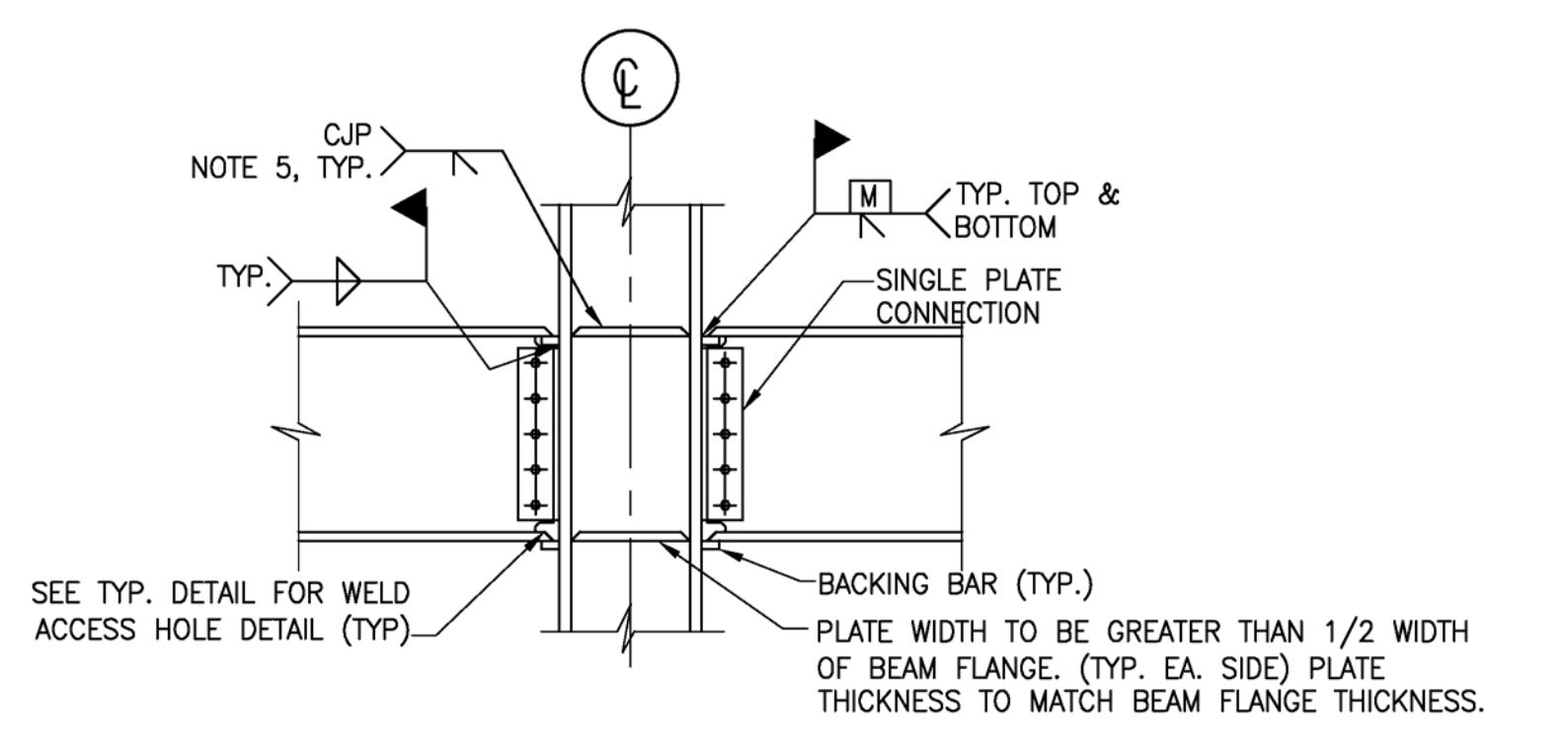
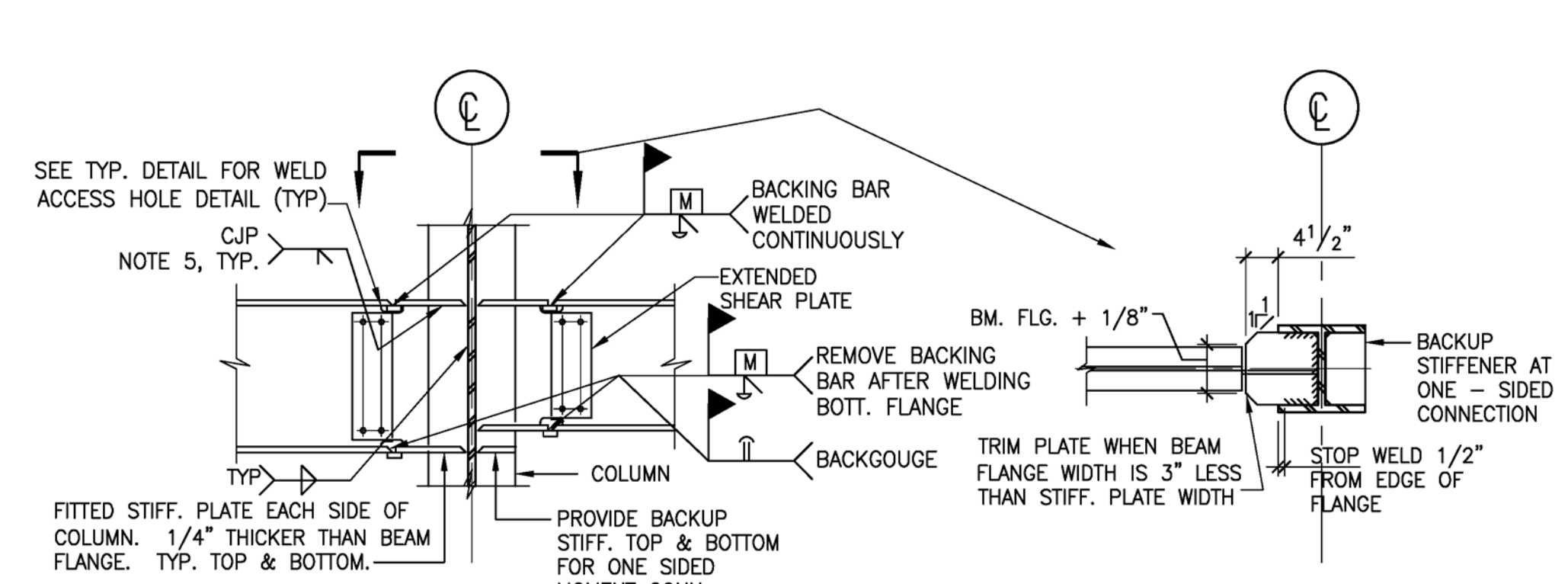


