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STRUCTURAL STEEL
AND MISCELLANEOUS METAL (ALL OTHER STEEL) WELDING

- ALL WELDING SHALL BE IN STRICT CONFORMANCE WITH THE LATEST EDITION OF AWS D1.1 AND THE CALIFORNIA BUILDING CODE WITH ALL APPLICABLE AMENDMENTS. ALL WELDED JOINTS SHALL BE PRE-QUALIFIED PER THE LATEST EDITION OF AWS D1.1. AND THE CALIFORNIA BUILDING CODE WITH ALL APPLICABLE AMENDMENTS. ALL NON-PRE-QUALIFIED WELDED JOINTS SHALL BE QUALIFIED BY TEST & PROCEDURE. QUALIFICATION TEST RECORD INCLUDED PER THE LATEST EDITION OF AWS D1.1.
- WELDING OF SHEET METAL AND METAL STUDS SHALL BE IN ACCORDANCE WITH AWS D1.3.
- WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WELD SIZE SHALL BE AS MINIMUM UNLESS A LARGER SIZE IS NOTED. WHERE LENGTH OF WELD IS NOT SHOWN, THE MINIMUM LENGTH OF JOINT, ALL BUTT AND GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.
- ALL WELDING ELECTRODES AND ELECTRODE FLUX COMBINATIONS (FILLER METAL) SHALL SEE XXX-XXXXXXX (MINIMUM TO X5), UNLESS NOTED OTHERWISE, AND SHALL MEET THE REQUIREMENTS FOR H16 PER AISC SEISMIC PROVISIONS.
- ALL WELDS SHALL HAVE A FILLER METAL WITH CHАРPY V-NOTCH TOUGHNESS OF 20 FT-LBS AVERAGE AT MINUS TWENTY DEGREES FAHRENHEIT AND 40 FT-LBS AT SEVENTY DEGREES FAHRENHEIT. CERTIFY CONFORMANCE TO CHАРPY V-NOTCH TOUGHNESS REQUIREMENTS WITH TESTS BY AN INDEPENDENT TESTING LABORATORY.
- GMAW AND FCAW-G WELDING PROCESSES SHALL NOT BE PERMITTED WHEN WIND SPEED EXCEEDS 3 MPH.
- WHERE FIELD WELDING IS NOTED, THE DESIGNATION IS GIVEN AS A SUGGESTED CONSTRUCTION PROCEDURE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR IDENTIFYING THE METHOD OF FABRICATION.
- ALL SHOP AND FIELD WELDS SHALL BE PERFORMED BY A FABRICATOR LICENSED BY THE LOCAL JURISDICTION.
- ALL WELDERS SHALL BE QUALIFIED FOR THE WORK THEY WILL BE PERFORMING AND SHALL HAVE CURRENT VALID CERTIFICATIONS ISSUED BY AWS AND THE GOVERNING JURISDICTION.
- FACES OF FILLET WELDS EXPOSED TO VIEW SHALL HAVE AS-WELDED SURFACES THAT ARE REASONABLY SMOOTH AND UNIFORM. NO FINISHING OR GRINDING SHALL BE REQUIRED, EXCEPT WHERE CLEARANCES OR FIT OF OTHER ITEMS MAY SO NECESSITATE.
- ALL PARTIAL AND FULL PENETRATION WELDS WHICH ARE EXPOSED TO VIEW SHALL BE GRIND SMOOTH AND FLUSH WITH FINISH SURFACE OF STEEL. HOLES SHALL BE FILLED WITH WELD METAL OR BODY SOLDER AND SMOOTHED BY GRINDING OR FILING.
- CLEAN GROOVE PREPARATION THERMAL CUTS BY GRINDING.
- WELDS SHALL BE TERMINATED AT THE END OF A JOINT IN A MANNER THAT WILL ENSURE SOUND WELDS. WHENEVER NECESSARY THIS SHALL BE DONE BY USE OF EXTENSION BARS AND RUN OFF TABS.
- A WRITTEN "WELDING PROCEDURE SPECIFICATION" (WPS), PER AWS D1.1, SHALL BE DEVELOPED BY THE FABRICATOR/ERECTOR, AND REVIEWED BY THE OWNER'S REPRESENTATIVE AND BUILDING DEPARTMENT. THE WPS SHALL CONTAIN ALL THE NECESSARY INFORMATION REQUIRED BY THE CODE, THE SPECIFICATIONS, AND ANY OTHER INFORMATION NECESSARY TO PRODUCE WELDS THAT ARE IN COMPLIANCE WITH THESE REQUIREMENTS. THE WPS SHALL INCLUDE THE WELDING PARAMETERS RECOMMENDED BY THE ELECTRODE MANUFACTURER. ALL WELDERS AND INSPECTORS SHALL ADHERE TO THE WPS AND SHALL RETAIN A COPY.
- PROVISION FOR WELDING HEAT EFFECTS: A SEQUENCE OF FIELD WELDING SHALL BE PLANNED TO MINIMIZE LOCKED IN STRESSES AND DISTORTION AND SHALL BE SUBMITTED TO THE ENGINEER AT TIME OF SHOP DRAWING SUBMITTAL. THE OWNER'S REPRESENTATIVE SHALL APPROVE ANY PROPOSED DEVIATIONS FROM THE DETAILS SHOWN ON THE DRAWINGS. THE PROCEDURES AND THE DETAILS USED SHALL INTENT OF THE DETAILS SHOWN ON THE DRAWINGS AND SPECIFICATIONS. THE SEQUENCE OF FIELD WELDING, BOTH IN THE JOINTS AND FRAMES AS A WHOLE, SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR APPROVAL. NO FIELD WELDING SHALL BE PERFORMED PRIOR TO BUILDING DEPARTMENT APPROVAL.
- THE FOLLOWING PROVISIONS APPLY TO ALL WELDING AT BEAM-COLUMN MOMENT FRAME CONNECTIONS:
 - MINIMUM INITIAL PRE-HEAT TO BE 225 DEGREES F MEASURED +/- 3 INCHES FROM THE WELD JOINT. FOR JUMBO SECTIONS, MINIMUM PRE-HEAT TO BE 350 DEGREES F. MAXIMUM INTERPASS TEMPERATURE 550 DEGREES F SHALL BE MONITORED ON COLUMN FLANGE, MAINTAIN PRE-HEAT TEMPERATURE WHEN WELDING IS INTERRUPTED. VERIFY WITH AWS D1.1 FOR ADDITIONAL REQUIREMENTS.
 - EACH FLANGE OF A MOMENT FRAME BEAM TO COLUMN CONNECTION SHALL BE WELDED IN ONE CONTINUOUS PROCESS WITHOUT COOLING BELOW THE PRE-HEAT TEMPERATURE.
 - USE STRINGER PASSES ONLY. NO WEAVING. LAY PASSES IN HORIZONTAL LAYERS. EACH PASS SHALL BE THOROUGHLY DESLAGGED AND CLEANED BY WIRE BRUSHING.
 - PEEN EACH PASS, EXCEPT FIRST AND LAST, IMMEDIATELY AFTER DESLAGGING AND CLEAN USING A POWER SLAGGING GUN WITH A BLUNT TOOL. KEEP GUN AT RIGHT ANGLES TO WELD AND MAKE 4-5 PASSES THE LENGTH OF THE WELD WITH NO NICKS, CUTS OR DEEP INDENTATIONS BEING EVIDENT.
 - BOTH BEAM FLANGES SHOULD BE WELDED PRIOR TO ANY SUPPLEMENTAL WELDING TO THE SHEAR TAB. WELD RUN OFF TABS SHALL BE REMOVED AND GROUND FLUSH TO THE BEAM FLANGE WITH MINIMAL DISTURBANCE.
 - RUN OFF TABS USED AT BEAM FLANGE CONNECTION SHALL BE REMOVED AND THE ENDS OF THE WELDS SHALL BE MADE SMOOTH & FLUSH WITH THE EDGE OF ABUTTING PARTS IN ACCORDANCE WITH AWS D1.1. NO WELD DAMS ARE ALLOWED.
 - AFTER FULL PENETRATION WELDING, THE BOTTOM BEAM FLANGE BACKING BAR SHALL BE REMOVED. THE WELD ROOT INSPECTED AND TESTED FOR IMPERFECTIONS, WHICH IF FOUND, ARE TO BE REMOVED BY BACKGROUTING TO SOUND MATERIAL & CLEANED BY GRINDING & BACKGROUTED BY AIR ARC. THE BACKGROUTED AREA IS TO BE WELDED. A FILLET WELD SHALL BE APPLIED TO REINFORCE THE JOINT. SEE DETAILS FOR INFORMATION RELATED TO THE REINFORCING FILLET WELD.
- THE FOLLOWING PROVISIONS APPLY TO WELDING BEAM-COLUMN MOMENT FRAME BOTTOM FLANGE CONNECTIONS:
 - THE ROOT PASS SHALL BEGIN IN THE CENTER OF THE JOINT, IN THE AREA OF THE WELD ACCESS HOLE, REACHING PAST THE BEAM WEB THROUGH THE COPE HOLE WHEN NEAR END OF WELDING. AFTER THE ARC IS INITIATED, TRAVEL SHALL PROGRESS TOWARD THE EDGE OF BEAM BOTH FLANGES, AND THE WELD SHALL BE TERMINATED ON THE WELD RUN OFF TAB.
 - THE HALF LENGTH ROOT PASS SHALL BE THOROUGHLY CLEANED.
 - THE START OF THE WELD IN THE WELD ACCESS HOLE AREA SHALL BE VISUALLY INSPECTED TO ENSURE FUSION, SOUNDNESS, FREE FROM SLAG INCLUSIONS AND EXCESSIVE POROSITY. THE RESULTING BEAD PROFILE SHALL BE SUITABLE FOR OBTAINING GOOD FUSION BY THE SUBSEQUENT PASS TO BE INITIATED ON THE OPPOSITE SIDE OF THE BEAM WEB. IF THE PROFILE IS NOT CONDUCTIVE TO GOOD FUSION, THE START OF THE FIRST ROOT PASS SHALL BE GROUND, GROUTED, CHIPPED, OR OTHERWISE PREPARED TO ENSURE ADEQUATE FUSION.
 - THE SECOND HALF OF THE WELD JOINT SHALL HAVE THE ROOT PASS APPLIED BEFORE ANY OTHER WELD PASSES ARE PERFORMED. THE ARC SHALL BE INITIATED IN THE AREA OF THE START OF THE FIRST ROOT PASS, AND TRAVEL SHALL PROGRESS TO THE END OF THE JOINT, TERMINATING ON THE WELD TAB.
 - EACH WELD LAYER SHALL BE COMPLETED ON BOTH SIDES OF THE JOINT BEFORE A NEW LAYER IS DEPOSITED.

STRUCTURAL STEEL AND
MISCELLANEOUS METAL (ALL OTHER STEEL)

- ALL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND THE LATEST EDITION OF AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS. WHERE THE STRUCTURAL STEEL IS EXPOSED AND INDICATED AS "WELDS" ON PLANS OR DETAILS, FABRICATION AND ERECTION SHALL ALSO BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL. ALL STRUCTURAL STEEL SHALL BE FABRICATED BY A FABRICATOR LICENSED BY LOCAL JURISDICTION.
- GENERAL CONTRACTOR TO DETERMINE SCOPE OF WORK FOR BOTH STRUCTURAL STEEL AND MISCELLANEOUS METAL. SUBCONTRACTORS IF MULTIPLE SUBCONTRACTORS ARE USED). THE COMBINED SCOPE OF WORK FOR ALL SUBCONTRACTORS SHALL INCLUDE ALL STRUCTURAL STEEL AND MISCELLANEOUS METAL WORK SHOWN ON THE CONTRACT DRAWINGS.
- STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION AS INDICATED BELOW UNLESS NOTED OTHERWISE:

ALL WIDE FLANGE AND WT SHAPES	A992, GRADE 50
STEEL ANGLES AND CHANNELS	A36 UNO
ALL OTHER STRUCTURAL SECTIONS	A572, GRADE 50
DECK CLOSURE PLATES AND SHIM MATERIALS	A36
BEAM SHEAR PLATES, STIFFENER PLATES ALL OTHER PLATES	A572, GRADE 50 UNO
HSS (RECTANGULAR, SQUARE OR ROUND)	A500, GRADE B
STEEL PIPE (NOT LABELED AS HSS)	A53, GRADE B
STAINLESS STEEL SHAPES, PLATES AND BARS	A276
BOLTS	A325X
MACHINE BOLTS (USE ONLY WHERE INDICATED)	A307
ANCHOR BOLTS	F1554, GRADE 55 S1, HEADED
THREADED AND HANGER ROD	A572, GR50
NUTS FOR BOLTS AND MACHINE BOLTS	A563
HARDENED WASHERS	F436
UNHARDENED WASHERS	F844
PLAIN WASHERS	ANSI B18.22.1
- HOT ROLLED SHAPES WITH FLANGES 1-1/2" THICK OR THICKER AND PLATES THAT ARE 2" THICK OR THICKER THAT ARE PART OF THE SEISMIC FORCE RESISTING SYSTEM SHALL HAVE A MINIMUM CHАРPY V-NOTCH (CVN) TOUGHNESS OF 20 FT-LBS AT 70 DEGREES F.
- HIGH STRENGTH BOLTS
 - PROVIDE HIGH STRENGTH BOLTS, NUTS AND WASHERS COMPLYING WITH ASTM A325 WITH THREADS EXCLUDED FROM THE SHEAR PLANE UNLESS NOTED OTHERWISE. PROVIDE PRE-TENSIONED HIGH STRENGTH BOLTS (WITH CLASS A FAYING SURFACE) FOR ALL BOLTED CONNECTIONS PART OF THE SEISMIC FORCE RESISTING SYSTEM (SFRS, INCLUDING MOMENT FRAMES AND DRAG CONNECTIONS) UNLESS NOTED OTHERWISE.
 - ASSEMBLE HIGH STRENGTH BOLTS IN COMPLIANCE WITH SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS.
 - TIGHTEN ALL BOLTS TO A SNUG TIGHT CONDITION, UNLESS NOTED OTHERWISE. INSTALL PRE-TENSIONED BOLTS TO AT LEAST THE TENSILE STRENGTH INDICATED IN THE REFERENCED STANDARD USING ONE OF THE APPROVED METHODS.
- HEADED ANCHOR STUDS AND THREADED STUDS SHALL BE NELSON Q21 (ICC ECR-2656, LARR #2276) GRANULAR FLUX-FILLED, AND SHALL BE MADE FROM COLD FINISHED LOW CARBON STEEL, CONFORMING TO ASTM A-108, GRADES 1010 THROUGH 1020 WITH A MINIMUM TENSILE STRENGTH OF 60,000 PSI. STUD WELDING INSPECTION AND TESTING SHALL CONFORM TO AWS D1.1.
- DEFORMED BAR ANCHOR STUDS SHALL BE NELSON D21 (ICC ECR-2607, LARR #2660) GRANULAR FLUX-FILLED REBAR STUDS, AND SHALL BE MADE OF LOW CARBON COLD ROLLED STEEL WITH A MINIMUM TENSILE STRENGTH OF 80,000 PSI. STUD WELDING INSPECTION AND TESTING SHALL CONFORM TO AWS D1.1.
- HOT DIP GALVANIZE IN ACCORDANCE WITH ASTM A123 AND ASTM A153 STRUCTURAL STEEL, MISCELLANEOUS METAL, AND SHALL BE MADE FROM COLD FINISHED WEATHER. REPAIR GALVANIZING AFTER WELDING IN ACCORDANCE WITH ASTM A780.
- WHEN FABRICATING BEAMS, PLACE NATURAL CAMBER UP. PROVIDE UPWARD CAMBER TO ALL MEMBERS SHOWN TO HAVE CAMBER. AMOUNT MEASURED IN THE FIELD PRIOR TO ERECTION SHALL NOT DEVIATE BY MORE THAN ALLOWED BY THE AISC SPECIFICATIONS. DO NOT CAMBER MEMBERS OCCURRING BELOW ELEVATOR ENTRANCE DOORS.
- SPLICE MEMBERS ONLY WHERE INDICATED.
- THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS FOR OWNER'S REPRESENTATIVE REVIEW BEFORE FABRICATION. SUBMITTALS SHALL BE IN SIZES COMMENSURATE WITH A TWO WEEK TURNAROUND TIME. A MAXIMUM OF 250 SHOP DRAWINGS EVERY TWO WEEKS IS PERMITTED UNLESS WRITTEN AUTHORIZATION IS PROVIDED BY THE ARCHITECT TO CHANGE THIS LIMIT.
- AFTER FABRICATION, ALL STEEL SHALL BE CLEANED FREE OF RUST, LOOSE MILL SCALE AND OIL.
- BOLT HOLES IN STEEL SHALL BE STANDARD HOLES, 1/16 INCH LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE. BOLT HOLES IN BASE PLATES MAY BE OVERSIZED PER AISI TABLE 14-2 IF WASHERS ARE PROVIDED IN ACCORDANCE WITH THIS TABLE.
- BOLTS SHALL BE SPACED AT 3" O.C. UNLESS NOTED OTHERWISE. THE DISTANCE FROM THE EDGE OF A STANDARD HOLE TO THE EDGE OF A CONNECTING PART IN ANY DIRECTION SHALL NOT BE LESS THAN 1 1/2" U.N.O. THE EDGE DISTANCE MAY BE 1 1/4" AT THE ENDS OF BEAM CONNECTION ANGLES AND SHEAR END PLATES. THE DISTANCE FROM CENTER OF AN OVERSIZED OR SLOTTED HOLE TO THE EDGE OF A CONNECTING PART SHALL NOT BE LESS THAN THAT REQUIRED FOR A STANDARD HOLE TO THE EDGE OF A CONNECTED PART PLUS THE APPLICABLE INCREMENT C/2 FROM AISI TABLE J3.5.
- ALL STRUCTURAL STEEL SURFACES TO BE WELDED OR HIGH-STRENGTH BOLTED, TO BE ENCASED IN CONCRETE OR TO RECEIVE SPRAY-APPLIED FIREPROOFING SHALL BE LEFT UNPAINTED.
- FRAME WELDING SEQUENCE: LONGITUDINAL SHRINKAGE STRESSES DUE TO FIELD WELDING SHALL BE MINIMIZED BY MAKING WELDED CONNECTIONS STARTING AT THE MOST CENTRAL BEAM IN THE FRAMES AND PROGRESSING TOWARDS THE EXTERIOR COLUMNS. IN THIS MANNER, THE LONGITUDINAL SHORTENING CAN PULL THE UNRESTRAINED PORTION OF THE FRAME INWARDS WITHOUT CREATING EXCESSIVE SECONDARY TENSILE FORCES. IN ADDITION, ONE END OF EACH BEAM SHALL BE ALLOWED TO COOL BEFORE WELDING THE OTHER END. WELDED AND BOLTED WEB CONNECTIONS SHALL BE MADE ONLY AFTER FLANGES HAVE BEEN WELDED. FINAL WELDING SEQUENCE IS TO BE SUBMITTED FOR REVIEW TO THE STRUCTURAL ENGINEER OF RECORD AND FOR APPROVAL TO THE APPROVING AGENCY HAVING JURISDICTION OVER THE PROJECT.
- SEE ARCHITECTURAL DRAWINGS FOR DETAILS OF FIREPROOFING & INTUMESCENT PAINTS.

MECHANICAL ANCHORS

- EXPANSION OR WEDGE ANCHORS INTO CONCRETE: HLTI KB TZ (ICC ESR-1917) OR SIMPSON STRONG BOLT (ICC ESR-1771) TO BE INSTALLED IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS.
- EXPANSION OR WEDGE ANCHORS INTO MASONRY: HLTI KB 3 (ICC ESR-1389) OR SIMPSON WEDGE-ALL (ICC ESR-1396) TO BE INSTALLED IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS.
- UNDERCUT ANCHORS INTO CONCRETE: HLTI HDA (ICC ESR-1546) TO BE INSTALLED IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS.
- HEAVY DUTY SLEEVE ANCHORS INTO CONCRETE: HLTI HSL 3 (ICC ESR-1546) TO BE INSTALLED IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS.
- FASTENERS SHALL BE STAINLESS STEEL FOR EXTERIOR USE OR WHEN EXPOSED TO WEATHER. PROVIDE GALVANIZED CARBON STEEL ANCHORS AT OTHER LOCATIONS, UNLESS OTHERWISE NOTED.
- IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE STRUCTURAL ENGINEER WILL DETERMINE A NEW LOCATION.
- LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH MECHANICAL ANCHORS.
- ANCHORS SHALL BE PROOF-TESTED BY OWNER'S TESTING AND INSPECTION AGENCY.
- TEST ANCHORS NO SOONER THAN 24 HOURS AFTER INSTALLATION.
- APPLY TEST LOAD BY ANY METHOD THAT WILL EFFECTIVELY MEASURE THE TENSION ON THE ANCHOR SUCH AS DIRECT PULL WITH A HYDRAULIC JACK, TORQUE WRENCH, OR CALIBRATED SPRING LOADING DEVICES, ETC.
- REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED. PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY A BASE PLATE OR OTHER FIXTURE. IF RESTRAINT IS FOUND, LOOSEN AND SHIM OR REMOVE THE FIXTURE PRIOR TO TESTING.
- UNLESS OTHERWISE NOTED, PROVIDE MINIMUM EMBEDMENT OF ANCHORS AS SHOWN IN TABLES BELOW.
- TEST 50% OF ANCHORS PER ONE OF THE FOLLOWING METHODS AND IN ACCORDANCE WITH THE VALUES SHOWN IN THE TABLE.
 - HYDRAULIC RAM METHOD: APPLY PROOF TEST LOAD WITHOUT REMOVING THE NUT. IF IT IS NOT POSSIBLE TO TEST WITH THE NUT INSTALLED, REPLACE THE NUT WITH A THREADED COUPLER TO THE SAME TORQUE MEASURED WITH A TORQUE WRENCH, AND THEN APPLY THE LOAD. ANCHOR IS ACCEPTABLE IF NO MOVEMENT IS OBSERVED AT THE TEST LOAD. MOVEMENT MAY BE DETERMINED WHEN THE WASHER UNDER THE NUT BECOMES LOOSE.
 - TORQUE WRENCH METHOD: TEST ANCHORS TO THE TORQUE LOAD INDICATED IN THE TABLE WITHIN ONE-HALF TURN OF THE NUT.

WEDGE OR EXPANSION ANCHOR EMBEDMENT DEPTH AND TEST LOAD					
ANCHOR DIAMETER	MIN EMBED	ANCHORS IN CONCRETE		ANCHORS IN MASONRY	
		TENSION LOAD (LBS)	TORQUE LOAD (FT-LBS)	TENSION LOAD (LBS)	TORQUE LOAD (FT-LBS)
1/4"	2"	800	10	300	10
3/8"	2"	1500	25	500	30
1/2"	3 1/4"	3000	40	1000	35
5/8"	4	4900	80	1250	55
3/4"	4 3/4"	6300	110	1700	120

UNDERCUT ANCHORS IN CONCRETE EMBEDMENT DEPTH AND TEST LOAD				
ANCHOR DIAMETER (MM)	ANCHOR DIAMETER (IN)	MIN EMBED (IN)	TENSION LOAD (LBS)	TORQUE LOAD (FT-LBS)
M10	3/4	4	8730	37
M12	7/8	5	10914	59
M16	1 1/8	7 1/2	21828	89
M20	1 7/16	10	32742	221

HEAVY DUTY SLEEVE ANCHORS IN CONCRETE EMBEDMENT DEPTH AND TEST LOAD				
ANCHOR DIAMETER (MM)	ANCHOR DIAMETER (IN)	MIN EMBED IN	TENSION LOAD (LBS)	TORQUE LOAD (FT-LBS)
M8	1/2	2 1/2	2728	25
M10	5/8	3	4364	50
M16	3/4	3 1/4	6512	80
M20	15/16	4	9102	120
M24	1 3/16	5	12720	200
M24	1 5/16	6	13904	250

- IF ANY ANCHOR FAILS TESTING, REPLACE ANCHOR AND TEST ADDITIONAL ANCHORS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE TESTS PASS, THEN RESUME INITIAL TESTING FREQUENCY.

ADHESIVE ANCHORS AND DOWELS

- ANCHORS AND DOWELS INSTALLED INTO CONCRETE SHALL BE INSTALLED USING HLTI HIT RE 500-S0 (ICC ESR-2322). PERFORM INSTALLATION IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS. EMBEDMENT DEPTH FOR ANCHORS AND DOWELS IS AS FOLLOWS, UNLESS OTHERWISE NOTED. THE TESTING LABORATORY WILL PERFORM TENSION TESTS ON 25% OF ANCHORS AND DOWELS TO THE FOLLOWING TEST LOADS:

ROD DIA OR BAR SIZE	EMBEDMENT	TEST LOAD	BASE MATERIAL
3/8"	4"	3,000#	CONCRETE
1/2"	5"	4,500#	CONCRETE
5/8"	6"	6,500#	CONCRETE
3/4"	7"	9,000#	CONCRETE
7/8"	9"	11,000#	CONCRETE
1"	11"	15,000#	CONCRETE
1 1/4"	14"	20,000#	CONCRETE
#3	5"	3,500#	CONCRETE
#4	6 1/2"	5,500#	CONCRETE
#5	8"	8,500#	CONCRETE
#6	10"	12,000#	CONCRETE
#7	12"	16,500#	CONCRETE
#8	18"	21,500#	CONCRETE
#9	16"	23,000#	CONCRETE
#10	19"	26,500#	CONCRETE

- ANCHORS INSTALLED INTO GROUT-FILLED MASONRY SHALL BE INSTALLED USING SET ADHESIVE ANCHOR SYSTEMS BY SIMPSON STRONG-TIE (ICC ESR-1772) OR HLTI HIT HY-150 MAX (ICCESR-1967). PERFORM INSTALLATION IN ACCORDANCE WITH THE ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS. EMBEDMENT DEPTH FOR ANCHORS AND DOWELS SHOWN BELOW (UNLESS OTHERWISE NOTED). THE TESTING LABORATORY WILL PERFORM TENSION TESTS ON 25% OF ANCHORS AND DOWELS TO THE FOLLOWING TEST LOADS:

ROD DIA OR BAR SIZE	EMBEDMENT	TEST LOAD	BASE MATERIAL
3/8"	3 3/8"	1,900#	GROUTED CMU
1/2"	4 1/2"	2,550#	GROUTED CMU
5/8"	5 5/8"	3,700#	GROUTED CMU
3/4"	6 3/4"	4,900#	GROUTED CMU

ROD DIA OR BAR SIZE	EMBEDMENT	TEST LOAD	BASE MATERIAL
3/8"	3 3/8"	1,900#	GROUTED CMU
1/2"	4 1/2"	2,550#	GROUTED CMU
5/8"	5 5/8"	3,700#	GROUTED CMU
3/4"	6 3/4"	4,900#	GROUTED CMU

- ANCHORS INSTALLED IN UNREINFORCED BRICK MASONRY (URM) SHALL BE INSTALLED USING SET ADHESIVE ANCHOR SYSTEMS BY SIMPSON STRONG-TIE (ICC ESR-1772). USE SCREENS AND INSTALL AS SPECIFIED BY THE MANUFACTURER AND THE ICC REPORT. BARS SHALL BE BENT AND INSTALLED AT A 22.5 DEGREE ANGLE. EMBEDMENT DEPTH FOR ANCHORS AND DOWELS SHALL BE IN ACCORDANCE WITH TABLE BELOW (UNLESS OTHERWISE NOTED). THE TESTING LABORATORY WILL PERFORM TENSION TESTS ON 25% OF ANCHORS AND DOWELS TO THE SPECIFIED TEST LOADS

ROD DIA OR BAR SIZE	EMBEDMENT	TEST LOAD	BASE MATERIAL
3/4"	13"	2,400#	URM

- ANCHORS SHALL CONFORM WITH ASTM A193 GRADE B7 THREADED RODS USING ASTM A 963 GRADE DH HEAVY HEX NUTS AND ASTM F436 WASHERS U.N.O.
- DOWELS SHALL CONFORM WITH ASTM A615 OR ASTM A706 GRADE 60 REINFORCING STEEL U.N.O.
- REPLACE ANCHORS AND DOWELS THAT FAIL DURING TESTING AND RETEST. IF MORE THAN 10% OF THE TESTED DOWELS AND ANCHORS FAIL TO ACHIEVE THE SPECIFIED TEST LOAD, TEST 100% OF THE DOWELS AND ANCHORS INSTALLED IN THE LAST 2 DAYS OF ANCHOR INSTALLATION.
- CENTER BAR IN THE HOLE AND WEDGE TIGHT WITH WOODEN WEDGES TO HOLD IT IN PLACE UNTIL THE ADHESIVE SETS.
- IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
- LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH ADHESIVE ANCHORS.

METAL DECK

- THE STEEL DECKING SHALL BE OF TYPE AND GAUGE AS CALLED FOR ON THE DRAWINGS MANUFACTURED BY ASC PROFILES, INC. ESR-1414 (LARR #23783), VERCOR MANUFACTURING COMPANY, ESR-1736P (LARR #23789), OR APPROVED EQUAL. DECKING AND ALL ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS HAVING A MINIMUM YIELD STRENGTH OF 33,000 PSI AND CONFORMING TO ASTM A-653. THE STEEL SHALL BE ZINC-COATED CONFORMING TO ASTM A525, CLASS 580. DECK UNITS SHALL BE CONTINUOUS OVER THREE OR MORE SPANS WHERE POSSIBLE.
- MINIMUM BEARING OF DECKING ON SUPPORTS SHALL BE 2 INCHES. SHEETS SHALL BE ATTACHED TO ALL SUPPORTING STEEL MEMBERS BY WELDING AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. UPON COMPLETION OF ERECTION, ALL WELDS IN EXPOSED DECK AREAS SHALL HAVE TOUCH-UP DE-SLAG, CLEAN AND PRIME WITH A ZINC RICH PRIMER. DECK WELDING SHALL BE AS NOTED ON PLANS. WHERE NO WELDING IS NOTED, THE SIDE LAP OF EACH PANEL SHALL BE FASTENED BY 1 INCH LONG FILLET WELDS AT 3 FEET ON CENTER MAXIMUM, OR BUTT JUNCTIONED AT 18 INCHES ON CENTER.
- SEE DRAWINGS FOR DETAIL OF REINFORCING OF DECK OPENINGS. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL DRAWINGS, ETC., FOR SIZE AND LOCATION OF REQUIRED OPENINGS.
- ALL WELDING OF STEEL DECK SHALL BE PERFORMED BY LIGHT GAUGE WELDERS CERTIFIED BY THE GOVERNING JURISDICTION.
- HANGERS SUPPORTED BY METAL DECKING ONLY OR METAL DECKING WITH INSULATING FILL SHALL BE ATTACHED TO STEEL BARS, 3/8" ROUND X 12" OR 18" x 1 1/2" x 12" FLAT, PLACED PERPENDICULAR TO THE TESTES. ONLY LIGHT DUCTWORK (12" X 16" MAX.), PIPING (1 1/2" ROUND PIPING MAX), OR CEILINGS MAY BE HUNG FROM SUCH INSTALLATIONS. HANGERS MUST BE TWO FLUTES APART WHERE THEY OCCUR ON THE SAME SPAN.
- HANGERS SUPPORTED BY METAL DECK WITH STRUCTURAL CONCRETE FILL SHALL BE INSTALLED USING ICC APPROVED ANCHORAGE SYSTEMS. SUCH HANGERS SHALL BE USED TO SUPPORT DUCTWORK (6" X 16" MAX.), PIPING (4" ROUND MAX), OR CEILINGS. HANGERS MUST BE AT LEAST TWO FLUTES APART ON SAME DECK SPAN. LARGER DUCTWORK AND PIPING SHALL BE SUPPORTED BY STRUCTURAL BEAMS OR COLUMNS.
- METAL DECK AT ROOFS, EXTERIOR BALCONIES, CANOPIES OR EXPOSED TO WEATHER SHALL BE VENTED.

REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318) AND THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION (ACI 308.1) AND THE W.C.R.S.I., OR AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
- REINFORCING BARS SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE.

CLASSIFICATION	TYPE
REINFORCING STEEL IN GRAVITY BEAMS, GRAVITY COLUMNS, STIRRUPS, TIES, FOUNDATIONS, PILECAPS, AND GRADE BEAMS (JUNO);	ASTM A615, 60 KSI*
REINFORCING STEEL TO BE WELDED AND LONGITUDINAL REINFORCING STEEL IN CONCRETE GRADE BEAM;	ASTM A706, 60 KSI
* ASTM A706 GR 60 MAY BE CONSIDERED EQUIVALENT TO ASTM A615, BUT ASTM A615 IS NOT EQUIVALENT TO ASTM A706.	
- MECHANICAL COUPLERS: LENTON THREADED COUPLERS BY ERICO, ICC #3967 (LARR #24507), XTENDER BY HEADED REINFORCEMENT CORPORATION, ICC #2794 (LARR #25347) OR BAR LOCK BY DAYTON SUPERIOR CORP., ICC #2496 (LARR #25342), COUPLERS FOR BEAM AND SLAB BARS AT FORMED CONSTRUCTION JOINTS MAY BE LENTON FORM SAVERS BY ERICO, ICC #3967.
- WELDING OF REINFORCEMENT SHALL BE WITH LOW HYDROGEN E80XX ELECTRODES FOR WELDING ASTM A615 BARS AND E80XX ELECTRODES FOR WELDING ASTM A706 BARS. ALL WELDING SHALL BE IN CONFORMANCE WITH AMERICAN WELDING SOCIETY AWS-D1.4. ONLY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL AND IN ACCORDANCE WITH AWS D1.4 SHALL PERFORM WELDING OF REINFORCING STEEL.
- DRAWINGS SHOW TYPICAL REINFORCING CONDITIONS. CONTRACTOR SHALL PREPARE DETAILED PLACEMENT DRAWINGS OF ALL CONDITIONS SHOWING QUANTITY, SPACING, SIZE, CLEARANCES, LAPS, INTERSECTIONS AND COVERAGE REQUIRED BY STRUCTURAL DETAILS, APPLICABLE CODE AND TRADE STANDARDS. CONTRACTOR SHALL NOTIFY REINFORCING INSPECTOR OF ANY ADJUSTMENTS FROM TYPICAL CONDITIONS THAT ARE PROPOSED IN PLACEMENT DRAWINGS TO FACILITATE FIELD PLACEMENT OF REINFORCING STEEL AND CONCRETE.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 12 INCHES, OR ONE FULL MESH PLUS TWO INCHES, WHICHEVER IS GREATER.
- REINFORCING SPLICES SHALL ONLY BE MADE AS INDICATED ON THE DRAWINGS.
- DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.
- DOWELS BETWEEN SLABS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.
- ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
- CONTRACTOR SHALL PROVIDE FOR AN ALLOWABLE OF 5 TONS OF REINFORCING TO BE FABRICATED AND PLACED DURING PROGRESS OF WORK AS MAY BE DIRECTED BY THE STRUCTURAL ENGINEER. THE UNUSED PORTION SHALL BE CREDITED TO THE OWNER AT THE COMPLETION OF THE CONCRETE WORK.

POWDER ACTUATED FASTENERS (SHOT PINS)

- POWDER ACTUATED FASTENERS INTO STEEL SHALL BE HLTI X-U FASTENERS (LARR#22675) OR RAMSET SP FASTENERS (LARR#22688). INSTALL ANCHORS IN (LARR#22675) OR RAMSET SP FASTENERS (LARR#22688). INSTALL ANCHORS IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS. FASTENERS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE POINT OF THE PIN PENETRATES THROUGH THE STEEL BASE MATERIAL WHEN CONNECTING TO STEEL LESS THAN 3/4 IN THICKNESS. FASTENERS LENGTH SHALL PROVIDE MINIMUM POINT PENETRATION OF 1/2" WHEN CONNECTING TO STEEL 3/4" OR THICKER IN THICKNESS U.N.O.
- POWDER ACTUATED FASTENERS INTO CONCRETE SHALL BE HLTI X-U FASTENERS (LARR#22675) OR RAMSET SP STEPPED SHANK FASTENERS (LARR#22666). INSTALL ANCHORS IN ACCORDANCE WITH ICC REPORT AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE FASTENERS WITH SUFFICIENT LENGTH TO PROVIDE 1-1/2" MINIMUM PENETRATION INTO CONCRETE U.N.O.
- FASTENERS SHALL NOT BE INSTALLED UNTIL THE CONCRETE HAS REACHED ITS DESIGNATED STRENGTH.
- FASTENERS SHALL NOT BE INSTALLED IN CONCRETE WITH THICKNESS LESS THAN THREE TIMES THE PENETRATION REQUIRED, EXCEPT 1-1/2" PENETRATION IN 3-1/4" THICK CONCRETE FILL OVER METAL DECK IS ACCEPTABLE.
- PROVIDE A MINIMUM OF 3" BETWEEN THE EDGE OF CONCRETE TO CENTER OF ANCHOR.
- FASTENERS IN THE UNDERSIDE OF CONCRETE FILL OVER METAL DECK SHALL BE PLACED IN THE LOW FLUTES ONLY.
- FASTENERS SHALL BE INSTALLED, BY A PRE-QUALIFIED OPERATOR, ACCORDING TO THE APPLICABLE ICC RESEARCH REPORT AND TESTED AS FOLLOWS. INSPECTOR SHALL OBSERVE THE TESTING OF THE FIRST 10 FASTENERS INSTALLATION. A TEST PULL-OUT LOAD OF NOT LESS THAN TWICE THE APPLICABLE ALLOWABLE LOAD PER ICC TABLES SHALL BE APPLIED TO THE PIN IN SUCH A MANNER AS NOT TO RESIST THE SPALLING TENDENCY OF THE CONCRETE SURROUNDING THE PIN (NOT APPLICABLE TO PINS INSTALLED INTO STEEL). RANDOM TESTS UNDER THE PROJECT INSPECTORS SUPERVISION SHALL BE MADE OF APPROXIMATELY 1 IN 20 PINS SHOULD FAILURE OCCUR ON ANY PIN TESTED. ALL OF THE INSTALLATIONS MUST BE TESTED AND FAILED PINS REPLACED AT CONTRACTOR'S EXPENSE.
- WHEN INSTALLING POWDER DRIVEN PINS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS

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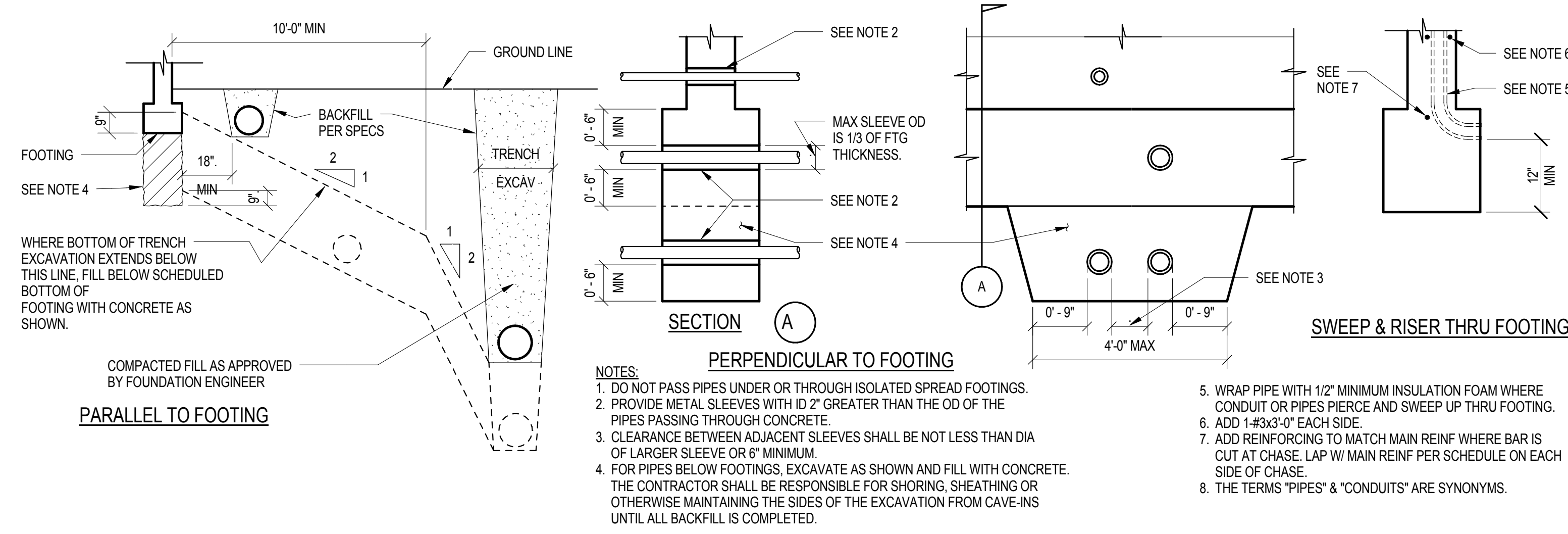
Professional Seal



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3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
5	Foundation & Utilities Permit	08/12/15
6	90% Steel Package	08/28/15
7	Plan Check	09/18/15

Key Plan

S-012



1 PIPE TRENCHES AND PENETRATIONS AT FOOTING
S-012 NTS

INTERSECTION

CORNER

D HOOK TYP.

FOOTING/GRADE BEAM CORNER REBAR TYP.

CLASS 'B'

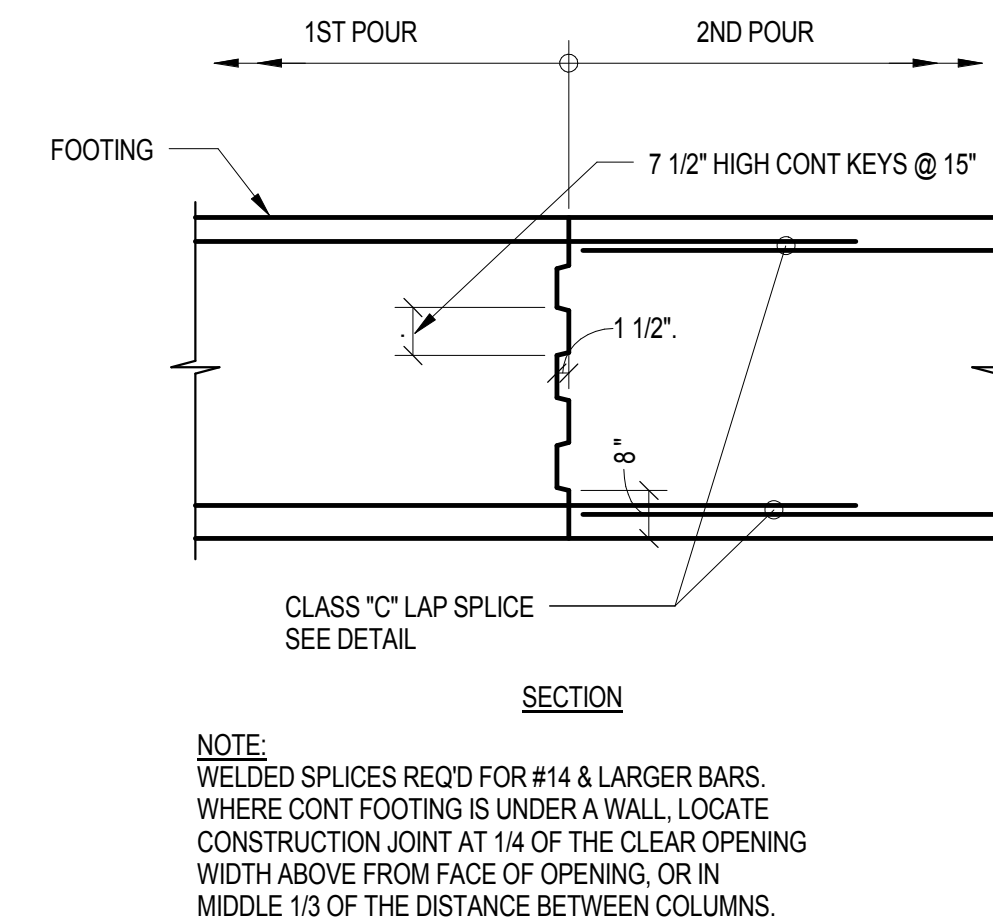
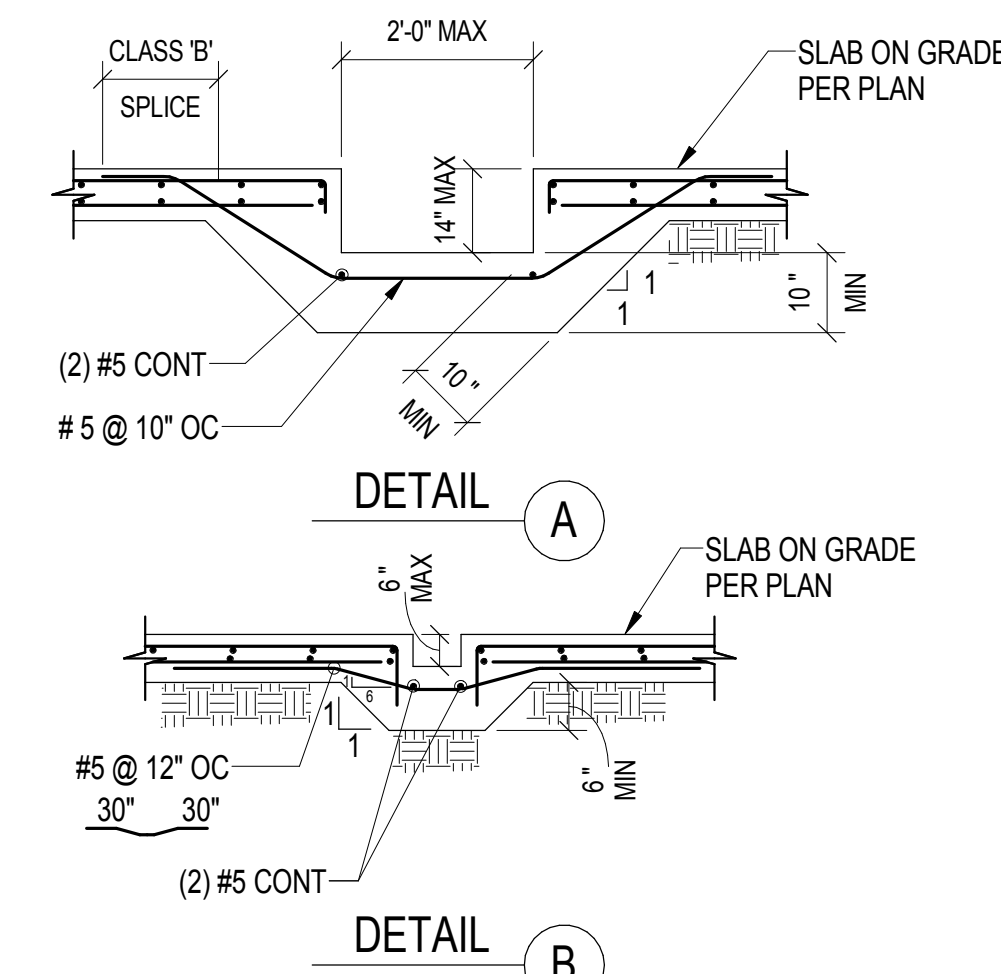
LAP SPLICE

BOARD

PLAN

NOTES:

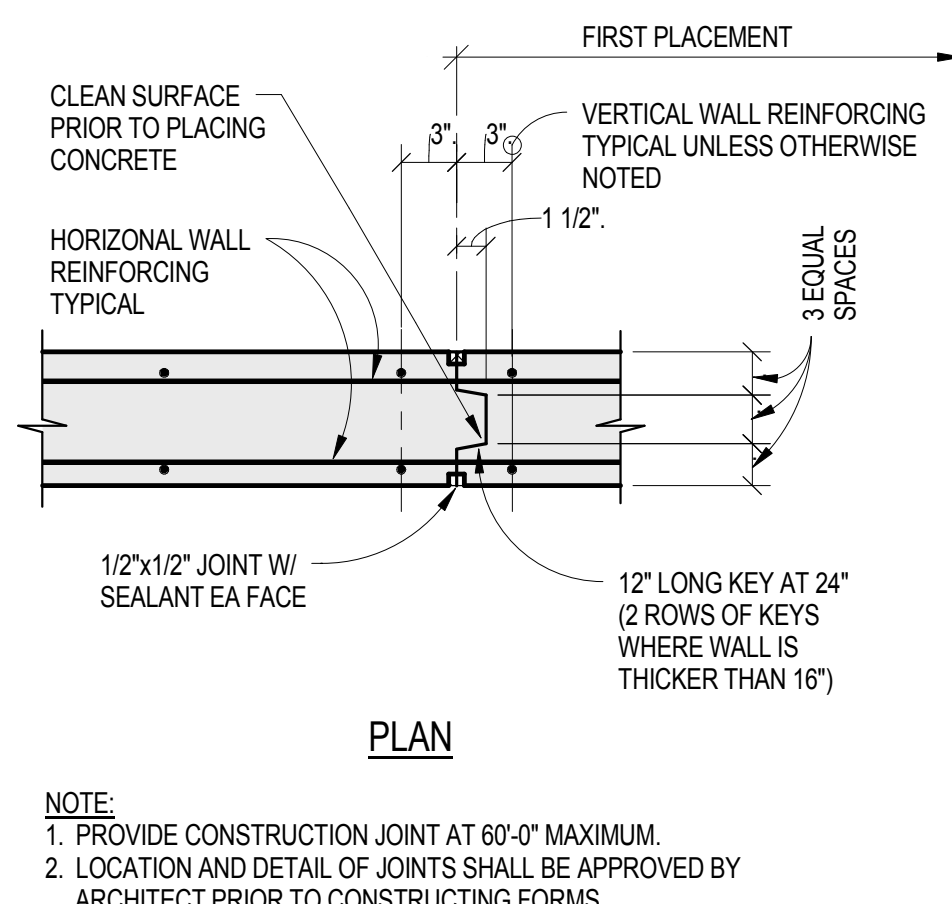
1. SEE TYP. DETAIL FOR REINFORCING IN STEM WALL.
2. ONLY CORNER REBAR SHOWN ON THIS DETAIL. TERMINATE REMAINING REBAR WITH STANDARD HOOK.



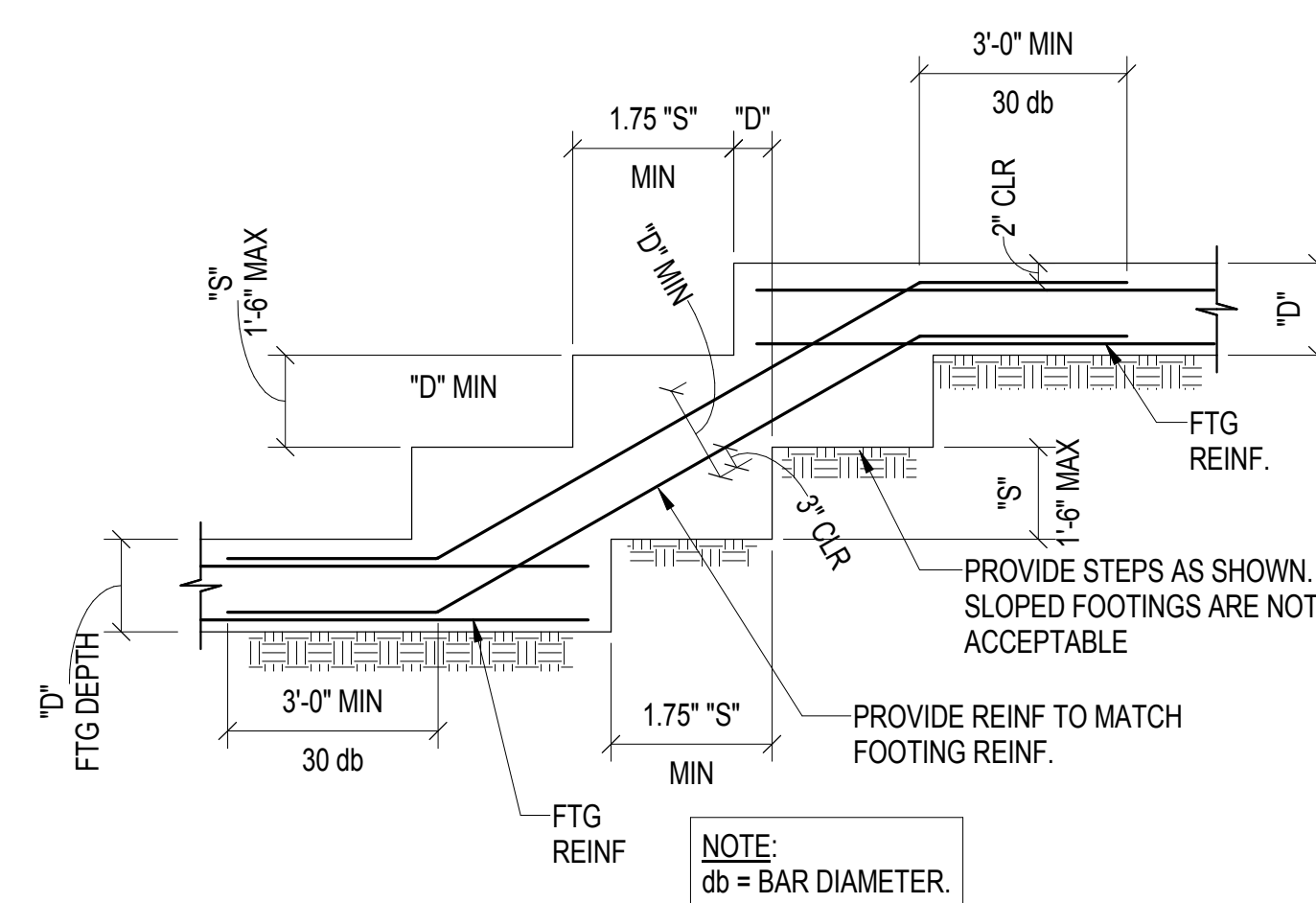
14 REINFORCING AT WALL INTERSECTIONS
S-012 NTS

5 TRENCH DRAIN DETAIL
S-012 NTS

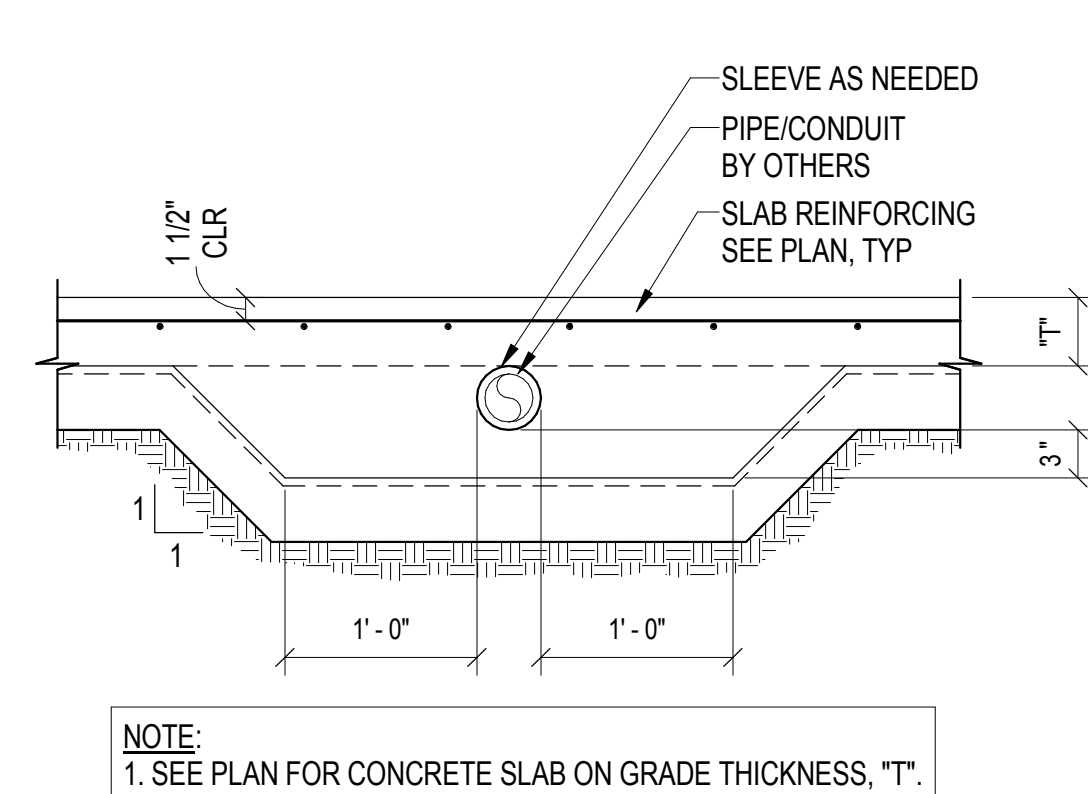
2 CONTINUOUS FOOTING CONSTRUCTION JOINT
S-012 NTS



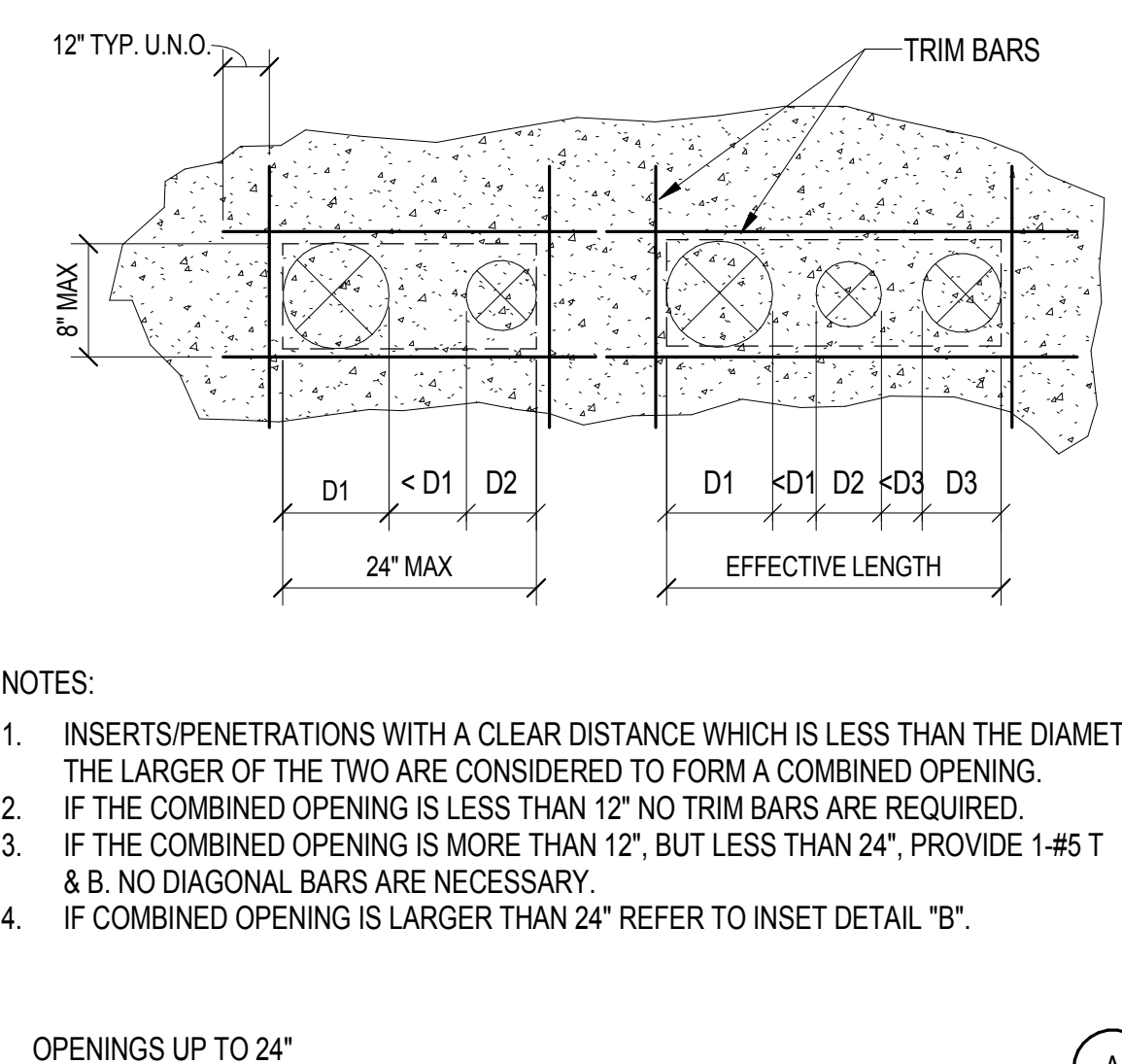
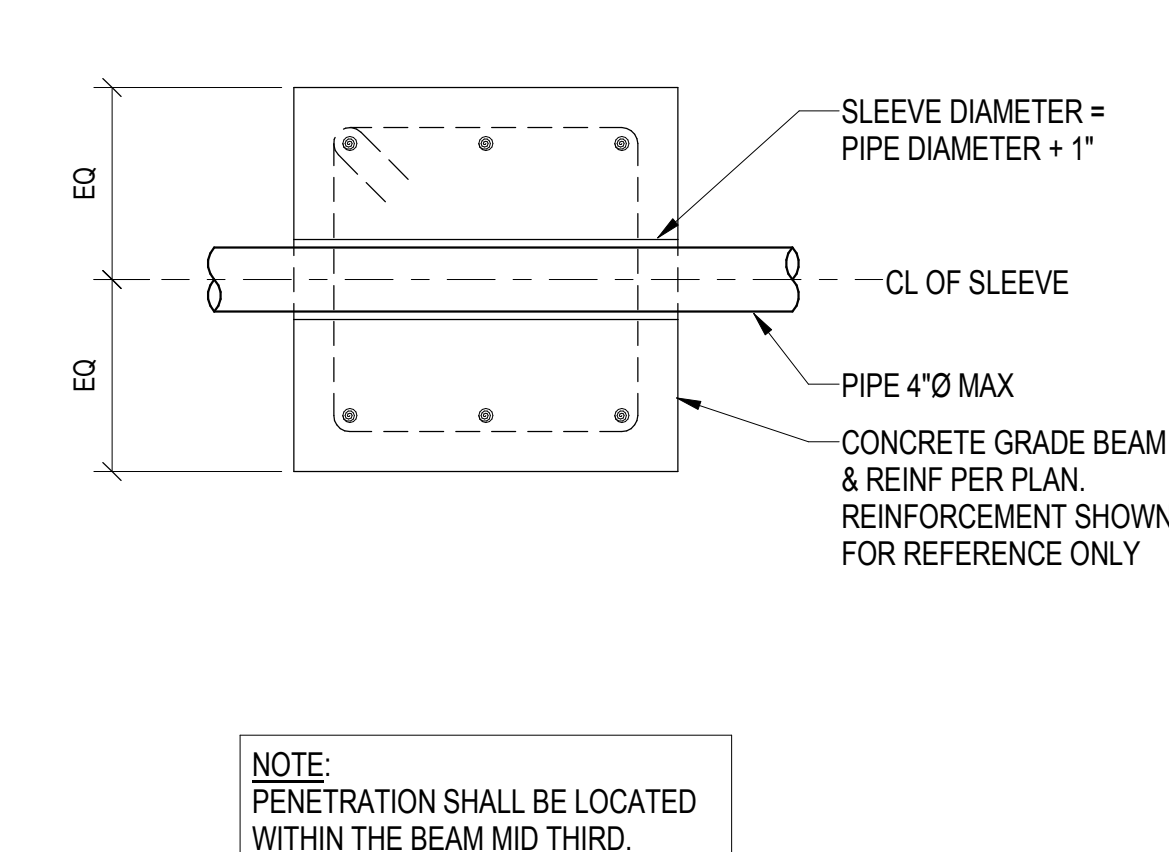
15 VERTICAL WALL CONSTRUCTION JOINT



