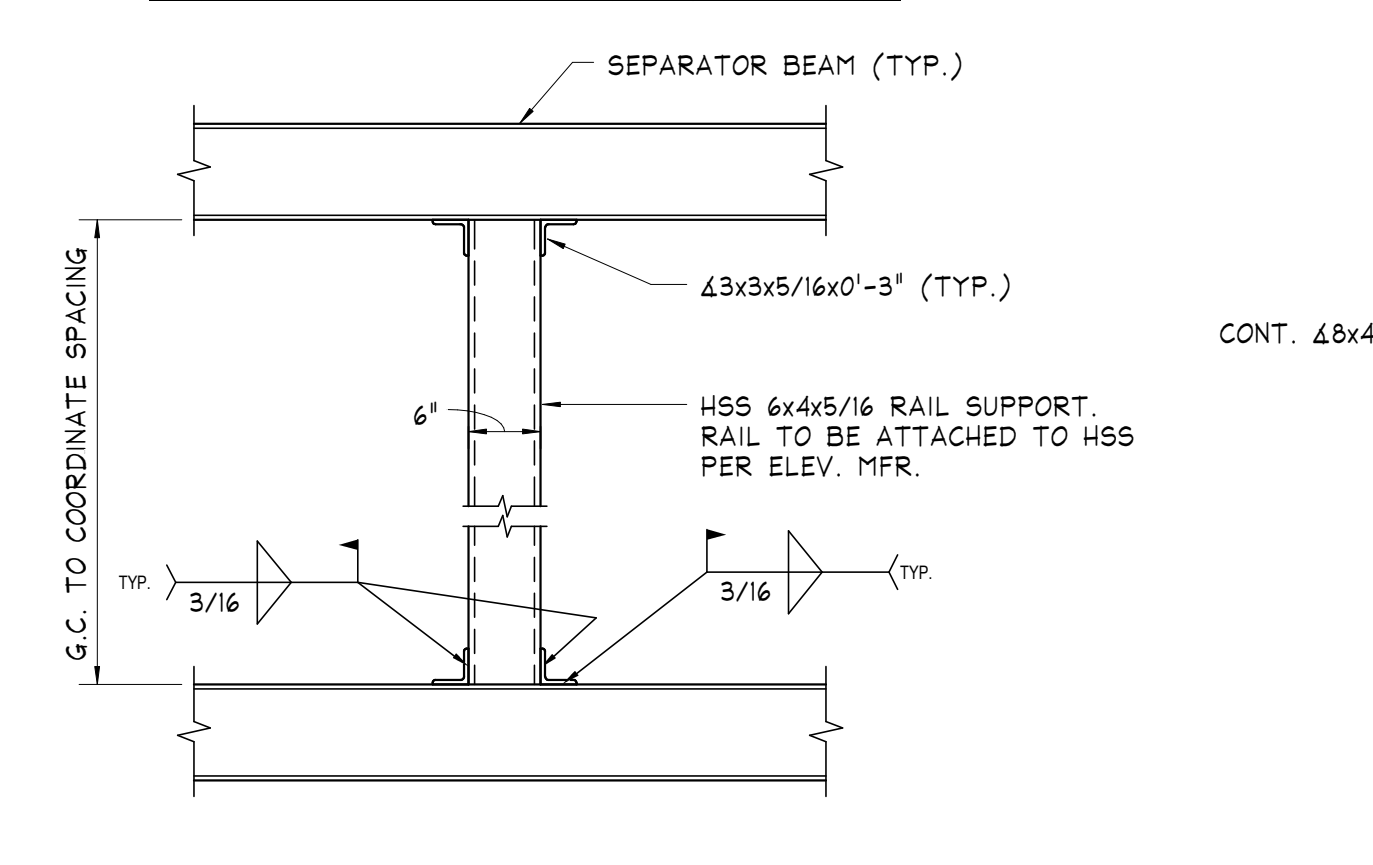
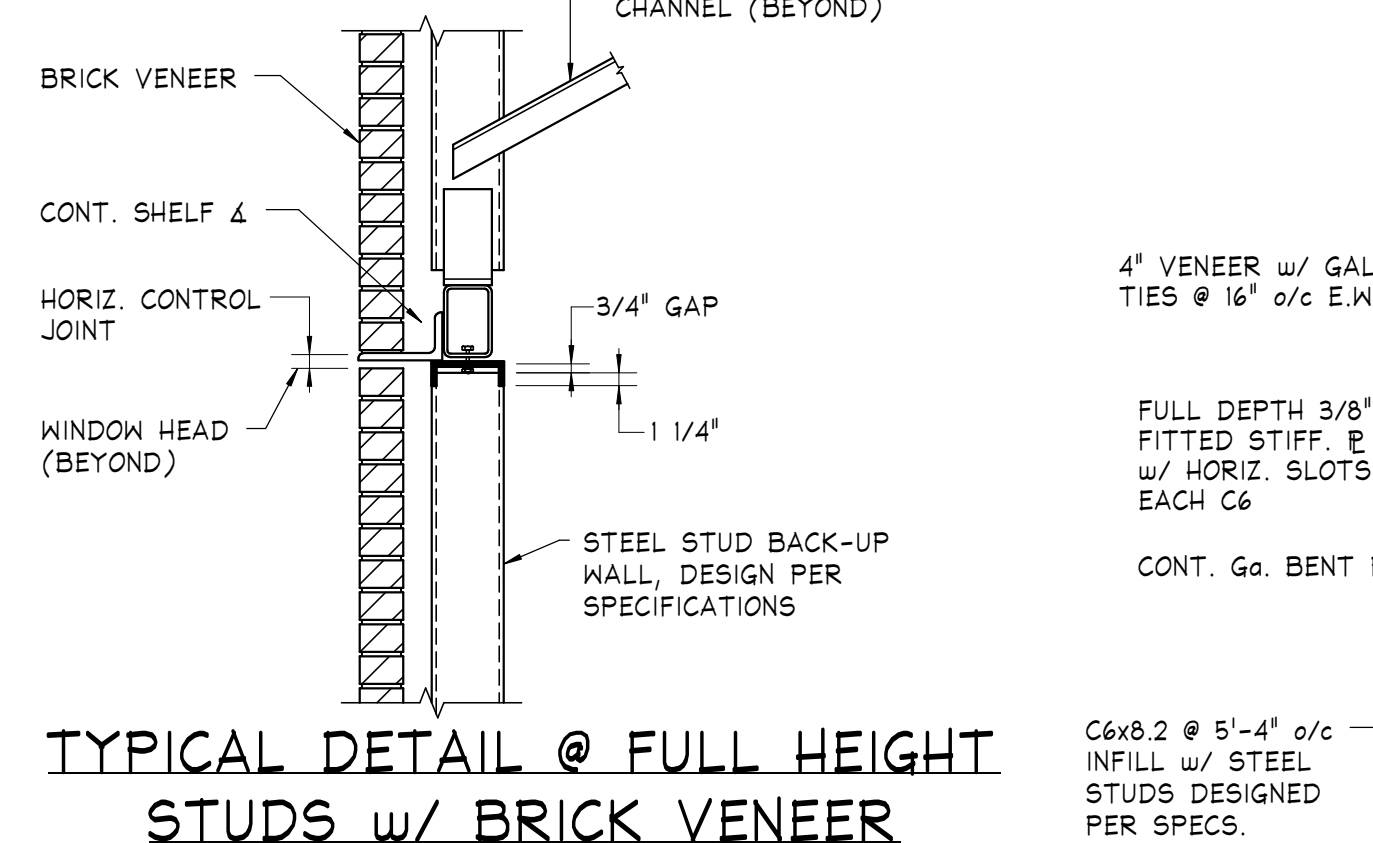
BID DOCUMENTS - NOT FOR CONSTRUCTION  
FULLY SPRINKLERED





