FRAMING AND ALIGNMENT TOLERANCES

WEB/FLANGE FILLET AREA:

PROJECT SPECIFIC INFORMATION

MM/DD/YYYY

PROJECT NAME

PROJECT LOCATION

eSTIMATE FILE IN EXCEL FORMAT FOR USE IN AFFIRMING SIDEPLATE CONNECTION MATERIAL QUANTITIES.

c. ESTIMATED NUMBER OF SIDEPLATE JOINTS FOR THIS PROJECT THAT ARE **NOT** SUPPORTED BY eDATA = ###

a. THERE MAY BE EDATA AVAILABLE FOR YOUR PROJECT WHICH IS AVAILABLE FOR DOWNLOAD AT WWW.SIDEPLATE.COM. EDATA MAY

a. THE STEEL FABRICATOR'S BID PRICE FOR PROCUREMENT, FABRICATION AND ERECTION OF STRUCTURAL AND MISCELLANEOUS STEEL

b. UPON THE SUCCESSFUL STEEL FABRICATOR SIGNING A CONTRACT TO FABRICATE STRUCTURAL STEEL FOR THIS PROJECT, THE STEEL

1. IN ADDITION TO THE REQUIRED SUBMITTALS SPECIFIED BY THE BALANCE OF THE CONTRACT DOCUMENTS, THE FOLLOWING SUBMITTALS SHALL

b. ONE ELECTRONIC COPY OF ALL STRUCTURAL STEEL DRAWINGS THAT EITHER DIRECTLY PERTAINS TO AND/OR AFFECTS THE SHOP

c. PROCEDURE QUALIFICATION RECORD (PQR), OR WELDING PROCEDURE SPECIFICATIONS (WPS) AND CURRENT CERTIFICATE OF

a. PRIOR TO THE START OF DETAILING OF THE SHOP DRAWINGS, THE FABRICATION CONTRACTOR SHALL FORMALLY REQUEST A PRE-

DETAILING OF THE SIDEPLATE CONNECTIONS, AND TO CREATE A PROACTIVE FORUM TO ANSWER ANY QUESTIONS.

DETAILING MEETING FROM SIDEPLATE SYSTEMS, INC. THIS MEETING IS TYPICALLY A WEBINAR TO DISCUSS BEST PRACTICES FOR THE

a. PRIOR TO THE START OF FABRICATION, THE FABRICATION CONTRACTOR SHALL FORMALLY REQUEST A PRE-FABRICATION MEETING FROM

a. PRIOR TO THE START OF STEEL ERECTION, THE ERECTION CONTRACTOR SHALL FORMALLY REQUEST A PRE-ERECTION MEETING FROM

1. THE GOVERNING CODES SHALL CONSIST OF ANSI/AWS D1.1-2015 (AWS D1.1), ANSI/AWS D1.8-2016, ANSI/AISC 358-16 (INCLUDING SUPPLEMENT

2. ALPHA AND NUMERIC DESIGNATORS {X} & {#} USED HEREIN TO SIMPLIFY THE IDENTIFICATION OF PLATES, ANGLES, AND WELDS ARE DEFINED

THE GENERAL STRUCTURAL NOTES, AND THE GOVERNING CODES, THE MORE STRINGENT SECTION CRITERIA SHALL CONTROL

VERTICAL SHEAR ELEMENT (VSE) WHICH CONSISTS OF PLATE (C) AND ANGLE (E) MATERIAL, AS REQUIRED

FILLET (AND/OR FLARE BEVEL) WELD CONNECTING INSIDE FACE OF SIDE PLATE {A} TO COLUMN [DEMAND CRITICAL]

[5] FILLET (AND/OR PJP) WELD CONNECTING BEAM FLANGE TIPS TO COVER PLATE (B) AND/OR LONGITUDINAL ANGLE (H), AS REQUIRED

{5a} FILLET WELD CONNECTING OUTSIDE FACE OF BEAM FLANGE TO COVER PLATE {B} AND/OR LONGITUDINAL ANGLE {H}, AS REQUIRED

FILLET WELD CONNECTING SIDE PLATE {A} TO COLUMN FACE, WRAPPED AROUND THREE SIDES OF SIDE PLATE {A} [DEMAND CRITICAL]

3. ALPHA DESIGNATORS, USED HEREIN TO SIMPLIFY THE IDENTIFICATION OF DIMENSIONS OF THE SIDEPLATE CONNECTIONS, ARE DEFINED BELOW:

DISTANCE FROM END OF SIDE PLATE {A} TO A CJP WELDED SPLICE IN THE FLANGES AND WEB OF THE MOMENT FRAME BEAM, AS

DISTANCE FROM CENTERLINE OF HORIZONTAL BOLT HOLES IN BOTTOM ANGLE {H} TO BOTTOM MOST BOLT HOLE IN VSE {F}

b. ANGLE AND BAR MATERIAL SHALL HAVE A HIGH STRENGTH STEEL SPECIFICATION AND SHALL HAVE A MINIMUM YIELD STRENGTH (F<sub>y</sub>) OF 50

CHARPY V-NOTCH (CVN) TOUGHNESS SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROVISIONS OF ASTM A673. FREQUENCY P. A

S5, SHALL BE DOCUMENTED IN THE CERTIFIED MILL TEST REPORT (CMTR). IF THE CMTR DOES NOT DOCUMENT THE MINIMUM CVN

MINIMUM CVN TOUGHNESS OF 20 FT-LB AT A TEMPERATURE OF 70°F, IN ACCORDANCE WITH ASTM A6, SUPPLEMENTARY REQUIREMENT

VALUES, A COUPON SHALL BE REMOVED FROM THE END OF EACH PIECE OF PLATE TO BE TESTED. THE LENGTH OF COUPON SHALL BE

ORIENTED PARALLEL TO THE LONGITUDINAL AXIS OF THE MEMBER. A TEST SPECIMEN SHALL BE MACHINED FROM EACH COUPON IN

ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, SECTION A3-1d, BUILT-UP HEAVY SHAPES.

b. THE WELD FILLER METAL USED FOR FILLET WELDS TO CONSTRUCT THE SIDEPLATE CONNECTION SYSTEM PRESENTED HEREIN SHALL

40 FT-LB IMPACT STRENGTH AT 70°F AS DETERMINED BY AWS CLASSIFICATION TEST METHODS OR MANUFACTURER CERTIFICATION.

a. THE WELD FILLER METAL AND ASSOCIATED WELDING PROCESS FOR ALL FILLET WELDS SHALL MEET THE REQUIREMENTS OF AWS D1.1 AND

DEMONSTRATE AN ENERGY EQUIVALENT TO A MINIMUM CVN TOUGHNESS OF 20 FT-LB IMPACT STRENGTH AT A TEMPERATURE OF 0°F AND

c. ALL WELD FILLER METAL SHALL SATISFY A MAXIMUM DIFFUSIBLE HYDROGEN CONTENT REQUIREMENT PER AWS D1.1 AND D1.8 SECTION 6.1

GAP PHYSICAL SEPARATION BETWEEN THE END OF THE MOMENT FRAME BEAM AND THE ADJOINING FACE OF THE COLUMN FLANGE

FILLET (AND/OR PJP) WELD CONNECTING LONGITUDINAL ANGLE {G} (AND/OR PLATE {T}) TO SIDE PLATE {A}, AS REQUIRED

LONGITUDINAL ANGLE WELDED TO THE BOTTOM BEAM FLANGE (OR TOP BEAM FLANGE AS REQUIRED)

NO. 2), AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES (JUNE 15, 2016), 2014 RCSC SPECIFICATIONS FOR STRUCTURAL

JOINTS USING HIGH-STRENGTH BOLTS, AND ALL APPLICABLE BUILDING AND JURISDICTIONAL CODES AND PROJECT STANDARDS SPECIFIED IN

THE PROJECT SPECIFICATION STRUCTURAL STEEL SECTION. WHERE THE REQUIREMENTS DIFFER BETWEEN SIDEPLATE CONNECTION NOTES.

SIDEPLATE SYSTEMS, INC. THIS MEETING IS TYPICALLY A WEBINAR TO DISCUSS BEST PRACTICES FOR THE FABRICATION OF THE SIDEPLATE

SIDEPLATE SYSTEMS, INC. THIS MEETING IS TYPICALLY A WEBINAR TO DISCUSS BEST PRACTICES FOR FIELD ERECTION OF THE SIDEPLATE

BE SENT TO SIDEPLATE SYSTEMS, INC. ELECTRONICALLY VIA THE STRUCTURAL ENGINEER OF RECORD FOR THEIR REVIEW AND DISPOSITION:

FABRICATION OR FIELD ERECTION OF THE SIDEPLATE STEEL FRAME CONNECTION SYSTEM, INCLUDING THE INITIAL SUBMITTAL AND ALL

CORRECTED RE-SUBMITTALS OF AFFECTED DRAWINGS. SIDEPLATE SYSTEMS, INC. SHALL BE GIVEN, AS A MINIMUM, THE SAME SPECIFIED

FORMALLY REQUEST THE SIDEPLATE LICENSE FEE BY ACCESSING THE SIDEPLATE WEBSITE (http://www.sideplate.com).

SHALL INCLUDE THE SIDEPLATE LICENSE FEE FOR THE PROJECT. EACH PROSPECTIVE STEEL FABRICATOR WHO BIDS THE PROJECT SHALL

FABRICATOR SHALL SUBMIT A PURCHASE ORDER (PO) TO SIDEPLATE SYSTEMS, INC. FOR THE TOTAL AMOUNT OF THE SIDEPLATE LICENSE

SIDEPLATE PLUS

PROJECT NUMBER:

SUBMITTAL NUMBER

SUBMITTAL DATE:

CONNECTION TYPE

NUMBER OF BUILDINGS:

NUMBER OF STORIES:

INSTRUCTIONS TO STEEL FABRICATOR

SIDEPLATE SYSTEMS, INC.

25909 PALA, SUITE 200 MISSION VIEJO, CA 92691

TEL: 949-238-8900

SIDEPLATE LICENSE FEE:

2. SENT BY SIDEPLATE:

PRE-DETAILING MEETING

2. PRE-FABRICATION MEETING

3. PRE-ERECTION MEETING

APPROX. TOTAL GROSS SQUARE FOOTAGE: ##,###

 ComponentXML FILE FOR USE IN ASSISTING DETAILING EFFORTS. b. ESTIMATED NUMBER OF SIDEPLATE JOINTS FOR THIS PROJECT = ###

FEE AND SHALL INCLUDE SAID FEE IN ITS FIRST CONSTRUCTION DRAW.

a. QUALITY CONTROL PROGRAM (REQUIRED IF NOT AISC CERTIFIED)

CONFORMANCE BY THE WIRE MANUFACTURER.

a. INTELLECTUAL PROPERTY RIGHTS NOTICE LABEL.

{A} SIDE PLATE FOR UNIAXIAL CONNECTIONS

{B} BEAM FLANGE COVER PLATE, AS REQUIRED

(AKA COLUMN/BEAM SEPARATION)

B DEPTH OF SIDE PLATE {A}

K CUT DIMENSION ON ANGLE {H}

**MATERIAL** 

R RADIUS OF SLOT DIMENSION IN COVER PLATE {B}

PLATE, FLAT BAR, AND ANGLE MATERIAL:
 a. ALL PLATE MATERIAL SHALL BE ASTM A572, GRADE 50.

HORIZONTAL SPACING BETWEEN BOLT HOLES

D1.8 SECTION 6.1 AND SHALL BE ANY OF THE FOLLOWING:

F7A2-EXXX FOR SUBMERGED ARC WELDING (SAW)

E7XT-9 FOR FLUX CORED ARC WELDING (FCAW) WITH GAS SHIELDING

E7018 STICK ELECTRODE FOR SHIELDED METAL ARC WELDING (SMAW)

ER70S-X, E70C-XM, OR E70C-XC FOR GMAW (EXCEPT SHORT CIRCUIT TRANSFER)

OF 16 MILLILITERS OF HYDROGEN PER 100 GRAMS OF WELD METAL (H16) OR LESS.

d. REFER TO AWS D1.8 ANNEX B FOR REQUIREMENTS WHEN MIXING FCAW-S WITH OTHER WELD PROCESSES.

E70T-6, E71T-8, OR E70TG-K2 FOR FCAW

A EXTENSION OF SIDE PLATE {A} FROM THE FACE OF THE COLUMN

LENGTH OF COVER PLATE (B) AND/OR LONGITUDINAL ANGLE (H)

EDGE DISTANCE OF BOLT HOLES IN COVER PLATE {B}, AS REQUIRED

c. THE STEEL FABRICATOR SHALL MAKE PAYMENT OF THE SIDEPLATE LICENSE FEE DIRECTLY TO:

REVIEW TIME (NOT LESS THAN SEVEN BUSINESS DAYS) AS THE ENGINEER OF RECORD.

USPTO PATENT LABEL STICKERS, SEE INTELLECTUAL PROPERTY SECTION FOR PLACEMENT.

CONNECTIONS, AND TO CREATE A PROACTIVE FORUM TO ANSWER ANY QUESTIONS.

{C} VERTICAL SHEAR PLATE OR FLAT BAR WELDED TO BEAM WEB, AS REQUIRED

HORIZONTAL SHEAR PLATE OR FLAT BAR WELDED TO COLUMN WEB, AS REQUIRED

{G} LONGITUDINAL ANGLE WELDED TO THE OUTSIDE FACE OF SIDE PLATE {A}, AS REQUIRED

HORIZONTAL PLATE WELDED TO THE OUTSIDE FACE OF SIDE PLATE {A}, AS REQUIRED

FILLET WELD CONNECTING HORIZONTAL SHEAR PLATE (D) TO COLUMN, AS REQUIRED

({5p}) PJP WELD CONNECTING ANGLE {H} TO BEVELED BEAM FLANGE [DEMAND CRITICAL]

({8p}) PJP WELD CONNECTING PLATE {T} TO SIDE PLATE {A}, AS REQUIRED [DEMAND CRITICAL]

{10} FILLET WELD TO CONSTRUCT SIDE PLATE SLOTTED INTERLOCK ASSEMBLY [DEMAND CRITICAL]

{10r} REINFORCING FILLET WELD TO CONSTRUCT SIDE PLATE SLOTTED INTERLOCK ASSEMBLY [DEMAND CRITICAL]

{13} FILLET WELD CONNECTING BUILT UP ANGLE {H} PLATES TOGETHER, AS REQUIRED [DEMAND CRITICAL]

({13p}) PJP WELD CONNECTING BUILT UP ANGLE {H} PLATES TOGETHER, AS REQUIRED [DEMAND CRITICAL]

LENGTH OF SLOT FROM THE TOE OF THE RADIUS IN THE COVER PLATE {B}, AS REQUIRED

H ADDED DIMENSION TO COLUMN FLANGE WIDTH TO DEFINE TOTAL COVER PLATE {B} WIDTH

G GAGE DISTANCE TO CENTERLINE OF BOLT HOLES IN ANGLES (G) AND (H), AND PLATE (T), AS REQUIRED

ADDED DIMENSION TO COLUMN FLANGE WIDTH FOR ALLOWABLE SPREAD OF SIDE PLATES {A}

c. ALL PLATE MATERIAL 2 INCHES THICK AND GREATER SHALL MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:

DISTANCE FROM END OF THE BEAM TO CENTERLINE OF VERTICAL BOLT HOLES IN VSE {F}, AS REQUIRED

[10p] PJP WELD TO CONSTRUCT SIDE PLATE SLOTTED INTERLOCK ASSEMBLY [DEMAND CRITICAL]

{4} FILLET WELD TO CONSTRUCT VSE {F} AND TO CONNECT IT TO THE WEB OF THE BEAM, AS REQUIRED

FILLET WELD CONNECTING SIDE PLATE (A) TO HORIZONTAL SHEAR PLATE (D) OR COLUMN

VERTICAL ANGLE WELDED TO THE VERTICAL SHEAR PLATE {C}, AS REQUIRED

BEAMS AND COLUMNS, AND TO CREATE A PROACTIVE FORUM TO ANSWER ANY QUESTIONS.

d. MISCELLANEOUS DETAILS, TYPICALLY DESIGNATED BY M#, ARE NOT SUPPORTED.

PROJECT NAME: LOCATION:

BOLTS SHALL REQUIRE 5/16 INCH THICK WASHER. NUTS SHALL BE ASTM A563 GRADE DH OR DH3. d. THE BOLT ASSEMBLY SHALL BE COVERED IN A LIGHT PROTECTIVE OIL. F2280 AND F3148 ASSEMBLIES SHALL ONLY BE LUBRICATED BY THE

e. THE MILL TEST REPORT (MTR) MUST HAVE DOCUMENTED LOT TRACEABILITY, STATEMENT OF DIMENSIONAL RESULTS, FULL CHEMICAL AND MECHANICAL TEST RESULTS TO THE SPECIFICATIONS ABOVE.

THE USE OF FINGER SHIMS ARE ACCEPTABLE PER BOLTING SECTION 8.

a. ALL ROLLED SHAPES USED FOR COLUMNS AND BEAMS IN CONSTRUCTING SIDEPLATE MOMENT FRAMES SHALL BE ASTM A992 GRADE 50

b. FOR EACH DIFFERENT SIZE OF STEEL FRAME COLUMNS AND BEAMS IDENTIFIED IN THE CONTRACT DOCUMENTS AS PART OF THE SFRS INVOLVING ASTM A6 HOT-ROLLED SHAPES WITH FLANGES 1 1/2 INCHES THICK OR THICKER, CHARPY V-NOTCH (CVN) TOUGHNESS SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROVISIONS OF ASTM A673, FREQUENCY H. A MINIMUM CVN TOUGHNESS OF 20 FT-LB AT A TEMPERATURE OF 70°F, IN ACCORDANCE WITH ASTM A6, SUPPLEMENTARY REQUIREMENT S30, SHALL BE DOCUMENTED IN THE CERTIFIED MILL TEST REPORT (CMTR). IF THE CMTR DOES NOT DOCUMENT THE MINIMUM CVN VALUES, A COUPON SHALL BE REMOVED FROM THE END OF EACH MEMBER SHAPE SAMPLED. THE LENGTH OF COUPON SHALL BE ORIENTED PARALLEL TO THE LONGITUDINAL AXIS OF THE MEMBER. A TEST SPECIMEN SHALL BE MACHINED FROM EACH COUPON, IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, SECTION A3-1c, ROLLED HEAVY SHAPES. THE LONGITUDINAL AXIS OF THE TEST SPECIMEN SHALL BE LOCATED AS NEAR AS PRACTICABLE TO A POINT MIDWAY BETWEEN THE INNER FLANGE SURFACE AND THE CENTER OF FLANGE THICKNESS, AT THE INTERSECTION OF THE WEB MID-THICKNESS.

a. FOR EACH DIFFERENT SIZE OF STEEL FRAME COLUMNS AND BEAMS IDENTIFIED IN THE CONTRACT DOCUMENTS AS PART OF THE SFRS INVOLVING PLATE 2 INCHES THICK OR THICKER USED TO CONSTRUCT WELDED BUILT-UP SECTIONS SHALL FOLLOW PLATE MATERIAL SPECIFICATIONS OUTLINED IN SECTION 1.

a. ALL HSS SHAPES USED FOR BEAMS IN CONSTRUCTING SIDEPLATE MOMENT FRAMES SHALL, AS A MINIMUM, BE ASTM A500 GRADE B OR b. ALL HSS SHAPES USED FOR COLUMNS IN CONSTRUCTING SIDEPLATE MOMENT FRAMES SHALL BE ASTM A1085.

1. THE STEEL FABRICATION AND ERECTION SUBCONTRACTORS SHALL EMPLOY A DISTORTION CONTROL PROGRAM PRIOR TO THE START OF SIDEPLATE MOMENT FRAME FABRICATION. THE DISTORTION CONTROL PROGRAM SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF AWS D1.1 SECTION 5.20 AND 5.21 TO ENSURE THAT THE FOLLOWING ARE MAINTAINED: DIMENSIONAL ACCURACY

 COMPLIANCE WITH AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, SECTION 7.0, ERECTION PROVISIONS CONTROL OF DISTORTION AND WELD SHRINKAGE 2. BASE METAL SURFACE PREPARATION: SURFACES ON WHICH WELD METAL IS TO BE DEPOSITED, INCLUDING BUT NOT LIMITED TO COLUMN FLANGE TIPS (I.E., COLUMN FLANGE-TO-SIDE PLATE {A} ATTACHMENT), BEAM FLANGE TIPS (I.E., BEAM FLANGE-TO-COVER PLATE {B} ATTACHMENT), AND THERMAL CUT EDGES (E.G., LONGITUDINAL EDGÉS OF COVER PLATE (B)), SHALL BE SMOOTH, UNIFORM, AND FREE FROM LOOSE OR THICK SCALE, SLAG, RUST, MOISTURE, GREASE AND OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.

a. THE ROUGHNESS OF ALL THERMAL-CUT SURFACES SHALL BE NO GREATER THAN AN ANSI SURFACE ROUGHNESS VALUE OF 1000 MICRO-INCHES; CUT ROUGHNESS EXCEEDING THIS VALUE AND NOTCHES OR GOUGES NOT MORE THAN 3/16 INCH DEEP SHALL BE REMOVED BY MACHINING OR GRINDING. NOTCHES OR GOUGES DEEPER THAN 3/16 INCH SHALL BE REPAIRED PER AWS. b. FLAME CUT SURFACES SHALL BE FREE OF GLOBULES AND LOOSE SLAG. THE THERMAL CUTTING EQUIPMENT SHALL BE ADJUSTED AND MANIPULATED SO AS TO AVOID CUTTING BEYOND (INSIDE) THE PRESCRIBED LINES. c. THERMAL CUTTING PROCESSES SHALL BE LIMITED TO PLASMA ARC-CUTTING OR OXYFUEL GAS PROCESSES.

a. UNLESS NOTED OTHERWISE, VERTICAL SHEAR PLATES {C} (AS REQUIRED) AND HORIZONTAL SHEAR PLATES {D} (AS REQUIRED) SHALL HAVE THEIR INSIDE CORNERS CLIPPED PER AWS D1.8 CLAUSE 4 TO PREVENT WELDING IN THE K-AREA BETWEEN WEB AND FLANGE WHEN THE COLUMN IS DEEPER THAN W16x, THESE CLIPS SHALL START AND STOP A DISTANCE OF 1 1/2 INCHES FROM THE TANGENT OF THE FLANGE TO THE WEB FILLET (I.E., THE AISC 'k' DIMENSION). THE DIMENSIONS OF THE CLIPPED CORNER SHALL BE DETAILED ON THE SHOP DRAWINGS. WELD {3} RETURNS ON THE INSIDE FACE OF THE COLUMN FLANGES (AS OCCURS): IN NO CASE SHALL A WELD TIE-IN OF WELD {3} BE ALLOWED ACROSS THE CLIPPED CORNER OF THE HORIZONTAL SHEAR PLATES (D) AT THE K-AREA BETWEEN WEB AND FLANGE.

5. ANY HOLE MAKING METHODS ALLOWED BY AISC SPECIFICATIONS ARE ALLOWED WITH THE EXCEPTION THAT WHEN USING A THERMAL CUTTING PROCESS, IT IS NOT PERMITTED FOR PLATES THICKER THAN 2 INCHES (50 MM).

1. WELDER QUALIFICATION: THE PERFORMANCE OF ALL WELDERS, WELDING OPERATORS AND TACK WELDERS SHALL BE QUALIFIED IN CONFORMANCE WITH AWS D1.1, SECTION 4, PART C TO DEMONSTRATE ABILITY TO PRODUCE SOUND WELDS.

WELDING PROCEDURE SPECIFICATIONS (WPS):
a. THE APPROPRIATE STEEL SUB-CONTRACTOR SHALL PREPARE A SPECIFIC WRITTEN WPS FOR EVERY DIFFERENT WELDING APPLICATION. DIFFERENT WELDING APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE JOINT DETAILS AND TOLERANCES, PREHEAT AND INTERPASS TEMPERATURE, SINGLE OR MULTIPLE STRINGER PASSES, WELDING CURRENT, POLARITY, ALLOWABLE AMPERAGE RANGES, ALLOWABLE VOLTAGE RANGES, ALLOWABLE TRAVEL SPEED RANGES, ELECTRODE EXTENSION, ROOT TREATMENT, WELDING POSITION, WELDING PROCESS, ELECTRODE MANUFACTURER, FILLER METAL TRADE NAME FOR THE ELECTRODE TYPE SELECTED, AND OTHER ESSENTIAL VARIABLES AS DEFINED IN AWS D1.1 REQUIRED TO COMPLETE THE FABRICATION AND ERECTION OF THE SPECIFIED SIDEPLATE CONNECTIONS. AMPERAGE, VOLTAGE, TRAVEL SPEED AND ELECTRODE EXTENSION SHALL BE WITHIN THE FILLER METAL MANUFACTURER'S

b. EACH WPS PREPARED SHALL BE BASED ON AND REFERENCED TO A CURRENT CERTIFICATE OF CONFORMANCE PROVIDED BY THE WIRE MANUFACTURER AND SHALL BE USED AS A SUPPORTING POR PROVIDED FULL COMPLIANCE WITH EVERY SINGLE CONDITION O PREQUALIFICATION FOUND IN AWS D1.1 SECTION 3 AND AWS D1.8 HIGH AND LOW HEAT INPUT FOR PREQUALIFIED FILLET AND CJP WELDS. THE SELECTION OF THIS OPTION BY THE STEEL FABRICATION/ERECTION SUBCONTRACTOR IS PREDICATED ON ITS ACKNOWLEDGEMENT THAT ITS CERTIFIED WELDERS ARE EXPERIENCED AND CONFIDENT IN THE USE AND SETTINGS SPECIFIED IN THE CERTIFICATE OF CONFORMANCE WITH THE ALLOWABLE TOLERANCES FOR ESSENTIAL VARIABLES FOUND IN TABLE 3.7 OF AWS D1.1. PREVIOUS WPS QUALIFICATION PERFORMED BY THE STEEL FABRICATION/ERECTION SUBCONTRACTOR THAT COMPLIES WITH THE PROVISIONS HEREIN MAY SATISFY THIS REQUIREMENT. EACH WPS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, AND TO SIDEPLATE SYSTEMS, INC. FOR REVIEW AND DISPOSITION PRIOR TO STARTING THE WORK.

THE APPROVED WPS FOR EACH APPLICABLE PRODUCTION WELD SHALL BE CLEARLY DISPLAYED TO PROVIDE READY ACCESS BY THE ASSIGNED WELDERS, WELDING SUPERVISORS AND INSPECTORS. d. IN LIEU OF THE ABOVE PROCEDURE, THE STEEL FABRICATOR MAY CHOOSE TO QUALIFY A WPS BASED ON A PROCEDURE QUALIFICATION RECORD (PQR), WHICH SHALL BE PROVIDED WITH THE WPS SUBMITTAL. THE PQR SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1. SECTION 4.1 AND EMPLOY THE PROPER ACCEPTANCE CRITERIA.

a. TACK WELDS SHALL BE PLACED WHERE THEY WILL BE INCORPORATED INTO A FINAL WELD AND SHALL BE SUBJECT TO THE SAME QUALITY REQUIREMENTS AS THE FINAL WELDS, INCLUDING POSITION, PREHEAT AND UNDERCUT, IN ACCORDANCE WITH AWS D1.1. THESE QUALITY REQUIREMENTS SHALL APPLY EQUALLY TO TACK WELDING OF ANY OTHER CONSTRUCTION AIDS.

PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS:

a. THE MINIMUM PREHEAT AND INTERPASS TEMPERATURES FOR A GIVEN THICKNESS OF BASE METAL TO BE WELDED SHALL BE IN b. IN NO CASE, REGARDLESS OF THE WELDING PROCESS, SHALL THE PREHEAT TEMPERATURE BE LESS THAN THAT REQUIRED TO DRIVE OFF ANY SURFACE MOISTURE OR CONDENSATION WHICH MAY BE PRESENT ON THE STEEL ELEMENTS TO BE WELDED.

MAXIMUM INTERPASS TEMPERATURE SHALL NOT EXCEED 550°F, MEASURED AT A DISTANCE NOT EXCEEDING THREE INCHES FROM THE START OF THE WELD PASS. WELDING OPERATORS AND INSPECTORS SHALL UTILIZE TEMPERATURE MEASURING DEVICES. ALL SLAG SHALL BE REMOVED AFTER EACH WELD PASS AND THE WELD AND THE ADJACENT BASE METAL SHALL BE CLEANED BEFORE WELDING OVER PREVIOUSLY DEPOSITED WELD METAL. THIS REQUIREMENT SHALL APPLY NOT ONLY TO SUCCESSIVE LAYERS BUT ALSO TO SUCCESSIVE BEADS AND TO THE CRATER AREA WHEN WELDING IS RESUMED AFTER ANY INTERRUPTION, IN ACCORDANCE WITH AWS D1.1 SECTION 5.29.1. PEENING SHALL NOT BE ALLOWED.