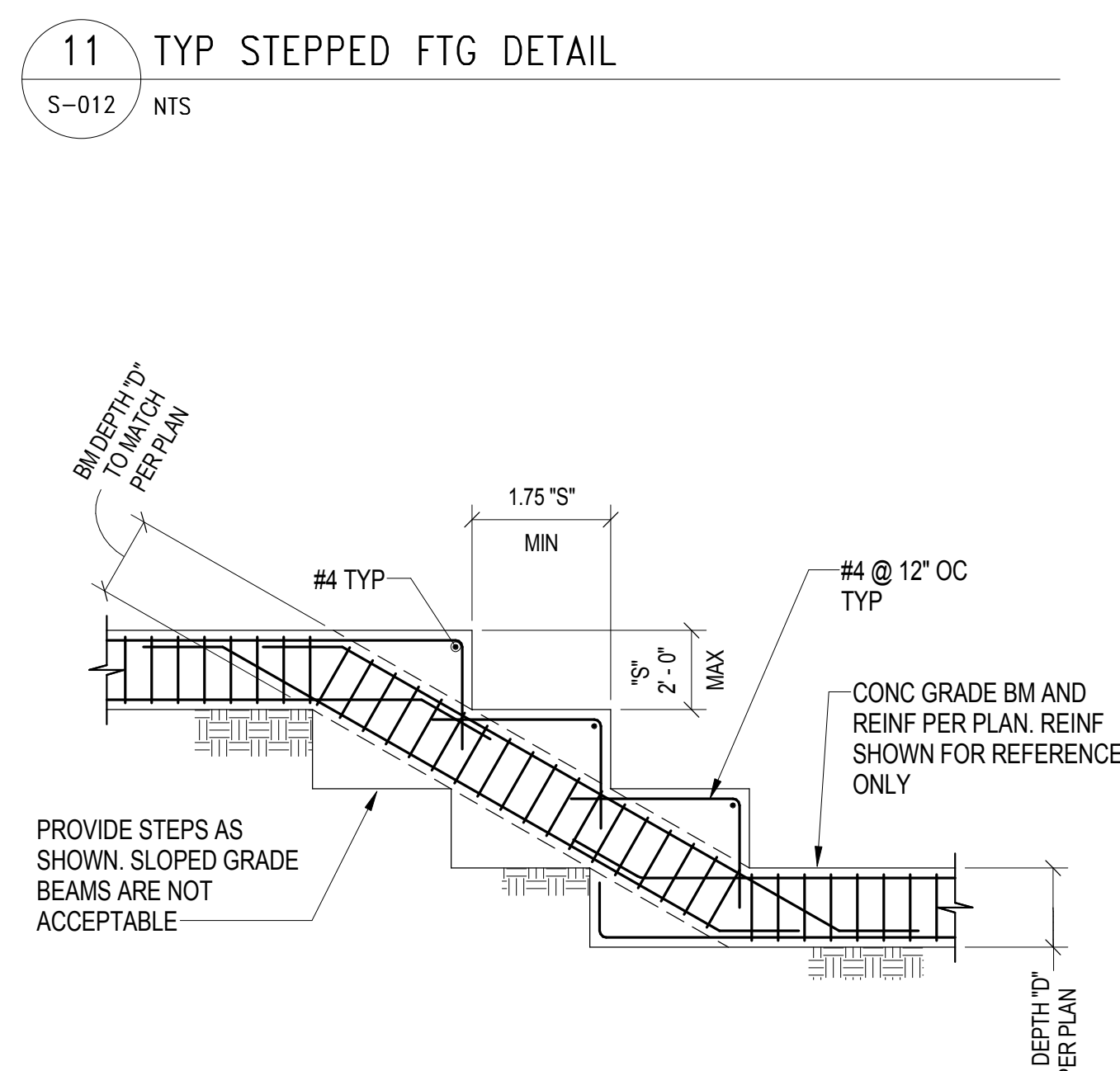
6 TYP PIPE THRU SLAB ON GRADE
S-012 NTS



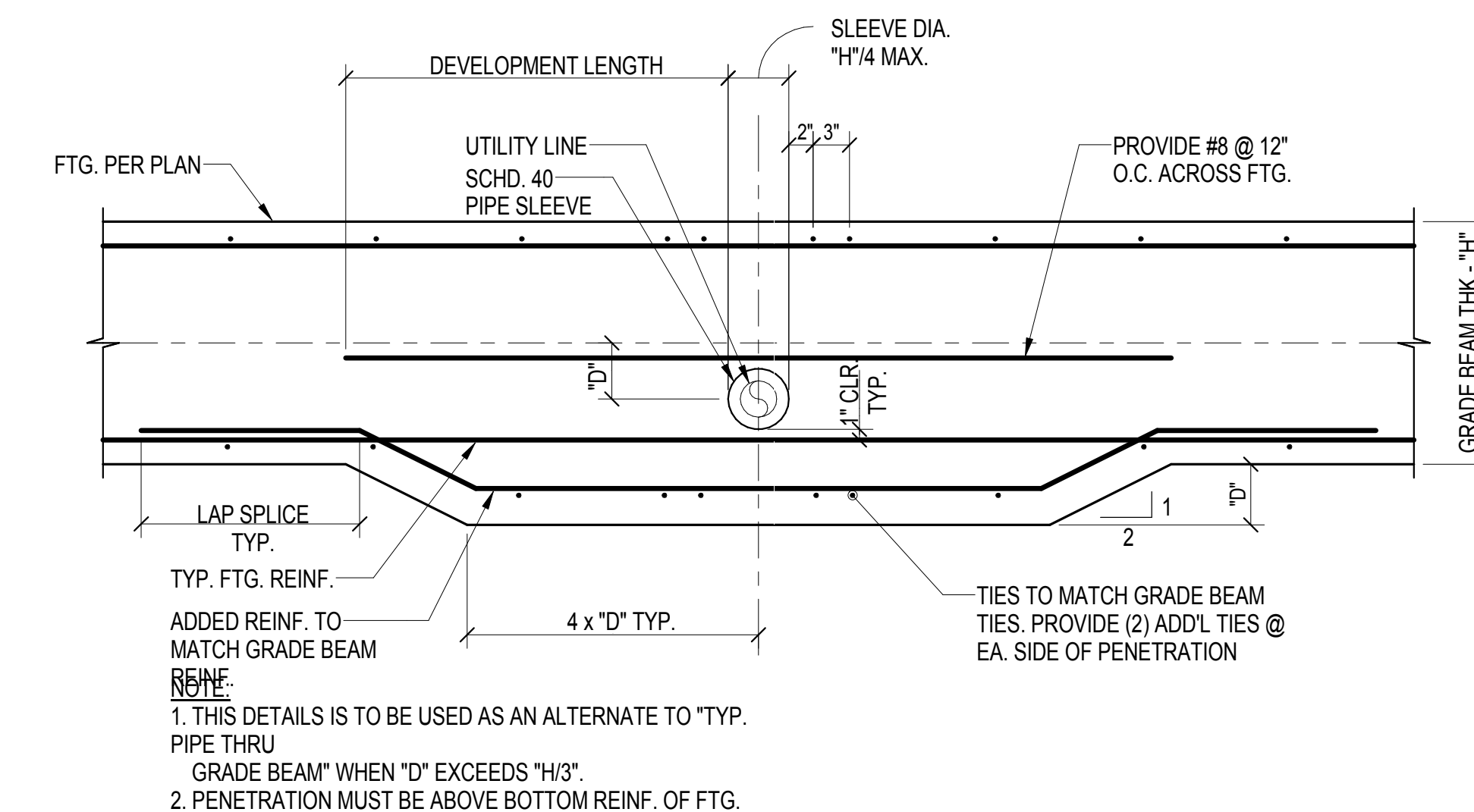
3 TYP PIPE THRU GRADE BEAM
S-012 NTS



16 PENETRATIONS
S-012 NTS

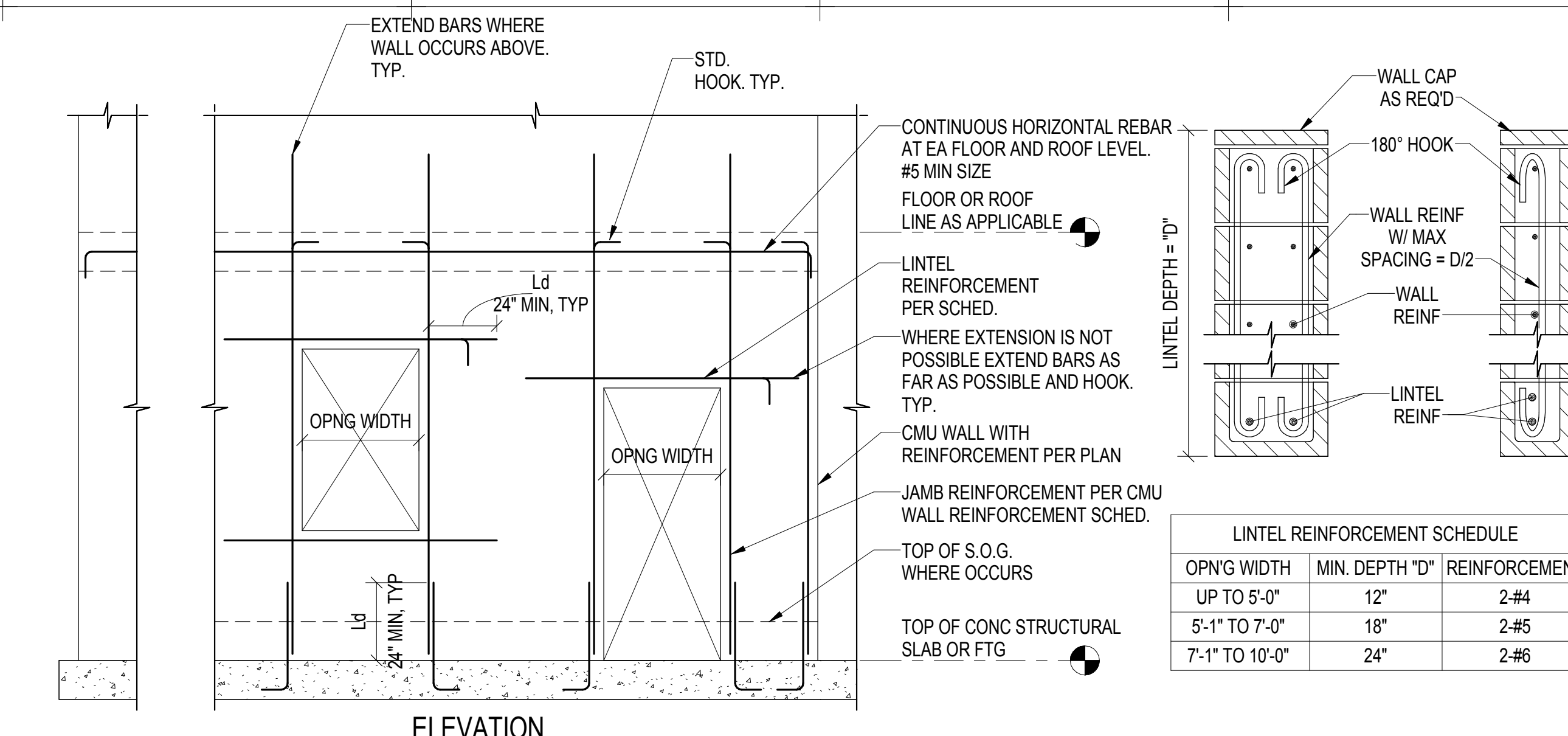


12 STEPPED GRADE BEAM DETAIL
S-012 NTS

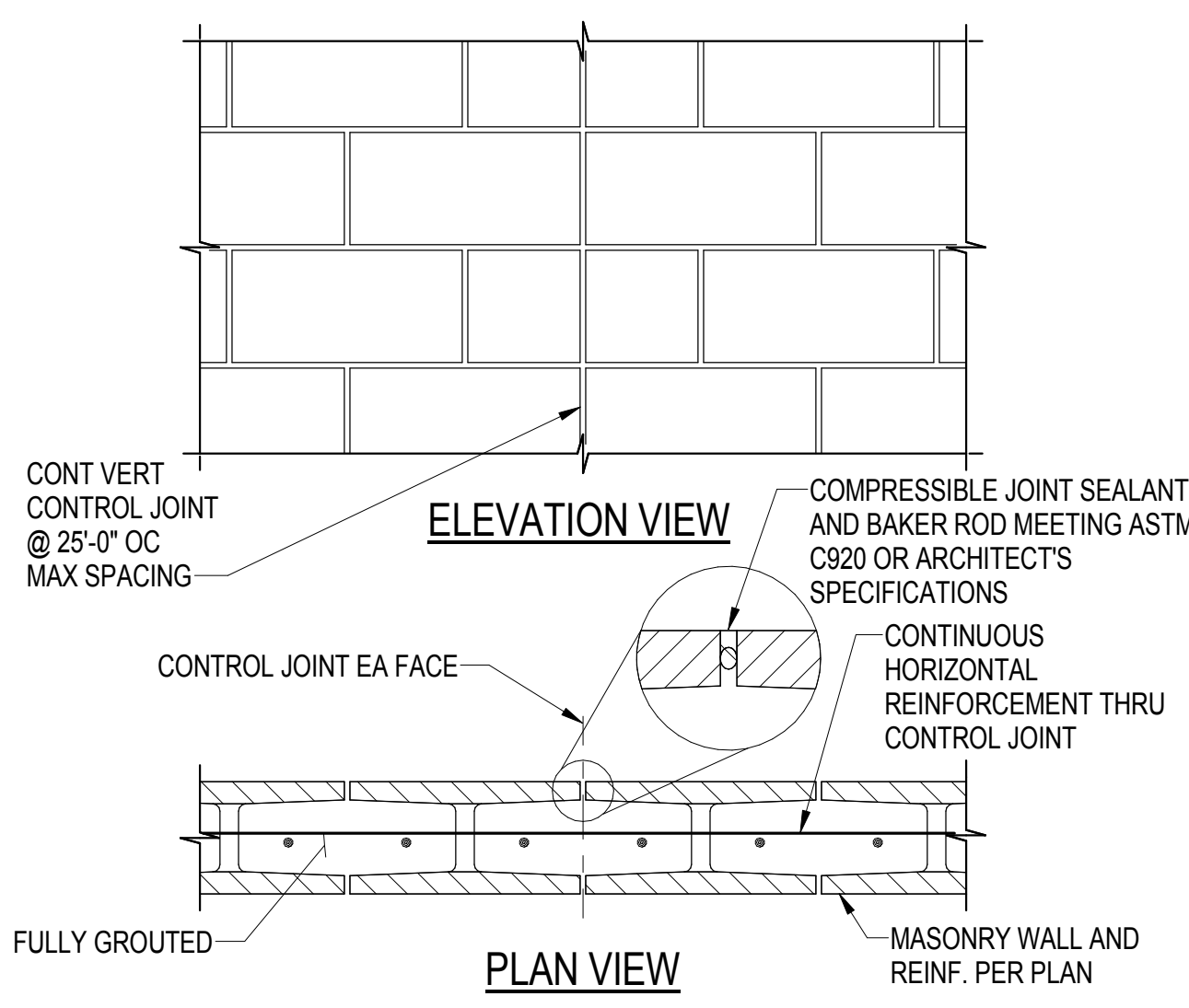


8 ALTERNATE GRADE BEAM PENETRATION DETAIL
S-012 NTS

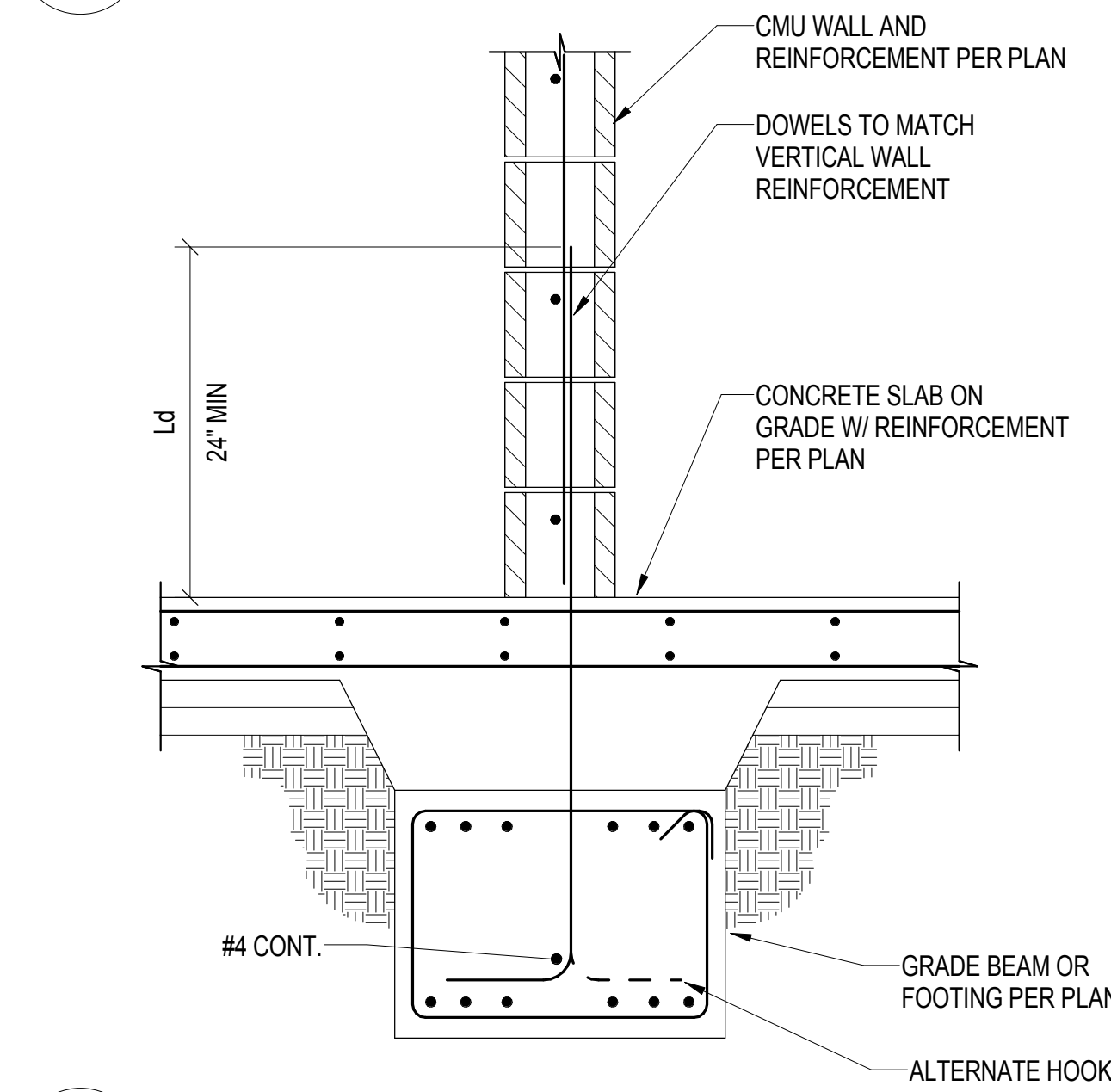
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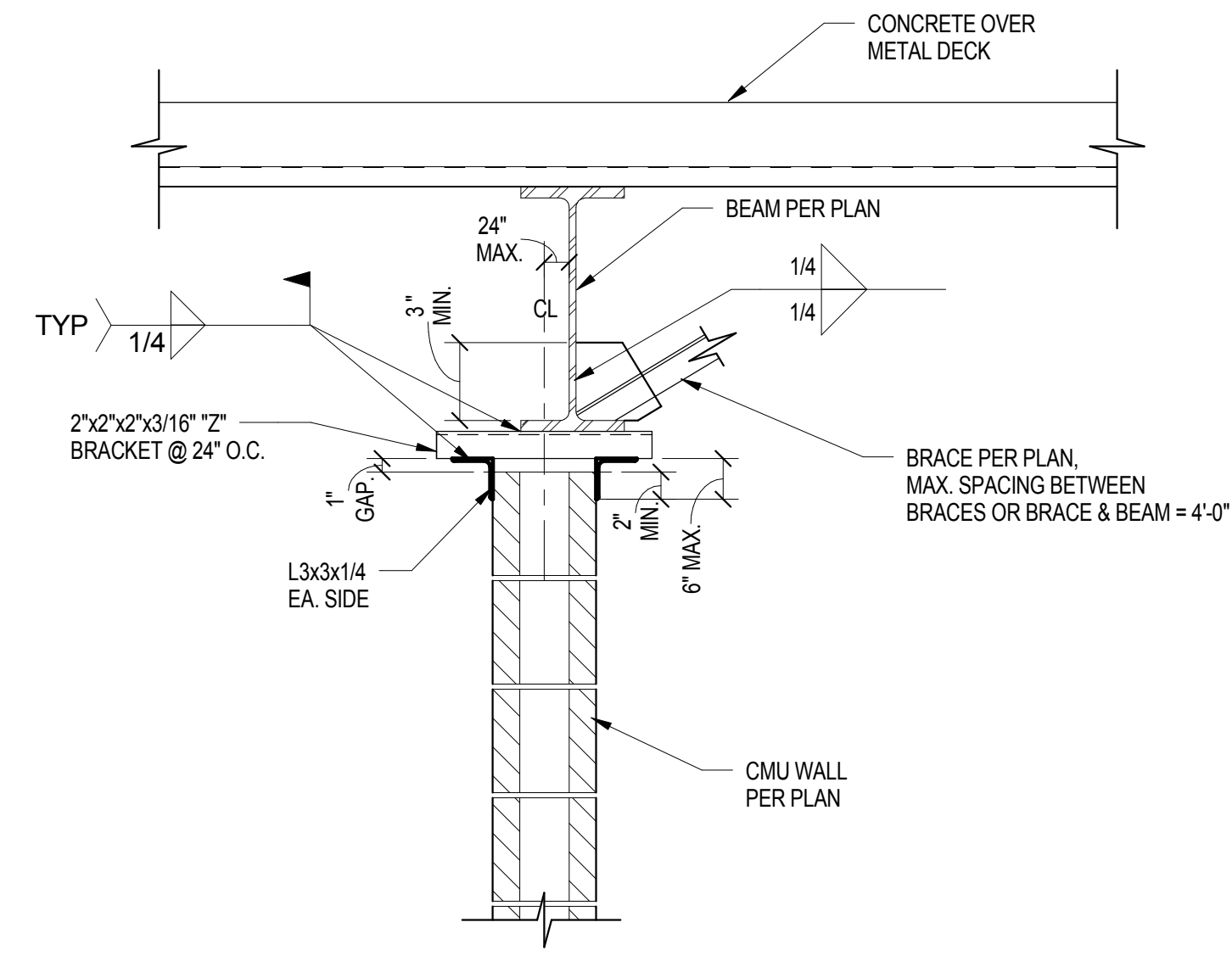
13 TYP MIN REINF AT CMU WALL OPENINGS & LINTEL DETAIL
S-013 1" = 1'-0"



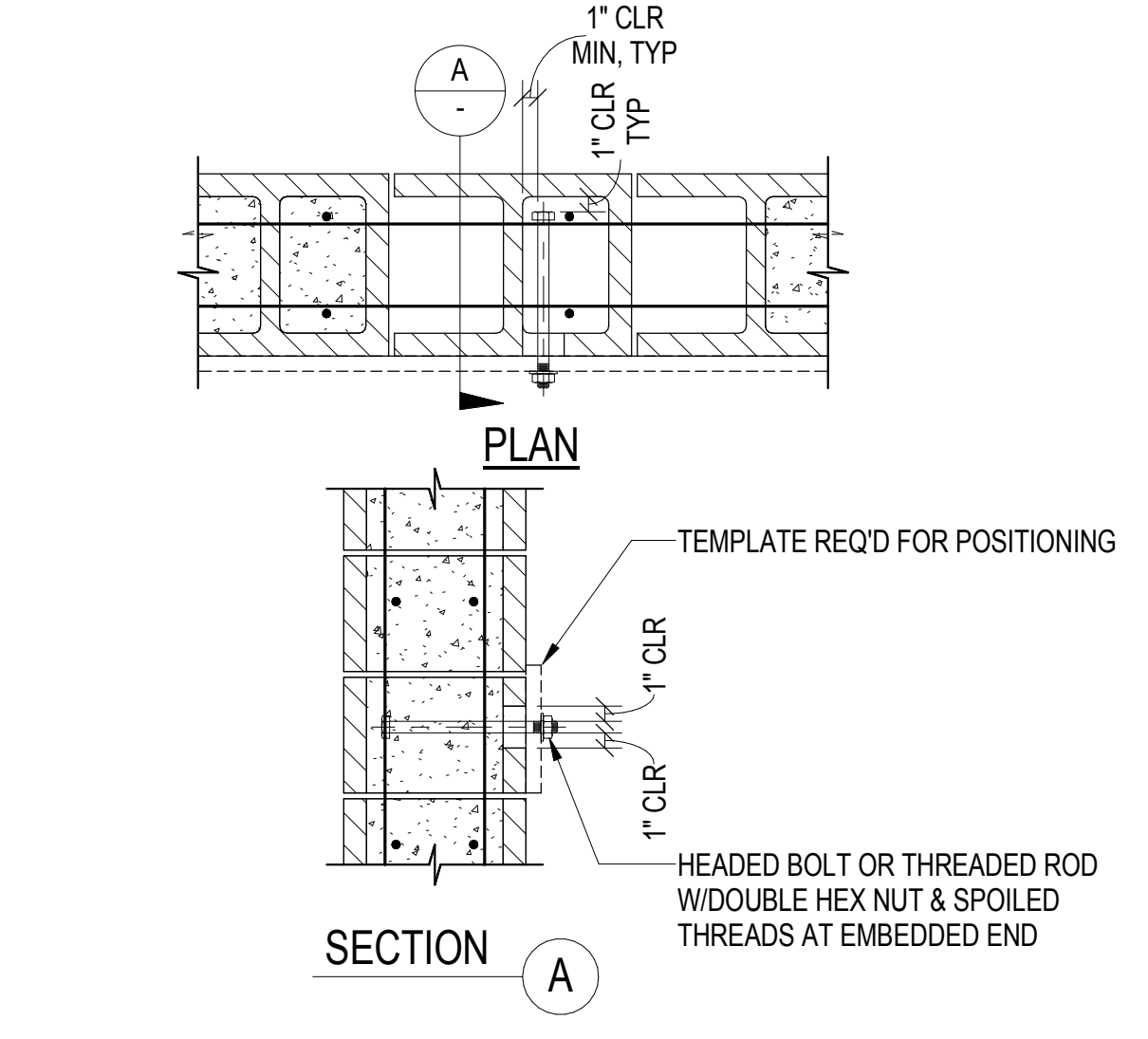
14 CONTINUOUS CONTROL JOINT
S-013 1" = 1'-0"



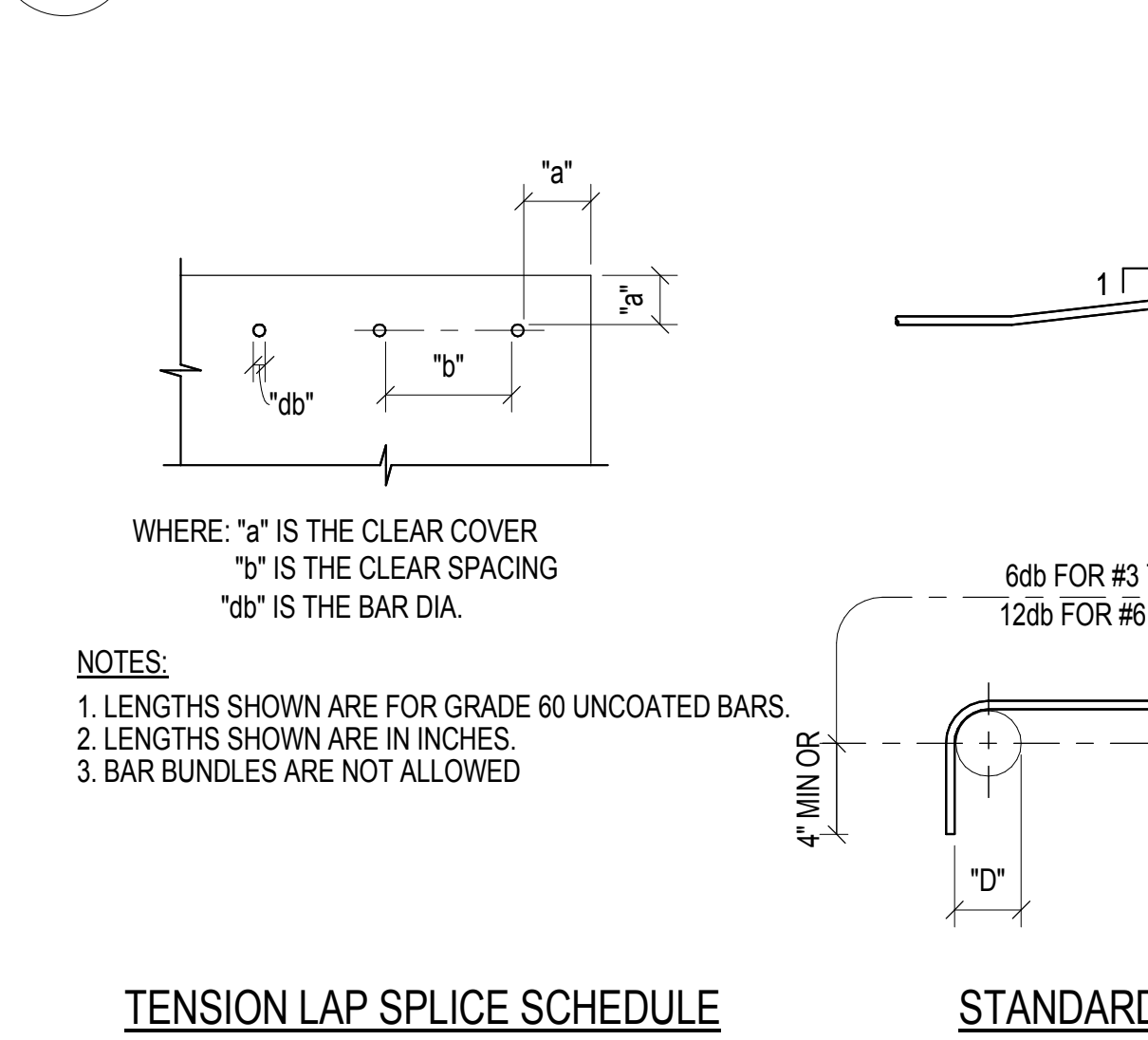
15 NON BEARING CMU ON SLAB ON GRADE
S-013 1" = 1'-0"



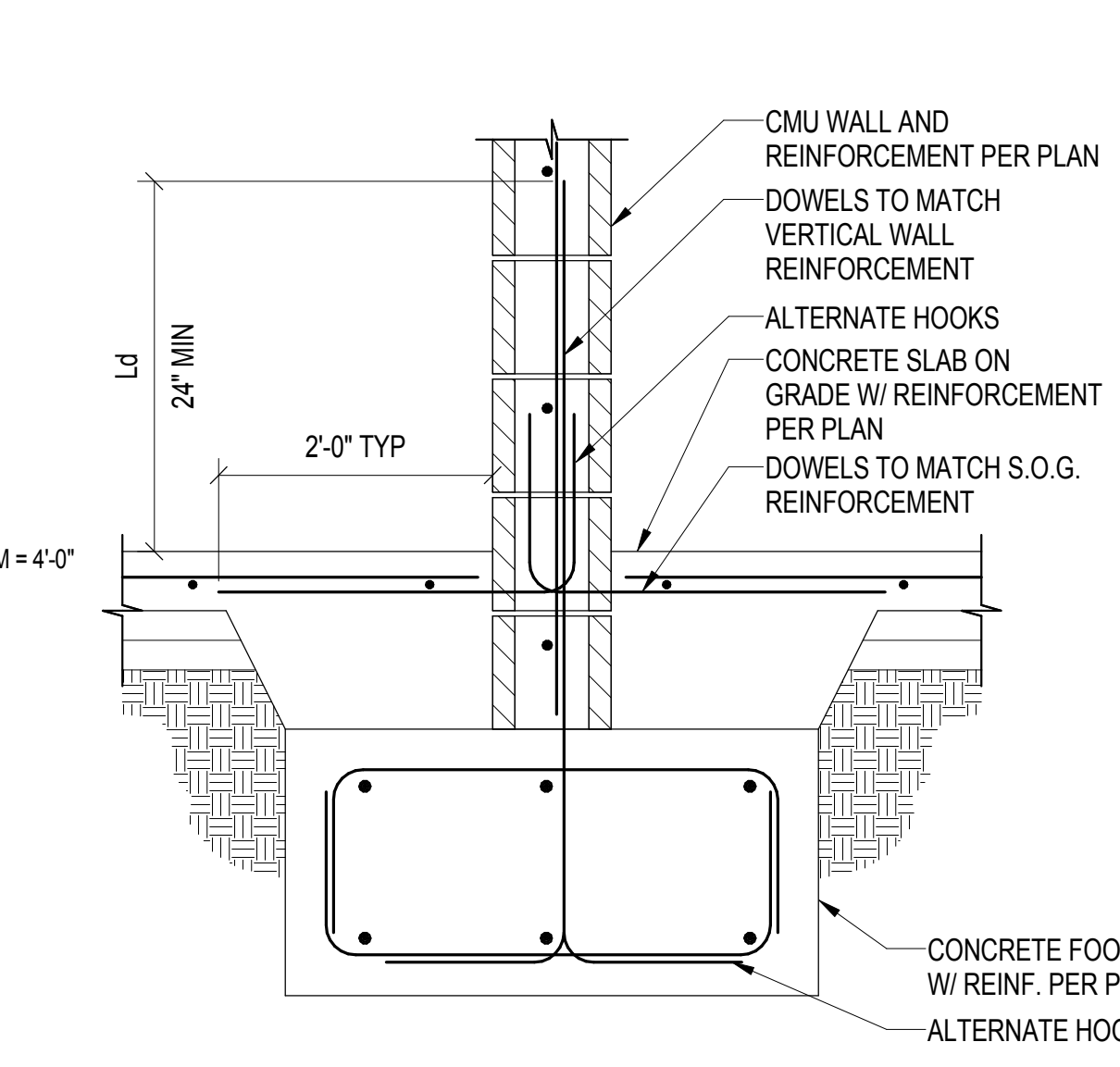
16 CMU WALL BRACING AT PARALLEL BEAM
S-013 1" = 1'-0"



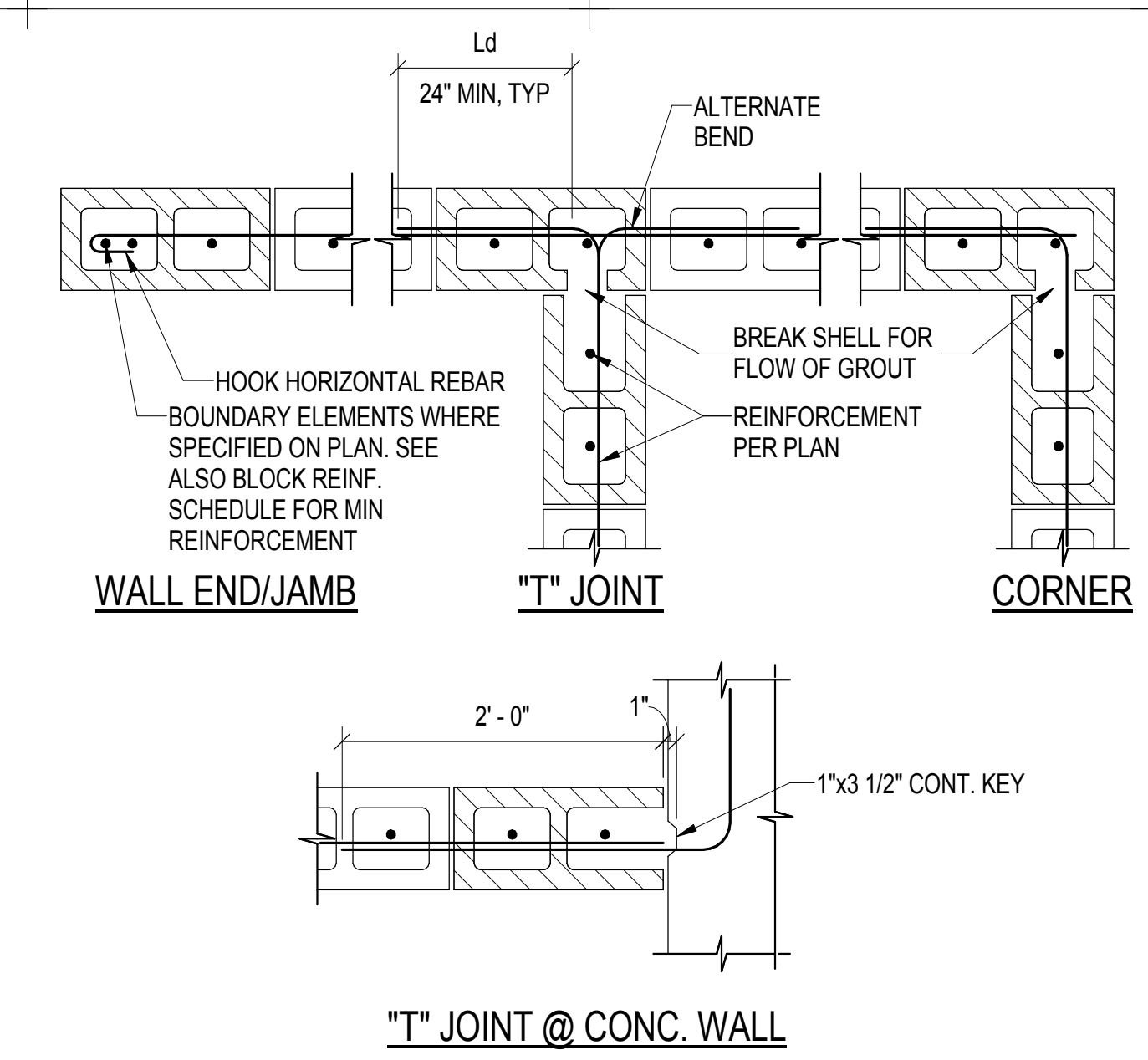
10 EMBEDDED BOLTS
S-013 1" = 1'-0"



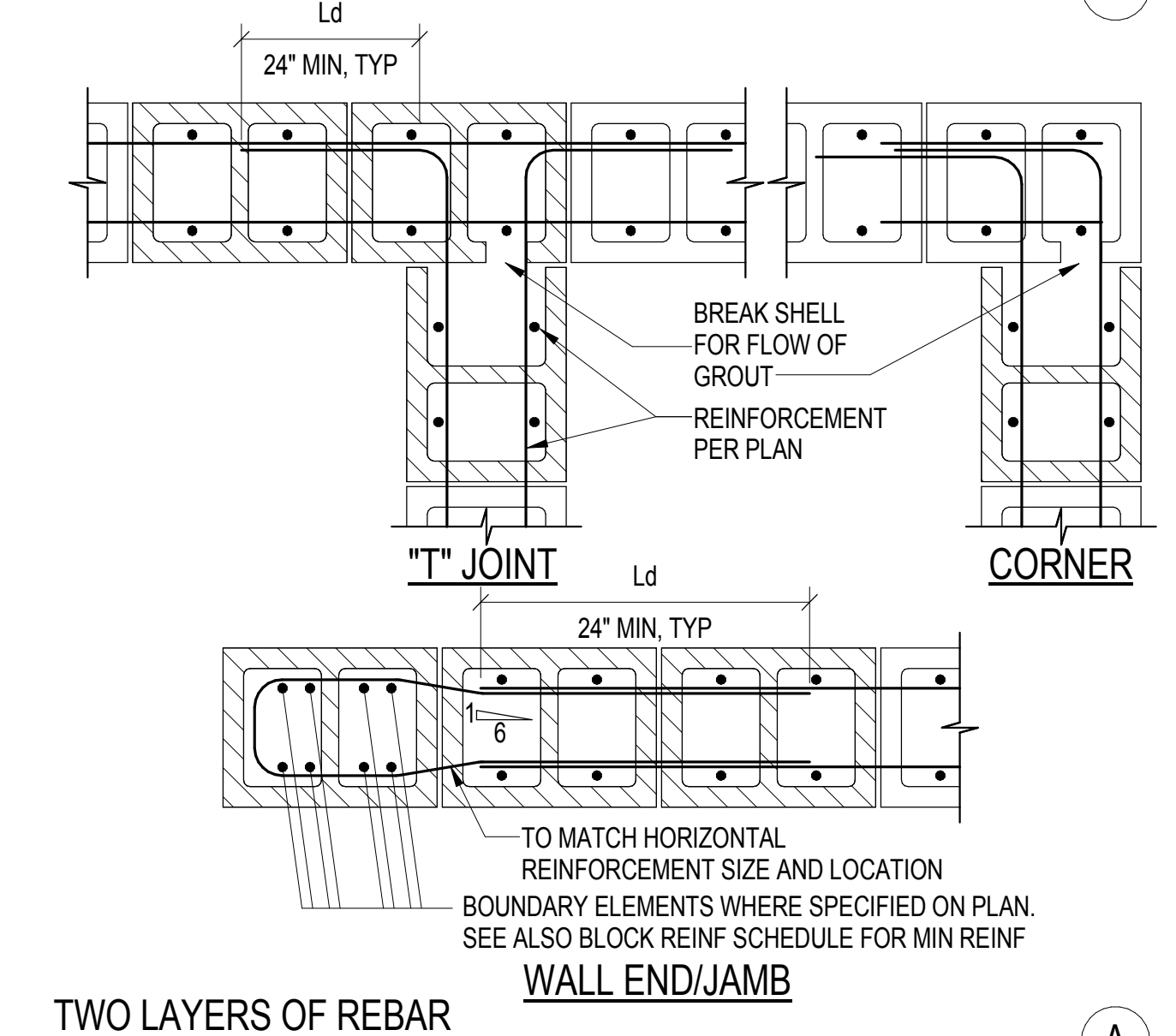
11 TYP CMU REINF DETAILS AND TENSION LAP SPLICE SCHED
S-013 1" = 1'-0"



12 BEARING CMU - FOUNDATION
S-013 1" = 1'-0"

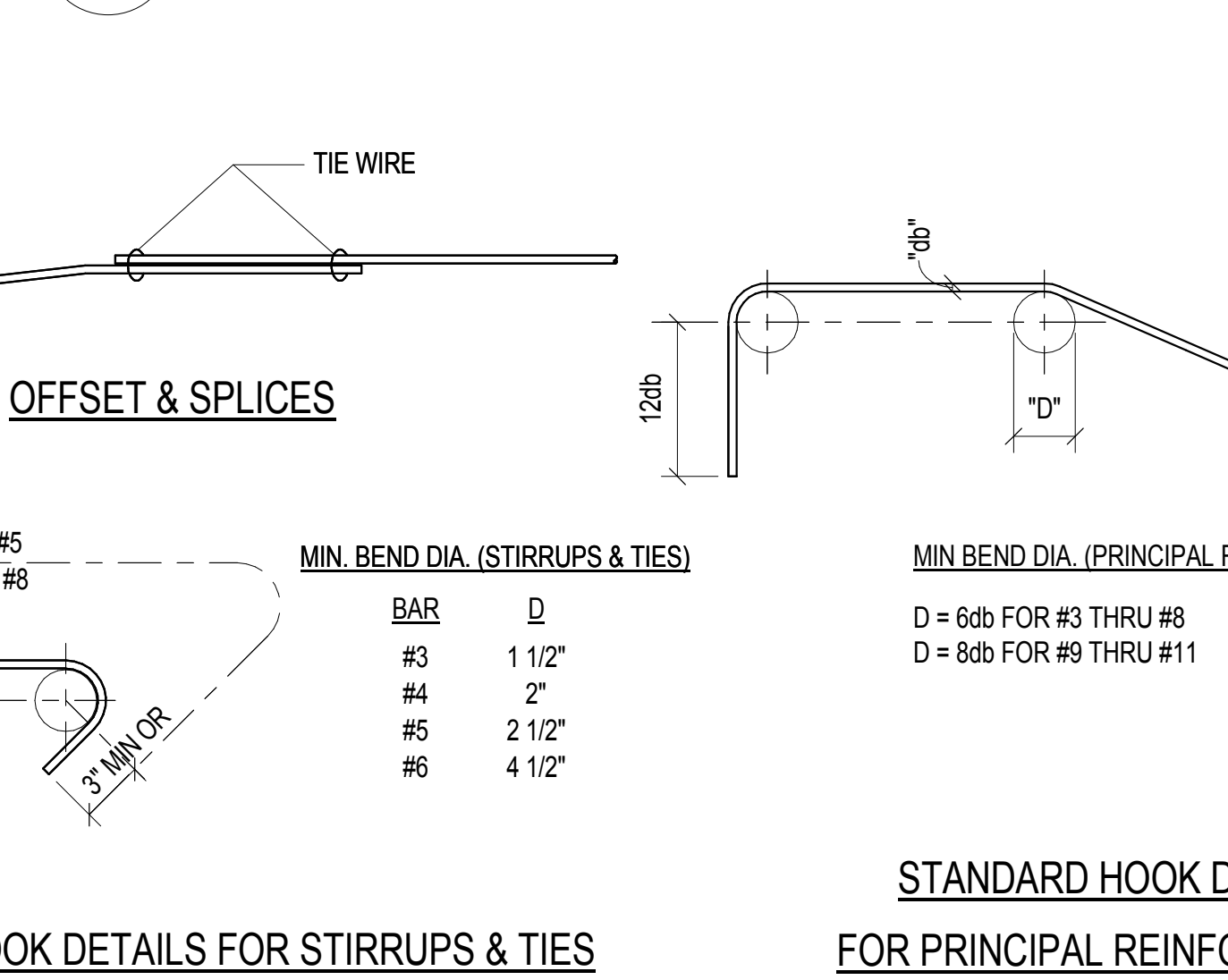


ONE LAYER OF REBAR

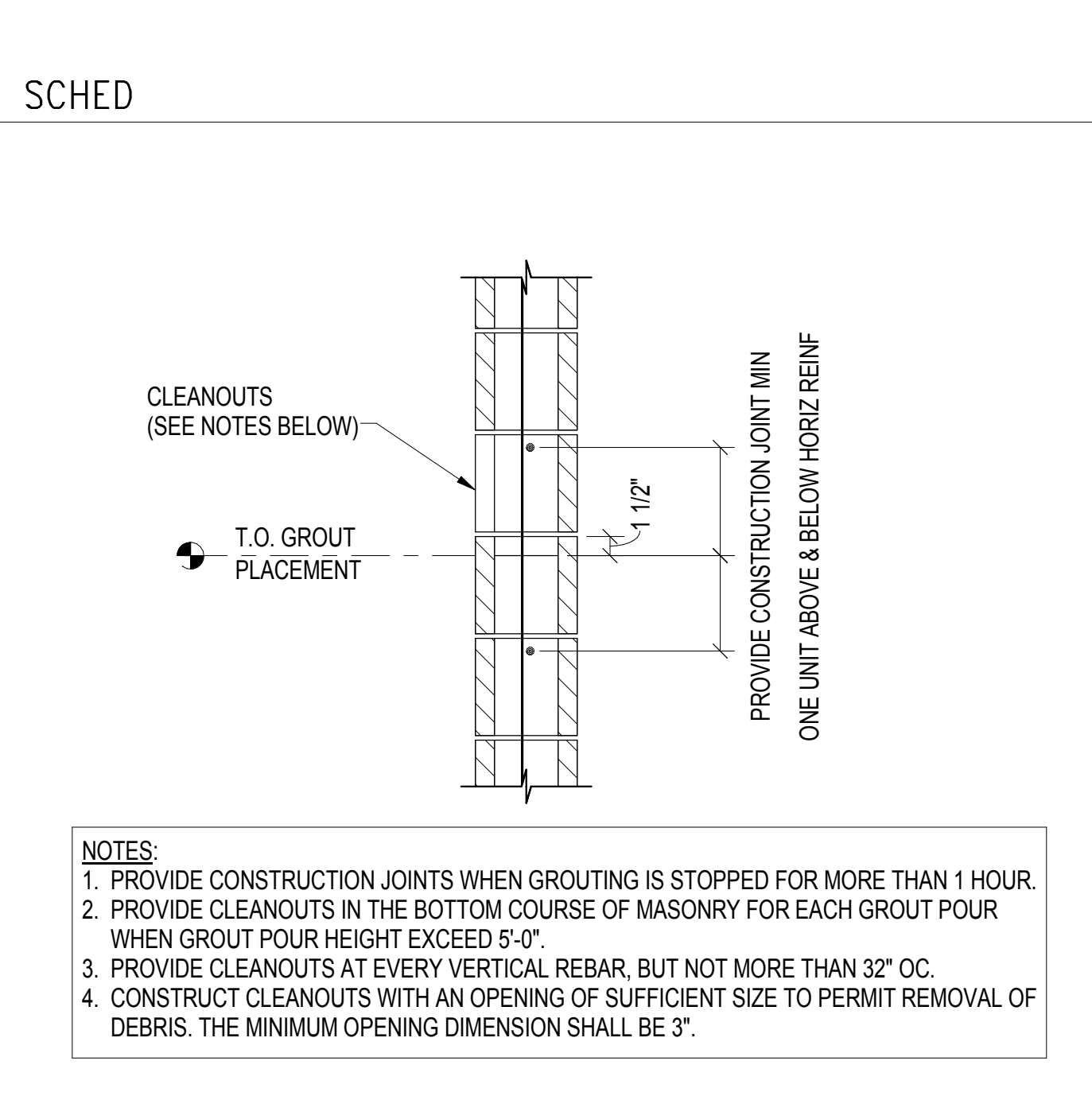


TWO LAYERS OF REBAR

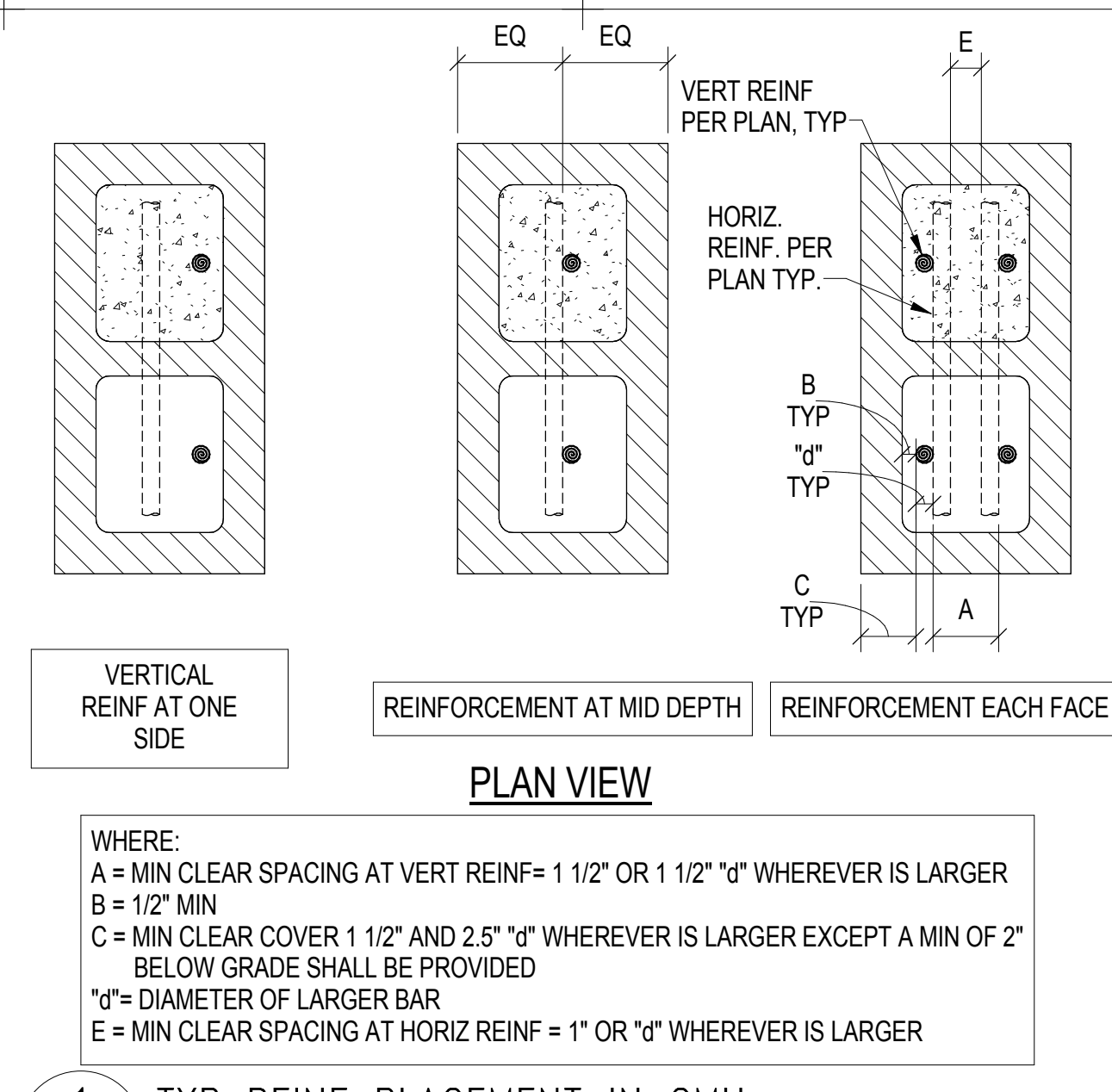
6 CMU END AND INTERSECTION DETAIL
S-013 1" = 1'-0"



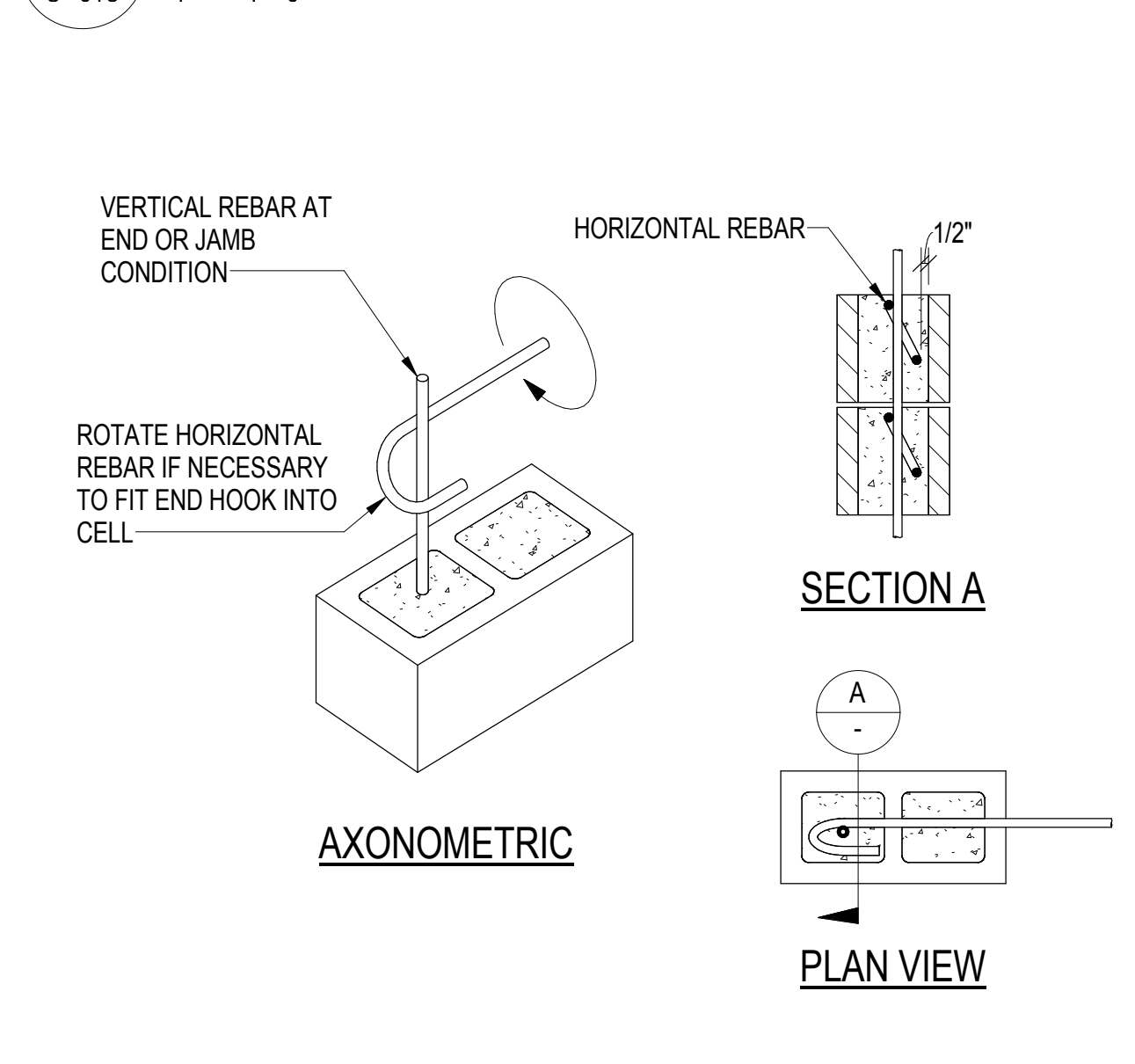
STANDARD HOOK DETAILS FOR PRINCIPAL REINFORCEMENT



8 HORIZ CONSTRUCTION JOINT AND CLEANOUTS
S-013 1" = 1'-0"



1 TYP REINF PLACEMENT IN CMU
S-013 1" = 1'-0"



2 HOOK ARRANGEMENT AT WALL END
S-013 1" = 1'-0"

BAR SIZE	DEVELOPMENT LENGTH (ld) / LAP SPLICE							
	1500 PSI CMU f'm		2000 PSI CMU f'm		2500 PSI CMU f'm		3000 PSI CMU f'm	
	1- LAYER	2- LAYER	1- LAYER	2- LAYER	1- LAYER	2- LAYER	1- LAYER	2- LAYER
#3	16	16	14	14	12	12	12	12
#4	21	26	18	22	16	20	15	18
#5	26	40	22	35	20	31	18	28
#6	49	74	42	64	38	58	34	53
#7	69	101	60	87	53	78	49	71
#8	108	151	93	131	84	117	76	107
#9	143	193	124	167	111	149	102	136

MINIMUM REINFORCEMENT IN CONCRETE BLOCK WALL UNLESS NOTED OTHERWISE ON PLANS

WALL THICK.	HORIZ REINF	VERT REINF	JAMB, HEAD, SILL & END OF WALL REINF
6" BLOCK	#4@24"O.C.	#4@24"O.C.	1-#5
8" BLOCK	#4@24"O.C.	#5@16"O.C.	2-#6
12" BLOCK	#4@24"E.F.	#5@16"E.F.	2-#6

5 BLOCK WALL REINF SCHEDULE
S-013 1" = 1'-0"

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Professional Seal

REGISTERED PROFESSIONAL ENGINEER
No. 4549
Civil
STRUCTURAL
STATE OF CALIFORNIA
DATE SIGNED: 01/22/2016

No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package.	12/12/14
3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
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6	90% Steel Package	08/28/15
7	Plan Check	09/18/15
8	Back-Check #1 - Frdn & Utility	10/09/15
9	ASI 004 (Fnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title
TYPICAL DETAILS

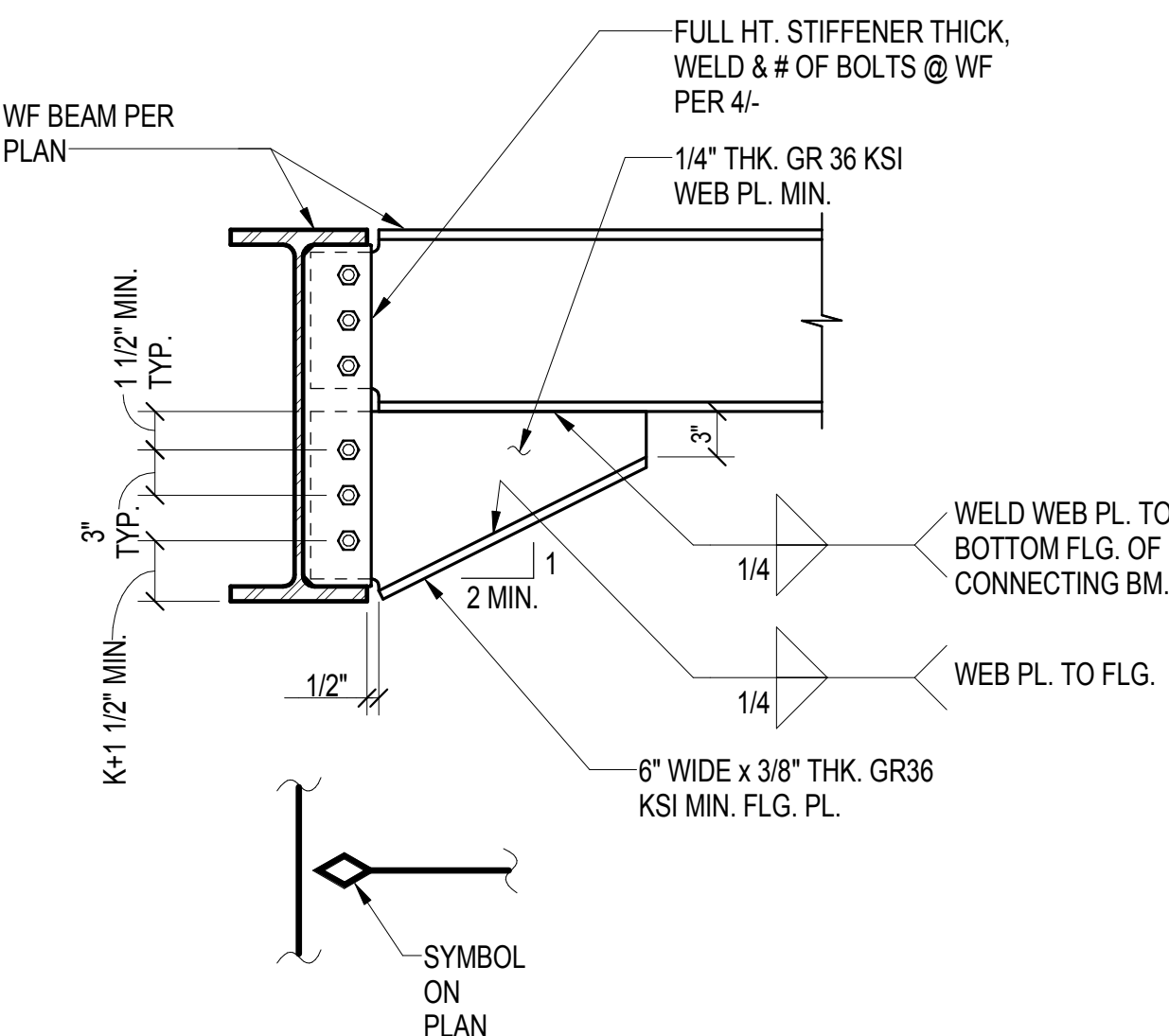
Project Number
2014-015

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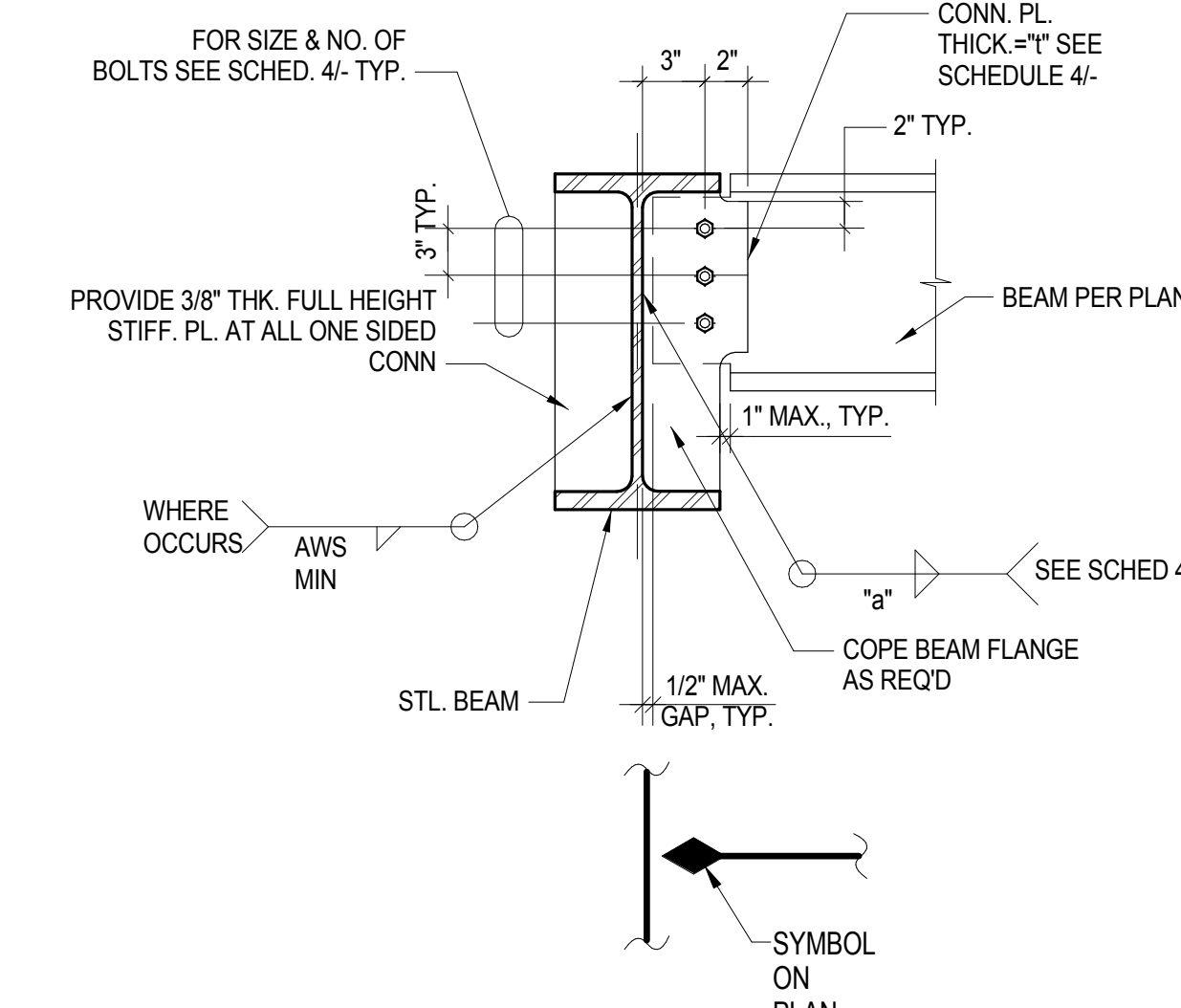
Sheet number

S-013

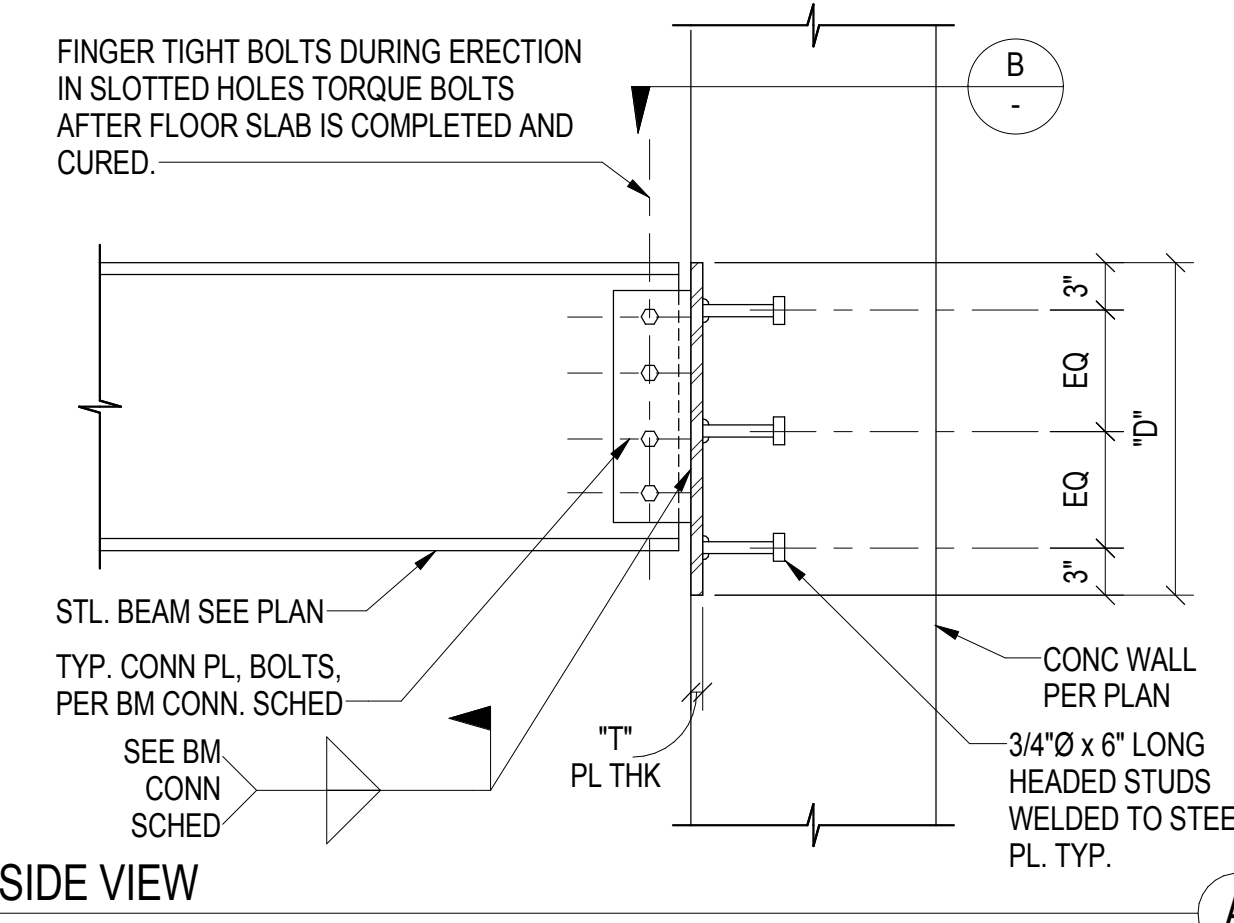
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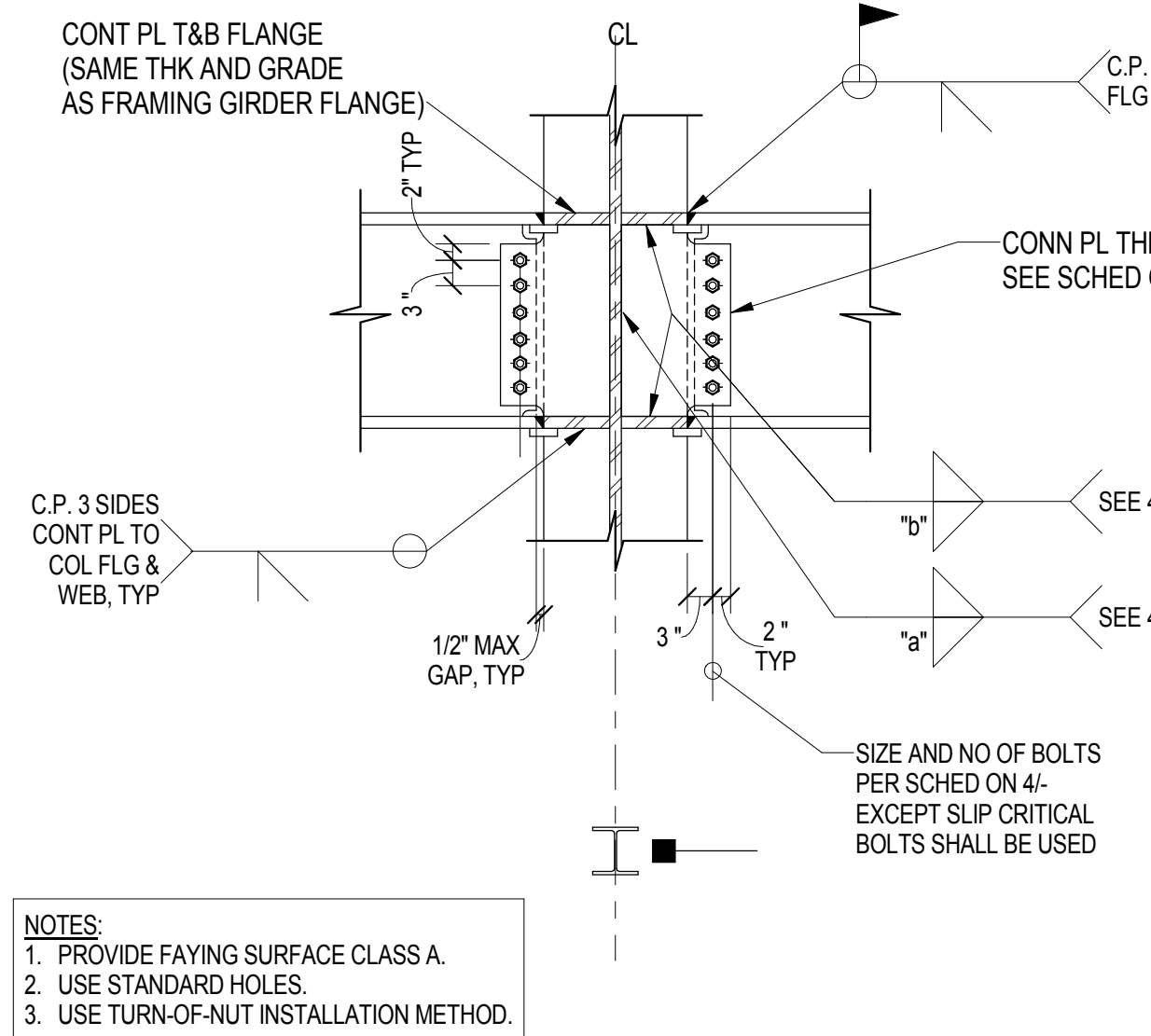
13 FULL HEIGHT STIFFENER BOTTOM FLANGE BRACE CONNECTION
S-014 NTS