**EDGE CLOSURE CHART**

SLAB DEPTH "D"	OVERHANG "L"					
	$\leq 3'$	$3' < L \leq 5'$	$5' < L \leq 9'$	$9' < L \leq 12'$	$12' < L \leq 15'$	$15' < L \leq 18'$
$\leq 4'$	16 Ga.	14 Ga.	10 Ga.	1/4"	1/4"	5/16"
$4' < D \leq 6'$	16 Ga.	14 Ga.	10 Ga.	1/4"	1/4"	5/16"
$6' < D \leq 9'$	12 Ga.	10 Ga.	10 Ga.	1/4"	1/4"	3/8"
$9' < D \leq 10 1/2'$	10 Ga.	10 Ga.	1/4"	1/4"	1/4"	3/8"
$10 1/2' < D \leq 12'$	10 Ga.	10 Ga.	1/4"	1/4"	5/16"	3/8"



**CONSULTANTS:**

NO.	DESCRIPTION	DATE

**ARCHITECT/ENGINEERS:**

<b>Miller-Remick LLC</b> 1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002	<b>ODONNELL &amp; NACCARATO, INC.</b> STRUCTURAL ENGINEERS 111 SOUTH INDEPENDENCE MALL EAST SUITE 900 PHILADELPHIA, PENNSYLVANIA 19106-2524 TELEPHONE: (215) 925-3788 FAX: (215) 927-1051 2928.007.00
--	--