2/20/14 3:41:59 PM  
 I:\BOS\Projects\2010\04\08\08-205\Drawings\Working\_Seri\_Revit\LOCAL USERS\MBA\Bos\Drawings\MAC\_BEANZ\_NEW\_STRUC\_MBA\Bos\Drawings



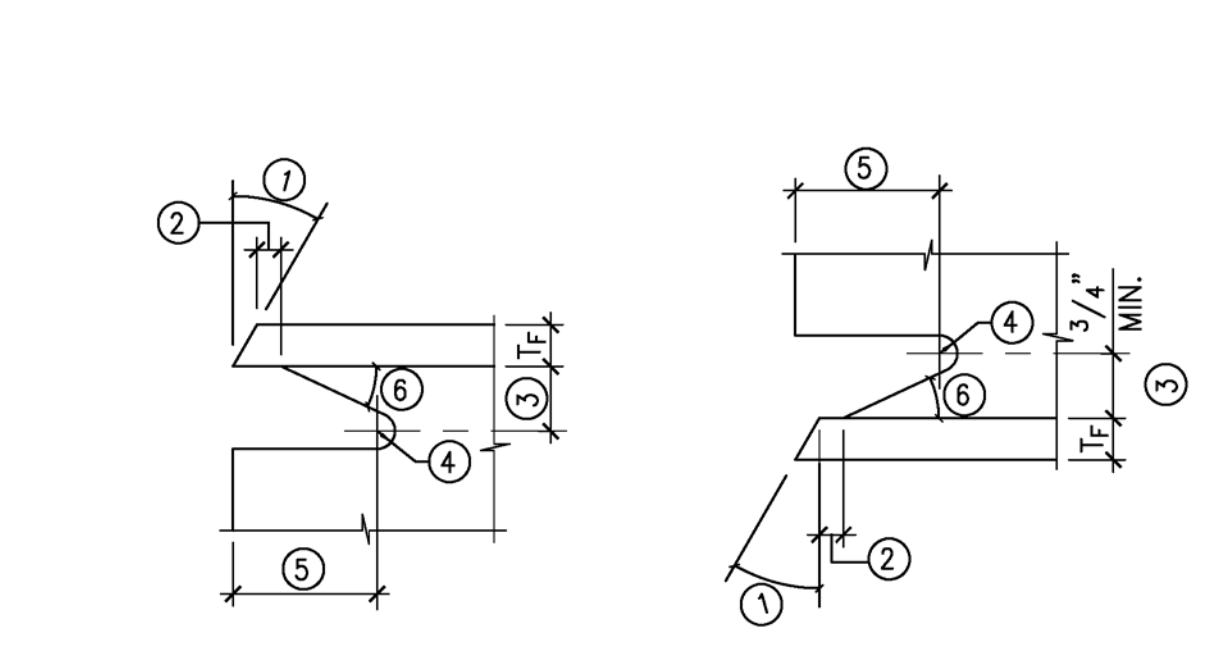
- NOTES:**
- MOMENT CONNECTION TO DEVELOP CAPACITY SHOWN ON PLAN.
  - SHEAR CONNECTION TO DEVELOP THE FACTORED REACTION LISTED IN THE SCHEDULE.
  - INSTALL ALL BOLTS SNUG TIGHT PRIOR TO FIRST TORQUING. TENSION BOLTS FULLY PRIOR TO WELDING.
  - EDGE PREPARATION OF CONTINUITY PLATES AT FABRICATOR'S DISCRETION. BACK GOUGE ROOT PASS OF DOUBLE BEVEL GROOVE WELDS.

**1A** TYPICAL BEAM-TO-COLUMN GRAVITY MOMENT CONNECTION DETAIL (STRONG AXIS) SIM. AT TOP OF COLUMN N.T.S.



- NOTES:**
- MOMENT CONNECTION TO DEVELOP THE OF THE BEAM SHOWN ON PLAN.
  - SHEAR CONNECTION TO DEVELOP FACTORED REACTION LISTED IN THE SCHEDULE.
  - INSTALL ALL BOLTS SNUG TIGHT PRIOR TO FIRST TORQUING. TENSION BOLTS FULLY PRIOR TO WELDING.
  - EDGE PREPARATION OF CONTINUITY PLATES AT FABRICATOR'S DISCRETION. BACK GOUGE ROOT PASS OF DOUBLE BEVEL GROOVE WELDS.

