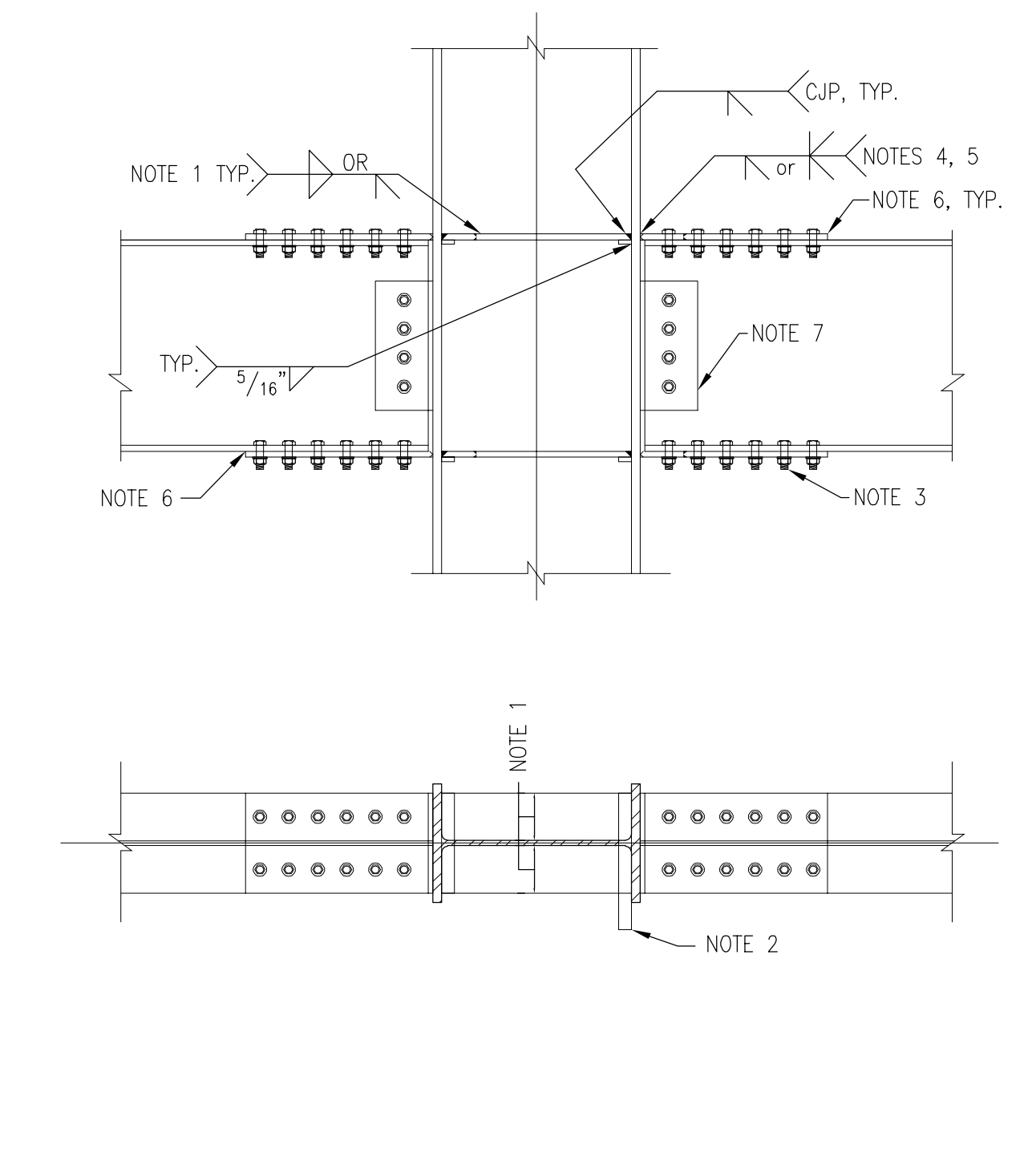


- STRONG AXIS NOTES:**
- MOMENT CONNECTION TO DEVELOP THE FULL CAPACITY OF THE BEAM.
 - SHEAR CONNECTION TO DEVELOP FACTORED REACTION LISTED IN SCHEDULE + 2.4IMP (SPAN).
 - REMOVE BOTTOM FLANGE BACKING BAR, BACK GOUGE, AND INSTALL REINFORCING $7/16"$ FILLET ON TOP & BOTTOM OF FLANGE.
 - WELD TOP FLANGE BACKING BAR CONTINUOUSLY TO COLUMN FLANGE OR CONTINUITY PLATE.
 - ADD REINFORCING FILLET TO TOP FLANGE WELD.
 - INSTALL ALL BOLTS SNUG TIGHT PRIOR TO FIRST TORQUING. TENSION BOLTS FULLY PRIOR TO WELDING.
 - SIMILAR DETAIL APPLIES AT COLUMN BASES MOMENT CONNECTED TO TRUSS CHORDS.