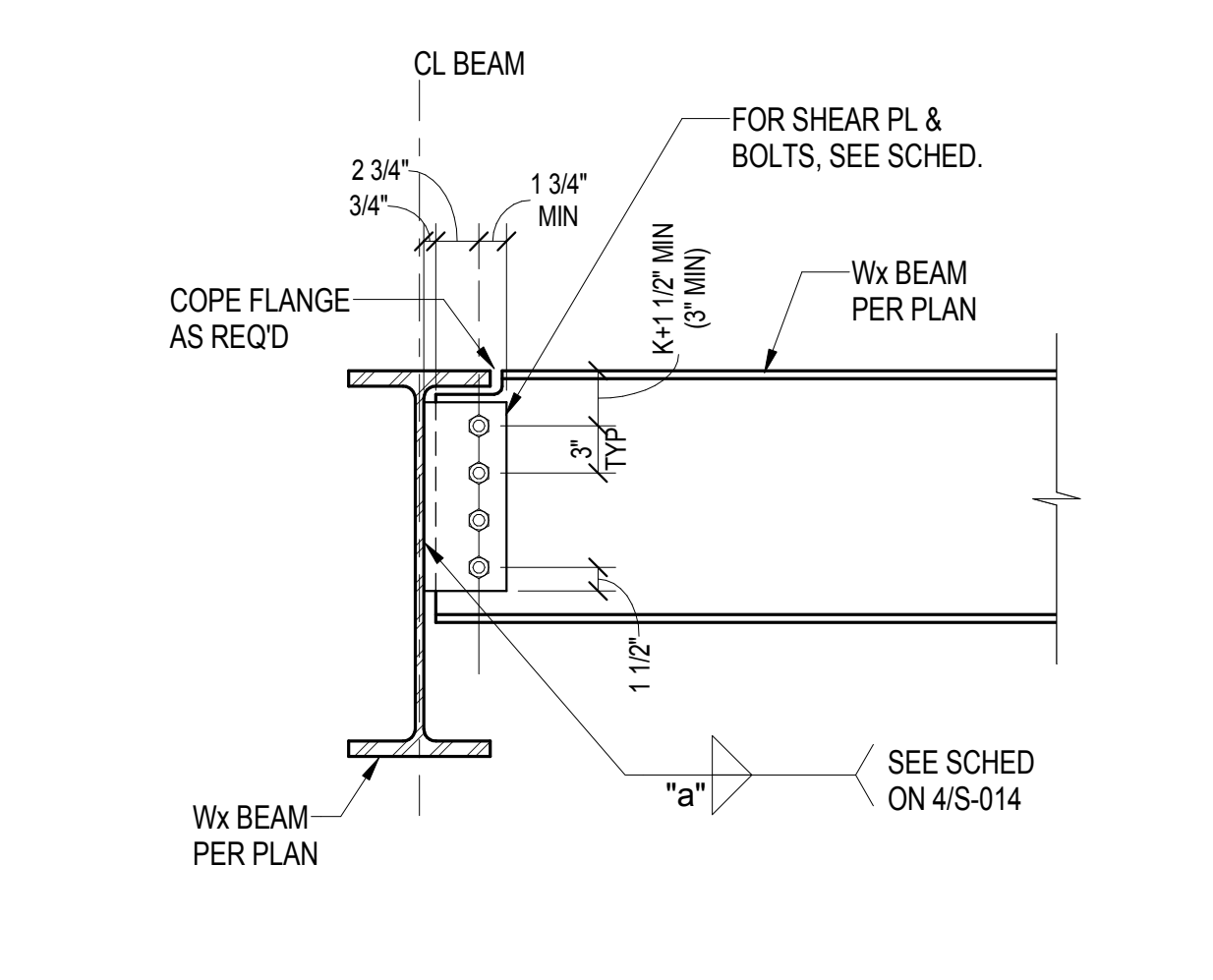
14 BEAM TO BEAM WITH FULL HEIGHT STIFFENER CONNECTION
S-014 NTS



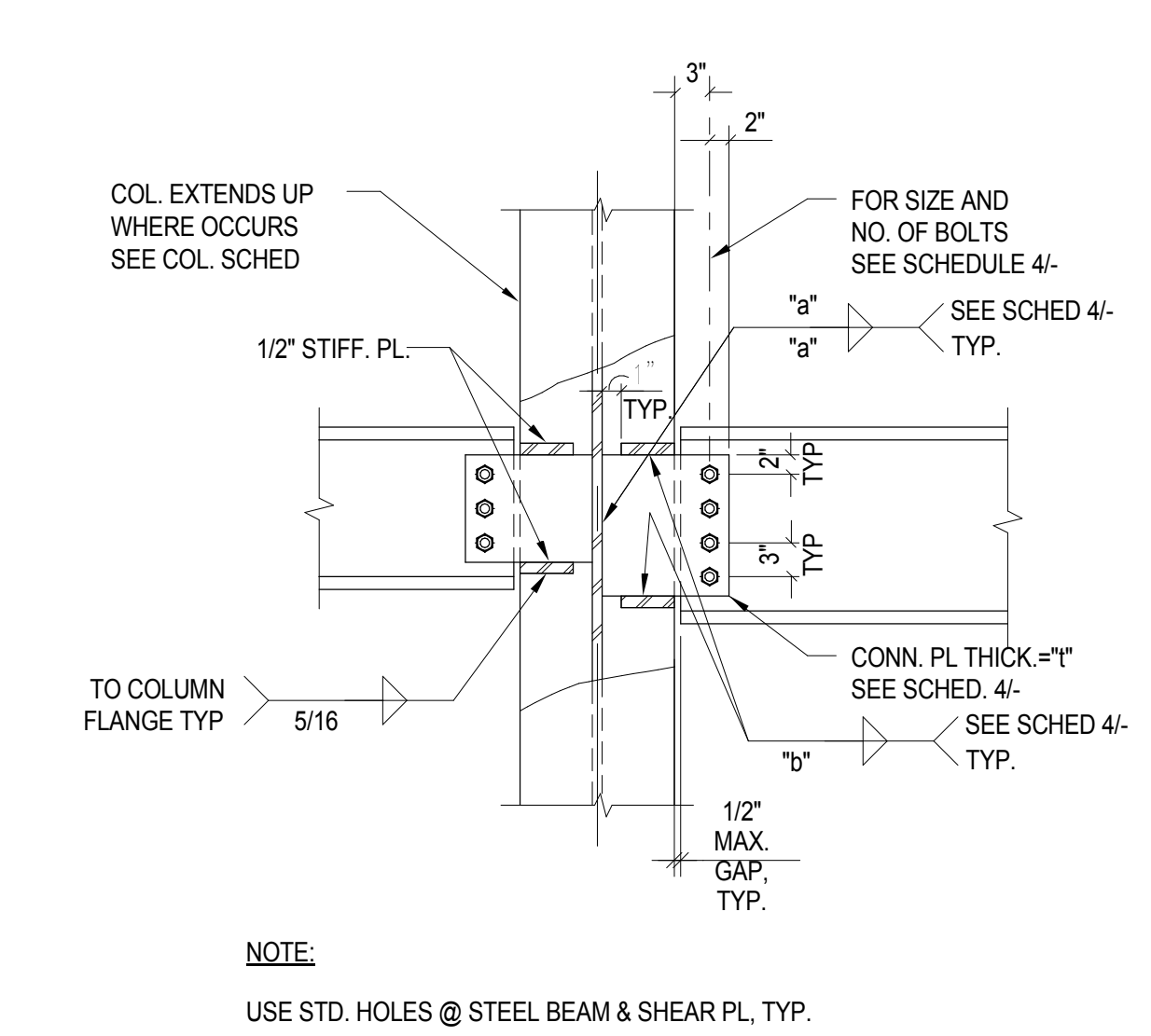
5 MOMENT BEAM TO BEAM CONNECTION
S-014 NTS



6 MOMENT BEAM TO COL. WEB CONNECTION
S-014 NTS



1 TYP BEAM TO BEAM CONNECTION
S-014 NTS



2 TYP BEAM TO COL. WEB CONNECTION
S-014 NTS

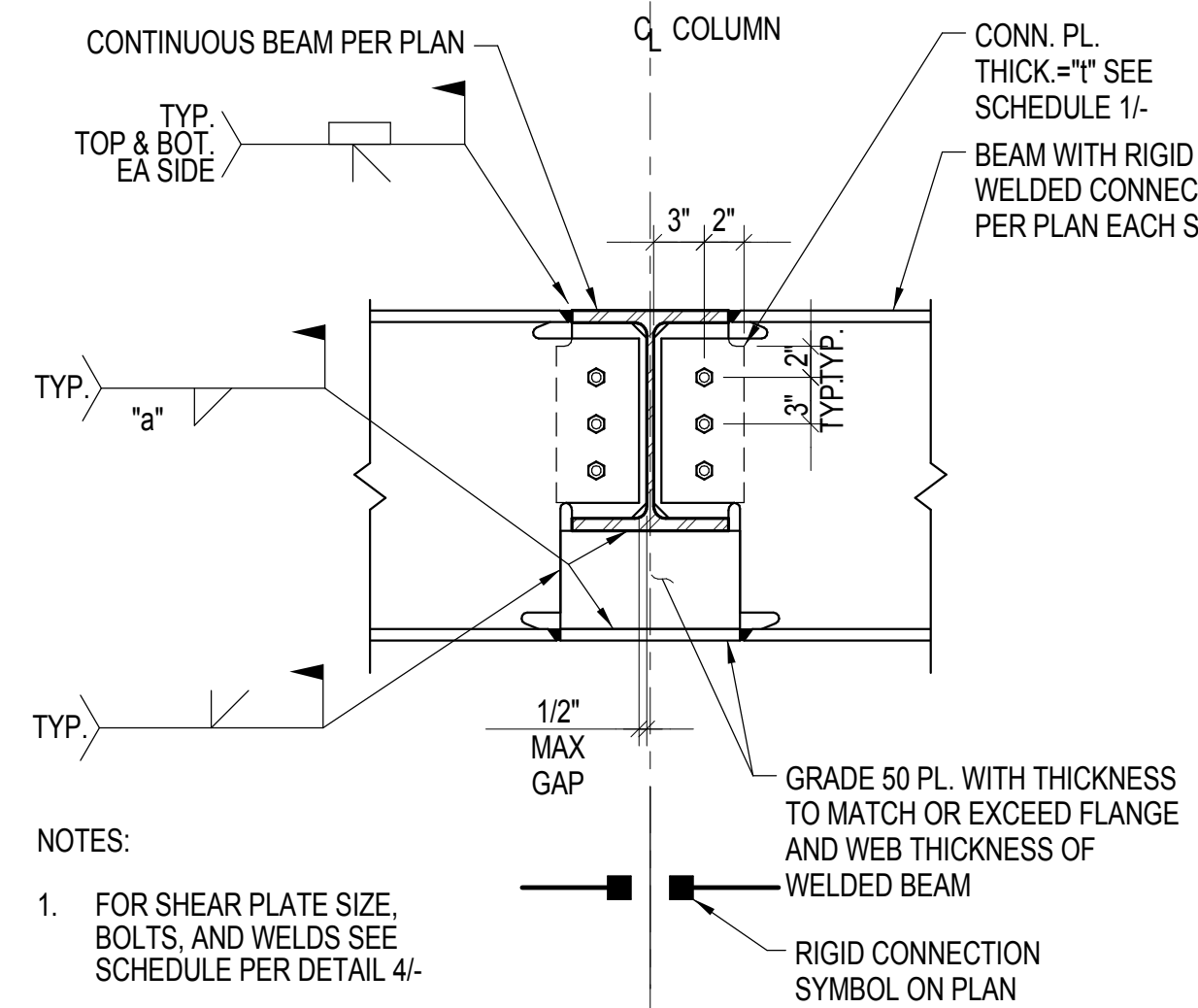
PLAN VIEW

SECTION	NO. OF ROW	NO. OF STUDS	SIZE OF STEEL PLATE			
			"W"	"D"	"T"	"a"
C6, W8	4	2	1'-4"	1'-2"	3/4"	3"
W10, W12	4	3	1'-4"	1'-6"	3/4"	4"
W14	4	3	1'-4"	1'-6"	3/4"	4"
W16	4	3	1'-4"	1'-10"	1"	6"
W18	4	3	1'-4"	1'-10"	1"	6"
W24	4	3	1'-4"	2'-0"	1"	6"

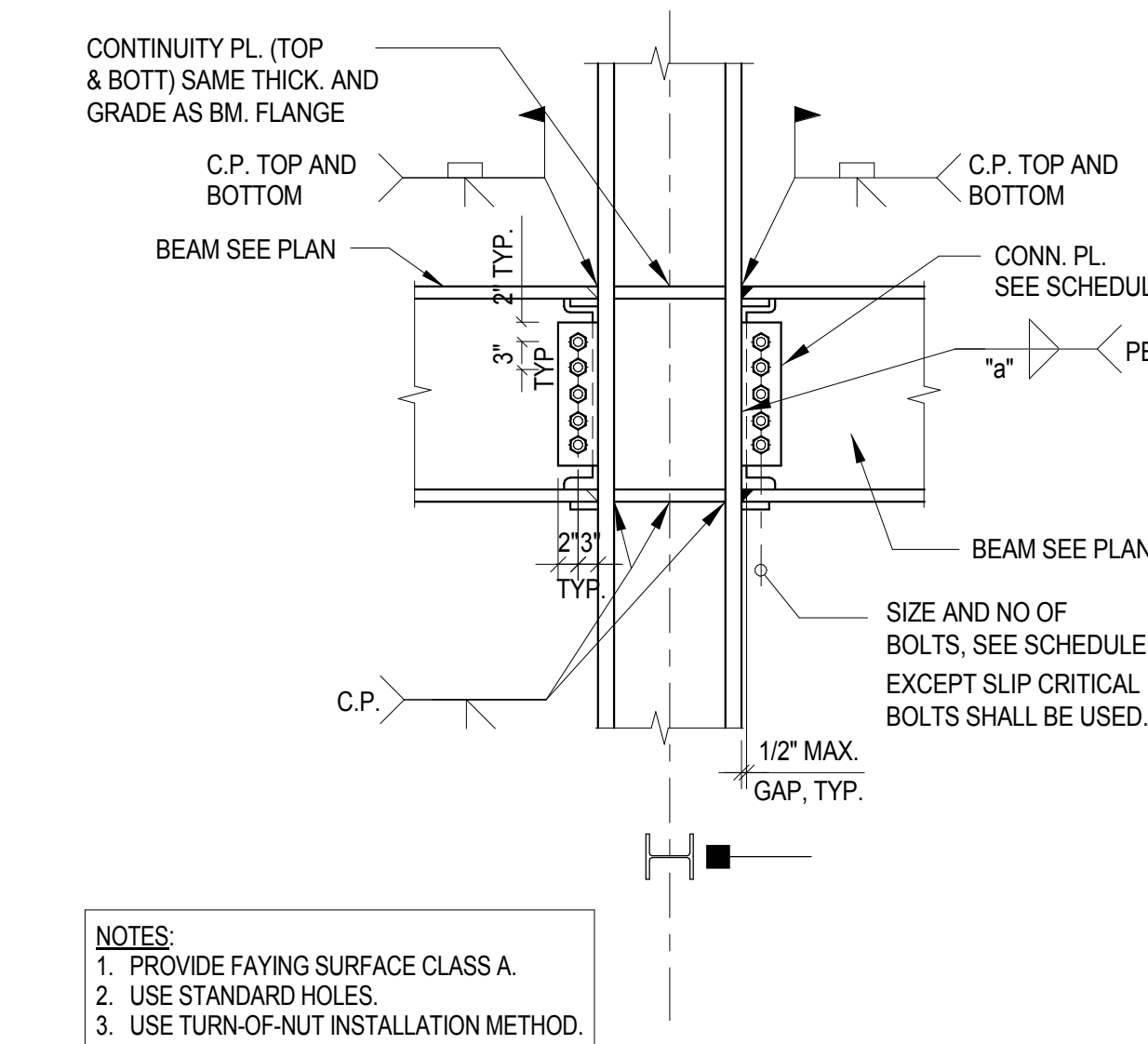
NOTE:
1. FOR STEEL BEAM TO CONCRETE WALL CONNECTION USE DETAIL WITH STEEL BEAM SEATED INTO POCKET. USE THIS DETAIL ONLY WHERE SPECIFICALLY SPECIFIED ON THE PLANS, OR OBTAIN APPROVAL FROM ENGINEER PRIOR TO USING THIS DETAIL.
2. SEE EMBEDDED STEEL PLATE SCHEDULE FOR NO. OF STUDS AND PLATE SIZE.
3. W8x BEAMS MAY USE 3/4" Ø SIMPSON TITEN HD SCREWS
4. REINF. NOT SHOWN FOR CLARITY.

SCHEDULE AND NOTES

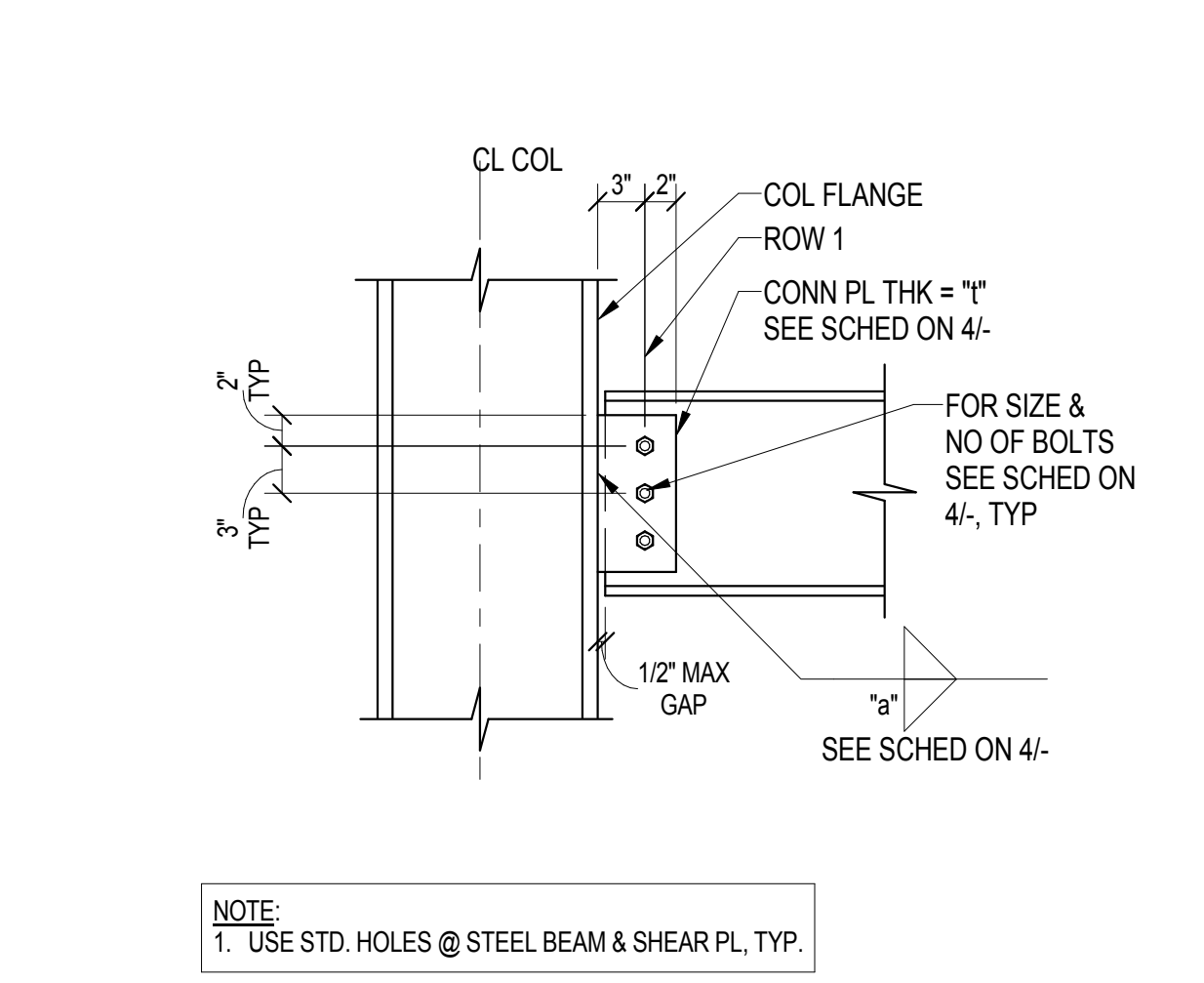
10 TYP STL BM TO CONC WALL CONN DETAIL
S-014 NTS



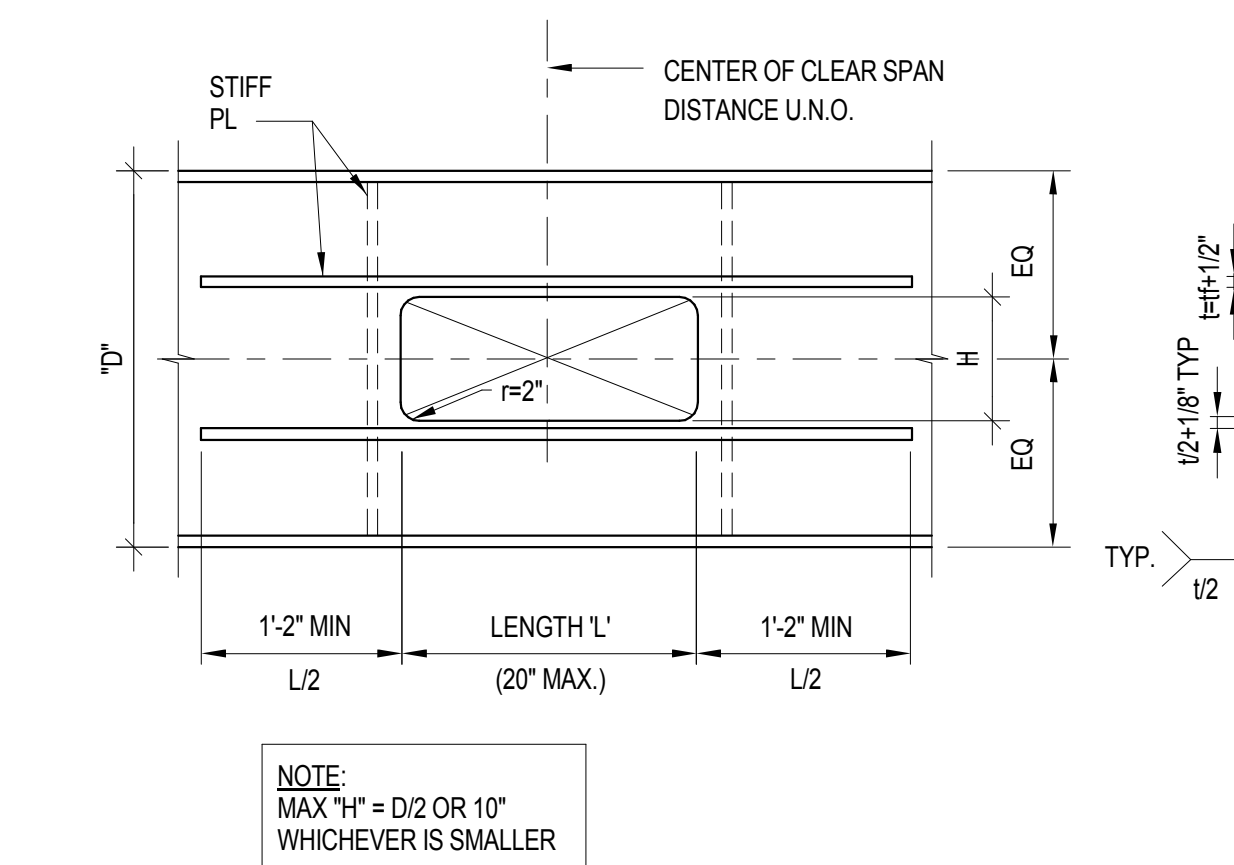
11 DEEP BEAM TO BEAM RIGID CONNECTION
S-014 NTS



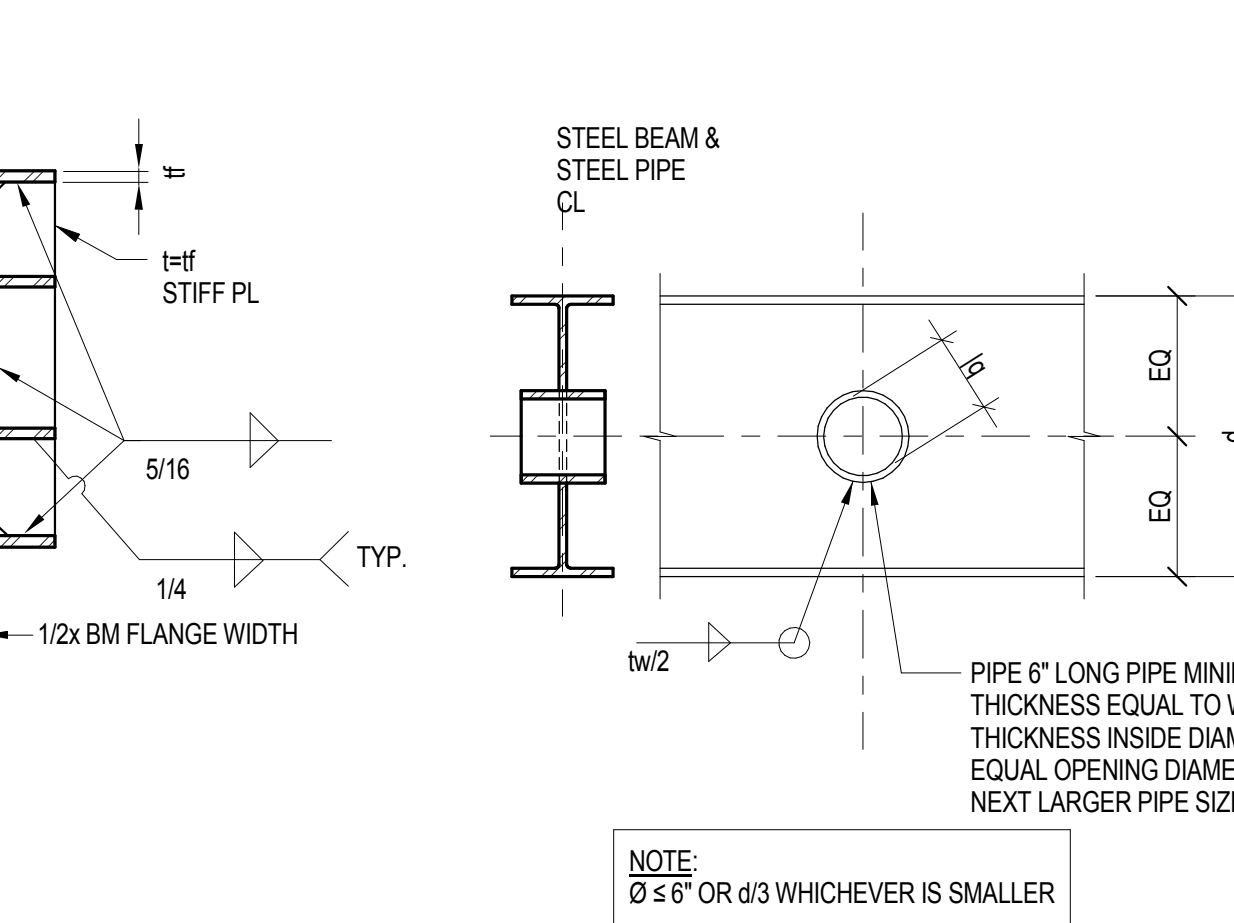
7 MOMENT BEAM TO COL. FLANGE CONNECTION
S-014 NTS



3 TYP BEAM TO COL. FLANGE CONNECTION
S-014 NTS



RECTANGULAR OPENING



CIRCULAR OPENING

BEAM/ GIRDER	CONNECTION BOLT - A325X			
	NO. OF BOLTS	SIZE OF BOLTS	PLATE THICK "t"	WELD SIZE "a", "b"
W6	2	5/8"Ø	3/8"	5/16"
W8, W10	2	7/8"Ø	3/8"	5/16"
W12, W14	3	7/8"Ø	3/8"	3/8"
W16, W18	4	7/8"Ø	1/2"	3/8"
W21	5	7/8"Ø	1/2"	3/8"
W24	6	7/8"Ø	1/2"	3/8"
W27	7	7/8"Ø	1/2"	3/8"
W30	8	7/8"Ø	5/8"	3/8"
W33	9	7/8"Ø	5/8"	3/8"
W36	10	7/8"Ø	5/8"	3/8"

NOTES:
1. ALL FILLET WELD SIZES SHOWN ARE MINIMUM WELD SIZE. WHERE WELD SIZE SHOWN ARE SMALLER THAN AWS MINIMUM WELD SIZE, AWS MINIMUM WELD SIZE SHALL BE USED.
2. FIELD WELD CONNECTION PLATES WHERE (N) MEMBERS CONNECT TO (E) MEMBERS.
3. AT W6 BEAMS PROVIDE 1-7/8" SPACING BETWEEN BOLTS.

4 TYP BEAM CONNECTION SCHEDULE
S-014 NTS

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Professional Seal



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12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title
TYPICAL DETAILS

Project Number
2014-015

CAD File

Sheet number

S-014

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Lakers
Headquarters

2275 Mariposa, El Segundo, California 90245

Consultant



John Labb + Associates
Structural Engineers
319 Main Street
El Segundo, CA 90245
t: 213-239-9700 f: 213-239-9699
JLA Job no. 14820

Professional Seal



No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package.	12/12/14
3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
5	Foundation & Utilities Permit	08/12/15
6	90% Steel Package	08/28/15
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9	ASI 004 (Fnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

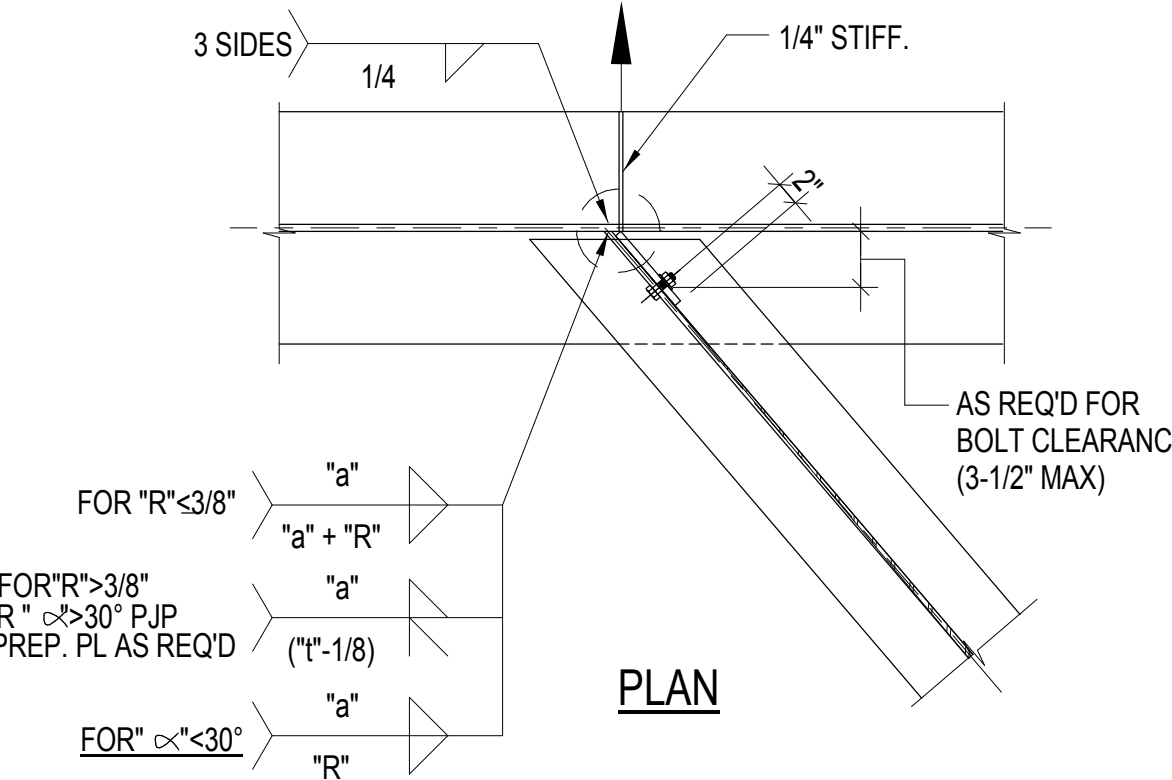
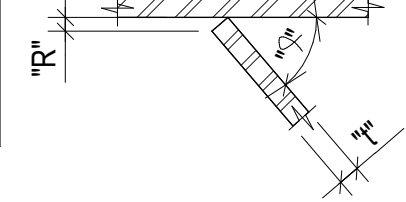
Key Plan

Sheet Title
TYPICAL DETAILS

Project Number
2014-015
Sheet number

S-015

NOTES:
1. SEE TYP BM TO BM CONNECTIONS FOR INFO NOT SHOWN.
2. FOR "a" SEE BM CONN SCHEDULE.

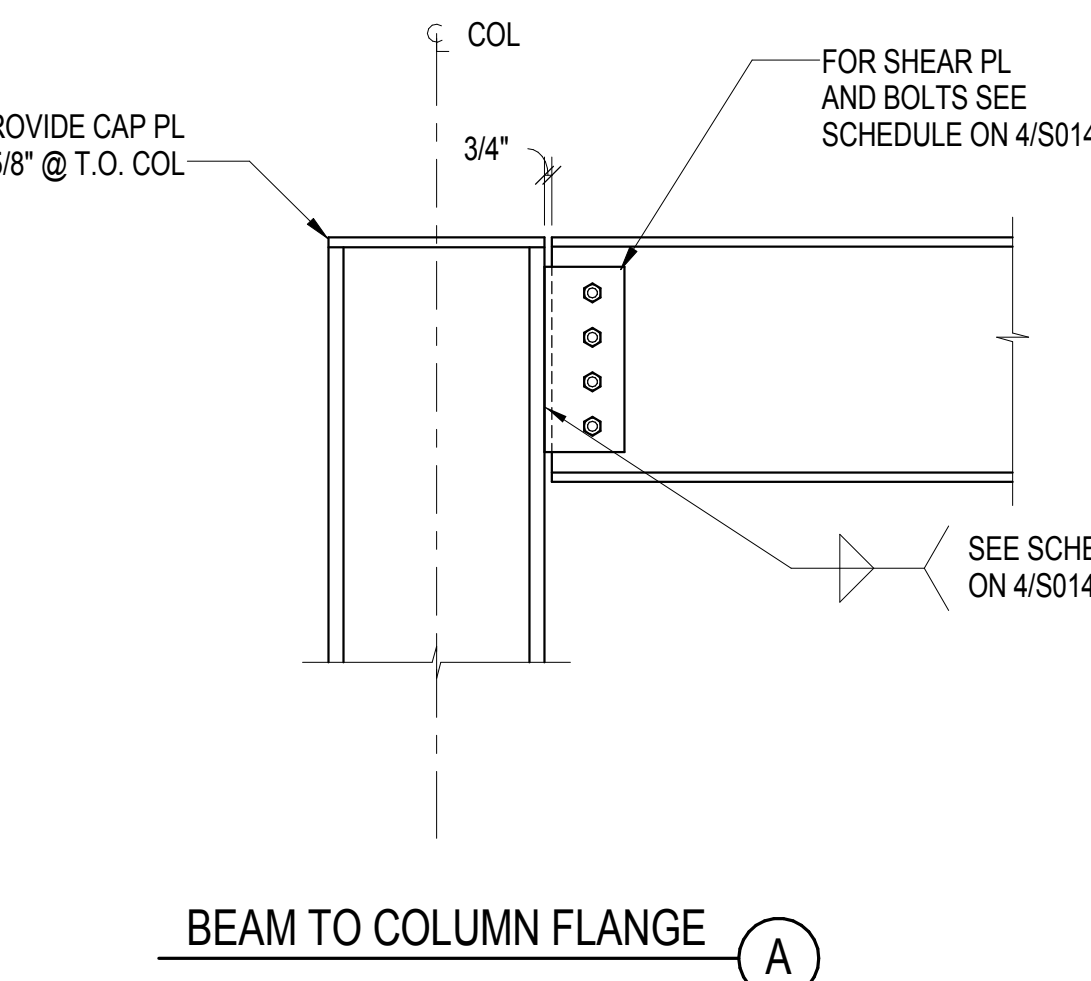


1 SKEWED BEAM TO BEAM CONNECTION

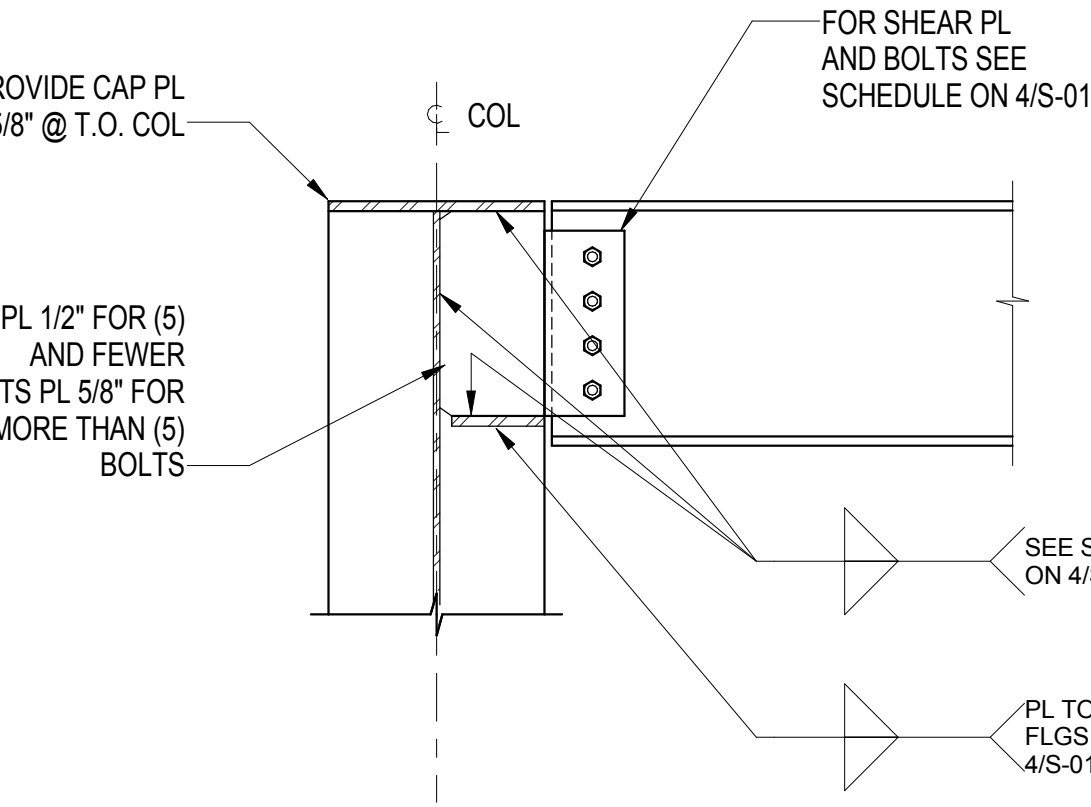
S-015 NTS

2 BENT BEAM DETAIL

S-015 NTS

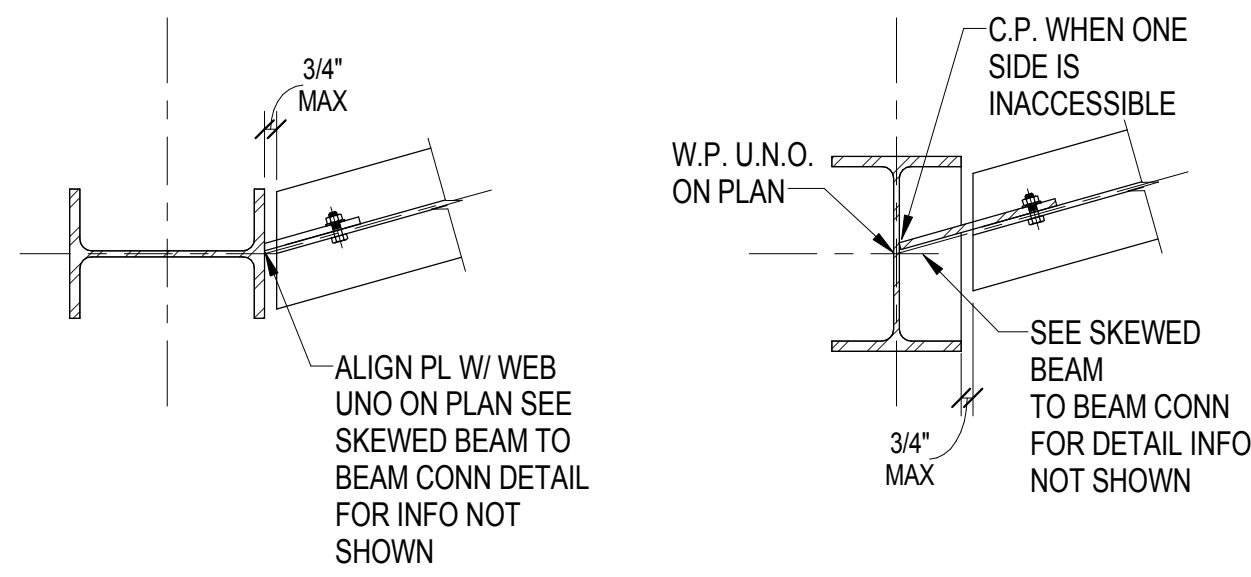


BEAM TO COLUMN FLANGE



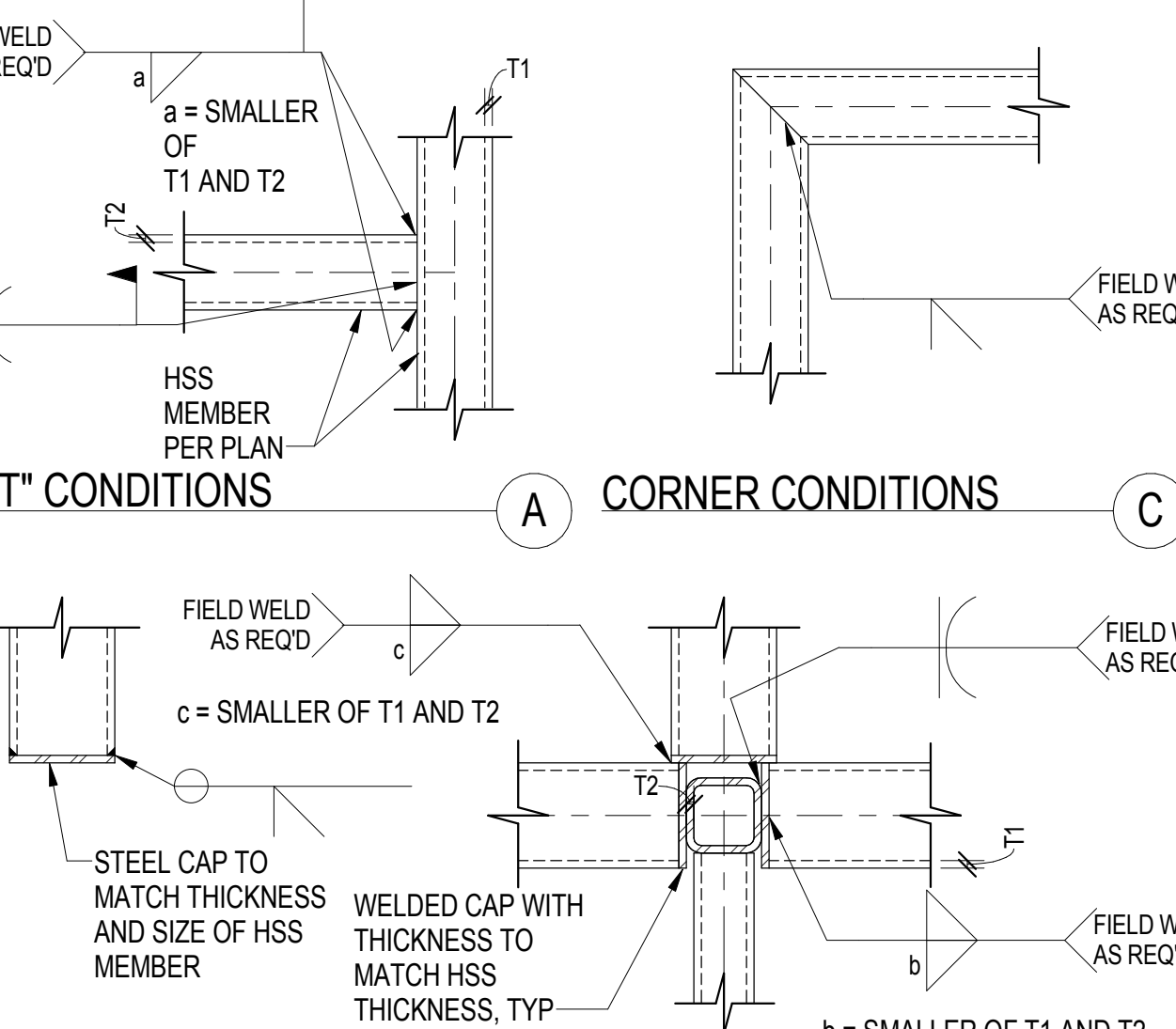
3 TOP OF COLUMN CONNECTION DETAIL

S-015 1" = 1'-0"



5 SKEWED BEAM TO COLUMN CONNECTION

S-015 NTS

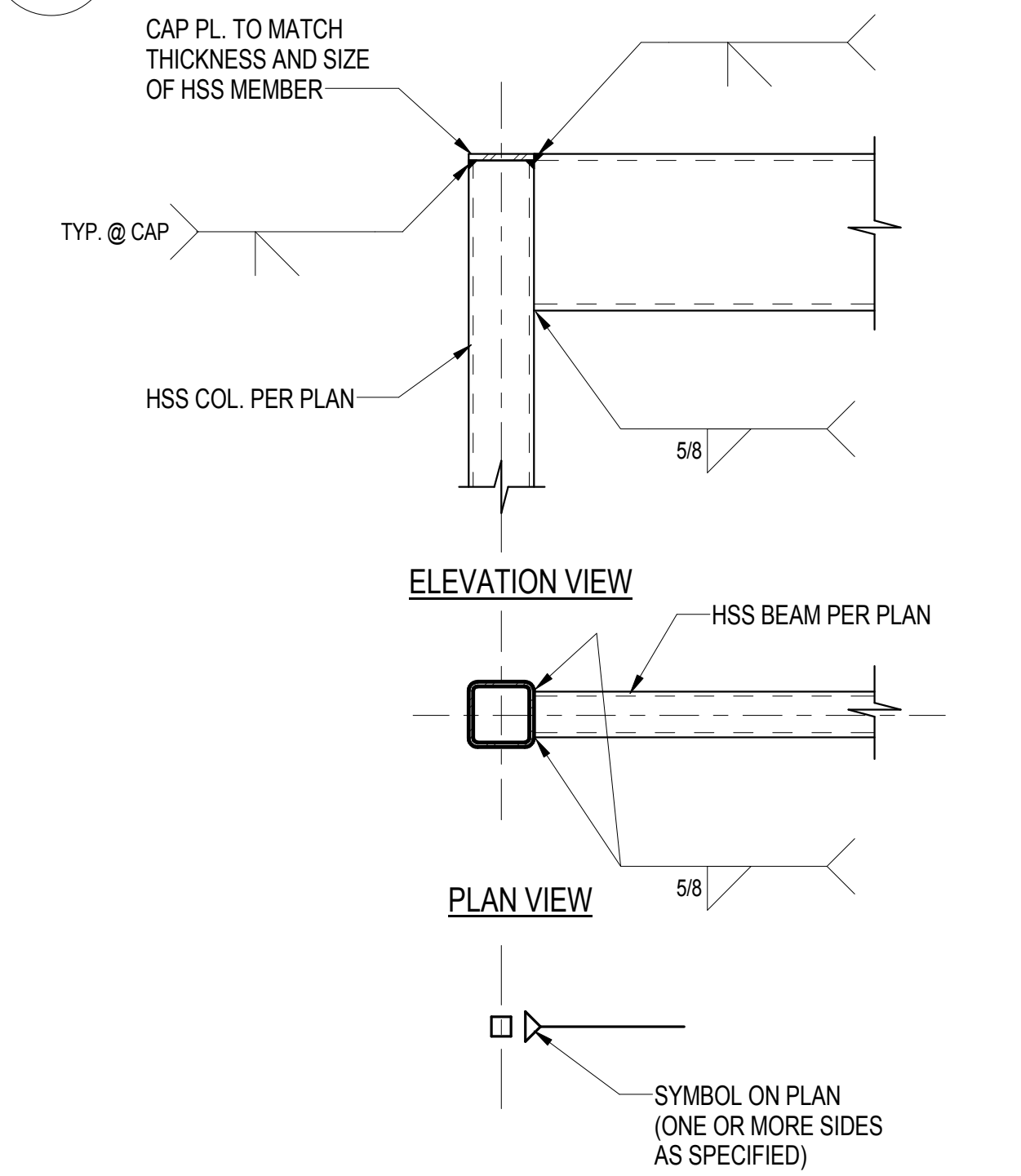


"T" CONDITIONS

DIFFERENT SIZES

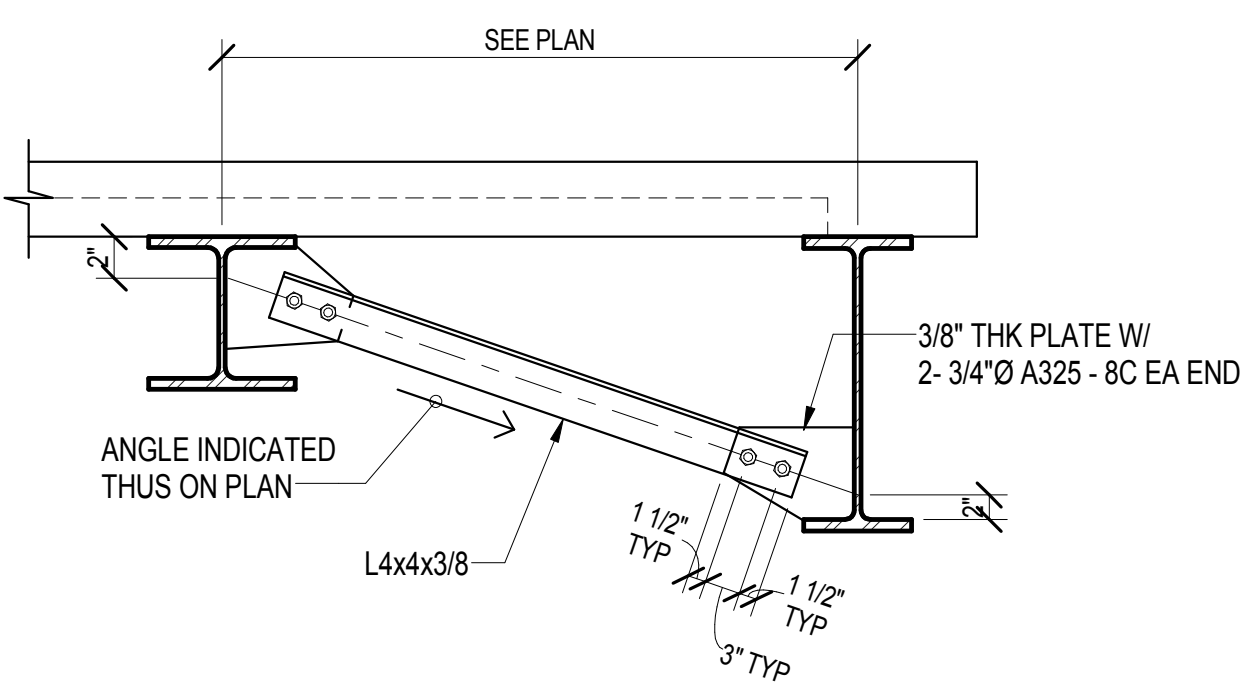
6 HSS MEMBERS CONNECTION

S-015 NTS



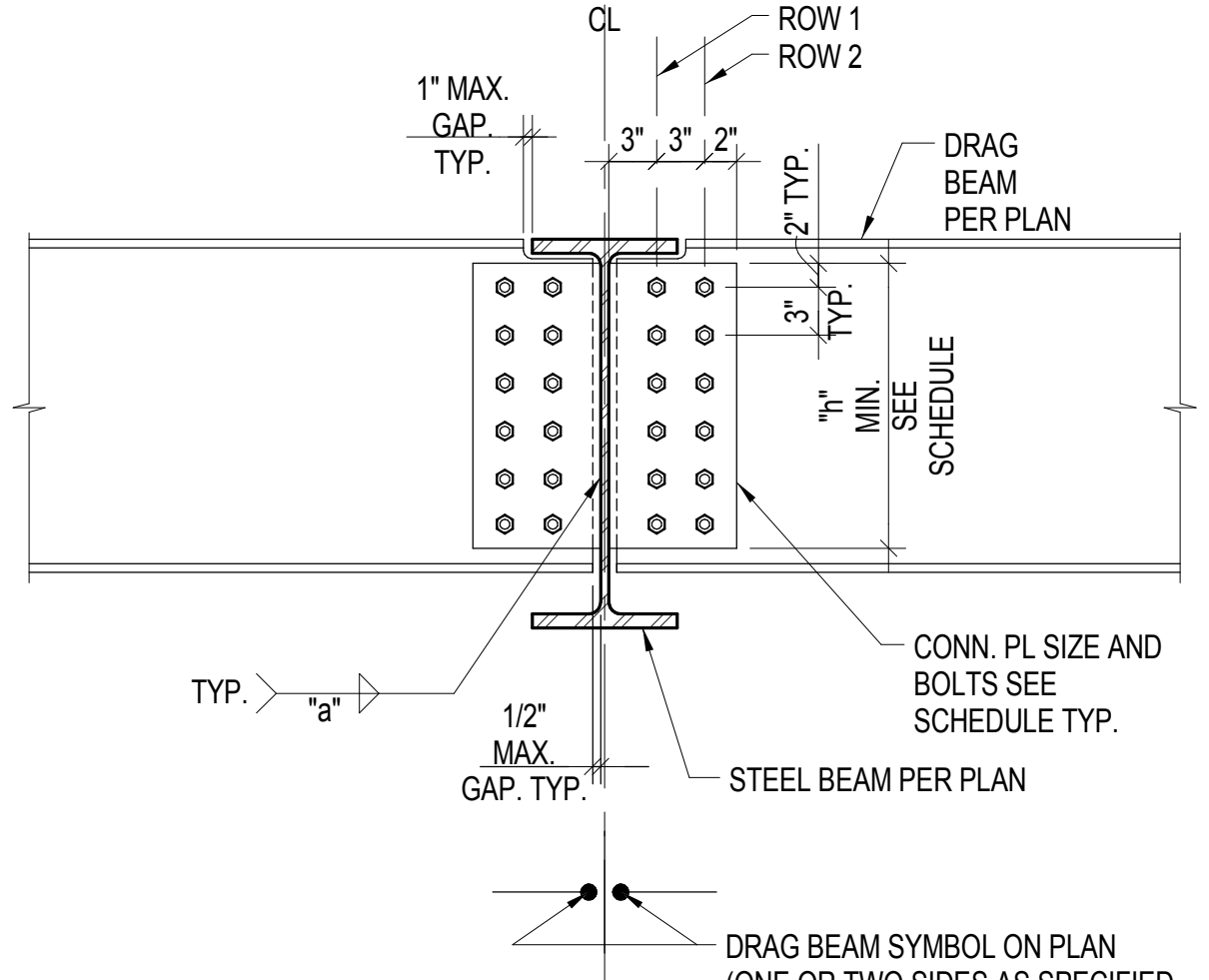
7 TYPICAL HSS CONNECTION AT OMFS

S-015 NTS



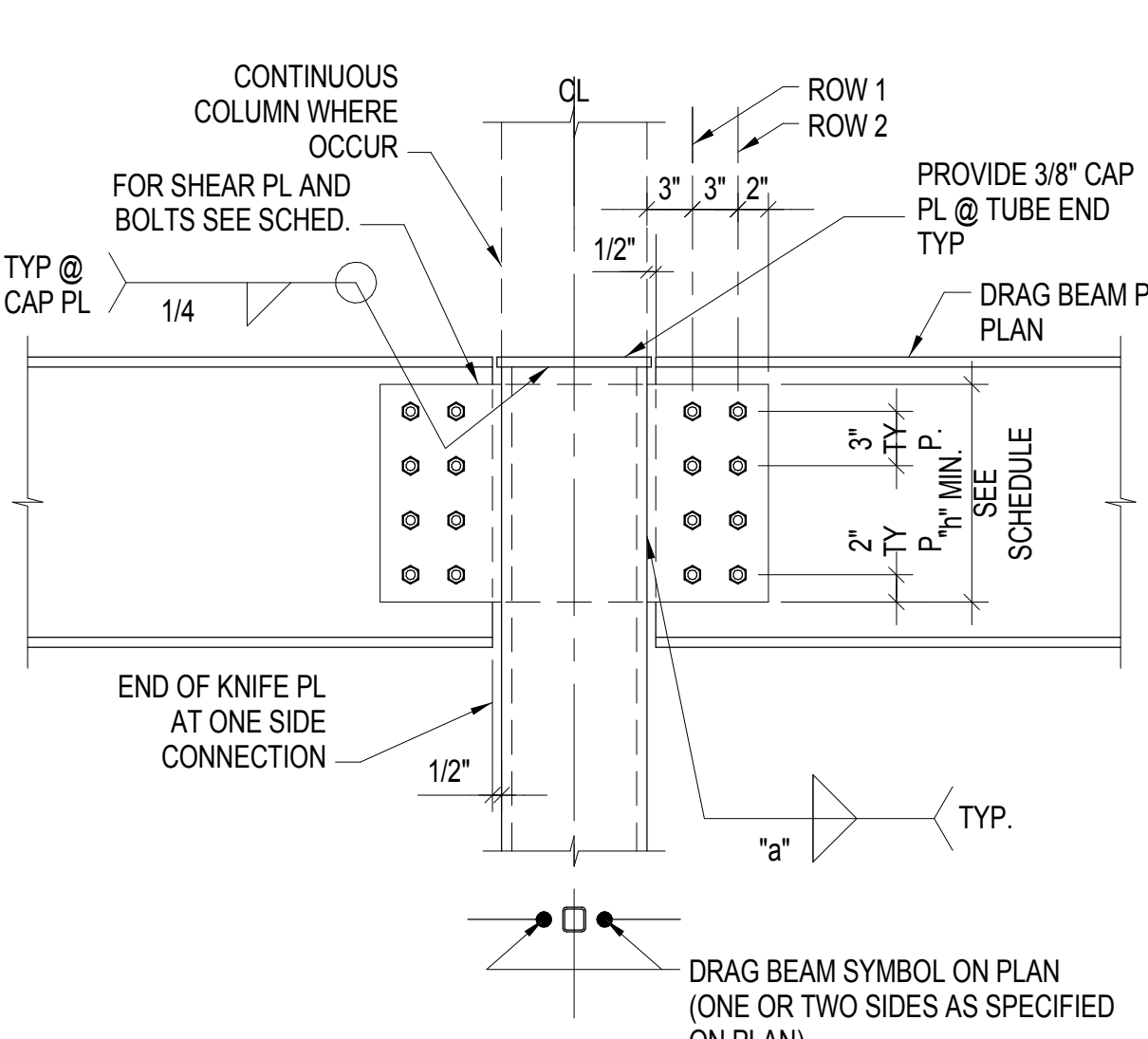
8 TYP ANGLE BRACE DETAIL

S-015 NTS



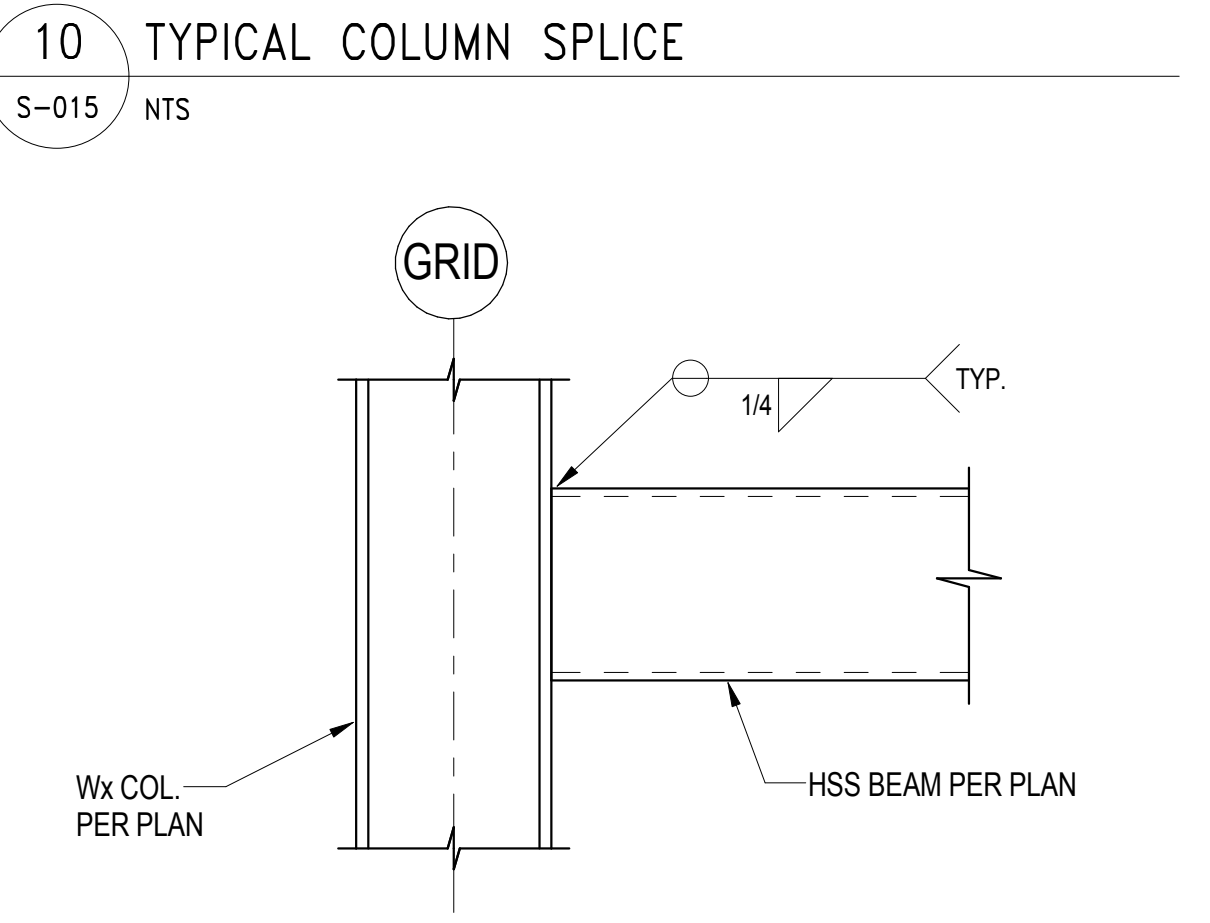
DRAG BEAM TO BEAM CONNECTION

S-015 NTS



DRAG BEAM TO TS COLUMN

S-015 NTS

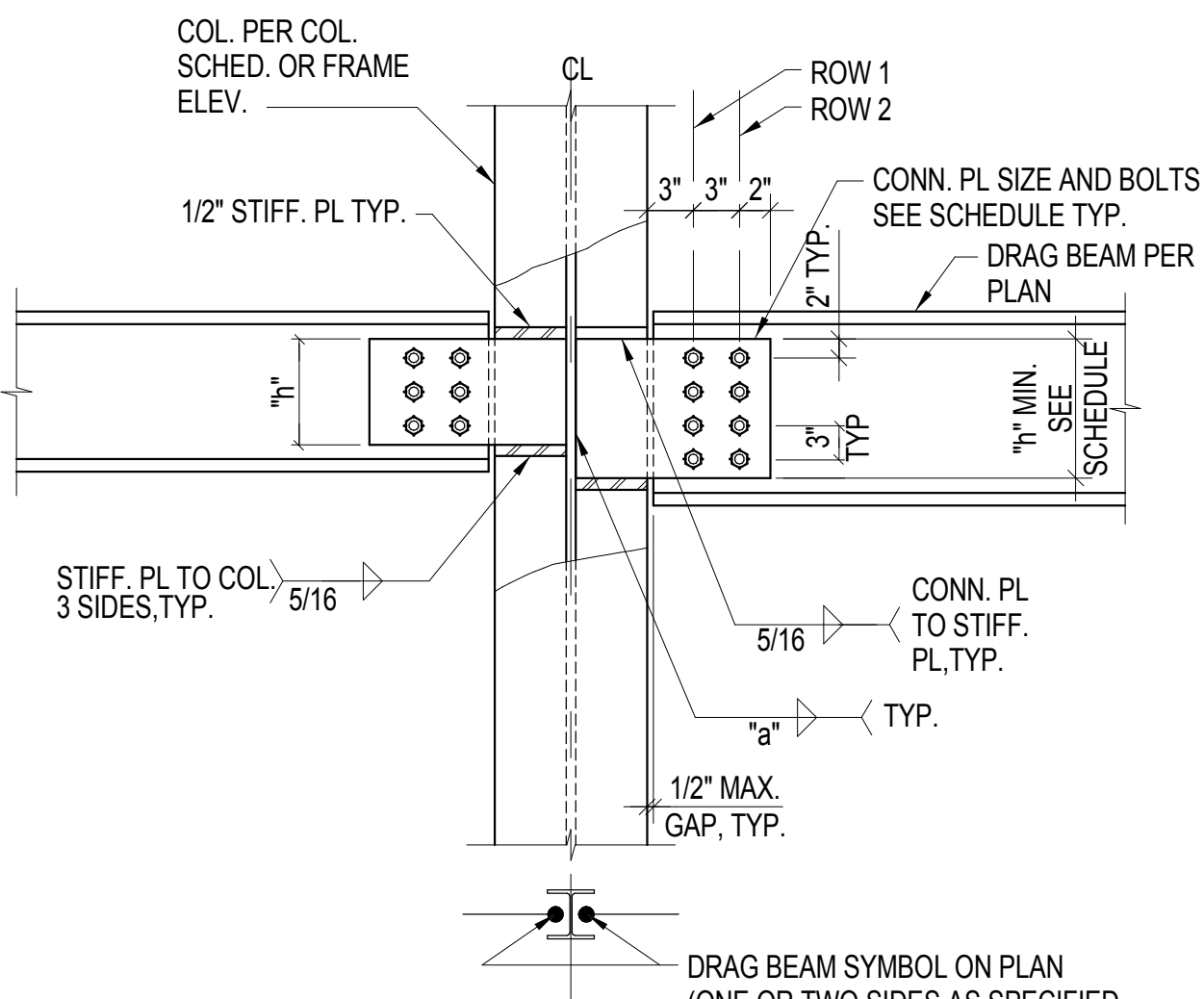


10 TYPICAL COLUMN SPLICE

S-015 NTS

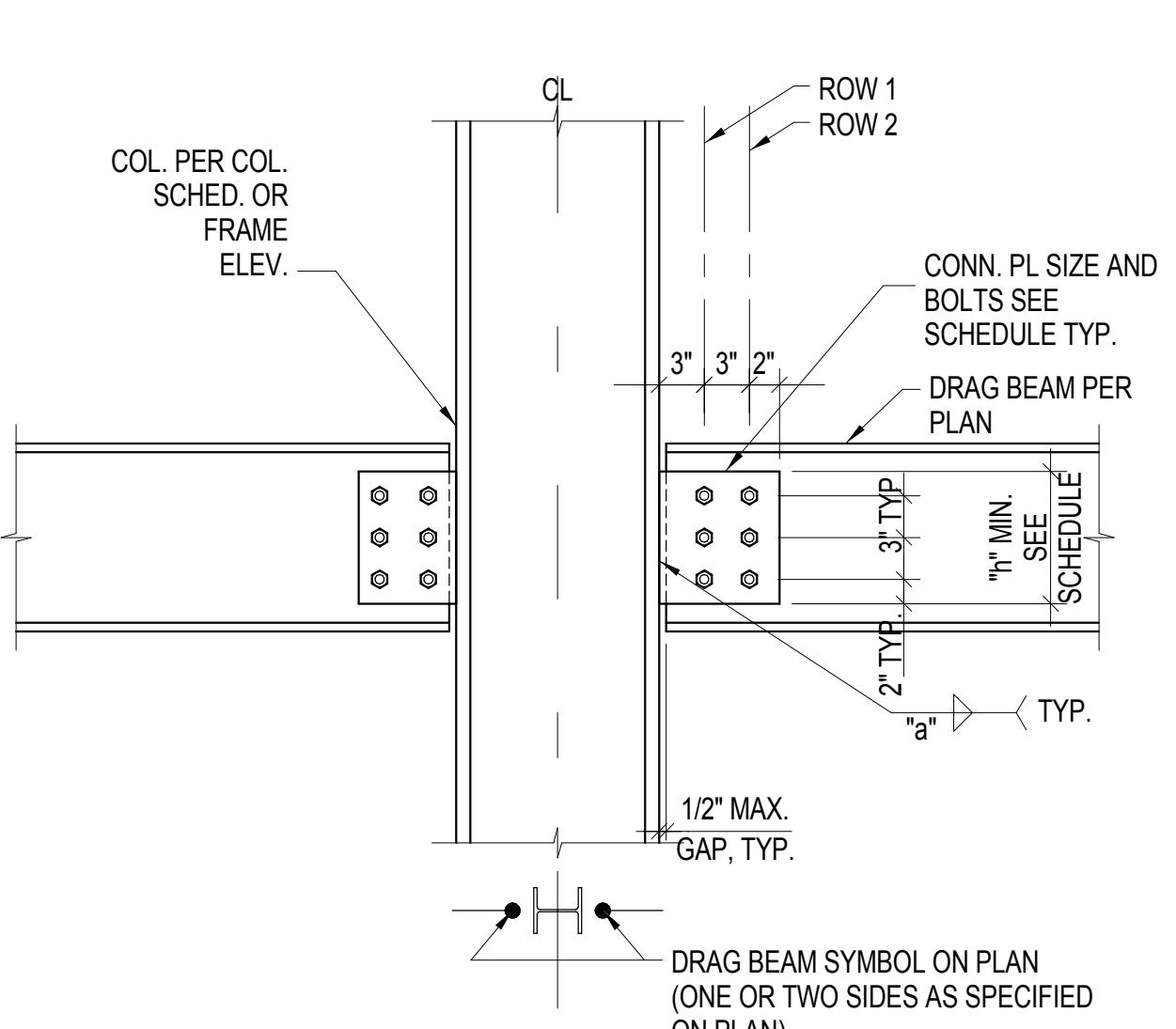
11 HSS BEAM TO Wx COL. FLANGE CONN

S-015 NTS



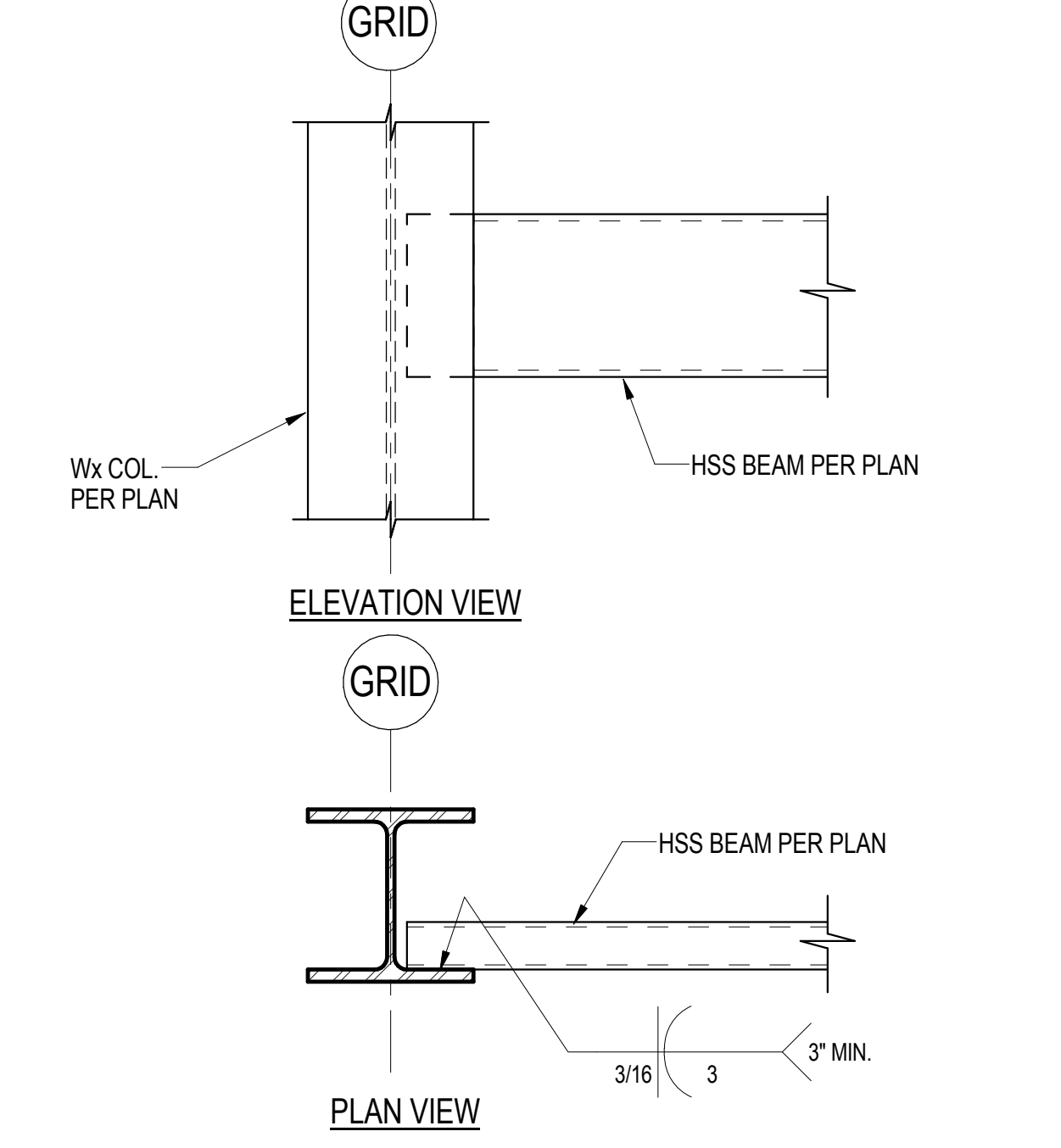
DRAG BEAM TO COL. WEB CONN.