**1B** TYPICAL BEAM-TO-COLUMN GRAVITY MOMENT CONNECTION DETAIL (WEAK AXIS) SIM. AT TOP OF COLUMN N.T.S.

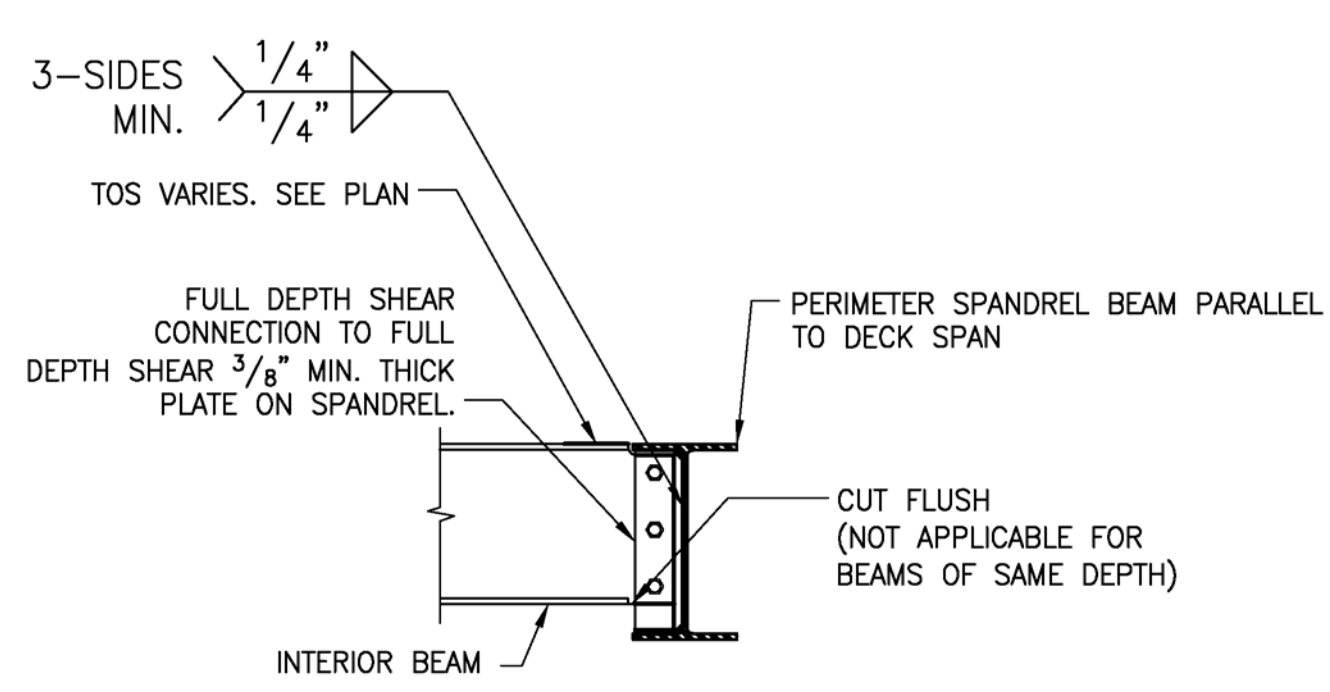


- WELD ACCESS HOLE NOTES:**
- BEVEL AS REQUIRED BY AWS D1.1 FOR SELECTED GROOVE WELD PROCEDURE.
  - LARGER OF  $T_f$  OR  $1/2"$  (TOLERANCE: PLUS  $1/2 T_f$ , OR MINUS  $1/4 T_f$ )
  - $3/4 T_f$  TO  $T_f$ ,  $3/4"$  MINIMUM (TOLERANCE:  $\pm 1/4"$ )
  - $3/8"$  MINIMUM RADIUS (TOLERANCE: PLUS NOT LIMITED, OR MINUS 0)
  - $3 T_f$  (TOLERANCE:  $\pm 1/2"$ )
  - $25^\circ$  MAXIMUM AS-BUILT ANGLE AFTER TOLERANCES.

**1C** WELD ACCESS HOLE DETAILS N.T.S.

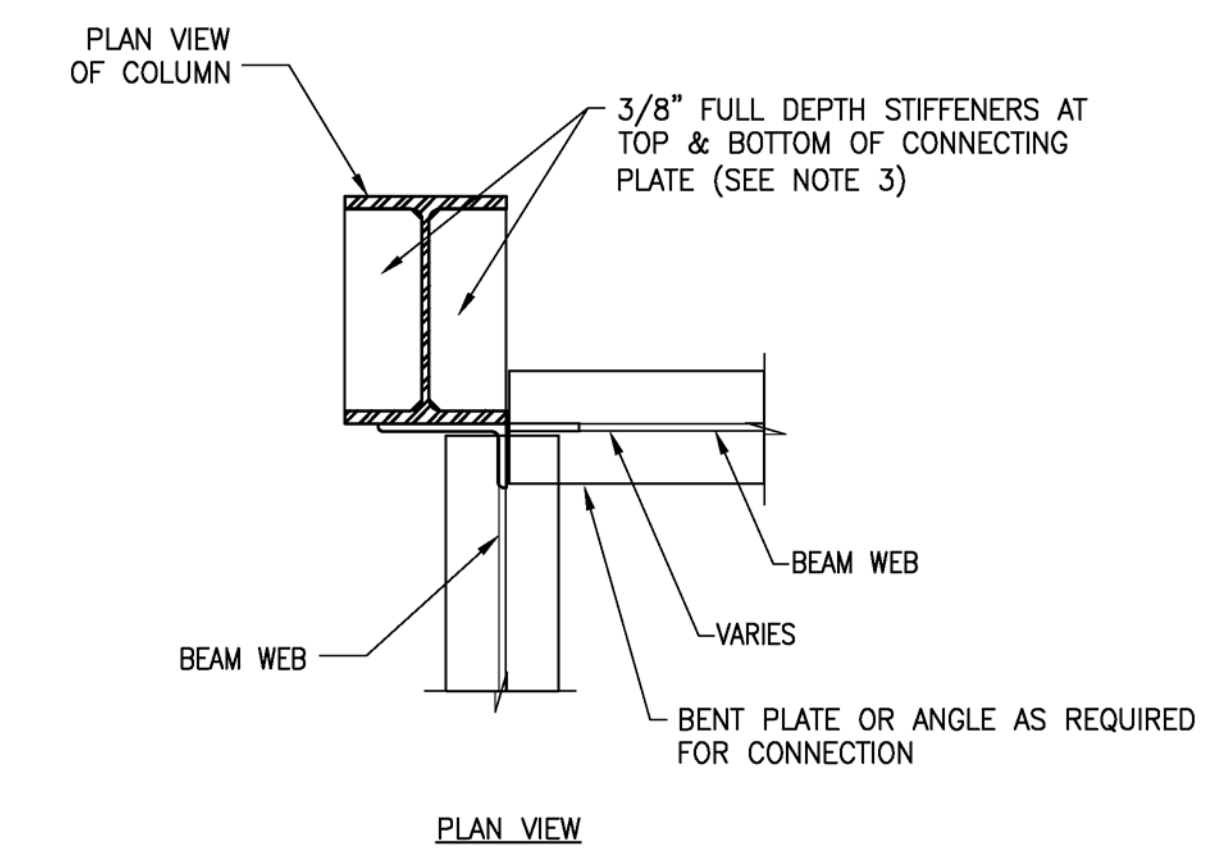
MINIMUM SIZE OF FILLET WELDS TABLE	
MATERIAL THICKNESS OF THINNER PART JOINED (IN.)	MINIMUM SIZE OF FILLET WELD <sup>a</sup> (IN.)
UP TO 1/4 INCLUSIVE	3/16
OVER 1/4 TO 1/2	1/8
OVER 1/2 TO 3/4	1/4
OVER 3/4	3/8

<sup>a</sup> LEG DIMENSION OF FILLET WELDS. SINGLE-PASS WELDS MUST BE USED.