**Drawing Title**

**FRAMING DETAILS**

Approved: Project Director

**Project Title**

**AE - UNIVERSITY DRIVE RESEARCH BUILDING ADDITION**

**Location** VA HEALTHCARE, PITTSBURGH PA

**Date** 04/30/14

**Checked** JMG

**Drawn** DEF

**Project Number** VA244-P-1749

**Building Number** NO. 30

**Drawing Number** SS4.01

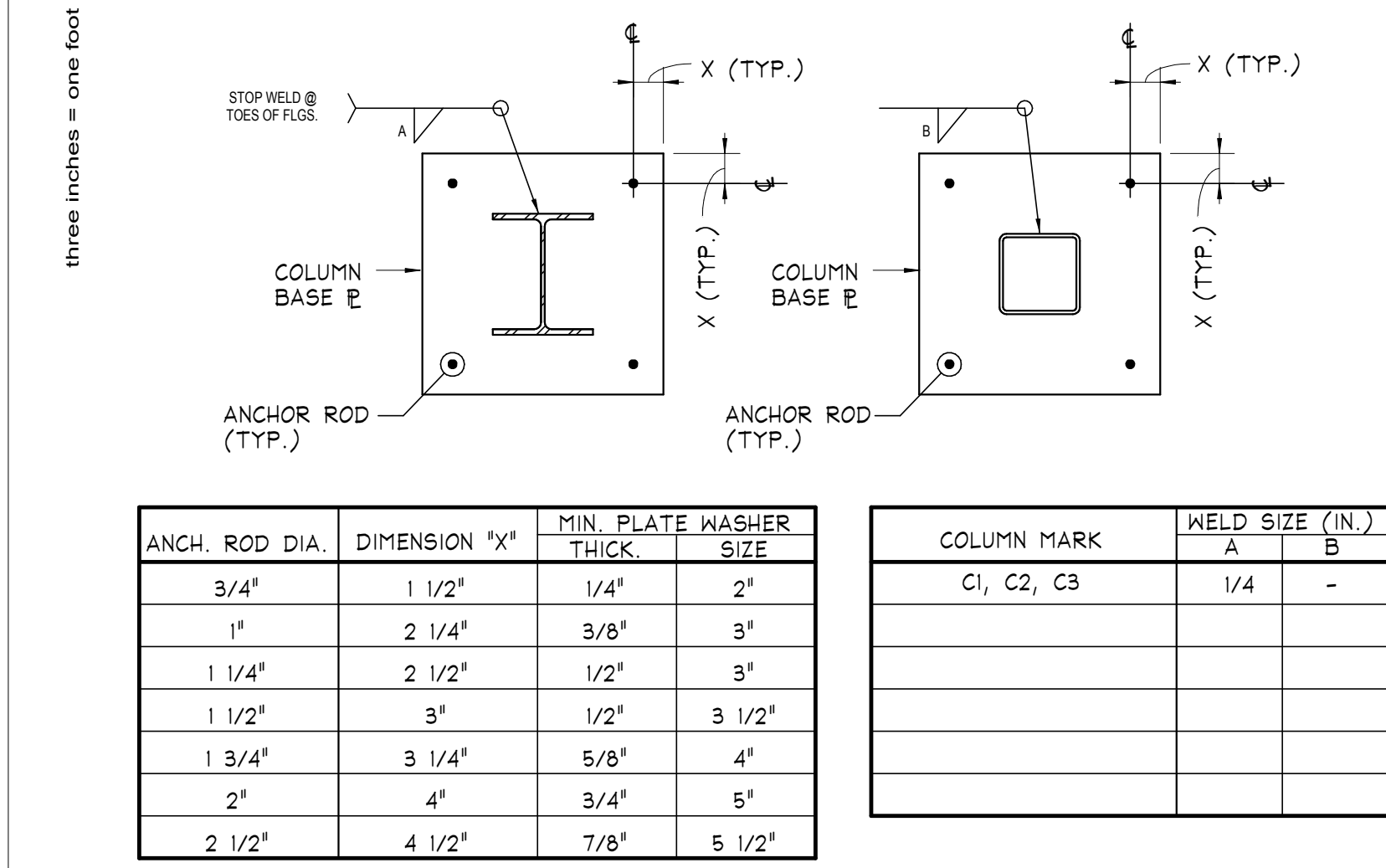
**Dwg. 77 of 161**

**Office of Construction and Facilities Management**

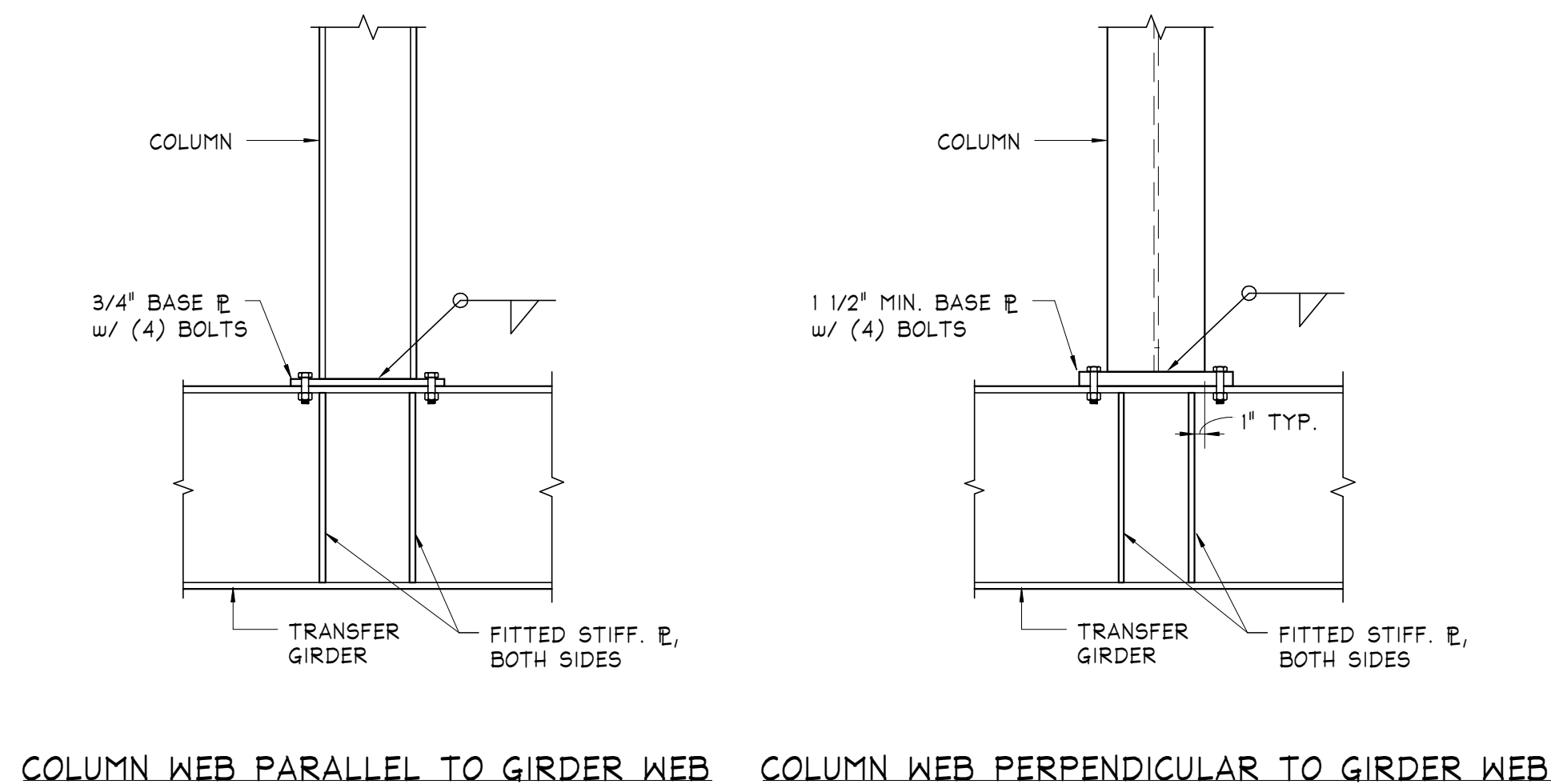
**Department of Veterans Affairs**



three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one eighth inch = one foot  
one eighth inch = one foot