S-015 NTS



DRAG BEAM TO COL. FLANGE CONN.

S-015 NTS



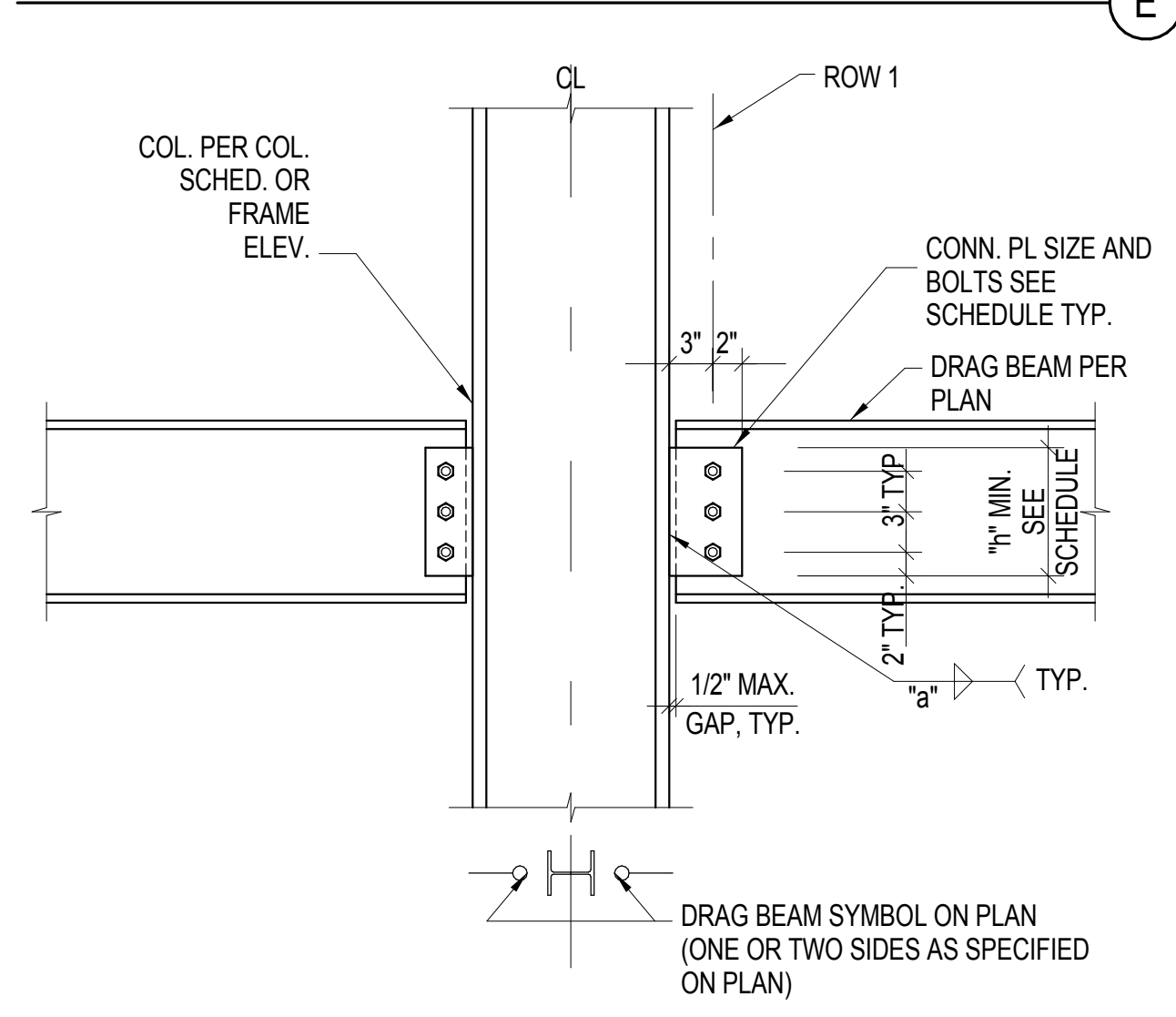
12 HSS BEAM TO Wx COL. WEB CONN.

S-015 NTS

DRAG BEAM CONNECTION SCHEDULE					
BEAM SIZE	NUMBER OF 1"Ø A490 BOLTS	CONNECTION PLATE PL. THICKNESS "t"	PLATE HEIGHT "h"	WELD "a"	
W12x	2	2	5/8"	9"	5/16"
W14x	3	2	5/8"	11"	5/16"
W16	4	2	5/8"	13"	3/8"
W18x	4	4	3/4"	13"	3/8"
W21x	5	4	3/4"	16"	3/8"
W24x55	6	4	3/4"	19"	3/8"
W24x62	6	4	3/4"	19"	3/8"
W24x68	6	4	1-1/4"	19"	3/8"
W24x76	6	4	1-1/4"	19"	3/8"
W24x84	6	6	1-1/2"	19"	3/8"
W24x94	6	6	1-5/8"	19"	1/2"
W27x	7	5	1-5/8"	22"	1/2"

NOTES:
1. ALL FILLET WELD SIZES SHOWN ARE MINIMUM WELD SIZE. WHERE WELD SIZE SHOWN ARE SMALLER THAN AWS MINIMUM WELD SIZE, AWS MINIMUM WELD SIZE SHALL BE USED.
2. ALL CONN PL. SHALL BE A572, GRADE 50
3. FIELD WELD CONNECTION PLATES WHERE (N) MEMBERS CONNECT TO (E) MEMBERS.
4. USE STD. HOLES @ STEEL BEAM & SHEAR PL. TYP.

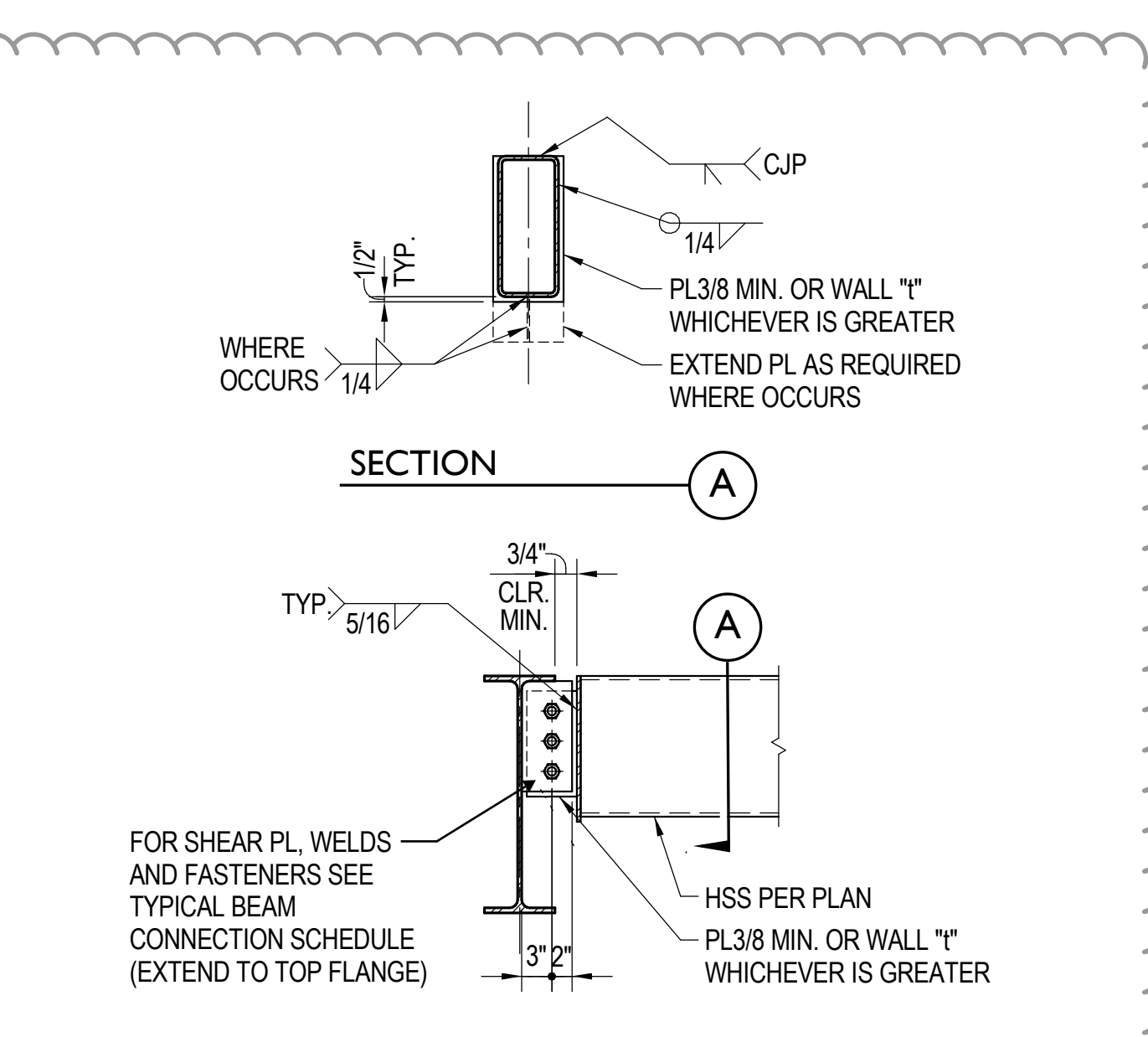
DRAG BEAM CONNECTION SCHEDULE



DRAG BEAM (WITH ONE ROW OF BOLTS)

9 TYP DRAG BEAM CONNECTIONS

S-015 NTS



13 TYP. HSS BM TO Wx BEAM

S-015 SCALE: N.T.S.

[illegible]

Diagram illustrating the cross-section of a bridge deck with reinforcement details:

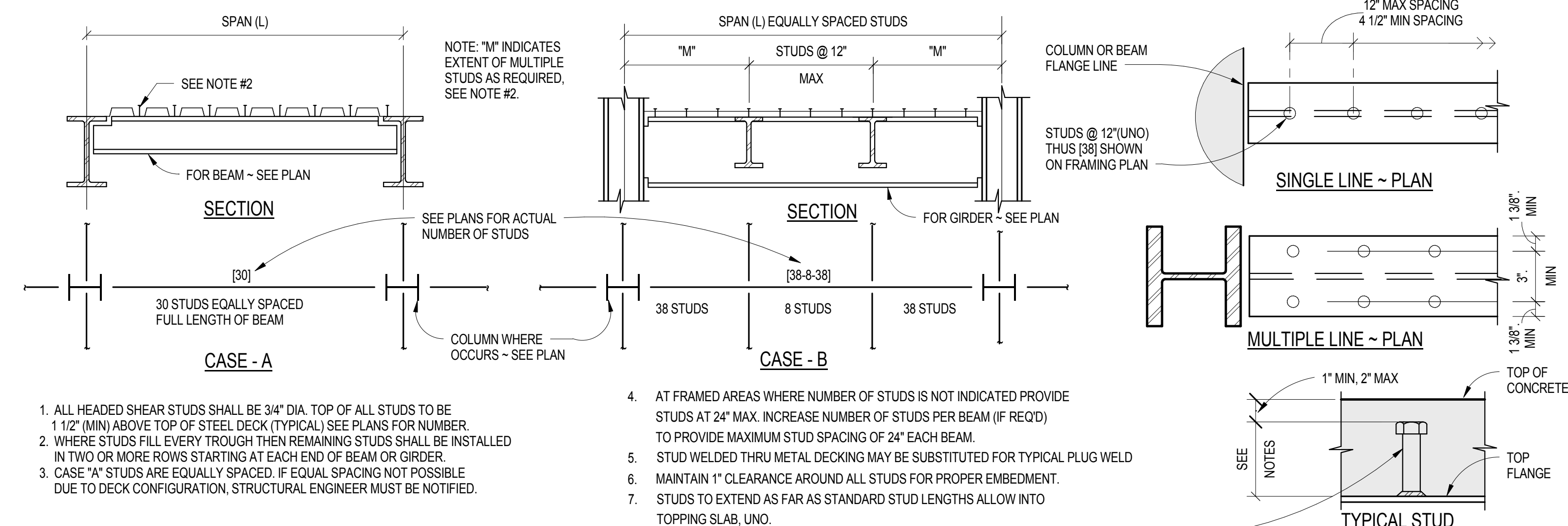
- TOPPING ROOFING PER ARCH.**: Reinforcement R-1 and R-2 are shown above the main deck.
- DECK REINF. PER SCHED.**: Reinforcement D-1, D-2, and D-3 are shown within the main deck structure.
- A dimension of $\frac{1}{2}$ inch is indicated for the top reinforcement layer.

METAL DECK SCHEDULE NOTES:

1. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. WHERE NELSON STUDS AND PUDDLE WELDS COINCIDE, THE PUDDLE WELD MAY BE REPLACED BY STUDS.
3. VALUES SHOWN ARE MAXIMUM UNSHORED CLEAR SPANS FOR CONCRETE TOPPED DECK, AND MAXIMUM CLEAR SPANS FOR UNTOPPED DECK.

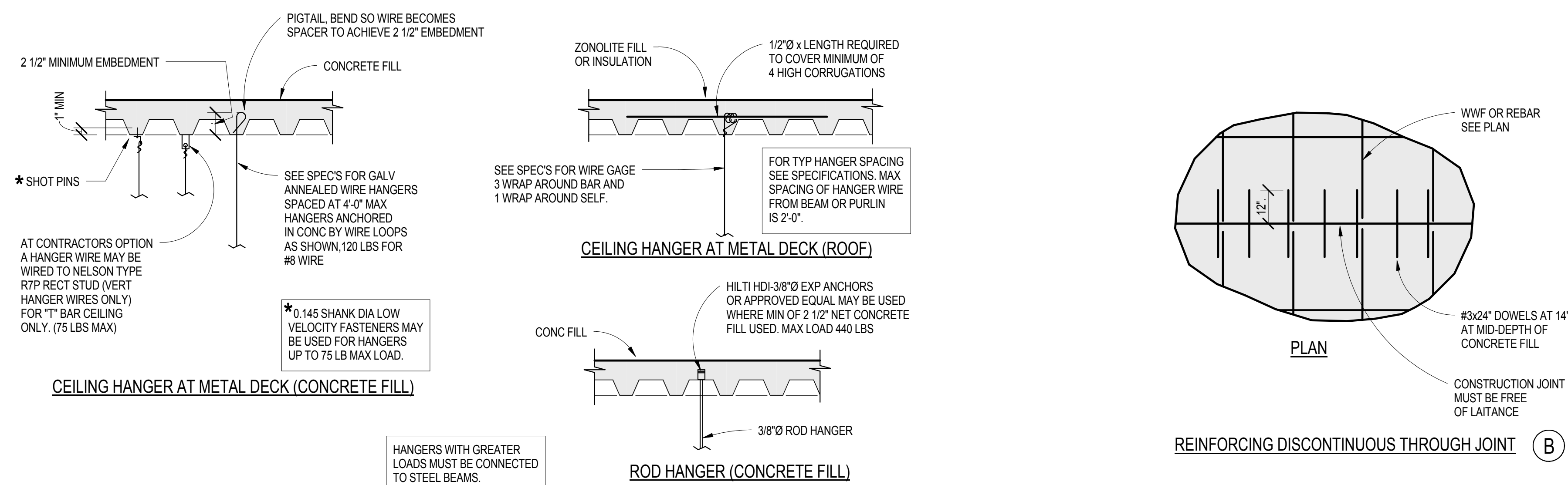
9 METAL DECK SCHEDULE

S-016 NTS



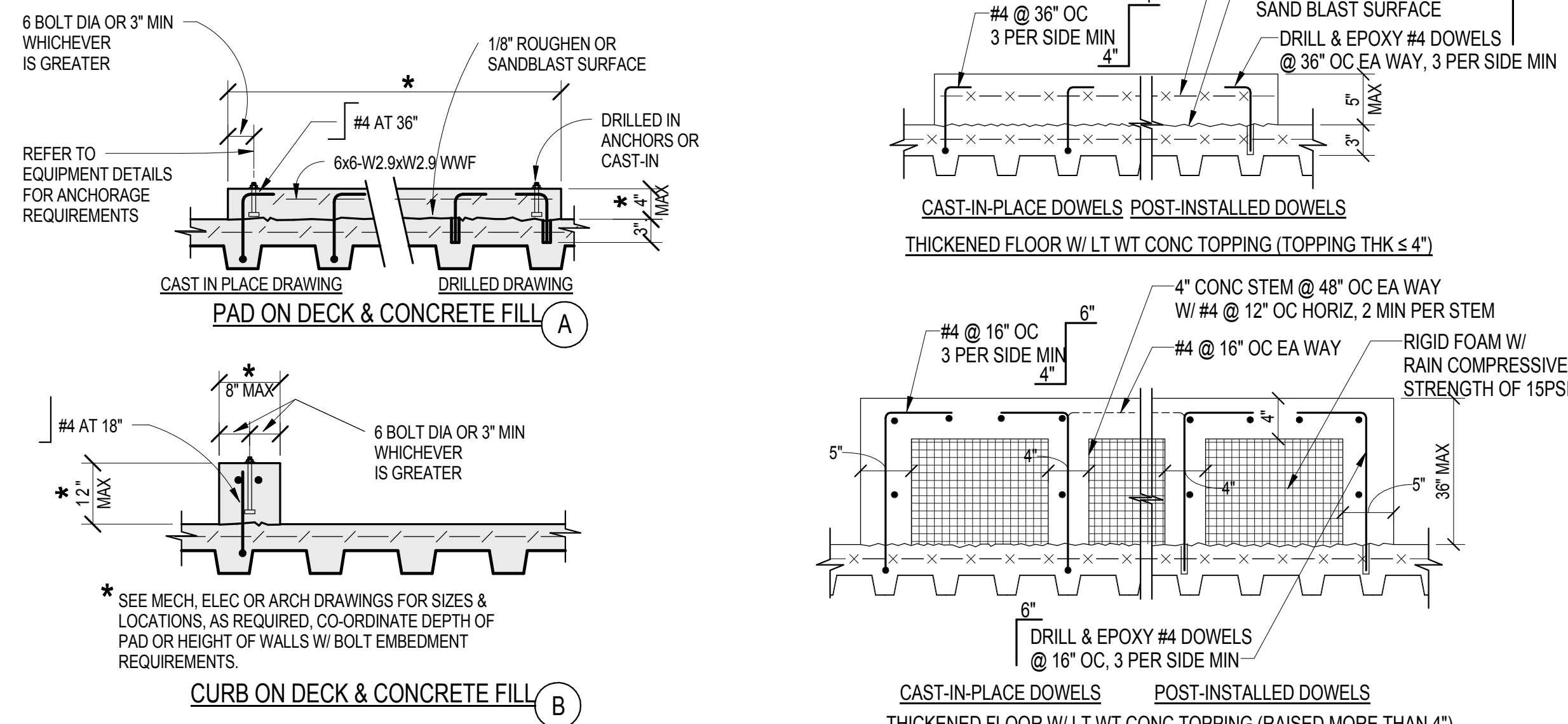
10 WELDED STUD LAYOUTS

S-016 NTS



11 HANGER DETAILS

S-016 NTS



12 CONCRETE EQUIPMENT SUPPORTS

S-016 NTS

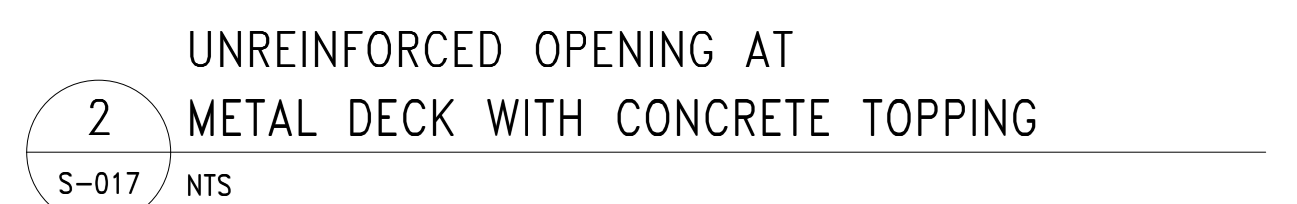
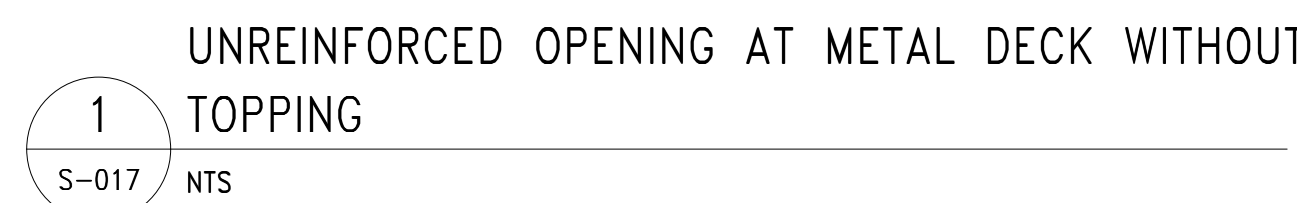
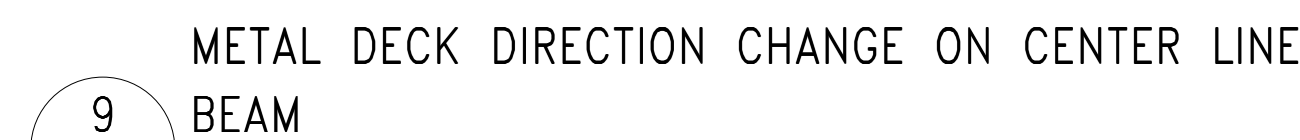
8 TYP RAISED FLOOR DETAILS

S-016 NT

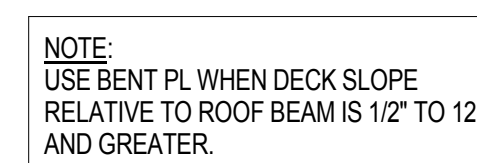
CONSTRUCTION JOINT IN CONCRETE FILL ON METAL DECK

4

S-016 NTS



* TYPICALLY WE SPECIFY BEAM PERPENDICULAR TO ROOF SLOPE. THUS, THIS DETAIL IS TO BE USED ONLY WHEN YOU HAVE THIS CONDITION



Project
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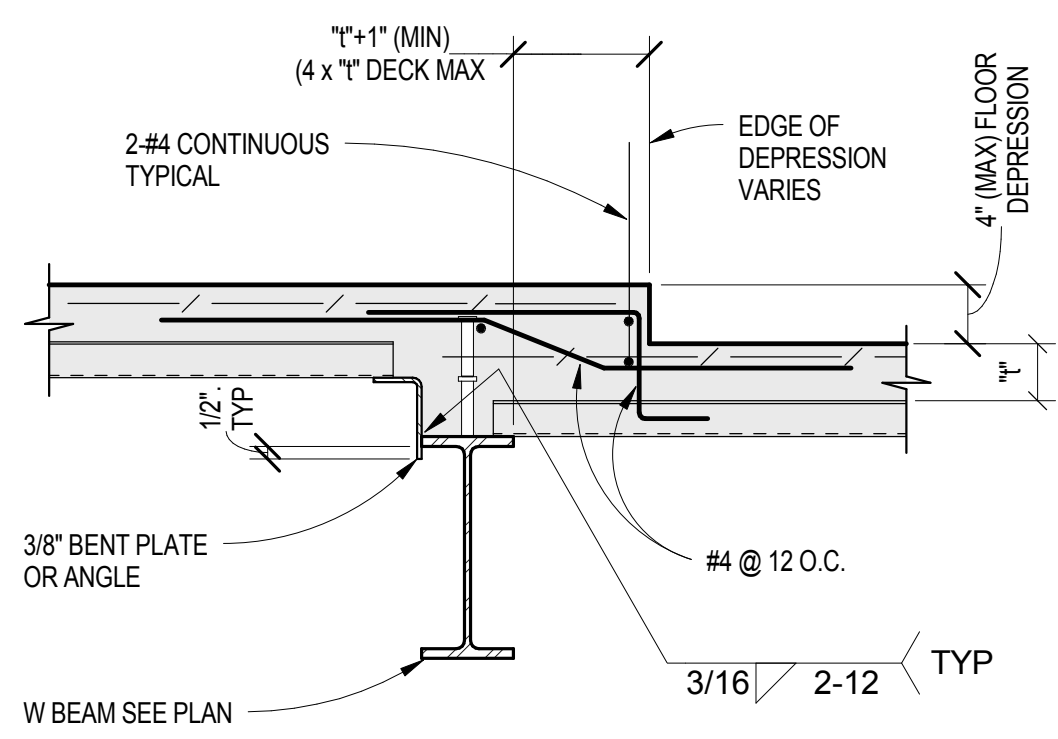
Key Plan

Sheet Title
TYPICAL DETAILS

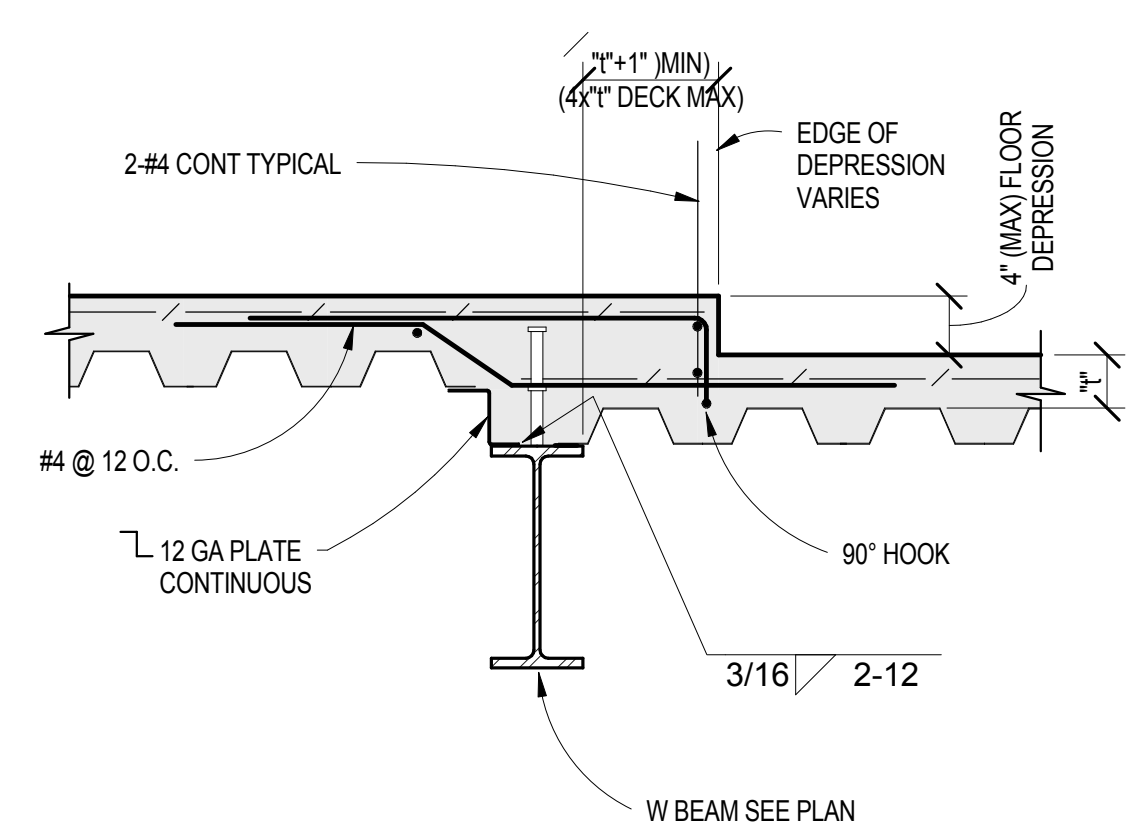
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2014-015
Sheet number

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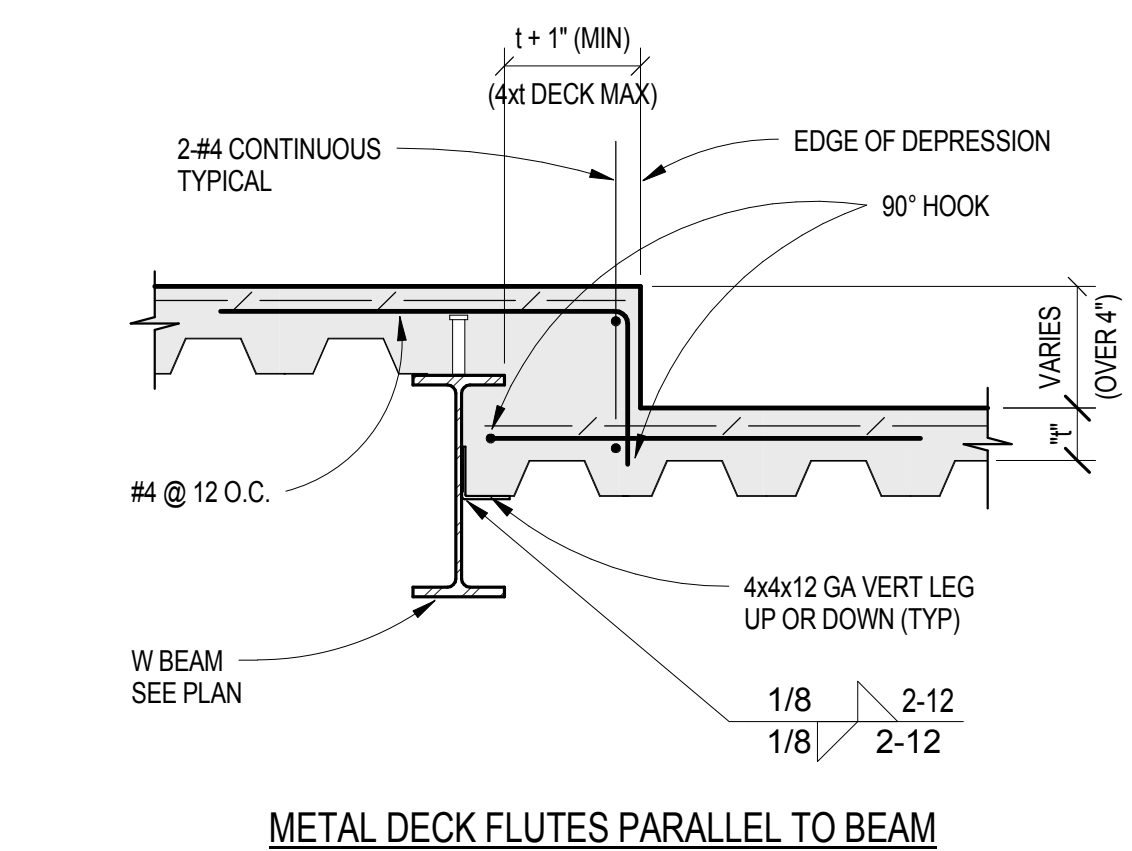
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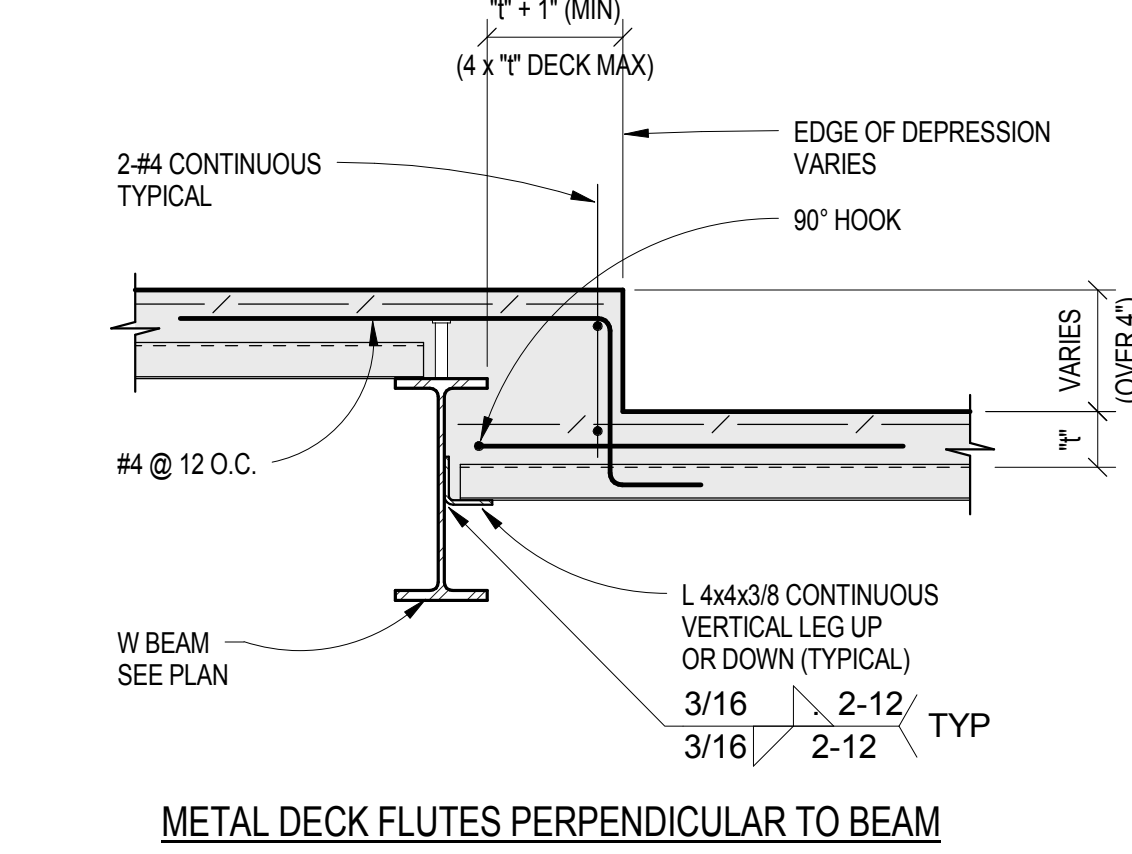
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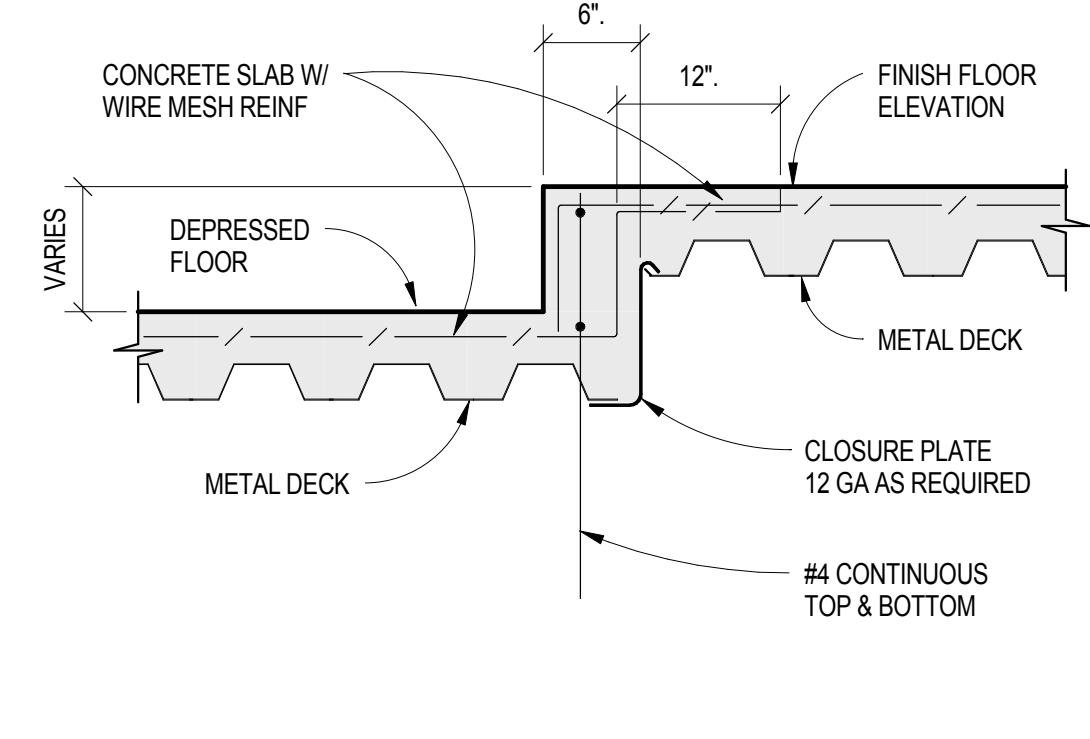
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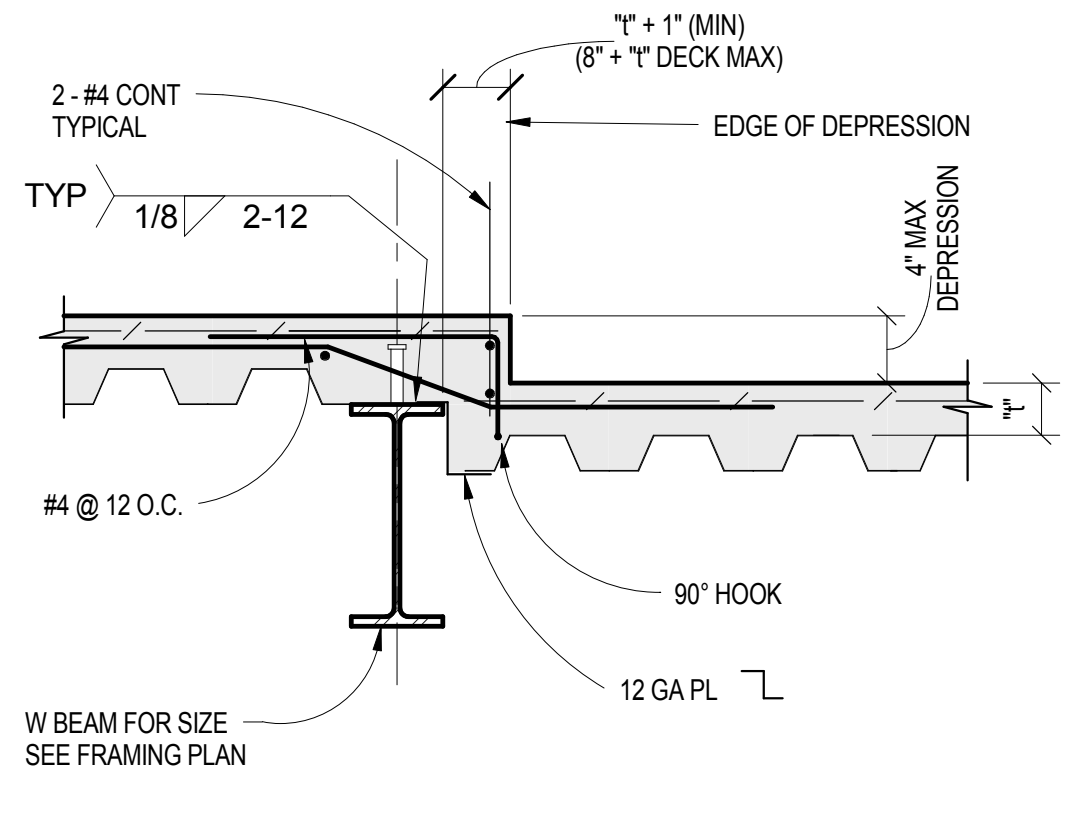
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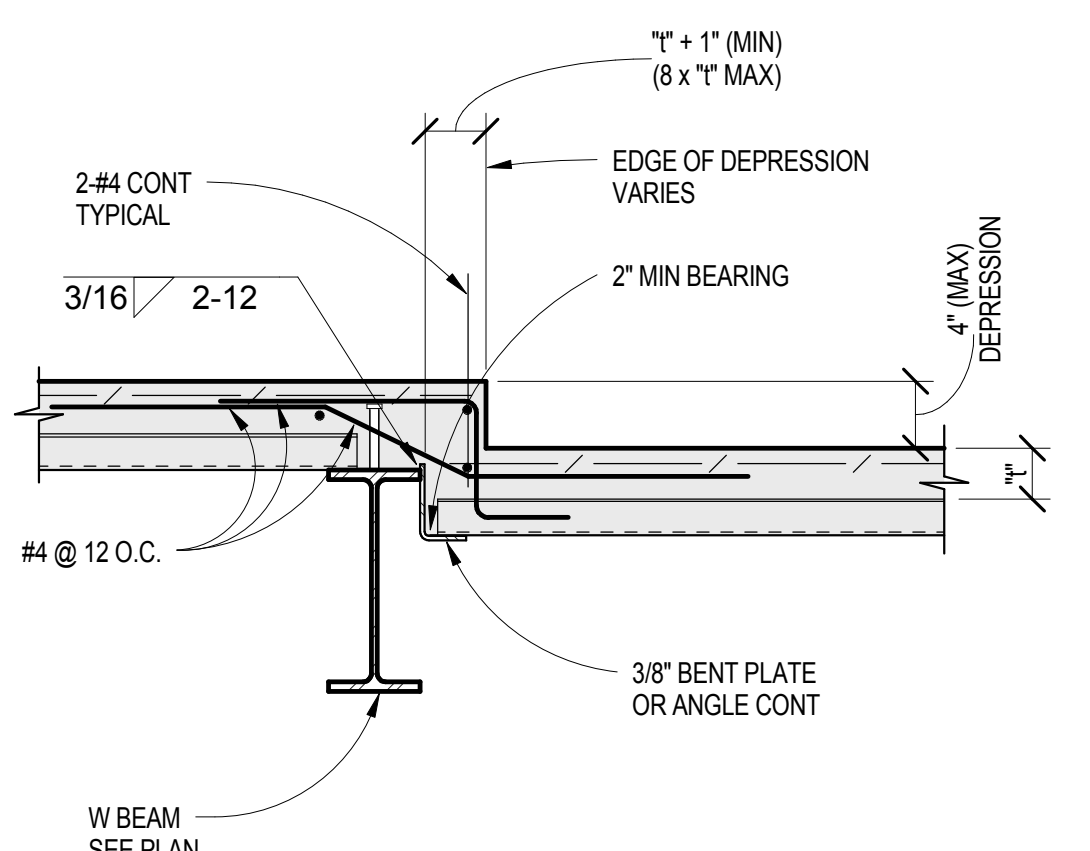
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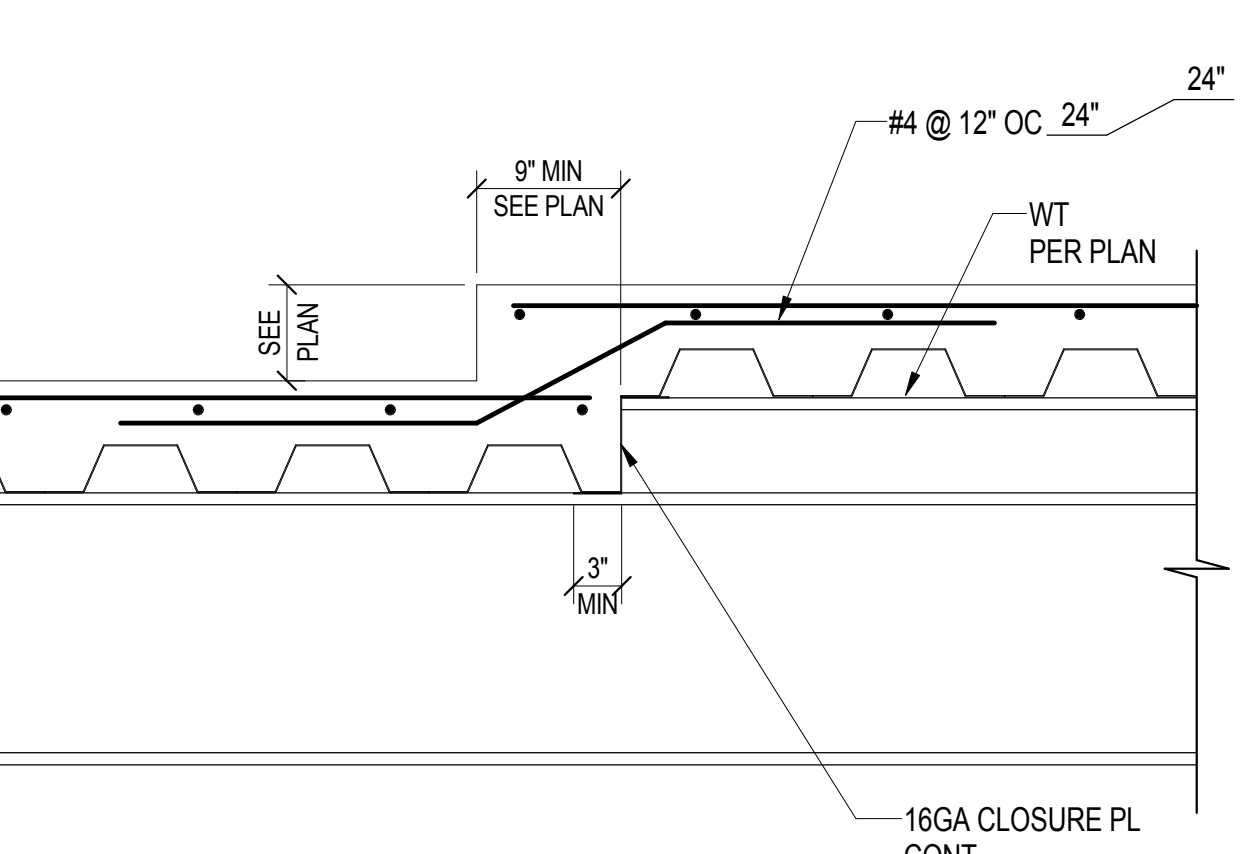
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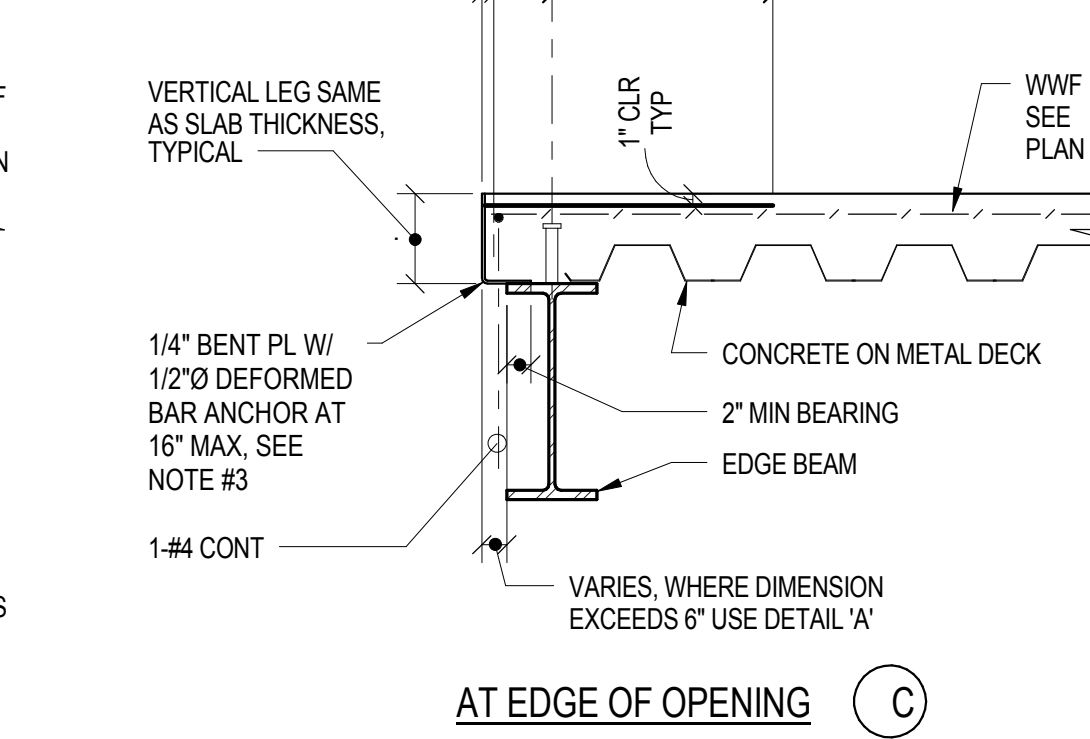
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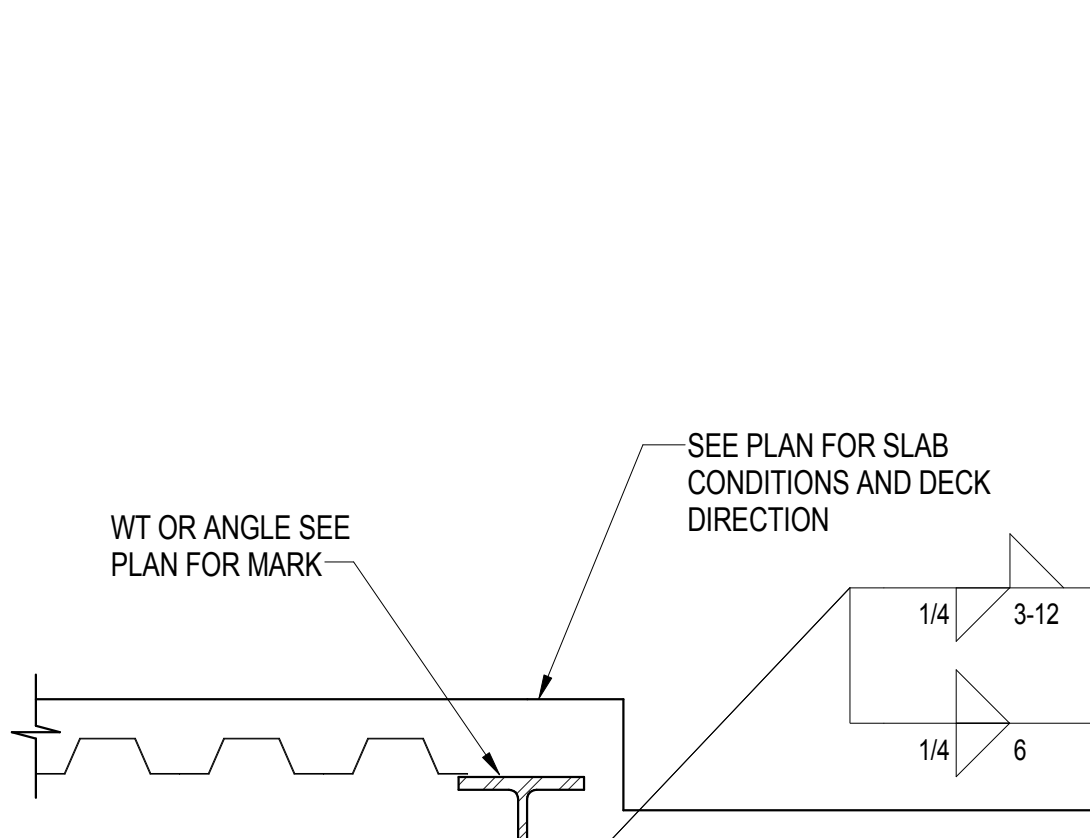
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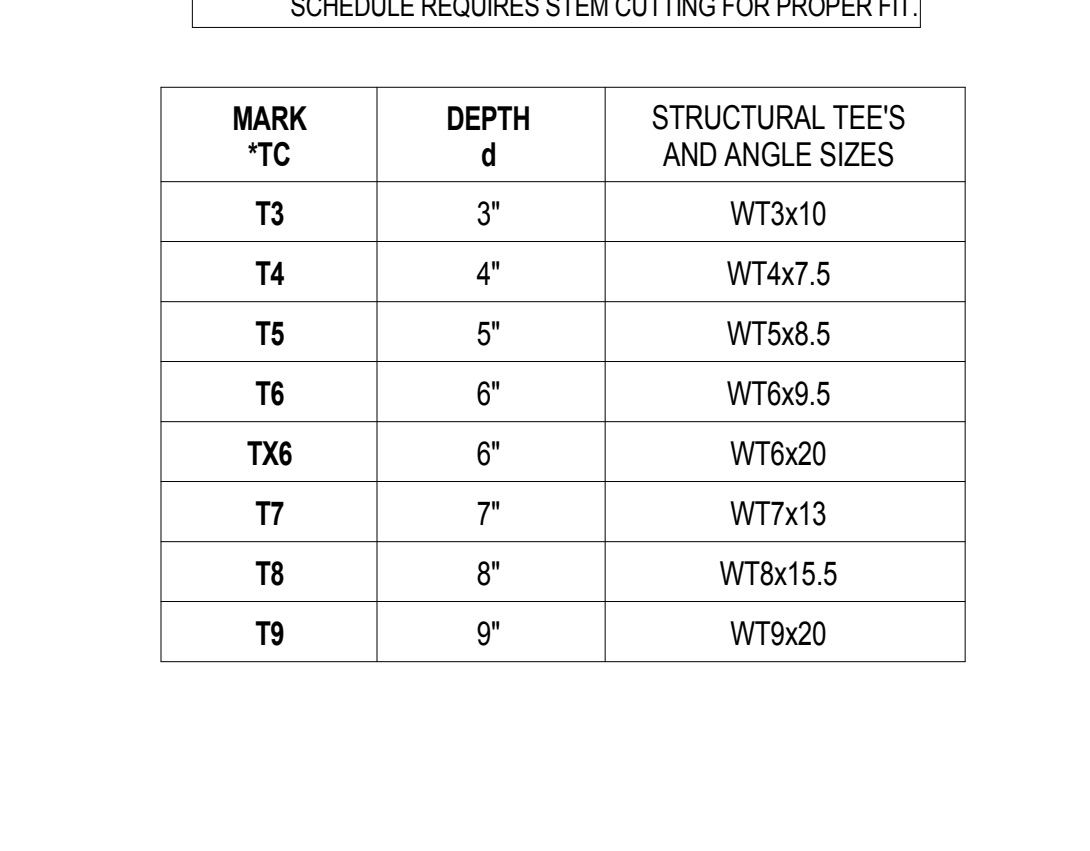
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S-018 NTS



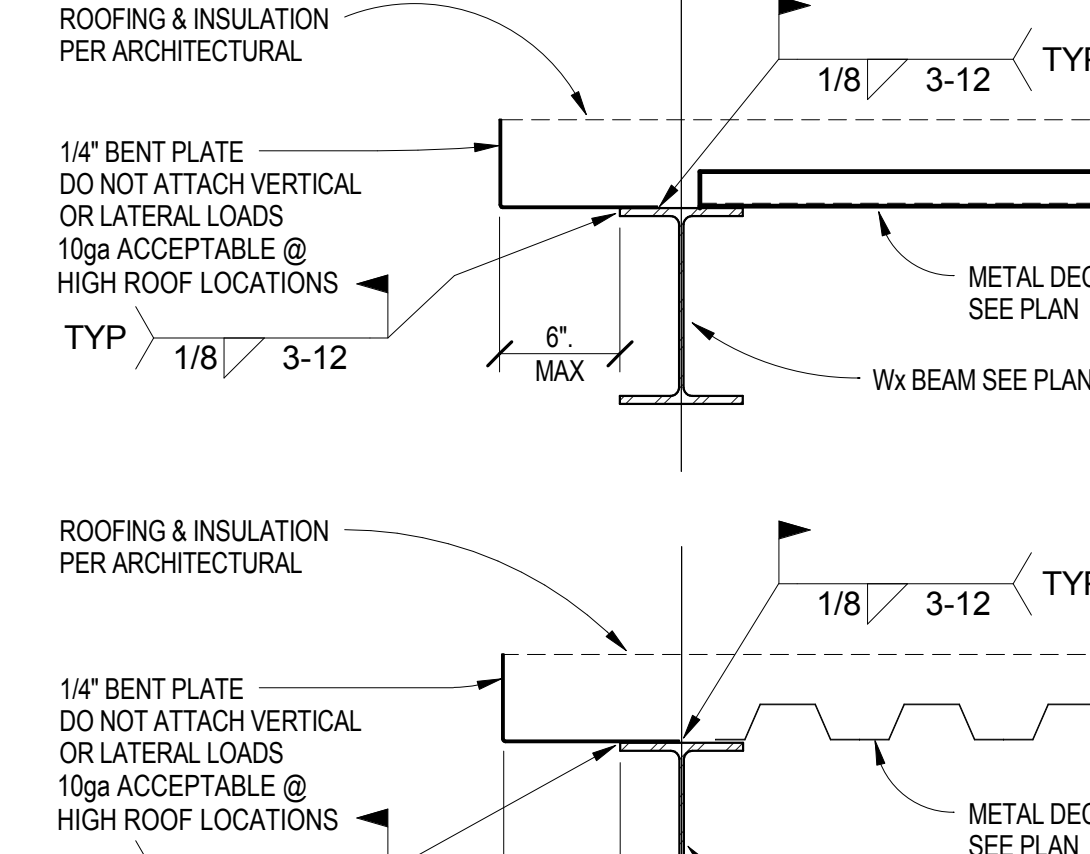
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S-018 NTS



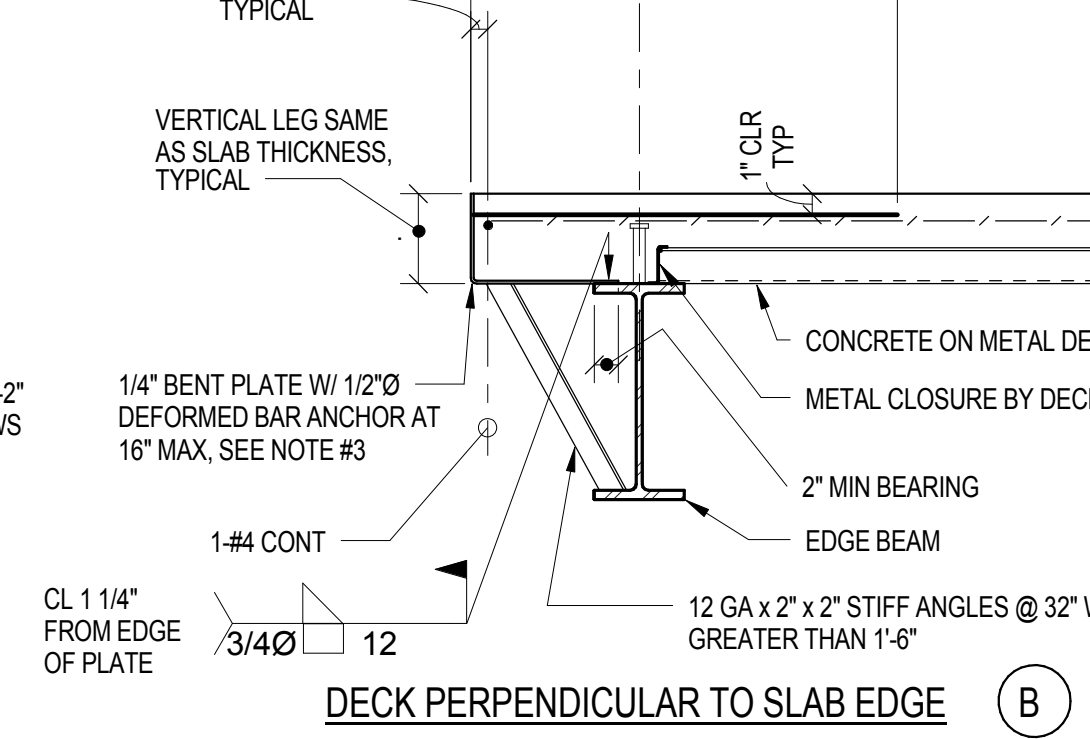
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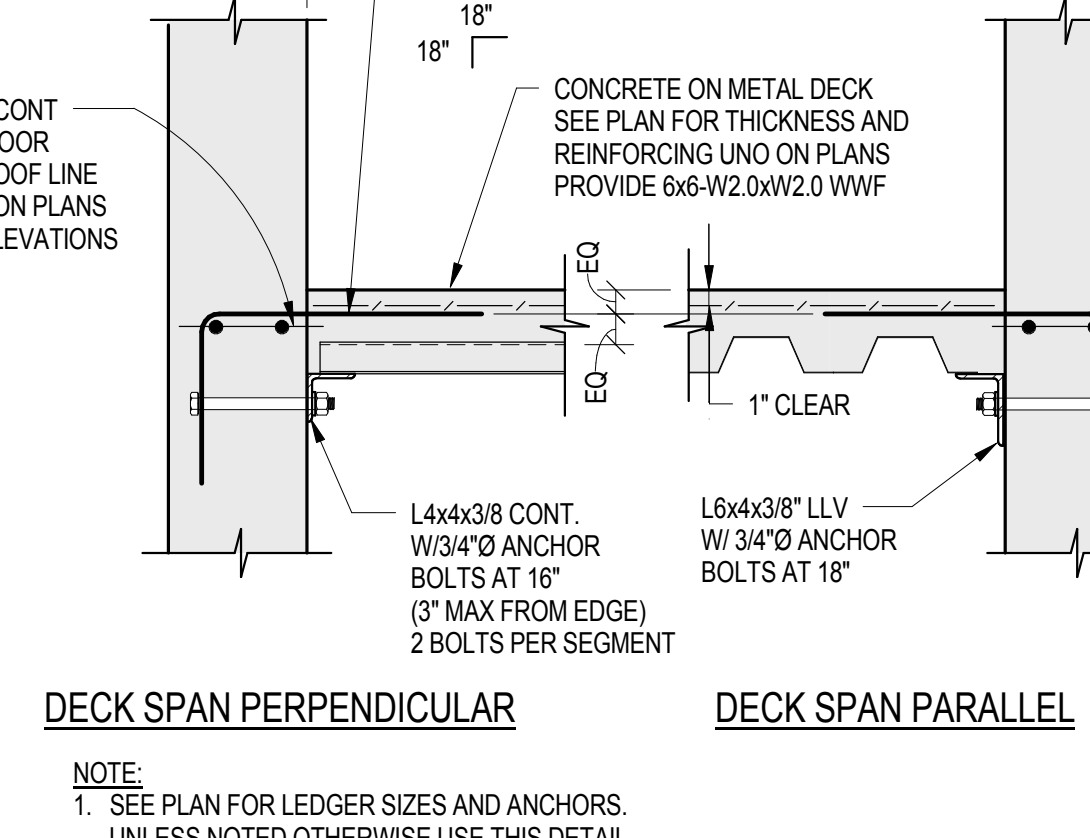
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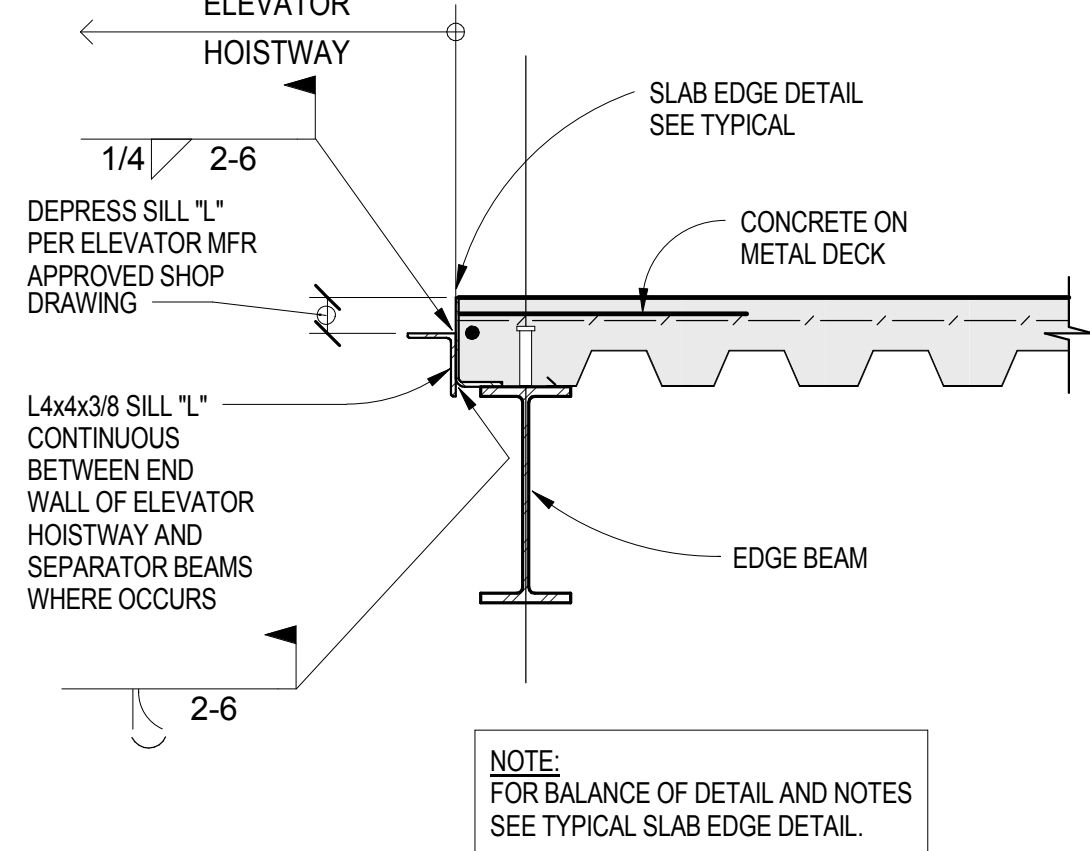
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S-018 NTS