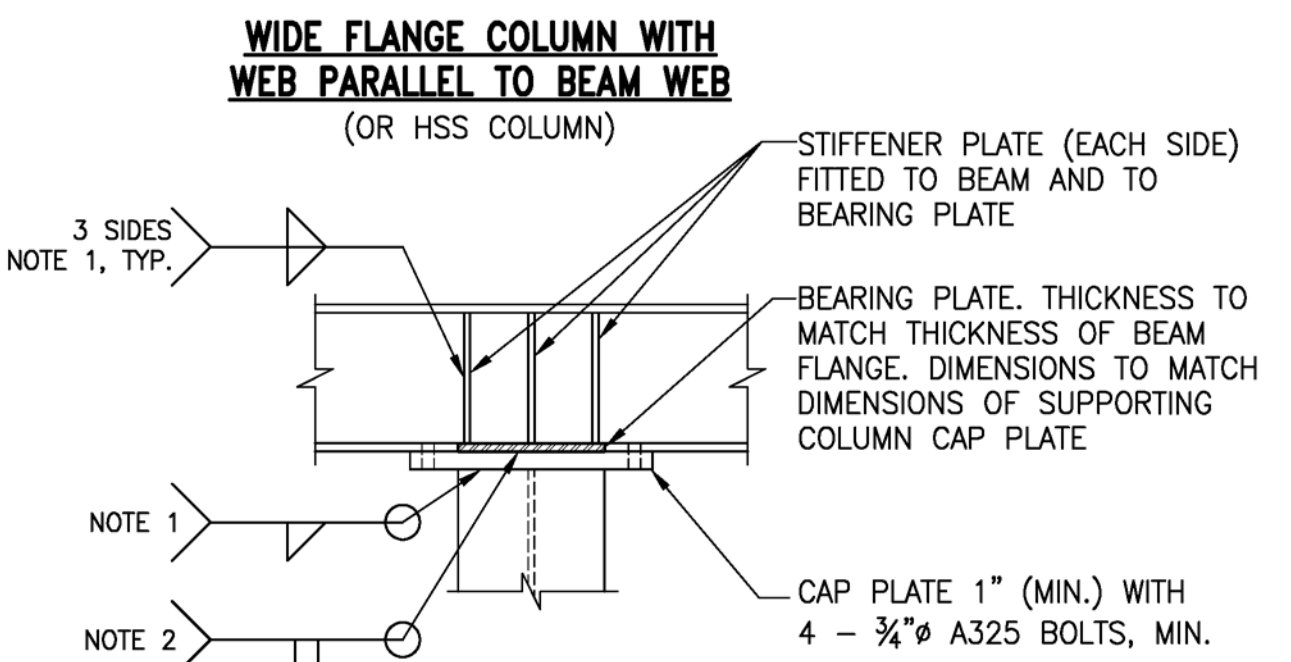
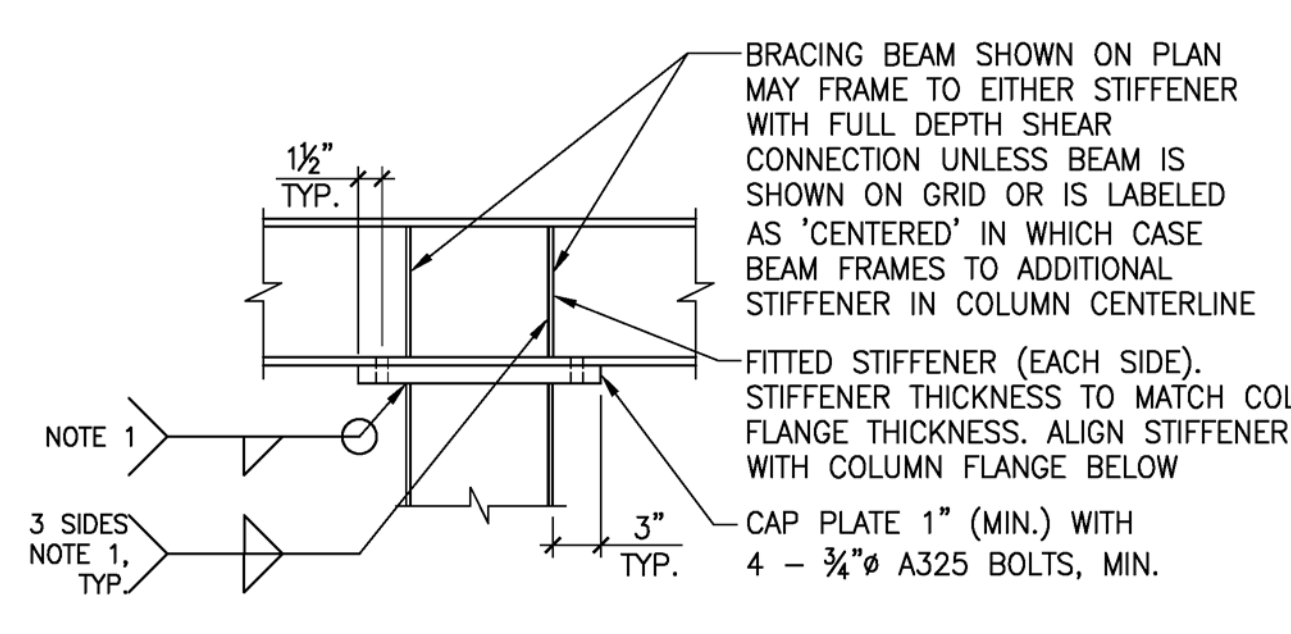
**2** WELD TABLE N.T.S.