WELD RUN-OFF TABS SHALL NOT BE USED FOR FILLET WELDS (EXCEPT WHEN REQUIRED ON INTERLOCKING SLOTTED SIDE PLATES). 8. WELD END TERMINATIONS FOR RECESSED PLATE {D} OPTION ONLY WHERE WELD {3} IS REQUIRED ON BOTH WEB AND FLANGES:

a. IN ORDER TO PREVENT TIE-IN BETWEEN THE ENDS OF WELD {3} CLOSEST TO THE INSIDE FACE OF SIDE PLATE {A} AND WELD {1} THE ENDS OF WELD {1} SHALL BE HELD BACK FROM THE FLANGE TIP OF COLUMN BY A DISTANCE EQUAL TO WELD {3} PLUS 1/8 INCH. IN NO CASE SHALI A WELD TIE-IN BETWEEN THE ENDS OF WELD {1} AND THE ENDS OF WELD {3} CLOSEST TO THE INSIDE FACE OF SIDE PLATE {A} BE ALLOWED. FABRICATION PRIORITY IS GIVEN HEREIN TO WELDING FILLET WELD (3) ALONG ITS FULL DISTANCE.

. ARC STRIKES WITHIN THE SIDEPLATE PROTECTED ZONE ON BOTH THE INTERIOR AND EXTERIOR FACES OF SIDE PLATES {A}, WITHIN THE TOP AND BOTTOM 6 INCHES OF PLATE HEIGHT SHALL BE AVOIDED. IF THEY DO OCCUR, THEY SHALL BE REMOVED BY GRINDING AND SHALL HAVE BASE METAL REPAIRED PER AWS D1.8 SECTION 6.18, WITH NON-DESTRUCTIVE TESTING AS NECESSARY

1. BOLTS/FASTENERS SHALL BE INSTALLED TO PRETENSIONED CONDITION USING ONE OF THE METHODS PRESCRIBED HERE: TURN-OF-NUT (A490), CALIBRATED WRENCH (A490), TWIST-OFF-TYPE TENSION-CONTROL BOLT (F2280), TORQUE AND ANGLE METHOD (F3148), OR WHEN HEAVY HEX BOLTS ARE REQUIRED DIRECT TENSION INDICATORS (DTI) (ASTM F959). FOR TURN-OF-NUT THE THREAD AND NUT SHOULD BOTH BE MARKED TO MAKE SURE THE REQUIRED TURN IS ACHIEVED. 2. FOR ALL PRETENSIONING METHODOLOGIES, ALL FASTENER ASSEMBLIES WITHIN THE JOINT SHALL FIRST BE BROUGHT TO A SNUG TIGHT

CONDITION, FOLLOWED BY A SYSTEMATIC PRETENSIONING PROCESS. PRETENSIONING SHALL BEGIN AT THE MOST RIGID PART OF THE JOINT AND CONTINUE IN A MANNER THAT WILL MINIMIZE THE RELAXATION OF PREVIOUSLY PRETENSIONED FASTENERS, UNTIL THE CONNECTED PLIES ARE IN AS FIRM CONTACT AS POSSIBLE. IN ADDITION: a. FOR TURN-OF-NUT METHOD, AFTER SNUGGING THE JOINT USING AT LEAST A FEW IMPACTS OF A WRENCH OR THE FULL EFFORT OF AN IRON WORKER, ROUTINE MARKING OR MATCH-MARKING SHALL BE USED TO VERIFY RELATIVE BOLT AND NUT ROTATION TO RCSC TABLE 8.2. FOR BOLT LENGTHS OVER 4D UP TO 8D, THE BOLT OR NUT SHALL BE ROTATED 180 DEGREES (1/2 TURN). FOR BOLT LENGTHS OVER 8D UP TO 12D,

THE BOLT OR NUT SHALL BE ROTATED 240 DEGREES (2/3 TURN). FOR BOLT LENGTHS OVER 12D, THE REQUIRED ROTATION SHALL BE DETERMINED USING A BOLT TENSION MEASUREMENT DEVICE. b. FOR CALIBRATED WRENCH METHOD, THE WRENCH AND BOLT ASSEMBLY LOT SHALL BE TESTED IN COMBINATION DAILY. IF NECESSARY, THE WRENCH SHALL BE CALIBRATED FOR PROPER OUTPUT PRIOR TO USE. THE INSTALLATION TORQUE NEED NOT PRODUCE A RELATIVE

ROTATION EQUAL TO OR GREATER THAN THAT SPECIFIED BY THE TURN-OF-NUT METHOD. FOR TWIST-OFF-TYPE TENSION-CONTROL BOLT METHOD, FINAL TENSIONING SHALL BE DONE IN A CONTINUOUS OPERATION UNTIL THE TIP TWISTS OFF. ANY BOLT ASSEMBLIES WHICH HAD THE TIP TWIST OFF DURING THE SNUGGING OPERATION SHALL BE REMOVED AND

d. FOR COMBINED METHOD (ASTM F3148), AFTER SNUGGING THE JOINT USING THE APPROPRIATE INSTALLATION TOOL, ROUTINE MONITORING OR MATCH MARKING SHALL BE USED TO VERIFY RELATIVE BOLT AND NUT ROTATION. FOR BOLT LENGTHS UP TO 4D, THE NUT SHALL BE ROTATED 90 DEGREES (1/4 TURN). FOR BOLT LENGTHS OVER 4D UP TO 8D, THE NUT SHALL BE ROTATED 120 DEGREES (1/3 TURN). FOR BOLT LENGTHS OVER 8D THE MANUFACTURER SHALL PROVIDE APPROPRIATE INSTALLATION REQUIREMENTS. REUSE OF A490, F2280, AND F3148 BOLT ASSEMBLIES SHALL NOT BE ALLOWED. TOUCHING UP OR RE-TIGHTENING BOLTS THAT MAY HAVE BEEN LOOSENED BY THE INSTALLATION OF ADJACENT BOLTS SHALL NOT BE CONSIDERED TO BE A REUSE. 4. ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS.

5. THE BOLT LENGTH USED SHALL BE SUCH THAT THE BOLT THREAD EXTENDS BEYOND OR IS AT LEAST FLUSH WITH THE OUTER FACE OF THE NUT eta. FASTENER COMPONENTS SHALL BE PROTECTED FROM DIRT AND MOISTURE IN CLOSED CONTAINERS AT THE SITE OF INSTALLATION. 7. THE BOLT SHANK SHALL NOT EXTEND BEYOND THE CONNECTED PLIES. USE WASHER/SPACER IF NECESSARY TO PREVENT SHANK OUT

8. F2280 OR F3148 ASSEMBLIES AND ALTERNATIVE DESIGN FASTENERS THAT MEET THE SPECIFIED REQUIREMENTS PREVIOUSLY MENTIONED SHALL NOT BE RE-LUBRICATED, EXCEPT BY THE MANUFACTURER. 9. FINGER SHIMS MAY BE USED UP TO 1/4 INCH WITHOUT RESTRICTION, SHIM REQUIREMENTS GREATER THAN 1/4 INCH SHALL BE SUBMITTED TO SIDEPLATE SYSTEMS INC FOR APPROVAL PRIOR TO USE. IO. WASHERS SHALL BE ASTM F436 AND SHALL BE USED UNDER THE NUT OF THE FASTENER ASSEMBLY (AND BOLT HEAD AS REQUIRED) SO AS TO

PROVIDE A HARDENED NON-GALLING SURFACE OF THE TURNED ELEMENT. WHEN USING THE TURN-OF-NUT OR CALIBRATED WRENCH METHOD, THE TURNED ELEMENT MUST BE THE SAME AS WAS USED WHEN PERFORMING PREINSTALLATION VERIFICATION TESTING . THE FABRICATOR AND ERECTOR SHALL BE RESPONSIBLE FOR QUALITY CONTROL BY PROVIDING, AS A MINIMUM, IN-PROCESS VISUAL

INSPECTION OF ALL FABRICATION AND ERECTION ACTIVITIES TO ENSURE THAT MATERIALS AND WORKMANSHIP MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND SHALL INCLUDE WORK PERFORMED PRIOR TO ASSEMBLY. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, VERIFYING THAT EFFECTIVE PROCEDURES AND METHODS HAVE BEEN EMPLOYED IN THE FORM OF A DISTORTION CONTROL PROGRAM TO ACCOUNT FOR AND COUNTERACT THE EFFECTS OF WELD SHRINKAGE, EXISTING BEAM SWEEP AND CAMBER, AND CHANGES IN MOMENT FRAME GEOMETRY DUE TO SKEWED AND CURVED DESIGN CONFIGURATIONS (AS OCCURS), TO ENSURE COMPLIANCE WITH SPECIFIED ERECTION AND ALIGNMENT TOLERANCES. QC INSPECTION SHALL INCLUDE HOLD POINTS FOR THE FOLLOWING: VERIFICATION THAT ACTUAL COLUMN FLANGE WIDTH IS AT LEAST NOMINAL COLUMN FLANGE WIDTH WHERE THE SIDE PLATES (A) ARE

TO BE INSTALLED. IN THE UNLIKELY EVENT ACTUAL COLUMN FLANGE WIDTH IS LESS THAN NOMINAL, BUT WITHIN AISC STANDARD MILL TOLERANCES (-3/16 INCH MAX), CONTACT SIDEPLATE SYSTEMS, INC FOR APPROPRIATE RECOMMENDATIONS MINIMUM CLEAR DIMENSION SHALL BE VERIFIED AFTER PLACEMENT OF WELD {2}, COOLING OF WELD {2}, AND REMOVAL OF TEMPORARY SHOP CONSTRUCTION AID(S). VERIFY THAT A MINIMUM ACTUAL COLUMN FLANGE WIDTH DIMENSION OCCURS ANYWHERE IN BETWEEN THE SIDE PLATES (A) FROM TOP TO BOTTOM. THE SIDE PLATES SHALL BE PARALLEL TO ONE ANOTHER. IN NO CASE SHALL THEY BE LESS

THAN THE ACTUAL COLUMN FLANGE WIDTH. 3. MAXIMUM SPREAD DIMENSION OF SIDE PLATE {A} SHALL NOT EXCEED ACTUAL COLUMN FLANGE WIDTH PLUS THE SCHEDULED SPREAD DIMENSION Y. THE FIELD CONSTRUCTION AID SHALL BE PLACED AND HOLD THE SIDE PLATES IN THIS FLARED CONDITION UNTIL THE BEAM HAS BEEN SAFELY ERECTED. IN NO CASE SHALL THE SPREAD CAUSE PERMANENT DEFORMATION IN THE SIDE PLATES.

BEAM, TO MINIMIZE, IF NOT ELIMINATE, ANY MISALIGNMENT OF BOLT HOLES DUE TO BEAM FLANGE TILT WHEN THE BEAM HAS BEEN

4. VERIFICATION OF BOLT HOLE ELEVATION AND SPACING FOR POSITION OF SIDE PLATE (A) AND PROPER POSITION AND ELEVATION OF ANGLES (G). VERIFICATION OF PERPENDICULAR ALIGNMENT BETWEEN THE TOP COVER PLATE (B) AND BOTTOM ANGLES (H) TO THE WEB OF THE

LOWERED INTO PLACE. VERIFICATION OF BOLT HOLE SPACING AND POSITION ON COVER PLATE (B) AND ANGLES (H). CONSIDERATION SHALL BE GIVEN TO THE CUPPING EFFECT OF THE TOP COVER PLATE (B), DUE TO WELD SHRINKAGE. VERIFICATION OF THE DISTANCE BETWEEN EXTERIOR ANGLE (H) FACES AND THEIR RESPECTIVE BOLT HOLE PLACEMENT TO EACH OTHER (VERTICALLY AND HORIZONTALLY).

4. VERIFICATION THAT IN NO CASE SHALL THE OUTSIDE FACE OF VSE {F} EXTEND BEYOND THE OUTSIDE FACES OF THE LONGITUDINAL 5. VERIFICATION THAT VERTICAL PLACEMENT OF VSE (F) IS IN THE CORRECT LOCATION.

a. AFTER REMOVAL FROM PROTECTIVE PACKAGING, THE PERMISSIBLE ATMOSPHERIC EXPOSURE TIME OF ELECTRODES SHALL NOT EXCEED THE ELECTRODE MANUFACTURER'S GUIDELINES AND SHALL BE IN ACCORDANCE WITH AWS D1.8 SECTION 6.4. a. THE PARTS TO BE JOINED BY FILLET WELDS SHALL BE BROUGHT INTO AS CLOSE CONTACT AS PRACTICABLE. USING AS NECESSARY

SUITABLE CLAMPING MEANS. THE ROOT OPENING (I.E., THE FIT-UP GAP) SHALL NOT EXCEED 1/4 INCH. FOR FILLET WELD ROOT GAPS GREATER THAN 1/16 INCH, THE LEG SIZE (I.E., THE SPECIFIED SIZE) OF FILLET WELD SHALL BE INCREASED BY THE AMOUNT OF THE ROOT

a. THE ROUGHNESS OF ALL THERMAL-CUT SURFACES SHALL BE NO GREATER THAN AN ANSI SURFACE ROUGHNESS VALUE OF 1000 MICRO-

INCHES. ROUGHNESS EXCEEDING THIS VALUE AND NOTCHES OR GOUGES NOT MORE THAN 3/16 INCH DEEP SHALL BE REMOVED BY MACHINING OR GRINDING. NOTCHES OR GOUGES IN THE THERMALLY CUT EDGES DEEPER THAN 3/16 INCH SHALL BE REPAIRED PER AWS. a. TENSION CALIBRATION SHALL BE USED TO CONFIRM THE SUITABILITY OF THE COMPLETE FASTENER ASSEMBLY, AND THE PROCEDURE TO BE USED BY THE BOLTING CREW. A MINIMUM SAMPLING OF AT LEAST THREE COMPETE FASTENER ASSEMBLIES OF EACH COMBINATION OF DIAMETER, LENGTH, GRADE, WASHER REQUIREMENTS, LUBRICATION, AND LOT SHALL BE USED. CALIBRATION SHALL BE DONE AT THE SITE OF INSTALLATION IN A TENSION CALIBRATOR TO VERIFY THAT THE PRETENSIONING METHOD IS ADEQUATE. b. IF FASTENER ASSEMBLIES ARE FOUND TO BE LESS THAN THE FOLLOWING SPECIFIED REQUIREMENTS (PRETENSION VALUE AS FOLLOWS: 1

INCH DIAMETER = 67 KIPS, 1 1/8 INCH DIAMETER = 84 KIPS, 1 1/4 INCH DIAMETER = 107 KIPS, AND 1 1/2 INCH DIAMETER = 155 KIPS), THE CAUSE(S) SHALL BE DETERMINED AND RESOLVED BEFORE USING SAID FASTENER ASSEMBLIES. 6. EXPOSURE LIMITATION ON FASTENERS: a. FASTENER COMPONENTS SHALL BE PROTECTED FROM CONTAMINATION (DIRT AND MOISTURE) AND SHALL BE STORED IN CLOSED

CONTAINERS AT THE SITE OF INSTALLATION. FASTENER COMPONENTS THAT ARE NOT INCORPORATED INTO THE WORK SHALL BE RETURNED TO PROTECTED STORAGE AT THE END OF THE WORK SHIFT. FASTENER COMPONENTS THAT ACCUMULATE RUST OR DIRT SHALL NOT BE USED UNLESS THEY ARE RE-QUALIFIED AND APPROVED BY SIDEPLATE SYSTEMS, INC.

a. CONFIRM F436 CORRECTLY SIZED WASHERS HAVE BEEN USED IN THE FASTENER ASSEMBLY

IN ADDITION TO ALL OTHER QUALITY ASSURANCE INSPECTION ACTIVITIES, THE OWNER'S VERIFICATION INSPECTOR SHALL BE RESPONSIBLE FOR a. TO ASSURE THE PROPER AMPERAGE AND VOLTAGE OF THE WELDING PROCESS, THE USE OF HAND HELD CALIBRATED AMP AND VOLT METERS SHALL BE USED. THIS EQUIPMENT SHALL BE USED BY THE FABRICATOR AND THE INSPECTOR. AMPERAGE AND VOLTAGE SHALL BE MEASURED NEAR THE ARC. TRAVEL SPEED AND ELECTRODE STICK OUT SHALL BE VERIFIED TO BE IN COMPLIANCE WITH THE APPROVED

b. VISUAL INSPECTION SHALL BE PERFORMED ON ALL SHOP WELDS. c. EACH WELDER EMPLOYED ON THE PROJECT SHALL UNDERSTAND ALL THE REQUIREMENTS OF THE WELDING PROCEDURE

SPECIFICATION(S) BEFORE WELDING ON THE PROJECT. d. AS-BUILT BEAM TO COLUMN GAP PER CONNECTION SCHEDULE IS ALLOWED TO BE INSTALLED WITH A TOLERANCE OF PLUS OR MINUS 1/2 e. EACH WPS AND QUALIFICATION DOCUMENT SHALL BE SUBMITTED TO THE SEOR AND TO SIDEPLATE SYSTEMS, INC. FOR REVIEW AND

APPROVAL PRIOR TO THE START OF FABRICATION. WHERE WELDING OF HORIZONTAL SHEAR PLATE (D) OR VERTICAL SHEAR PLATE (C) ENCROACH INTO THE K-AREA (AS DEFINED IN AISC 341), THE WEB SHALL BE VISUALLY CHECKED FOR CRACKS. THE INSPECTION AREA SHALL INCLUDE THE K-AREA BASE METAL WITHIN 3 INCHES OF THE WELD. THE INSPECTION SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING PER AWS D1.8,

THE SURFACES ADJACENT TO THE BOLT HEAD AND NUT SHALL BE FREE OF DIRT AND OTHER FOREIGN MATERIAL. COMPRESSIBLE MATERIALS, OTHER THAN THE SPECIFIED COATINGS, SHALL NOT BE PLACED WITHIN THE GRIP OF THE BOLT b. FAYING SURFACES ARE PERMITTED TO BE COATED AND UNCOATED AND SHALL BE FREE OF LOOSE SCALE AND ANY INADVERTENT

OVERSPRAY. IF COATING IS REQUIRED, THE FAYING SURFACES SHALL FIRST BE BLAST CLEANED AND SUBSEQUENTLY COATED WITH A COATING THAT QUALIFIES AS A CLASS 'A' COATING. c. GALVANIZED FAYING SURFACES SHALL BE IN ACCORDANCE WITH ASTM A123.

d. TO AVOID COMPRESSIVE CREEP AND SIGNIFICANT LOSS OF PRETENSION, THE COMBINED COATING THICKNESS SHALL IN NO CASE BE MORE THAN 15 MILS PER SURFACE. e. AFTER THE CONNECTIONS HAVE BEEN ASSEMBLED, VISUALLY ENSURE THAT THE PLIES OF THE CONNECTED ELEMENTS HAVE BEEN BROUGHT INTO AS CLOSE OF CONTACT AS PRACTICABLE WITH ONE ANOTHER. GAPS UP TO 1/8 INCH BETWEEN THE SURFACES SHALL BE

ALLOWED. GAPS GREATER THAN 1/8 INCH UP TO 1/4 INCH SHALL HAVE FINGER SHIMS INSTALLED BEFORE PRETENSIONING. FOR GAPS GREATER THAN 1/4 INCH, CONTACT SIDEPLATE SYSTEMS, INC. A MINIMUM BOLT PRETENSION VALUE SHALL BE AS FOLLOWS: 1 INCH DIAMETER = 64 KIPS, 1 1/8 INCH DIAMETER = 80 KIPS, 1 1/4 INCH DIAMETER =

102 KIPS, AND 1 1/2 INCH DIAMETER = 148 KIPS. THE INSPECTOR SHALL OBSERVE THE PRE-INSTALLATION VERIFICATION TESTING. SUBSEQUENTLY, THE INSPECTOR SHALL ENSURE THAT THE BOLTING CREW PROPERLY FOLLOW THE CORRECT METHODOLOGY OUTLINED a. FOR TURN OF THE NUT METHOD: BY VISUAL OBSERVATION ENSURE THAT THE NUT AND PROTRUDING END OF THE BOLT HAVE BEEN MATCH-MARKED SO THAT THE PROPERLY ROTATED TURNED ELEMENT CAN BE VISUALLY OBSERVED RELATIVE TO THE UNTURNED ELEMENT. b. FOR CALIBRATED WRENCH METHOD: BY ROUTINE OBSERVATION ENSURE THAT THE CALIBRATED WRENCH IS BEING APPLIED TO THE

c. FOR TWIST-OFF-TYPE TENSION CONTROL METHOD: BY ROUTINE OBSERVATION ENSURE THAT THE SPLINED ENDS ARE PROPERLY SEVERED d. FOR COMBINED METHOD (ASTM F3148): BY ROUTINE OBSERVATION OR MATCH MARKING TO VERIFY RELATIVE BOLT AND NUT ROTATION.

1. PER AISC 341 SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, SECTION D1.3, SPECIAL (SMF) AND INTERMEDIATE (IMF) MOMENT FRAME SYSTEMS SHALL HAVE DESIGNATED PROTECTED ZONES AS FOLLOWS:

 BEAM
 THE PROTECTED ZONE STARTS FROM THE VERTICAL EDGE OF SIDE PLATE {A}, AWAY FROM THE COLUMN, AND ENDS ON THE BEAM AS DETAILED. SEE SIDEPLATE TYPICAL DETAILS. SHOT PINS AND PUDDLE WELDS ARE ALLOWED IN THE BEAM PROTECTED ZONE TO SECURE METAL DECKING. THEY SHALL NOT PENETRATE MORE THAN 85% OF THE BEAM FLANGE THICKNESS.

 THE PROTECTED ZONE FOR THE SIDE PLATES (A) ARE DEFINED AS A RECTANGULAR AREA AT THE COLUMN/BEAM SEPARATION (GAP) ALONG THE TOP AND BOTTOM EDGES OF THE SIDE PLATES {A}. SEE SIDEPLATE TYPICAL DETAILS. NOTE: WELDS {2} AND {8} ARE EXEMPT FROM THIS PROTECTED ZONE AND SHALL BE PERFORMED FOR THEIR ENTIRE REQUIRED LENGTH. 2. <u>IDENTIFICATION OF PROTECTED ZONES</u>

a. THE CONTRACTOR SHALL IDENTIFY THE PROTECTED ZONES ON BOTH THE BEAM AND THE SIDE PLATES (A) BY USING ANY SUITABLE NON-DESTRUCTIVE MEANS. b. ONCE THE STEEL DECKING IS IN PLACE, THE CONTRACTOR SHALL USE ANY SUITABLE NON-DESTRUCTIVE MEANS TO IDENTIFY THE PROTECTED ZONES PRIOR TO THE INSTALLATION OF SHEAR STUDS, DECK ATTACHMENTS, ETC.

c. AFTER SPRAYED ON FIRE-RESISTIVE MATERIAL HAS BEEN APPLIED, THE CONTRACTOR SHALL USE ANY SUITABLE NON-DESTRUCTIVE MEANS TO IDENTIFY THE PROTECTED ZONES FOR OTHER DISCIPLINES TO PRECLUDE UNAUTHORIZED ATTACHMENTS.

1. SIDEPLATE CONNECTIONS REQUIRING THIS TYPE OF FINISH SHALL FOLLOW THE SAME CONSTRUCTION SEQUENCING AS PREVIOUSLY OUTLINED

WITH THE FOLLOWING MODIFICATIONS: a. AS APPLICABLE, HORIZONTAL SHEAR PLATES (D) SHALL HAVE AN INCREASED CLIP SIZE WHICH SHALL BE 1 5/8 INCH BY 1 5/8 INCH TO PROVIDE ADEQUATE VENTILATION AND DRAINAGE. CONTACT SIDEPLATE SYSTEMS, INC. IN THE EVENT THAT THE GALVANIZING CONTRACTOR SPECIFICATIONS REQUIRE A LARGER OPENING THAN THAT SPECIFIED HEREIN. b. SEAL WELDING SHALL NOT BE ALLOWED ON THE SIDE PLATES (A), COVER PLATES (B), AND/OR ANGLES (H); THUS, THEY SHALL HAVE A 1/16 INCH GAP INTRODUCED BETWEEN THEM AND THE OUTBOARD FACE OF THE BEAM FLANGES TO ALLOW THE MOLTEN ZINC TO PENETRATE AND SEAL BETWEEN THEIR FAYING SURFACES. c. ANGLE {H} PLACEMENT AND COVER PLATE {B} WIDTH AND HOLE LOCATIONS SHOULD BE ADJUSTED AND DETAILED CORRECTLY IN THE

DETAILING OF THE BEAM DUE TO AN INCREASED OUT-TO-OUT DIMENSION OF GAPPED SIDE PLATES (A) ON THE MOMENT FRAME COLUMN DEPTH OF SIDE PLATES (A) AND HOLE LOCATIONS SHOULD BE ADJUSTED AND DETAILED CORRECTLY FOR THE INCREASED DIMENSION BETWEEN GAPPED COVER PLATE (B) (WHEN APPLICABLE) AND GAPPED ANGLES (H) ON THE MOMENT FRAME BEAM. e. ANY DEVIATIONS TO THESE MODIFICATIONS SHALL BE COORDINATED WITH SIDEPLATE SYSTEMS, INC. AND THE SEOR. 2. IF CONTRACTOR ELECTS TO USE A490 BOLTS AND THE PROJECT SPECIFICATIONS REQUIRE GALVANIZATION, ADDITIONAL REQUIREMENTS SHALL

BE APPLIED TO THE A490 MATERIAL. A490 BOLTS SHALL NOT BE HOT DIP GALVANIZED. FOR ASTM A490 BOLTS, THE PROPER CORROSION PROTECTION SHALL BE A ZINC/ALUMINUM INORGANIC COATING THAT IS IN CONFORMANCE WITH ASTM F1136 GRADE 3. EXAMPLES OF SUCH COATINGS, BUT NOT ENDORSED HEREIN, ARE MAGNI® 556 AND GEOMET® 321, OR DACROMET®. 3. STANDARD ASTM A490 BOLTS WITH ADDITIONAL PROCESS FOR COATINGS SHALL REQUIRE EVIDENCE OF COMPLIANCE (CERTIFICATION, LETTER, OR SIMILAR) FROM THE APPLICATOR.

1. WHEN REQUIRED BY THE GOVERNING CODE FOR CERTAIN TYPES OF CONSTRUCTION, SIDEPLATE CONNECTIONS SHALL HAVE A FIRE-RESISTANCE RATING LIKE THAT OF A STEEL "STRUCTURAL FRAME".

2. THE MINIMUM THICKNESS OF SPRAY-APPLIED FIRE-RESISTIVE MATERIAL (SFRM) FOR STEEL SIDEPLATE CONNECTIONS PLATES THAT ARE NOT ENCASED IN CONCRETE, SHALL BE DETERMINED JUST LIKE THAT OF A PIPE/TUBE COLUMN SECTION WITH A CONSTANT STEEL WALL THICKNESS USING THE THICKNESS OF SIDE PLATE {A} FOR EACH SIDEPLATE CONNECTION ID PER THE SIDEPLATE CONNECTION SCHEDULE, WHICH ARE UNIFORMLY HEATED AND PROTECTED (THE FIRE EXPOSURE OF A PIPE/TUBE COLUMN IS DIRECTLY ANALOGOUS TO A PLATE WITH A 1-SIDED FIRE EXPOSURE AND PROTECTION). THE SFRM SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ASTM E119 AND LISTED FOR FIRE RESISTIVE PIPE/TUBE COLUMN APPLICATIONS FOR NO LESS THAN THE REQUIRED RATED TIME.

3. WHEN NO VSE OPTION IS SPECIFIED, PROVIDE A CLOSURE PLATE, AS NEEDED, FOR SFRM MATERIAL TO MORE EASILY ADHERE TO. ATTACH CLOSURE PLATE TO THE INSIDE OR OUTSIDE FACE OF THE SIDE PLATE (A) WITHIN THE MIDDLE HALF OF THE SIDE PLATE (A) HEIGHT. DO NOT ATTACH CLOSURE PLATE TO THE BEAM FLANGES OR WEB.

4. THE CONTRACTOR SHALL PROVIDE THE MEANS, TYPICALLY DONE WITH A LAYERING TECHNIQUE, FOR FIREPROOFING ACROSS THE PHYSICAL COLUMN/BEAM SEPARATION (GAP) BETWEEN THE BOTTOM BEAM FLANGE AND THE FACE OF THE COLUMN FLANGE. IF CLOSURE IS REQUIRED FOLLOW ITEMS 4a AND 4b IN THE SIDEPLATE CONSTRUCTION GUIDELINES.