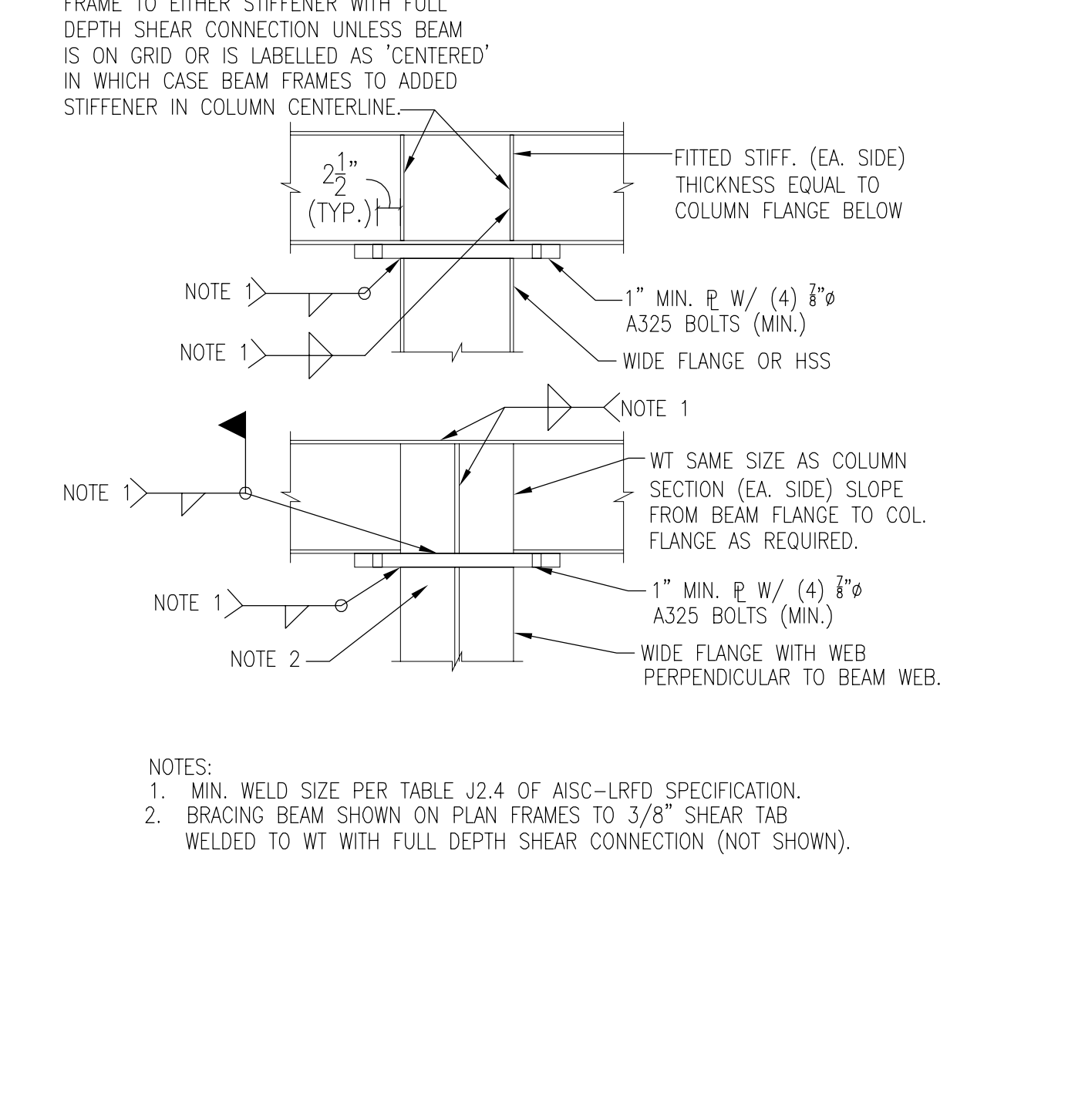
WELDED CONNECTIONS



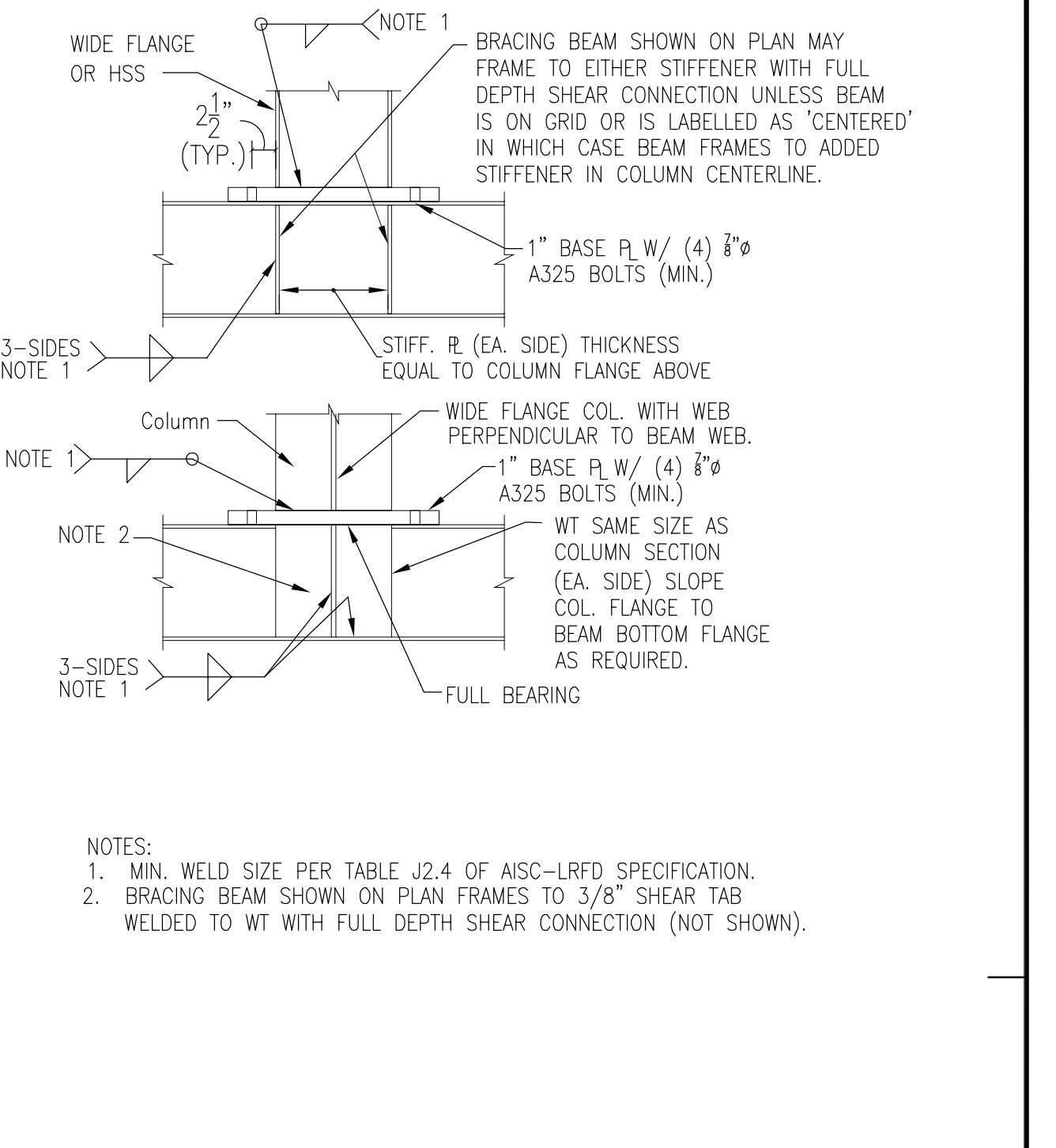
- BOLTED MOMENT CONNECTION NOTES:**
- MINIMUM WIDTH TO MATCH BEAM FLANGE, THICKNESS TO MATCH OR EXCEED FLANGE OF THICKER BEAM FLANGE AT CONNECTION.
 - REMOVE WELD TABS TO $1/4"$ MAXIMUM FROM EDGE OF CONTINUITY PLATE. GRIND END OF WELD SMOOTH, NOT FLUSH; DO NOT GOUGE COLUMN FLANGE.
 - ALL BOLTS PRETENSIONED; DESIGNED FOR BEARING. BOLT HOLES IN FLANGE PLATE ARE OVERSIZED; BOLT HOLES IN BEAM FLANGE ARE STANDARD.
 - SHOP WELD: WHEN USING SINGLE BEVEL PREPARATION, REMOVE BACKING AFTER WELDING, BACKGOUGE, AND REINFORCE WITH $5/16"$ MIN. FILLET WELD.
 - WHEN USING DOUBLE BEVEL PREPARATION, BACKGOUGE FIRST WELD BEFORE WELDING OTHER SIDE.
 - SHIMS BETWEEN BEAM FLANGE AND FLANGE PLATES ARE ALLOWED; USE FULL COVERAGE SHIM PLATES OR FULL DEPTH FINGER SHIMS.
 - HOLES IN SHEAR TABS ARE SHORT SLOTTED HORIZONTAL HOLES. HOLES IN BEAM WEB ARE STANDARD.
 - MOMENT CONNECTION SHALL DEVELOP THE FULL CAPACITY OF THE BEAM.