**3** TYPICAL BEAM FRAMING TO SPANDREL BEAM CONNECTION N.T.S.



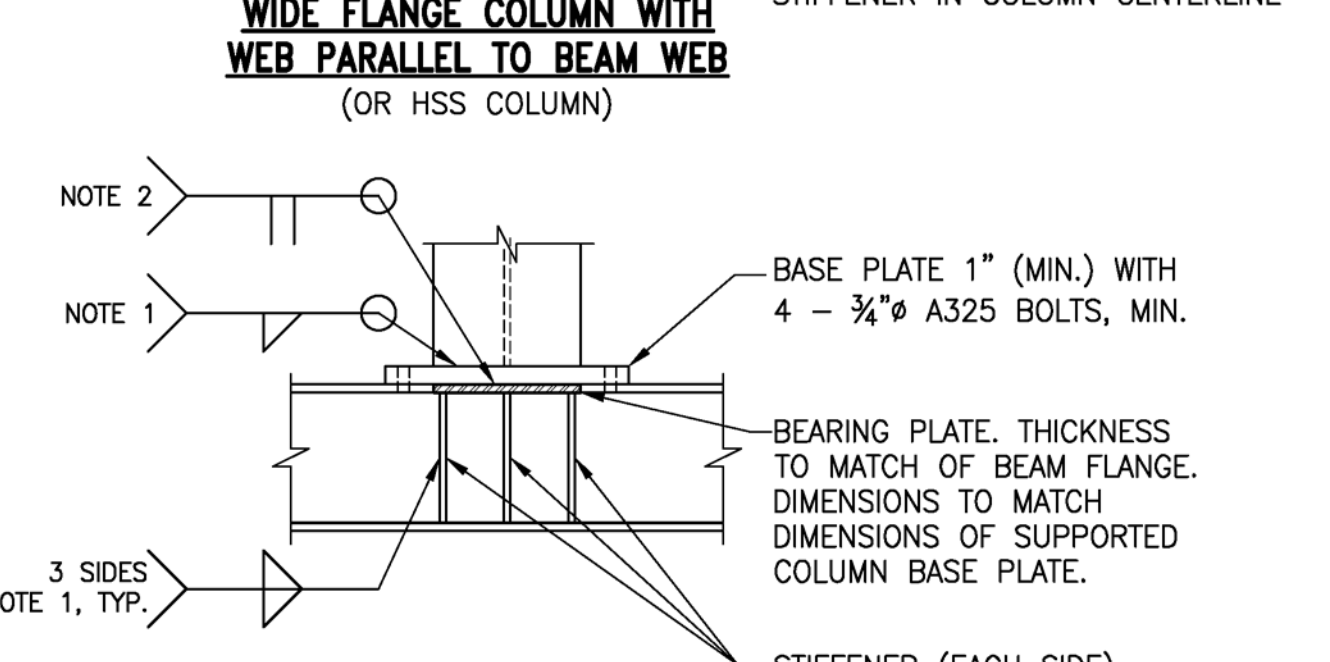
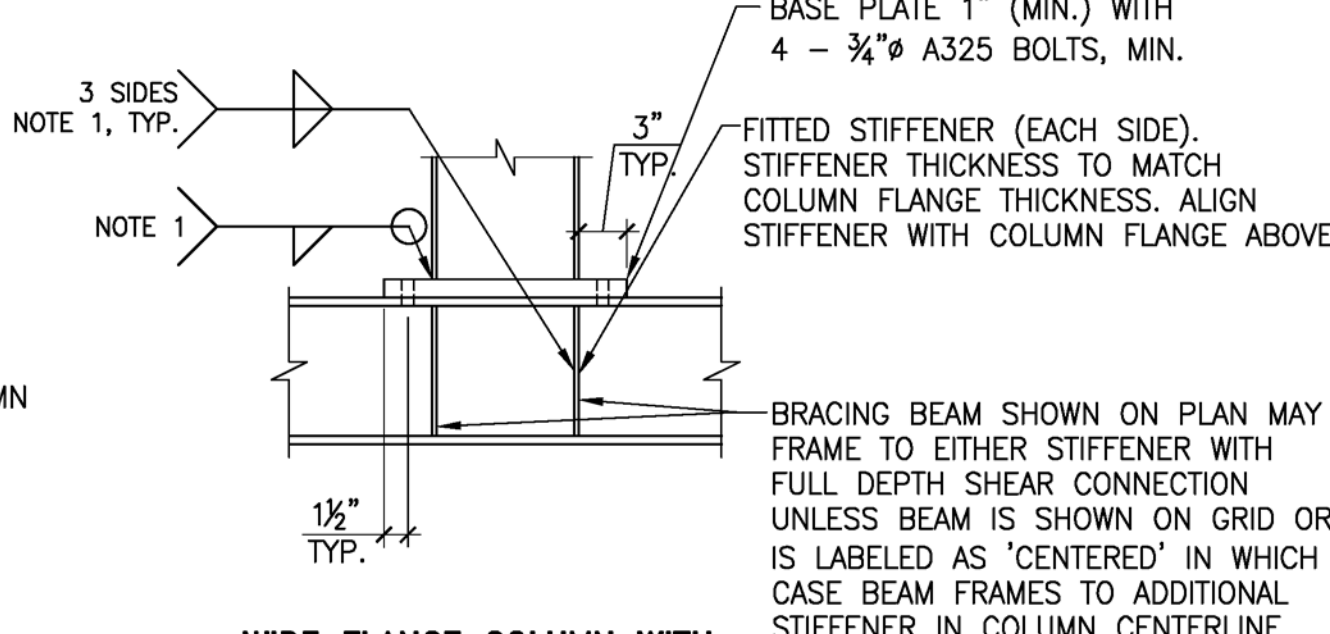
- NOTES:**
- WELDED CONNECTION AT CONTRACTOR'S OPTION IS ACCEPTABLE.
  - FULLY TENSIONED BOLTED CONNECTION.
  - FOR BEAMS PARALLEL TO COLUMN FLANGE, DIRECT WEB-TO-FLANGE CONNECTION IS ACCEPTABLE IF IT CAN DEVELOP REQUIRED STRENGTH. CAN USE ONE PAIR OF STIFFENERS ON CONNECTION SIDE OF COLUMN AT LEVEL OF BEAM FLANGES.