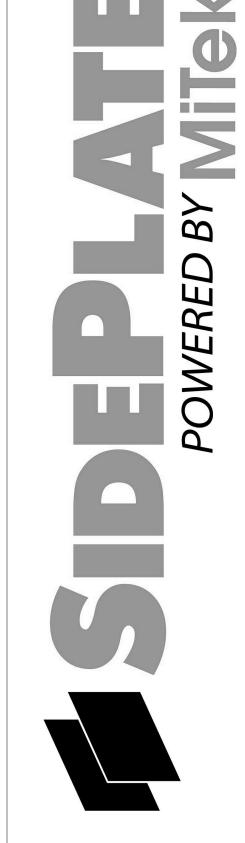
1. IN ORDER TO SAFEGUARD THE AUTHORIZED USE AND INTELLECTUAL PROPERTY OF THE PATENTED SIDEPLATE CONNECTION TECHNOLOGY, THE STEEL FABRICATION SUBCONTRACTOR SHALL SATISFY THE FOLLOWING REQUIREMENTS: a. A NOTICE OF INTELLECTUAL PROPERTY, IDENTICAL TO THAT PROVIDED ON THIS SHEET, SHALL BE AFFIXED ON EACH SHEET OF SHOP DETAIL AND FIELD ERECTION DRAWINGS CONTAINING SIDEPLATE SYSTEM INFORMATION WHICH DISCLOSES IN ANY WAY THE SIDEPLATE CONNECTION CONCEPT PRIOR TO RELEASING SUCH INFORMATION FOR ITS INTENDED USE. SUCH NOTICE SHALL BE PROVIDED TO THE STEEL FABRICATION SUBCONTRACTOR BY SIDEPLATE SYSTEMS, INC. IN A FORMAT (E.G. WORD OR AUTOCAD) SUITABLE TO THE NEEDS OF THE STEEL FABRICATION SUBCONTRACTOR'S DETAILER. b. PATENT LABELS SHALL BE APPLIED IN COMPLIANCE WITH THE GOVERNING PATENT AND INTELLECTUAL PROPERTY LAWS AND SHALL BE

PLACED, AS A MINIMUM, IN THE FOLLOWING LOCATIONS: • IF PLATE {D} IS REQUIRED, PLACE ONE STICKER ON THE OUTSIDE FACE OF ONE OF THE TWO BOTTOM HORIZONTAL PLATES {D} IF PLATE {D} IS NOT REQUIRED, PLACE ONE STICKER ON THE WEB OF THE COLUMN BEHIND THE SIDE PLATES {A}.

PLACE ONE STICKER ON ONE END OF THE BEAM BETWEEN THE TOP AND BOTTOM FLANGES WHERE SIDEPLATE CONNECTIONS

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SidePlate Systems, Inc. 25909 Pala, Suite 200 Mission Viejo, CA 92691

DATE 05.07.2024

SHEET TITLE

SIDEPLATE GENERAL NOTES

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HOLE SIZE = BOLT DIA. + 1/8", TYPICAL

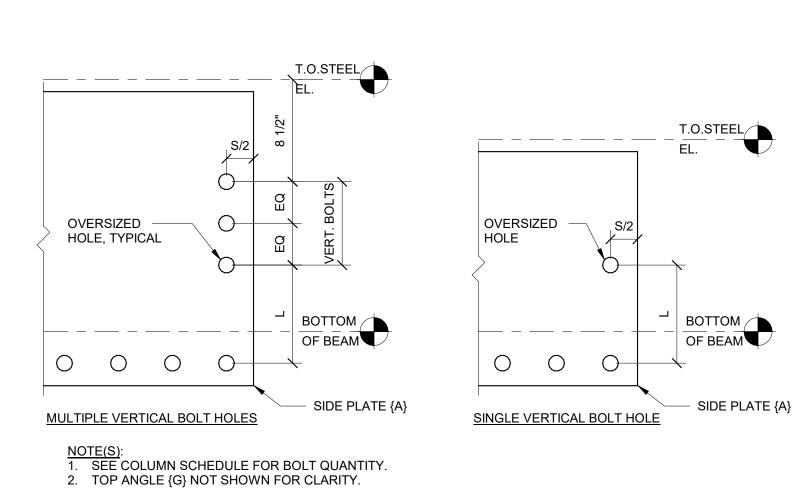
NOTE(S):

1. DECK SUPPORT MAY BE ACCOMPLISHED BY WELDING FLAT BAR TO TIP OF ANGLE {G} PER DETAIL 5 / SP111

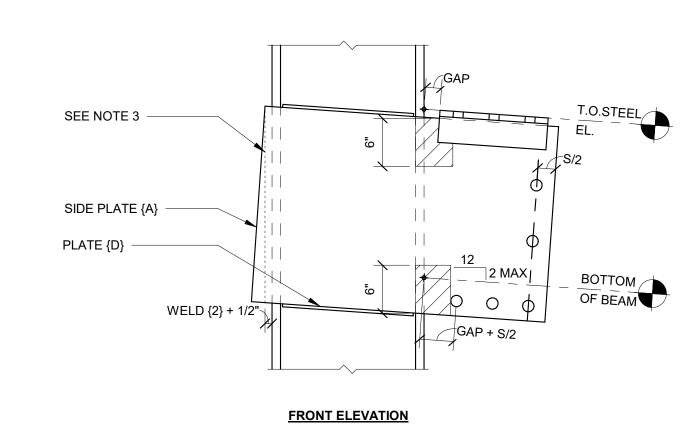
OR BY EXTENDING HORIZONTAL LEG OF ANGLE {G} PER DETAIL 7 / SP111 2. EDGE SUPPORT MAY BE ACCOMPLISHED BY WELDING FLAT BAR TO TIP OF ANGLE {G} PER DETAIL 6 / SP111 OR BY EXTENDING HORIZONTAL LEG OF ANGLE {G} PER DETAIL 8 / SP111

3. SUGGESTED ANGLE (G) SIZE PROVIDED IN SCHEDULE IS BASED ON COMMONLY AVAILABLE SHAPES PER AISC. IF THE ANGLE {G} SECTION WITH THE GIVEN DIMENSIONS CANNOT BE OBTAINED, THE PIECE SHALL BE FABRICATED BY TRIMMING ONE OR BOTH LEGS OF A LARGER AVAILABLE ANGLE SECTION. 4. ANY ANGLE OF THE REQUIRED THICKNESS THAT IS CAPABLE OF MEETING THE PROPER MATERIAL

SPECIFICATIONS AND THE DIMENSIONS SHOWN ABOVE MAY BE USED FOR ANGLE {G}. 5. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE STEEL FABRICATOR WHAT THE PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA WILL BE.



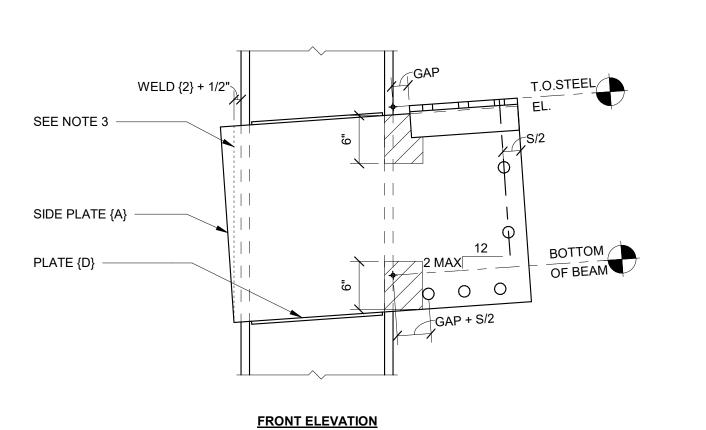
3 SIDE PLATE {A} VSE BOLT HOLE DETAIL (AS APPLICABLE)
N.T.S.



NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC. 2. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION. 3. AT CONTRACTOR'S DISCRETION, SIDE PLATE {A} MAY BE CUT AS SHOWN.

6 SLOPED DOWN CONNECTION N.T.S.



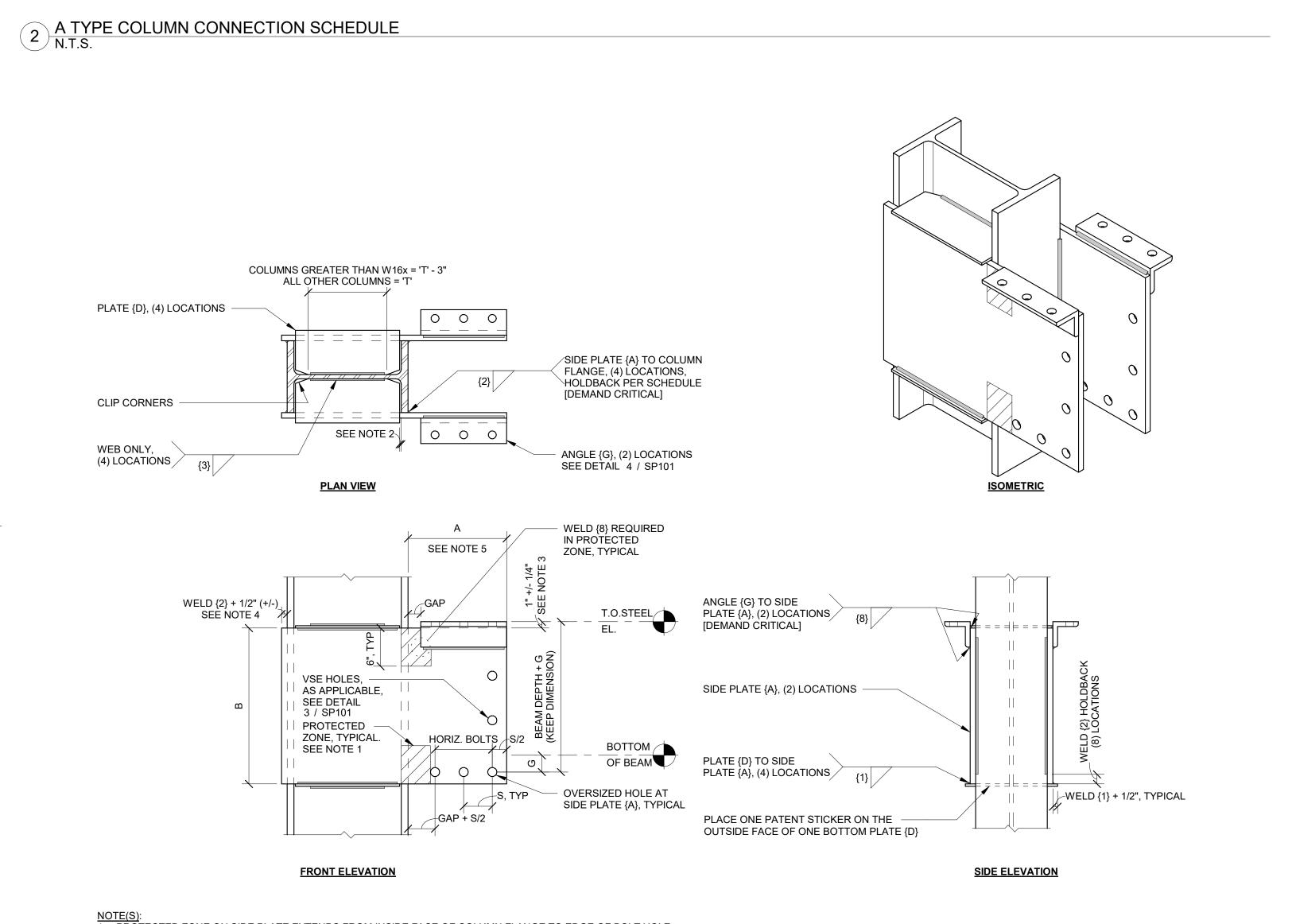
NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

2. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION.

3. AT CONTRACTOR'S DISCRETION, SIDE PLATE {A} MAY BE CUT AS SHOWN.

5 SLOPED UP CONNECTION N.T.S.



NOTE(S):
1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE TO EDGE OF BOLT HOLE.
2. DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR THE UNIFORMITY OF PIECE MARKS.
 THE UNIFORMITY OF PIECE MARKS.
 THE +/- 1/4 INCH TOLERANCE FOR PLACEMENT OF ANGLES {G} IS TO ENSURE CORRECT TOP OF STEEL PLACEMENT RELATIVE TO THE CENTERLINE OF THE BOTTOM HORIZONTAL ROW OF BOLT HOLES. THE PLACEMENT OF ANGLES {G} SHALL NEVER BE MEASURED FROM THE BOTTOM EDGE OF SIDE PLATE {A} TO ESTABLISH THE CORRECT TOP OF STEEL.
 THE 1/2 INCH OVERHANG ON THE SIDE PLATE {A} IS TO ENSURE SUFFICIENT ROOM FOR WELD {2}, THE +/- TOLERANCE IS APPLIED SO THAT IF DESIRED, THE DETAILER CAN MAKE THE SIDE PLATES {A} THE SAME LENGTH WITH SLIGHTLY VARYING COLUMN DEPTHS WITHIN A GROUP OF THE SAME CONNECTION ID'S. 5. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)

1 A TYPE BOLTED CONNECTION N.T.S.

BY

SidePlate Systems, Inc.

Mission Viejo, CA 92691

SIDEPLATE COLUMN

**DETAILS, A TYPE** 

25909 Pala, Suite 200

**SP101** 

05.07.2024

SHEET TITLE

SidePlate Systems, Inc.

Mission Viejo, CA 92691

SIDEPLATE COLUMN

**DETAILS, B TYPE** 

**SP102** 

25909 Pala, Suite 200

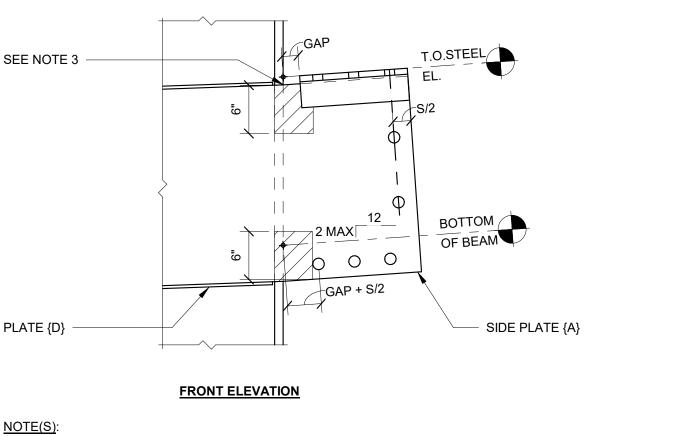
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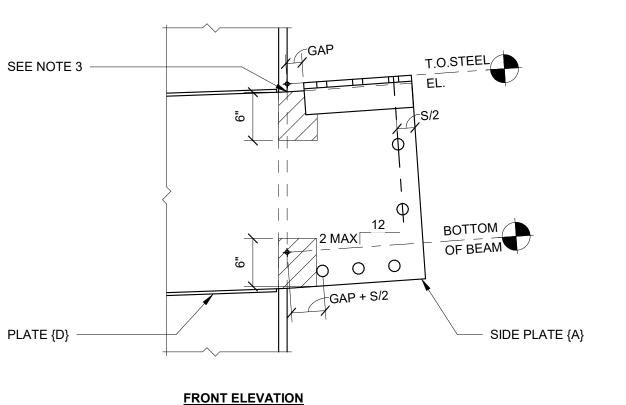
SIDE ELEVATION

05.07.2024

SHEET TITLE

#### /0 0 0 GAP + S/2 PLATE {D} - SIDE PLATE {A} FRONT ELEVATION NOTE(S): 1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL. NOTE THAT SLOPE OF SIDE PLATE WITHIN THE COLUMN EXTENTS MAY NOT MATCH SLOPE OF BEAM. 1 B TYPE BOLTED CONNECTION N.T.S. 5 SLOPED UP CONNECTION N.T.S.





**FRONT ELEVATION** 

PLATE WITHIN THE COLUMN EXTENTS MAY NOT MATCH SLOPE OF BEAM.

PLATE {D}

SEE NOTE 3

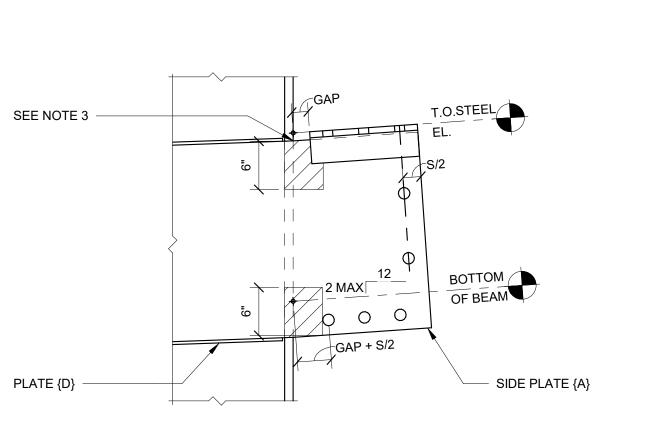
6 SLOPED DOWN CONNECTION N.T.S.

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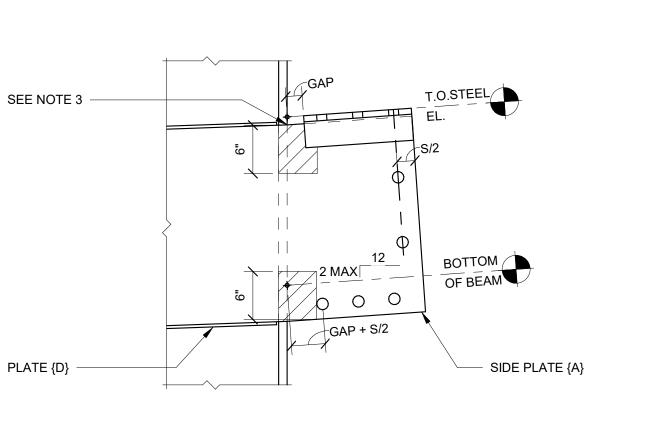


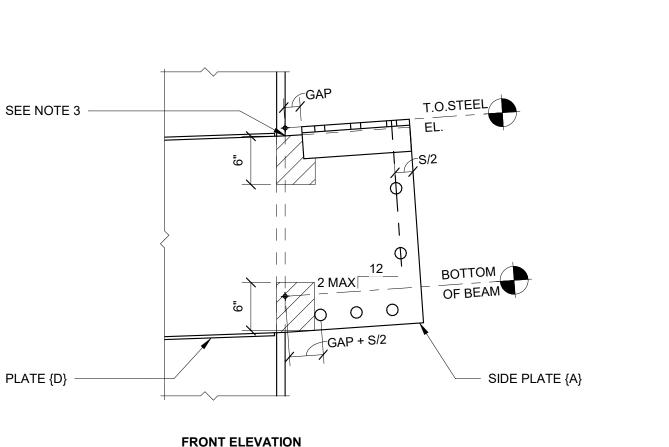
NOTE(S):

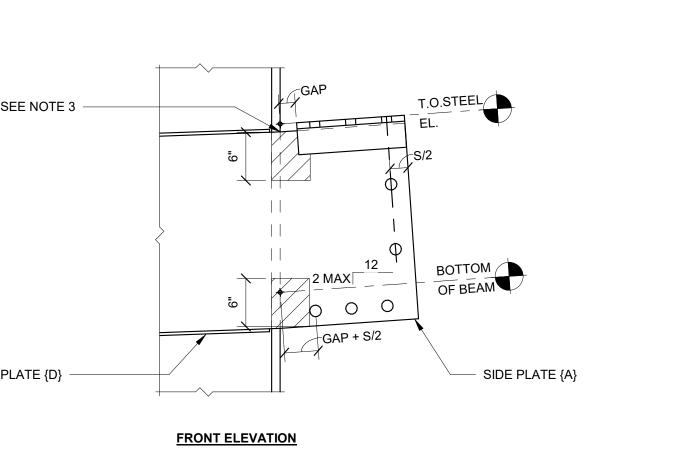
1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

2. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION.

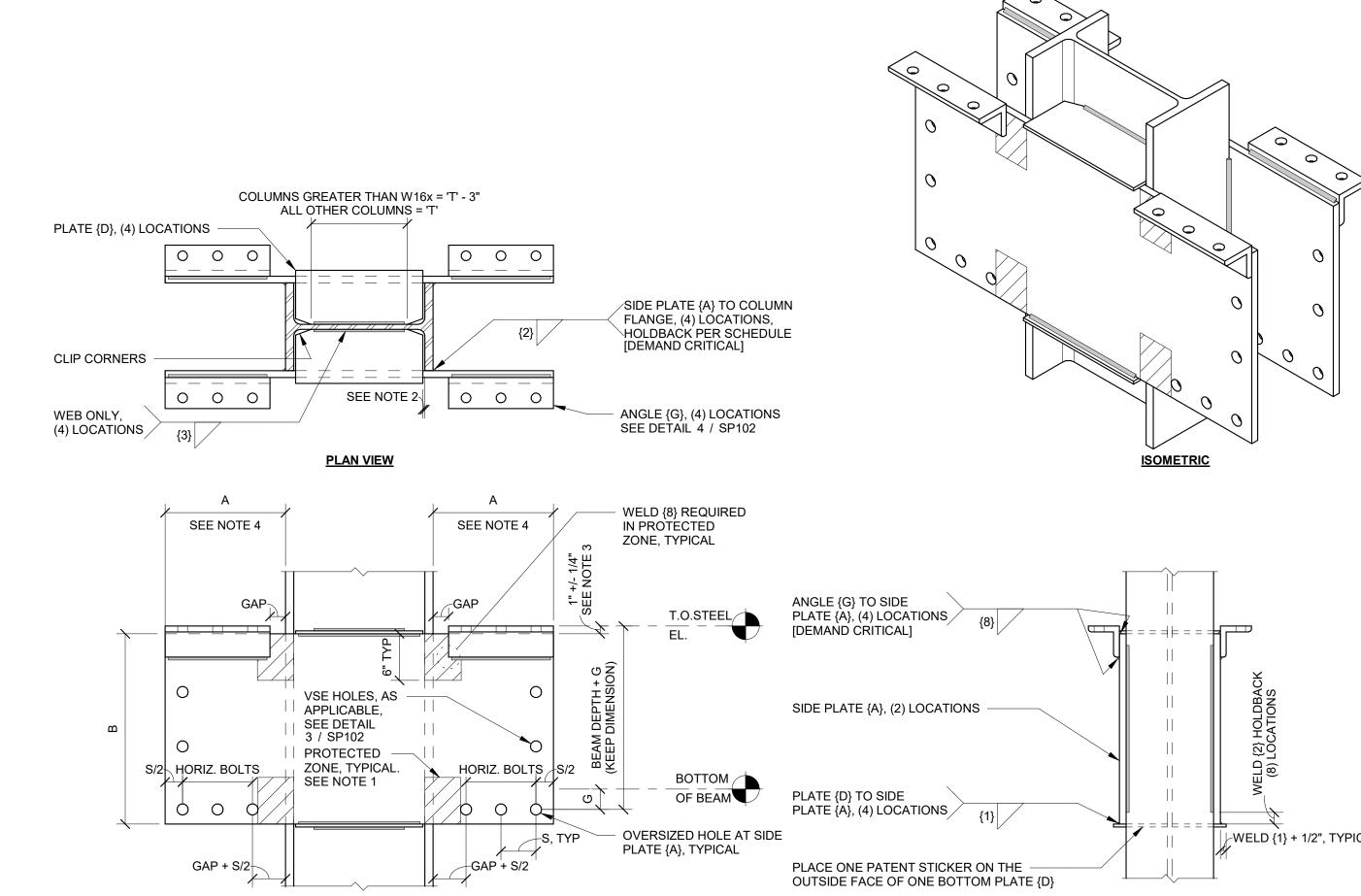
3. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL. NOTE THAT SLOPE OF SIDE







SIDE PLATE {A}



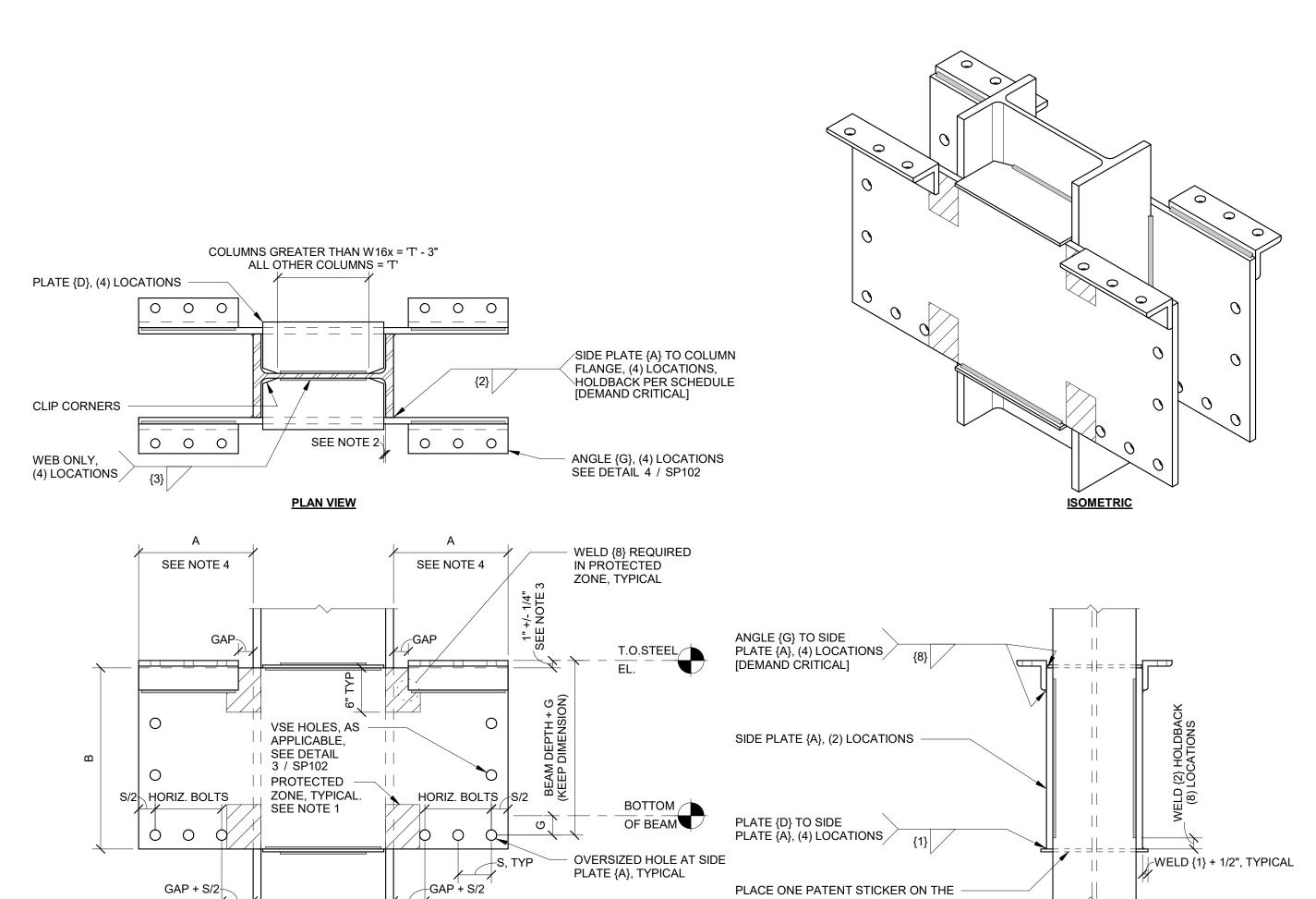
2 B TYPE COLUMN CONNECTION SCHEDULE N.T.S.

FRONT ELEVATION

NOTE(S):

1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE TO EDGE OF BOLT HOLE.

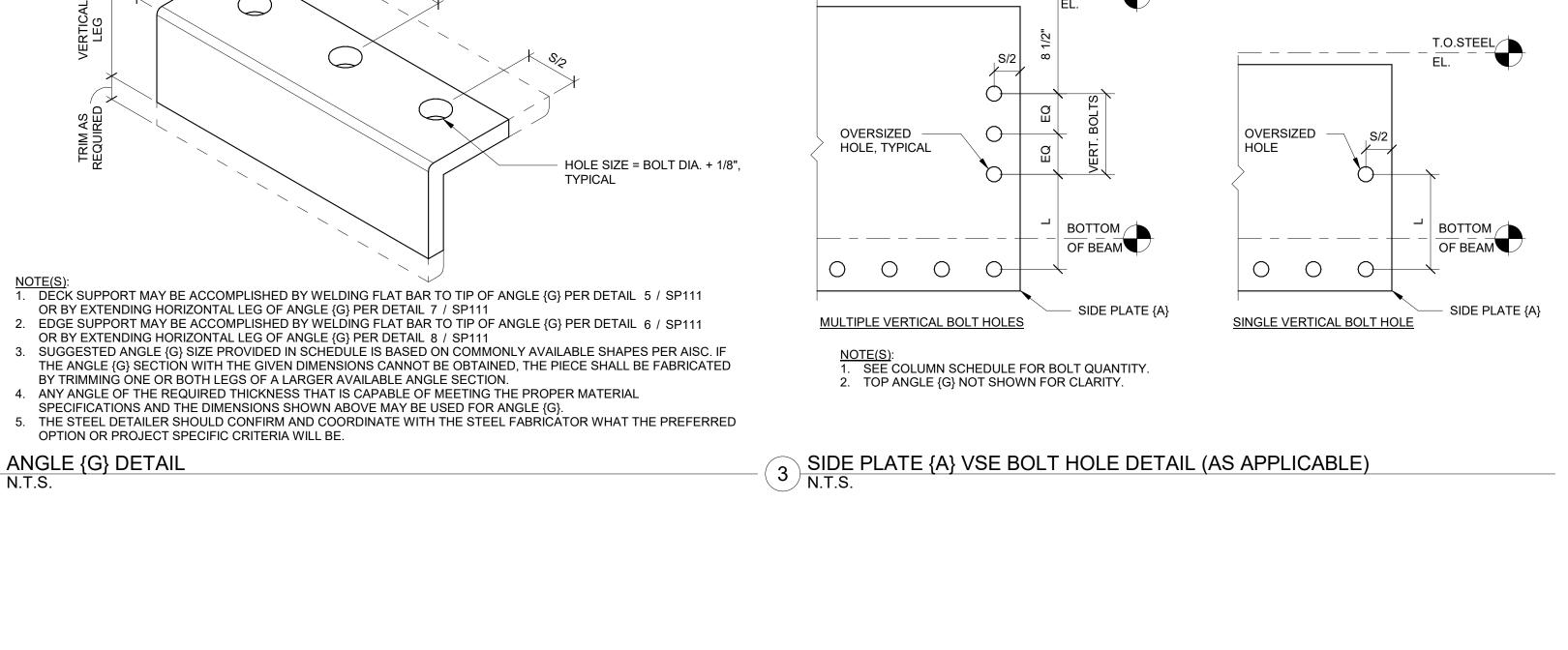
1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIME



2. DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR THE UNIFORMITY OF PIECE MARKS.

3. THE +/- 1/4 INCH TOLERANCE FOR PLACEMENT OF ANGLES {G} IS TO ENSURE CORRECT TOP OF STEEL PLACEMENT RELATIVE TO THE CENTERLINE OF THE BOTTOM HORIZONTAL ROW OF BOLT HOLES. THE PLACEMENT OF ANGLES {G} SHALL NEVER BE MEASURED FROM THE BOTTOM EDGE OF SIDE PLATE {A} TO ESTABLISH THE CORRECT TOP OF STEEL.

4. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)



BY

SidePlate Systems, Inc.

Mission Viejo, CA 92691

SIDEPLATE COLUMN

**DETAILS, C TYPE** 

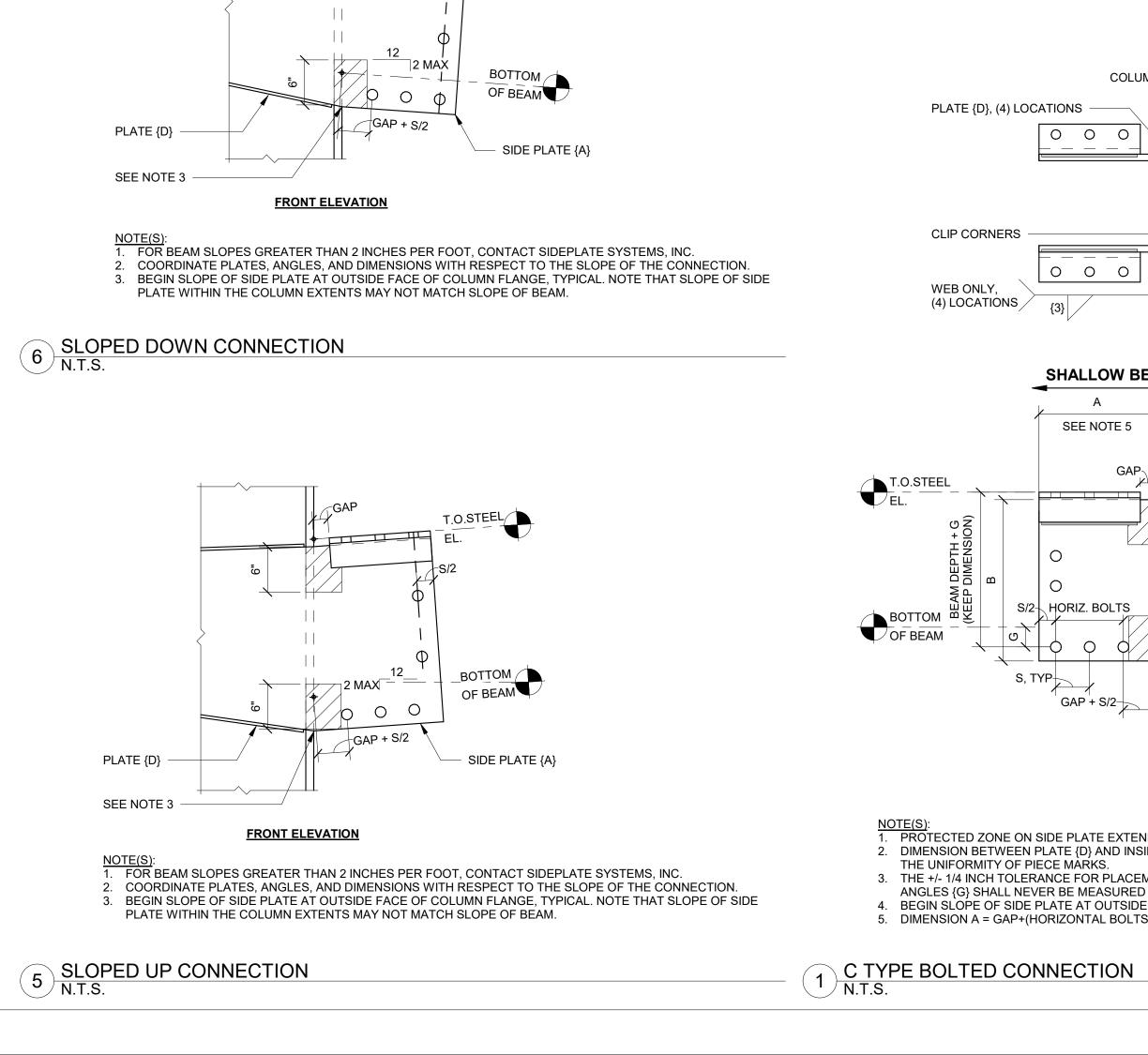
**SP103** 

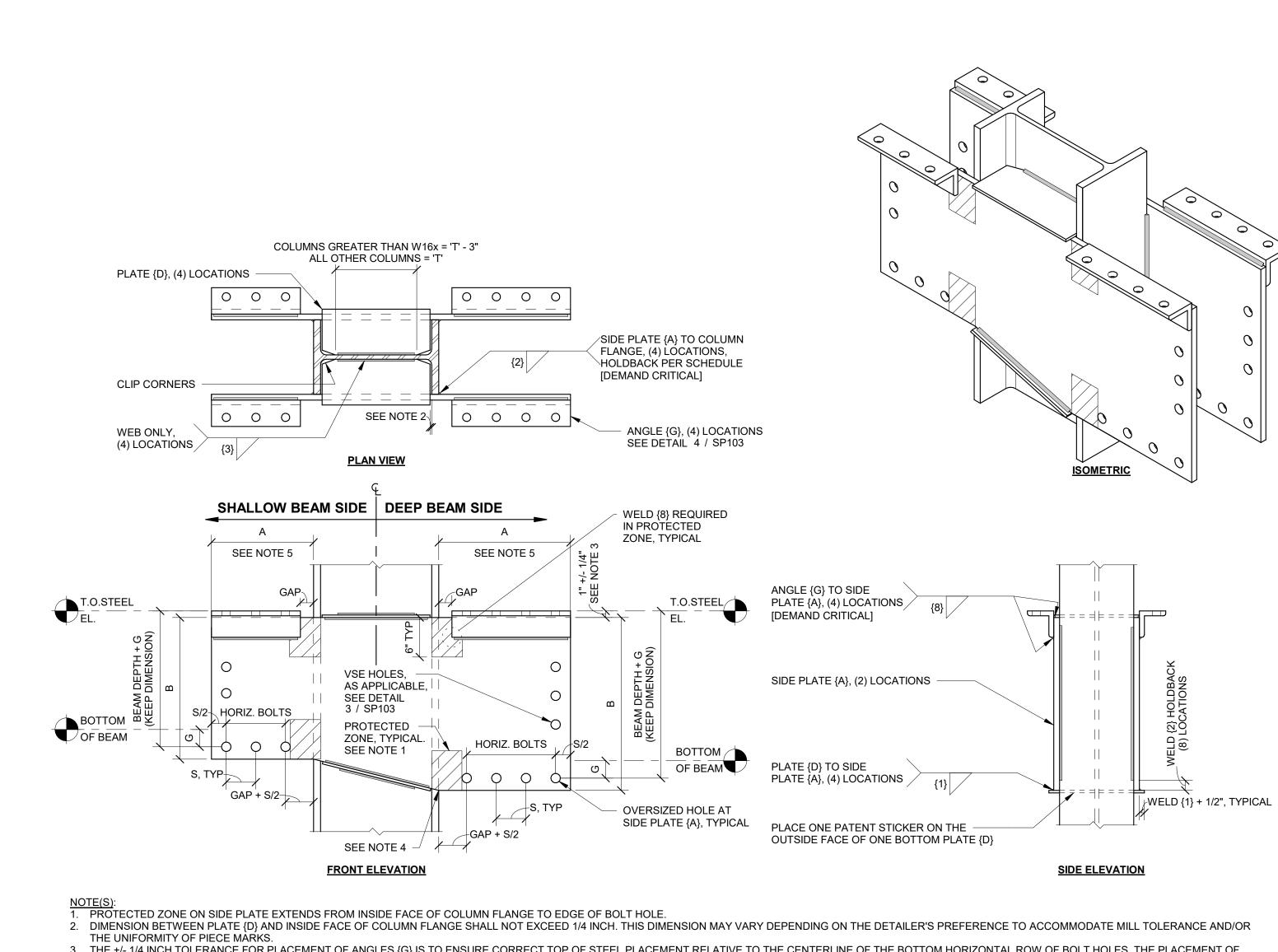
25909 Pala, Suite 200

DATE

05.07.2024

SHEET TITLE



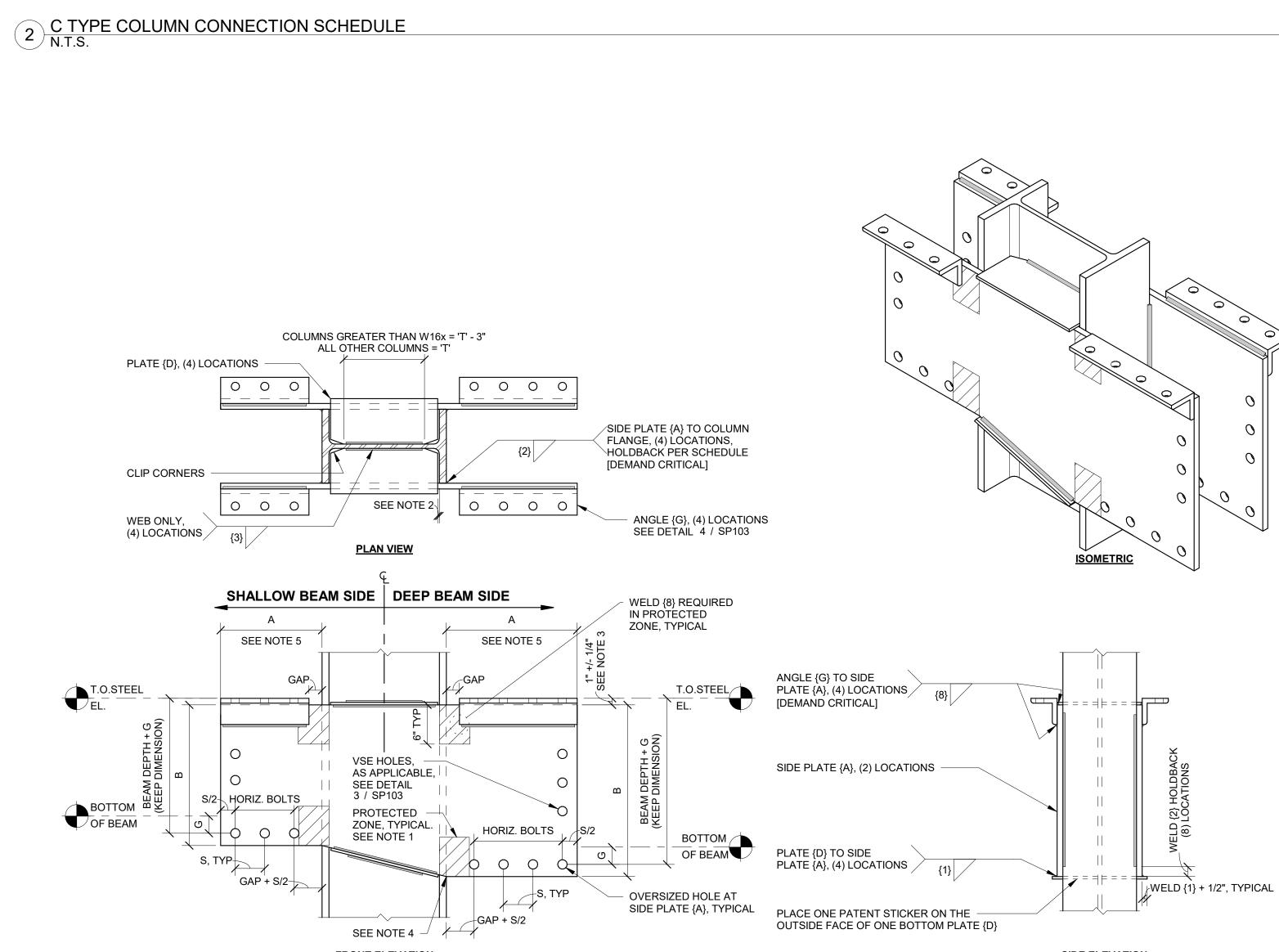


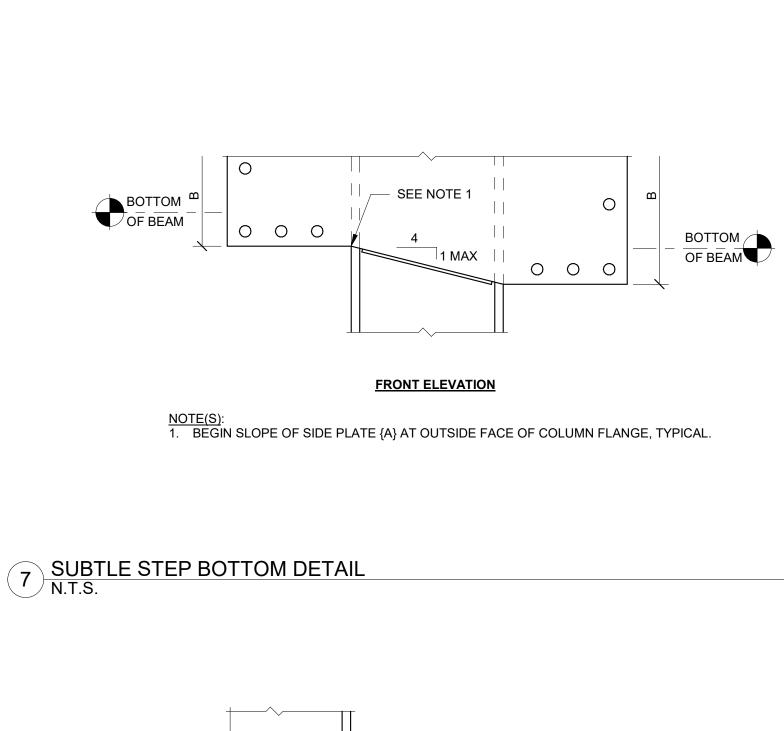
THE UNIFORMITY OF PIECE MARKS.

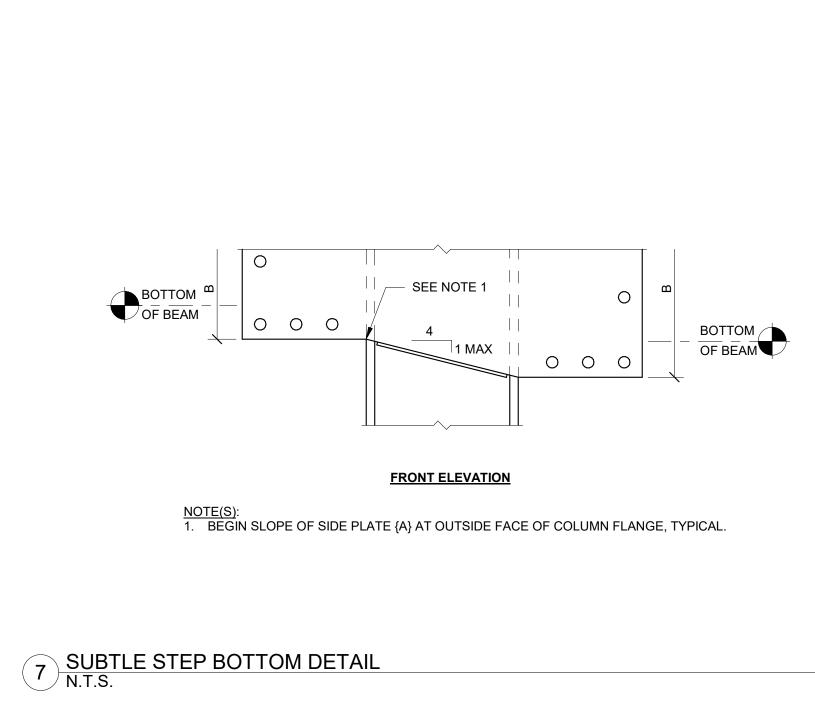
3. THE +/- 1/4 INCH TOLERANCE FOR PLACEMENT OF ANGLES {G} IS TO ENSURE CORRECT TOP OF STEEL PLACEMENT RELATIVE TO THE CENTERLINE OF THE BOTTOM HORIZONTAL ROW OF BOLT HOLES. THE PLACEMENT OF

ANGLES (G) SHALL NEVER BE MEASURED FROM THE BOTTOM EDGE OF SIDE PLATE (A) TO ESTABLISH THE CORRECT TOP OF STEEL.

4. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN, TYPICAL.
5. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)





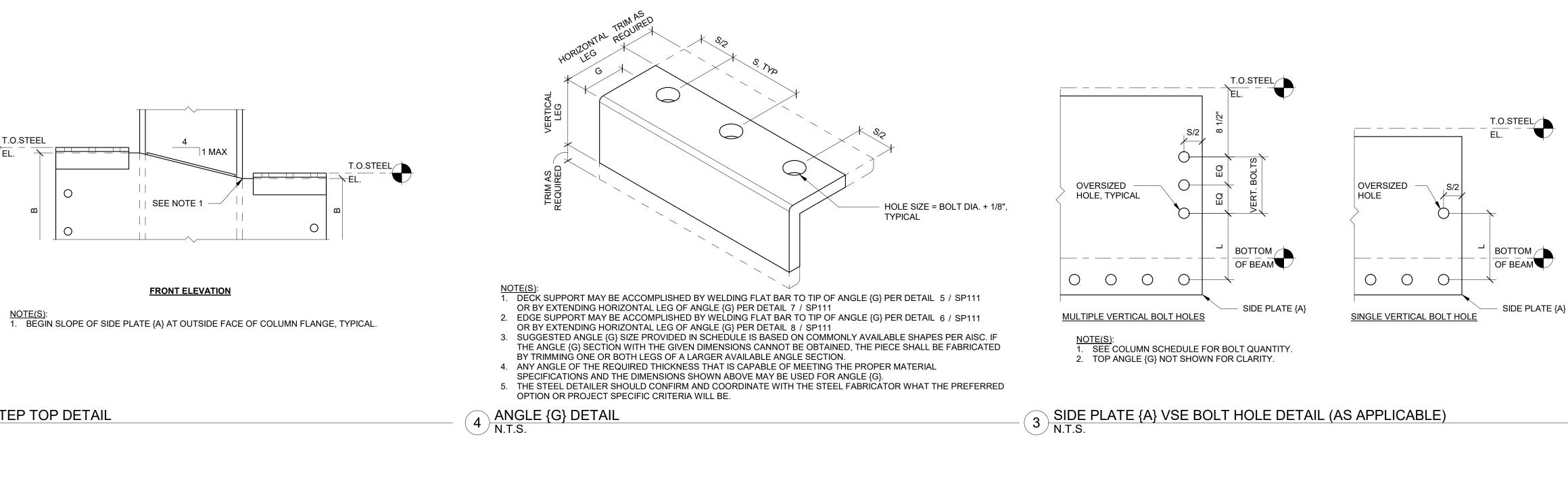


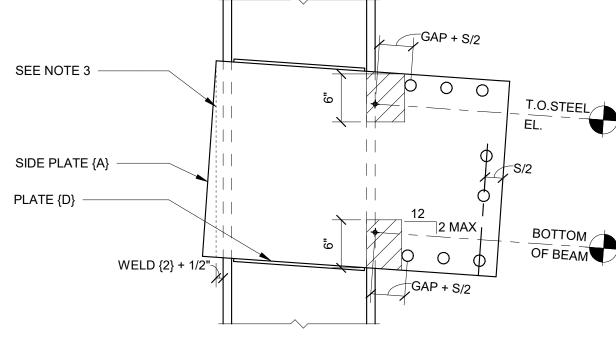
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1 A TYPE NARROW BOLTED CONNECTION N.T.S.

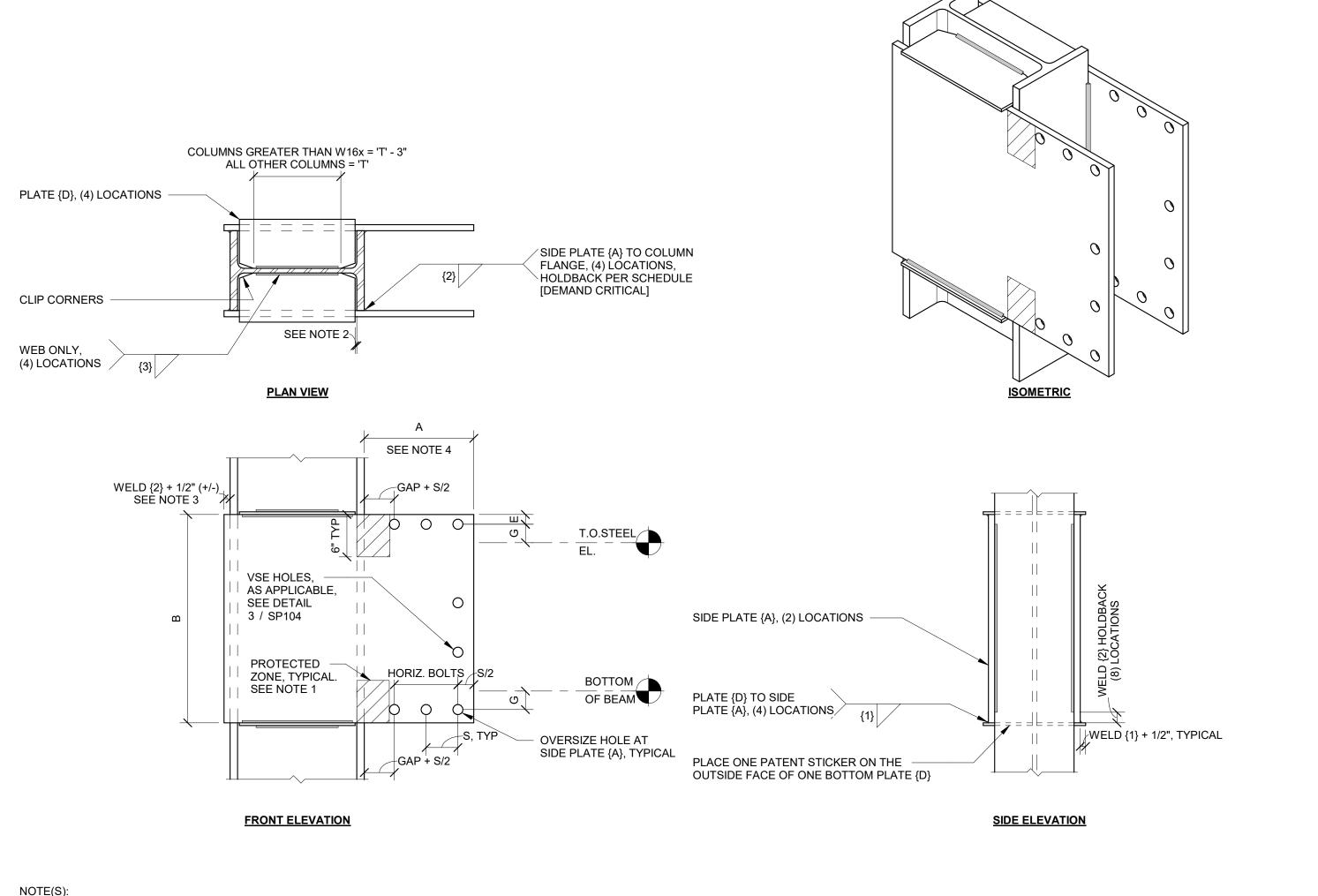
NOTE(S):

1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE TO EDGE OF BOLT HOLE.

2. DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR THE UNIFORMITY OF PIECE MARKS.

3. THE 1/2 INCH OVERHANG ON THE SIDE PLATE {A} IS TO ENSURE SUFFICIENT ROOM FOR WELD {2}, THE +/- TOLERANCE IS APPLIED SO THAT IF DESIRED, THE DETAILER CAN MAKE THE SIDE PLATES {A} THE SAME LENGTH WITH SLIGHTLY VARYING COLUMN DEPTHS WITHIN A GROUP OF THE SAME CONNECTION ID'S.

4. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)

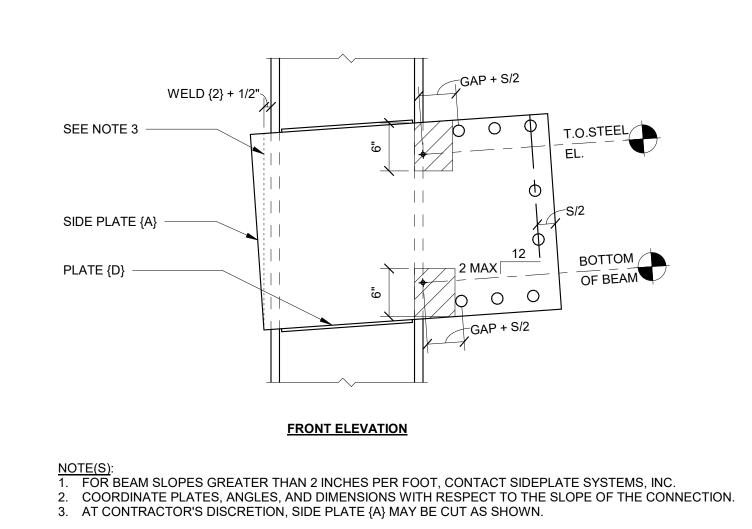


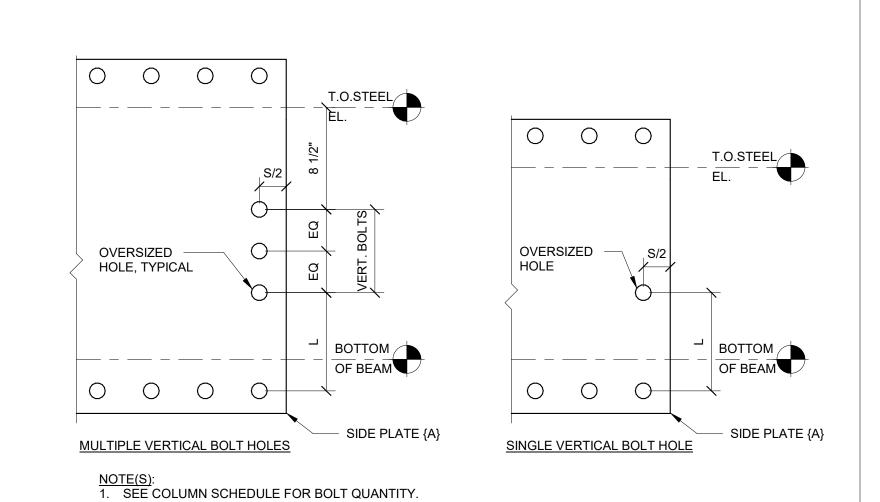
2 A TYPE NARROW COLUMN CONNECTION SCHEDULE N.T.S.

4 SLOPED UP CONNECTION N.T.S.

SIDE PLATE {A} VSE BOLT HOLE DETAIL (AS APPLICABLE)

N.T.S.





SidePlate Systems, Inc.

25909 Pala, Suite 200

DATE

05.07.2024

SHEET TITLE

NARROW

**SP104** 

Mission Viejo, CA 92691

SIDEPLATE COLUMN

**DETAILS, A TYPE** 

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SEE NOTE 3 GAP + S/2 PLATE {D} - SIDE PLATE {A} **FRONT ELEVATION** 

NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

2. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION.

3. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL. NOTE THAT SLOPE OF SIDE PLATE WITHIN THE COLUMN EXTENTS MAY NOT MATCH SLOPE OF BEAM.