BOLTED CONNECTIONS

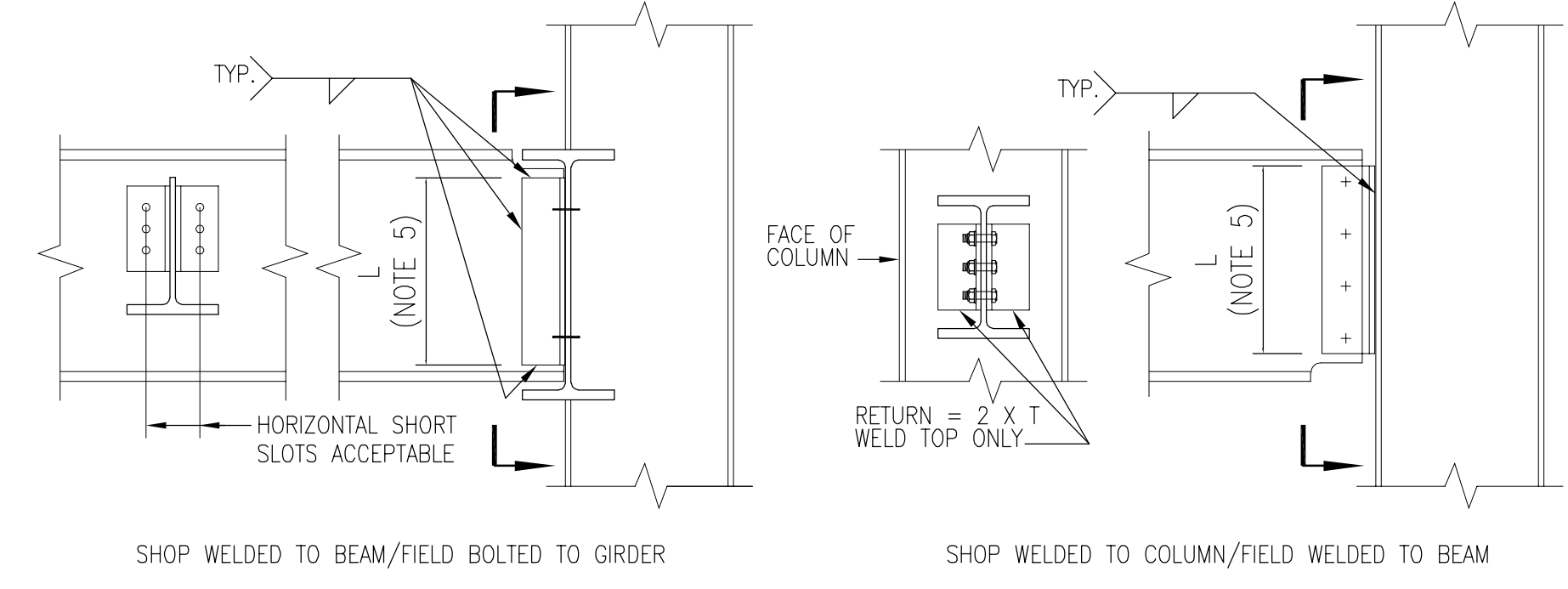
TS-1 TYPICAL "BEAM-TO-COLUMN" MOMENT CONNECTION DETAILS
3/4"=1'-0"