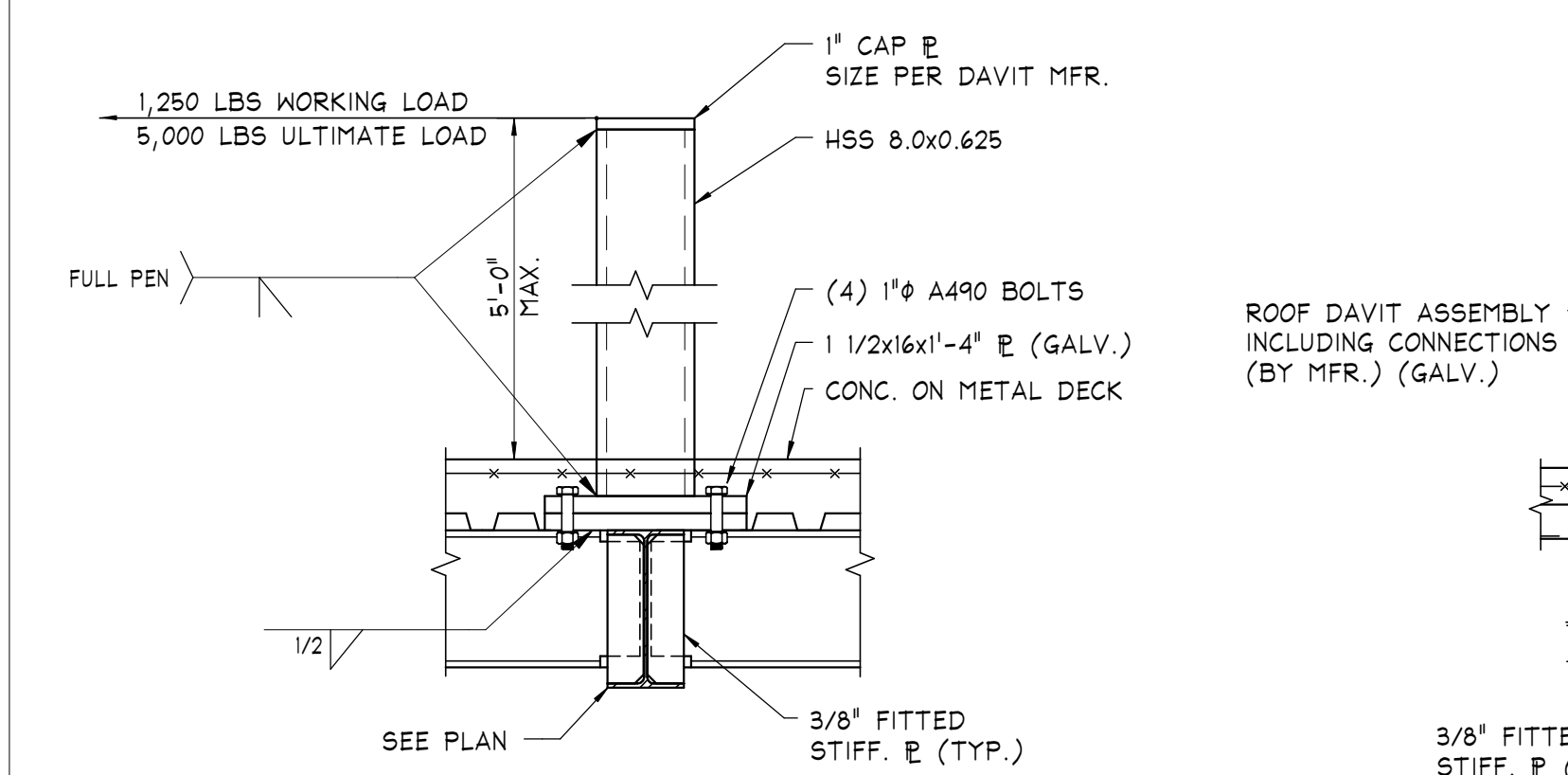


COLUMN BASE PLATE DETAIL  
(USE ONLY AT COLUMNS INDICATED)



TYPICAL WF COLUMN CONNECTION TO TRANSFER GIRDER

NOTE:  
1) STIFFENER  $\bar{E}$  THICKNESS TO MATCH COLUMN FLANGE THICKNESS.