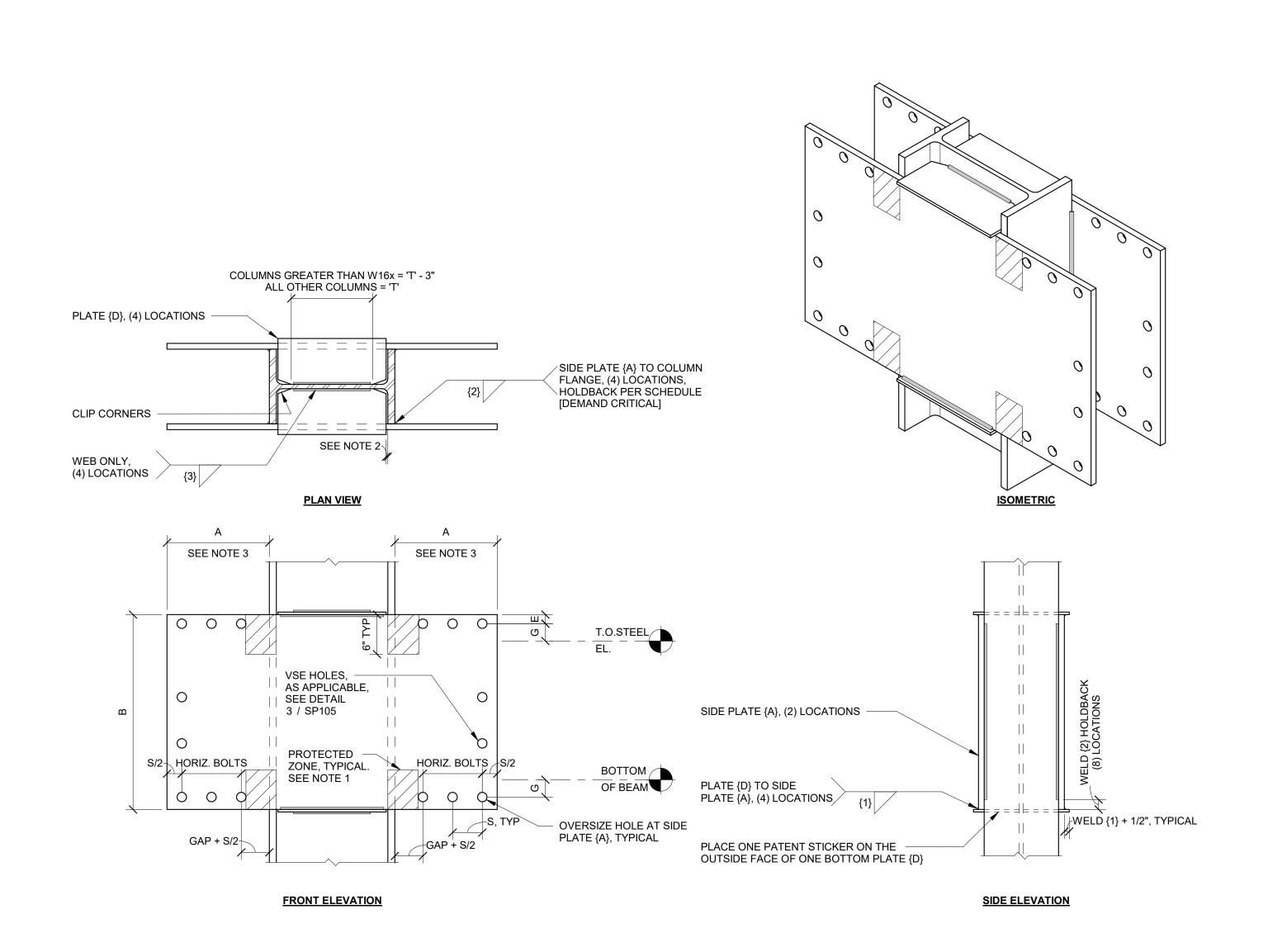
0 0 0 0 0 0 0 \_\_\_ \_ \_ \_ \_ \_ \_ \_ OVERSIZED -OVERSIZED HOLE, TYPICAL 0 0 0 0 0 0 0 - SIDE PLATE {A} SIDE PLATE {A} MULTIPLE VERTICAL BOLT HOLES SINGLE VERTICAL BOLT HOLE

NOTE(S):

1. SEE COLUMN SCHEDULE FOR BOLT QUANTITY.

3 SIDE PLATE {A} VSE BOLT HOLE DETAIL (AS APPLICABLE) N.T.S.

2 B TYPE NARROW COLUMN CONNECTION SCHEDULE N.T.S.



NOTE(S):

1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE TO EDGE OF BOLT HOLE.

2. DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR THE UNIFORMITY OF PIECE MARKS.

3. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)

1 B TYPE NARROW BOLTED CONNECTION N.T.S.

2 MAX

NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

2. COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION.

3. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL. NOTE THAT SLOPE OF SIDE PLATE WITHIN THE COLUMN EXTENTS MAY NOT MATCH SLOPE OF BEAM.

**FRONT ELEVATION** 

- SIDE PLATE {A}

PLATE {D} -

SEE NOTE 3

5 SLOPED DOWN CONNECTION N.T.S.

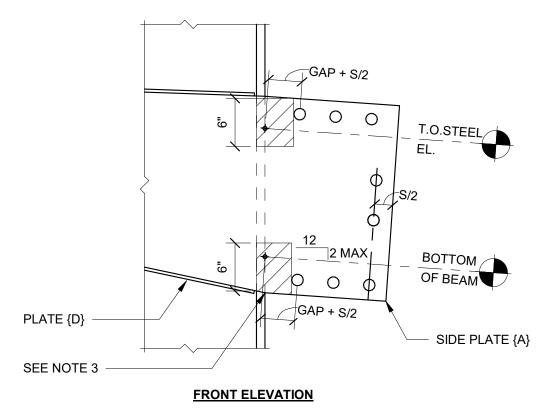
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Mission Viejo, CA 92691 DATE

05.07.2024

SHEET TITLE

SIDEPLATE COLUMN **DETAILS, B TYPE** NARROW



6 SUBTLE STEP BOTTOM DETAIL N.T.S.

NOTE(S):

1. BEGIN SLOPE OF SIDE PLATE {A} AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL.

FRONT ELEVATION

0 0 0

2 C TYPE NARROW COLUMN CONNECTION SCHEDULE N.T.S.

PLATE {D}, (4) LOCATIONS

CLIP CORNERS

WEB ONLY, (4) LOCATIONS

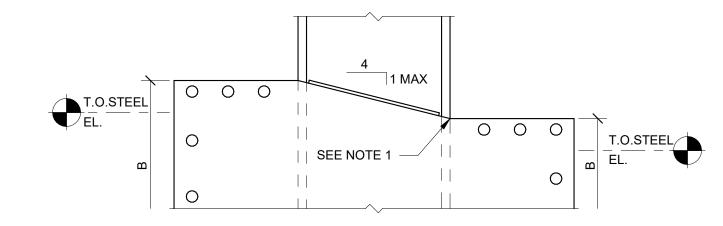
BOTTOM OF BEAM

7 SUBTLE STEP TOP DETAIL N.T.S.

NOTE(S):

1. BEGIN SLOPE OF SIDE PLATE {A} AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL.

**FRONT ELEVATION** 



COLUMNS GREATER THAN W16x = 'T' - 3" ALL OTHER COLUMNS = 'T'

SEE NOTE 2

SEE NOTE 4

HORIZ. BOLTS

GAP + S/2

\_\_GAP + S/2

SHALLOW BEAM SIDE DEEP BEAM SIDE

VSE HOLES, —— || AS APPLICABLE, |- SEE DETAIL

PROTECTED — ZONE, TYPICAL.

SEE NOTE 1

SEE NOTE 3

**FRONT ELEVATION** 

3 / SP106

SEE NOTE 4

S/2 HORIZ. BOLTS

THE UNIFORMITY OF PIECE MARKS.

3. BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN, TYPICAL.

4. DIMENSION A = GAP+(HORIZONTAL BOLTS)\*(S)

SIDE PLATE {A} TO COLUMN FLANGE, (4) LOCATIONS, HOLDBACK PER SCHEDULE

OVERSIZED HOLE AT SIDE PLATE {A}, TYPICAL

NOTE(S):

1. PROTECTED ZONE ON SIDE PLATE EXTENDS FROM INSIDE FACE OF COLUMN FLANGE TO EDGE OF BOLT HOLE.
2. DIMENSION BETWEEN PLATE {D} AND INSIDE FACE OF COLUMN FLANGE SHALL NOT EXCEED 1/4 INCH. THIS DIMENSION MAY VARY DEPENDING ON THE DETAILER'S PREFERENCE TO ACCOMMODATE MILL TOLERANCE AND/OR

[DEMAND CRITICAL]

COORDINATE PLATES, ANGLES, AND DIMENSIONS WITH RESPECT TO THE SLOPE OF THE CONNECTION.
 BEGIN SLOPE OF SIDE PLATE AT OUTSIDE FACE OF COLUMN FLANGE, TYPICAL. NOTE THAT SLOPE OF SIDE PLATE WITHIN THE COLUMN EXTENTS MAY NOT MATCH SLOPE OF BEAM.

SIDE PLATE(A) VSE BOLT HOLE DETAIL (AS APPLICABLE)

N.T.S.

= = = = = =

SIDE ELEVATION

WELD {1} + 1/2", TYPICAL

SIDE PLATE {A}, (2) LOCATIONS -

PLATE {D} TO SIDE PLATE {A}, (4) LOCATIONS {1}

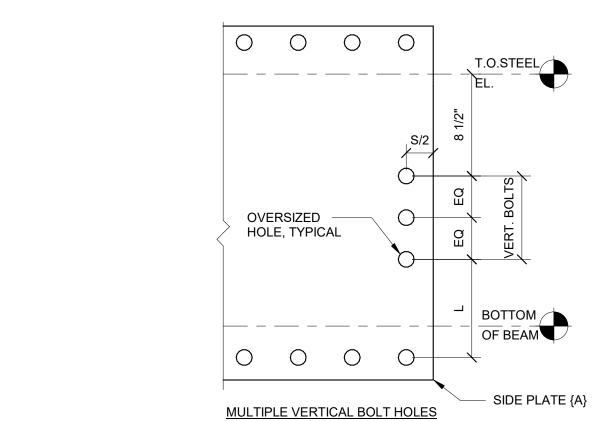
PLACE ONE PATENT STICKER ON THE OUTSIDE FACE OF ONE BOTTOM PLATE {D}

NOTE(S):

1. SEE COLUMN SCHEDULE FOR BOLT QUANTITY.

PLATE {D} SIDE PLATE {A} SEE NOTE 3 NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.



0 0 0 OVERSIZED \_\_ \_ \_ \_ \_ \_ \_ \_ 0 0 0 - SIDE PLATE {A} SINGLE VERTICAL BOLT HOLE

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Other U.S. and foreign applications pending. maintenance, restoration or demolition of the building(s) specifically identified.

BY

SidePlate Systems, Inc. 25909 Pala, Suite 200

Mission Viejo, CA 92691

SIDEPLATE COLUMN

**DETAILS, C TYPE** 

DATE

05.07.2024

SHEET TITLE

NARROW

**ISOMETRIC VIEW** 

COL. bf + H

COL. bf - 1/4"

**SECTION VIEW** 

SEE DÉTAIL 6 / SP107

BEAM FLANGE TO

PER SCHEDULE [DEMAND CRITICAL]

ANGLE {H}. HOLDBACK

PLATE {C} TO BEAM WEB, TYPICAL, AS APPLICABLE

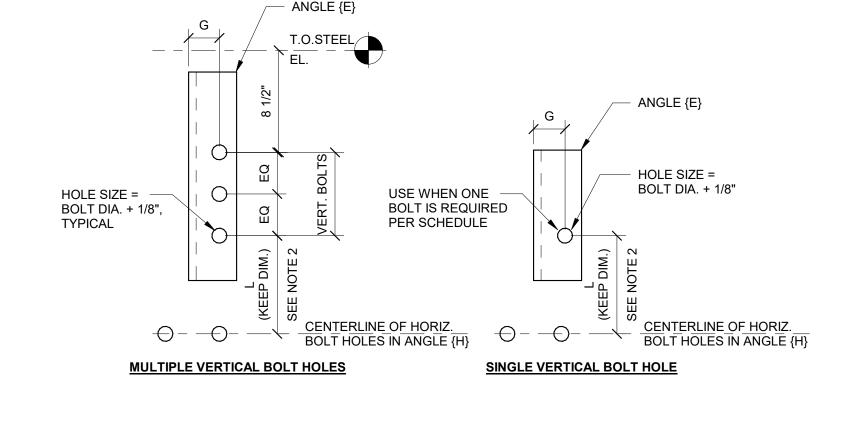
- SEE NOTE 3



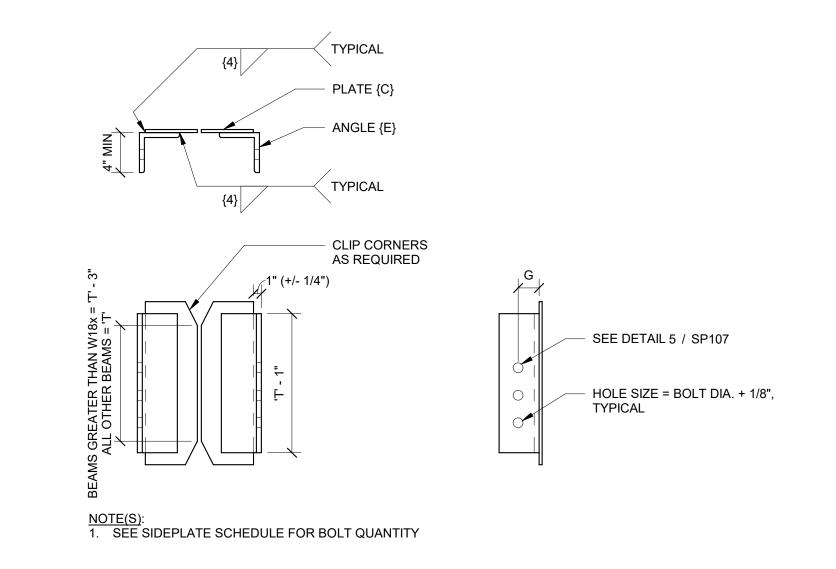
NOTE(S):

1. SEE BEAM END SCHEDULE FOR BOLT QUANTITY.

2. EFFECTS OF MILL AND FABRICATION TOLERANCES ARE ACCOUNTED FOR BY MEASURING FROM THE CENTERLINE OF THE HORIZONTAL ROW OF BOLTS IN THE BOTTOM ANGLES {H}.



6 VSE {F} DETAIL (AS APPLICABLE)
N.T.S.



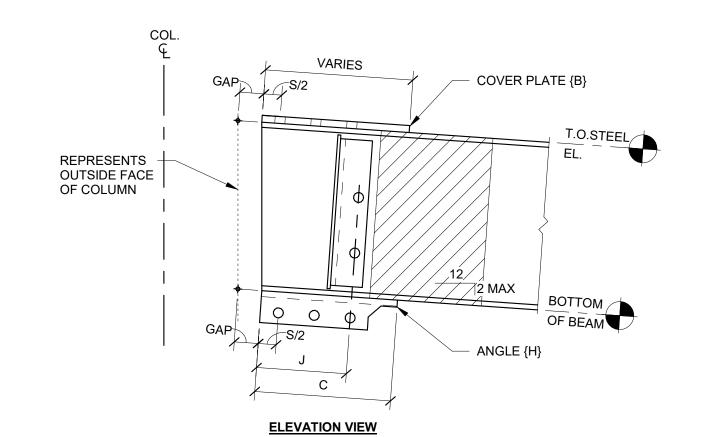
NOTE(S):
1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC. 7 SLOPED UP BEAM END N.T.S.

**ELEVATION VIEW** 

# REPRESENTS OUTSIDE FACE OF COLUMN

COVER PLATE {B}

8 SLOPED DOWN BEAM END N.T.S.



NOTE(S):
1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

OVERSIZED HOLE AT PLATE {B}, TYPICAL

BEAM FLANGE TO PLATE {B}.
HOLDBACK PER SCHEDULE
[DEMAND CRITICAL]

{5a}

PLATE {B}, (2) LOCATIONS.
HOLDBACK PER SCHEDULE
[DEMAND CRITICAL]

[5]

ANGLE {H}, (2) LOCATIONS.
HOLDBACK PER SCHEDULE {5}

PLACE ONE PATENT STICKER AT ONE END OF BEAM VSE {F} HOLE, TYPICAL, AS APPLICABLE, SEE DETAIL 5 / SP107

BEAM FLANGE TO

[DEMAND CRITICAL]

1 BEAM END DETAIL N.T.S.

ANGLE {H}, (2) LOCATIONS SEE DETAIL 3 / SP107

PLATE {B}

LOCATIONS PER BEAM END. 2. USING APPROXIMATELY A 1/4 INCH STEP BETWEEN ALL WELD PASSES WILL PROVIDE THE REQUIRED TRANSITION AS DEMONSTRATED THROUGH PHYSICAL TESTING. END PROFILE SHALL BE APPROXIMATELY 60 DEGREES +/- 15 WELD {5} HOLDBACK AND END PROFILE N.T.S.

WELD {5a} HOLDBACK — TOP AND BOTTOM, TYPICAL

**PLAN VIEW** 

0001

PROTECTED ZONE (0.67\*BEAM DEPTH)

WELD (5) HOLDBACK

(4) LOCATIONS

NOTE(S):

1. DIMENSION BETWEEN PLATE {C} AND INSIDE FACE OF BEAM FLANGE SHALL NOT EXCEED 1/4 INCH, AND MAY VARY DEPENDING ON BEAM MILL TOLERANCES. PLATE {C} SHALL BE CENTERED ON THE DEPTH OF THE BEAM.

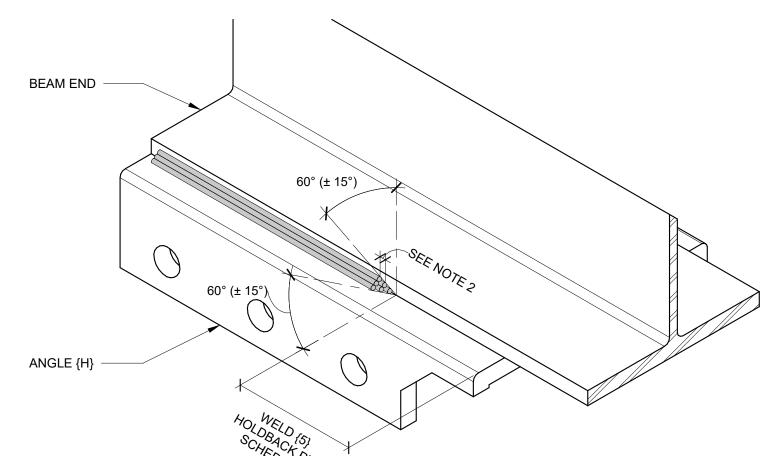
2. THIS HOLDBACK AND WELD END PROFILE ARE CRITICAL TO THE PERFORMANCE OF THE CONNECTION. SEE DETAIL 4 / SP107

SEE NOTE 2

**FRONT ELEVATION** 

NOTE(S):

1. WELD {5} IS SHOWN FROM THE BOTTOM BEAM FLANGE TO THE BOTTOM ANGLE {H}, BUT IT ALSO OCCURS ON THE TOP BEAM FLANGE WHERE IT CONNECTS TO COVER PLATE {B} OR TOP ANGLE {H}. THERE ARE FOUR TOTAL



HOLE SIZE = BOLT DIA. + 1/8", TYPICAL NOTE(S):

1. IF THE ANGLE SECTION WITH THE GIVEN DIMENSIONS CANNOT BE OBTAINED, THE PIECE SHALL BE FABRICATED BY TRIMMING ONE OR BOTH LEGS OF A LARGER ROLLED ANGLE SECTION. 2. SUGGESTED ANGLE {H} SIZE PROVIDED IN SCHEDULE IS BASED ON COMMONLY AVAILABLE SHAPES PER AISC. IF THE ANGLE {H} SECTION WITH THE GIVEN DIMENSIONS CANNOT BE OBTAINED, THE PIECE SHALL BE FABRICATED BY TRIMMING ONE OR BOTH LEGS OF A LARGER AVAILABLE ANGLE SECTION. 3. ANY ANGLE OF THE REQUIRED THICKNESS THAT IS CAPABLE OF MEETING THE PROPER MATERIAL SPECIFICATIONS AND LEG DIMENSION REQUIREMENTS GIVEN IN THE SCHEDULE MAY BE USED FOR ANGLE {H}. 4. MITER CUT NEED NOT BE FLUSH WITH HORIZONTAL LEG. DIMENSION MITER CUT TO UNDERSIDE OF HORIZONTAL LEG SHALL NOT EXCEED 1/2 INCH.

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SidePlate Systems, Inc.

Mission Viejo, CA 92691

25909 Pala, Suite 200

SIDEPLATE BEAM

DATE

05.07.2024

SHEET TITLE

DETAILS

SEE NOTE 3

REPRESENTS OUTSIDE FACE OF COLUMN **ELEVATION VIEW** REPRESENTS OUTSIDE FACE OF COLUMN 0 0 **ELEVATION VIEW** NOTE(S):

1. FOR BEAM SLOPES GREATER THAN 2 INCHES PER FOOT, CONTACT SIDEPLATE SYSTEMS, INC.

7 SLOPED UP BEAM END N.T.S.

HOLE SIZE =
BOLT DIA. + 1/8",
TYPICAL

HOLE SIZE =

CENTERLINE OF HORIZ.
BOLT HOLES IN ANGLE {H}

SINGLE VERTICAL BOLT HOLE

USE WHEN ONE — BOLT IS REQUIRED

PER SCHEDULE

NOTE(S):

1. SEE BEAM END SCHEDULE FOR BOLT QUANTITY.

2. EFFECTS OF MILL AND FABRICATION TOLERANCES ARE ACCOUNTED FOR BY MEASURING FROM THE CENTERLINE OF THE HORIZONTAL ROW OF BOLTS IN THE BOTTOM ANGLES {H}.

CENTERLINE OF HORIZ.
BOLT HOLES IN ANGLE {H}

**MULTIPLE VERTICAL BOLT HOLES** 

5 VSE {F} HOLE DETAIL (AS APPLICABLE)
N.T.S.

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> PLACE ONE PATENT STICKER — AT ONE END OF BEAM AS APPLICABLE SEE DETAIL 5 / SP108 BEAM FLANGE TO
> ANGLE {H}, (4) LOCATIONS.
> HOLDBACK PER SCHEDULE
>
> {5} [DEMAND CRITICAL] WELD (5) HOLDBACK ANGLE {H}, (4) LOCATIONS -SEE DETAIL 3 / SP108 (4) LOCATIONS SEE NOTE 2 FRONT ELEVATION

NARROW BEAM END DETAIL

1 NARR

NOTE(S):

1. DIMENSION BETWEEN PLATE {C} AND INSIDE FACE OF BEAM FLANGE SHALL NOT EXCEED 1/4 INCH, AND MAY VARY DEPENDING ON BEAM MILL TOLERANCES. PLATE {C} SHALL BE CENTERED ON THE DEPTH OF THE BEAM.

2. THIS HOLDBACK AND WELD END PROFILE ARE CRITICAL TO THE PERFORMANCE OF THE CONNECTION. SEE DETAIL 4 / SP108

**SP108** 

05.07.2024

SHEET TITLE

DATE

SidePlate Systems, Inc.

Mission Viejo, CA 92691

25909 Pala, Suite 200

SIDEPLATE BEAM

**DETAILS, NARROW** 

VSE {F}, AS APPLICABLE, SEE DÉTAIL 6 / SP108

PLATE {C} TO BEAM WEB, TYPICAL, AS APPLICABLE

COL. bf - 1/4"

**SECTION VIEW** 

FRONT ELEVATION

**PLAN VIEW** 

- 4. BOLTS SHALL BE INSERTED INTO HOLES IN THE SIDE PLATES {A}. 5. SYSTEMATICALLY PRE-TENSION BOLTS PER RCSC SPECIFICATIONS. 6. THE WELD REMNANTS OF THE BOTTOM DOG MAY REMAIN IN PLACE AND DO NOT NEED TO BE
- TYPICAL SEQUENCE OF ERECTION:

  1. LOWER THE BEAM INTO PLACE FROM ABOVE. INSERT A FEW BOLTS TO SECURE ASSEMBLY.
- 3. BOTTOM DOG SHALL BE REMOVED. IT IS RECOMMENDED THAT IT BE REMOVED BY TORCH THE WELDS WHILE THE DOG IS UNDER LOAD!
- CUTTING A 'V' SECTION OUT OF ONE OF THE ANGLE LEGS TO ALLEVIATE THE LOAD AND THEN PROCEED TO REMOVE IT. IT IS NOT RECOMMENDED TO USE A GRINDING WHEEL TO REMOVE
- **BOTTOM DOG** REMOVED THEN INSERT ALL REMAINING BOLTS STARTING WITH THE BOTTOM ROW, THEN THE VERTICAL ROW, AND LAST THE

INSERT SECOND T

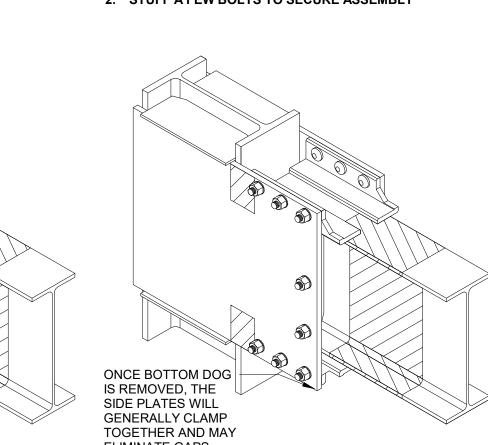
(AS APPLICABLE)

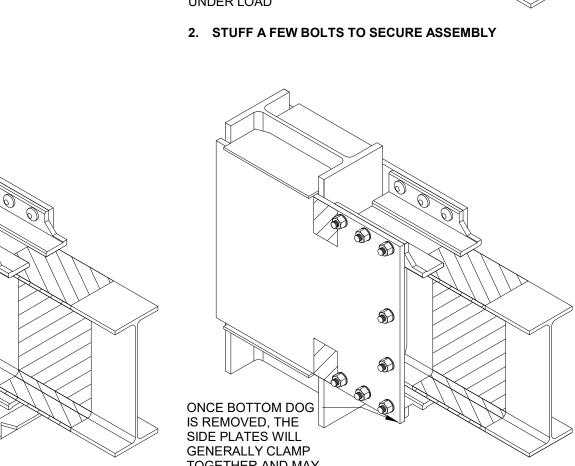
**SECTION VIEW** 

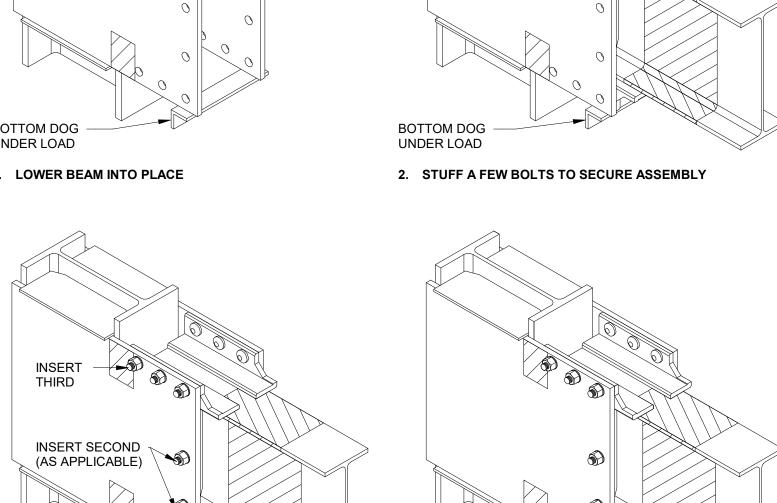
**BOTTOM DOG** 

UNDER LOAD

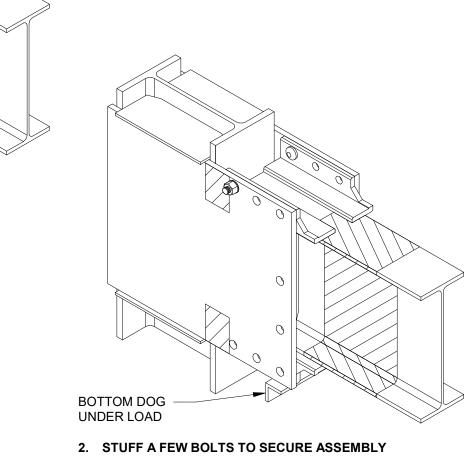
- TOGETHER AND MAY ELIMINATE GAPS 3. CAREFULLY REMOVE BOTTOM DOG AS IT IS UNDER LOAD. 4. SYSTEMATICALLY PRE-TENSION BOLTS PER SPECIFICATIONS, STARTING WITH THE TIGHTEST PLIES FIRST. (NOTE: COORDINATE LOT TESTING AND INSPECTIONS WITH THIRD PARTY INSPECTION TEAM AS
- ONCE BOTTOM DOG IS REMOVED, THE SIDE PLATES WILL GENERALLY CLAMP



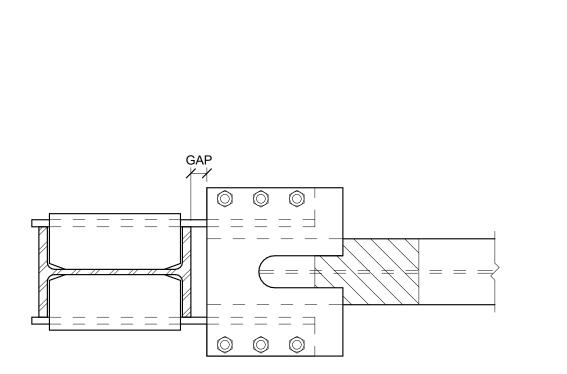




5 NARROW BEAM ERECTION SCHEDULE N.T.S.



3 FIELD BOLTING DETAIL N.T.S.



**PLAN VIEW** 

3. BOTTOM DOG SHALL BE REMOVED. IT IS RECOMMENDED THAT IT BE REMOVED BY TORCH

CUTTING A 'V' SECTION OUT OF ONE OF THE ANGLE LEGS TO ALLEVIATE THE LOAD AND THEN

4. BOLTS SHALL BE INSERTED INTO HOLES IN THE BEAM COVER PLATE (B) AND THE SIDE PLATES (A).

5. SYSTEMATICALLY PRE-TENSION BOLTS PER RCSC SPECIFICATIONS.6. THE WELD REMNANTS OF THE BOTTOM DOG MAY REMAIN IN PLACE AND DO NOT NEED TO BE

PROCEED TO REMOVE IT. IT IS NOT RECOMMENDED TO USE A GRINDING WHEEL TO REMOVE THE

**FRONT ELEVATION** 

TYPICAL SEQUENCE OF ERECTION:

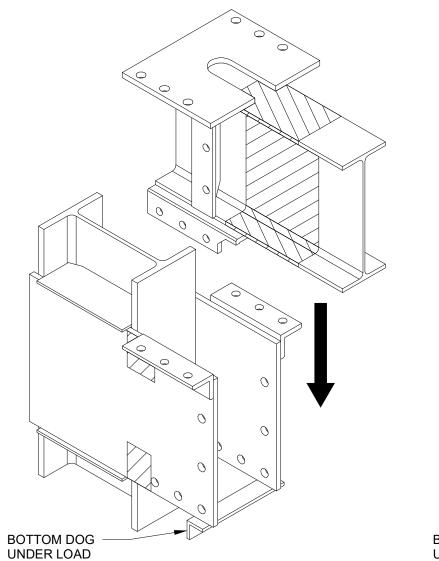
1. LOWER THE BEAM INTO PLACE FROM ABOVE.