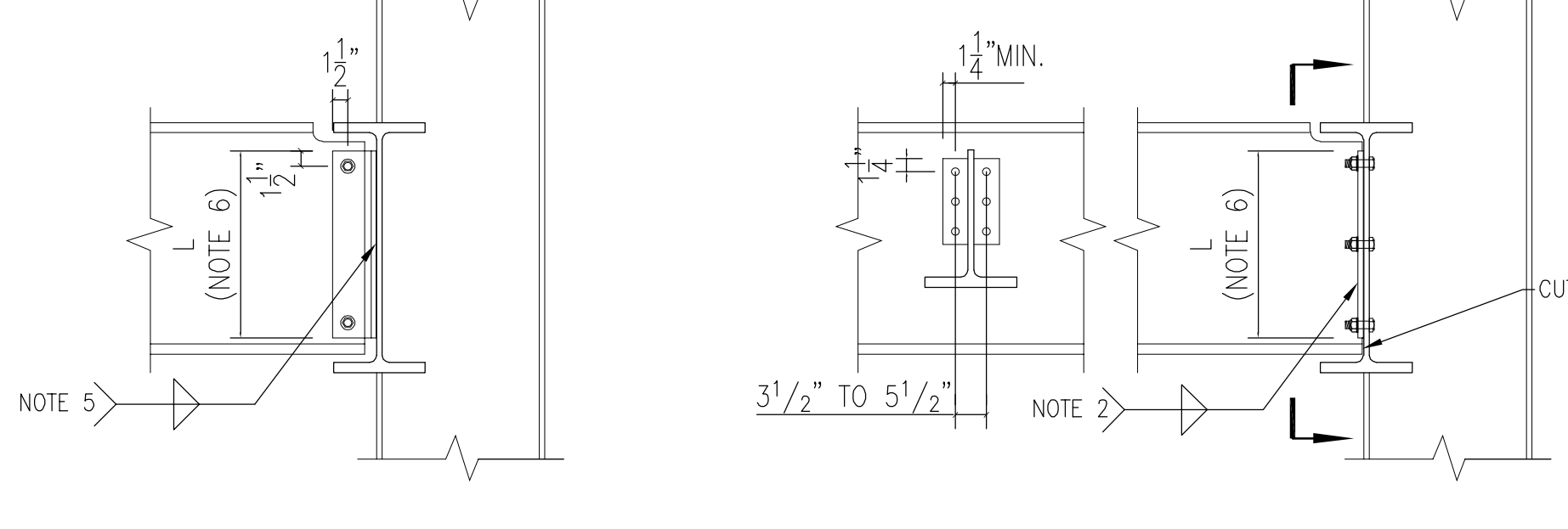
TS-2 STANDARD BEAM OVER COLUMN DETAIL
3/4"=1'-0"