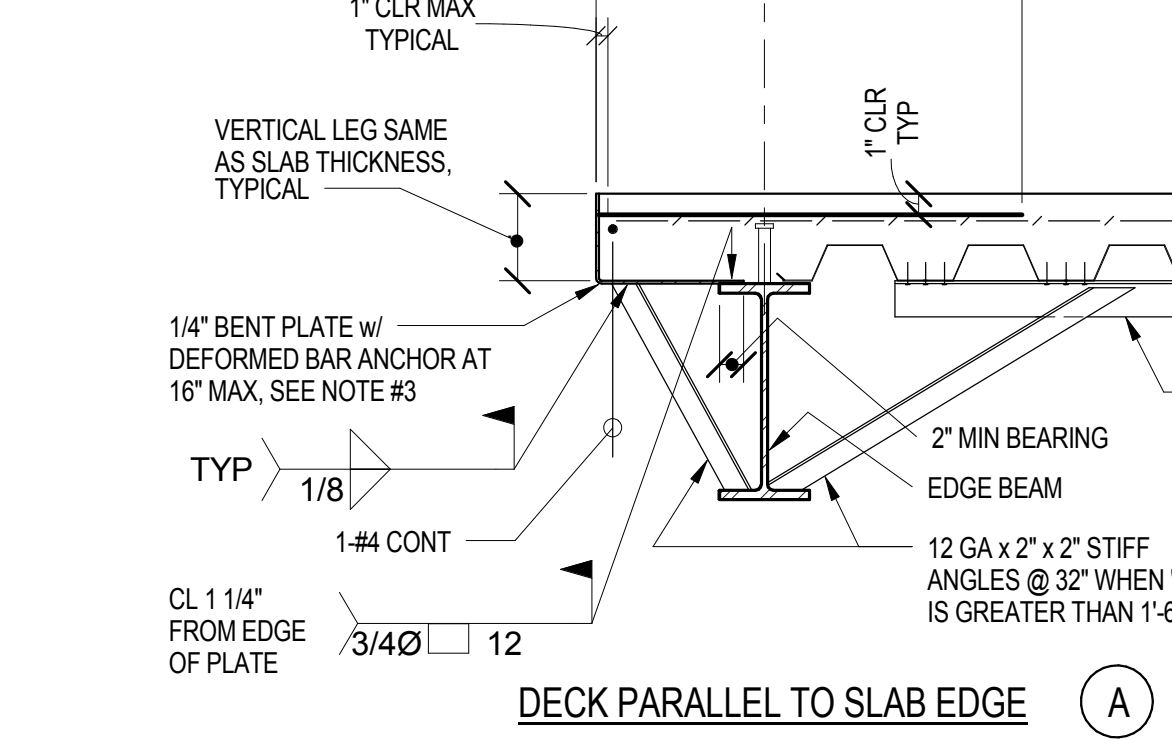
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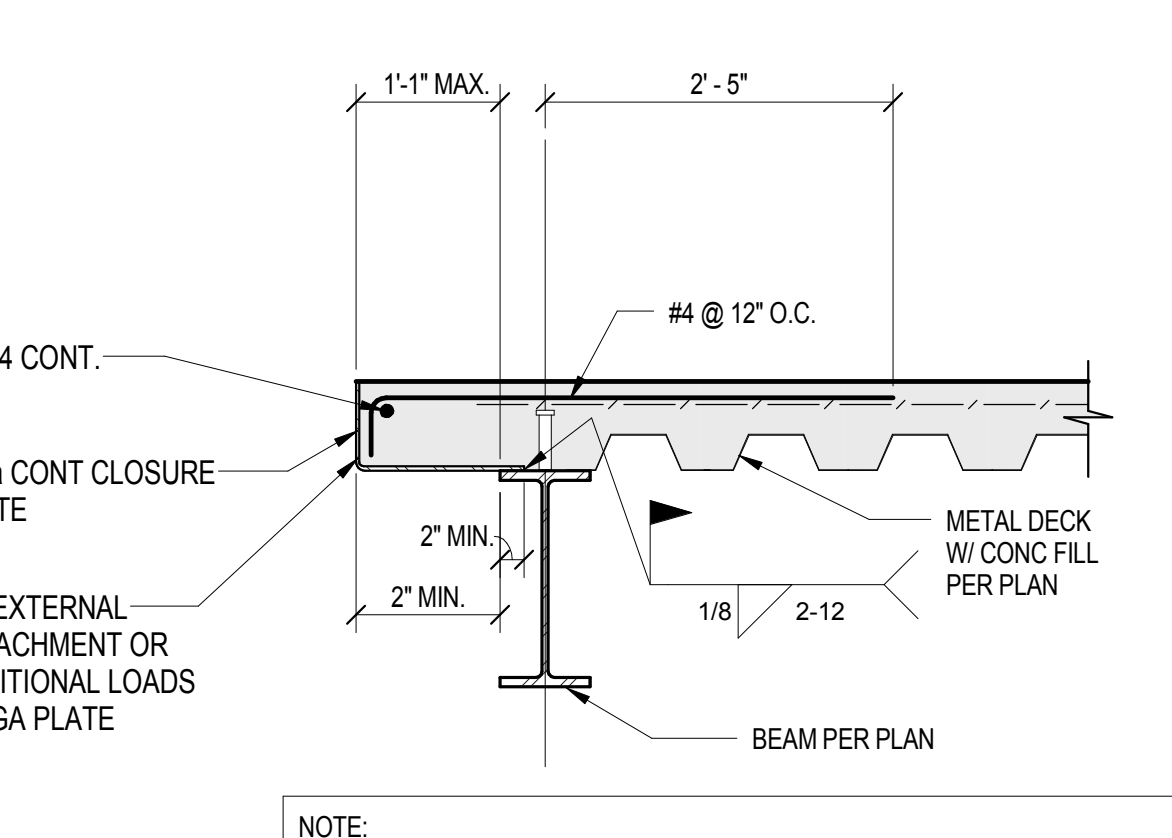
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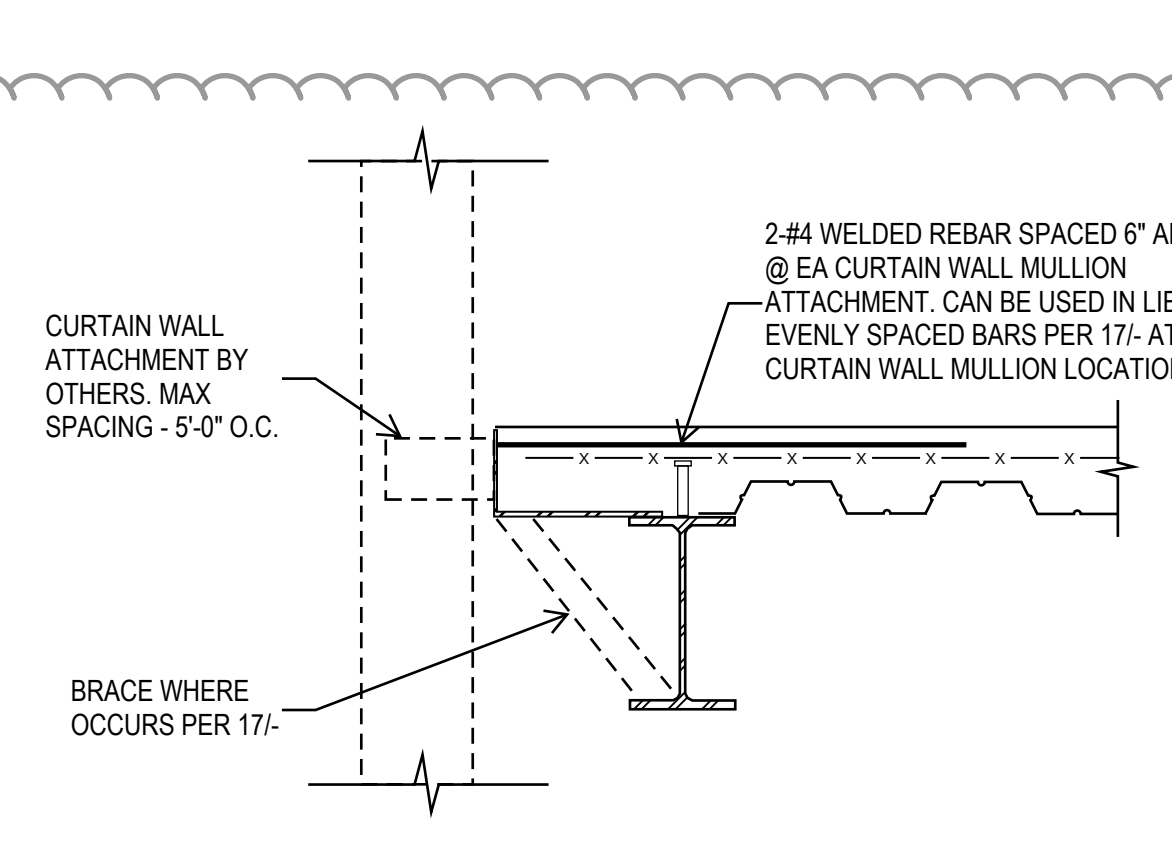
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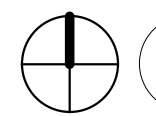
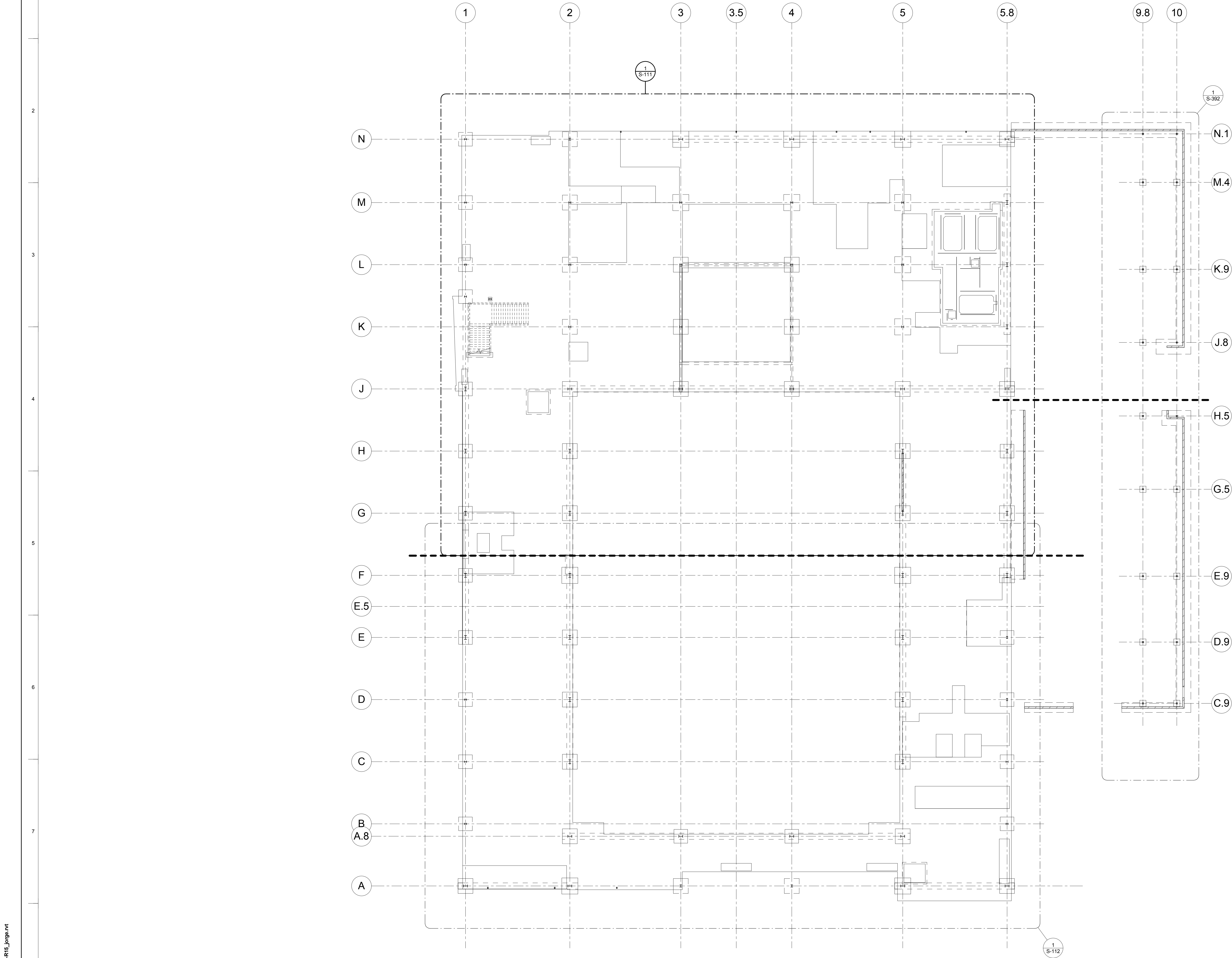


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S-018 SCALE: N.T.S.



20
S-018 SCALE: N.T.S.

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1 S-101

OVERALL - FOUNDATION / LEVEL 1 PLAN

Scale: 1/16" = 1'-0"
Ref:

Project

**Los Angeles
Lakers
Headquarters**

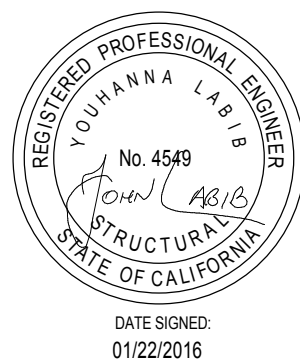
2275 Mariposa, El Segundo, California 90245

Consultant



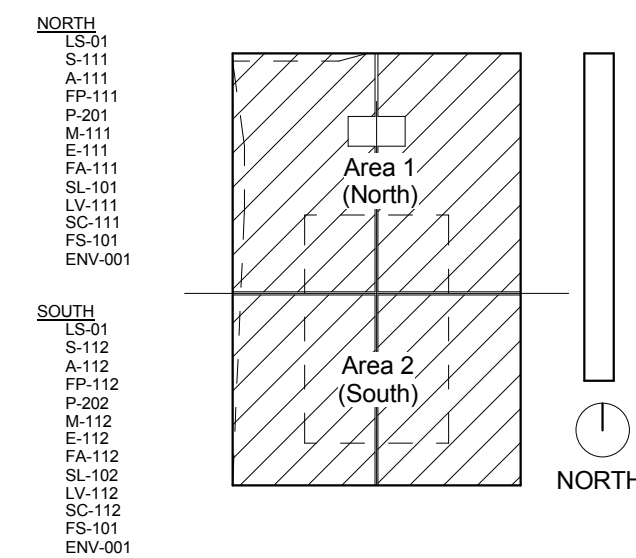
319 Main Street
El Segundo, CA 90245
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JLA Job no. 14820

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Key Plan



Sheet Title

**OVERALL PLAN -
FOUNDATION / LEVEL 1
PLAN**

Project Number

2014-015

CAD File

Sheet number

S-101

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Project

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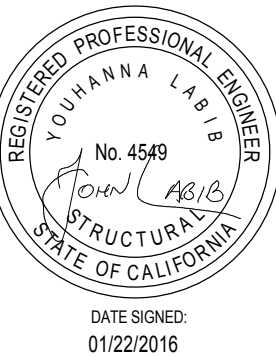
2275 Mariposa, El Segundo, California 90245

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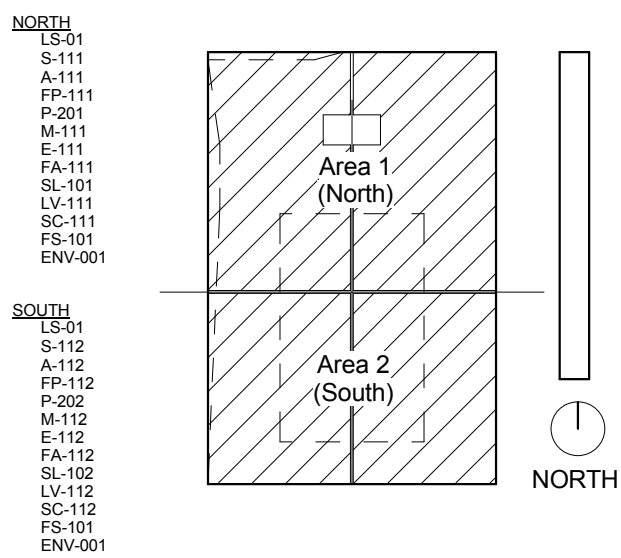
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Key Plan



Sheet Title

**OVERALL PLAN - LEVEL 2
PLAN**

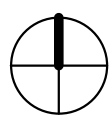
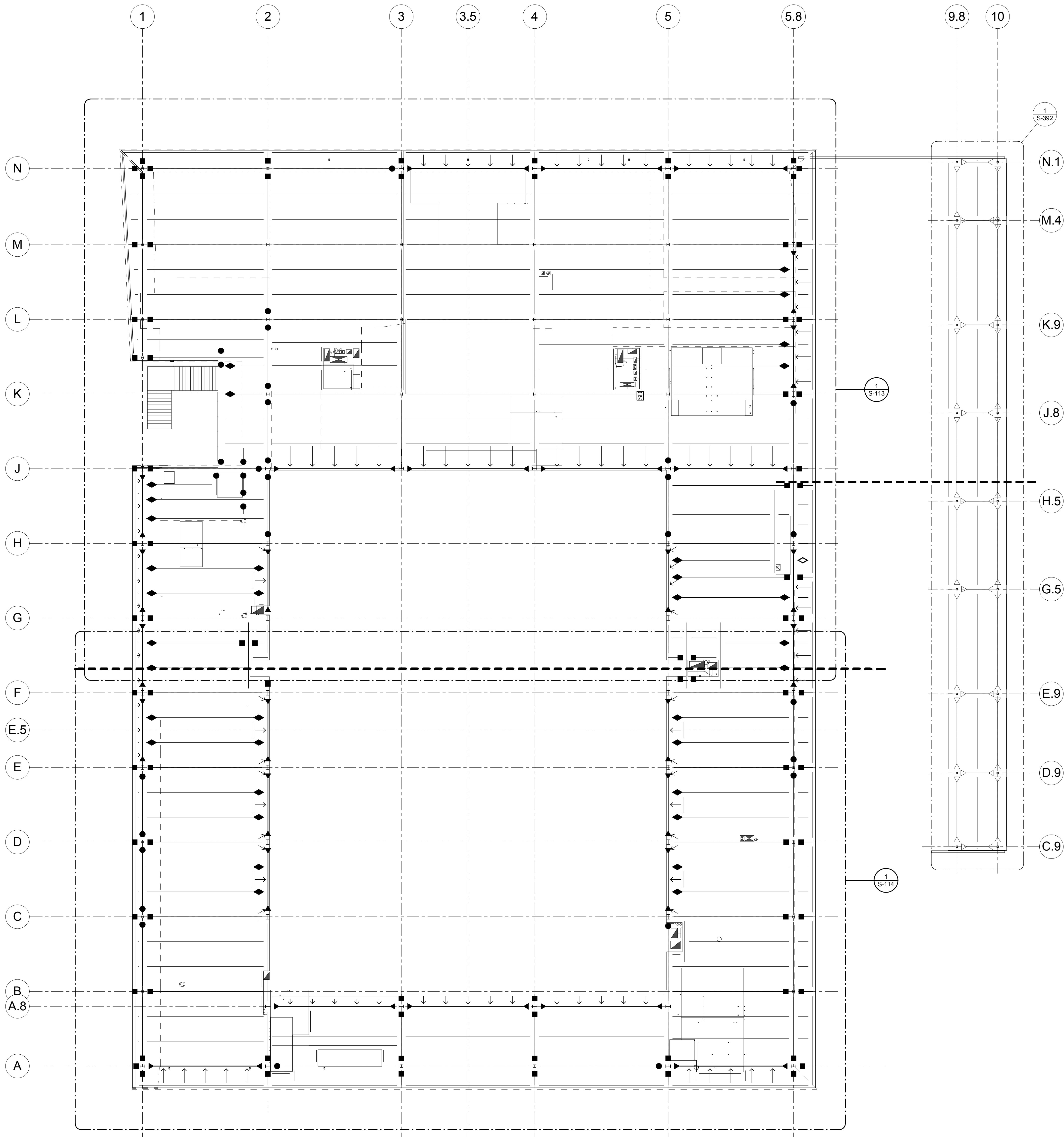
Project Number

2014-015

CAD File

Sheet number

S-102



1

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OVERALL - LEVEL 2 PLAN

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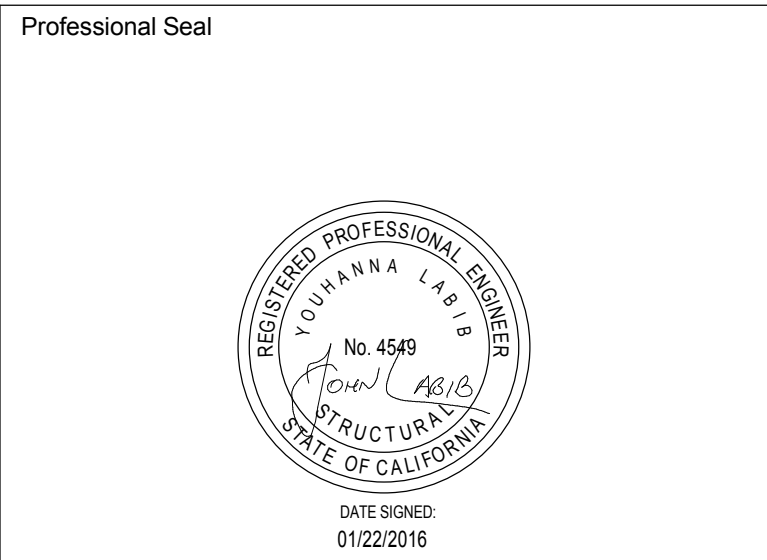
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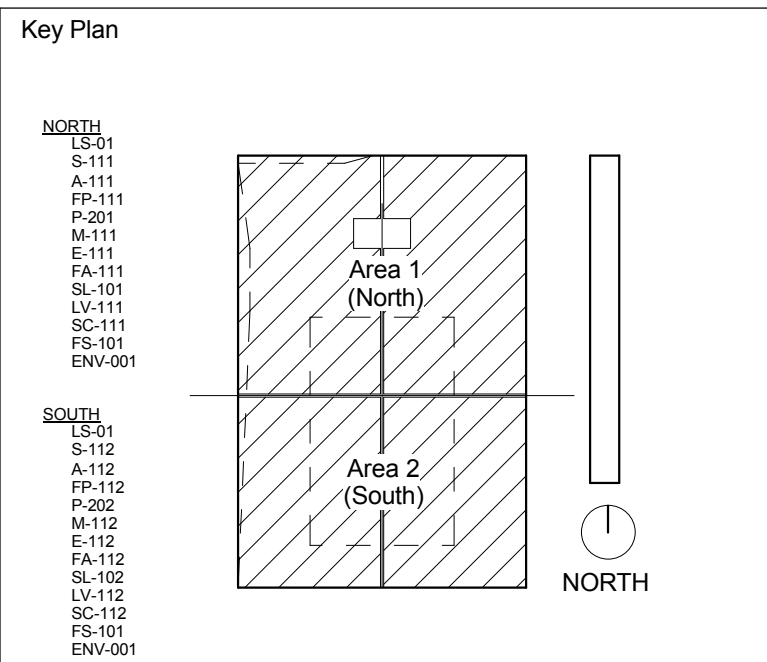
Project
Los Angeles Lakers Headquarters

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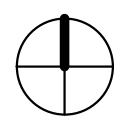
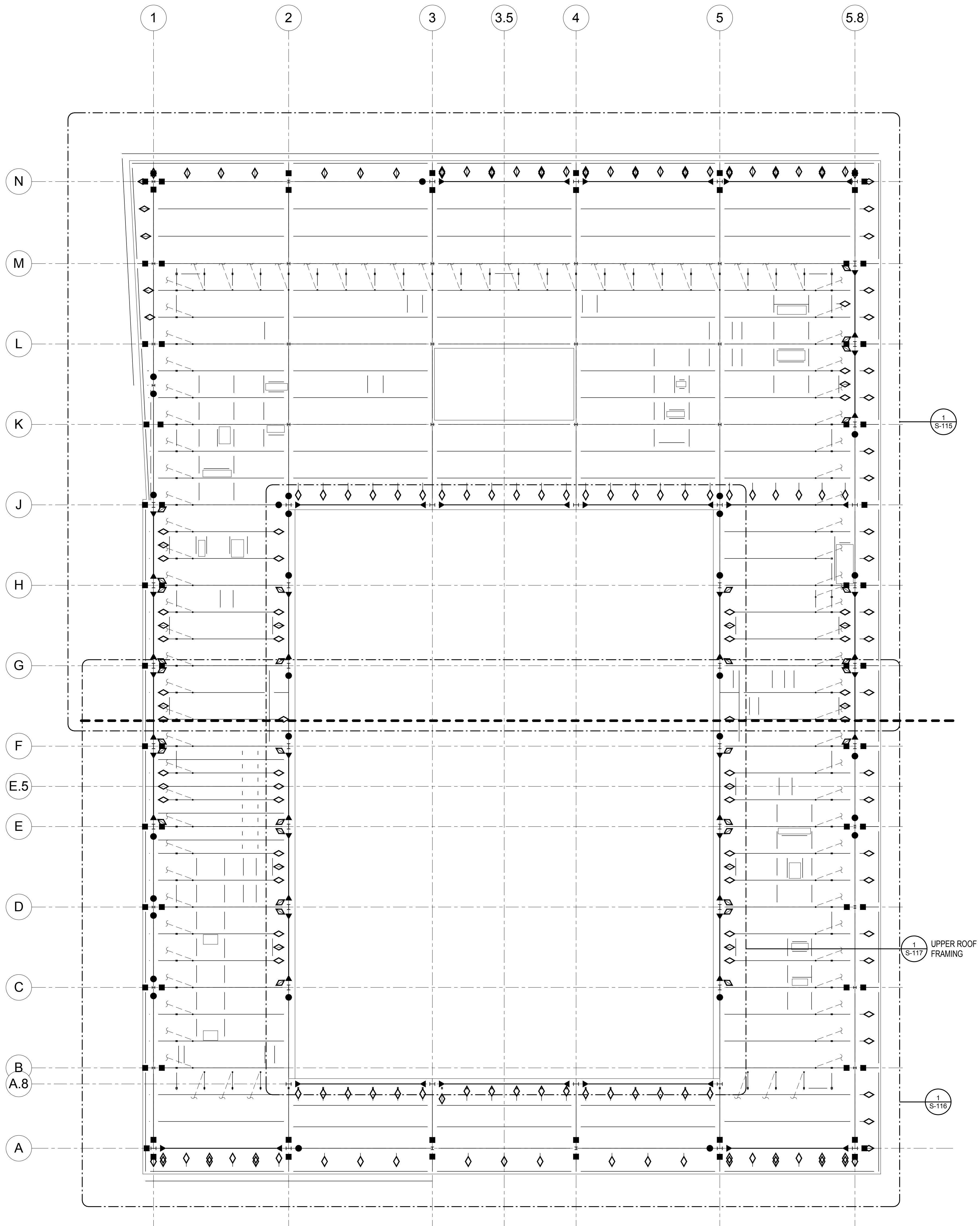


Sheet Title

OVERALL PLAN - ROOF PLAN

Project Number 2014-015	CAD File
Sheet number	

S-103



1 S-103

OVERALL - ROOF PLAN

Scale: 1/16" = 1'-0"
Ref:

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SPREAD FOOTING SCHEDULE								
MARK	DIMENSIONS			REINFORCING				REMARKS
	WIDTH	LENGTH	DEPTH	BOTTOM BARS EACH WAY		TOP BARS		
				QUANTITY	SIZE	QUANTITY	SIZE	
F1.5	1' - 6"	1' - 6"	1' - 0"	3	6	0	0	
F2.5	2' - 6"	2' - 6"	1' - 6"	3	6	0	0	
F5.5	5' - 6"	5' - 6"	2' - 0"	5	7	0	0	
F6	6' - 0"	6' - 0"	2' - 0"	6	7	0	0	
F6.5	6' - 6"	6' - 6"	2' - 0"	6	7	0	0	

WALL FOOTING SCHEDULE							
MARK	DIMENSIONS		REINFORCING				NOTES
	WIDTH	DEPTH	LONGITUDINAL	SIZE	TRANSVERSE	SPACING	
			QUANTITY		SIZE		
CF2	6' - 0"	1' - 6"	4	5	4	1' - 0"	TOP & BOTTOM
CF3	4' - 0"	1' - 6"	3	5	4	1' - 0"	TOP & BOTTOM

SYMBOLS

	INDICATES CHANGE IN FLOOR ELEVATION		GB-#	INDICATES CONCRETE GRADE BEAM PER SCHEDULE ON S-301
	INDICATES CONCRETE WALL			INDICATES CONCRETE FOOTING
	INDICATES CONCRETE WALL OR BEAM BELOW		S - - - S	INDICATES STEPPED FOOTING PER TYP. DETAIL
	INDICATES CMU WALL		T.O.F. - #'-#"	INDICATES TOP OF FOOTING ELEVATION COMPARED TO TOP OF SLAB ON GRADE @ DATUM ELEVATION
	INDICATES CMU WALL BELOW			INDICATES AREA OF CONC OVER METAL DECK TYPE D-3
	INDICATES CONCRETE FOOTING PER SCHEDULE ON THIS SHEET			
	INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON S-016			

FOUNDATION NOTES:

- FOR GENERAL NOTES AND TYPICAL DETAILS SEE S-001 THRU S-018 SHEETS. GENERAL NOTES & TYPICAL DETAILS APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR U.N.O.
- VERIFY ALL DIMENSIONS, ELEVATIONS, SLAB EDGES, SLAB DEPRESSIONS, SLAB OPENINGS, CURBS, FOOTING, PENETRATIONS, WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL & CIVIL DRAWINGS.
- FOR ALL DIMENSIONS, SEE ARCHITECTURAL DRAWINGS. SEE G-003 FOR EDGE OF SLAB DIMENSION. SEE G-004 FOR DEPRESSED SLAB DIMENSIONS.
- FOR SLAB ON GRADE SUB-GRADE PREPARATION SEE SOILS REPORT
- ALL GRADING & FOUNDATION WORK MUST BE OBSERVED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER FOLLOWING PLACEMENT OF STEEL REINF. & PRIOR TO POURING CONCRETE.
- U.N.O. TOP OF CONCRETE GRADE BEAMS & TOP OF CONC. FOOTING ELEVATION SHALL BE 1'-6" BELOW THE TOP OF THE LOWEST ADJACENT SLAB.
- PER SOIL REPORT, RETAINING WALLS MUST BE PROVIDED WITH A SUBDRAIN. SEE SOILS REPORT FOR MORE DETAILS.
- FOR LIMITS AND EXTENT OF OVER EXCAVATION SEE CIVIL DRAWINGS
- NON-BEARING WALLS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FOR NON-BEARING WALL LOCATIONS SEE ARCHL.
- BOTTOM OF FOOTING TO EXTEND 12" BELOW LOWEST ADJACENT GRADE OR BE EMBEDDED 12" INTO COMPETENT BEARING MATERIAL PER GEOTECH REPORT (AS VERIFIED IN FIELD BY GEOTECHNICAL ENGINEER OBSERVATION), WHICHEVER IS LOWER.

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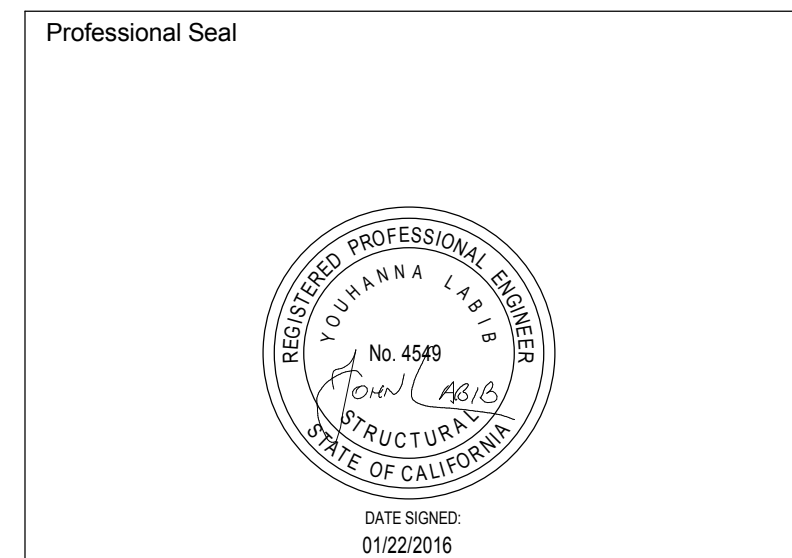
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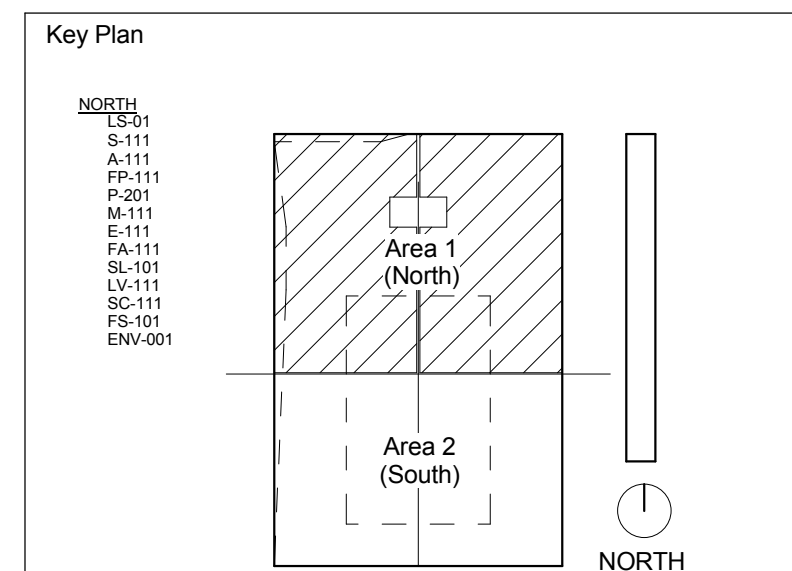
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Project
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2275 Mariposa, El Segundo, California 90245

Consultant
John Labb + Associates
Structural Engineers
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El Segundo, CA 90245
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JLA Job no. 14820



No.	Description	Date
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2	75% DD Pricing Package.	12/12/14
3	DD Package	01/19/15
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6	90% Steel Package	08/28/15
7	Plan Check	09/18/15
8	Back-Check #1 - Frndn & Utility	10/09/15
9	ASI 004 (Frnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16



Sheet Title
**FOUNDATION / LEVEL 1
PLAN - NORTH**

Project Number
2014-015
Sheet number

S-111

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SPREAD FOOTING SCHEDULE								
MARK	DIMENSIONS			REINFORCING				REMARKS
	WIDTH	LENGTH	DEPTH	BOTTOM BARS EACH WAY		TOP BARS		
				QUANTITY	SIZE	QUANTITY	SIZE	
F1.5	1'- 6"	1'- 6"	1'- 0"	3	6	0	0	
F2.5	2'- 6"	2'- 6"	1'- 6"	3	6	0	0	
F5.5	5'- 6"	5'- 6"	2'- 0"	5	7	0	0	
F6	6'- 0"	6'- 0"	2'- 0"	6	7	0	0	
F6.5	6'- 6"	6'- 6"	2'- 0"	6	7	0	0	

WALL FOOTING SCHEDULE							
MARK	DIMENSIONS		REINFORCING				NOTES
	WIDTH	DEPTH	LONGITUDINAL		TRANSVERSE		
			QUANTITY	SIZE	SIZE	SPACING	
CF2	6'- 0"	1'- 6"	4	5	4	1'- 0"	TOP & BOTTOM
CF3	4'- 0"	1'- 6"	3	5	4	1'- 0"	TOP & BOTTOM

SYMBOLS

- INDICATES CHANGE IN FLOOR ELEVATION
- INDICATES CONCRETE WALL
- INDICATES CONCRETE WALL OR BEAM BELOW
- INDICATES CMU WALL
- INDICATES CMU WALL BELOW
- INDICATES CONCRETE FOOTING PER SCHEDULE ON THIS SHEET
- INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 9/S-016
- GB-#
- INDICATES CONCRETE GRADE BEAM PER SCHEDULE ON S-301
- INDICATES CONCRETE FOOTING
- S - - - S
- INDICATES STEPPED FOOTING PER TYP. DETAIL
- T.O.F. - #'-#"
- INDICATES TOP OF FOOTING ELEVATION COMPARED TO TOP OF SLAB ON GRADE @ DATUM ELEVATION
- INDICATES AREA OF CONC OVER METAL DECK TYPE D-3

FOUNDATION NOTES:

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JLA

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Structural Engineers

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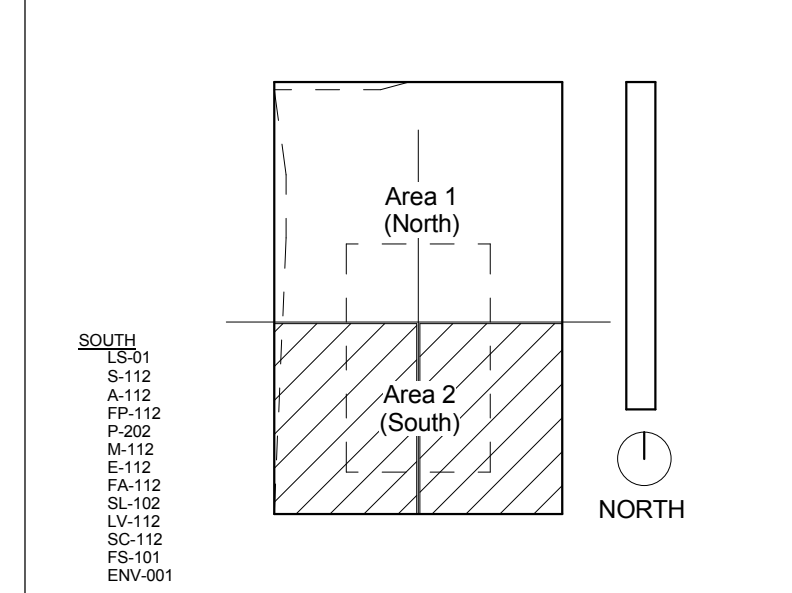
JLA Job no. 14820

Professional Seal

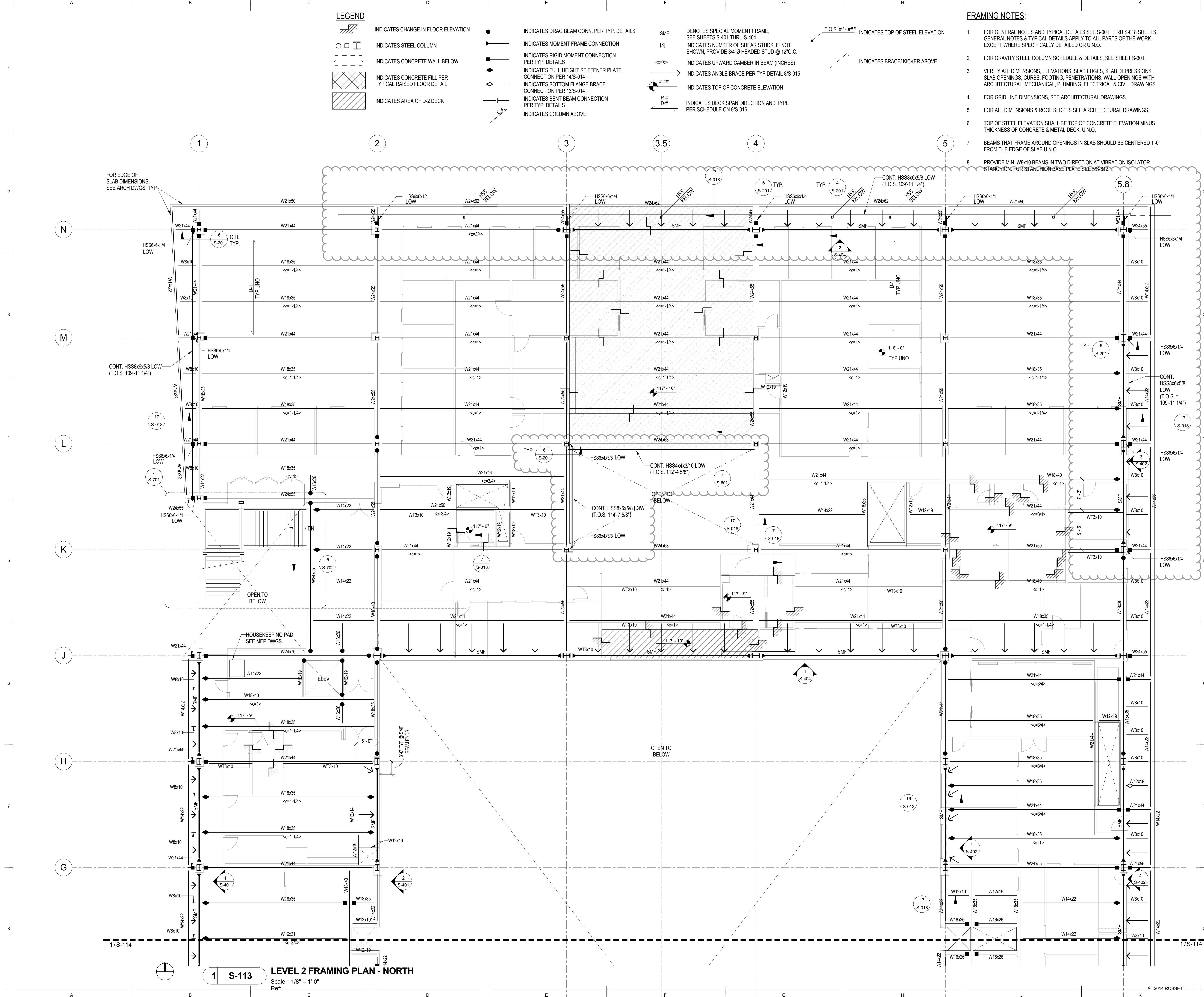


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11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan



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FRAMING NOTES:

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- FOR GRAVITY STEEL COLUMN SCHEDULE & DETAILS, SEE SHEET S-301.
- VERIFY ALL DIMENSIONS, ELEVATIONS, SLAB EDGES, SLAB DEPRESSIONS, SLAB OPENINGS, CURBS, FOOTING, PENETRATIONS, WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL & CIVIL DRAWINGS.
- FOR GRID LINE DIMENSIONS, SEE ARCHITECTURAL DRAWINGS.
- FOR ALL DIMENSIONS & ROOF SLOPES SEE ARCHITECTURAL DRAWINGS.
- TOP OF STEEL ELEVATION SHALL BE TOP OF CONCRETE ELEVATION MINUS THICKNESS OF CONCRETE & METAL DECK, U.N.O.
- BEAMS THAT FRAME AROUND OPENINGS IN SLAB SHOULD BE CENTERED 1'-0" FROM THE EDGE OF SLAB U.N.O.
- PROVIDE MIN. W8x10 BEAMS IN TWO DIRECTION AT VIBRATION ISOLATOR STANCHION FOR STANCHION BASE PLATE SEE S/S-812.

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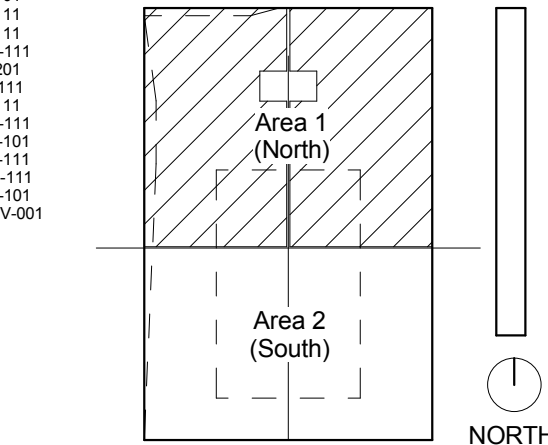
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Professional Seal



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Key Plan



Sheet Title

LEVEL 2 FRAMING PLAN - NORTH

Project Number

2014-015

CAD File

Sheet number

S-113



2275 Mariposa, El Segundo, California 90245

319 Main Street
El Segundo, CA 90245
t: 213-239-9700 f: 213-239-9699
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Key Plan

Area 1
(North)

Area 2
(South)

SOUTH

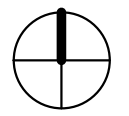
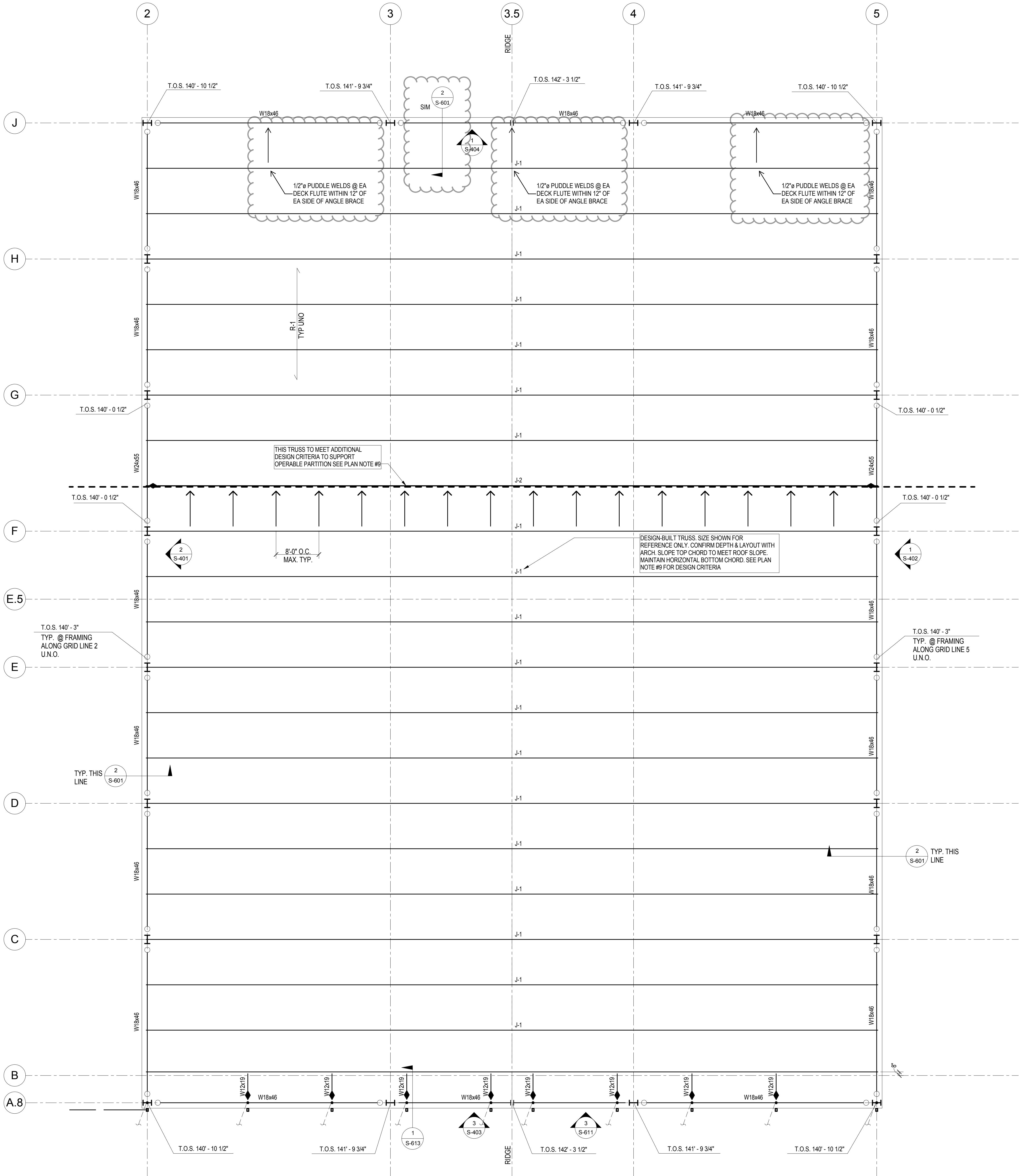
L501
S-112
A-112
F5-112
P-501
M-112
E-112
FA-112
GS-102
SC-112
FS-101
EW-601

NORTH

S-116



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1 S-117

UPPER ROOF FRAMING PLAN

Scale: 1/8" = 1'-0"
Ref:

FRAMING NOTES:

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- PROVIDE MIN. W8x10 BEAMS IN TWO DIRECTION AT VIBRATION ISOLATOR STANCHION. FOR STANCHION BASE PLATE SEE 5/S-612.
- DESIGN BUILD TRUSS LOADS: DESIGN ALL OPEN WEB JOISTS FOR THE FOLLOWING SUPERIMPOSED LOADS. THE SELF WEIGHT OF THE OPEN WEB JOISTS IS NOT INCLUDED IN THE LOADS BELOW. LOADS ARE PER ASCE 7/10

- A. DEAD LOAD: D. = 142 PLF
B. REDUCED ROOF LIVE LOAD: LR = 100 PLF
C. ALL JOISTS SHALL BE DESIGNED TO CARRY A SUSPENDED CONCENTRATED LIVE LOAD L=300 POUNDS IN ADDITION TO THE SPECIFIED DEAD AND LIVE LOAD TO BE APPLIED TO ANY ONE PANEL POINT ALONG THE BOTTOM AND TOP CHORD.
D. THE TRUSS DESIGNATED TO SUPPORT THE OPERABLE PARTITION SHALL BE DESIGNED FOR THE LOADS IN A-C, AS WELL AS AN ADDITIONAL 350 PLF DEAD LOAD DUE TO THE OPERABLE PARTITION.
E. SINGLE MAST SIDE FOLD BACKBOARDS SHALL BE SUPPORTED AT JOIST PANEL POINTS. JOIST SHALL BE DESIGNED TO CARRY AN ADDITIONAL CONCENTRATED DEAD LOAD= 350 POUNDS AND LIVE LOAD=250 POUNDS AT THESE PANEL POINTS. SEE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING LOCATIONS.

SEE GENERAL NOTES FOR DEFLECTION CRITERIA AND ADDITION INFORMATION

LEGEND

- INDICATES CHANGE IN FLOOR ELEVATION
 INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 9/S-016
 INDICATES STEEL COLUMN
 INDICATES CONCRETE WALL BELOW
 INDICATES CONCRETE FILL PER TYPICAL RAISED FLOOR DETAIL
 INDICATES AREA OF D-2 DECK
 INDICATES DRAG BEAM CONN. PER TYP. DETAILS
 INDICATES MOMENT FRAME CONNECTION
 INDICATES RIGID MOMENT CONNECTION PER TYP. DETAILS
 INDICATES FULL HEIGHT STIFFENER PLATE CONNECTION PER 14/S-014
 INDICATES BOTTOM FLANGE BRACE CONNECTION PER 13/S-014
 INDICATES BENT BEAM CONNECTION PER TYP. DETAILS
 INDICATES COLUMN ABOVE
 DENOTES SPECIAL MOMENT FRAME, SEE SHEETS S-401 THRU S-404
 INDICATES NUMBER OF SHEAR STUDS. IF NOT SHOWN, PROVIDE 3/4" HEADED STUD @ 12" O.C.
 INDICATES UPWARD CAMBER IN BEAM (INCHES)
 INDICATES ANGLE BRACE PER TYP DETAIL 8/S-015
 INDICATES TOP OF CONCRETE ELEVATION
 INDICATES TOP OF STEEL ELEVATION
 INDICATES DESIGN BUILD TRUSS. SEE SCHEDULE THIS SHEET FOR REFERENCE SIZES. SEE ARCH FOR ADDL. INFORMATION. SEE PLAN NOTE #9 FOR DESIGN CRITERIA

INDICATES: OMF CONNECTION PER 7/S-015

MARK	REFERENCE SIZE	NOTES
J-1	68-85-68LH	
J-2	96-113-96LLH	

Project

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2275 Mariposa, El Segundo, California 90245

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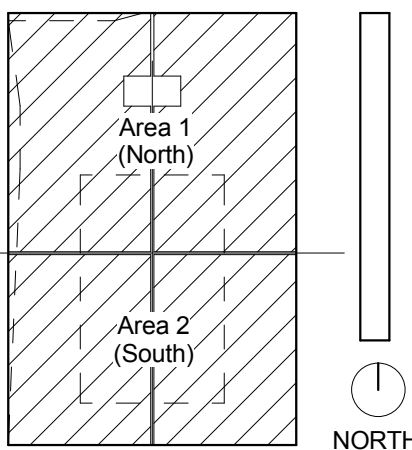
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11	Back-Check #2 - ASI 008	01/08/16
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Key Plan

NORTH
Area 1 (North)
Area 2 (South)



Sheet Title

UPPER ROOF FRAMING PLAN

Project Number

2014-015

CAD File

Sheet number

S-117

Project
Los Angeles Lakers Headquarters

2275 Mariposa, El Segundo, California 90245

Consultant



John Labb + Associates
 Structural Engineers
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 El Segundo, CA 90245
 t: 213-239-9700 f: 213-239-9699
 JLA Job no. 14820

Professional Seal



DATE SIGNED:
 01/22/2016

No.	Description	Date
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Key Plan

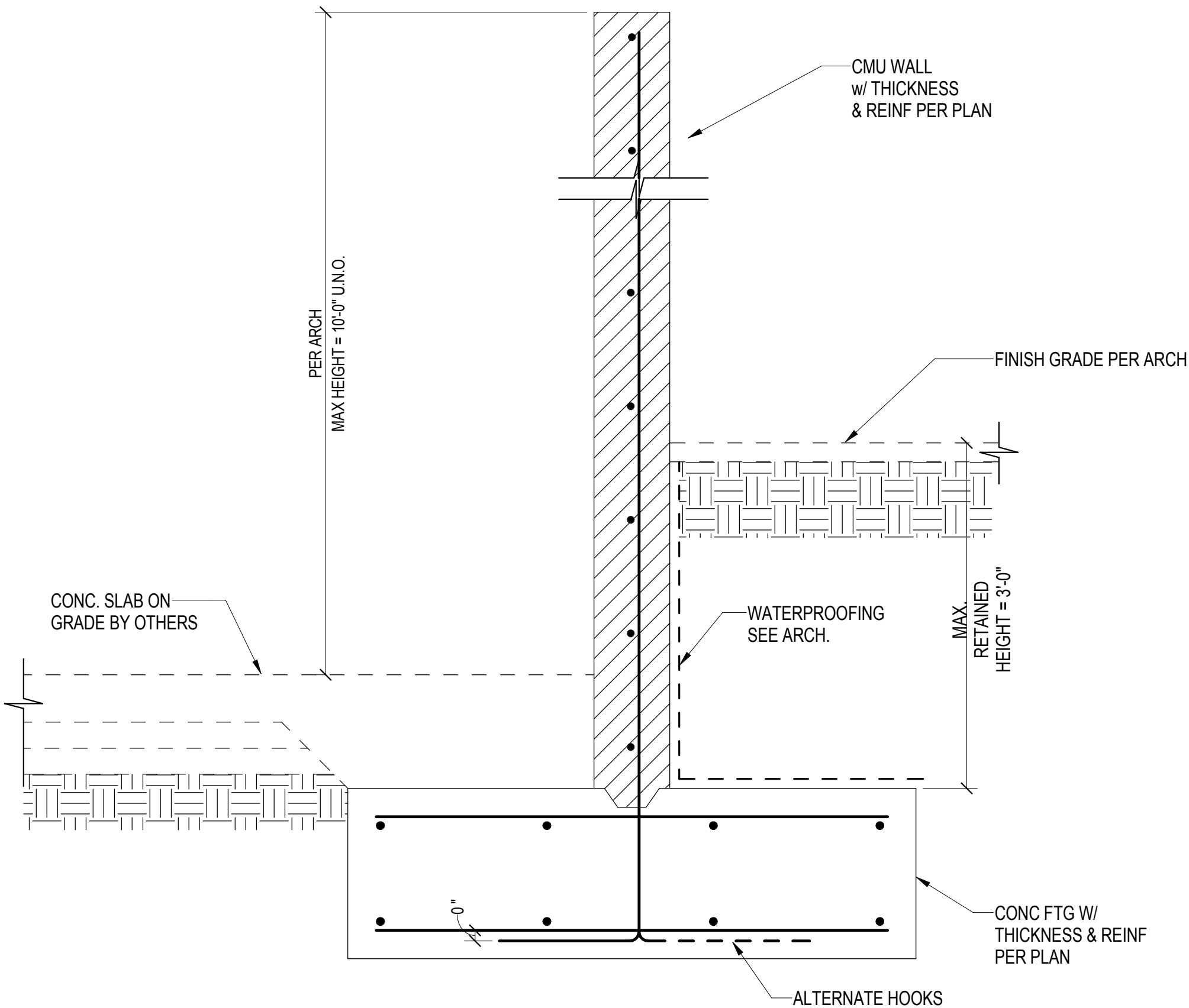
Sheet Title
SITE WALL DETAILS

Project Number
2014-015

CAD File

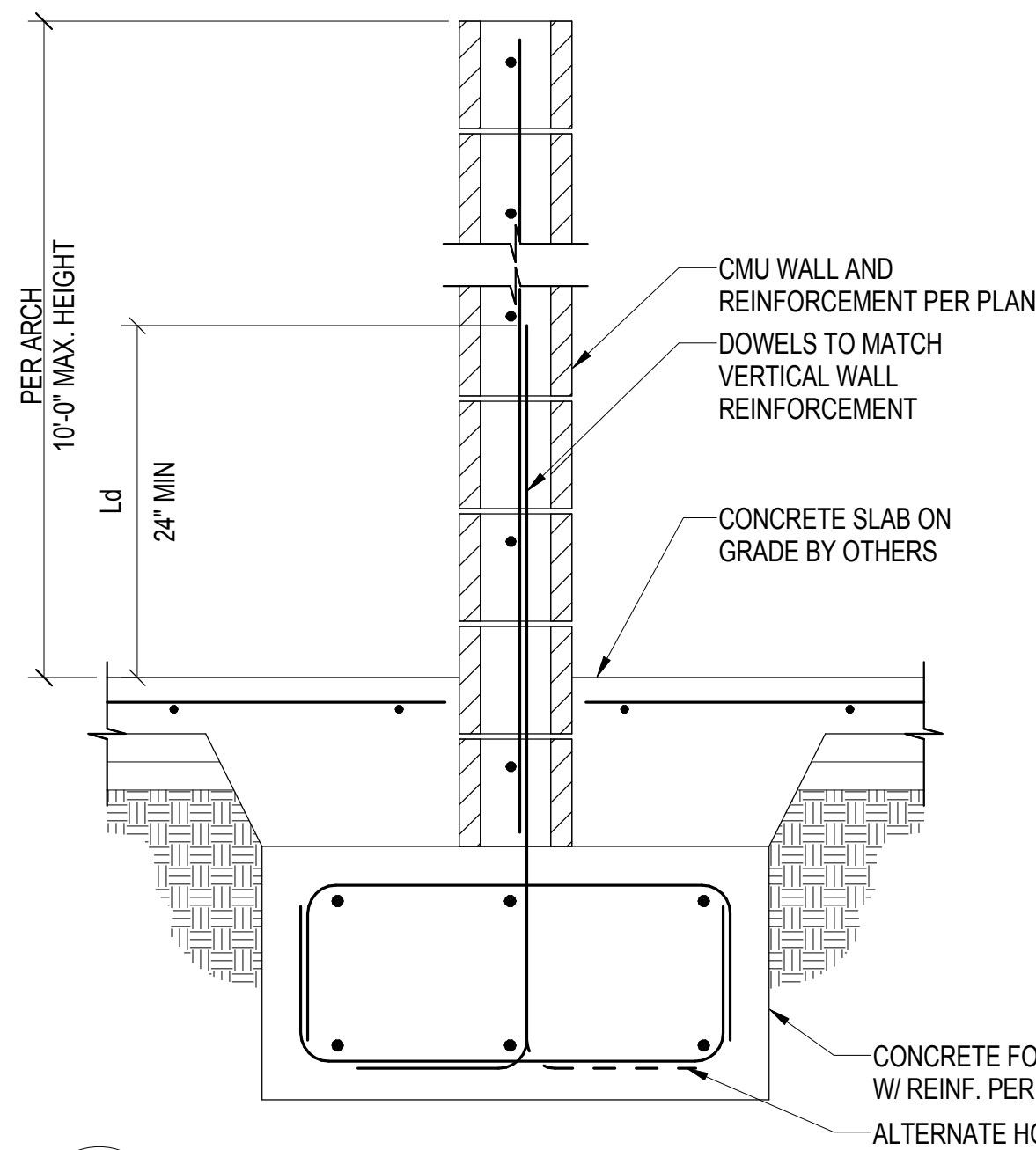
Sheet number

S-201



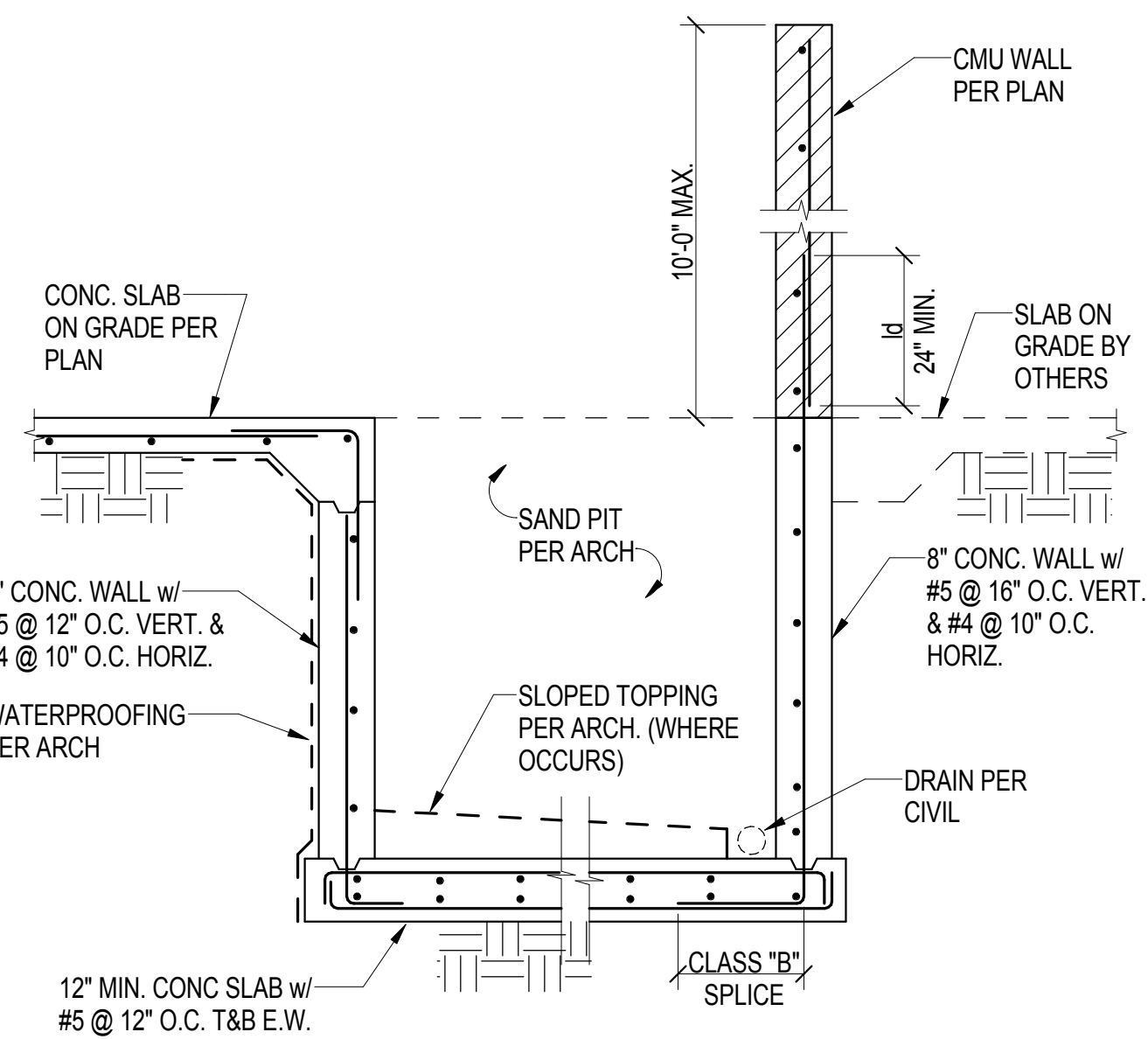
1 SECTION @ COVERED PARKING WALL

S-201 1" = 1'-0"



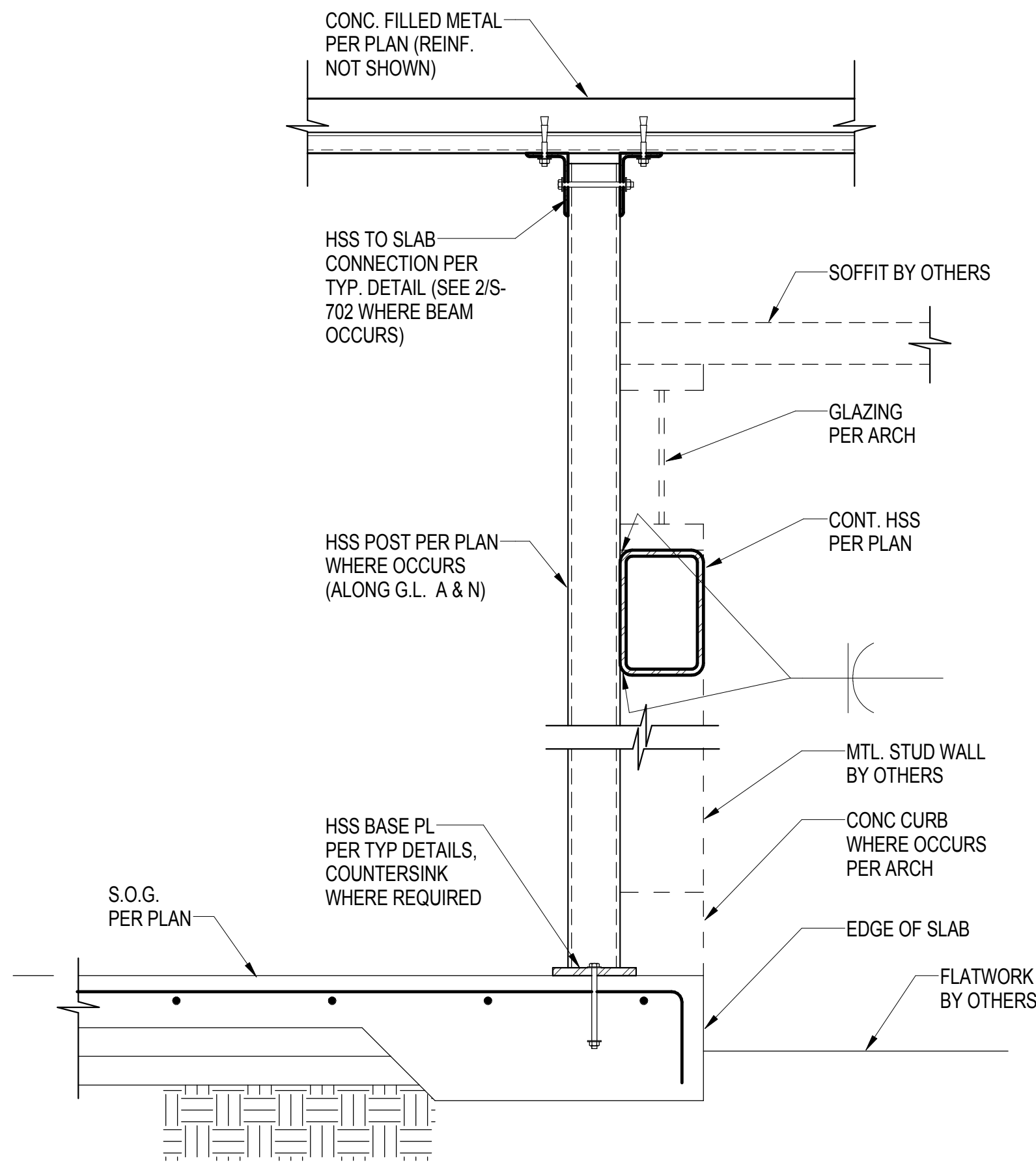
2 SITE WALL

S-201 1" = 1'-0"



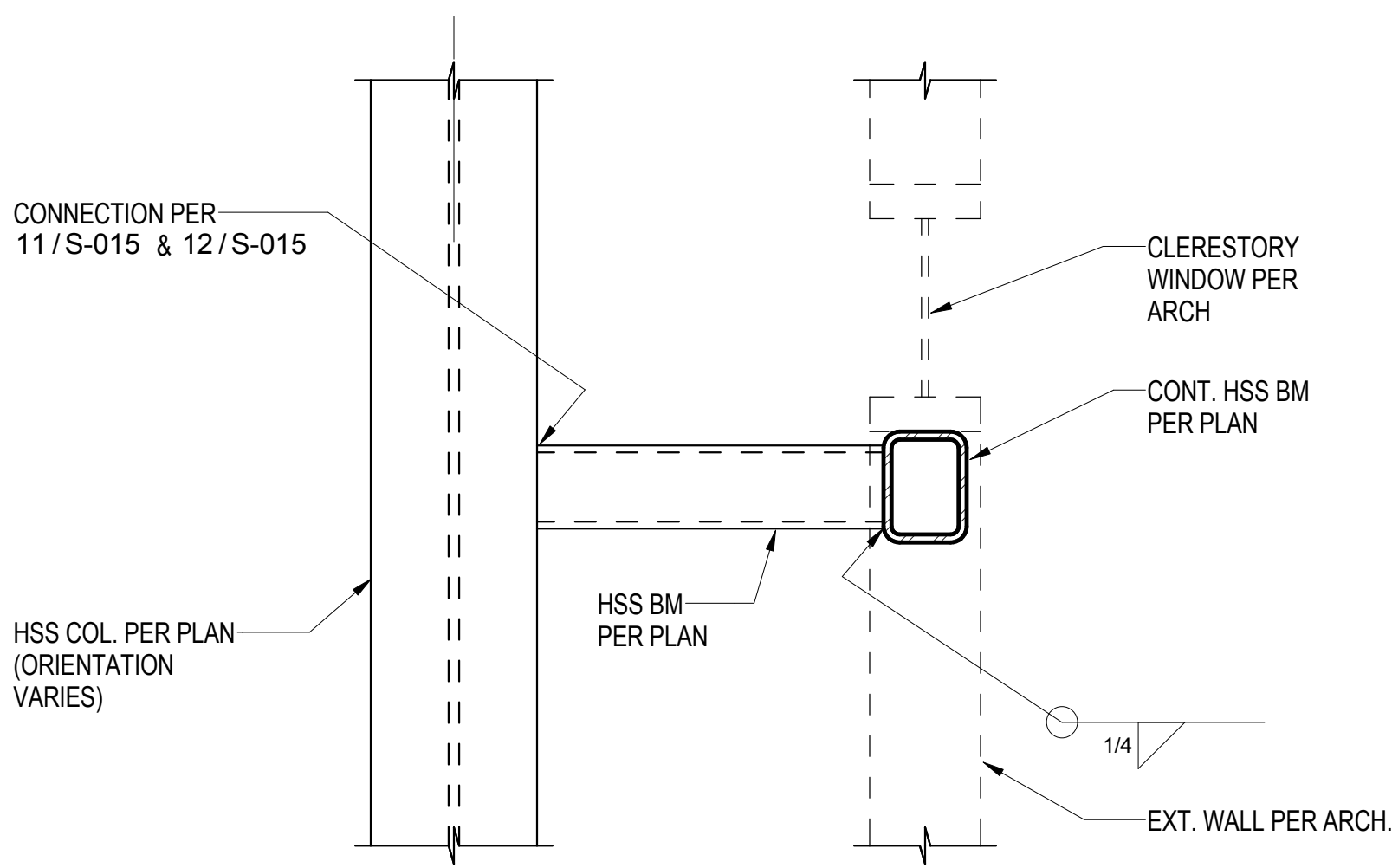
3 SAND PIT DETAIL

S-201 1" = 1'-0"