**4** TYPICAL OFFSET BEAM CONNECTION TO COLUMN FLANGE 3/4" = 1'-0"



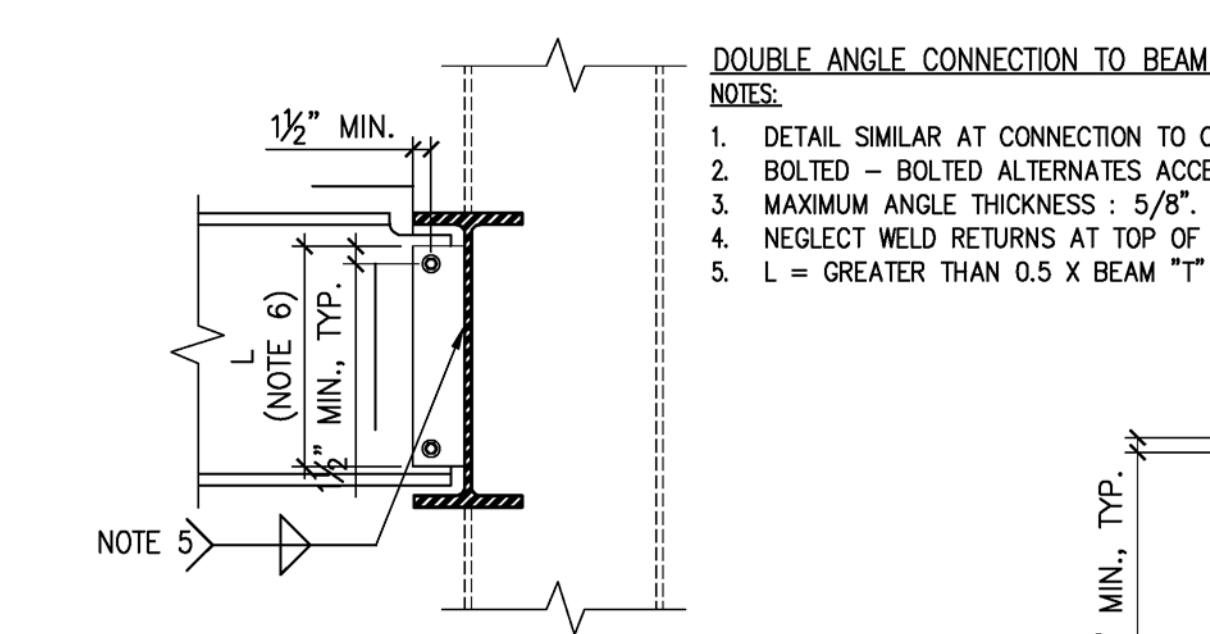
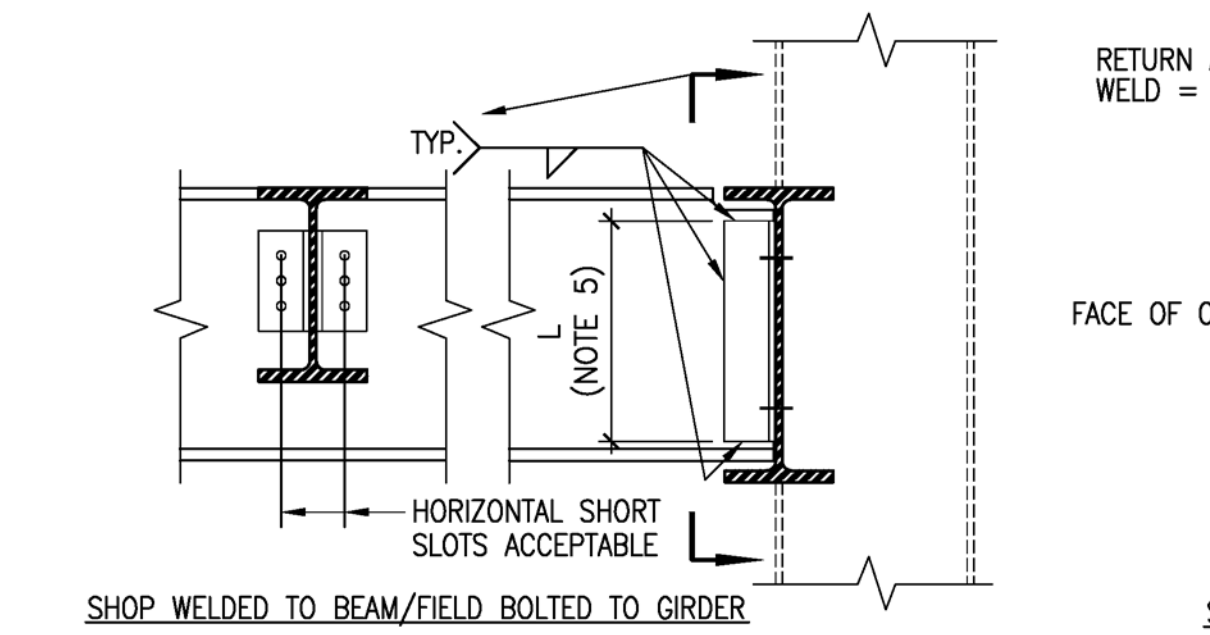
- NOTES:**
- MINIMUM WELD SIZE PER WELD TABLE TYP. DETAIL.
  - CJP BETWEEN BEARING PLATE AND SUPPORTING BEAM.
  - FULLY TENSION ALL BOLTS.
  - SLAB CONSTRUCTION NOT SHOWN FOR CLARITY, SEE PLANS.