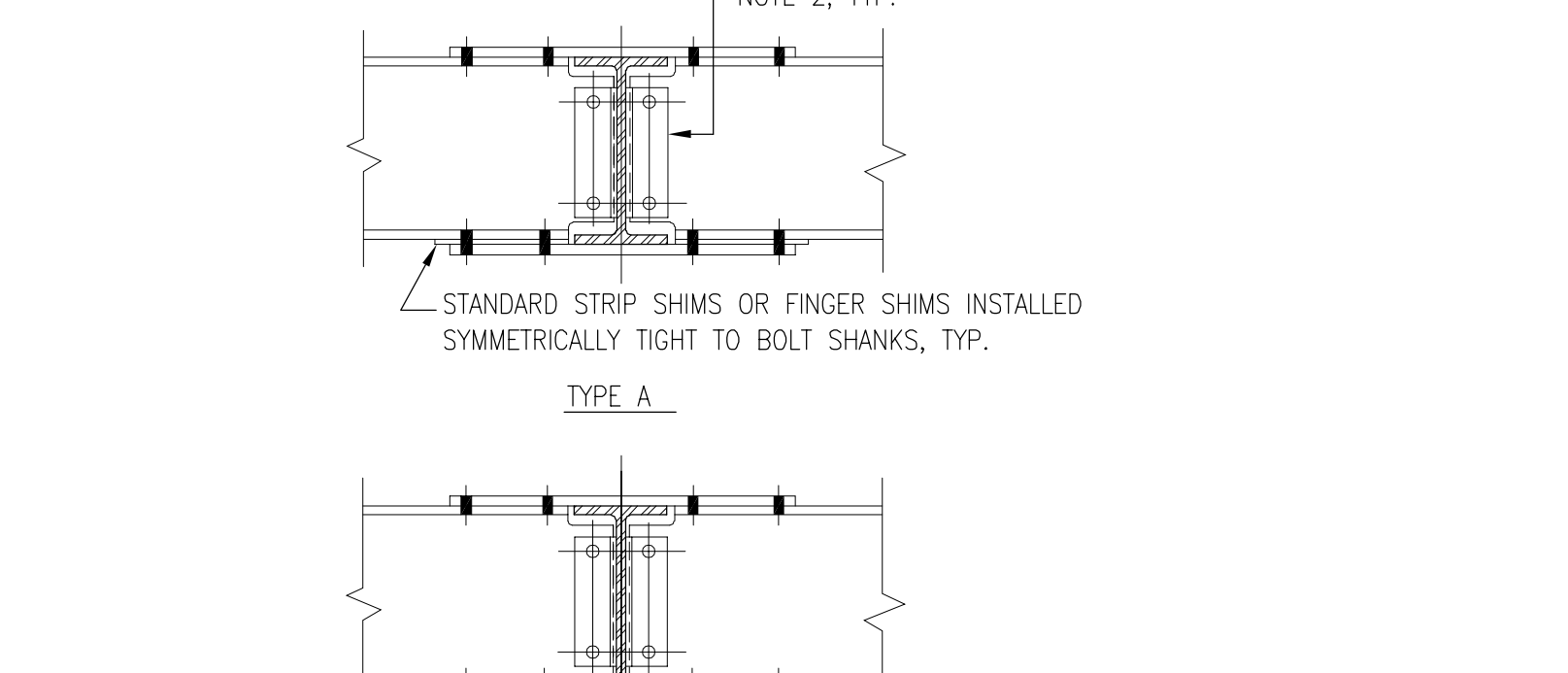
TS-3 COLUMN BASE TO STEEL SUPPORT
3/4"=1'-0"