2. INSERT A FEW BOLTS TO SECURE ASSEMBLY.

WELDS WHILE THE DOG IS UNDER LOAD!

GROUND SMOOTH.

1 BEAM ERECTION DETAIL N.T.S.



1. LOWER BEAM INTO PLACE

INSERT SECOND

3. CAREFULLY REMOVE BOTTOM DOG AS IT IS UNDER LOAD.

THEN INSERT ALL REMAINING BOLTS STARTING WITH THE

BOTTOM ROW, THEN THE VERTICAL ROW, AND LAST THE

TOP ROW. SNUG TIGHTEN ALL BOLTS.

(AS APPLICABLE)

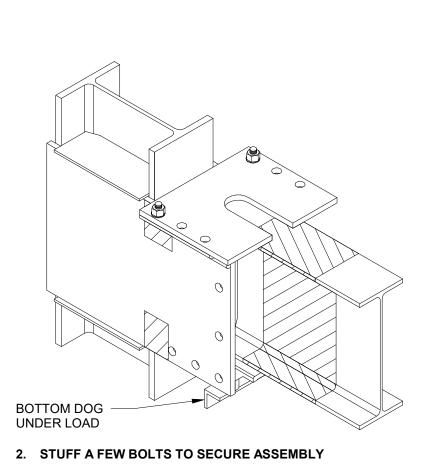
INSERT

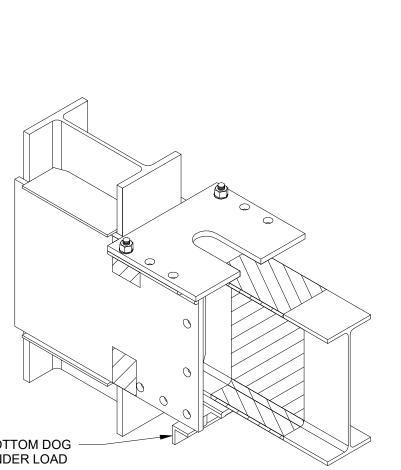
FIRST

**BOTTOM DOG** 

REMOVED

**SECTION VIEW** 





9. THE MINIMUM EDGE DISTANCE FROM THE CENTER OF THE HOLE TO THE EDGE OF THE CONNECTED

FOR EACH BOLT DIAMETER, BUT SHALL NOT BE LESS THAN ONE BOLT DIAMETER.

REQUIRED. VERIFY THREAD ARE EXCLUDED FROM THE SHEAR PLANE.

IS REQUIRED TO ENSURE DTIs CAN WORK EFFECTIVELY WHEN PRETENSIONED.

10. BOLT ORIENTATION IS PERMITTED TO BE FLIPPED IF THE FOLLOWING CONDITIONS ARE MET:

A. IF A HEAVY HEX BOLT IS USED, AN ADDITIONAL WASHER ON THE OVERSIZED HOLE SIDE IS

B. IF A TC BOLT IS USED, NO ADDITIONAL WASHER IS REQUIRED. VERIFY THREADS ARE EXCLUDED

11. WHEN USING DIRECT TENSION INDICATORS (DTI) FOR PRETENSIONING. VERIFY IF ADDITIONAL WASHER

PART IS PERMITTED TO BE LESS THAN THE MINIMUM EDGE DISTANCE PRESCRIBED BY AISC TABLE J3.4

ONCE BOTTOM DOG

IS REMOVED, THE SIDE PLATES WILL

GENERALLY CLAMP

ELIMINATE GAPS

TOGETHER AND MAY

APPROPRIATE)

4. SYSTEMATICALLY PRE-TENSION BOLTS PER

FIRST. (NOTE: COORDINATE LOT TESTING AND

SPECIFICATIONS, STARTING WITH THE TIGHTEST PLIES

INSPECTIONS WITH THIRD PARTY INSPECTION TEAM AS

NOTE(S):

1. BOLTS SHALL BE INSTALLED AS SHOWN TO KEEP THREADS OUTSIDE OF SHEAR PLANE. 2. BOLTS SHALL BE SYSTEMATICALLY INSTALLED AS OUTLINED IN THE BOLTING SPECIFICATIONS. FIRST TO A SNUG TIGHT CONDITION, AND THEN PRETENSIONED. 3. USE FINGER SHIMS FOR GAPS GREATER THAN 1/8 INCH UP TO 1/4 INCH. CONTACT SIDEPLATE SYSTEMS, INC. IF GAPS ARE GREATER THAN 1/4 INCH. 4. NUT SHALL BE ASTM A563. 5. THE BOLT/FASTENER ASSEMBLY SHALL BE COVERED IN A LIGHT PROTECTIVE OIL. 6. FOLLOW QUALITY CONTROL SECTION FOR EXPOSURE LIMITATION ON BOLTS/FASTENERS. 7. STEEL DETAILER TO COORDINATE BOLT LENGTHS WITH REQUIRED WASHERS AND POTENTIAL SHIMMING THICKNESS WITH STEEL FABRICATOR. 8. ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO

**HEAVY HEX BOLT** 

- THE BOLT SHALL EXTEND BEYOND OR BE AT ----LEAST FLUSH WITH THE OUTER FACE OF THE NUT WHEN PRETENSIONED, SEE NOTE 7 FOR BOLTS UP TO 1 1/4 INCH DIAMETER — MINIMUM (1) ORDINARY THICKNESS ASTM F436 WASHER. 1 1/2 INCH DIAMETER BOLTS SHALL REQUIRE MINIMUM (1) 5/16 INCH THICK WASHER - SIDE PLATE {A} OR PLATE {B} SHEAR PLANE FINGER SHIMS MAY BE PLACED BETWEEN FAYING SURFACES OF ANGLES AND PLATE - HOLE SIZE = BOLT DIA. + 1/8" -- ANGLE {E}, ANGLE {G}, ANGLE {H}, OR PLATÉ (T) F3125 GRADE F2280-X TC BOLT OR F3148 FIXED SPLINE F3125 GRADE A490-X

WASHER AS APPLICABLE

7,178,296; 8,122,671; 8,122,672; 8,146,322; 8,176,706; 8,205,408; and 9,091,065 and foreign counterparts. Other U.S. and foreign applications pending. SIDEPLATE® is a registered trademark of MiTek Holdings, Inc., an affiliate of SidePlate Systems, Inc. Copyright © 2024 SidePlate Systems, Inc. All rights reserved. Without limitation, this drawing and the information hereon may be used only following payment of a license fee to SidePlate Systems, Inc. and for the design, construction, operation, repair, maintenance, restoration or demolition of the building(s) specifically identified.

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SP109

SIDEPLATE FIELD

**ERECTION DETAILS** 

05.07.2024

SHEET TITLE

SidePlate Systems, Inc. 25909 Pala, Suite 200

Mission Viejo, CA 92691



**BEAM FLANGE** 

WIDTH + 1" (+/- 1/4")

TO MATCH CONTINUITY

FRONT ELEVATION

PLATE THICKNESS, SEE NOTE 3

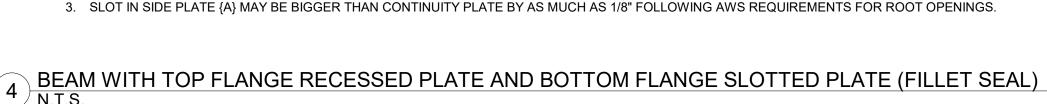
**SECTION VIEW AT TOP** RECESSED PLATES

SECTION VIEW AT BOTTOM SLOTTED CONTINUITY PLATE

PLATE {D} TO SIDE PLATE {A}, (4) LOCATIONS SLOT IN SIDE PLATE {A}
TO MATCH CONTINUITY PLATE THICKNESS, SEE NOTE 3 PLATE {D} TO COLUMN WEB ONLY, (4) LOCATIONS {3} **FRONT ELEVATION** SIDE ELEVATION 3. SLOT IN SIDE PLATE (A) MAY BE BIGGER THAN CONTINUITY PLATE BY AS MUCH AS 1/8" FOLLOWING AWS REQUIREMENTS FOR ROOT OPENINGS. 4 BEAM WITH TOP FLANGE RECESSED PLATE AND BOTTOM FLANGE SLOTTED PLATE (FILLET SEAL) N.T.S. TOP CONTINUITY PLATE TO COLUMN FLANGES — 1" THICK TOP CONTINUITY PLATE, (2) LOCATIONS **PLAN VIEW** CONTINUITY PLATE TO COLUMN FLANGES **BEAM FLANGE** CONTINUITY PLATE THICKNESS = tf + 1/4", (2) LOCATIONS SECTION VIEW LOOKING DOWN /PJP TOP CONTINUITY PLATE TO COLUMN WEB, (2) LOCATIONS BEAM, FLANGE WELDS PER EOR DETAILS /TOP CONTINUITY PLATE TO SIDE PLATE {A}, SHEAR CONNECTION (2) LOCATIONS PER EOR DETAILS CONTINUITY PLATE TO FACE OF SIDE PLATE {A}, TYPICAL /PJP CONTINUITY PLATE TO COLUMN WEB, (2) LOCATIONS /PLATE {D} TO SIDE SLOT IN SIDE PLATE {A}

PLATE {D} TO COLUMN WEB ONLY, (2) LOCATIONS {3}

SIDE ELEVATION



(2) LOCATIONS

### NOTE(S): 1. ATTACHMENT SHOWN ON ONE SIDE OF SIDEPLATE CONNECTION FOR ILLUSTRATION. ATTACHMENT CAN OCCUR ON LEFT SIDE, RIGHT SIDE, OR BOTH SIDES OF CONNECTION AS APPLICABLE. 2. IF THE BOTTOM FLANGE OF THE CANTILEVER BEAM FALLS WITHIN 3 INCHES OF THE BOTTOM OF SIDE PLATE {A}, BOTTOM PLATE {D} SHALL BE OMITTED.

CONTINUITY PLATE TO FACE

∖OF SIDE PLATE {A}, TYPICAL

CONTINUITY PLATE TO COLUMN FLANGES

CONTINUITY PLATE TO

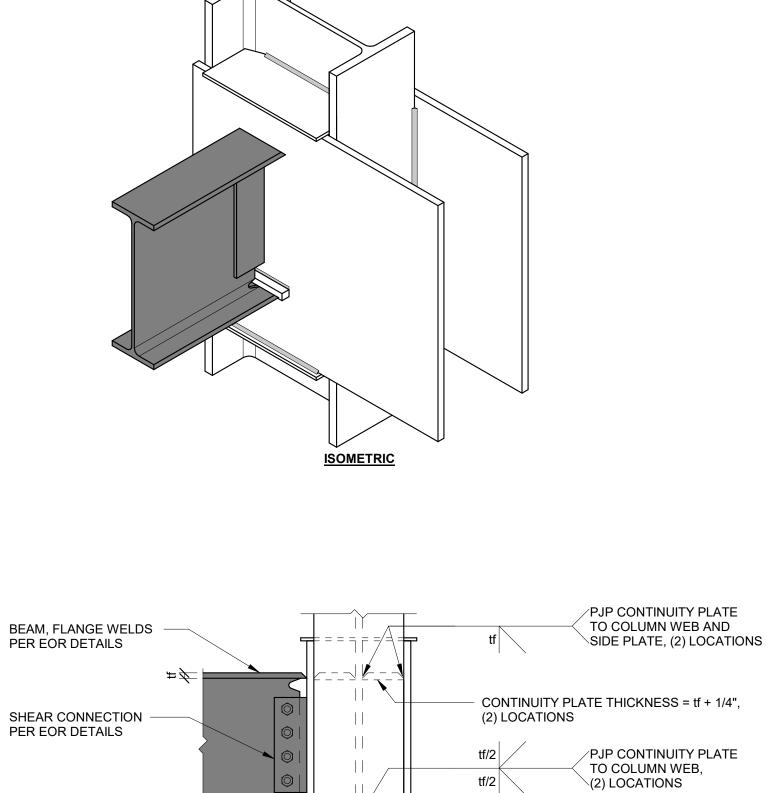
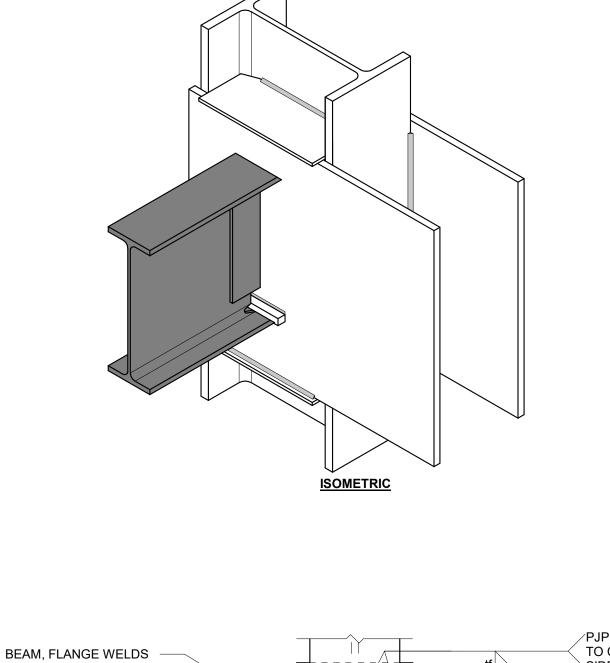


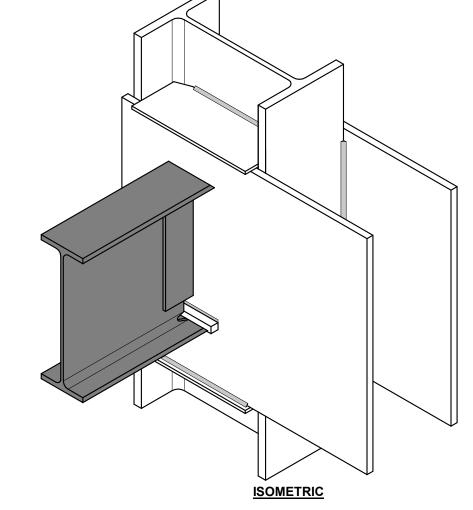
PLATE (A), (2)

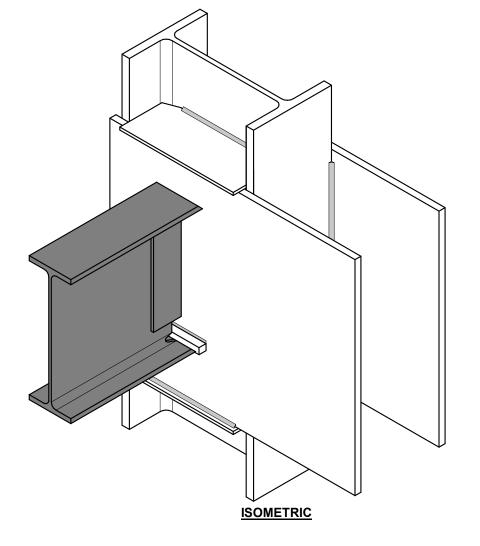
LOCATIONS

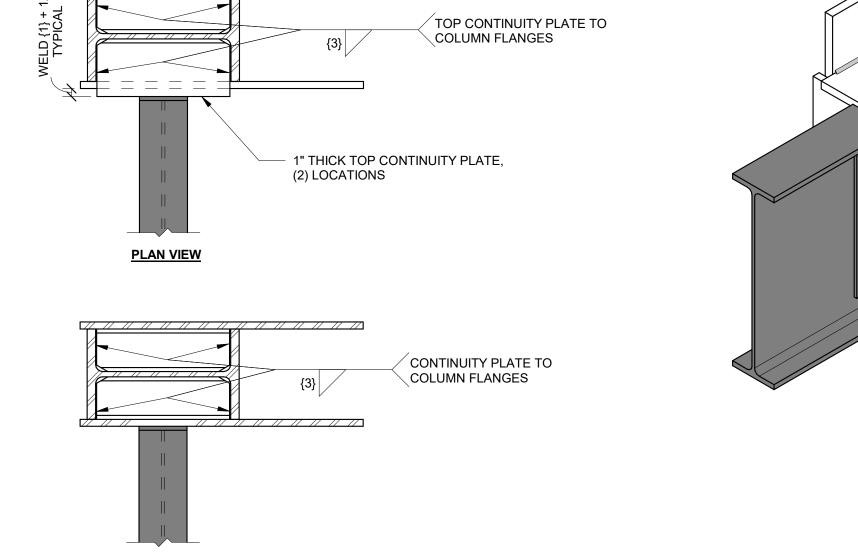
PLATE {D} PER SCHEDULE,(2) LOCATIONS

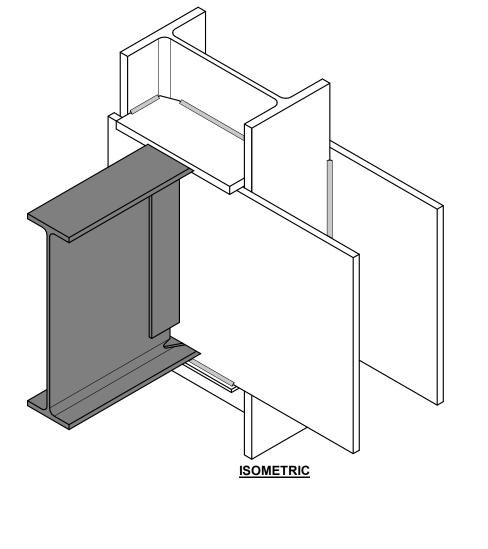


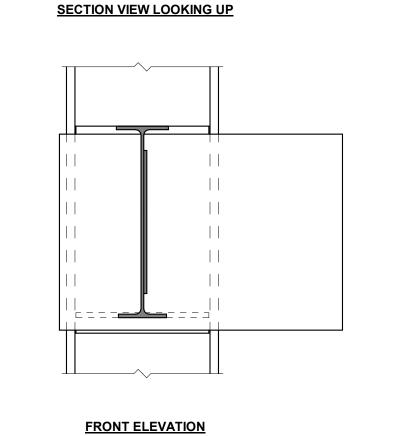
## COLUMN FLANGES CONTINUITY PLATE THICKNESS = tf + 1/4",

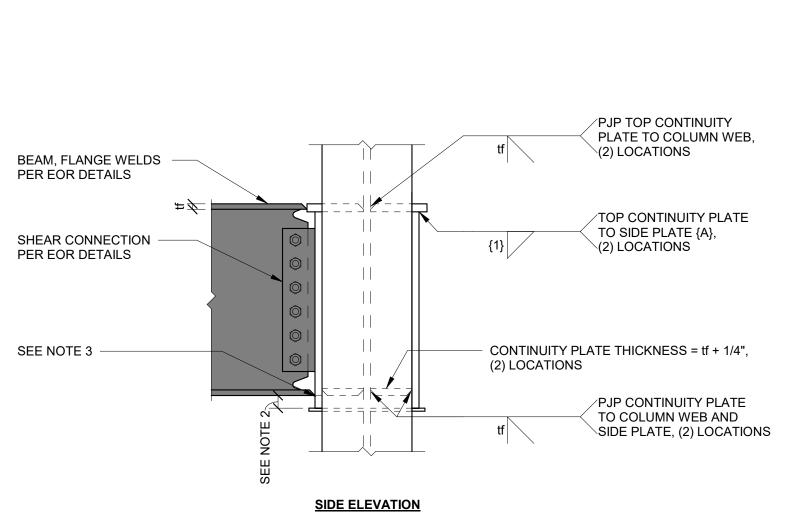












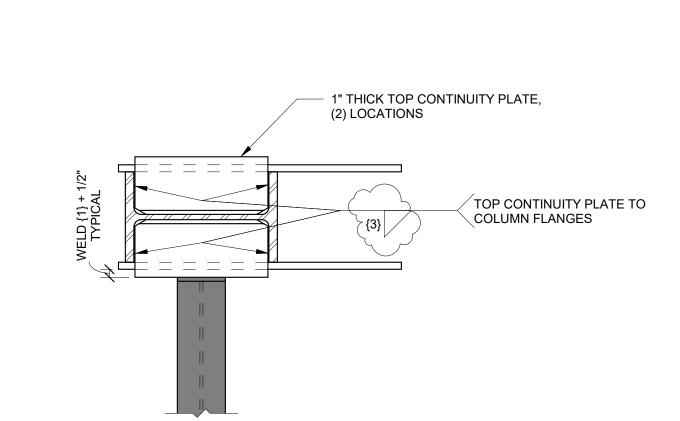
3. IF PLATE {D} IS REMOVED, PROVIDE POST LAMINATION CHECK (FACE B) ON OUTBOARD FACE OF SIDE PLATE {A} FROM BOTTOM OF CANTILEVERING BEAM FLANGE TO BOTTOM EDGE OF SIDE PLATE {A}.

NOTE(S):

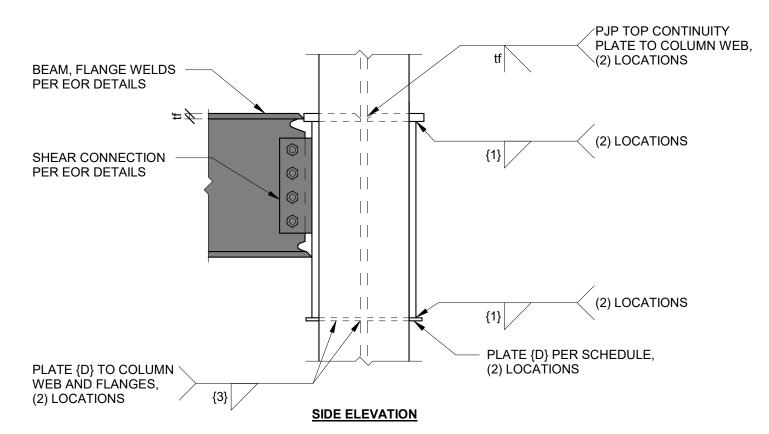
1. ATTACHMENT SHOWN ON ONE SIDE OF SIDEPLATE CONNECTION FOR ILLUSTRATION. ATTACHMENT CAN OCCUR ON LEFT SIDE, RIGHT SIDE, OR BOTH SIDES OF CONNECTION AS APPLICABLE.

2. IF THE BOTTOM FLANGE OF THE CANTILEVER BEAM FALLS WITHIN 3 INCHES OF THE BOTTOM OF SIDE PLATE {A}, BOTTOM PLATE {D} SHALL BE OMITTED.

BEAM WITH TOP FLANGE CONTINUITY PLATE AND BOTTOM FLANGE RECESSED PLATE N.T.S.



**PLAN VIEW** 



NOTE(S):
1. ATTACHMENT SHOWN ON ONE SIDE OF SIDEPLATE CONNECTION FOR ILLUSTRATION. ATTACHMENT CAN OCCUR ON LEFT SIDE, RIGHT SIDE, OR BOTH SIDES OF CONNECTION AS APPLICABLE.

1 BEAM WITH TOP FLANGE CONTINUITY PLATE AND BOTTOM FLANGE TO FACE OF SIDE PLATE N.T.S.

SidePlate Systems, Inc. 25909 Pala, Suite 200 Mission Viejo, CA 92691

DATE 05.07.2024 SHEET TITLE

SIDEPLATE **MISCELLANEOUS DETAILS** 

SP110

NOTE(S):

1. ATTACHMENT SHOWN ON ONE SIDE OF SIDEPLATE CONNECTION FOR ILLUSTRATION. ATTACHMENT CAN OCCUR ON LEFT SIDE, RIGHT SIDE, OR BOTH SIDES OF CONNECTION AS APPLICABLE.

2. IF THE BOTTOM FLANGE OF THE CANTILEVER BEAM FALLS WITHIN 3 INCHES OF THE BOTTOM OF SIDE PLATE {A}, BOTTOM PLATE {D} SHALL BE OMITTED.

3. SLOT IN SIDE PLATE {A} MAY BE BIGGER THAN CONTINUITY PLATE BY AS MUCH AS 1/8" FOLLOWING AWS REQUIREMENTS FOR ROOT OPENINGS.

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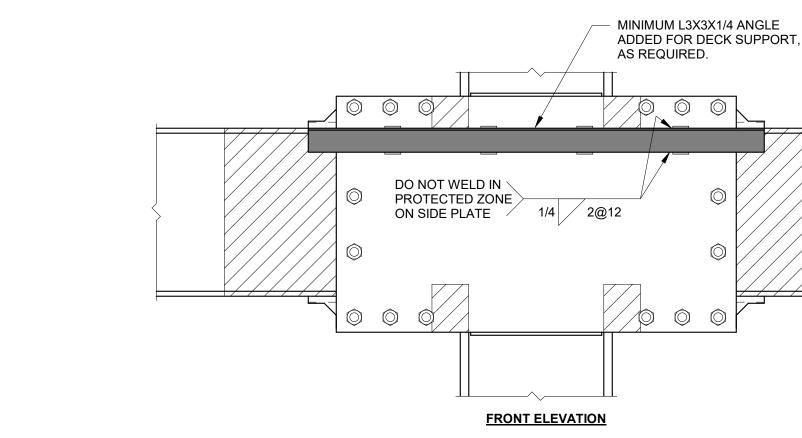
maintenance, restoration or demolition of the building(s) specifically identified.

METAL LATH/ LIGHT GAGE PLATE FOR GAP CLOSURE, BY OTHERS **SECTION VIEW** 

NOTE(S):

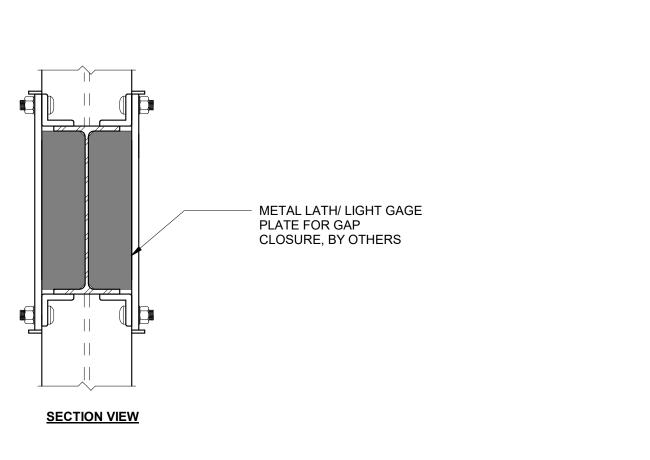
1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE GAP CLOSURE. 2. SEE GENERAL NOTES FIREPROOFING SECTION FOR MORE DETAILS.

(OPTIONAL) NO VSE BEAM GAP CLOSURE DETAIL N.T.S.



NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT.