**5** STANDARD BEAM OVER COLUMN DETAIL 3/4" = 1'-0"



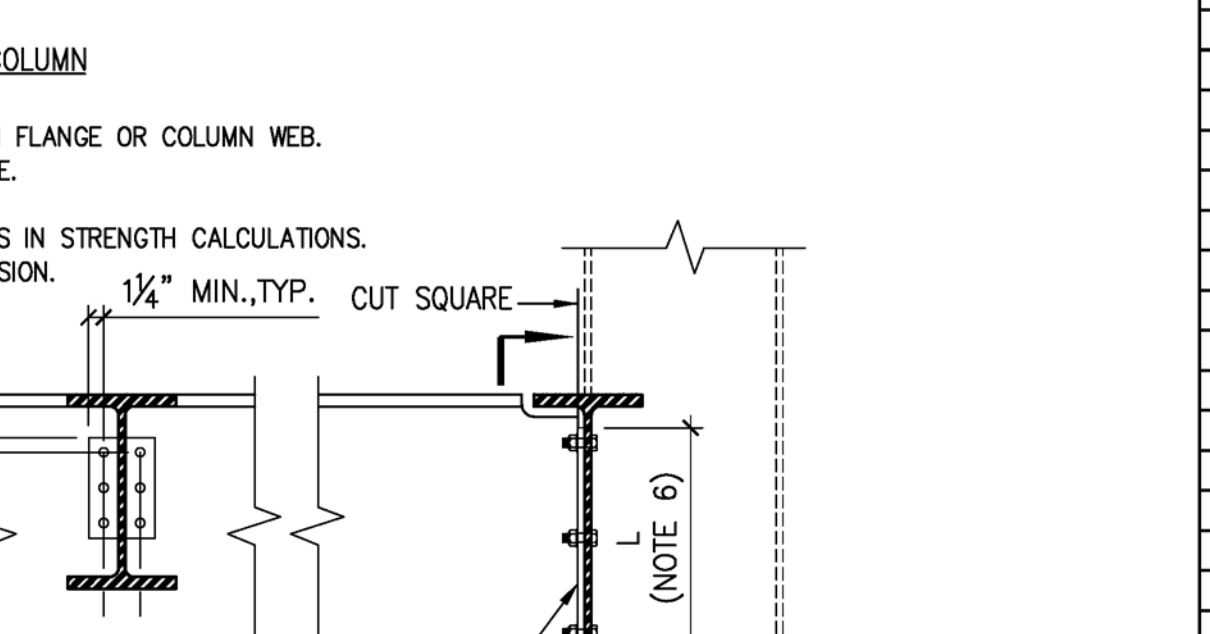
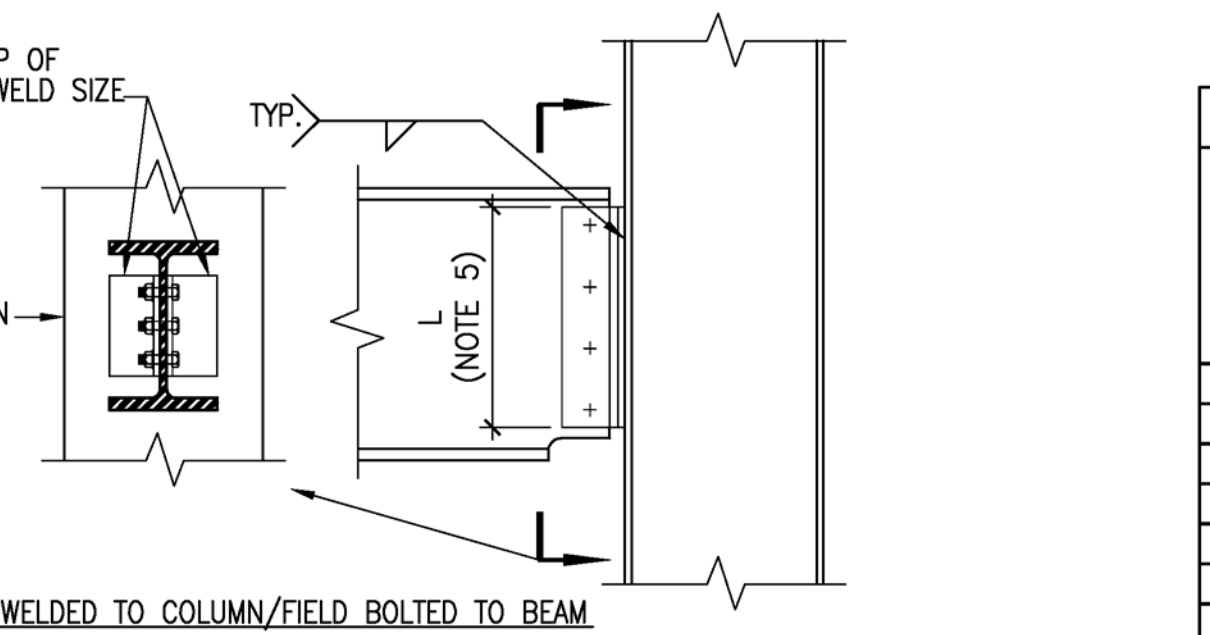
- NOTES:**
- MINIMUM WELD SIZE PER WELD TABLE TYP. DETAIL.
  - CJP BETWEEN BEARING PLATE AND SUPPORTING BEAM.
  - FULLY TENSION ALL BOLTS.
  - SLAB CONSTRUCTION NOT SHOWN FOR CLARITY, SEE PLANS.

**6** COLUMN OVER BEAM DETAIL 3/4" = 1'-0"



- GENERAL NOTES:**
- DESIGN CONNECTIONS FOR THE GREATER OF THE FORCES SHOWN ON PLAN OR THE FORCES SHOWN ON THE BEAM SHEAR REACTION TABLE.
  - MINIMUM BOLT SIZE IS 3/4" A325, U.O.N.
  - FULLY TENSION ALL BOLTS.
  - REINFORCE WEBS AS REQUIRED BY COPES, WEB CUTS, ETC.
  - ALTERNATE CONNECTION TYPES, SUCH AS SINGLE ANGLE, TEE, SEATED CONNECTIONS, ETC. MAY BE ACCEPTABLE UNDER CERTAIN CIRCUMSTANCES. REVIEW WITH SER.
  - SEE DETAILS & SECTIONS FOR BEAMS REQUIRING FULL DEPTH SHEAR CONNECTIONS.
  - DETAIL CONNECTIONS IN CONFORMANCE WITH THE REQUIREMENTS OF "29 CFR PART 1926, SUBPART R - STEEL ERECTION".
  - GRIND COPES FOR GROUP 4 AND 5 SECTIONS PER THE AISC LRFD SPECIFICATION SECTION J1.6.