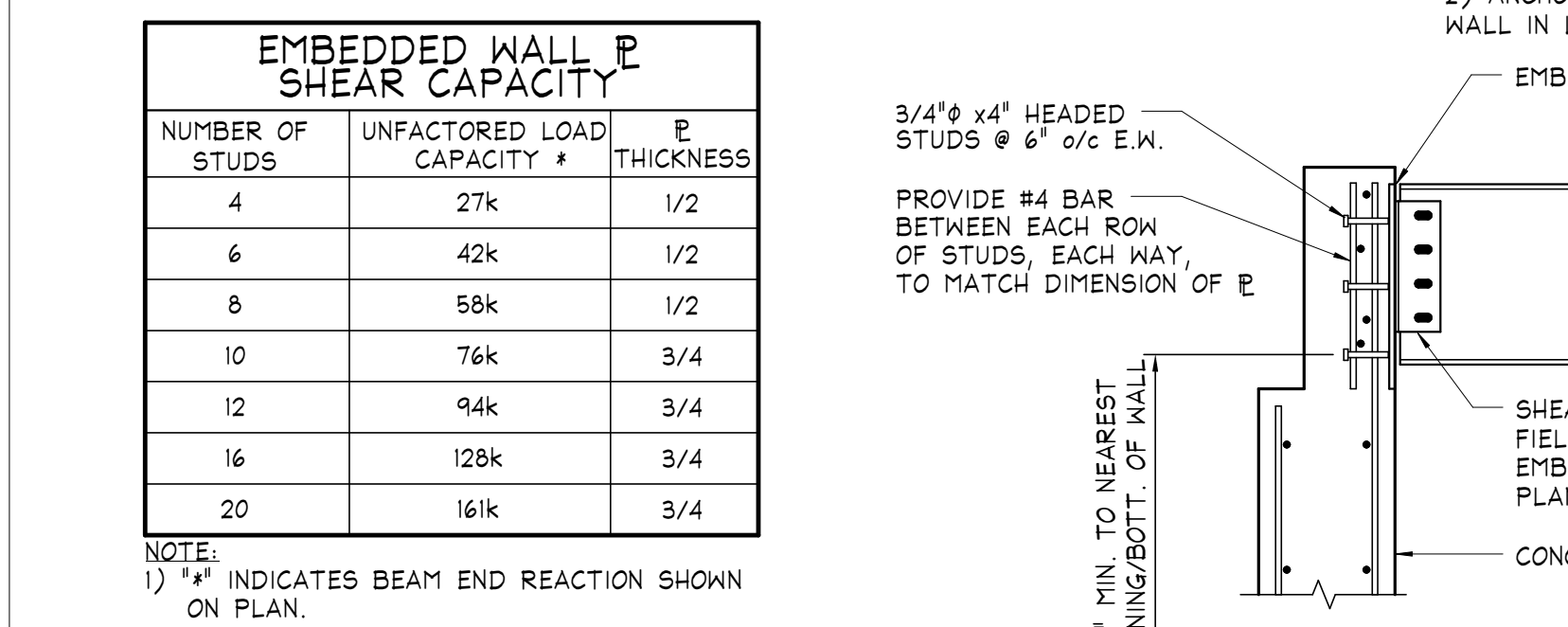


TYPICAL DAVIT SUPPORT STEEL DETAIL

TYPICAL TIE-OFF DETAIL

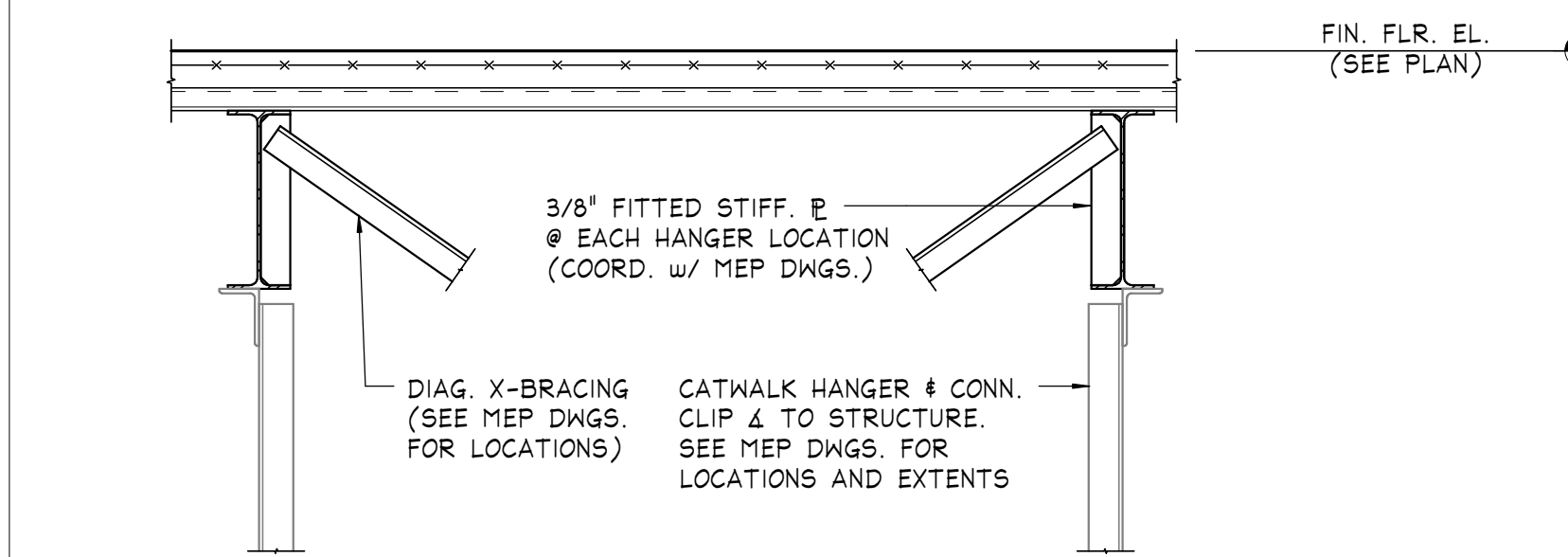
NOTE:  
1) COORDINATE LOCATION WITH ARCH. PLANS.  
2) ANCHOR CAN BE ATTACHED TO ROOF SCREEN WALL IN LIEU OF ROOF SLAB. (SEE ARCH.)

TYPICAL ELEVATOR SEPARATOR BEAM CONNECTION TO CONCRETE WALL



TYPICAL STEEL BEAM TO CAST IN PLACE CONCRETE WALL

NOTES:  
1) INSTALL HEADED STUDS SYMMETRICALLY ABOUT BEAM WEB CENTERLINE, MINIMUM (2) STUDS PER ROW, U.N.O.  
2) MAXIMUM PERMITTED CONNECTION ECCENTRICITY IS 3".  
3) MINIMUM REQUIRED EDGE DISTANCE FROM STUDS TO VERTICAL EDGE OF CONCRETE IS 4".  
4) FOR LOCATIONS WITH WALL OPENINGS BELOW THE  $\bar{E}$  WITHIN 48" OF  $\bar{E}$ , SEE PLAN FOR ADDITIONAL REQUIREMENTS.