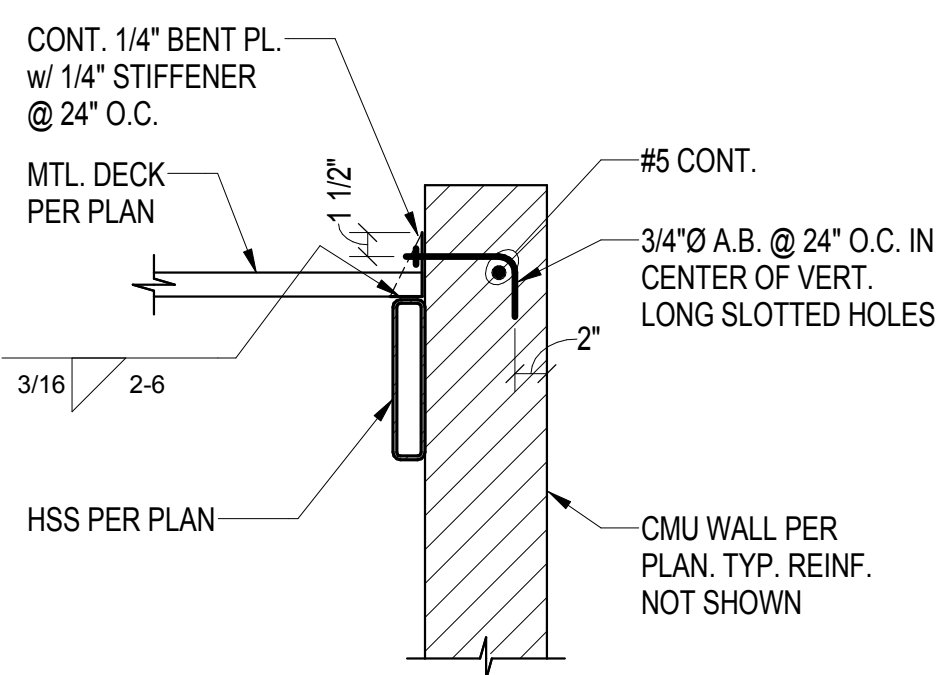
4 EXTERIOR WALL SUPPORT @ CLERESTORY (AT INTERMEDIATE HSS)

S-201 1" = 1'-0"



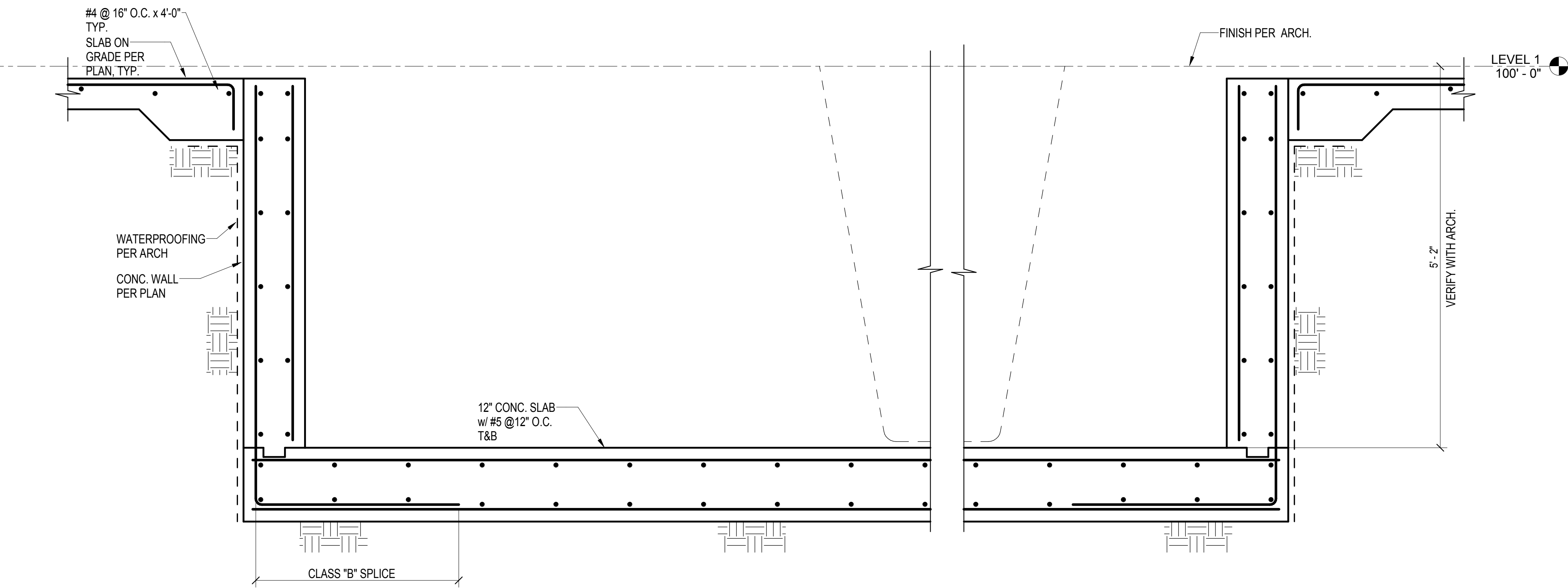
6 EXTERIOR WALL SUPPORT @ CLERESTORY (AT COLUMN)

S-201 1" = 1'-0"



7 HSS TO MASONRY WALL

S-201 1" = 1'-0"



5 HYDRO PIT DETAIL

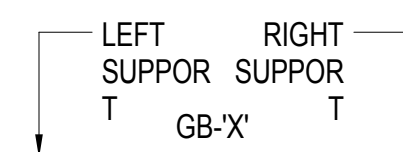
S-201 1" = 1'-0"

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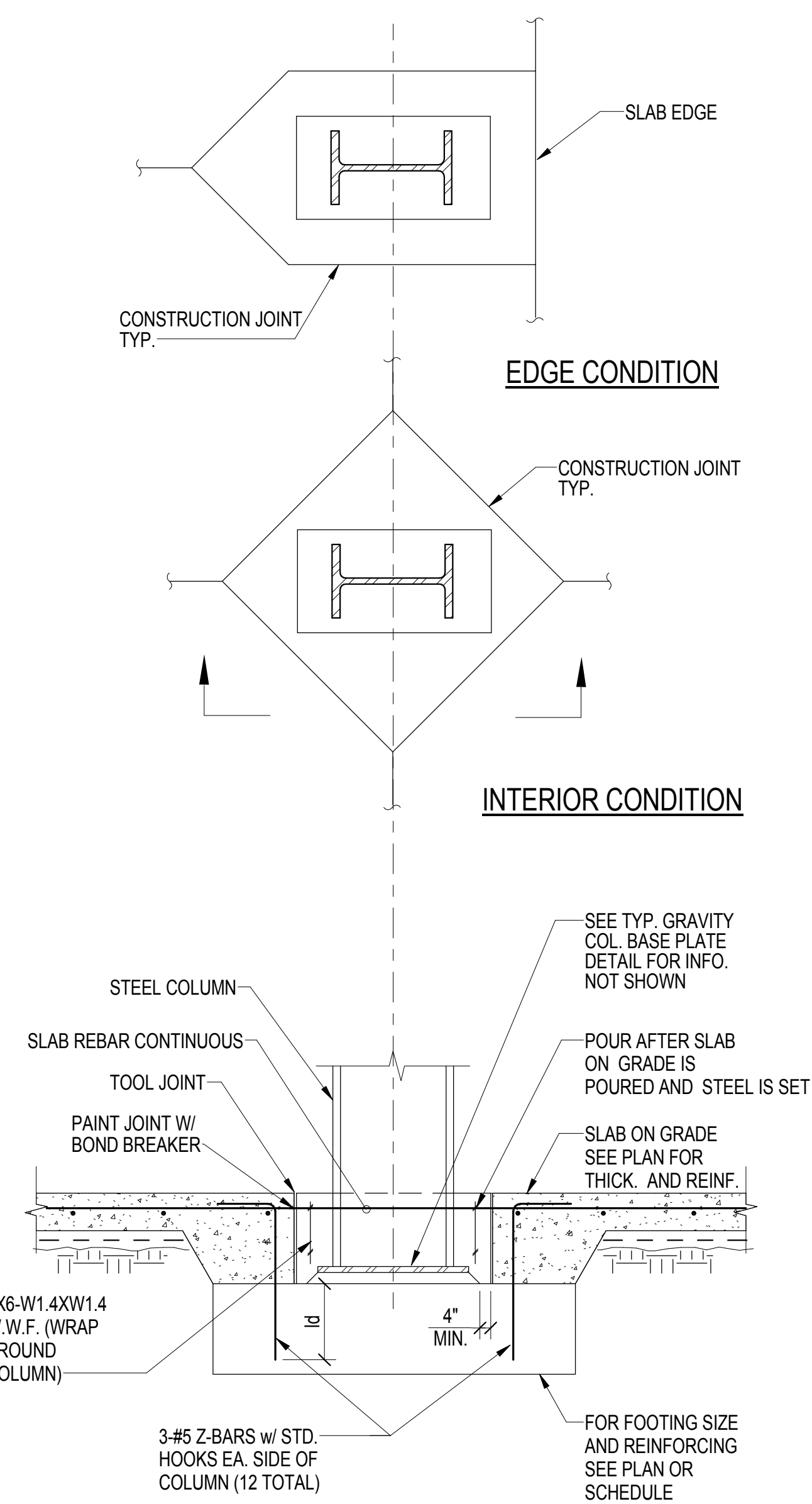
S-301

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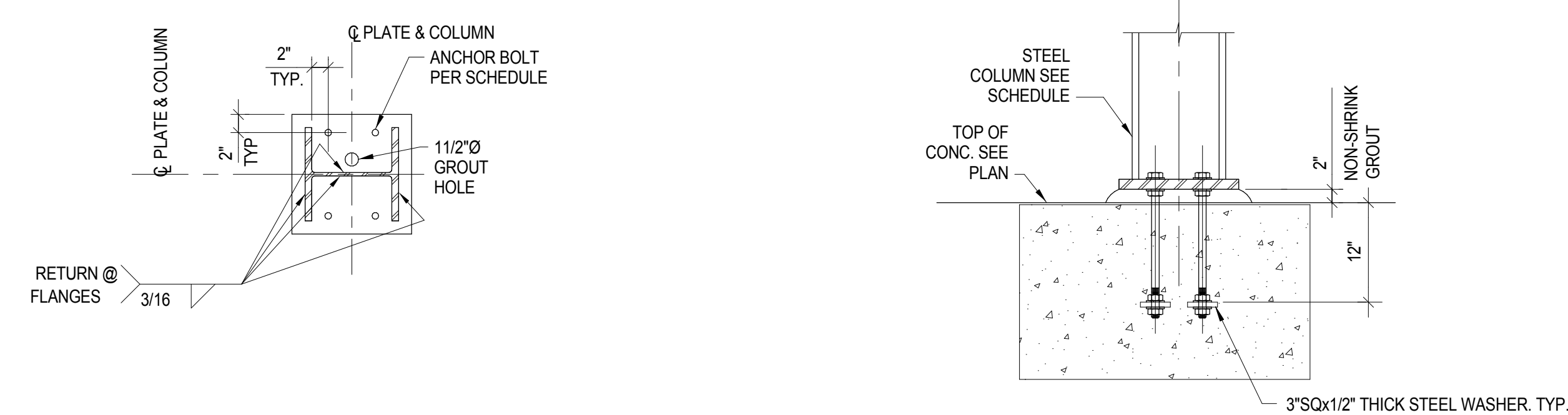
1. LEFT SUPPORT IS DEFINED AS SUPPORT TO THE LEFT OF THE BEAM MARK.
2. ALL GRADE BEAM REINFORCING TO BE A706 STEEL.
3. TIES WITHIN LEFT / RIGHT REGIONS CORRESPOND TO THE " CLOSED HOOP REGION" ON 14/S-511.
4. WHERE LAP SPICE FOR LONGITUDINAL BARS ARE REQUIRED, THEY SHALL OCCUR AT MID-SPAN ONLY, AND THEIR LENGTH SHALL BE ENCASED BY #4 CLOSED TIES @ 4" O.C.



S-301 NTS

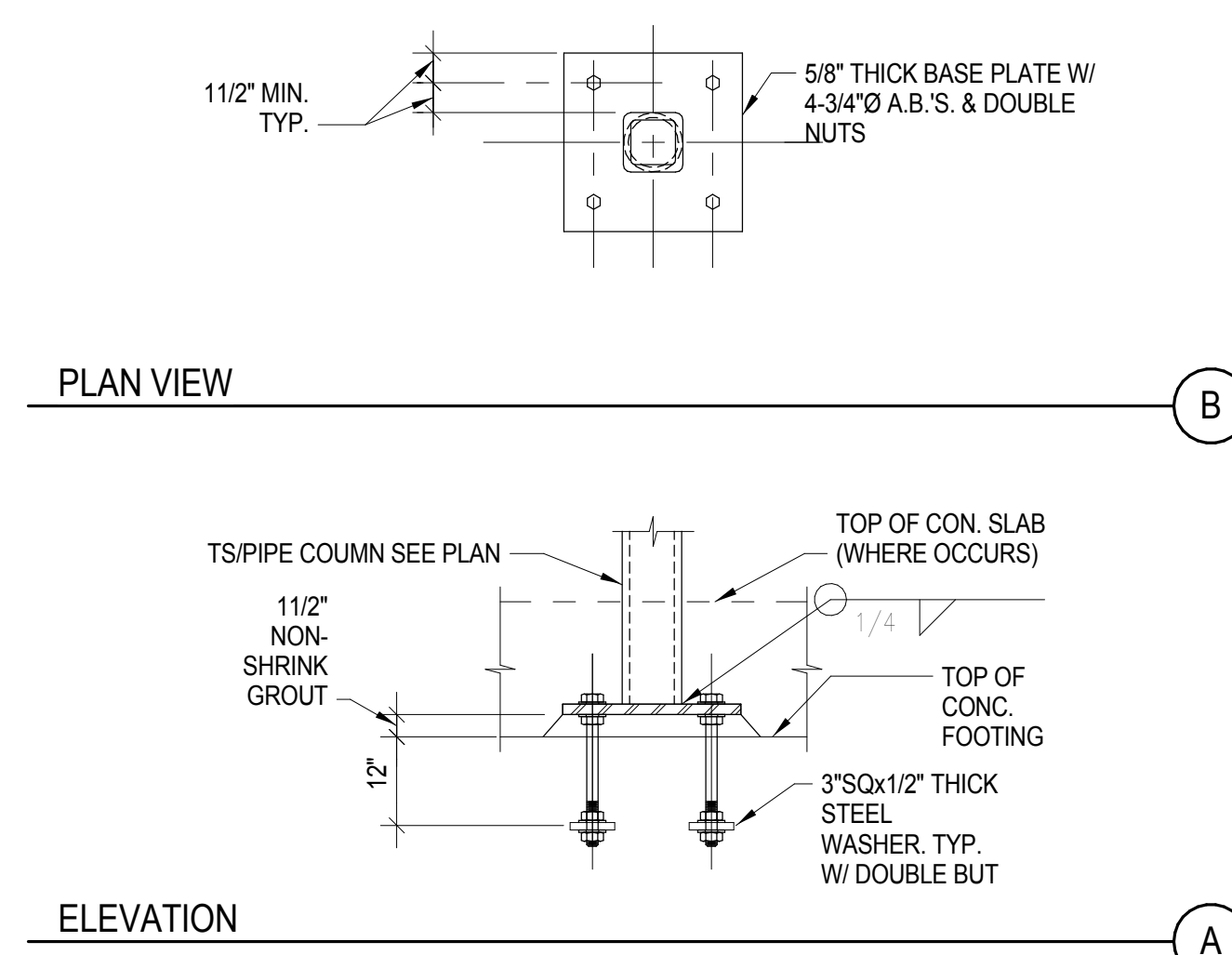


S-301 NTS



NOTES:
1. BASE PLATE SHALL BE FINISHED PER AISC SPECS
2. COLUMN SHALL BE FINISHED PER AISC "CODE OF STANDARD PRACTICES"
3. SEE DETAIL 3/- FOR S.O.G. JOINT AT COLUMN.

S-301 NTS



S-301 NTS

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SPREAD FOOTING SCHEDULE								
MARK	DIMENSIONS			REINFORCING				REMARKS
	WIDTH	LENGTH	DEPTH	BOTTOM BARS EACH WAY		TOP BARS		
				QUANTITY	SIZE	QUANTITY	SIZE	
F1.5	1' - 6"	1' - 6"	1' - 0"	3	6	0	0	
F2.5	2' - 6"	2' - 6"	1' - 6"	3	6	0	0	
F5.5	5' - 6"	5' - 6"	2' - 0"	5	7	0	0	
F6	6' - 0"	6' - 0"	2' - 0"	6	7	0	0	
F6.5	6' - 6"	6' - 6"	2' - 0"	6	7	0	0	

SYMBOLS

- INDICATES CHANGE IN FLOOR ELEVATION
- INDICATES CONCRETE WALL
- INDICATES CONCRETE WALL OR BEAM BELOW
- INDICATES CMU WALL
- INDICATES CMU WALL BELOW
- INDICATES CONCRETE FOOTING PER SCHEDULE ON THIS SHEET
- INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 9/S-016

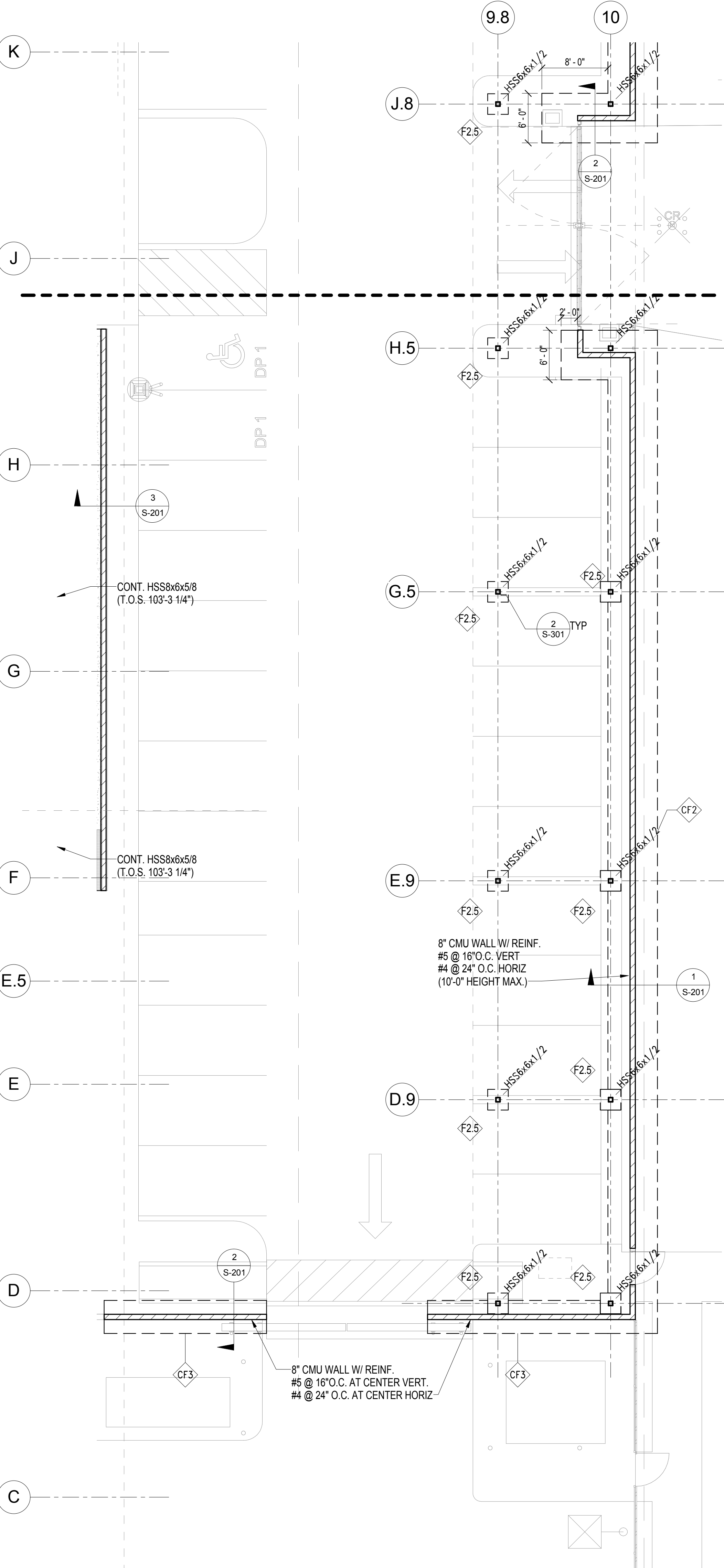
- GB.# INDICATES CONCRETE GRADE BEAM PER SCHEDULE ON S-301
- INDICATES CONCRETE FOOTING
- S --- S INDICATES STEPPED FOOTING PER TYP. DETAIL
- T.O.F. - #'-#-# INDICATES TOP OF FOOTING ELEVATION COMPARED TO TOP OF SLAB ON GRADE @ DATUM ELEVATION
- INDICATES AREA OF CONC OVER METAL DECK TYPE D-3

FOUNDATION NOTES:

- FOR GENERAL NOTES AND TYPICAL DETAILS SEE S-001 THRU S-018 SHEETS. GENERAL NOTES & TYPICAL DETAILS APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR U.N.O.
- VERIFY ALL DIMENSIONS, ELEVATIONS, SLAB EDGES, SLAB DEPRESSIONS, SLAB OPENINGS, CURBS, FOOTING, PENETRATIONS, WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL & CIVIL DRAWINGS.
- FOR ALL DIMENSIONS, SEE ARCHITECTURAL DRAWINGS. SEE G-003 FOR EDGE OF SLAB DIMENSION. SEE G-004 FOR DEPRESSED SLAB DIMENSIONS.
- FOR SLAB ON GRADE SUB-GRADE PREPARATION SEE SOILS REPORT
- ALL GRADING & FOUNDATION WORK MUST BE OBSERVED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER FOLLOWING PLACEMENT OF STEEL REINF. & PRIOR TO POURING CONCRETE.

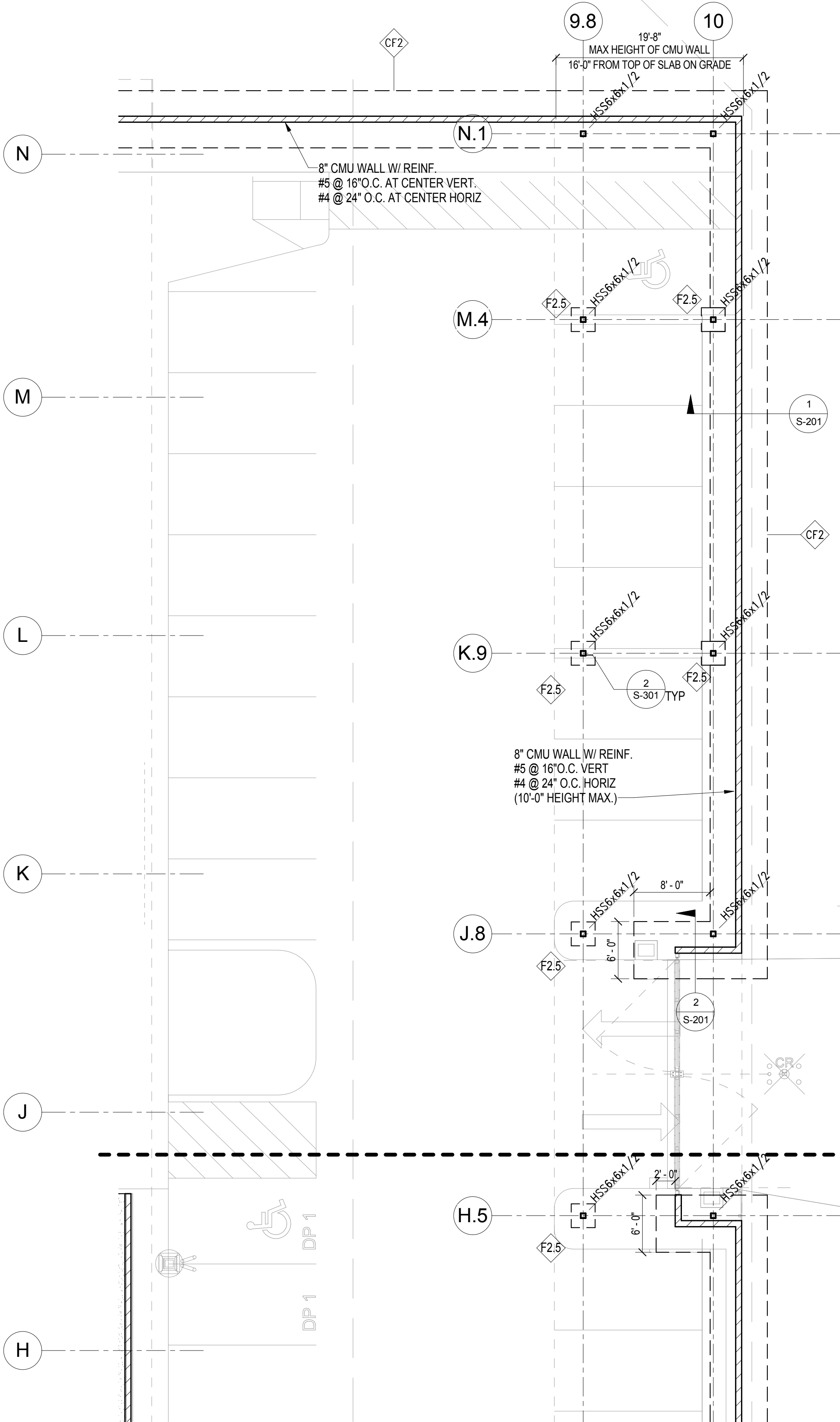
- U.N.O. TOP OF CONCRETE GRADE BEAMS & TOP OF CONC. FOOTING ELEVATION SHALL BE 1'-6" BELOW THE TOP OF THE LOWEST ADJACENT SLAB.
- PER SOIL REPORT, RETAINING WALLS MUST BE PROVIDED WITH A SUBDRAIN. SEE SOILS REPORT FOR MORE DETAILS.
- FOR LIMITS AND EXTENT OF OVER EXCAVATION SEE CIVIL DRAWINGS
- NON-BEARING WALLS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FOR NON-BEARING WALL LOCATIONS SEE ARCH'L.
- BOTTOM OF FOOTING TO EXTEND 12" BELOW LOWEST ADJACENT GRADE OR BE EMBEDDED 12" INTO COMPETENT BEARING MATERIAL PER GEOTECH REPORT (AS VERIFIED IN FIELD BY GEOTECHNICAL ENGINEER OBSERVATION), WHICHEVER IS LOWER.

WALL FOOTING SCHEDULE							
MARK	DIMENSIONS		REINFORCING				NOTES
	WIDTH	DEPTH	LONGITUDINAL		TRANSVERSE		
			QUANTITY	SIZE	SIZE	SPACING	
CF2	6' - 0"	1' - 6"	4	5	4	1' - 0"	TOP & BOTTOM
CF3	4' - 0"	1' - 6"	3	5	4	1' - 0"	TOP & BOTTOM



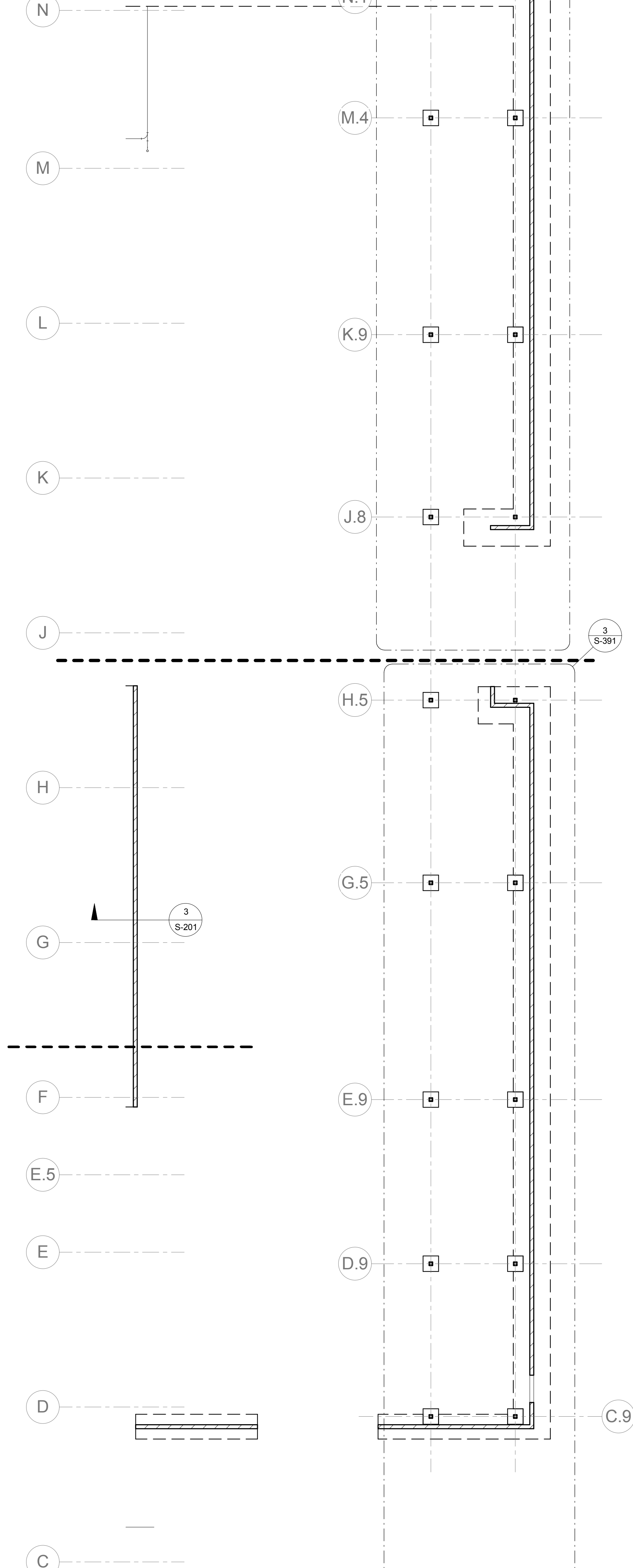
FOUNDATION / LEVEL 1 - COVERED PARKING SOUTH

Scale: 1/8" = 1'-0"
Ref:



FOUNDATION / LEVEL 1 - COVERED PARKING NORTH

Scale: 1/8" = 1'-0"
Ref:



FOUNDATION / LEVEL 1 - COVERED PARKING KEY PLAN

Scale: 3/32" = 1'-0"
Ref:

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ROSSETTI, ARCHITECTURE, INTERIORS, GRAPHICS, PLANNING
160 WEST FORT, SUITE 400, DETROIT, MICHIGAN 48226
Telephone: 313.463.5151 ROSSETTI.COM Fax: 313.463.5160

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Project

Los Angeles Lakers Headquarters

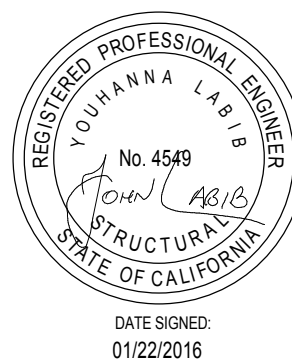
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JLA
John Labb + Associates
Structural Engineers

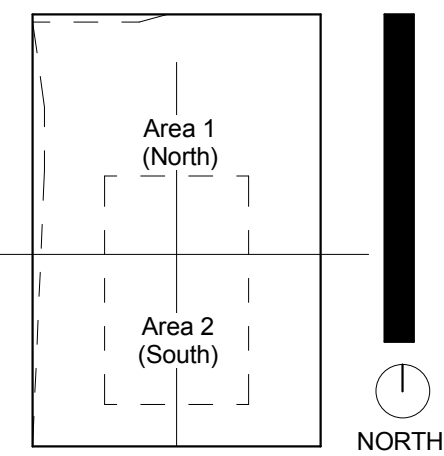
319 Main Street
El Segundo, CA 90245
t: 213-239-9700 f: 213-239-9699
JLA Job no. 14820

Professional Seal



No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package.	12/12/14
3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
5	Foundation & Utilities Permit	08/12/15
6	90% Steel Package	08/28/15
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9	ASI 004 (Frnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan



Sheet Title

COVERED PARKING FOUNDATION PLAN

Project Number

2014-015

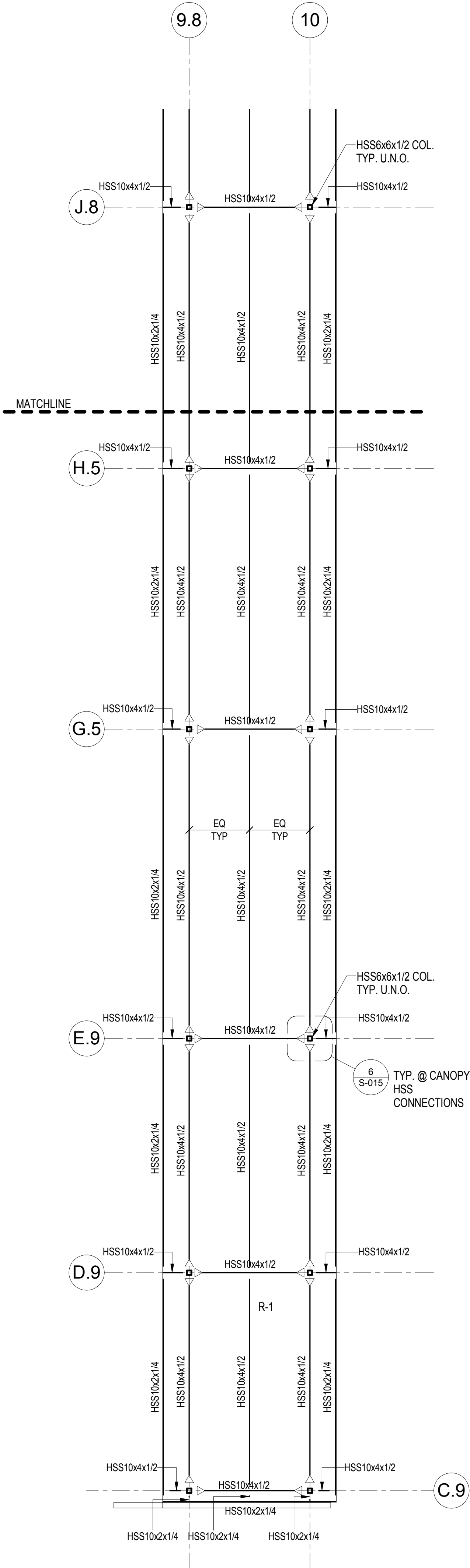
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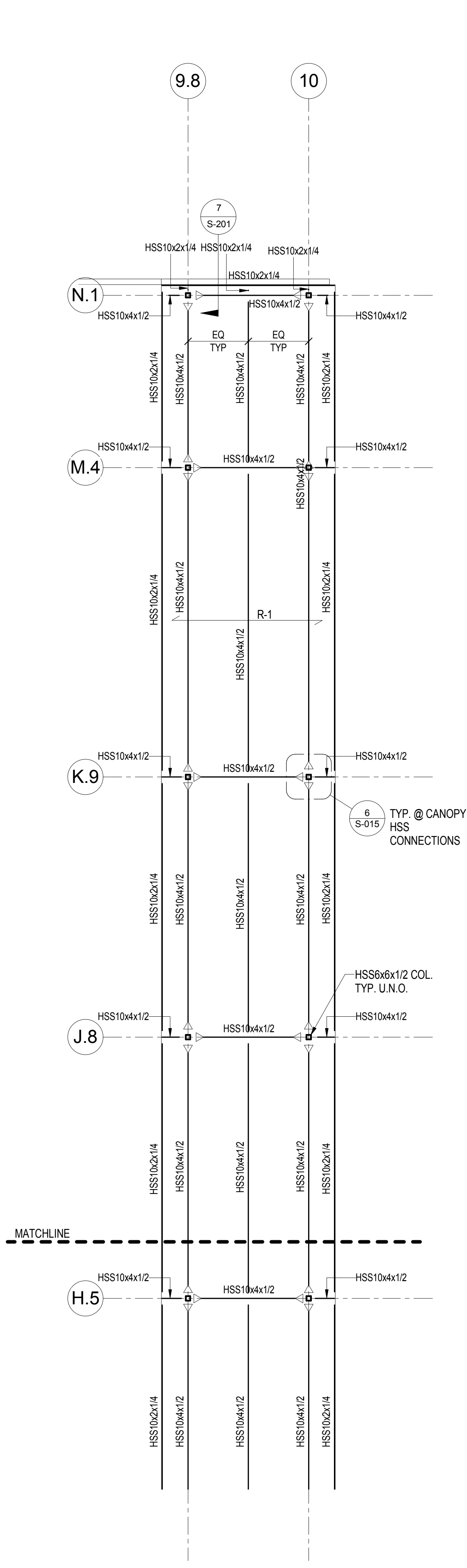
S-391

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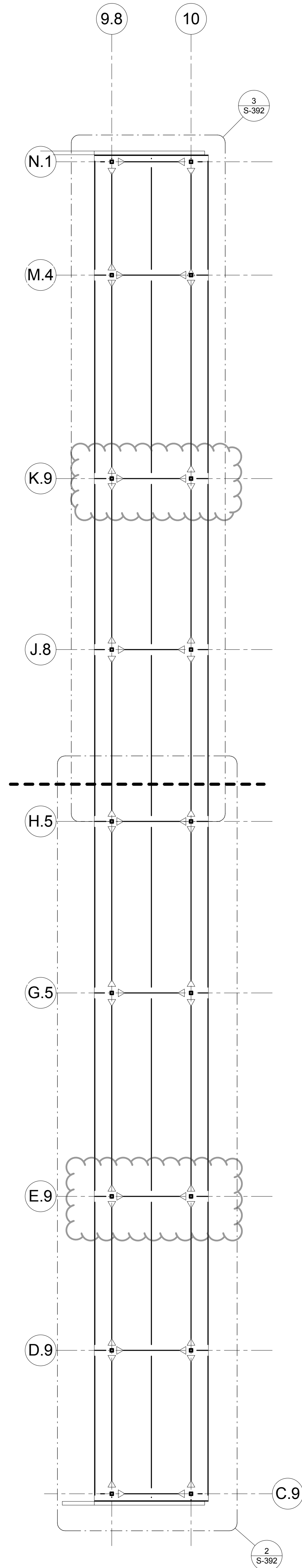
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3 S-392 ROOF - COVERED PARKING SOUTH
Scale: 1/8" = 1'-0"
Ref:



2 S-392 ROOF - COVERED PARKING NORTH
Scale: 1/8" = 1'-0"
Ref:



1 S-392 ROOF - COVERED PARKING - KEY PLAN
Scale: 3/32" = 1'-0"
Ref:

FRAMING NOTES:

- FOR GENERAL NOTES AND TYPICAL DETAILS SEE S-001 THRU S-018 SHEETS. GENERAL NOTES & TYPICAL DETAILS APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR U.N.O.
- FOR GRAVITY STEEL COLUMN SCHEDULE & DETAILS, SEE SHEET S-301.
- VERIFY ALL DIMENSIONS, ELEVATIONS, SLAB EDGES, SLAB DEPRESSIONS, SLAB OPENINGS, CURBS, FOOTING, PENETRATIONS, WALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL & CIVIL DRAWINGS.
- FOR GRID LINE DIMENSIONS, SEE ARCHITECTURAL DRAWINGS.
- FOR ALL DIMENSIONS & ROOF SLOPES SEE ARCHITECTURAL DRAWINGS.
- TOP OF STEEL ELEVATION SHALL BE TOP OF CONCRETE ELEVATION MINUS THICKNESS OF CONCRETE & METAL DECK, U.N.O.
- BEAMS THAT FRAME AROUND OPENINGS IN SLAB SHOULD BE CENTERED 1'-0" FROM THE EDGE OF SLAB U.N.O.
- PROVIDE MIN. W8x10 BEAMS IN TWO DIRECTION AT VIBRATION ISOLATOR STANCHION. FOR STANCHION BASE PLATE SEE S-012.

LEGEND

- INDICATES CHANGE IN FLOOR ELEVATION
- INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 9/S-016
- INDICATES STEEL COLUMN
- INDICATES CONCRETE WALL BELOW
- INDICATES CONCRETE FILL PER TYPICAL RAISED FLOOR DETAIL
- INDICATES AREA OF D-2 DECK
- INDICATES DRAG BEAM CONN. PER TYP. DETAILS
- INDICATES MOMENT FRAME CONNECTION
- INDICATES RIGID MOMENT CONNECTION PER TYP. DETAILS
- INDICATES FULL HEIGHT STIFFENER PLATE CONNECTION PER 14/S-014
- INDICATES BOTTOM FLANGE BRACE CONNECTION PER 13/S-014
- INDICATES BENT BEAM CONNECTION PER TYP. DETAILS
- INDICATES COLUMN ABOVE
- DENOTES SPECIAL MOMENT FRAME, SEE SHEETS S-401 THRU S-404
- INDICATES NUMBER OF SHEAR STUDS. IF NOT SHOWN, PROVIDE 3/4"Ø HEADED STUD @ 12"Ø.C.
- INDICATES UPWARD CAMBER IN BEAM (INCHES)
- INDICATES ANGLE BRACE PER TYP DETAIL 8/S-015
- INDICATES TOP OF CONCRETE ELEVATION
- INDICATES TOP OF STEEL ELEVATION
- INDICATES DESIGN BUILD TRUSS. SEE SCHEDULE THIS SHEET FOR REFERENCE SIZES. SEE ARCH FOR ADDL INFORMATION. SEE PLAN NOTE #9 FOR DESIGN CRITERIA
- INDICATES OMF CONNECTION PER 7/S-015

Project

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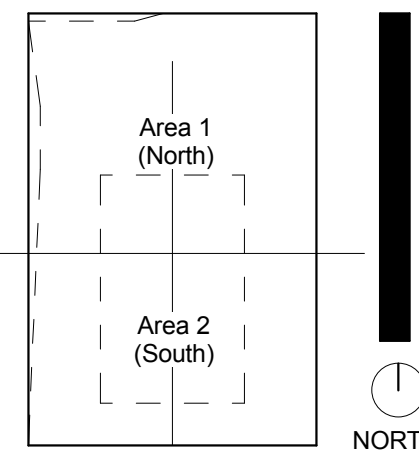
319 Main Street
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JLA Job no. 14820

Professional Seal



No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package.	12/12/14
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10	Back-Check #1	11/30/15
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12	Issued for Construction - ASI 010	01/22/16

Key Plan



Sheet Title

**COVERED PARKING
ROOF FRAMING PLAN**

Project Number

2014-015

CAD File

Sheet number

S-392

Project
Los Angeles Lakers Headquarters

2275 Mariposa, El Segundo, California 90245

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John Labb + Associates
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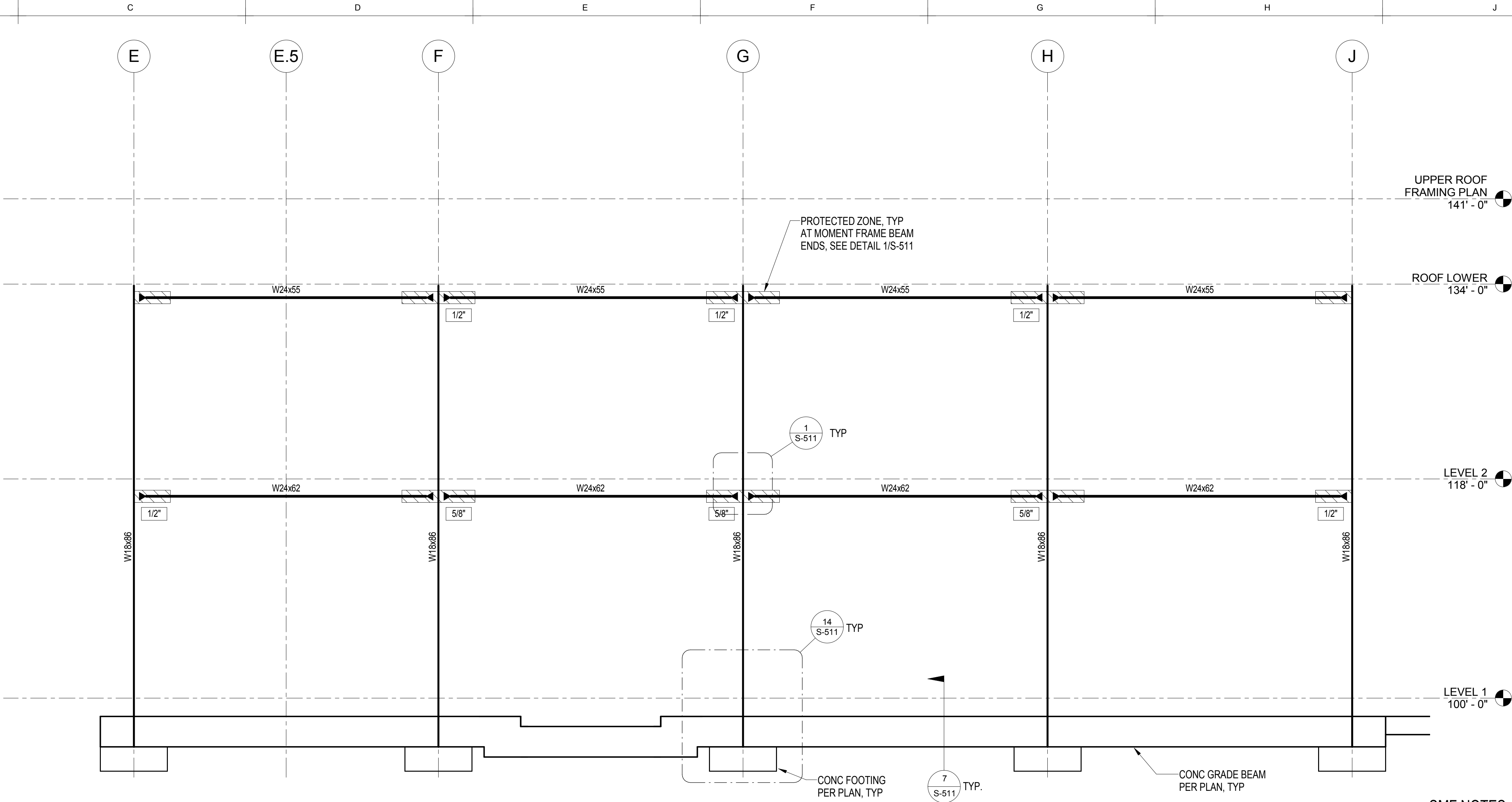
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Sheet Title
MOMENT FRAME ELEVATIONS

Project Number
2014-015
Sheet number

CAD File

S-401



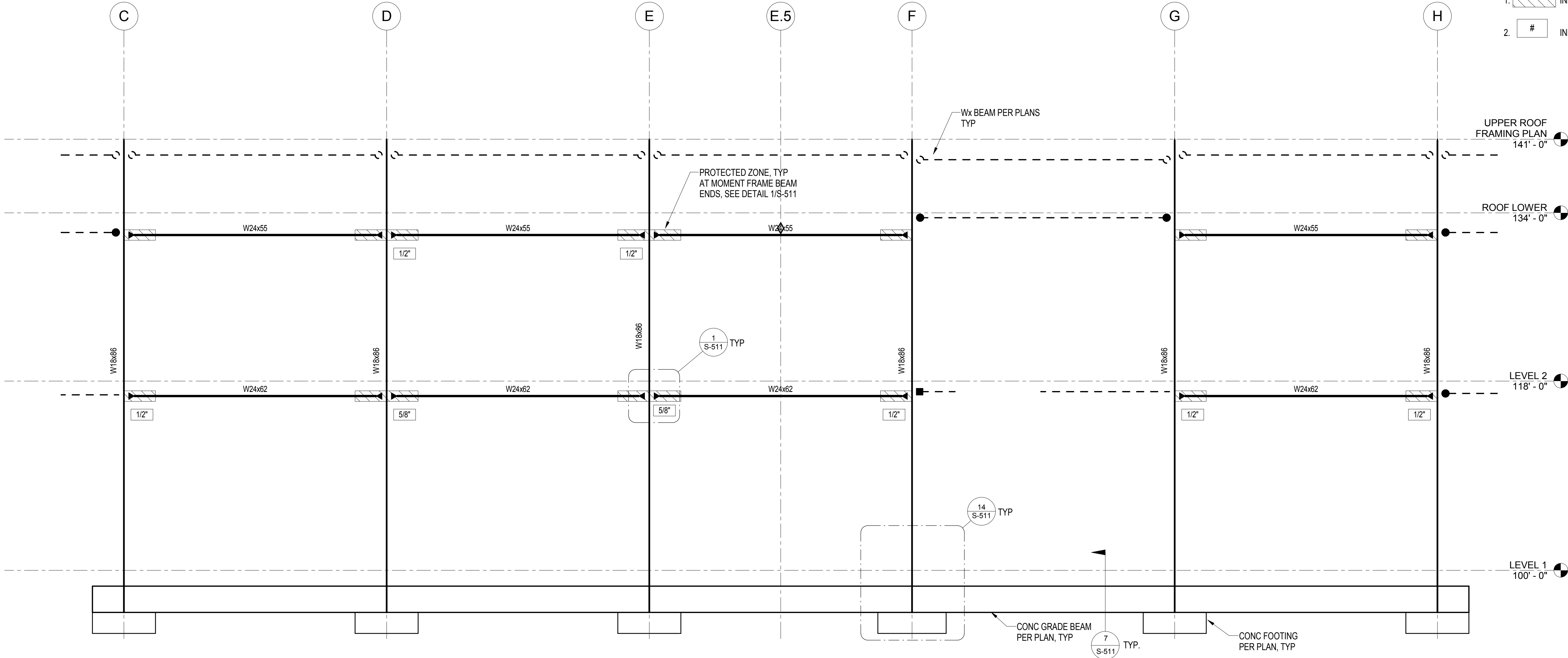
SMF NOTES:

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
- REFER TO SPECIFICATIONS, TABLES, NOTES, DETAILS, ETC. ON S-521 & S-522 FOR STANDARD QUALITY ASSURANCE PLAN FOR STEEL MOMENT FRAMES.
- SEE S-511 FOR STEEL MOMENT FRAME DETAILS

LEGEND

- INDICATES PROTECTED ZONE PER 1/S-511
- # INDICATES NUMBER AND THICKNESS OF DOUBLER PLATES.

1 MOMENT FRAME ELEVATION ALONG GRID LINE 1
S-401 3/16" = 1'-0"



2 MOMENT FRAME ELEVATION ALONG GRID LINE 2
S-401 3/16" = 1'-0"

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12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title
MOMENT FRAME ELEVATIONS
 Project Number
2014-015
 Sheet number
 CAD File

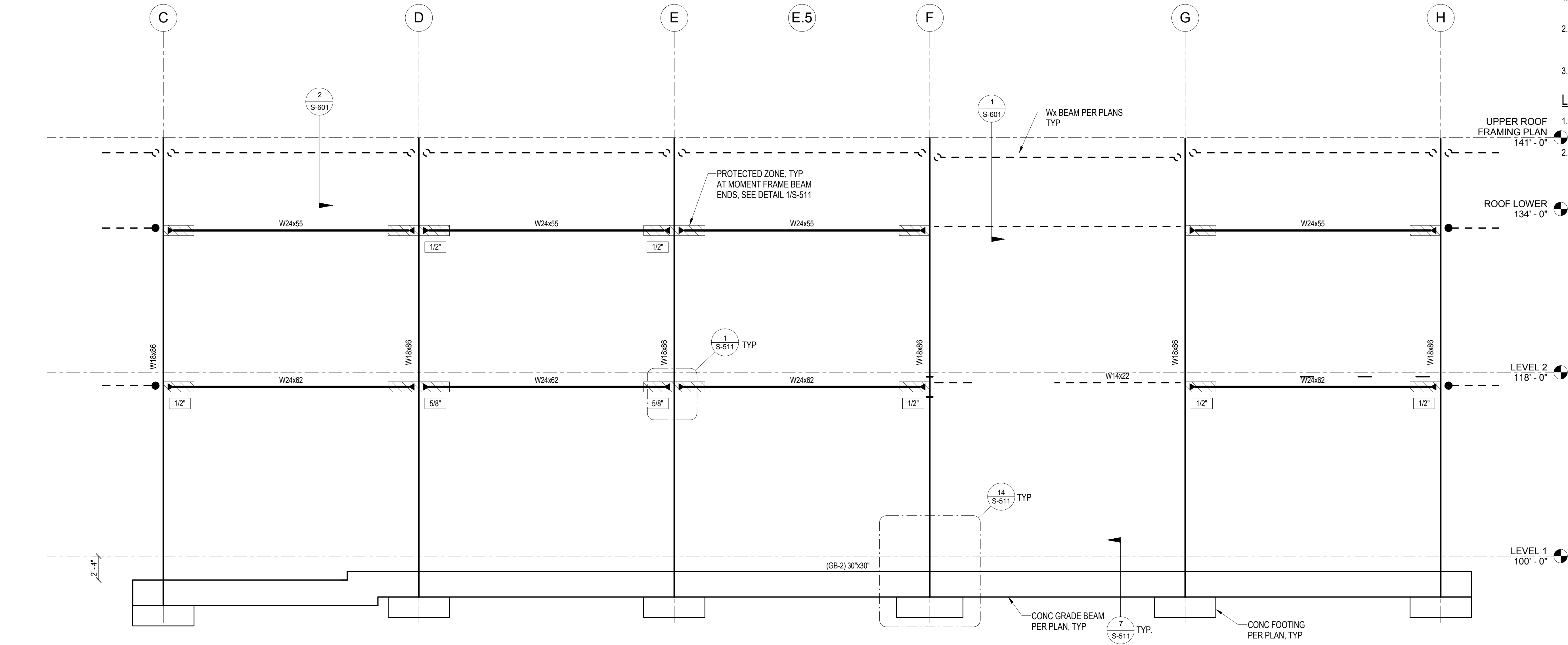
S-402

SMF NOTES:

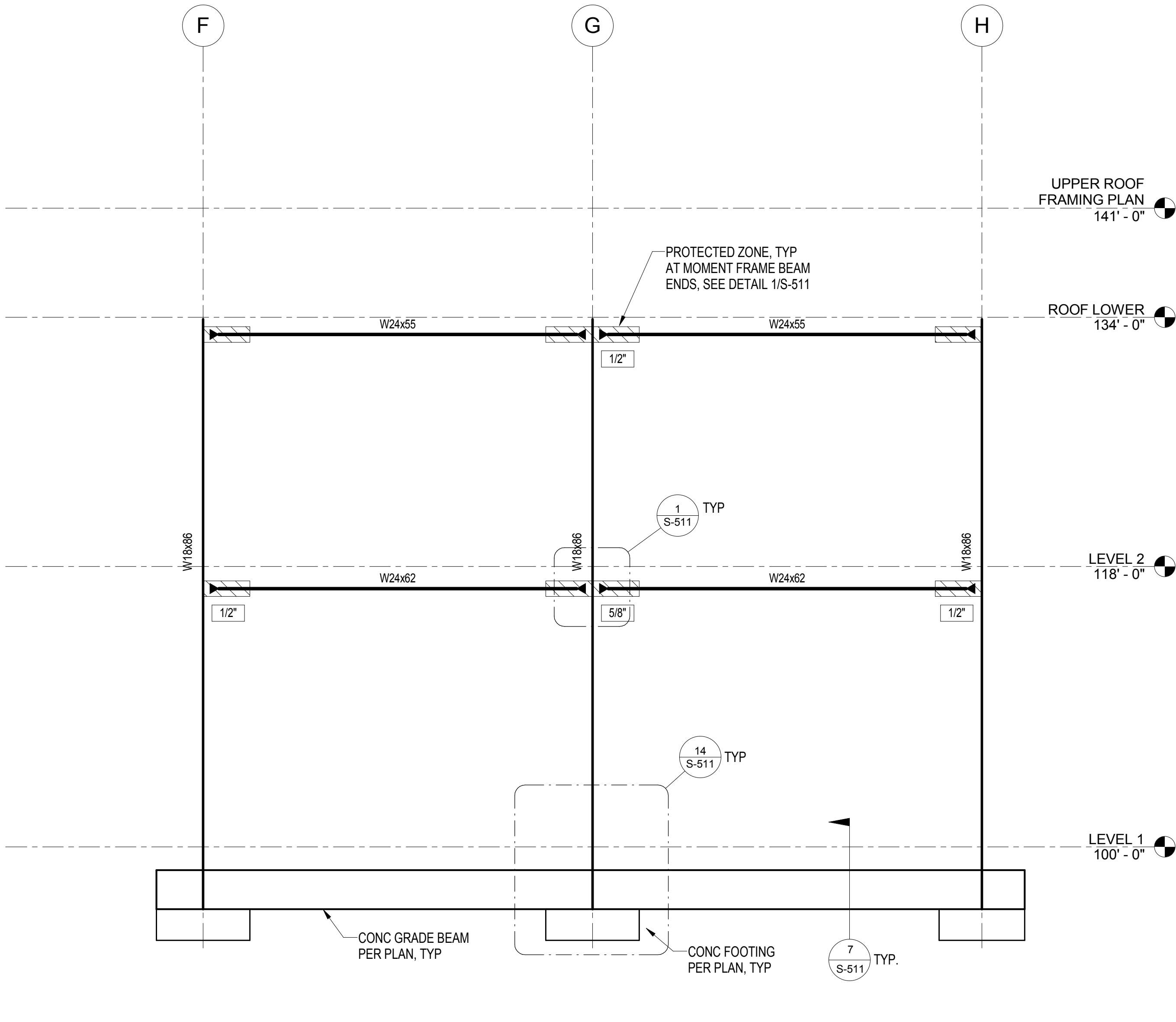
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
- REFER TO SPECIFICATIONS, TABLES, NOTES, DETAILS, ETC. ON S-521 & S-522 FOR STANDARD QUALITY ASSURANCE PLAN FOR STEEL MOMENT FRAMES.
- SEE S-511 FOR STEEL MOMENT FRAME DETAILS

LEGEND

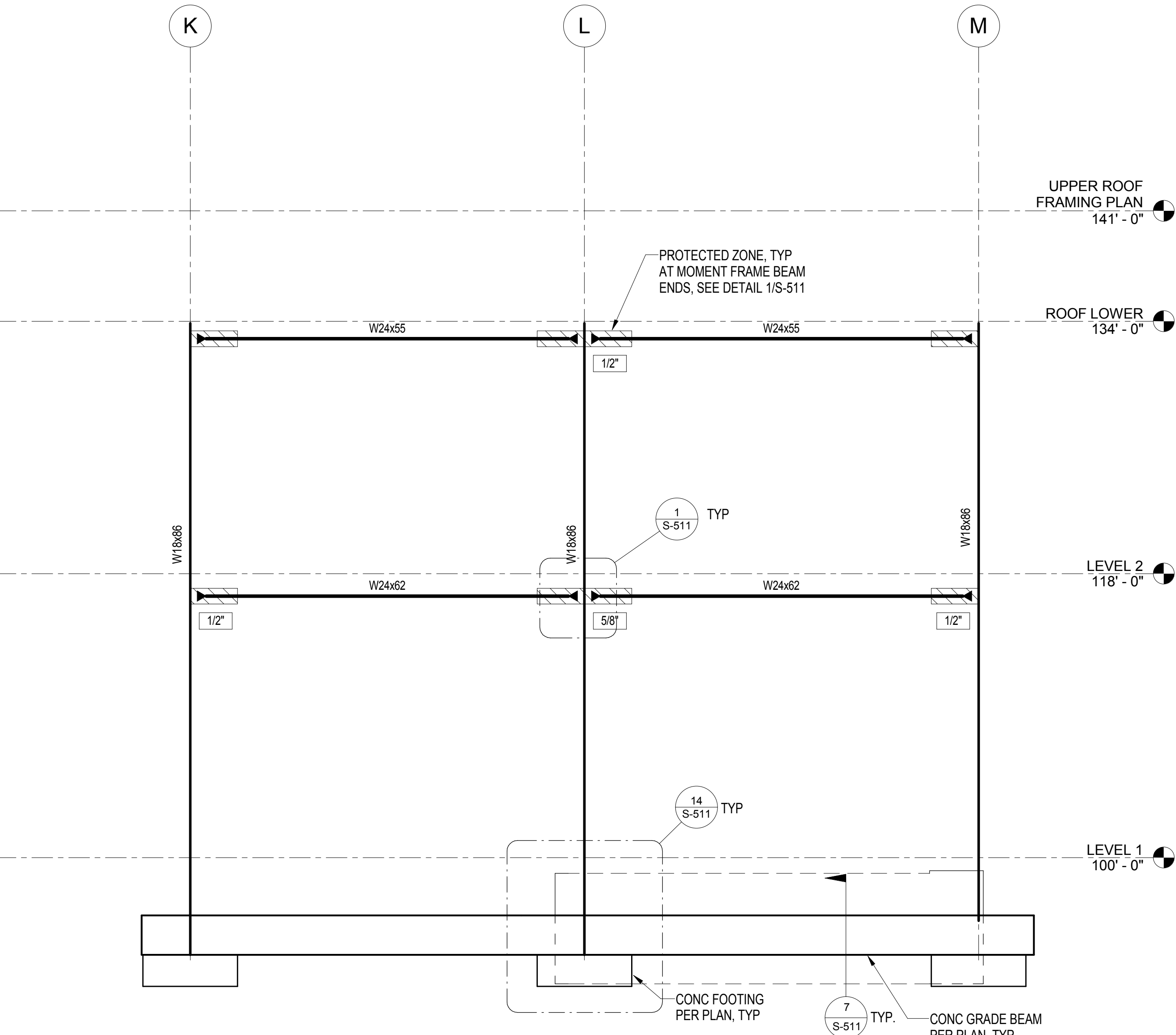
- INDICATES PROTECTED ZONE PER 1/S-511
- # INDICATES NUMBER AND THICKNESS OF DOUBLER PLATES.



1 MOMENT FRAME ELEVATION ALONG GRID LINE 5
 S-402 3/16" = 1'-0"



2 MOMENT FRAME ELEVATION ALONG GRID LINE 5.8
 S-402 3/16" = 1'-0"



3 MOMENT FRAME ELEVATION ALONG GRID LINE 5.8
 S-402 3/16" = 1'-0"

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JLA Job no. 14820



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10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title
MOMENT FRAME ELEVATIONS

Project Number
2014-015
Sheet number

CAD File

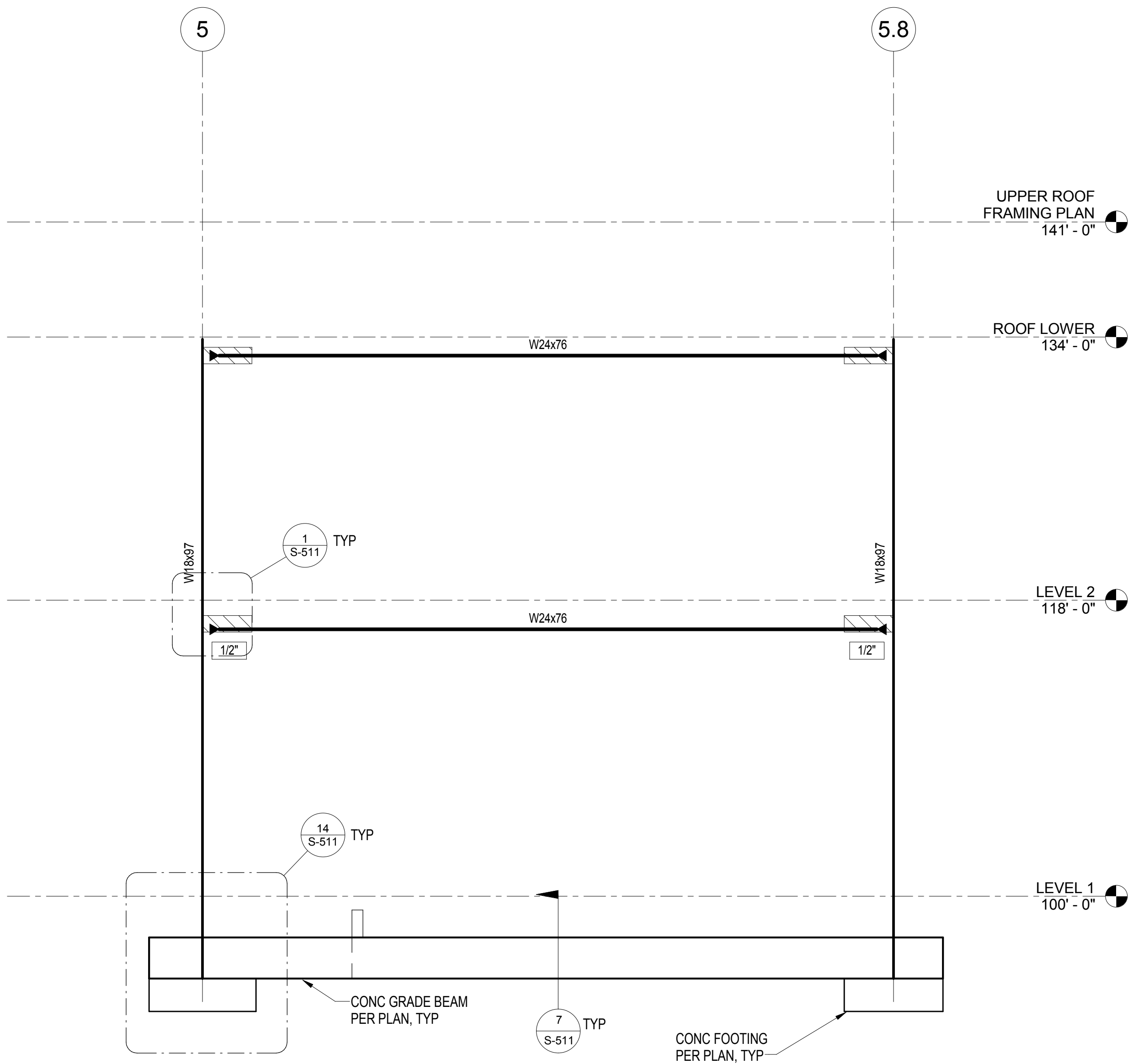
S-403

SMF NOTES:

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
- REFER TO SPECIFICATIONS, TABLES, NOTES, DETAILS, ETC. ON S-521 & S-522 FOR STANDARD QUALITY ASSURANCE PLAN FOR STEEL MOMENT FRAMES.
- SEE S-511 FOR STEEL MOMENT FRAME DETAILS

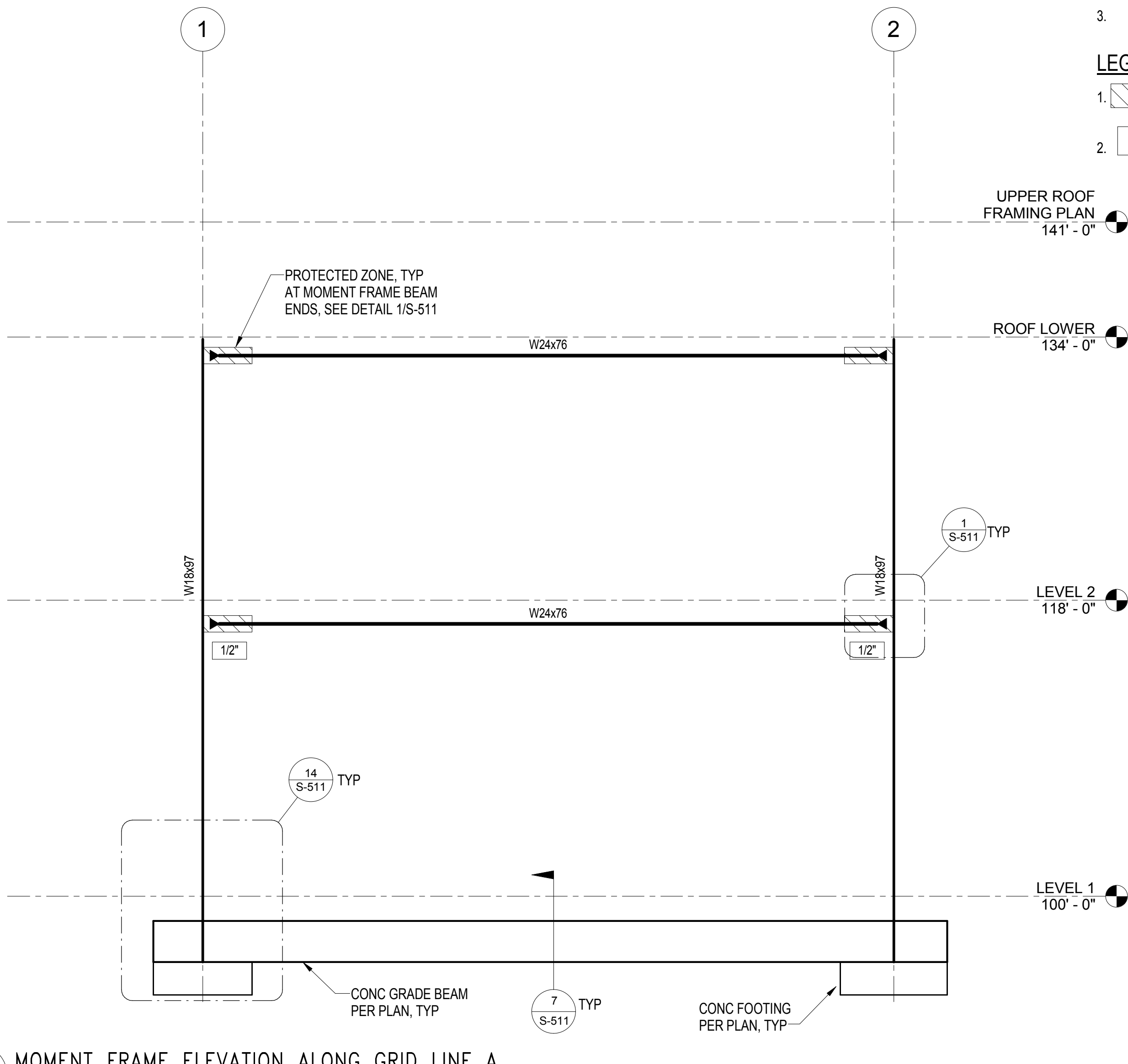
LEGEND

- INDICATES PROTECTED ZONE PER 1/S-511
- INDICATES NUMBER AND THICKNESS OF DOUBLER PLATES.