LIGHT GAGE PLATE FOR GAP CLOSURE, BY

OTHERS

NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL

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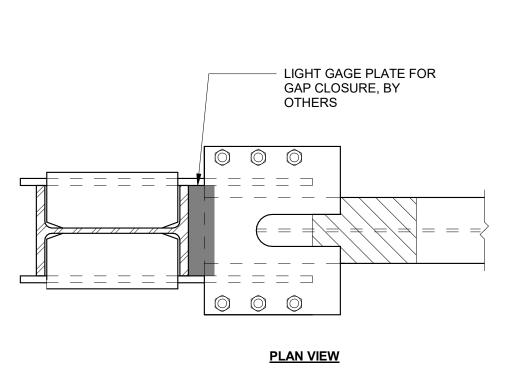
PLAN VIEW

NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL

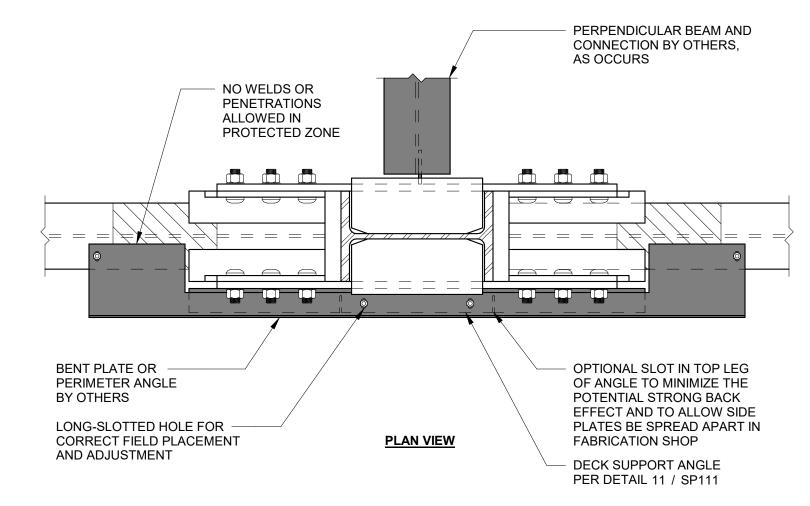
2. SEE GENERAL NOTES FIREPROOFING SECTION FOR MORE DETAILS.

FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE GAP CLOSURE.



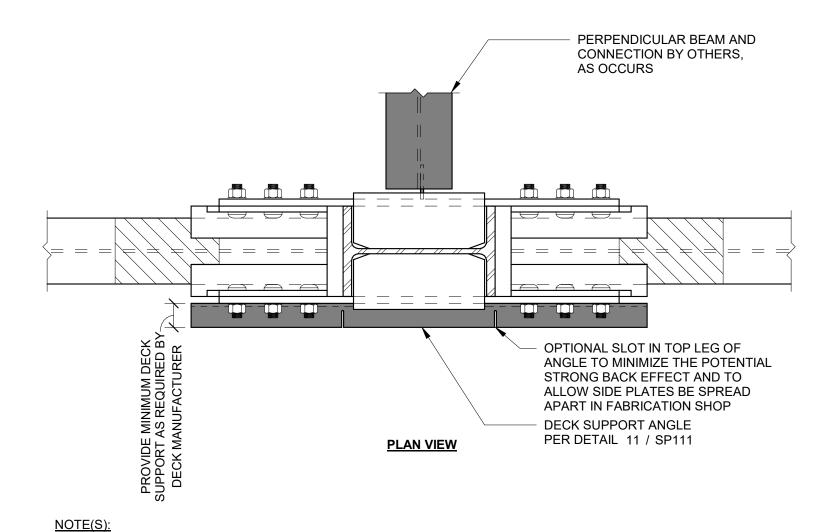
NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE GAP CLOSURE. 2. SEE GENERAL NOTES FIREPROOFING SECTION FOR MORE DETAILS.



NOTE(S):

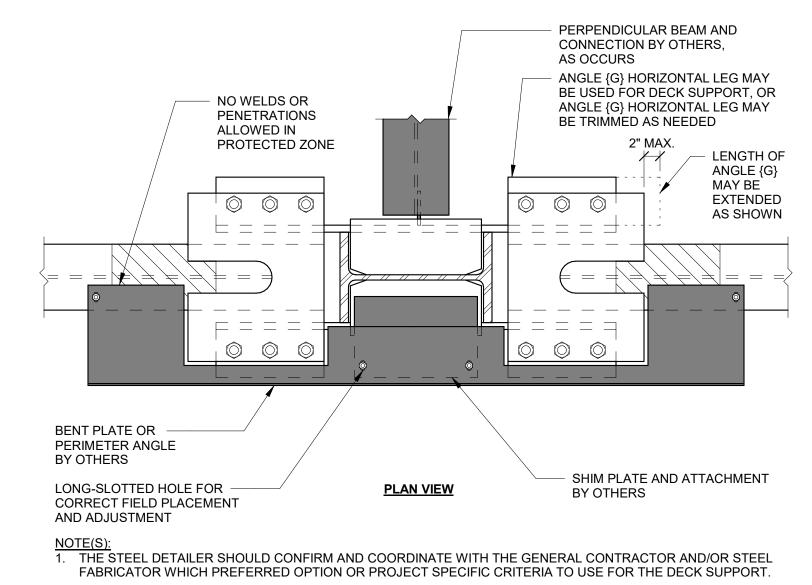
1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT.



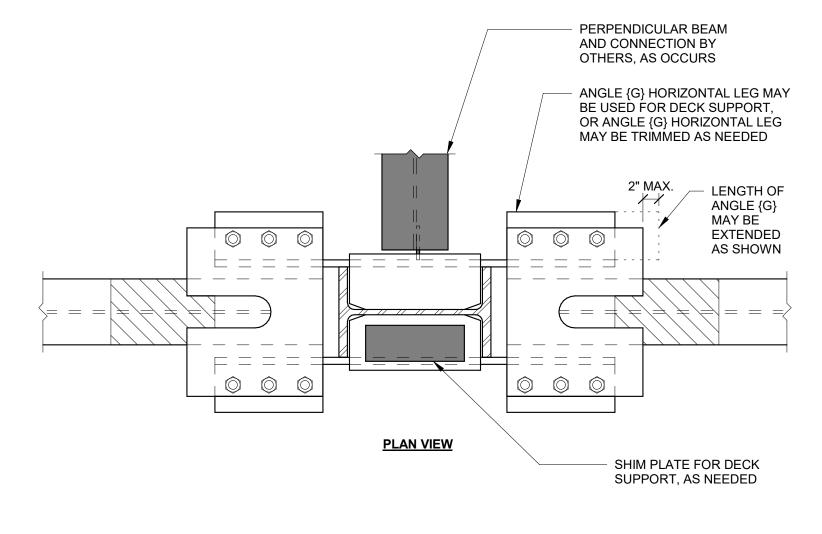
NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT.

9 (OPTIONAL) NARROW CONFIGURATION DECK SUPPORT DETAIL N.T.S.



(OPTIONAL) ANGLE (G) HORIZONTAL LEG FOR SLAB EDGE SUPPORT DETAIL N.T.S.



NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL

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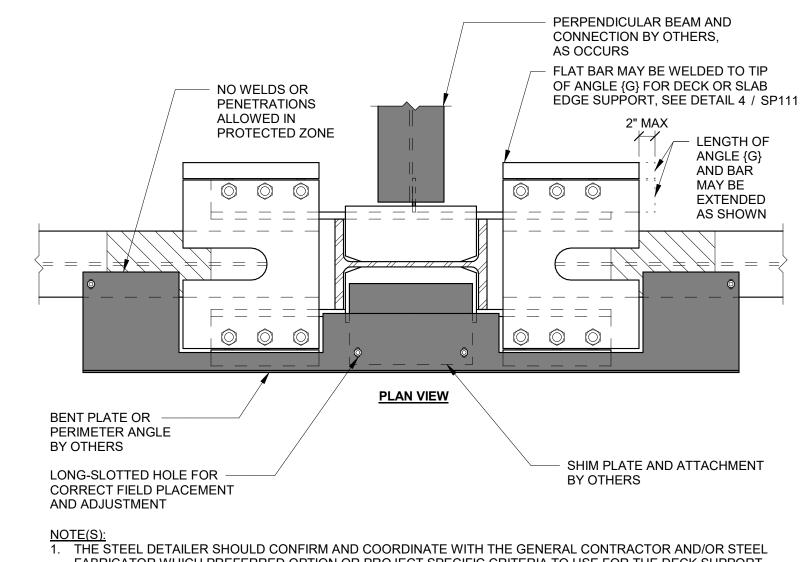
1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL

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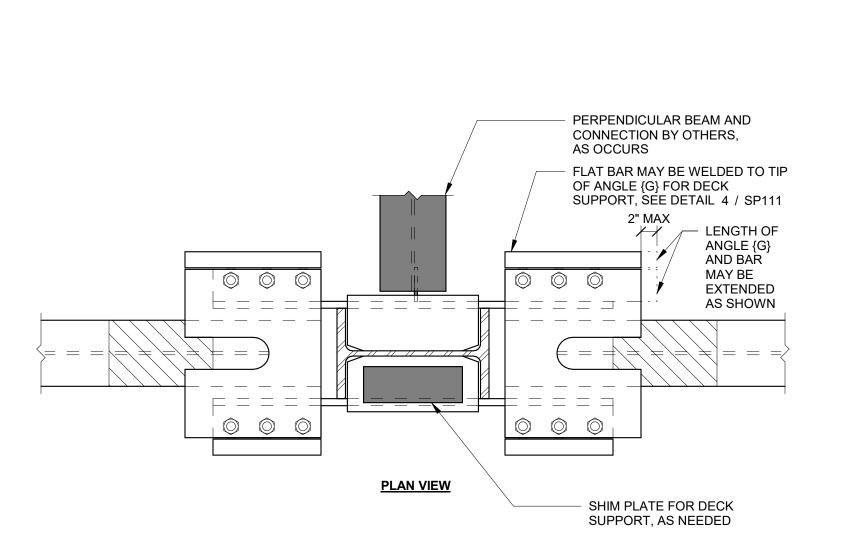
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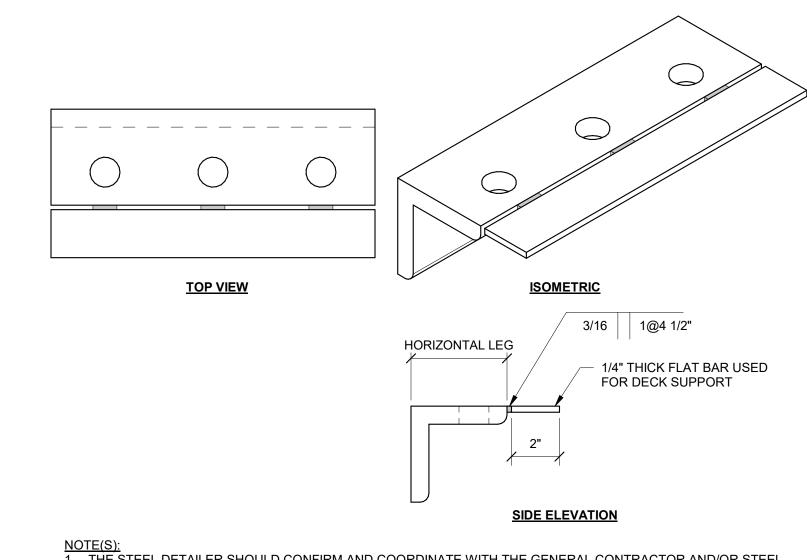


FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT.



NOTE(S):

1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT.



1. THE STEEL DETAILER SHOULD CONFIRM AND COORDINATE WITH THE GENERAL CONTRACTOR AND/OR STEEL FABRICATOR WHICH PREFERRED OPTION OR PROJECT SPECIFIC CRITERIA TO USE FOR THE DECK SUPPORT. (OPTIONAL) WELDED FLAT BAR TO ANGLE {G} FOR DECK SUPPORT N.T.S.

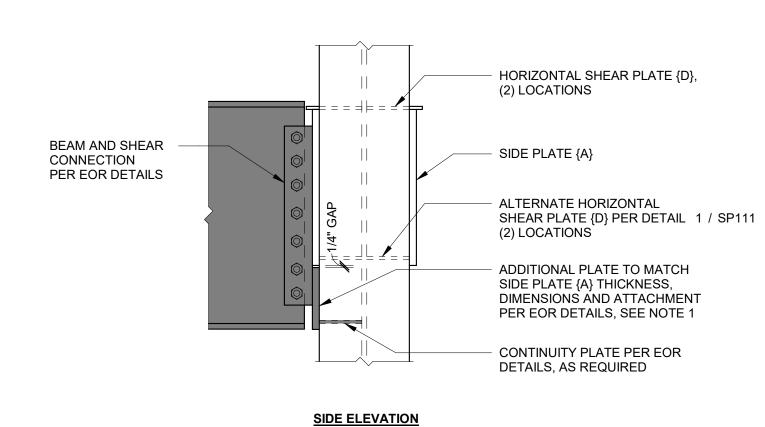
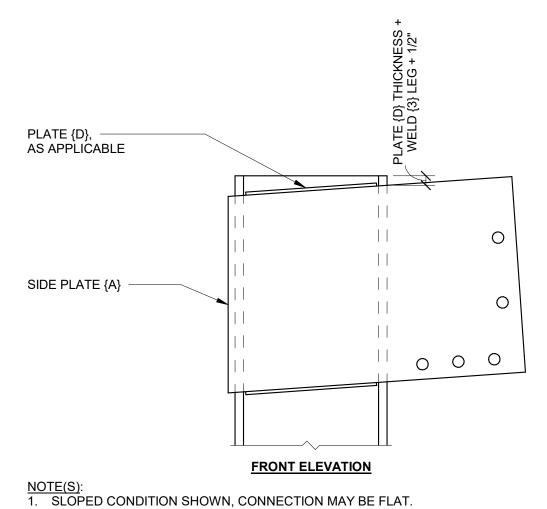
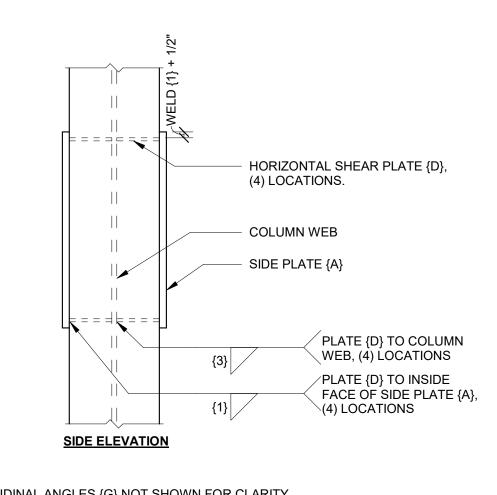


PLATE SHALL BE A572 GRADE 50. NO WELD TIE-IN ACROSS 1/4 INCH GAP. 2. LONGITUDINAL ANGLES {G} NOT SHOWN FOR CLARITY. 3. SEE SCHEDULE FOR INFORMATION NOT SHOWN.

3 DEEP SHEAR CONNECTION TO SIDEPLATE CONNECTION (AS APPLICABLE)
N.T.S.



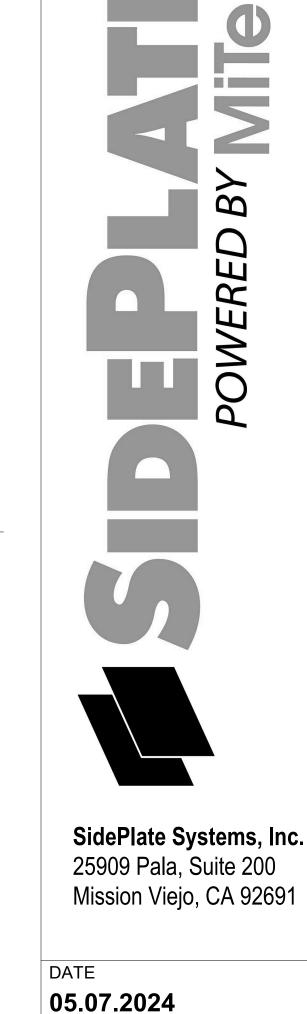
2. LONGITUDINAL ANGLES (G) NOT SHOWN FOR CLARITY.



NOTE(S):

1. LONGITUDINAL ANGLES {G} NOT SHOWN FOR CLARITY. 2. SEE SCHEDULE FOR INFORMATION NOT SHOWN.

1 PLATE {D} ALTERNATE DETAIL N.T.S.



**SP111** 

SHEET TITLE

**ITEMS** 

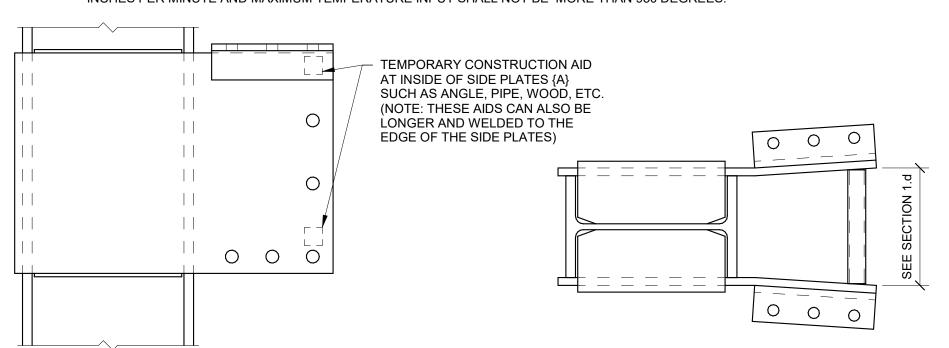
SIDEPLATE

COORDINATION

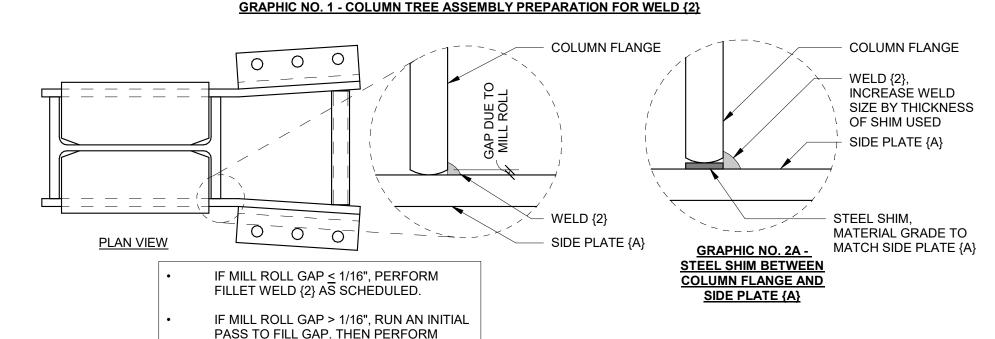
- **CONSTRUCTION GUIDELINES** 1. THE CONTRACTOR SHALL ASSUME FULL AND COMPLETE RESPONSIBILITY FOR THE MEANS AND METHODS OF CONSTRUCTING THE STEEL FRAME USING THE SIDEPLATE BOLTED SYSTEM. CONSTRUCTION MEANS AND METHODS SHALL BE COMPLIANT WITH THE CURRENT PROVISIONS OF AWS D1.1, AWS D1.8, THE AISC 360 CODE OF STANDARD PRACTICE, THE RCSC HIGH-STRENGTH BOLTING SPECIFICATIONS, AND THE CONSTRUCTION GUIDELINES PROVIDED HEREIN AND SHALL INCLUDE, BUT ARE NOT LIMITED TO: a. DIMENSIONAL VERIFICATION AND CONTROL
- b. FILLET WELD END PROFILE AND HOLD BACK DISTANCES FROM EDGE OF PLATE, SEE GRAPHIC NO. 7 AND GRAPHIC NO. 8 c. STEEL DETAILING AND ERECTION DRAWINGS
- d. FABRICATION AND ERECTION PROCEDURES (INCLUDING METHODS FOR CONTROLLING DISTORTION DUE TO WELD SHRINKAGE, AND FOR CONTROLLING COMBINED MILL, FABRICATION AND ERECTION TOLERANCES)
- e. WELDING PROCEDURES f. WELDING SEQUENCE OF FABRICATED AND ERECTED ELEMENTS
- g. QUALITY CONTROL MEASURES . CONSTRUCTION AIDS SUCH AS ERECTION RIGGING AND SHORING
- PROPER BOLT HOLE ALIGNMENT PROPER PRETENSIONING OF BOLTS
- 2. THE SEQUENCE OF CONSTRUCTION OPTIONS PROVIDED BELOW IN THESE CONSTRUCTION GUIDELINES HAVE PROVEN TO BE SUCCESSFUL BY STEEL FABRICATORS AND ERECTORS TO COST EFFICIENTLY CONSTRUCT THE BOLTED SIDEPLATE CONNECTION SYSTEM. VARIATIONS TO THESE CONSTRUCTION SEQUENCE OPTIONS PROVIDED BELOW SHALL BE SUBMITTED FOR REVIEW AND DISPOSITION TO SIDEPLATE SYSTEMS,
- 3. A PRE-DETAILING MEETING, PRE-FABRICATION MEETING, AND PRE-ERECTION MEETING WITH A SIDEPLATE SYSTEMS, INC REPRESENTATIVE ARE REQUIRED FOR ALL PROJECTS. THE MEETINGS ARE INTENDED TO SHARE BEST PRACTICES AND COMMON MISTAKES TO AVOID.
- a. PROVIDE A FOLDED STRIP OF LIGHT GAGE METAL, OR SIMILAR, SECURED TO STEEL SURFACES BY DUCT TAPE OR A TACK WELD LOCATED AS CLOSE AS PRACTICABLE TO THE MID SECTION OF THE BEAM FLANGES OR TOP COVER PLATE (B) ACROSS THE PHYSICAL COLUMN/BEAM SEPARATION (GAP) BETWEEN THE BEAM FLANGES OR TOP COVER PLATE {B} AND THE FACE OF COLUMN FLANGE. THIS SHALL PREVENT
- CONCRETE FILL FROM ENTERING THROUGH THE SEPARATION (GAP). b. IN NO CASE SHALL THE FOLDED STRIP OF LIGHT GAGE MATERIAL BE WELDED TO THE EDGE OF SIDE PLATE {A}, OR TO THE FACE OF COLUMN FLANGE TO ACHIEVE CLOSURE OF THE PHYSICAL COLUMN/BEAM SEPARATIONS. 5. WHEN NO VSE OPTION IS SPECIFIED, PROVIDE A CLOSURE PLATE, AS NEEDED, FOR SFRM MATERIAL TO MORE EASILY ADHERE TO. ATTACH CLOSURE PLATE TO THE INSIDE OR OUTSIDE FACE OF THE SIDE PLATE (A) WITHIN THE MIDDLE HALF OF THE SIDE PLATE (A) HEIGHT. DO NOT ATTACH CLOSURE PLATE TO THE BEAM FLANGES OR WEB.

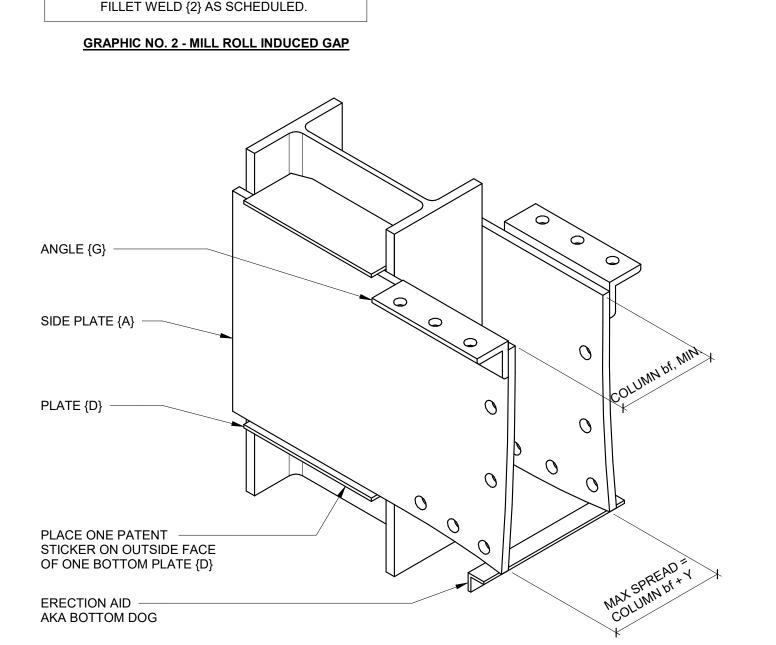
#### SHOP FABRICATION OF THE SIDEPLATE BOLTED SYSTEM COLUMN TREE ASSEMBLY

- a. TACK SIDE PLATES (A) AND HORIZONTAL SHEAR PLATES (D) TO THE COLUMN. QC INSPECTION SHALL PROVIDE VERIFICATION THAT ACTUAL COLUMN FLANGE WIDTH IS AT LEAST NOMINAL COLUMN FLANGE WIDTH WHERE THE SIDE PLATES {A} ARE TO BE INSTALLED. IN THE UNLIKELY EVENT ACTUAL COLUMN FLANGE WIDTH IS LESS THAN NOMINAL, BUT WITHIN AISC STANDARD MILL TOLERANCES (-3/16 INCH), OR THERE IS A FLANGE OFFSET CREATING A CONDITION WHERE THE SIDE PLATES (A) ARE NOT PARALLEL TO ONE ANOTHER, THE FOLLOWING MAY BE APPLIED: • PLACE A STRUCTURAL GRADE SHIM (A572 GRADE 50KSI) BETWEEN THE SIDE PLATE (A) AND THE COLUMN FLANGE TO OFFSET THE
- DEFICIENT DISTANCE. THE CORRESPONDING WELD {2} SHALL THEN BE INCREASED BY THE SHIM THICKNESS. QC INSPECTION SHALL PROVIDE VERIFICATION THAT THE CENTERLINE OF THE BOTTOM ROW OF THE LONGITUDINAL BOLT HOLES ARE SET TO THEIR CORRECT ELEVATION. THIS CENTERLINE MARK WILL BECOME THE WORKING POINT FOR THE CORRECT PLACEMENT OF ANGLE {G}. AS REQUIRED. AND IS ULTIMATELY USED TO SET THE ELEVATION FOR THE TOP OF STEEL IN THE SYSTEM. b. WELD HORIZONTAL SHEAR PLATES (D) TO COLUMN WEB USING FILLET WELDS (3) ON OUTER FACE OF PLATE. WHEN WELD (3) OCCURS ON THE COLUMN FLANGES, A WELD TIE-IN OF FILLET WELDS {3} SHALL NOT BE ALLOWED ACROSS THE CLIPPED CORNER OF HORIZONTAL SHEAR PLATE (D) AT THE K-LINE AREA. SEE PREPARATION NOTE 4.a IN SIDEPLATE GENERAL NOTES.
- c. WELD HORIZONTAL SHEAR PLATES (D) TO SIDE PLATE (A) USING FILLET WELD (1). d. TEMPORARILY MAINTAIN A SLIGHT (È.G. 1/2 INCH +/-) FLÀRED-OUT SEPARATION ÓF SIDE PLATES (A) (CARE SHALL BE TAKEN TO NOT OVER SPREAD IN THIS CONDITION, AS THAT MAY BREAK THE TACKS HOLDING THE SIDE PLATE (A) IN PLACE). IN ANTICIPATION OF WELD (2) SHRINKAGE EFFECTS, PLACE SUITABLE CONSTRUCTION AIDS (SUCH AS ANGLE, PIPES OR WOOD BLOCK) AT THE TOP AND BOTTOM OF SIDE PLATE {A}. AIDS MAY BE CUT TO FIT AND BEAR ON THE INSIDE FACE OF SIDE PLATES {A} OR CUT LONG AND TACKED TO THE EDGES OF SIDE PLATES {A}. SUCH CONSTRUCTION AIDS ACT AS SPACERS DURING THE WELDING AND SUBSEQUENT COOL DOWN OF FILLET WELDS {2}. SEE GRAPHIC NO. 1.
- e. WELD INSIDE FACE OF SIDE PLATES (A) TO THE FLANGE TIPS OF COLUMN USING FILLET WELDS (2). REFER TO GRAPHIC NO. 2 FOR CONDITIONS WITH NON-SQUARE COLUMN FLANGE TOES DUE TO MILL ROLLING.
- SHIMS ARE PERMITTED BETWEEN SIDE PLATE {A} AND COLUMN FLANGE IN CONDITIONS DUE TO MILL ROLLING. • THE MATERIAL GRADE OF THE SHIM SHALL MATCH THE GRADE USED ON THE SIDE PLATE {A}.
- FILLET WELD SIZE SHALL BE INCREASED BY THE THICKNESS OF THE SHIM USED. REFER TO GRAPHIC NO. 2A FOR MORE DETAIL. f. COLUMN FLANGE TRIMMING IS PERMITTED FOR CONDITIONS DUE TO MILL ROLLING.
- TRIMMING MAY BE PERFORMED VIA GRINDING TO SMOOTH OUT ROUGH TRANSITIONS. • TRIMMING SHALL BE DONE FOR THE FULL LENGTH OF THE SIDE PLATE {A} DEPTH (DIMENSION B) PLUS 12 INCHES ABOVE AND BELOW THE TOP AND BOTTOM EDGES OF SIDE PLATE {A}. • IF REPAIR WELDING IS REQUIRED TO FIX GAPS AND GOUGES LARGER THAN 3/16 INCH, IT SHALL BE DONE FOLLOWING AWS PROTOCOLS AND WITH AN APPROVED WPS.
- THE FINAL SURFACE SHALL HAVE A MINIMUM 500 MICRO-INCH ANSI WORKMANLIKE FINISH. ANY AND ALL TRANSITIONS SHALL BE 10:1.
- THE FINAL FLANGE WIDTH DIMENSION SHALL BE, AS A MINIMUM, THE NOMINAL DESIGN DIMENSION. g. AS REQUIRED, WELD ANGLES (G) TO THE TOP EDGE AND FACE OF SIDE PLATE (A) USING FILLET WELDS (8). CARE SHALL BE GIVEN TO THE PLACEMENT OF ANGLE (G) AT THE CORRECT ELEVATION RELATIVE TO THE 'WORKING POINT' OF THE CENTERLINE OF THE BOTTOM
- LONGITUDINAL BOLT HOLES IN SIDE PLATE {A}. h. AFTER COOL DOWN OF COMPLETED FILLET WELDS {2}, REMOVE TOP CONSTRUCTION AID. VERIFY MINIMUM CLEAR SPREAD DIMENSION (ACTUAL COLUMN FLANGE WIDTH) BETWEEN SIDE PLATES (A), SEE GRAPHIC NO. 3. THIS IS THE REQUIRED CLEARANCE FOR INSERTING THE IF CLEARANCE VERIFICATION IS SUFFICIENT (I.E. NOT LESS THAN THE ACTUAL COLUMN FLANGE WIDTH AND NOT EXCEEDING THE MAXIMUM SPREAD DIMENSION Y), A SUITABLE ERECTION AID ( AKA BOTTOM 'DOG' ) SHALL BE WELDED TO THE BOTTOM EDGE OF THE
- SIDE PLATES {A}. IT SHALL BE SUFFICIENTLY STRONG TO REMAIN IN PLACE DURING TRANSPORTATION AND ERECTION OF THE BEAM. THIS ERECTION AID WILL BE UNDER LOAD AND CARE SHALL BE TAKEN WHEN REMOVING IF CLEARANCE VERIFICATION IS NOT SUFFICIENT (I.E. LESS THAN THE NOMINAL COLUMN FLANGE WIDTH), FLEX SIDE PLATES (A) BY JACKING THEM APART TO A DIMENSION GREATER THAN THE WIDTH OF COLUMN  $\,$  FLANGE. MAXIMUM SEPARATION SHALL NOT EXCEED WIDTH OF COLUMN FLANGE PLUS SCHEDULED SPREAD DIMENSION Y. ONCE NECESSARY CLEARANCE HAS BEEN ESTABLISHED, A
- SUITABLE ERECTION AID (AKA BOTTOM 'DOG') SHALL THEN BE WELDED TO BOTTOM EDGE OF SIDE PLATES (A). IT SHALL BE SUFFICIENTLY STRONG TO REMAIN IN PLACE DURING TRANSPORTATION AND ERECTION OF BEAM ASSEMBLY. THIS ERECTION AID WILL BE UNDER LOAD AND CARE SHALL BE TAKEN WHEN REMOVING ALTERNATELY, HEAT STRAIGHTENING OF THE PLATES MAY BE USED TO MEET THE MINIMUM CLEAR DIMENSION SPREAD WITH THE
- FOLLOWING CRITERIA: USING A 3/4 INCH ROSE BUD HEATING TIP, HEAT THE OUTSIDE FACE OF THE SIDE PLATE ADJUNCT TO THE FREE UNSUPPORTED SIDE OF THE COLUMN FLANGE FOR MAJORITY OF THE FULL DIMENSION B DEPTH (HOLD HEATING BACK FROM TOP AND BOTTOM ENDS OF SIDE PLATE {A} BY 2 INCHES). THE WIDTH OR HEAT ZONE SHALL BE 3/4 INCH TO 1 1/4 INCH. TRAVEL SPEED OF HEATING SHALL BE 2 INCHES PER MINUTE AND MAXIMUM TEMPERATURE INPUT SHALL NOT BE MORE THAN 950 DEGREES.