**7** STANDARD BEAM SHEAR CONNECTIONS 3/4" = 1'-0"



- NOTES:**
- DETAIL SIMILAR AT COLUMN FLANGE OR COLUMN WEB.
  - END PLATE THICKNESS RANGE: FROM 1/2" TO 3/4" INCLUSIVE.
  - DO NOT RETURN WELD ACROSS THICKNESS OF BEAM WEB.
  - END PLATE MATERIAL: ASTM A36
  - DO NOT USE ON CAMBERED BEAMS.
  - L = GREATER THAN 0.5 X BEAM "T" DIMENSION.

**8** BEAM SHEAR REACTION TABLE 3/4" = 1'-0"

BEAM SHEAR REACTION TABLE (UON)			
BEAM SIZE	VERTICAL FACTORED (LOAD) REACTION (KIPS) (SEE NOTE 1)	MINIMUM NUMBER OF BOLTS (SEE NOTE 6)	HORIZONTAL FACTORED TENSILE FORCE (KIPS) (SEE NOTE 7)
WB	19	2	13
W10x26 AND LIGHTER	26	2	18
W10x30 AND HEAVIER	30	2	20
W12x22 AND LIGHTER	30	2	20
W12x26 AND HEAVIER	40	3	27
W14x26 AND LIGHTER	40	3	27
W14x30 AND HEAVIER	47	3	32
W16x31 AND LIGHTER	47	3	32
W16x36 AND HEAVIER	64	4	43
W18x46 AND LIGHTER	64	4	43
W18x50 AND HEAVIER	80	5	54
W21x57 AND LIGHTER	64	4	43
W21x62 AND LIGHTER	75	5	50
W21x68 AND HEAVIER	105	6	70
W24x55 AND LIGHTER	85	5	57
W24x62 AND HEAVIER	105	6	70
W27x94 AND LIGHTER	90	5	60
W27x102 AND HEAVIER	140	6	94
W30x99 AND LIGHTER	145	7	97
W30x108 AND HEAVIER	170	8	114
CB	15	2	10
CB	20	2	14
C10/C12	25	2	17

- NOTES:**
- LOADS IN THIS TABLE HAVE BEEN FACTORED IN ACCORDANCE WITH SECTION 2.3 OF ASCE 7-05.
  - SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
  - BEAM REACTIONS SHOWN ON PLAN TAKE PRECEDENCE OVER THOSE SHOWN IN THIS TABLE. FOR THOSE SHOWN ON PLAN, PROVIDE A HORIZONTAL FACTORED TENSILE FORCE EQUAL TO 2/3 THE VERTICAL FACTORED LOAD UON. VERTICAL AND HORIZONTAL LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
  - SEE DETAILS AND SECTIONS FOR BEAMS REQUIRING FULL DEPTH SHEAR CONNECTIONS.
  - FIELD WELDED CONNECTIONS MAY BE USED IN LIEU OF BOLTED CONNECTIONS AT CONTRACTOR'S OPTION, HOWEVER, SHOP DRAWINGS FOR ALL FIELD WELDED CONNECTIONS MUST BE SUBMITTED AND APPROVED BY THE EOR PRIOR TO BEGINNING FABRICATION.
  - USE 3/4" A325N BOLTS (MIN).
  - FOR COMPLIANCE WITH STRUCTURAL INTEGRITY REQUIREMENTS OF 2009 IBC 1614.3.2.2, CONNECTIONS SHALL HAVE MINIMUM HORIZONTAL AXIAL TENSILE STRENGTH INDICATED. VERTICAL REACTION AND HORIZONTAL TENSILE FORCE NEED NOT ACT CONCURRENTLY.

**8** BEAM SHEAR REACTION TABLE 3/4" = 1'-0"

**PERKINS + WILL**

225 Franklin St., Suite 1100  
 Boston, MA 02110  
 1 617 438 0300  
 1 617 478 0321  
 www.perkinswill.com

**Maine Medical Center**  
 MaineHealth

**Bean 2 Roof Addition**  
 22 Bramhall Street, Portland, Maine 04102

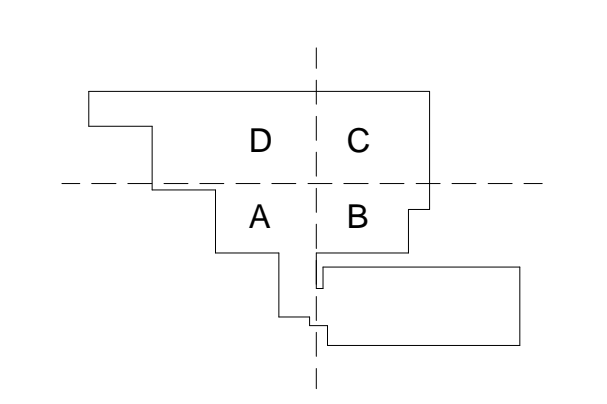
MEP ENGINEER  
 AKF ENGINEERS  
 41 Farnsworth Street, 3rd Floor  
 Boston, MA 02210  
 1 617 737 1111  
 1 617 737 4311

STRUCTURAL ENGINEER  
 SIMPSON GUMPERTZ & HEGER  
 41 Seign Street, Building 1, Suite 500  
 Waltham, MA 02453  
 1 781 907 9000  
 SGH Project No. 100439.09

MEDICAL EQUIPMENT PLANNERS  
 RTKL ASSOCIATES INC.  
 1717 PACIFIC AVENUE  
 DALLAS, TX 75201  
 1 214 468 7000  
 1 214 468 7601

COST ESTIMATOR  
 DG JONES & PARTNERS  
 3 Baldwin Green Common, Suite 202  
 Wilton, MA 01891  
 1 781 932 3131  
 1 781 932 3199

**CONSTRUCTION DOCUMENTS**  
 06.14.2013



STATE OF MAINE  
 JOHN H. THOMSEN III  
 No. 11220  
 PROFESSIONAL ENGINEER

Revisions

NO.	ISSUED FOR PERMIT	DATE
1	02/07/14	ESL/E

**Sheet Information**

Date: 12 APR 2013  
 Job #: C140135461(MMC)152168.000  
 Drawn: SWW  
 Checked: MJB  
 Approved: JHT  
 Title

**TYPICAL STEEL DETAILS**

Sheet  
**S00-20**