TYPICAL CATWALK HANGER CONNECTION DETAIL

TYPICAL PUNCH WINDOW/DOOR FRAME SUPPORT DETAIL

1) \*1" INDICATES TO COORDINATE HSS LOCATIONS WITH ARCH. DRAWINGS & WINDOW/DOOR REQUIREMENTS.  
2) COORDINATE EXTERIOR DOOR & WINDOW LOCATIONS w/ ARCH. DRAWINGS.

TYPICAL FULLY RESTRAINED BEAM TO COLUMN CONNECTION DESIGN MOMENT SCHEDULE																											
LEVEL	BEAM SIZE & UNFACTORED SERVICE MOMENT VALUES (K-FT)																										
	M27			M24			M21			M18			M16			M14			HSS20			HSS18			HSS10		
	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE	DL	LL	1.0W or 0.7IE
ROOF	--	--	--	115	150	65	50	50	10	50	40	10	20	25	20	10	15	10	--	--	--	15	45	55	--	--	--
LEVELS 1 AND 2	60	195	65	95	230	245	--	--	--	20	60	30	15	30	25	--	--	--	15	45	55	--	--	--	10	20	15
LEVEL G	--	--	--	55	100	70	35	60	55	40	75	20	20	35	50	15	30	15	--	--	--	10	20	35	10	15	10

1) ALL MOMENTS ARE IN KIP-FT.  
2) SEE PLANS FOR UNFACTORED BEAM END REACTION FOR USE IN SHEAR CONNECTION DESIGN.  
3) STEEL FABRICATOR TO SUBMIT SIGNED AND SEALED DESIGN CALCULATION BY A LICENSED ENGINEER FOR ALL MOMENT CONNECTIONS.  
4) SEE PLAN FOR ADDITIONAL MOMENT AT CANTILEVERS NOTED ON PLAN TO BE ADDED TO VALUES IN ABOVE CHART.  
5) SEE TYPICAL MOMENT CONNECTION DETAILS ON THIS SHEET FOR CONCEPTUAL DETAILS.  
6) IF SPECIFIED MOMENT IS GREATER THAN MOMENT CAPACITY OF BEAM, PROVIDE MOMENT CONNECTION FOR FULL CAPACITY OF BEAM.  
7) SEE PLAN FOR LOCATIONS.  
8) MOMENT CONNECTIONS SHALL BE DESIGNED FOR WORST CASE IBC ASD LOAD COMBINATIONS BASED ON VALUES LISTED.

CONSULTANTS:

ARCHITECT/ENGINEERS:


Miller-Remick LLC  
111 SOUTH INDEPENDENCE MALL EAST  
SUITE 900  
PHILADELPHIA, PENNSYLVANIA 19106-2524  
TELEPHONE: (215) 925-3788  
FAX: (215) 927-1051  
2025.0007.00

ODONNELL & NACCARATO, INC.  
STRUCTURAL ENGINEERS  
111 SOUTH INDEPENDENCE MALL EAST  
SUITE 900  
PHILADELPHIA, PENNSYLVANIA 19106-2524  
TELEPHONE: (215) 925-3788  
FAX: (215) 927-1051  
2025.0007.00

Drawing Title  
FRAMING DETAILS

Approved: Project Director

BID DOCUMENTS - NOT FOR CONSTRUCTION  
FULLY SPRINKLERED

Project Title <b>AE - UNIVERSITY DRIVE RESEARCH BUILDING ADDITION</b>			Project Number <b>VA244-P-1749</b>		Office of Construction and Facilities Management
Location VA HEALTHCARE, PITTSBURGH PA			Building Number NO. 30		
Date 04/30/14	Checked JMG	Drawn DEF	Drawing Number <b>SS4.02</b> Dwg 78 of 161		
					 Department of Veterans Affairs