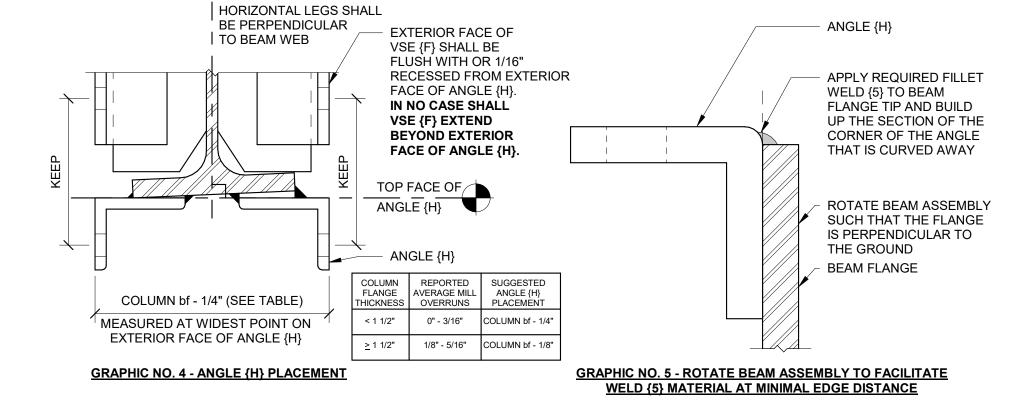
**FRONT ELEVATION** PLAN VIEW

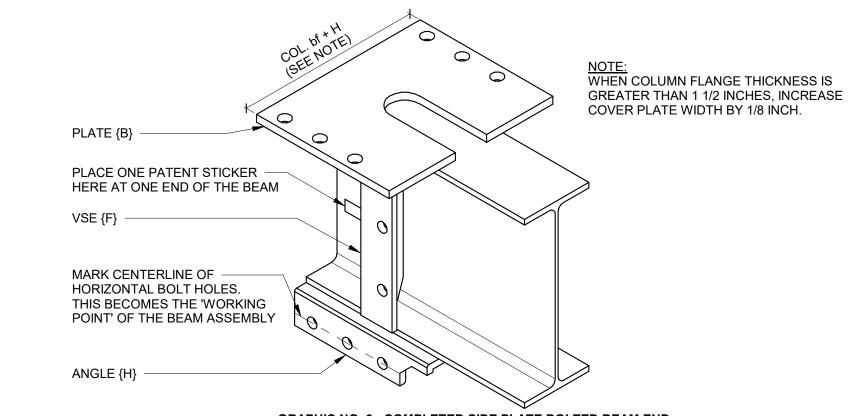


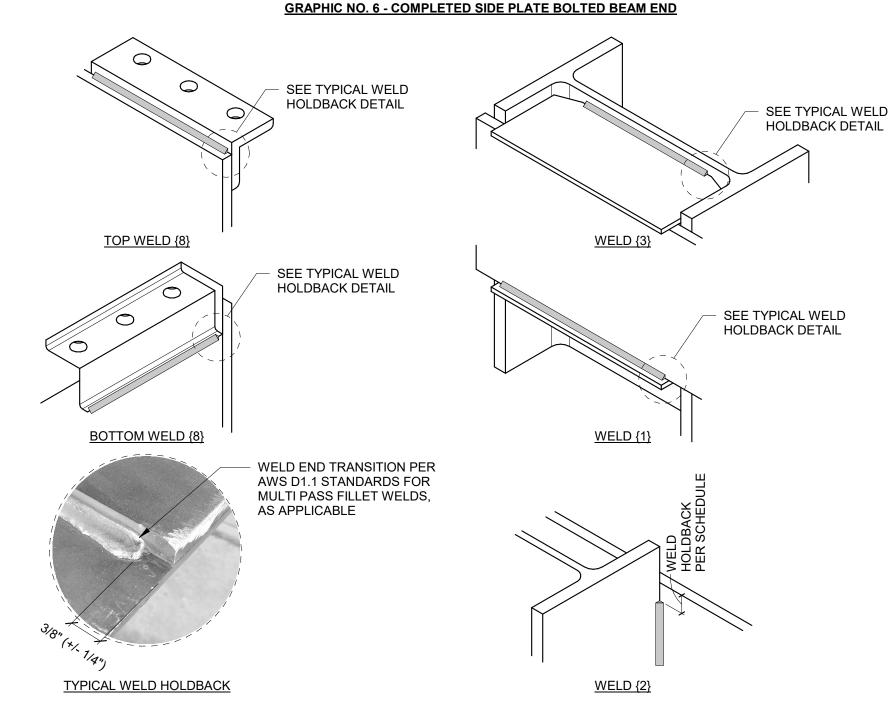


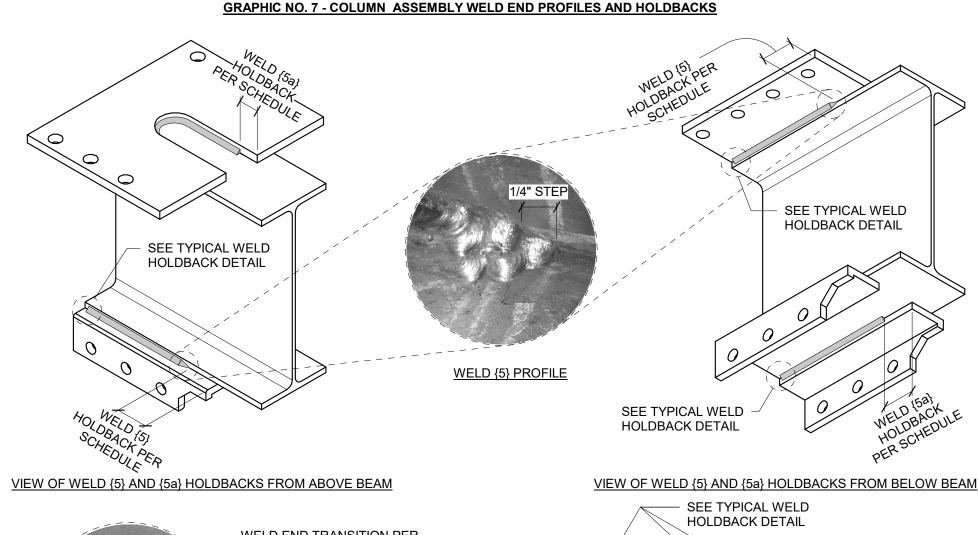
**GRAPHIC NO. 3 - COMPLETED SIDEPLATE BOLTED COLUMN TREE ASSEMBLY** 

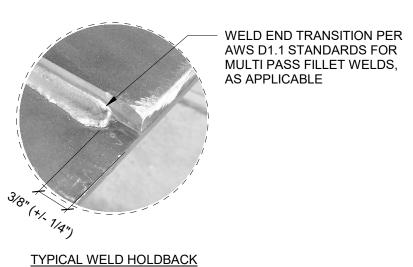
- a. THE COVER PLATE (B) AND LONGITUDINAL ANGLES (H) SHALL BE PLACED AS PERPENDICULAR AS POSSIBLE TO THE WEB OF BEAM, REGARDLESS OF POSSIBLE FLANGE TILT (AS ROLLED BY THE MILL). SEE GRAPHIC NO. 4. b. PLACEMENT OF ANGLES (H) SHALL BE SUCH THAT THEIR BOLT HOLES ARE ALIGNED WITH EACH OTHER AS MUCH AS POSSIBLE IN BOTH THEIR VERTICAL AND HORIZONTAL POSITIONS, ALLOWING THE CENTERLINE OF THE LONGITUDINAL ROWS TO BE THE 'WORKING POINT' FOR THE PLACEMENT OF VSE {F}. THIS WILL PROVIDE ASSURANCE THAT THE LONGITUDINAL BOLT HOLES IN THE BEAM ASSEMBLY WILL LINE UP WITH THE LONGITUDINAL BOLT HOLTS IN THE COLUMN ASSEMBLY. ANY OVER RUN IN THE AS BUILT DIMENSIONS WILL CREATE A GAP BETWEEN ANGLES (G) AND COVER PLATE (B). SHIM AS REQUIRED. ANY UNDER RUN IN THE AS BUILT DIMENSIONS SHOULD BE
- ACCOMMODATED BY THE OVERSIZED BOLT HOLE TOLERANCES. c. IN THE EVENT THE RADIUS OF THE ANGLE IS LARGER THAN THE EDGE DISTANCE REQUIRED TO PLACE FILLET WELD (5) FROM THE ANGLE (H) TO THE BEAM FLANGE TIPS, ROTATE ASSEMBLY ON ITS SIDE SO THAT THE WEB IS PARALLEL TO THE GROUND. IN THIS POSITION THE RADIUS OF THE ANGLE CAN BE BUILT UP. SEE GRAPHIC NO. 5.
- d. NOTE THAT IN SOME CONDITIONS ANGLES MAY NOT BE 90 DEGREES. CARE SHALL BE GIVEN TO MEASURE THE SUGGESTED WIDTH FROM THE MOST EXTREME POINT ON THE EXTERIOR FACE OF ANGLE {H} (WHICH MAY OCCUR AT THE TOE OF THE ANGLE VERSES ITS APEX). e. THE ENTIRE EXTERIOR FACE OF THE OUTSTANDING LEG OF ANGLE {H} SHALL BE PLACED PARALLEL TO THE WEB OF THE BEAM AS MUCH AS PRACTICABLE.
- f. WELD COVER PLATES (B) AND ANGLES (H) TO BEAM FLANGE USING FILLET WELD (5) AND (5a). SEE GRAPHIC NO. 8. g. WELD VSE {F} TO THE BEAM WEB, AS RÈQUIRED. SEE GRAPHIC NO. 8. IT IS RECOMMENDED THAT THE VSE {F} BE WELDED LAST AS A DISTORTION CONTROL METHOD DUE TO THE POTENTIAL WARPING EFFECTS OF WELD (5). THE EXTERIOR FACE OF THE VSE (F) SHALL EITHER BE FLUSH WITH THE EXTERIOR FACE OF ANGLE {H}, OR SLIGHTLY RECESSED TOWARDS THE BEAM WEB UP TO 1/16 INCH FROM THE EXTERIOR FACE OF ANGLE {H}, SEE GRAPHIC NO. 4. THE VERTICAL PLACEMENT OF THE VSE {F} SHALL BE SET BY THE KEEP DIMENSION
- FROM ITS BOTTOM BOLT HOLE TO THE CENTERLINE OF THE BOTTOM LONGITUDINAL ROW OF BOLT HOLES IN ANGLES (H) (I.E. THE 'WORKING POINT' OF THE BEAM). THIS WILL VERIFY PROPER ALIGNMENT OF THE BOLT HOLES IN THE COLUMN ASSEMBLY WITH THOSE IN THE BEAM ASSEMBLY, IRRESPECTIVE OF MILL TOLERANCES. h. TACK WELDING IN THE BEAM PROTECTED ZONE SHALL NOT BE PERMITTED. IF THIS SHOULD OCCUR, IT SHALL BE REPAIRED BY FOLLOWING AWS PROTOCOLS.

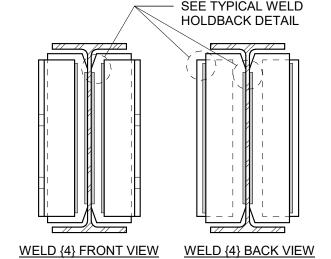












GRAPHIC NO. 8 - BEAM ASSEMBLY WELD END PROFILES AND HOLDBACKS

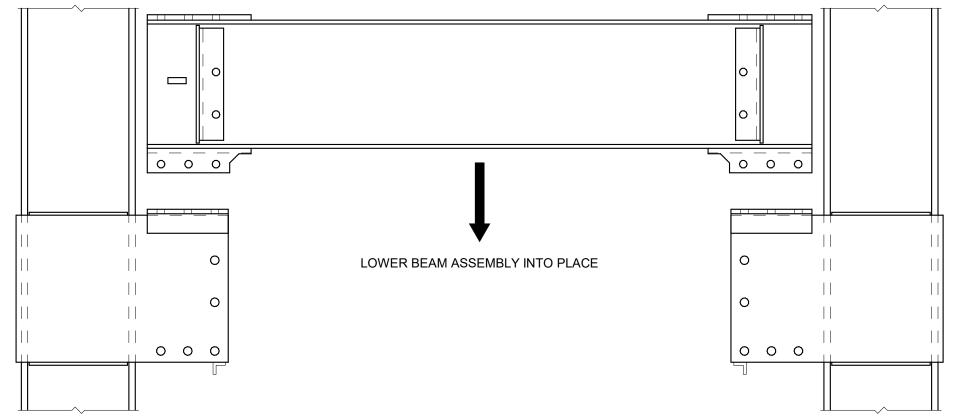
- 3. THE FOLLOWING FABRICATION AND SEPARATION MEASURES ARE IMPLEMENTED AND MAINTAINED THROUGH DELIVERY TO THE FIELD IN ORDER TO FACILITATE THE LOWERING INTO PLACE OF THE BEAM ASSEMBLY BETWEEN SIDE PLATES (A) OF OPPOSING COLUMN ASSEMBLIES. a. MAINTAIN, AS A MINIMUM, THE ACTUAL COLUMN FLANGE WIDTH ANYWHERE IN BETWEEN THE INTERIOR FACES OF SIDES PLATES (A) FROM
- TOP TO BOTTOM, TO ENSURE SUFFICIENT RATTLE SPACE UPON LOWERING THE BEAM ASSEMBLY INTO PLACE. b. THE DETAILED DISTANCE FROM EXTERIOR FACES OF ANGLES (H) ON THE BEAM ASSEMBLY SHALL BE CORRESPONDINGLY DIMENSIONED PER THE TABLE IN GRAPHIC NO. 4. THIS REDUCTION SHALL BE BASED ON THE FABRICATOR'S EXPERIENCE WITH THE TYPICAL MILL OVERRUNS IN THE COLUMN FLANGE WIDTH FOR THE COLUMN SECTIONS BEING USED. THE PROPER DETAILED DIMENSIONING OF THESE ANGLES {H} IS TO FACILITATE ERECTION CLEARANCE DURING THE LOWERING OF THE BEAM ASSEMBLY INTO PLACE. • IT IS IMPORTANT TO MAINTAIN SUFFICIENT EDGE DISTANCE BETWEEN THE LONGITUDINAL FACE OF THE BOTTOM ANGLES {H} WITH RESPECT TO ITS APEX AND RADIUS AND THE CORRESPONDING FLANGE TIP OF THE BEAM FOR PLACEMENT OF WELD {5}, SEE GRAPHIC

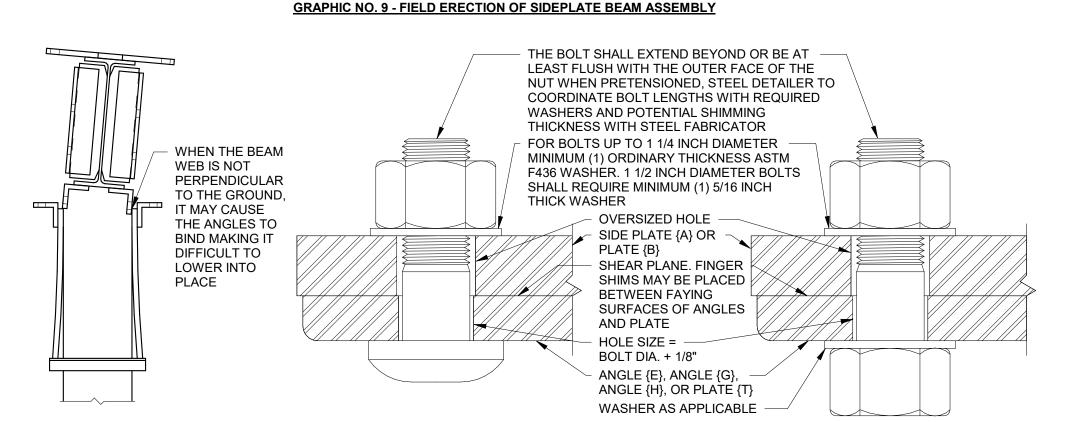
FIELD ERECTION OF SIDEPLATE BOLTED SYSTEM

- 1. LOWER THE BEAM ASSEMBLY INTO OPPOSING COLUMN ASSEMBLIES. SEE GRAPHIC NO. 9 a. RACK BEAM SUCH THAT WEB IS PERPENDICULAR TO THE GROUND, FACILITATING MAXIMUM TOLERANCE WITHOUT THE BEAM BEING TILTED AS IT IS LOWERED DOWN BETWEEN THE SIDE PLATES (A), SEE GRAPHIC NO. 10. b. IF THE OPPOSING COLUMNS ARE SLIGHTLY SKEWED IN RELATION TO ONE ANOTHER, MAKING IT DIFFICULT TO LOWER THE BEAM DOWN BETWEEN THEM SIMULTANEOUSLY. THE BEAM ASSEMBLY CAN BE TILTED AND PLACED FIRST ON ONE COLUMN (LIKELY THE ONE WITH THE GREATEST TWIST). THEN A CHOKER ON THE OPPOSITE END OF THE BEAM CAN BE USED TO PULL IT OVER SO THAT IT IS IN ALIGNMENT ALLOWING THE FREE END OF THE BEAM TO BE DROPPED DOWN INTO PLACE. IN NO CASE SHALL THE BEAM BE OVERDRAWN OR TWISTED
- SUCH THAT THE NON-PARALLEL COLUMNS' ERECTION AIDS FAIL. CAREFULLY REMOVE BOTTOM 'DOG' WHICH IS UNDER LOAD. IT IS RECOMMENDED THAT IT BE REMOVED BY TORCH CUTTING A 'V' SECTION OUT OF ONE OF THE ANGLE LEGS TO ALLEVIATE THE LOAD AND THEN PROCEED TO REMOVE IT. IT IS NOT RECOMMENDED TO USE A GRINDING WHEEL TO REMOVE THE WELDS WHILE THE DOG IS UNDER LOAD! BOTTOM 'DOG' ATTACHMENT WELD MAY REMAIN AND IS NOT NECESSARY TO BE GROUND FLUSH. BOTTOM DOGS SHALL BE REMOVED PRIOR TO PRETENSIONING SIDEPLATE BOLTS. INSTALL BOLTS WHICH SERVE AS CLAMPING DEVICES TO 1) PULL SIDE PLATES {A} IN AS CLOSE AS PRACTICABLE TO THE ANGLES {H} OF THE BEAM ASSEMBLY AND 2) PULL ANGLES (G) ON COLUMN TREE ASSEMBLY AS CLOSE AS PRACTICABLE TO COVER PLATE (B). BOLTS SHALL BE SYSTEMATICALLY INSTALLED AS OUTLINED IN THE BOLTING SPECIFICATIONS, FIRST TO A SNUG TIGHT CONDITION AND THEN PRETENSIONED.
- PRIOR TO PRETENSIONING, THE DISTANCE BETWEEN FAYING SURFACES SHALL BE MEASURED. IF DISTANCE EQUALS 1/8 INCH OR LESS, NO FURTHER ACTION IS REQUIRED PRIOR TO PRETENSIONING. IF DISTANCE IS GREATER THAN 1/8 INCH UP TO 1/4 INCH, A SINGLE-PLY FINGER SHIM SHALL BE INSTALLED BETWEEN FAYING SURFACES PRIOR TO PRETENSIONING. FOR GAPS GREATER THAN 1/4 INCH, CONTACT SIDEPLATE FOR REMEDIAL MEASURES. WASHER IS REQUIRED UNDER THE NUT (AND IN SOME CASES UNDER THE HEAD OF HEAVY HEX). BOLTS SHALL BE INSTALLED AS SHOWN IN GRAPHIC NO. 11.

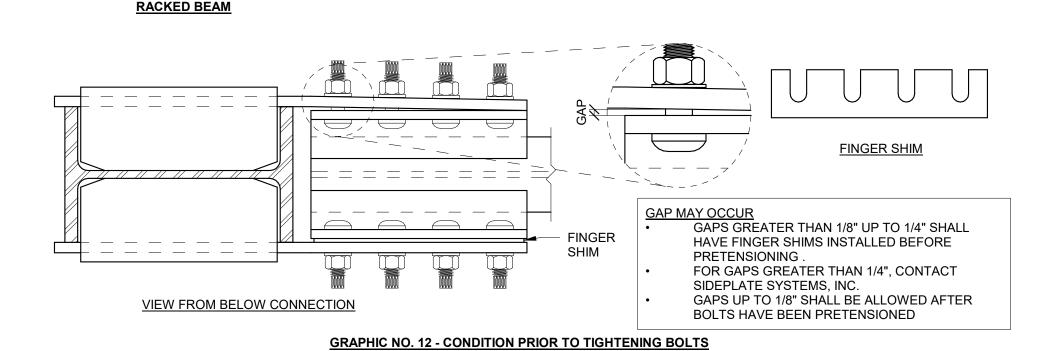
4. BOLT IN FIELD AS SHOWN IN GRAPHIC NO. 12 AND GRAPHIC NO. 13 TO COMPLETE ASSEMBLY.

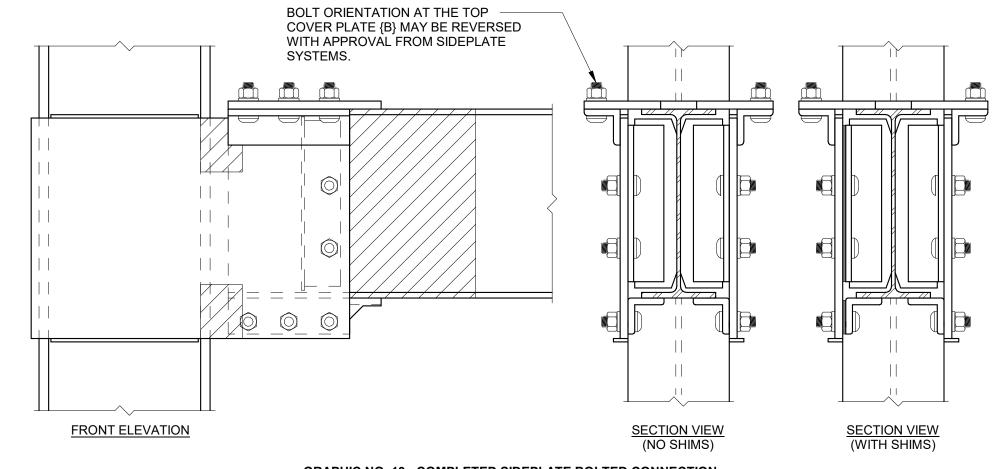
**GRAPHIC NO. 10 - INCORRECTLY** 

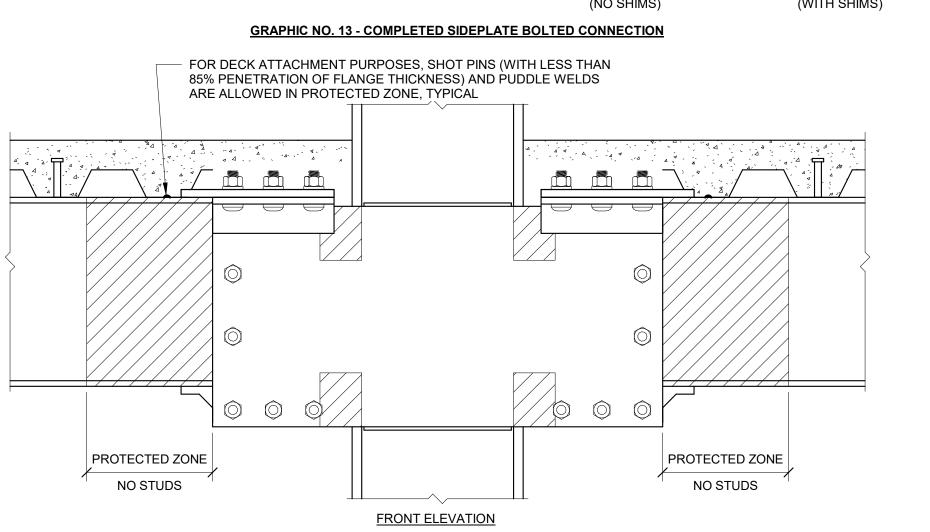




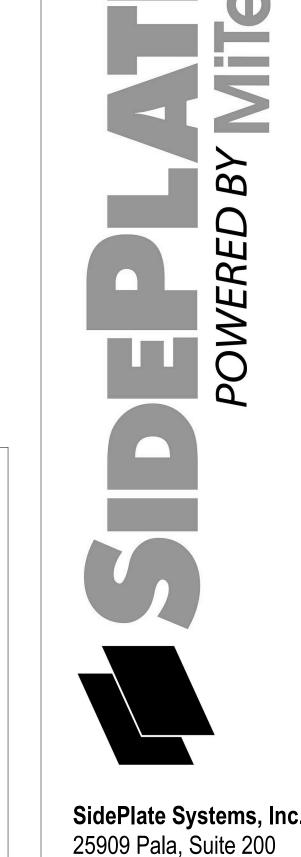
**GRAPHIC NO. 11 - BOLTING DETAIL** 







GRAPHIC NO. 14 - STUDS AND PUDDLE WELDS AT BEAM PROTECTED ZONE



05.07.2024 SHEET TITLE

**SIDEPLATE** CONSTRUCTION **GUIDELINES** 

Mission Viejo, CA 92691