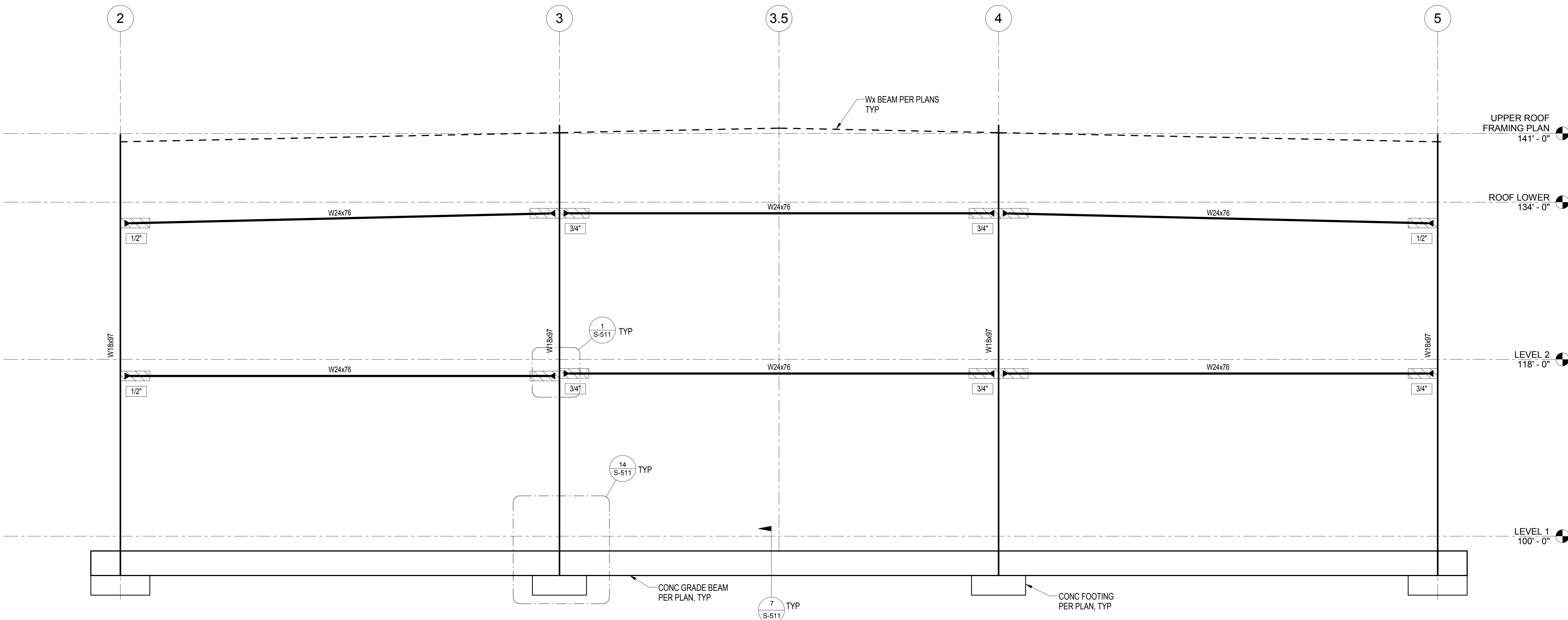
2 MOMENT FRAME ELEVATION ALONG GRID LINE A

S-403 3/16" = 1'-0"



1 MOMENT FRAME ELEVATION ALONG GRID LINE A

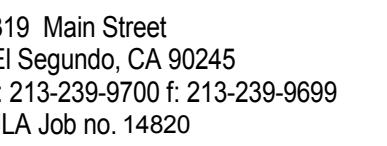
S-403 3/16" = 1'-0"



3 MOMENT FRAME ELEVATION ALONG GRID LINE A.8

S-403 3/16" = 1'-0"

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Professional Seal

[illegible]

Key Plan

Sheet Title

Project Number 2014-015	CAD File
Sheet number	

S-404



SMF NOTES:

- | | | |
|----|---|---|
| 1. | CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION. | |
| 2. | REFER TO SPECIFICATIONS, TABLES, NOTES, DETAILS, ETC. ON S-521 & S-522 FOR STANDARD QUALITY ASSURANCE PLAN FOR STEEL MOMENT FRAMES. | 5 |
| 3. | SEE S-511 FOR STEEL MOMENT FRAME DETAILS | |

LEGEND

1. INDICATES PROTECTED ZONE PER 1/S-511
2.  INDICATES NUMBER AND THICKNESS OF DOUBLER PLATES.



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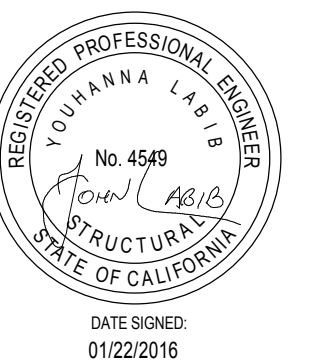
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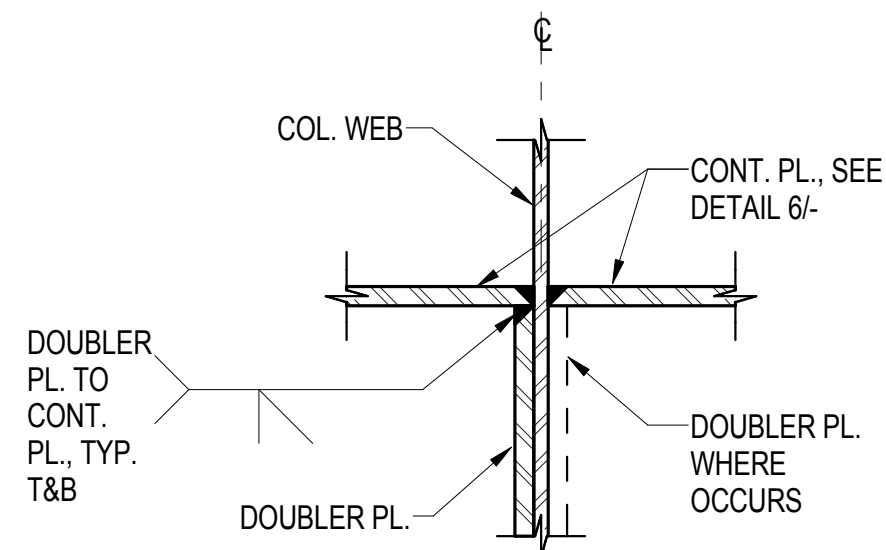
Key Plan

Sheet Title
MF SECTIONS AND DETAILS

Project Number
2014-015
Sheet number

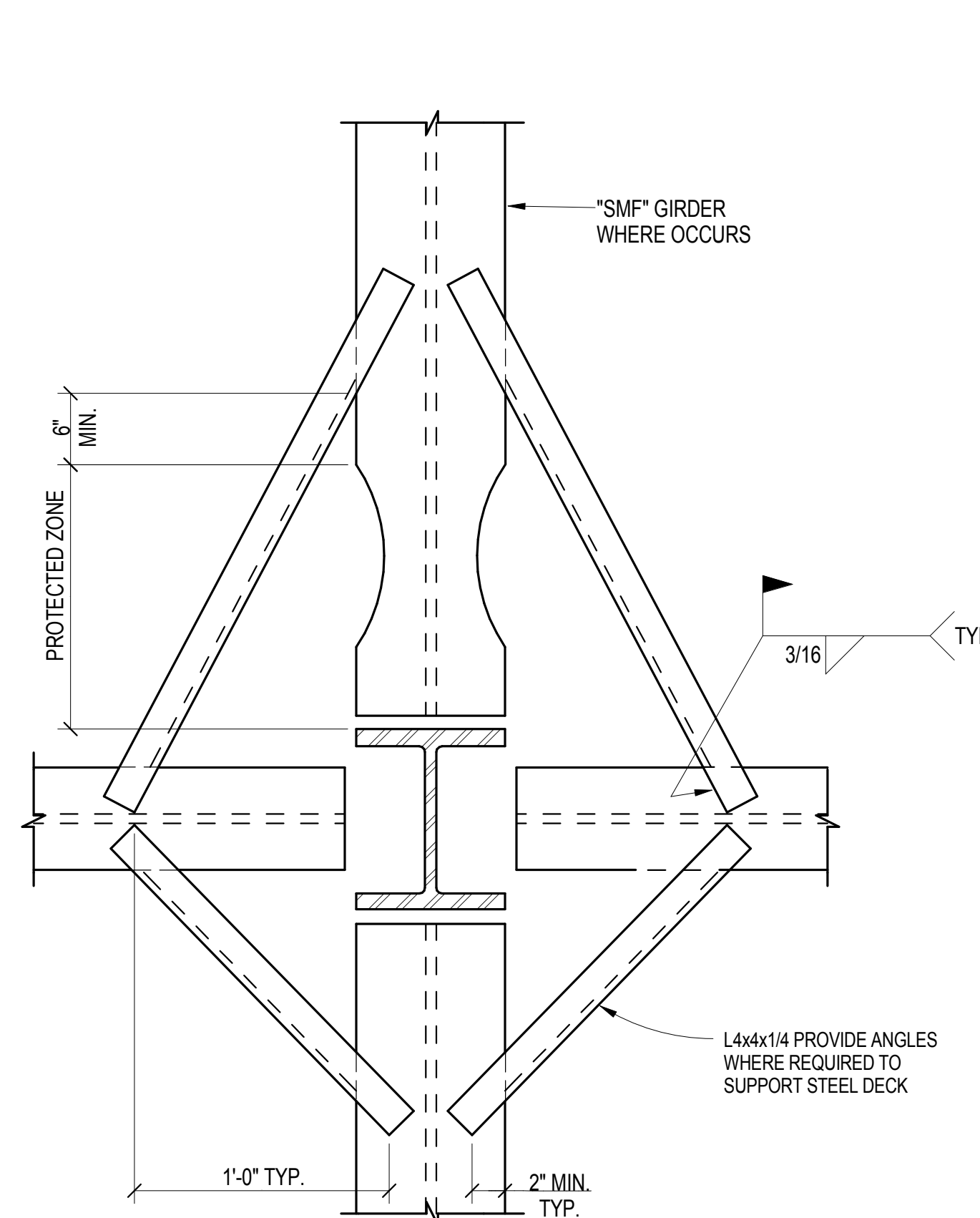
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S-511



8 TYPICAL DOUBLER PLATE DETAIL

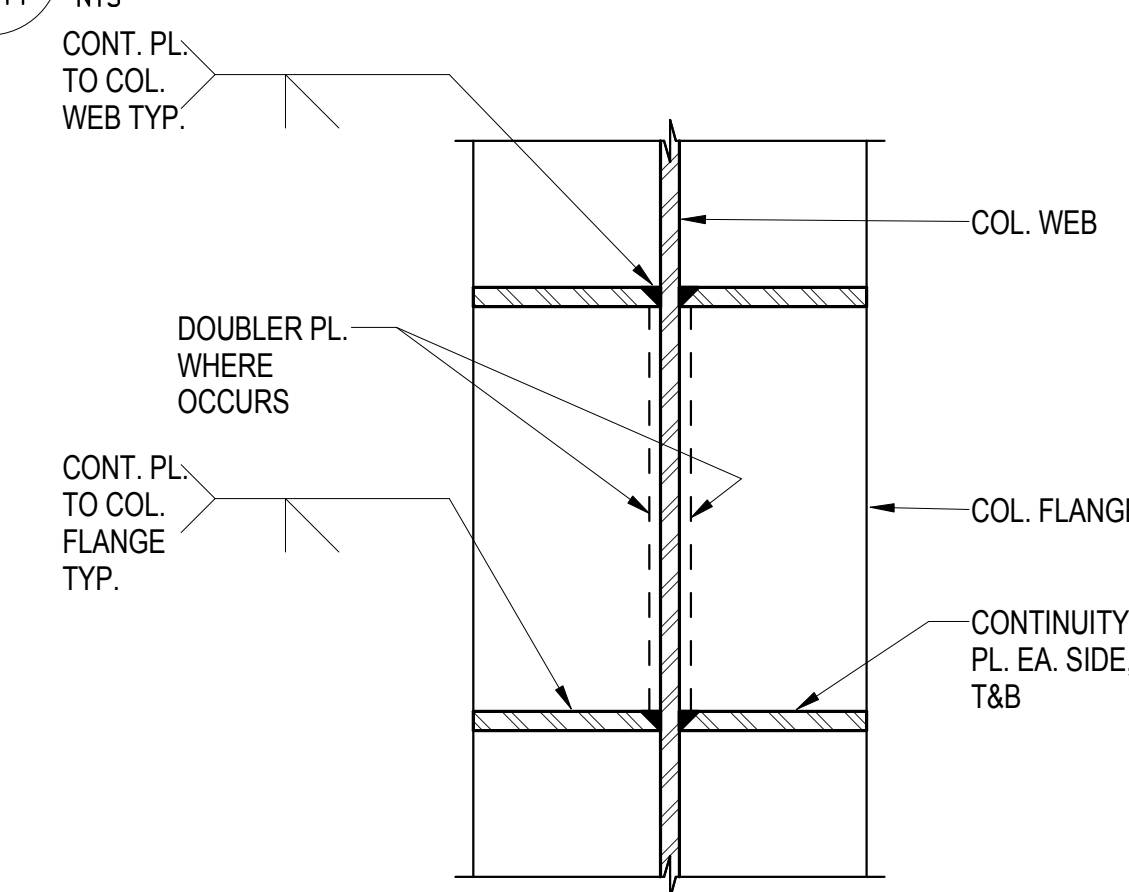
S-511
NTS



TYPICAL STEEL DECK SUPPORT @ SMF COLUMN DETAIL

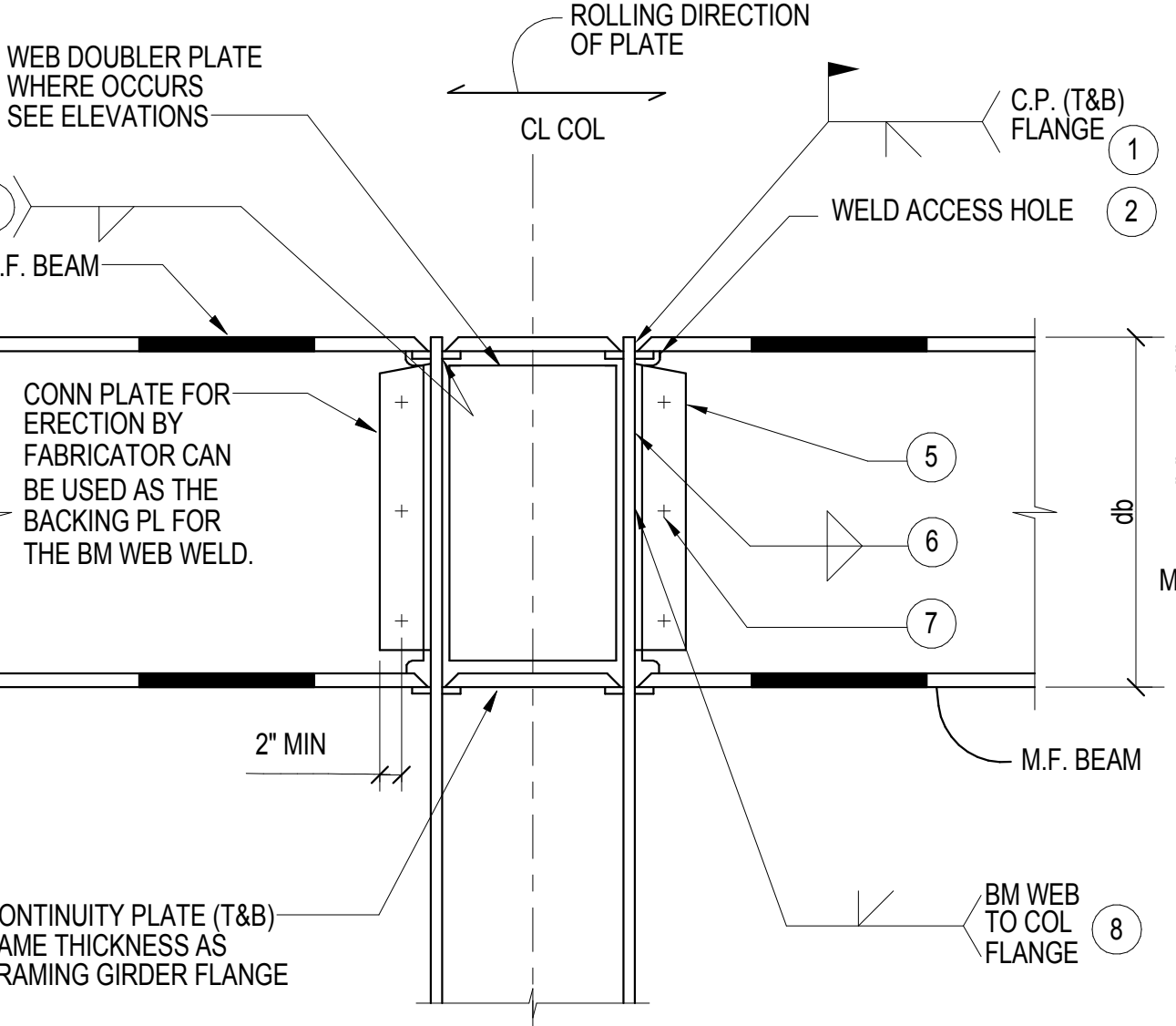
5

S-511
NTS

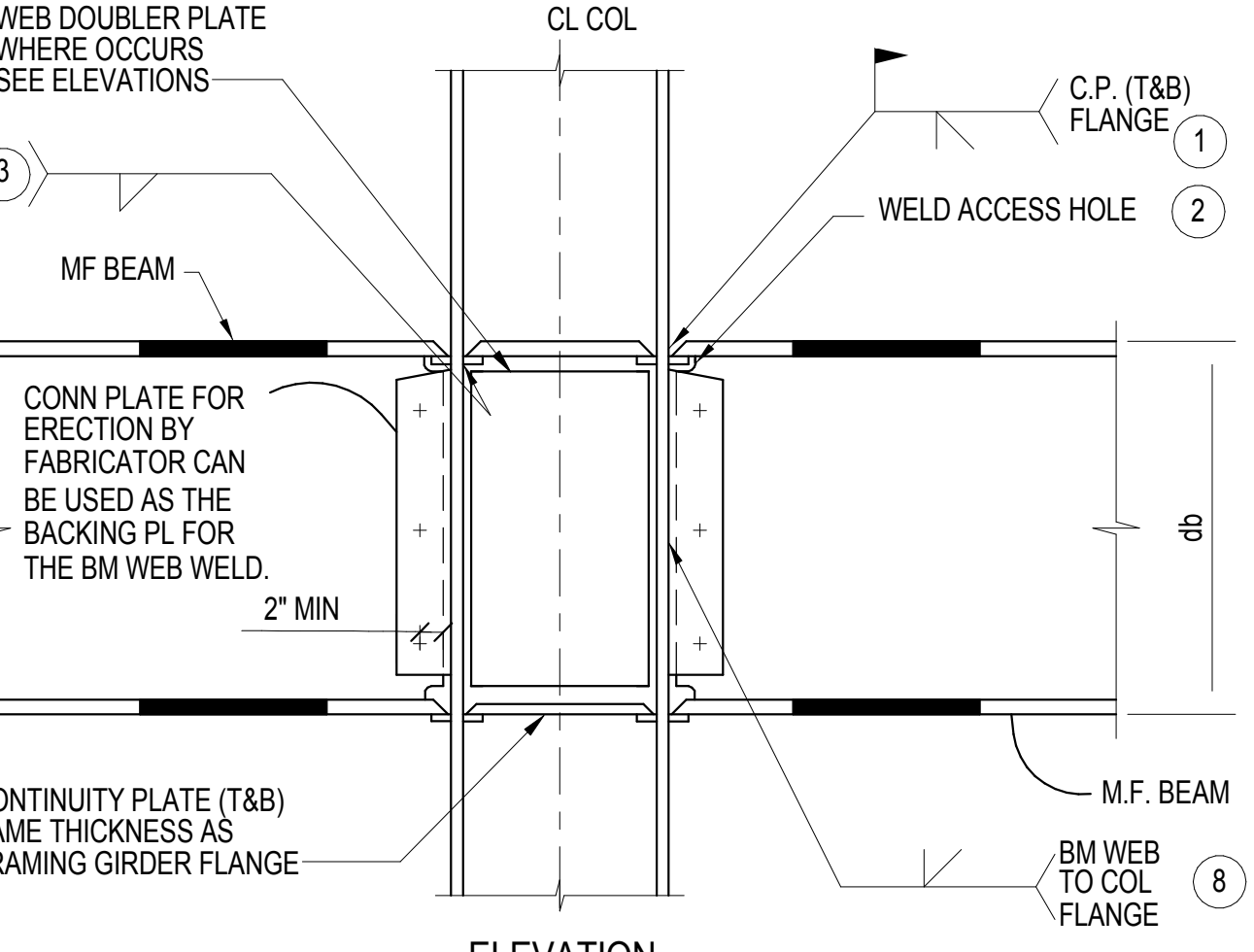


6 TYPICAL CONTINUITY PLATE DETAIL

S-511
NTS



ELEVATION AT DISCONTINUED COLUMN

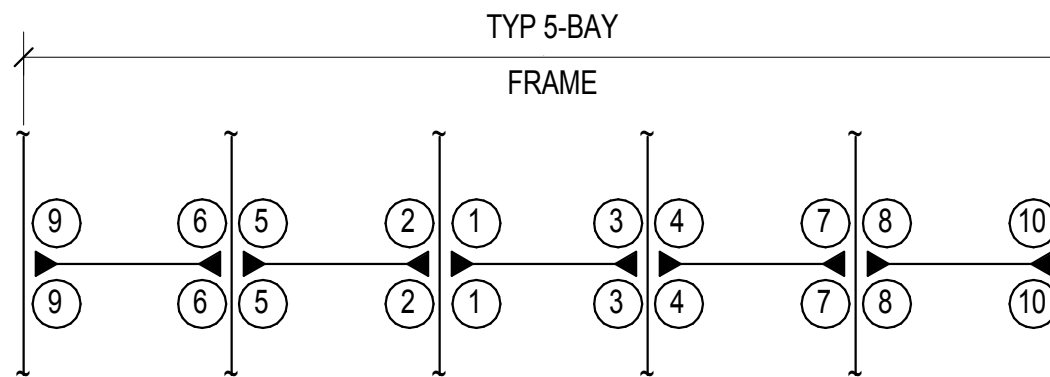
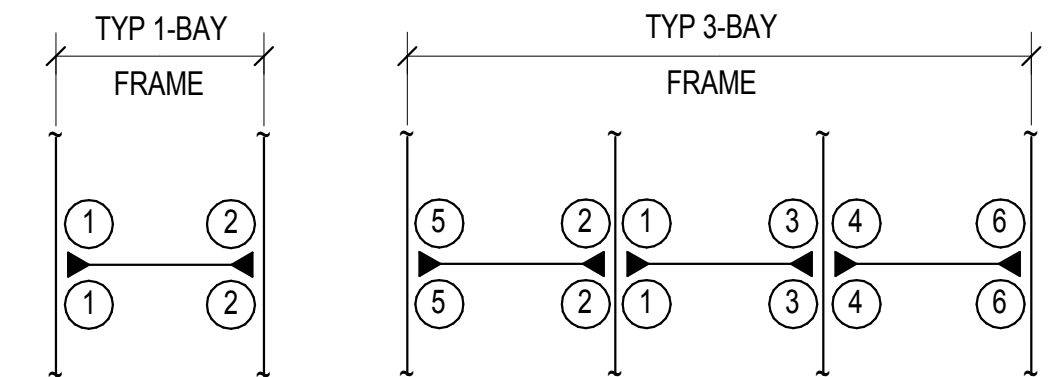


ELEVATION

1

S-511
NTS

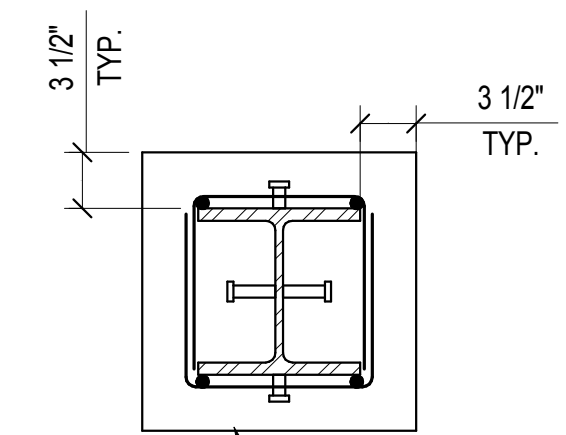
TYPICAL STEEL SPECIAL MOMENT FRAME CONNECTION



2

S-511
NTS

MOMENT FRAME WELDING SEQUENCE

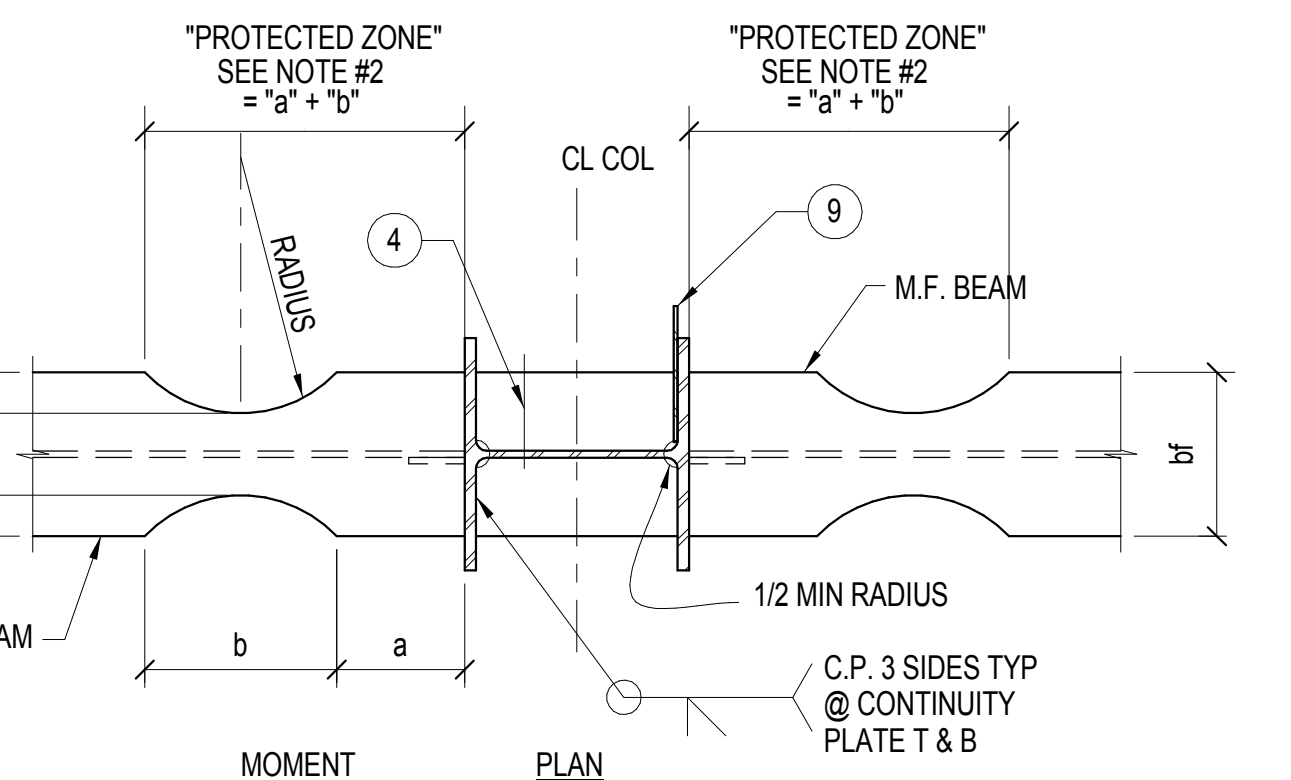


PLAN VIEW

4

S-511
NTS

CONCRETE ENCASEMENT



BEAM SIZE	LOCATION	APPROX. X SPAN	a (IN)	b (IN)	c (IN)	r (IN)
W24X55	-	SEE PLAN	4.5	18	1.75	24.02
W24X62	-	SEE PLAN	5	16	1.50	22.08
W24X76	-	SEE PLAN	6	18	1.75	24.02

CALLOUTS:

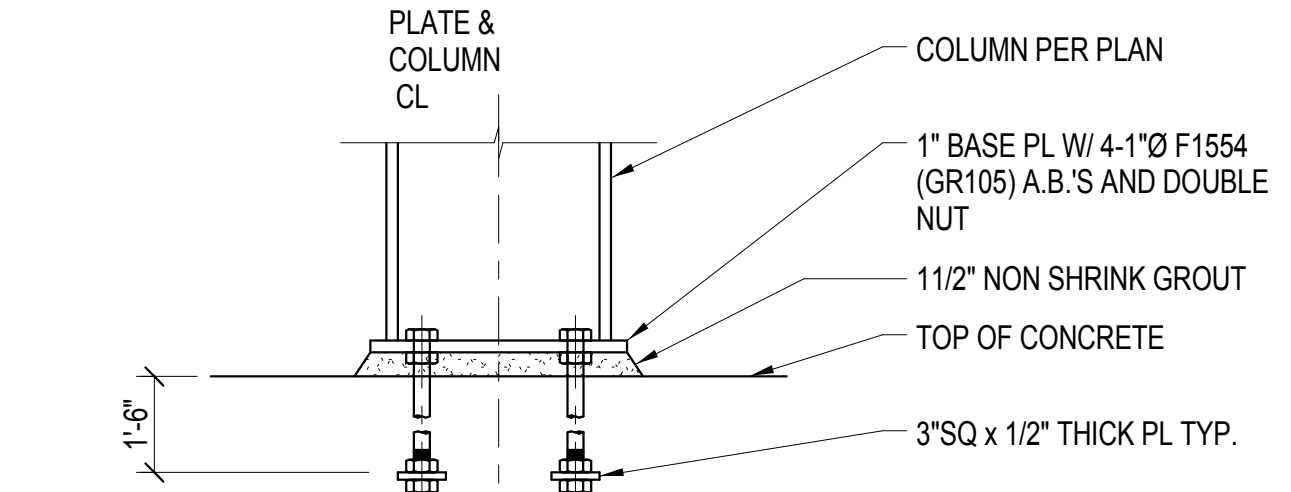
- CJP GROOVE WELD AT TOP AND BOTTOM FLANGES. AT BOTTOM FLANGE, REMOVE WELD BACKING, BACKGOUGE, AND ADD 5/16" MINIMUM FILLET WELD OR THE ROOT OPENING PLUS 1/16 IN. WHICHEVER IS LARGER. TOP FLANGE BACKING BAR MAY REMAIN, PROVIDED THAT THE BACKING BAR IS ATTACHED TO THE COLUMN BY A CONTINUOUS 5/16" FILLET WELD ON THE EDGE BELOW THE CJP GROOVE WELD. SEE DETAIL QUALITY ASSURANCE PLAN FOR DIMENSION OF WELD ACCESS HOLE.
- ASIS MINIMUM CONTINUOUS FILLET WELD UNDER BACKING TYPICAL.
- MINIMUM WIDTH TO MATCH BEAM FLANGE
- SHEAR TAB OF THICKNESS AS REQUIRED FOR ERECTION (3/8" MINIMUM THICKNESS) AND CAN BE USED AS BACKING BAR FOR BEAM WEB TO COLUMN FLANGE CJP WELD. SHEAR TAB LENGTH SHALL BE THE DISTANCE BETWEEN THE WELD ACCESS HOLES PLUS 1/4".
- WELD OF SHEAR TAB TO COLUMN FLANGE IS MINIMUM 3/16" FILLET ON THE SIDE OF THE BEAM WEB, AND A FILLET SIZED FOR ERECTION LOADS (5/16" MINIMUM) ON THE SIDEWAY FROM THE BEAM WEB. NO WELDING OF THE SHEAR TAB TO THE BEAM WEB IS REQUIRED.
- ERECTION BOLTS: NUMBER, TYPE, AND SIZE SELECTED FOR ERECTION LOADS.
- CJP GROOVE WELD FULL LENGTH OF WEB BETWEEN WELD ACCESS HOLES. GRIND END OF WELD SMOOTH AT WELD ACCESS HOLE.
- REMOVE WELD TABS TO 1/4" MAXIMUM FROM EDGE OF CONTINUITY PLATE, GRIND END OF WELD SMOOTH (500 U-IN), NOT FLUSH. DO NOT GOUGE COLUMN FLANGE.

NOTES:

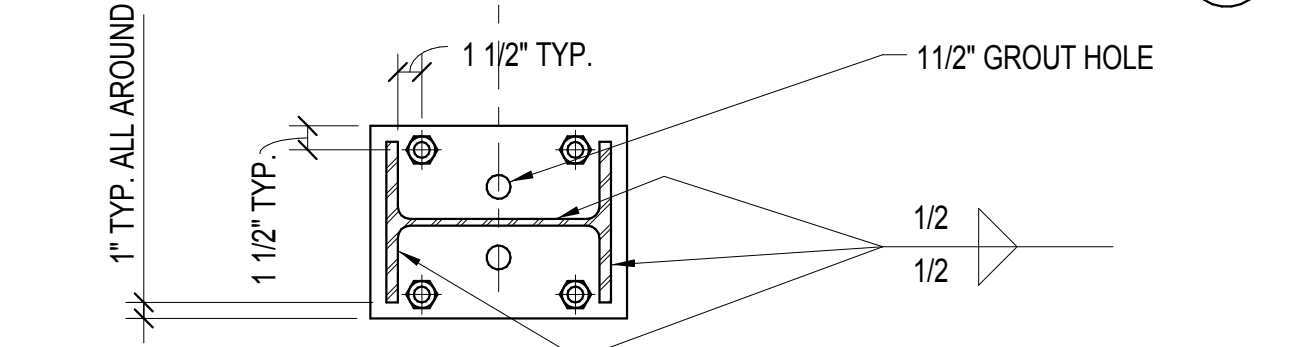
- ALL DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO FABRICATION.
- THIS PORTION OF BEAM IS "PROTECTED". SPECIAL CARE SHALL BE TAKEN TO COMPLY WITH THE FOLLOWING REQUIREMENTS:
 - WITHIN THE PROTECTED ZONE, DISCONTINUITIES CREATED BY FABRICATION OR ERECTION OPERATIONS, SUCH AS TACK WELDS, ERECTION AIDS, AIR-ARC GOUGING AND THERMAL CUTTING SHALL BE REPAIRED AS REQUIRED BY ENGINEER OF RECORD.
 - WELDED SHEAR STUDS AND DECKING ATTACHMENTS THAT PENETRATE THE BEAM FLANGE SHALL NOT BE PLACED ON BEAM FLANGES WITHIN THE PROTECTED ZONE. DECKING ARC SPOT WELDS AS REQUIRED TO SECURE DECKING SHALL BE PERMITTED.
 - WELDED, BOLTED, SCREWED OR SHOT-IN ATTACHMENTS FOR PERIMETER EDGE ANGLES, EXTERIOR FACADES, PARTITIONS, DUCT WORK, PIPING OR OTHER CONSTRUCTION SHALL BE PLACED WITHIN THE PROTECTED ZONE.

NOTES

- WELDING OF BEAMS AT STEEL FRAMES SHALL BE SEQUENCED PER THIS DETAIL
- PRIOR TO FABRICATION, THE GIRDER AND COLUMN FLANGES SHALL BE TESTED BY ULTRASONIC METHODS FOR POSSIBLE DEFECTS IN THE VICINITY OF GIRDER TO COLUMN CONNECTIONS AND COLUMN SPICE CONNECTIONS. ALL COLUMN FLANGE MATERIAL WITHIN THE GIRDER TO COLUMN JOINT AND FOR A DISTANCE OF NOT LESS THAN 6 INCHES BEYOND THE JOINT SHALL BE TESTED. ALL GIRDER FLANGE MATERIAL WITHIN 6 INCHES OF THE GIRDER OF COLUMN MOMENT CONNECTION SHALL BE TESTED.
- COMPLETE PENETRATION SHOP WELDING FOR MOMENT FRAME MEMBERS SHALL BE ULTRASONICALLY INSPECTED WHERE THE FABRICATION INVOLVED THE WELDING OF PLATES HAVING A THICKNESS IN EXCESS OF 1 1/2".
- AN APPROVED TESTING LABORATORY SHALL PERFORM ULTRASONIC TESTING OF COMPLETE PENETRATION FIELD WELDING. TESTING SHALL BE DONE IMMEDIATELY AFTER WELDING IS COMPLETED. A SECOND ULTRASONIC TEST SHALL BE PROVIDED NEAR THE END OF THE FIELD WELDING FOR AT LEAST 25% OF THE TYPICAL FIELD WELDING.



ELEVATION VIEW

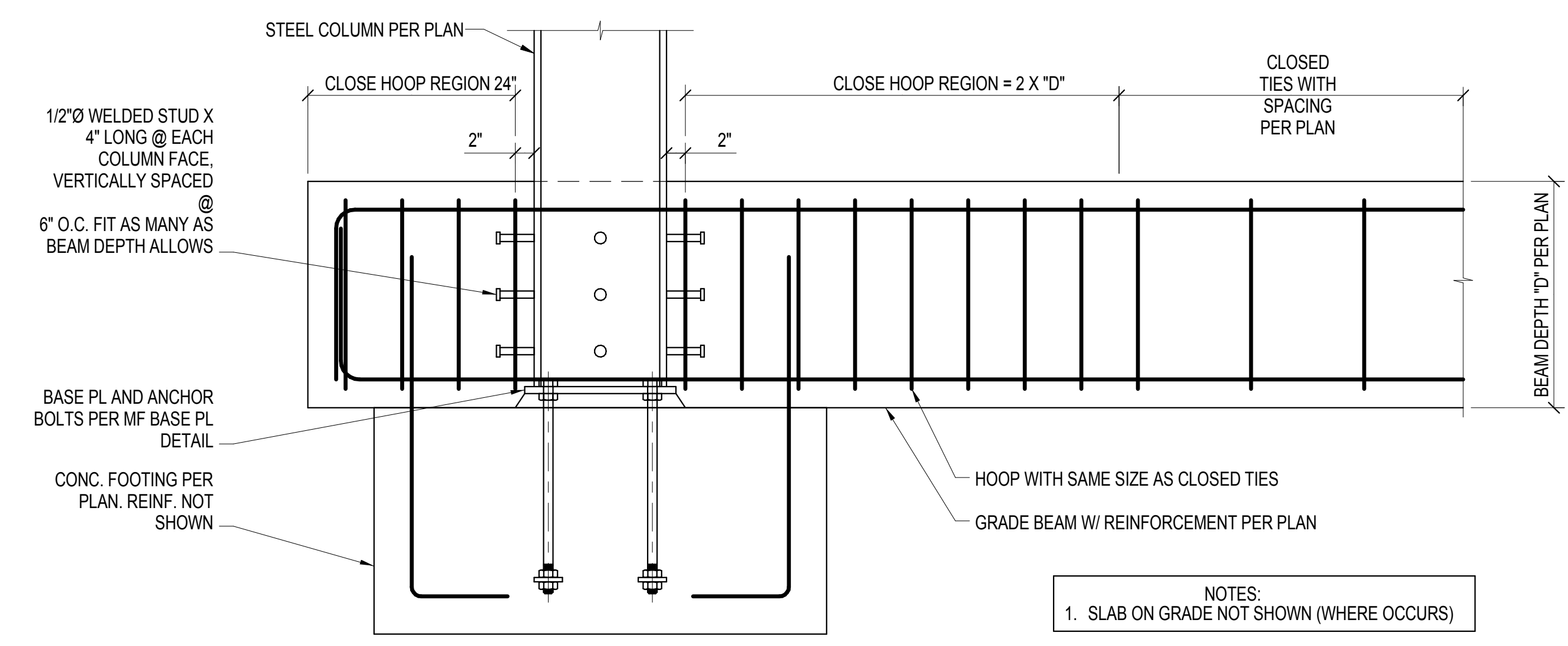


PLAN VIEW

3

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SMF BASE PLATE DETAIL



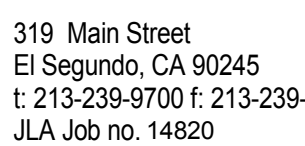
MOMENT FRAME COLUMN TO GRADE BEAM CONNECTION

14

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Consultant



Professional Seal

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Key Plan

Sheet Title

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Sheet number	

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M. VERIFY HIGH STRENGTH BOLTS ARE NOT WELDED OR DAMAGED BY PREHEATING.
N. VERIFY WASHERS ARE ALWAYS INSTALLED WITH ALL BOLTS, EXCEPT A-490 BOLTS WHICH REQUIRE WASHERS UNDER BOTH ELEMENTS.
O. VERIFY THAT ANY DEFICIENCY NOTED IN THE STRUCTURAL OBSERVATION REPORT FORM HAS BEEN CORRECTED.

7. THE WPS SHALL INCLUDE THE FOLLOWING:
- I. ALL APPLICABLE REQUIREMENTS FROM THE CODES, THE STANDARD QA PLAN, AND ANY OTHER INFORMATION NECESSARY TO PRODUCE THE WELDS.
 - II. LIST THE APPLICABLE REQUIREMENTS FROM THE CODES.
 - III. LIST THE WELDING JOINT DETAIL, INCLUDING JOINT TYPE, WELD TYPE, JOINT GEOMETRY, AND APPLICABLE DIMENSIONS. INDIVIDUAL WELD PASSES SHALL BE IDENTIFIED IN SKETCHES AND NUMBERED TO IDENTIFY THE SEQUENCE OF THEIR DEPOSITION (SEE DETAIL 8 ON SHEET 2 FOR EXAMPLE). THE MAXIMUM BEAD WIDTH SHALL BE IDENTIFIED FOR EACH WELD THICKNESS AND BEAD WIDTHS. IN NO CASE SHALL LAYER THICKNESSES EXCEED 1/4 INCH NOR SHALL THE MAXIMUM BEAD WIDTHS EXCEED 5/8 INCH.
 - IV. LIST THE WELDING PROCESSES.
 - V. SPECIFY THE REQUIRED WELDING POSITIONS.
 - VI. LIST THE FILLER METAL TYPES AND POSITIONS FOR ELECTRODE SPECIFICATION AND CLASSIFICATION (SEE TABLE 7 ON MF QUALITY ASSURANCE TABLE), AS WELL AS INFORMATION REGARDING SHIELDING MATERIAL TO BE USED.

- VII. INDICATE THE MINIMUM PREHEAT AND INTERPASS TEMPERATURES (SEE TABLE 4 ON MF QUALITY ASSURANCE TABLE) AND POST WELD HEAT TREATMENT PER PART V ITEM 5.
- VIII. LIST APPLICABLE ELECTRICAL CHARACTERISTICS FOR THE WELDING PROCESS EMPLOYED. WPS SHALL CLEARLY INDICATE THE SPECIFIC VALUES REQUIRED FOR EACH WELDING PASS. THESE ELECTRICAL CHARACTERISTICS SHALL INCLUDE AT MINIMUM THE FOLLOWING:
- (1) ELECTRODE DIAMETER (SEE TABLE 5 ON MF QUALITY ASSURANCE TABLE),
 - (2) TYPE OF CURRENT, AND ACCEPTABLE RANGES OF CURRENT MEASURED IN AMPERAGE,
 - (3) VOLTAGE,
 - (4) TRAVEL SPEED (RPM), AND
 - (5) AMPERAGE, VOLTAGE AND ELECTRODE EXTENSION (AS APPLICABLE)
- IX. A COPY OF THE ELECTRODE MANUFACTURER'S TECHNICAL RECOMMENDATIONS.
- X. A COPY OF THE ELECTRODE MANUFACTURER'S TECHNICAL INFORMATION WITH ID # LISTED SHALL BE ATTACHED TO THE WPS.
- Q. WELD JOINTS NOT CONFORMING TO AWS CHAPTER 3 MUST BE TESTED BY AN APPROVED TESTING AGENCY, ACCEPTED BY THE ENGINEER OF RECORD, AND APPROVED BY THE MATERIAL CONTROL SECTION BEFORE THE WELD IS PERFORMED. MATERIAL CONTROL SECTION CAN BE CONTACTED AT:
- LADDS MATERIAL CONTROL SECTION
221 N. FIGUEROA ST., SUITE 154A
LOS ANGELES, CA 90012
(213) 482-0380 OR 1-888-LA-4BULD

- R. NOTIFY THE CONTRACTOR, ENGINEER OF RECORD, AND CITY BUILDING INSPECTOR OF ANY DEVIATIONS OR NON-COMPLIANCE WITH THE APPROVED WPS, PLANS OR SPECIFICATIONS.
- S. "DEPUTY INSPECTION REPORT FORM B-94" SHALL BE SUBMITTED ON A WEEKLY BASIS TO THE CITY BUILDING INSPECTOR AND ENGINEER OF RECORD, UNLESS DETERMINED OTHERWISE BY THE CITY BUILDING INSPECTOR.
- T. DURING THE EXECUTION OF THE WORK, THE DEPUTY INSPECTOR SHALL NOT UNDERTAKE OR ENGAGE IN ANY OTHER TASK OR OCCUPATION WHICH WILL INTERFERE WITH THE PROPER PERFORMANCE OF THE DUTIES OF SUCH INSPECTION.

- ELECTRODE STORAGE AND ATMOSPHERIC EXPOSURE**
- A. ELECTRODES ARE CONSIDERED TO BE EXPOSED TO THE ATMOSPHERE IF:
- 1. THE MANUFACTURER'S SEALED ELECTRODE CONTAINERS OR PACKAGINGS ARE OPENED OR DAMAGED, OR
 - 2. OUTSIDE OF BAKING OR STORAGE OVENS.
- B. MODIFICATION OR LUBRICATION OF ELECTRODES ARE NOT PERMITTED.
- C. DRYING OF ELECTRODES IN BAKING OR STORAGE OVENS ARE PERMITTED AS RECOMMENDED BY THE MANUFACTURER.
- D. ELECTRODES SHALL BE IDENTIFIED TO FACILITATE MONITORING OF TOTAL ATMOSPHERIC EXPOSURE.
- E. STORAGE AND ATMOSPHERIC EXPOSURE OF AWS A5.1:91 AND A5.96:90 LOW-HYDROGEN SMAW ELECTRODES SHALL BE IN ACCORDANCE WITH AWS SECTION 5.3.2.
- F. FCAW ELECTRODES NOT CONSUMED WITHIN 24 HRS OF ACCUMULATED ATMOSPHERIC EXPOSURE TIME SHALL NOT BE USED. MANUFACTURER'S RECOMMENDATIONS THAT SHOW THAT DRYING EFFECTIVELY REMOVES MOISTURE AND RESTORES ELECTRODES TO THEIR DESIGNATED DIFFUSIBLE HYDROGEN LEVEL ARE PERMITTED.
- G. FCAW ELECTRODE WELDING SUSPENDED MORE THAN 8 HRS SHALL BE REMOVED FROM THE BAKING AND STORAGE OVEN. ELECTRODE MORE BAKING OR STORAGE OVEN MAINTAINED AT A TEMPERATURE BETWEEN 250° AND 550° F, OR AS RECOMMENDED BY THE ELECTRODE MANUFACTURER.

- PLASTIC HINGING ZONE PROTECTION
- A. THE PLASTIC HINGING ZONE SHALL BE IDENTIFIED DIAGRAMMATICALLY, AS ILLUSTRATED IN DETAIL 8 ON SHEET 2, ON THE STRUCTURAL PLANS BY THE ENGINEER OF RECORD.
- B. THE ENGINEER OF RECORD AND CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING SHOP DRAWINGS OF ALL RELEVANT TRADES TO ENSURE COMPLIANCE. THIS SHALL BE DISCUSSED AND DOCUMENTED IN PRE-CONSTRUCTION MEETINGS.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A PROGRAM TO ENSURE THAT ALL WORKERS ON THE PROJECT, INCLUDING THEIR SUBCONTRACTORS, ARE AWARE OF AND UNDERSTAND THIS REQUIREMENT. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY CAUSE THE REPLACEMENT OF STEEL.

- E. NOTE: AS ILLUSTRATED IN DETAIL 8 ON SHEET 2, SHALL BE PROMINENTLY PLACED ON THE STRUCTURAL PLANS (GENERAL, NOTE SHEET AND ADJACENT TO MOMENT FRAME DETAIL) AND THE CONSTRUCTION DOCUMENTS OF ALL TRADES.
- F. SIGNAGE SHALL BE REPAIRED IF THE SIGN OR WATER DRAIN SIGN BEFORE PROJECT COMPLETION. THIS SIGN AND IDENTIFICATION OF THE PLASTIC HINGING ZONE SHALL BE MAINTAINED DURING CONSTRUCTION, AND MAY REQUIRE REPAIR AFTER OPERATIONS SUCH AS FIREPROOFING.
- G. SIGNAGE SHALL BE AFFIXED TO THE SIGN AND LOCATED WITHIN THE PLASTIC HINGING ZONE. THE BUILDING INSPECTOR MAY ACCEPT ALTERNATE METHODS OF ATTACHING THE "WARNING SIGN" TO THE PLASTIC HINGING ZONES.

7. ADDITIONAL CHARPY V-NOTCH TOUGHNESS (NOT REQUIRED FOR OMF)
WELDS AT THE LOCATIONS INDICATED BELOW SHALL BE MADE WITH FILLER METAL
HAVING A CVN TOUGHNESS OF 20 FT-LBF AT -20°F AND 40 FT-LBF AT 70°F AS
DETERMINED BY TEST PROCEDURE DESCRIBED IN THE AISC SEISMIC APPENDIX
X "WELD METAL / WELDING PROCEDURE SPECIFICATION TOUGHNESS VERIFICATION
TEST".
- A. BEAM FLANGES TO COLUMNS,
 - B. SINGLE PLATE SHEAR CONNECTIONS TO COLUMNS,
 - C. BEAM WEBS TO COLUMNS, AND
 - D. COLUMN SPLICES.

8. NON-DESTRUCTIVE TESTING (NDT) REQUIREMENTS
- A. THE MINIMUM NON-DESTRUCTIVE TESTING AT EACH WELD JOINTS OR PARTS SHALL BE CONDUCTED AT THE LOCATIONS AND FREQUENCIES AS SPECIFIED IN TABLE 1 AND TABLE 3 ON MP QUALITY ASSURANCE TABLE RESPECTIVELY.
- B. A QUALIFIED PERSON SHALL BE TASKED BY THE CONTRACTOR, THE CONTRACTOR ENGINEER OF RECORD, DEPUTY INSPECTOR, AND CITY BUILDING INSPECTOR WITH THE FOLLOWING INFORMATION:
- I. DOCUMENT THE ACCEPTED AND REJECTED WELDS, PARTS, OR JOINTS
 - II. IDENTIFY THE TESTED WELD BY PIECE MARK AND LOCATION IN THE PIECE
 - III. IDENTIFY THE TESTED WELD LOCATION IN THE STRUCTURE
 - IV. NDT TECHNICIAN SHALL PERFORM THE FOLLOWING TASKS:
 - A. COORDINATE THE NDT SCOPE AND SCHEDULE WITH THE DEPUTY INSPECTOR
 - B. PERFORM NDT IN A TIMELY MANNER (SO AS NOT TO HINDER CONSTRUCTION WORK) AND TO DETECT WELDING PROBLEMS SOON AFTER OCCURRENCE SO AS TO CORRECTIVE ACTION CAN BE TAKEN BY THE CONTRACTOR
 - C. MARK THE INSPECTED AND ACCEPTED WELDS, PARTS, AND JOINTS WITH A DISTINGUISHING MARK OR DIE STAMP

- I. THE RATE OF UT TESTING ON GI C/POORE WELDS MAY BE REDUCED IF APPROVED BY THE ENGINEER OF RECORD AND THE DEPARTMENT. THE NOT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR MAY BE REDUCED TO 5% PROVIDED THE REJECT RATE IS DEMONSTRATED TO BE 5% OR LESS OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING AT LEAST 40 COMPLETED WELDS FOR A JOB SHALL BE MADE FOR SUCH REDUCTION EVALUATION.
- II. THE RATE OF MT TESTING ON GI C/POORE WELDS MAY BE REDUCED IF APPROVED BY THE ENGINEER OF RECORD AND THE DEPARTMENT. THE MT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR MAY BE REDUCED TO 5% PROVIDED THE REJECT RATE IS DEMONSTRATED TO BE 5% OR LESS OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING AT LEAST 40 COMPLETED WELDS FOR A JOB SHALL BE MADE FOR SUCH REDUCTION EVALUATION. THIS REDUCTION IS NOT PERMITTED ON WELDS IN KAREDA, AT REPAIR SITES, WELD TAB AND BACKING REMOVAL SITES AND ACCESS HOLES.
- III. REJECT RATE SHALL MEAN THE NUMBER OF WELDS CONTAINING REJECTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS TESTED.

9. DOCUMENTATIONS
THE REPORTS LISTED IN TABLE 1 ON MF QUALITY ASSURANCE TABLE SHALL BE SUBMITTED TO THE CITY BUILDING INSPECTOR IN A TIMELY MANNER.

V. WELDING PROCEDURES

1. BOTTOM BEAM FLANGE MOMENT CONNECTION WELDING
WHERE WELDING OF THE BOTTOM BEAM FLANGE TO THE COLUMN FLANGE IS IN THE FLAT WELDING POSITION, WELDING SHALL BE COMPLETED WITH THE FOLLOWING SEQUENCE:

- [illegible]

2. SEQUENCE FOR WELDING AT MULTIPLE LOCATIONS
WHEN WELDING OCCURS AT MULTIPLE LOCATIONS OF WELDED STEEL MOMENT FRAME CONNECTIONS, THE FOLLOWING SEQUENCE SHALL BE FOLLOWED:
- A. WELD BOTH TOP AND BOTTOM FLANGES PRIOR TO ANY SUPPLEMENTAL WELDING TO THE BEAM WEB OR SHEAR TAB.
 - B. ENGINEER OF RECORD SHALL REVIEW AND APPROVE ALL FIELD WELDING SEQUENCES PRIOR TO THE START OF WORK.
 - C. FIELD WELDING SHALL BE COMPLETED AT ALL BOLTS SHALL OCCUR AFTER FIELD WELDING OF BEAM FLANGES TO COLUMN FLANGE.
 - D. HIGH STRENGTH BOLTS SHALL BE IN THE SNUG TIGHT CONDITION PRIOR TO WELDING.
 - E. NOTWITHSTANDING AISC LRFD SPECIFICATION SECTION J1.9 TO THE CONTRARY, THE TENSILE STRENGTH OF THE BOLTS SHALL BE FULLY TENSIONED UPON COMPLETION OF ALL WELDING ACTIVITIES.

3. WELDING TECHNIQUE
- A. STRINGER BEADS SHALL BE USED DURING ALL WELDING OPERATIONS. MAXIMUM BEAD WIDTH, BEAD THICKNESS, AND LAYER THICKNESS SHALL BE CONSIDERED. WEAVING IS NOT PERMITTED, EXCEPT WHEN THE WPS APPROVED BY THE ENGINEER OF RECORD LIMITS ELECTRODE OSCILLATION TRANSVERSE TO THE V-Axis TO A MAXIMUM OF:
1. 3D FOR 1G/1F, 2G/2F, AND 4G/4F WELD POSITIONS, OR
- 5D FOR THE 3G/3F POSITION, WHERE D = ELECTRODE DIAMETER.
- B. WELDING LAYERS SHOULD PROGRESS FROM THE FACE OF THE COLUMN FLANGE OUTWARD TOWARD THE GROOVE FACE OF THE BEAM FLANGE AS ILLUSTRATED DETAIL 6 ON SHEET 2.

- A. PREHEAT AND INTERPASS TEMPERATURE
 - i. THE MINIMUM PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS IN TABLE 4 OF MF QUALITY ASSURANCE TABLE SHALL BE OBSERVED. SPECIAL ATTENTION SHALL BE GIVEN TO AWS SECTION 3.5.1 AND SECTION 5.6 FOR THE THICKNESS OF THE BASE METAL TO BE WELDED.
- B. PREHEAT AND ALL SUBSEQUENT INTERPASS TEMPERATURES SHALL BE MAINTAINED DURING THE WELDING OPERATION FOR A DISTANCE AT LEAST EQUAL TO THE THICKNESS OF THE THICKER WELDED PART, BUT NOT LESS THAN 3", IN ALL DIRECTIONS FROM POINT OF WELDING.
- C. WHEN METALS ARE OF DIFFERENT THICKNESS, THE HIGHER MINIMUM PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS OF THE THICKER PLATE SHALL GOVERN.
- D. MAXIMUM PREHEAT AND INTERPASS TEMPERATURE SHALL NOT EXCEED THE LESSER OF:
 - i. 550°F OR
 - ii. THE MAXIMUM TEMPERATURE RECOMMENDED BY THE MANUFACTURER.

- POST WELD HEAT TREATMENT
UNLESS SPECIFIED OTHERWISE IN AN APPROVED WPS, THE MINIMUM POST WELD HEAT
TREATMENT SHALL BE PROVIDED AS FOLLOWS:
- APPLY TEMPERATURE IN THE 400°F TO 600°F RANGE IMMEDIATELY AFTER COOLING TO 100°F OR LOWER. COOLING SHALL BE FROM COOLING BELOW MINIMUM PREHEAT AND INTERPASS TEMPERATURE.
 - MAINTAIN TEMPERATURE FOR APPROXIMATELY 1 HOUR PER INCH OF THICKNESS OF WELD METAL OR 2 HOURS, WHICHEVER IS LESS.
 - CONFORM TO THE SPECIFICATIONS IN AWS SECTION 5.14 AND SECTION 5.8 SHOULD BE CAREFULLY BE CONSIDERED WHEN APPLYING POST WELD HEAT TREATMENT.
- ALTERNATIVELY, THE USE OF INSULATING BLANKETS AFTER THE COMPLETION OF LIEU OF POST WELD HEAT TREATMENT MAY BE PERMITTED TO CONTROL THE COOL WELD CONNECTION TO AMBIENT TEMPERATURE IF RECOMMENDED BY THE ENGINEER OR APPROVED BY THE CITY BUILDING INSPECTOR, UNLESS REQUIRED OTHERWISE BY AN APPROVED WPS.

VI. WELDING AND FABRICATION DETAILS

- A. BASE METAL JOINT PREPARATION
1. BASE METAL PREPARATION SHALL BE IN COMPLIANCE WITH AWS SECTION 5.15.
2. ALL BEAM FLANGE TO COLUMN FLANGE WELDS ARE TO BE MADE WITH AN AWS
3. BEVEL, FIT-UP AND DETAIL TOLERANCES SHALL BE AS REQUIRED BY THE SELECTED PREQUALIFIED WELDED JOINT DETAIL.
4. WELDER PREQUALIFICATION
5. C/P GROOVE WELDED JOINT DETAIL
6. DETAIL AS ILLUSTRATED IN DETAIL 14 ON SHEET 3 AND THE FOLLOWING:
7. USE SINGLE BEVEL C/P GROOVE WELDS WITH AN A307 GROOVE ANGLE OR DOUBLE BEVEL C/P GROOVE WELDS WHEN FLANGE THICKNESS EXCEEDS 1-1/2 INCH.
8. "FIT-UP" AND "AS DETAIL" SHALL BE THE MAXIMUM TOLERANCES
9. MEET ALL PREQUALIFIED WPS VARIABLES IN THE TABLES ON MAXIMUM ASSURANCE

- WELD ACCESS HOLES
- A. WHERE WELD ACCESS HOLES ARE PROVIDED, THEY SHALL BE DETAILED AS ILLUSTRATED IN DETAIL 12 ON SHEET 3.
- B. NOTCHES AND GOUGES SHALL BE REPAIRED FOLLOWING A WPS APPROVED BY THE ENGINEER OF RECORD.
- C. WELD ACCESS HOLES SHALL BE PREPARED BY GRINDING TO A SUITABLE FINISH IN ACCORDANCE WITH AISC LRFD SPECIFICATION SECTION J1.6 AND PROVIDED WITH A MINIMUM RADIUS OF 3/8 INCH AS ILLUSTRATED IN DETAIL 9 ON SHEET 2.

- A. BACKING BAR USED IN CONNECTIONS WITH A CJP GROOVE WELD OF BEAM FLANG TO COLUMN FLANGE SHALL BE REMOVED EXCEPT THAT TOP FLANGE BACKING BAR ATTACHED TO THE COLUMN BY A CONTINUOUS FILLET WELD ON THE EDGE BELOW CJP GROOVE WELD NEED NOT BE REMOVED.**
- B. BACKING BAR SHALL BE QUALIFIED USING THE ROOT PASS SHALL BE BACKGROUNDED SOUND WELD METAL, AND BACK WELDED. A REINFORCING FILLET WELD WITH A MINIMUM LEG SIZE OF 5/16 INCH OR THE ROOT OPENING PLUS 1/16 INCH, WHICHEVER IS LARGER, SHALL BE PROVIDED. THE REINFORCING FILLET WELD NEED BE GRINDING.**
- C. WHEN BACKING BAR IS OTHER THAN AWS TABLE 3.1 AND SECTION 5.2.2 APPROVED BASE METAL IS USED, THE FOLLOWING SHALL APPLY:**
- I. CERAMIC, FLUX OR GLASS TAP MAY BE USED PROVIDED THE MANUFACTURER'S RECOMMENDATIONS ARE FOLLOWED.**
 - II. WHEN A NON-METALLIC BACKING BAR IS USED, THE WPS AND THE WELDER SHALL BE QUALIFIED USING THE TYPE OF BACKING BAR INTENDED FOR WELDING.**
 - III. NONFERROUS METALLIC (E.G. COPPER) BACKING MATERIALS ARE NOT PERMITTED.**

- W. WELD TAB
- A. WELD TABS SHALL BE ALIGNED PARALLEL TO THE JOINT PREPARATION.
 - B. NO WELD DAMS ARE ALLOWED.
 - C. WELD TABS SHALL EXTEND BEYOND THE EDGE OF THE JOINT A MINIMUM DISTANCE OF 1/4" TO THE PART THICKNESS, BUT NOT LESS THAN ONE INCH.
 - D. WELD TAB SHALL BE REMOVED UPON COMPLETION OF THE WELDED JOINT AS FOLLOWS:
 - I. NO MORE THAN 1/8" BEYOND THE EDGE OF THE JOINT SHALL REMAIN, EXPOSED AT CONTINUITY PLATE WHERE UP TO 1/4" INCH IS ACCEPTABLE.
 - II. EDGES OF THE WELD TAB SHALL BE FINISHED TO A SURFACE ROUGHNESS VALUE OF 500 MICRO INCH OR BETTER. GRINDING TO A FLUSH CONDITION IS NOT REQUIRED.
- 7.11. EXEMPTIONS

- REDUCTION FROM CERTAIN QUALITY ASSURANCE COMPONENTS OF THIS STANDARD PLAN, AS LISTED IN PART VII ITEM 2, ARE PERMITTED FOR THE FOLLOWING BUILDINGS STRUCTURES:
- A. ONE OR TWO FAMILY DWELLINGS NOT MORE THAN 1 STORY IN HEIGHT AND 2,500 S.F. FLOOR AREA,
 - B. BUILDINGS OR STRUCTURES ACCESSORY TO RESIDENTIAL USES (SUCH AS CARPORT, STORAGE, GARAGE), AND
 - C. MISCELLANEOUS STRUCTURES (SUCH AS WALKWAY, CANOPY, PATIO COVER, GAZEBO, STORAGE RACK).

- BUILDINGS OR STRUCTURES, AS LISTED IN PART VII ITEM 1, ARE EXEMPT FROM PROVIDING THE FOLLOWING QUALITY ASSURANCE COMPONENTS:
- A. ELECTRODE STORAGE AND ATMOSPHERIC EXPOSURE, PART IV ITEM 5(F) AND 5(G).
 - B. PLASTIC HINGING ZONE PROTECTION, PART IV ITEM 6.
 - C. ADDITIONAL CVN NOTCH TOUGHNESS TESTING, PART IV ITEM 7.
 - D. NON-DESTRUCTIVE TESTING, PART IV ITEM 8.
 - E. PREHEAT AND INTERPASS TEMPERATURE, PART V ITEM 4.
 - F. POST WELD HEAT TREATMENT, PART V ITEM 5.

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Project
**Los Angeles
Lakers
Headquarters**

2275 Mariposa, El Segundo, California 90245

Consultant



319 Main Street
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JLA Job no. 14820

Professional Seal



No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package	12/12/14
3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
5	Foundation & Utilities Permit	08/12/15
6	90% Steel Package	08/28/15
7	Plan Check	09/18/15
8	Back-Check #1 - Frdn & Utility	10/09/15
9	ASI 004 (Fnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title

**MF QUALITY ASSURANCE
TABLE AND DETAILS**

Project Number

2014-015

Sheet number

S-522

MOMENT FRAME QUALITY ASSURANCE: TABLES

Table 5. PREQUALIFIED WPS REQUIREMENTS

VARIABLE	POSITION OF WELD	WELD TYPE	(1, 2, 3)	FCAW
Maximum Electrode Diameter	Flat (F)	Fillet (4)	5/16 in.	1/8 in.
		Groove (4)	1/4 in.	
		Root Pass	3/16 in.	
	Horizontal (H)	Fillet	1/4 in.	1/8 in.
		Groove	3/16 in.	
Maximum Current	Vertical (V)	All	3/16 in.	3/32 in.
	Overhead (OH)	All	3/16 in.	5/64 in.
	All	Fillet		
	All	Groove weld root pass with opening	Within the range of recommended operation by the filler metal manufacturer and a WPS approved by engineer of record.	Within the range of recommended operation by the filler metal manufacturer and a WPS approved by engineer of record.
		Groove weld root pass without opening		
		Groove weld fill passes		
Maximum Root Pass Thickness	Flat (F)	All	3/8 in.	3/8 in.
	Horizontal (H)	All	5/16 in.	5/16 in.
	Vertical (V)	All	1/2 in.	1/2 in.
	Overhead (OH)	All	5/16 in.	5/16 in.
	All	All	3/16 in.	1/4 in.
Maximum Fill Pass Thickness	Flat (F)	Fillet	3/8 in.	1/2 in.
	Horizontal (H)	Fillet	5/16 in.	3/8 in.
Maximum Single Pass Fillet Weld Size	Vertical (V)	Fillet	1/2 in.	1/2 in.
	Overhead (OH)	Fillet	5/16 in.	5/16 in.
Maximum Single Pass Layer Width	All	Root opening >1/2 in.	Not applicable.	Split layers
		Any layer of width w		(6)

NOTES:

- Applicable provisions of AWS D1.1/D1.1M:2002 Section 3 "Prequalification of WPSs" must be maintained for prequalified status of SMAW and FCAW WPSs.
- Refer to Detail 13 on Sheet 3 for diagram of weld pass sequence.
- Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M:2002, Miami: American Welding Society, Table 3.7.
- Except root passes.
- See AWS D1.1/D1.1M:2002, Section 3.7.2, for width-to-depth limitations.
- In the F, H, or OH positions for non-tubulars, split layers when the layer width w > 5/8 in. In the V position for non-tubulars or the 5G or 6G for tubulars, split layers when the width w > 1 in.