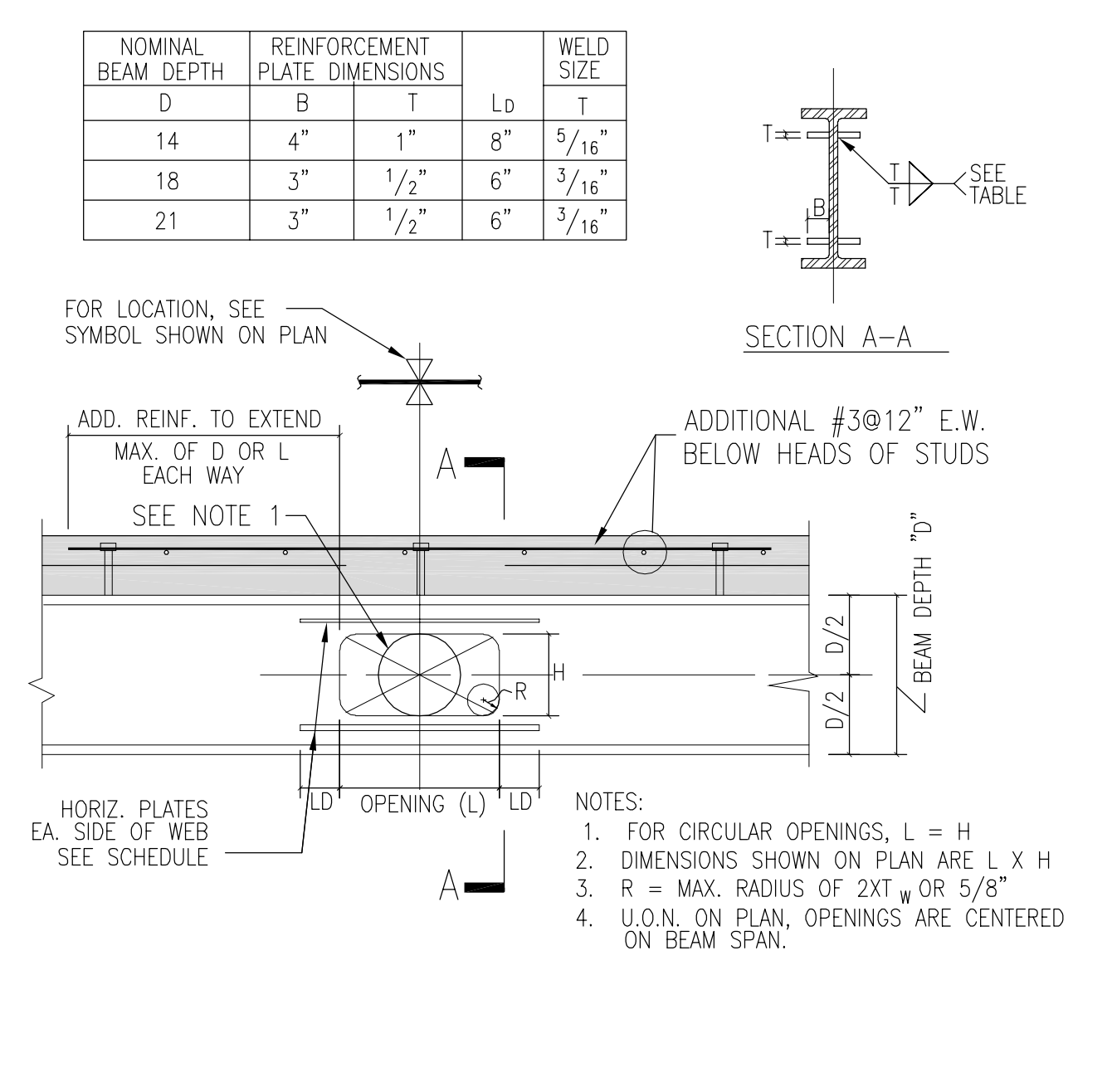
- DOUBLE ANGLE CONNECTION TO BEAM OR COLUMN**
- NOTES:**
- DETAIL SIMILAR AT CONNECTION TO COLUMN FLANGE OR COLUMN WEB.
 - BOLTED TO BOLTED ALTERNATES ACCEPTABLE.
 - MAXIMUM ANGLE THICKNESS = $5/8"$.
 - NEGLECT WELD RETURNS AT TOP OF ANGLES IN STRENGTH CALCULATIONS.
 - L = GREATER THAN $0.5 \times$ BEAM "T" DIMENSION.



- SINGLE PLATE CONNECTION**
- NOTES:**
- DESIGN MODEL = AISC LRFD 2ND EDITION MANUAL, SECTION 9.
 - TREAT COLUMN FLANGES AND ORDERS WITH SHEAR TABS ON OPPOSITE SIDES WITHIN 6" AS RIBB ELEMENTS.
 - TREAT ALL OTHER ORDER WEBS AS FLEXIBLE ELEMENTS.
 - MATE MATERIAL: ASTM A36 STEEL.
 - MINIMUM WELD SIZE = $3/4" \times$ PLATE THICKNESS.
 - L = GREATER THAN $0.5 \times$ BEAM "T" DIMENSION.
 - MAXIMUM PLATE THICKNESS = BOLT $d/2 + 1/16"$.
 - DO NOT USE AT COLUMN WEBS.



- "BEAM-TO-BEAM" MOMENT CONNECTIONS**
- NOTES:**
- DESIGN MOMENT PLATES FOR $0.8 \text{ PHI} \times 2 \text{ FY}$ OF THE SMALLER BEAM.
 - U.O.N. ON PLAN, DESIGN SHEAR CONNECTION FOR BOX OF THE SHEAR STRENGTH OF THE CORDED BEAM. REINFORCE WEB AS REQUIRED BY REACTIONS SHOWN ON PLAN. DOUBLE ANGLE, SINGLE PLATE, AND PLATE CONNECTIONS ACCEPTABLE.
 - ALL BOLTS ARE SUP. CRITICAL.
 - FIELD WELDED FLANGE PLATE ALTERNATES ACCEPTABLE.
 - DETAIL SHIMS PER AISC LRFD SPECIFICATION SECTION J6.
 - PROVIDE DECK SUPPORT AS REQUIRED.