Table 6. STRUCTURAL OBSERVATION CHECKLIST

STRUCTURAL OBSERVATION PROGRAM (Steel Moment Frame for Seismic Application)
☐ Orientation and placement of connected components.
☐ Removal of backing bars, as required on the plans.
☐ Removal of runoff tabs, as required on the plans.
☐ Presence of continuity plates, as required on the plans.
☐ Presence of doubler plates, as required on the plans.
☐ Configuration and finish of weld access holes, if applicable.
☐ Contour of RBS profile, if applicable.
☐ Verify that no welded attachments occur in the plastic hinging region.
☐ Review NDT and deputy inspection reports for general compliance.

NOTES:

- Weld qualities shall be verified by the Deputy Inspector.
- The structural observations listed in this Table are in addition to the structural observations that may be required on the structural plans.

Table 7. PREQUALIFIED BASE METAL - FILLER METAL COMBINATIONS FOR MATCHING STRENGTH

BASE METAL		FILLER METAL	
Group	Steel Specification	Welding Process	Electrode Specification
I	ASTM A36 < 3/4 in.	SMAW	A5.1 E70XX
			A5.5 (6) E70XX-X
			A5.20 (5) E70XT-X, E7XT-XM
II	ASTM A36 ≥ 3/4 in. ASTM A572 Grade 50 ASTM A913 Grade 50 ASTM A992	FCAW	A5.29 (6) E70XTX-X, E7XTX-XM
			A5.1 E7015, E7016, E7018, E7028
			A5.5 (6) E70XX-X
III	ASTM A36 ≥ 3/4 in. ASTM A572 Grade 50 ASTM A913 Grade 50 ASTM A992	FCAW	A5.20 (5) E70XT-X, E7XTX-XM
			A5.29 (6) E70XTX-X, E7XTX-XM
			A5.1 E7015, E7016, E7018, E7028
RELATIONSHIP	BASE METAL(S)	FILLER METAL STRENGTH RELATIONSHIP REQUIRED	
Matching	Any steel to itself or any steel to another in the same group	Any filler metal listed in the same group	
	Any steel in one group to any steel in another	Any filler metal listed for a lower strength group [SMAW electrodes shall be the low-hydrogen classification]	
Under-Matching	Any steel to any steel to any group	Any filler metal listed for a lower strength group [SMAW electrodes shall be the low-hydrogen classification]	

NOTES:

- The base metal/filler metal strength relationships above shall be used to determine whether matching or under-matching filler metals are required. Refer to AWS D1.1/D1.1M:2002, Section 3.3.
- Preheating of joints involving base metals of different groups shall be in conformance with the requirements applicable to the higher strength group.
- When welds are to be stress-relieved, the deposited weld metal shall not exceed 0.05 percent vanadium.
- Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M:2002, Miami: American Welding Society, Table 3.1.
- FCAW electrodes with the -2, -2M, -3, -4, -7, -10, -11, -13, -14, G, -GS suffix shall be excluded and electrodes with the -11 suffix shall be excluded for thicknesses greater than 1/2 in.
- Filler metals of alloy group B3, B3L, B4, B4L, B5, B5L, B6, B6L, B7, B7L, B8, B8L, B9, or any BXH grade in AWS A5.5 or A5.29 are not prequalified for use in the as-weld condition.

Table 1. REPORTS TO BE SUBMITTED TO THE CITY BUILDING INSPECTOR

PREPARED BY	TYPE OF REPORT
1. Structural Observer(s)	Structural Observation Reports
2. Deputy Inspector(s)	Deputy Inspection Reports
3. NDT Technician(s)	Non-Destructive Testing Reports

Table 2. NON-DESTRUCTIVE TEST LOCATIONS

REQUIRED LOCATIONS	OMF	IMF	SMF
1. CJP Groove Weld When welding of doubler plates, continuity plates, or stiffeners has been performed in the k-area, the web shall be tested for cracks using magnetic particle testing. The magnetic particle test area shall include the k-area base metal within 3 in. (75 mm) of the weld.	B	A	A
2. "K" Area When welding of doubler plates, continuity plates, or stiffeners has been performed in the k-area, the web shall be tested for cracks using magnetic particle testing. The magnetic particle test area shall include the k-area base metal within 3 in. (75 mm) of the weld.	C	B	B
3. Beam Cope and Access Hole At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested using magnetic particle testing, when the flange thickness exceeds 1-1/2 in. (38 mm) for rolled shapes.	C	B	B
4. Reduced Beam Section Repair Magnetic particle testing shall be performed on any weld and adjacent area of the RBS plastic hinge region that has been repaired by welding, or on the base metal of the RBS plastic hinge region if a sharp notch has been removed by grinding.	B	B	A
5. Base Metal Lamellar Tearing and Laminations at CJP Groove Weld Base metal thicker than 1-1/2 in. (38 mm) shall be ultrasonically tested for discontinuities behind and adjacent to the fusion line when the base metal is loaded in tension in the through thickness direction in tee and corner joints and the connected material is greater than 3/4 in. (19 mm). Any base metal discontinuities found within 1/4 of the steel surface shall be accepted or rejected on the basis of criteria of AWS D1.1 Table 6.2, where t is the thickness of the part subjected to the through-thickness strain.	B	B	A
6. End of Weld at Weld Tab Removal Site Magnetic particle testing shall be performed on the end of welds from which the weld tabs have been removed, except for continuity plate weld tabs.	C	B	B
7. PJP Groove Weld Ultrasonic testing shall be performed on PJP groove welds used in column splices with an effective throat of 3/4 in. (19.1 mm) thick or greater.	C	B	A

NOTE: A, B, and C are the frequencies of non-destructive tests listed in Table 3.

Table 3. NON-DESTRUCTIVE TEST FREQUENCY

	Frequency Designation		
	A	B	C
Ultrasonic Testing (UT)	100% of joints	50% of joints	25% of joints
Magnetic Particle Testing (MT)	50% of joints	25% of joints	Not Required

NOTES:

- Refer to Table 2 for locations of non-destructive testing.
- Rate of non-destructive testing may be reduced as permitted in Sheet 1, Part IV, Item 8(d).

Table 4. PREQUALIFIED MINIMUM PREHEAT AND INTERPASS TEMPERATURE

STEEL SPECIFICATION	WELDING PROCESS	THICKNESS OF THICKEST PART AT POINT OF WELDING (in.)	MINIMUM PREHEAT AND INTERPASS TEMPERATURE (°F)
ASTM A36	SMAW with low-hydrogen electrodes, FCAW	1/8 to 3/4 incl.	32
ASTM A572 Grade 50		Over 3/4 to 1-1/2 incl.	50
ASTM A913 Grade 50		Over 1-1/2 to 2-1/2 incl.	150
ASTM A992		Over 2-1/2	225

NOTES:

- Surfaces to be welded and surfaces adjacent to welds shall be free of moisture pursuant to AWS D1.1/D1.1M:2002 Section 5.15. Use a higher preheat temperature from this Table to remove moisture.
- Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M:2002, Miami: American Welding Society, Table 3.2.

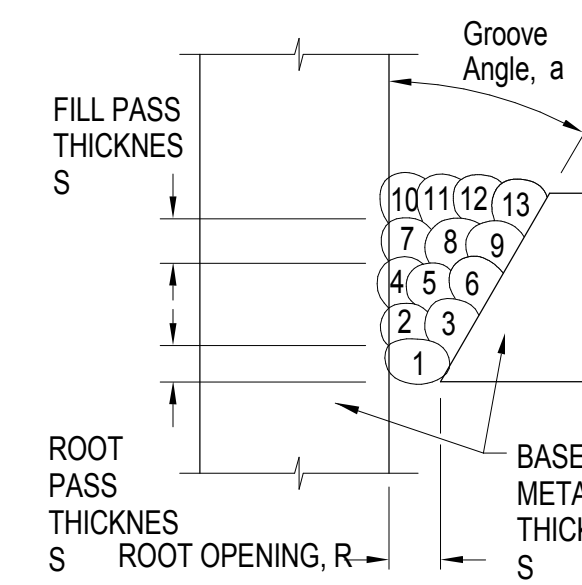
NOTES:

- BEVEL AS REQUIRED BY A SELECTED AWS PREQUALIFIED CJP GROOVE WELDED JOINT DETAIL.
- LARGER OF t_{bf} OR $1/2"$ (PLUS $1/2 t_{bf}$ OR MINUS $1/4 t_{bf}$).
- $3/4 t_{bf}$ TO t_{bf} , 3/4" MINIMUM (± 1/4").
- 3/8" MINIMUM RADIUS (PLUS NOT LIMITED, OR MINUS 0).
- $3 t_{bf}$ (± 1/2").
- TOLERANCES SHALL NOT ACCUMULATE TO THE EXTENT THAT THE ANGLE OF THE ACCESS HOLE CUT TO THE FLANGE SURFACE EXCEED 25°.
- WELD ACCESS HOLE SHALL BE GROUND SMOOTH TO A SURFACE ROUGHNESS VALUE NOT TO EXCEED 500 MICRO INCH; AND SHALL BE FREE OF NOTCHES AND GOUGES.

(FROM FEMA 350 "RECOMMENDED SEISMIC DESIGN CRITERIA FOR NEW STEEL MOMENT FRAME BUILDING" FIGURE 3-6)

DOUBLER PLATE WELDS TO CONTINUITY PLATE

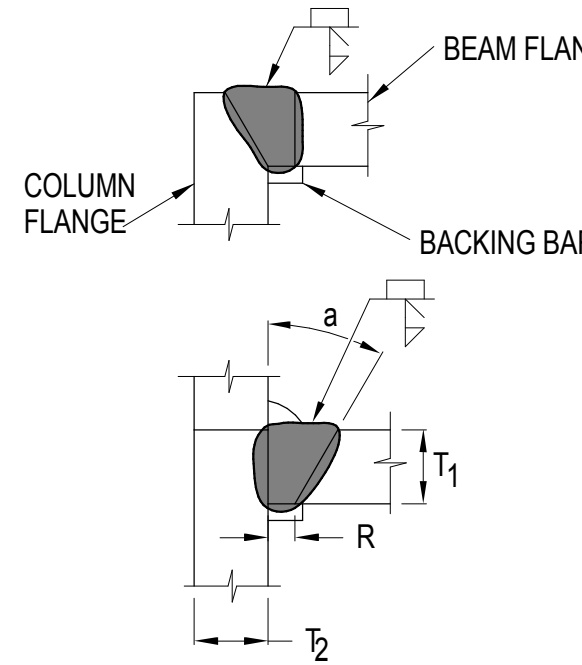
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WELD PASS SEQUENCE

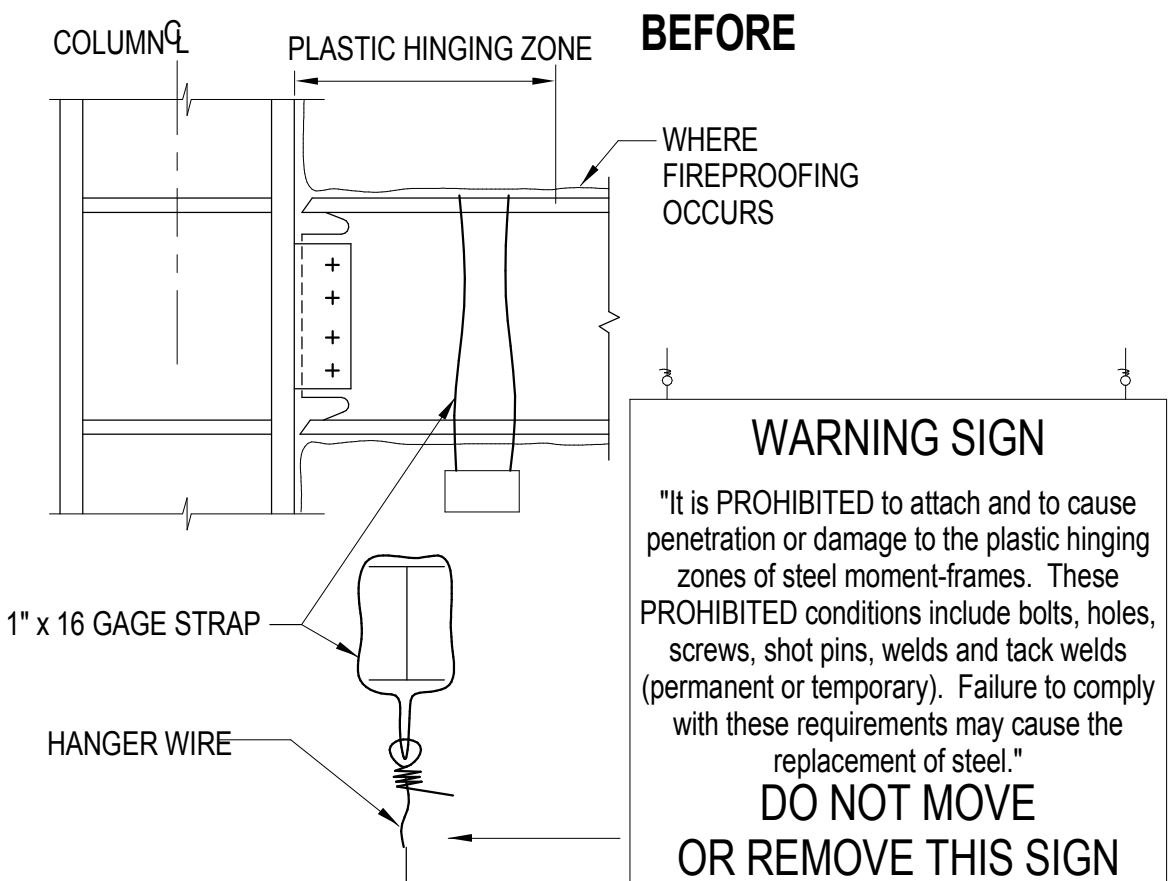
SCALE: NONE

TOLERANCES	
As Detailed	As Fit-Up
R = +1/16, -0	+1/4, -1/16
a = +10°, -0°	+10°, -5°



AWS PREQUALIFIED CJP GROOVE WELDED JOINT DETAIL

SCALE: NONE

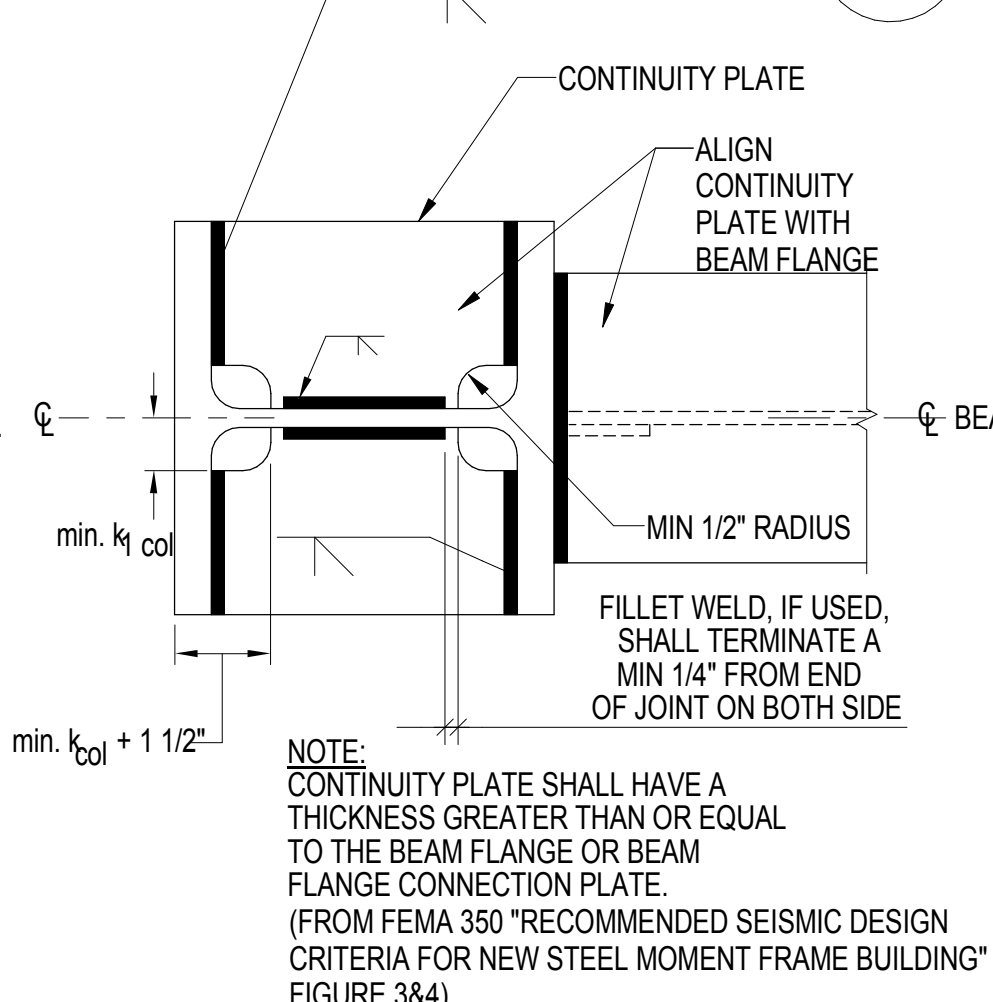


WARNING SIGN AT PLASTIC HINGING ZONE

SCALE: NONE

DOUBLER PLATE WELDS TO CONTINUITY PLATE

SCALE: NONE



CONTINUITY PLATE DETAIL

SCALE: NONE

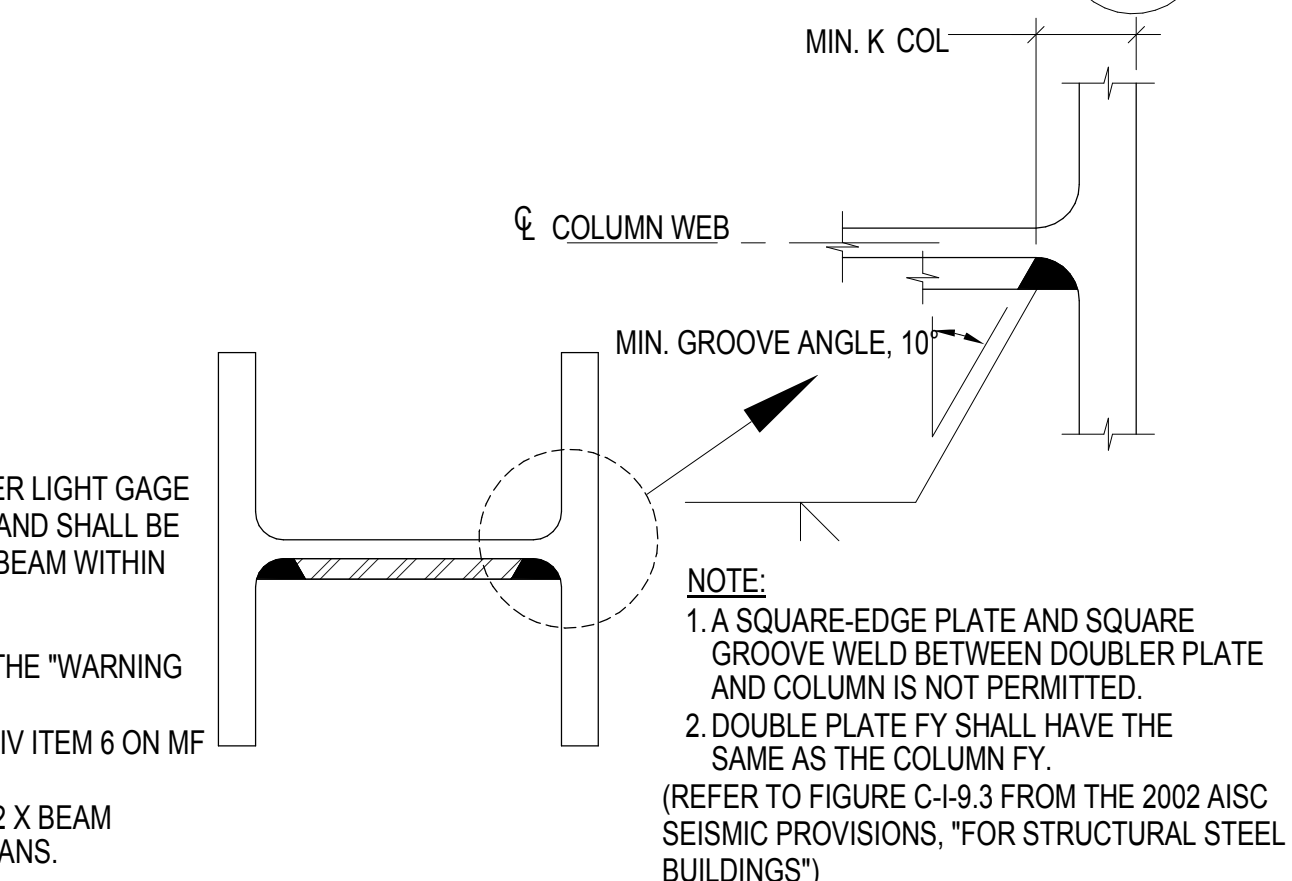
Welding Process	Joint Designation	Base Metal Thickness (U = unlimited)		Groove Preparation		Allowed Welding Positions	Gas Shielding for FCAW
		T1	T2	Root Opening	Groove Angle		
SMAW	TC-U4a	U	U	R = 1/4	a = 45°	All	-
				R = 3/8	a = 30°	F, V, OH	-
FCAW	TC-U4a-GF	U	U	R = 3/16	a = 30°	All	Required
				R = 3/8	a = 30°	F	Not required
				R = 1/4	a = 45°	All	Not required

NOTES:

- GROOVE WELDS IN CORNER AND T-JOINTS OF CYCLICALLY LOADED STRUCTURES SHALL BE REINFORCED WITH FILLET WELDS EQUAL TO T 1/4, BUT NEED NOT EXCEED 3/8 INCH.
- FOR CORNER JOINTS, THE OUTSIDE GROOVE PREPARATION MAY BE IN EITHER OR BOTH MEMBERS, PROVIDED THE BASIC GROOVE CONFIGURATION IS NOT CHANGED AND ADEQUATE EDGE DISTANCE IS MAINTAINED TO SUPPORT THE WELDING OPERATIONS WITHOUT EXCESSIVE EDGE MELTING.
- ADAPTED WITH PERMISSION FROM THE AWS D1.1 COMMITTEE ON STRUCTURAL WELDING, STRUCTURAL WELDING CODE - STEEL, AWS D1.1/D1.1M:2002, MIAMI: AMERICAN WELDING SOCIETY, FIGURE 3 PG. 92 (TOP LEFT).

WEB DOUBLER PLATE DETAIL

SCALE: NONE



GROOVE WELDED DOUBLER PLATE

SCALE: NONE

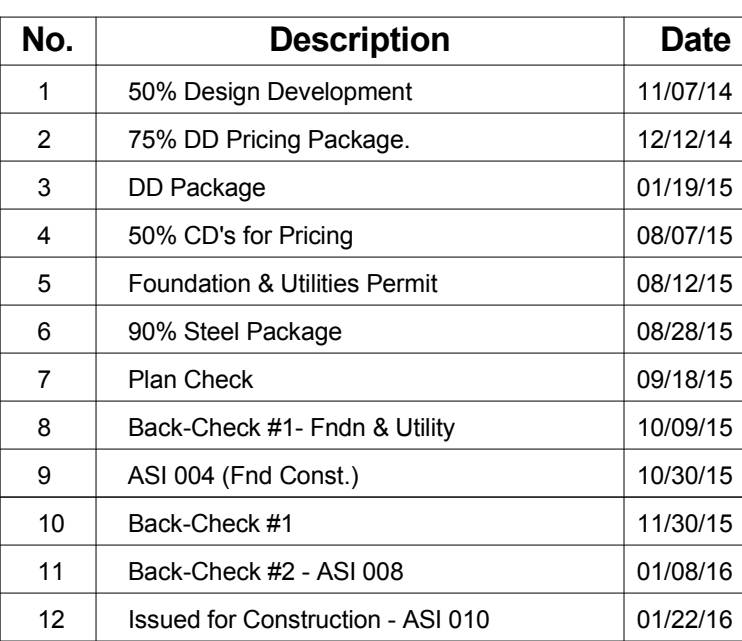
- A SQUARE-EDGE PLATE AND SQUARE GROOVE WELD BETWEEN DOUBLER PLATE AND COLUMN IS NOT PERMITTED.
- DOUBLER PLATE PY SHALL HAVE THE SAME AS THE COLUMN FY. (REFER TO FIGURE C-19.3 FROM THE 2002 AISC SEISMIC PROVISIONS, "FOR STRUCTURAL STEEL BUILDINGS")

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John Labib + Associates
Structural Engineers

ional Seal

Key Plan

SECTIONS AND DETAILS

CAD File

S-601



Project

Los Angeles Lakers Headquarters

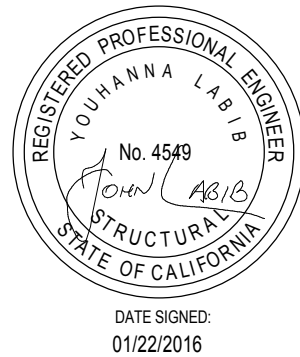
2275 Mariposa, El Segundo, California 90245

Consultant



John Labb + Associates
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319 Main Street
El Segundo, CA 90245
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JLA Job no. 14820

Professional Seal



No.	Description	Date
1	50% Design Development	11/07/14
2	75% DD Pricing Package.	12/12/14
3	DD Package	01/19/15
4	50% CD's for Pricing	08/07/15
5	Foundation & Utilities Permit	08/12/15
6	90% Steel Package	08/28/15
7	Plan Check	09/18/15
8	Back-Check #1- Frdn & Utility	10/09/15
9	ASI 004 (Fnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title

MECHANICAL SCREEN ROOF ELEVATIONS AND DETAILS

Project Number

2014-015

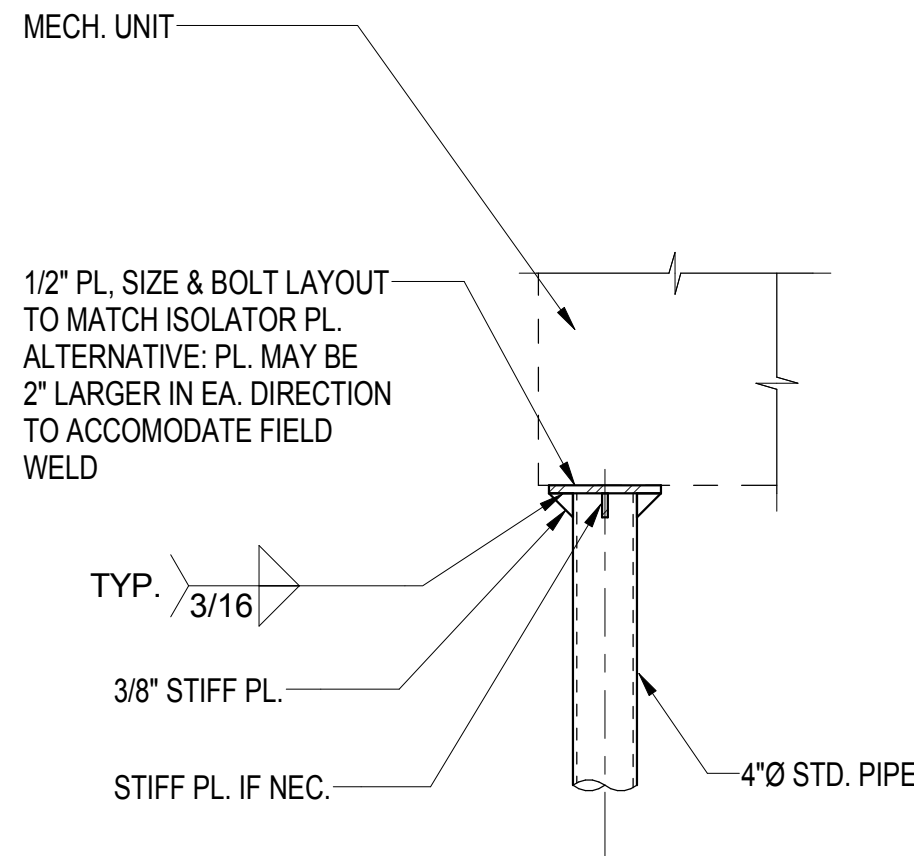
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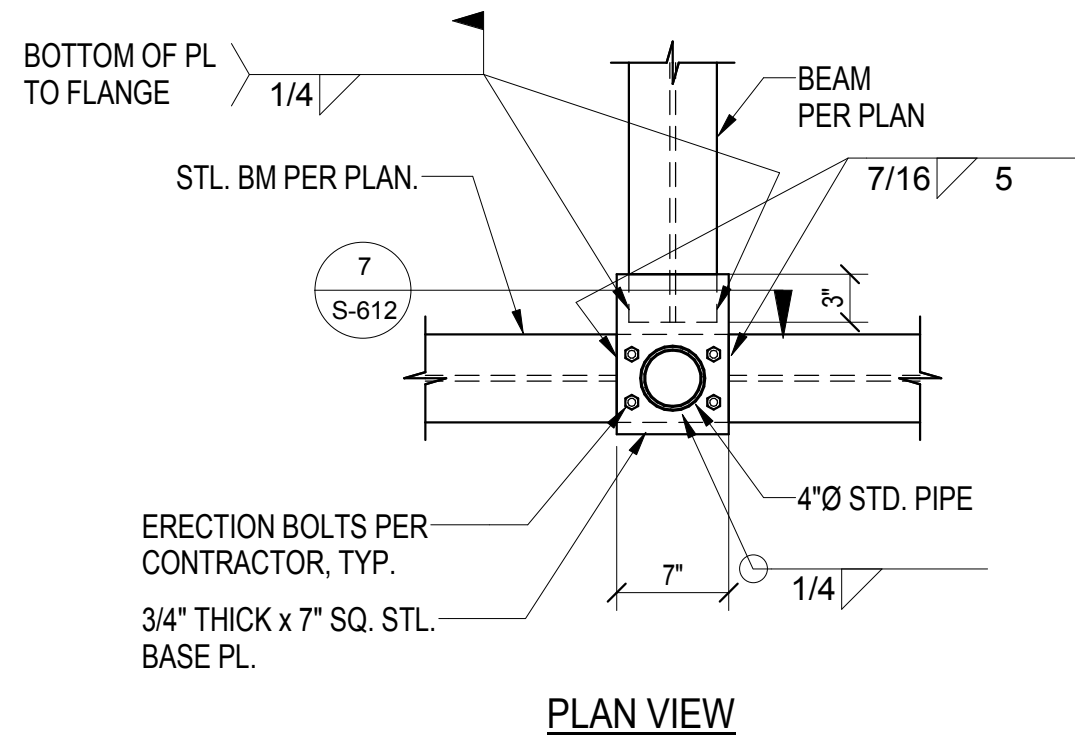
S-611



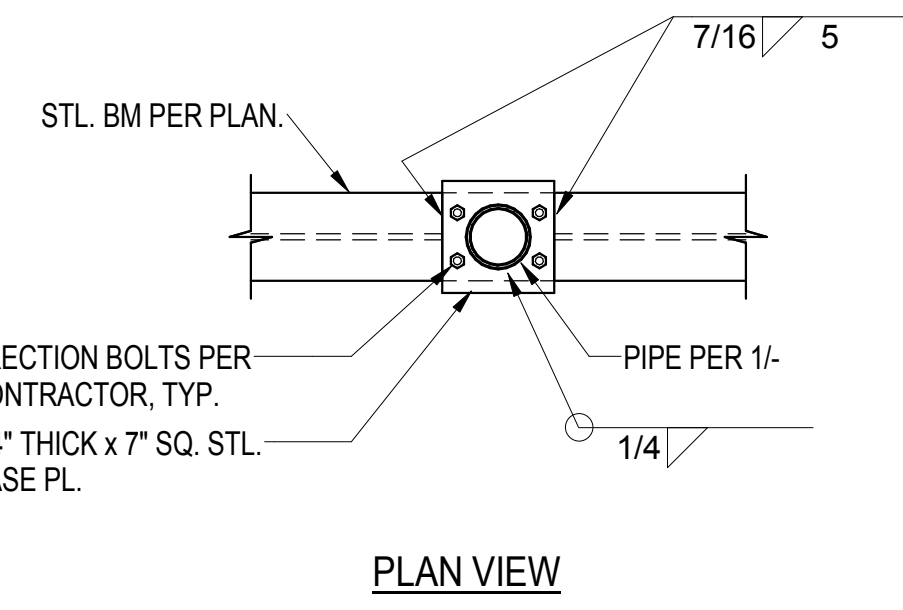
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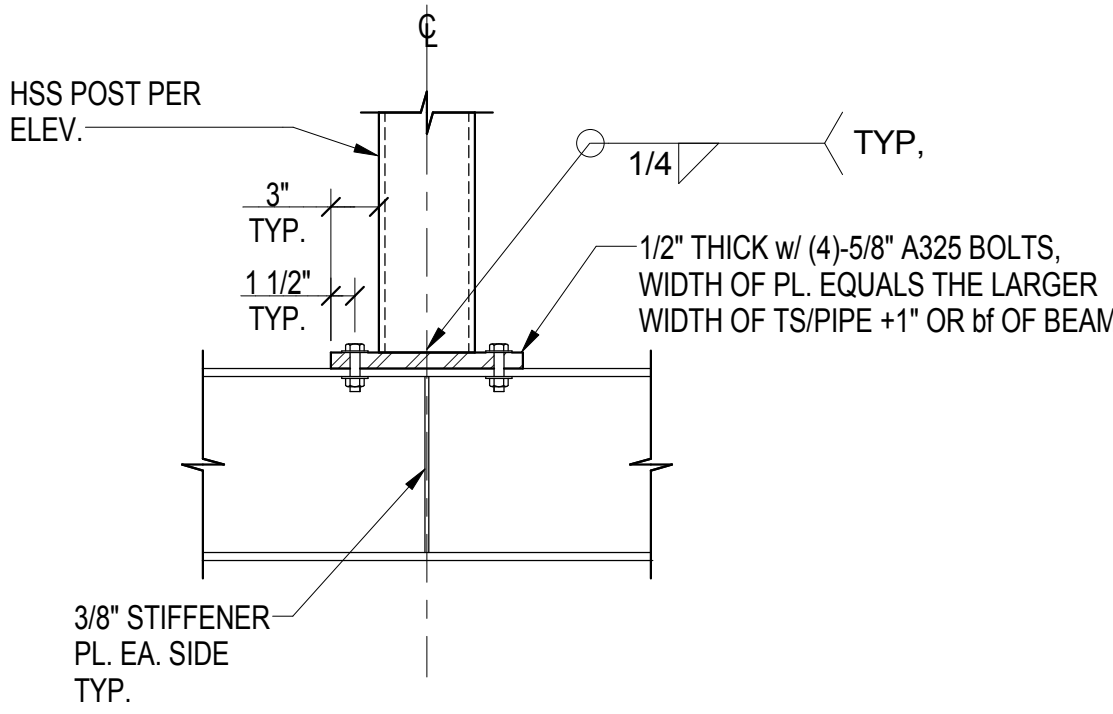
7 SECTION
S-612 1" = 1'-0"



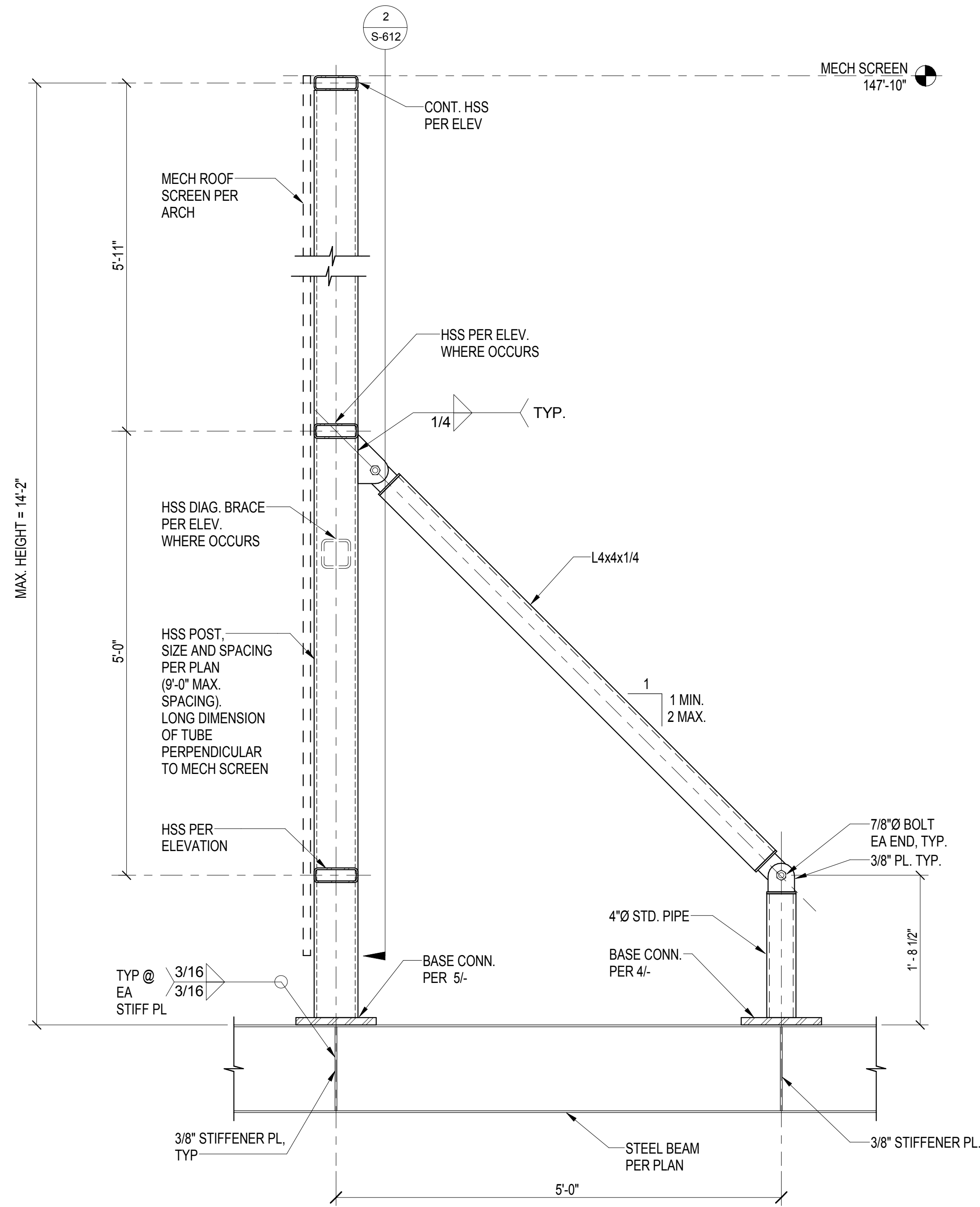
3 BASE PLATE CONN. DET. AT MECH ISOLATOR BASE
S-612 1" = 1'-0"



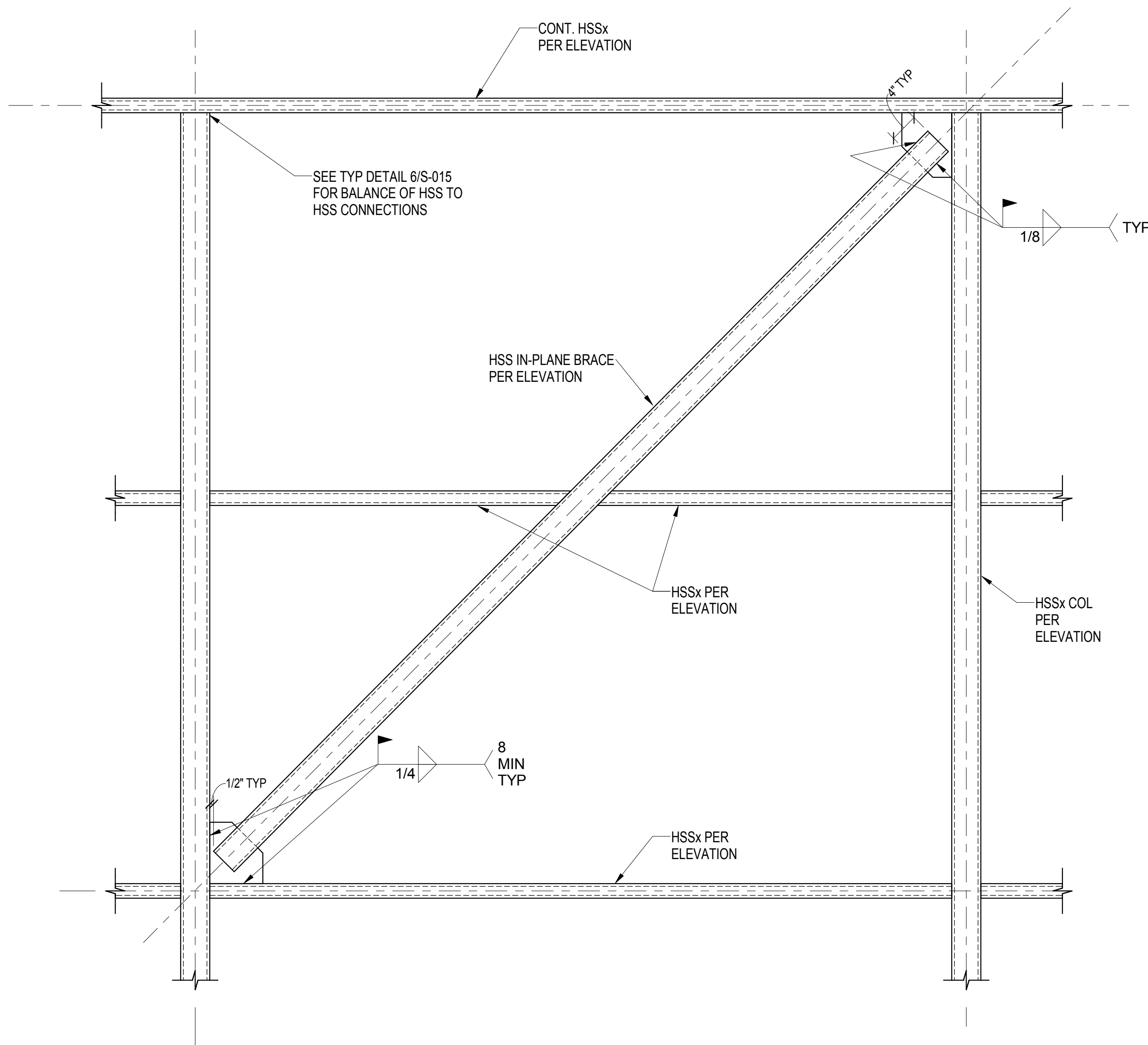
4 BASE PLATE CONN. DET. AT MECH SCREEN KICKER BASE
S-612 1" = 1'-0"



5 BASE PLATE CONNECTION AT HSS POST
S-612 1" = 1'-0"



1 MECH SCREEN POST (WITH KICKER)
S-612 1" = 1'-0"



2 MECH SCREEN POST IN-PLACE BRACE
S-612 1" = 1'-0"

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9	ASI 004 (Fnd Const.)	10/30/15
10	Back-Check #1	11/30/15
11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title
**MECHANICAL SCREEN
ROOF ELEVATIONS AND
DETAILS**

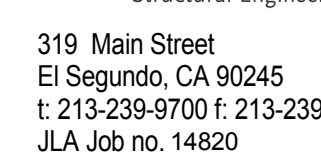
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S-612

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Professional Seal

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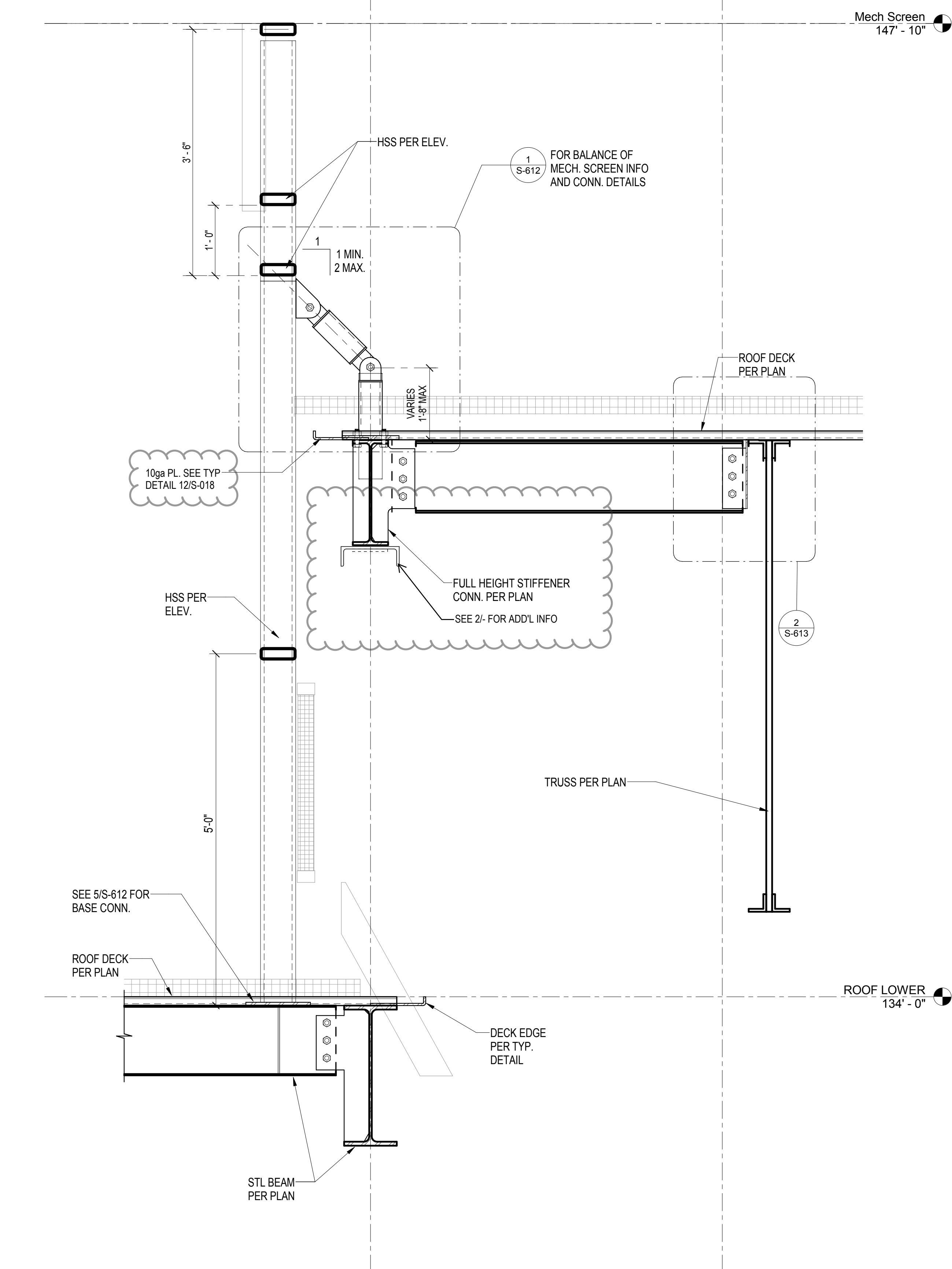
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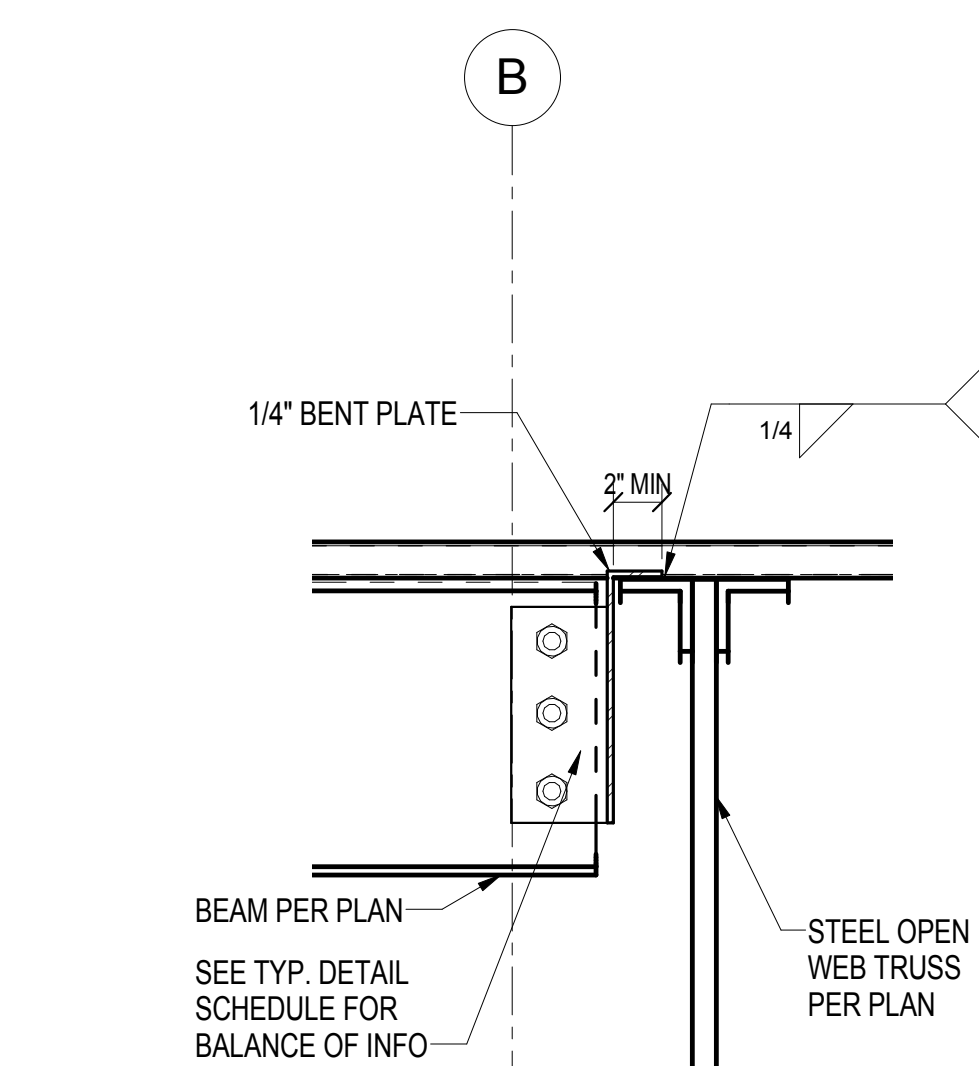
**MECHANICAL SCREEN
ROOF ELEVATIONS AND
DETAILS**

Project Number 2014-015	CAD File
Sheet number	

S-613



1 MECH. SCREEN SECTION
S-613 1" = 1'-0"



2 TYP. BEAM TO OPEN WEB TRUSS DETAIL
S-613 1 1/2" = 1'-0"

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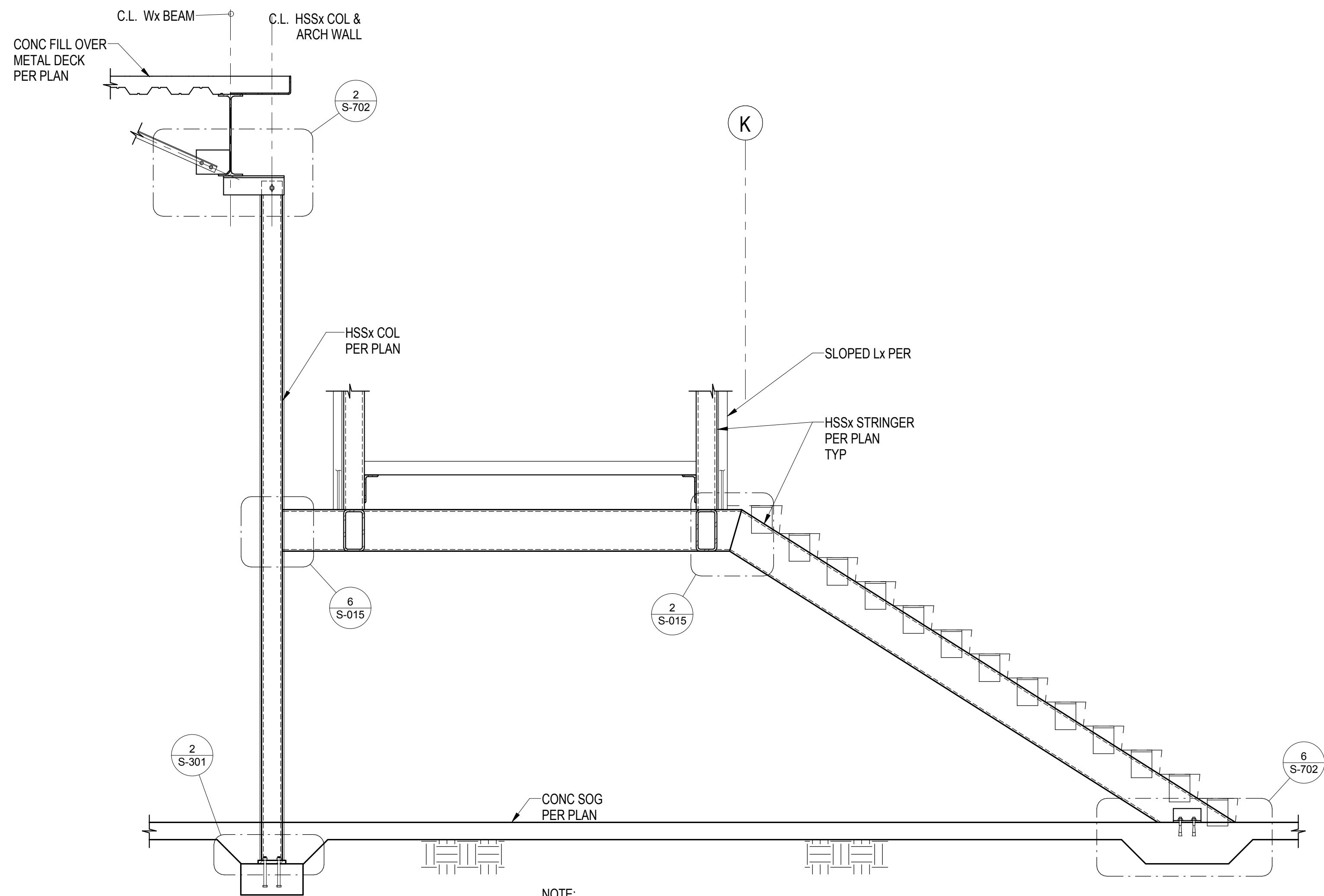
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Sheet Title
**STAIR PLANS, SECTIONS
AND DETAILS**

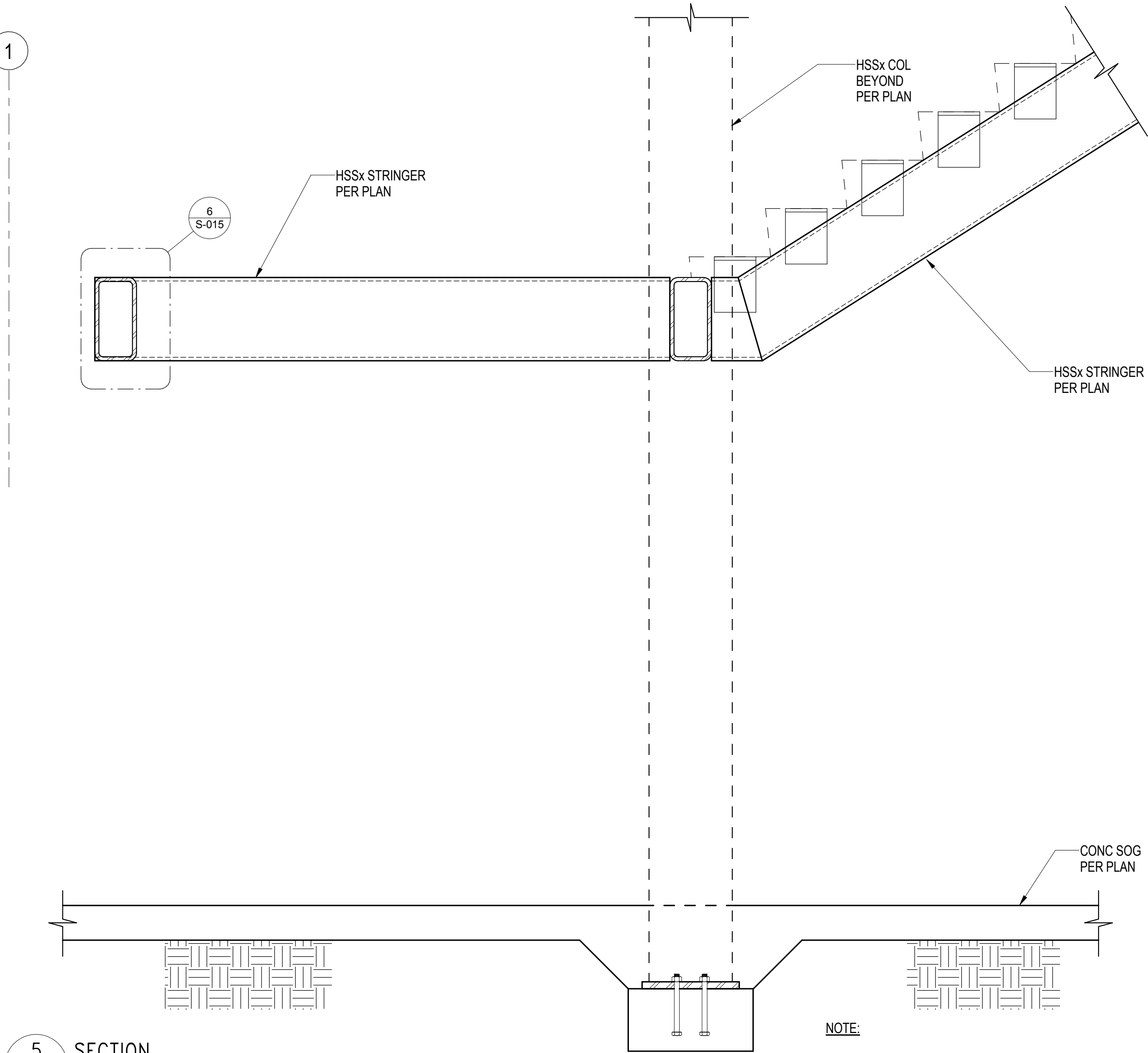
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2014-015
Sheet number

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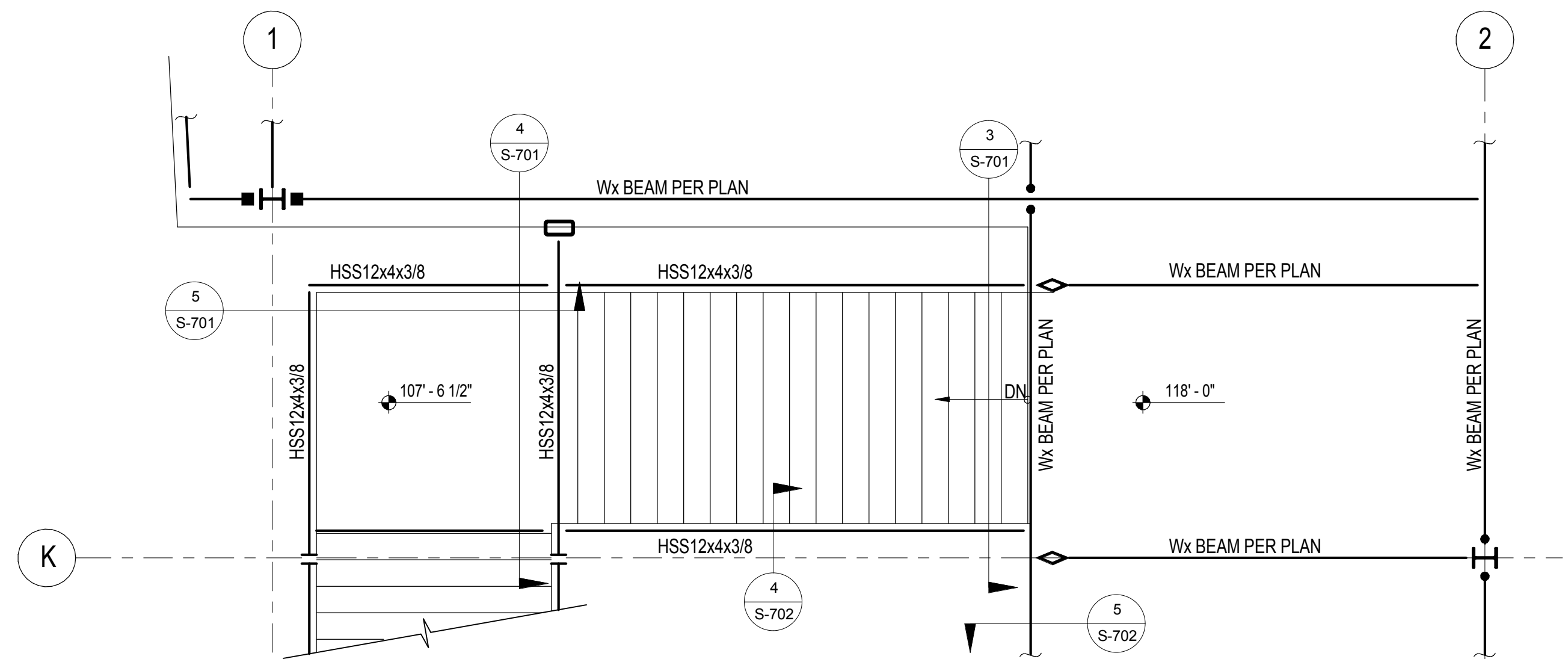
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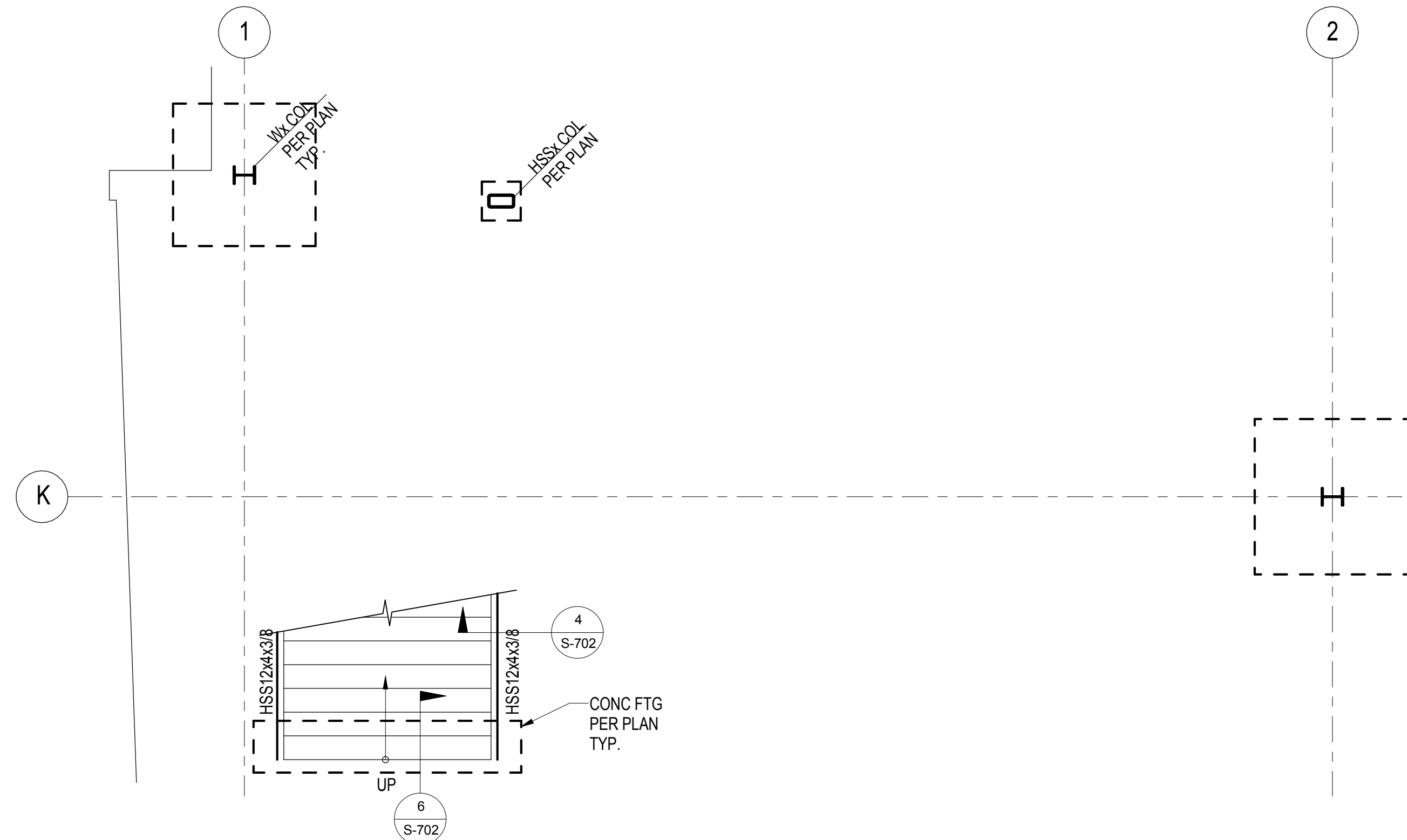
4 SECTION
S-701 1/2" = 1'-0"



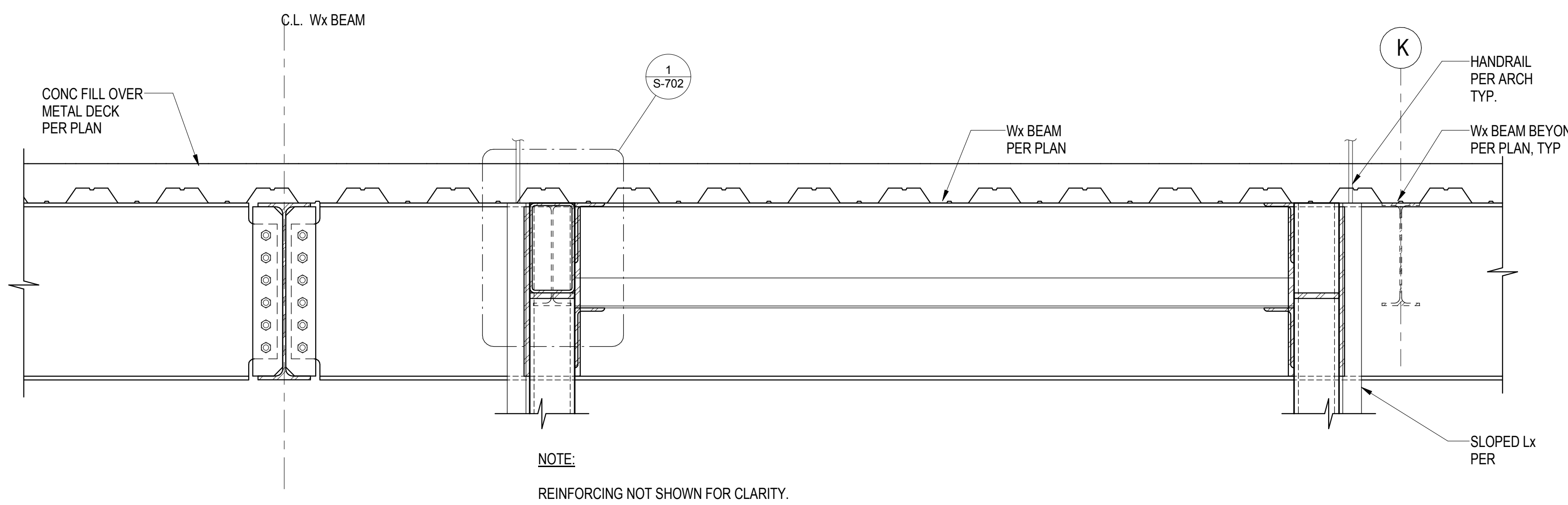
5 SECTION
S-701 1" = 1'-0"



1 LEVEL 2 STAIR FRAMING PLAN
S-701 1/4" = 1'-0"



2 LEVEL 1 FOUNDATION PLAN
S-701 1/4" = 1'-0"



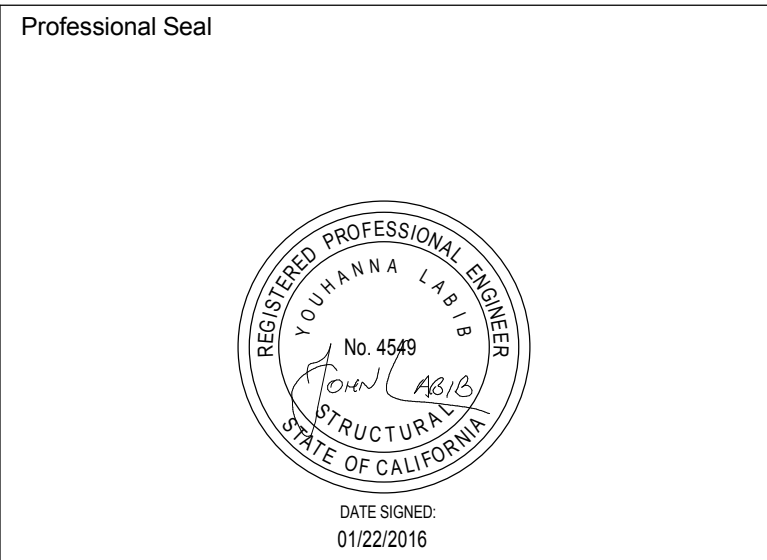
3 SECTION
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11	Back-Check #2 - ASI 008	01/08/16
12	Issued for Construction - ASI 010	01/22/16

Key Plan

Sheet Title

SECTIONS AND DETAILS	
Project Number 2014-015	CAD File
Sheet number	

S-702