TS-6 DETAILS OF OPENINGS IN STEEL BEAMS
3/4"=1'-0"

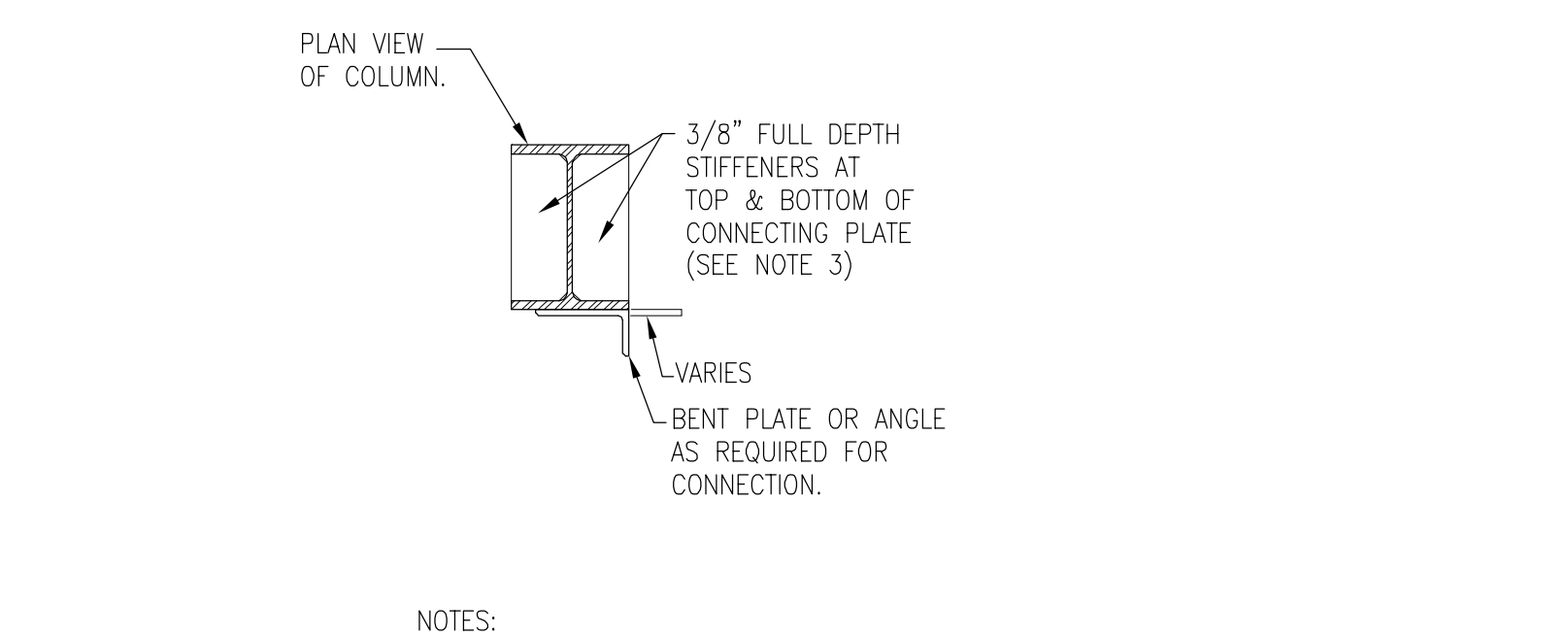
TS-4 STANDARD BEAM CONNECTIONS
3/4"=1'-0"

TS-5 "BEAM-TO-BEAM" MOMENT CONNECTIONS
3/4"=1'-0"

BEAM SHEAR REACTION TABLE			
BEAM SIZE	REACTION (KIPS)	REACTION (KIPS) @ MECHANICAL FLOOR	MINIMUM NUMBER OF BOLTS
W8	12	12	2
W10	15	15	2
W12	35	45	2
W14	40	60	3
W16	50	60	3
W18	50	60	4
W21	75	90	4
W24	90	95	6

- NOTES:**
- SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
 - SHEAR VALUES ARE SERVICE LOADS. USE 1.5 LOAD FACTOR FOR LRFD CONNECTIONS.
 - SEE PLANS FOR BEAMS WITH AXIAL FORCES.
 - SEE DETAILS AND SECTIONS FOR BEAMS REQUIRING FULL DEPTH SHEAR CONNECTIONS.

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



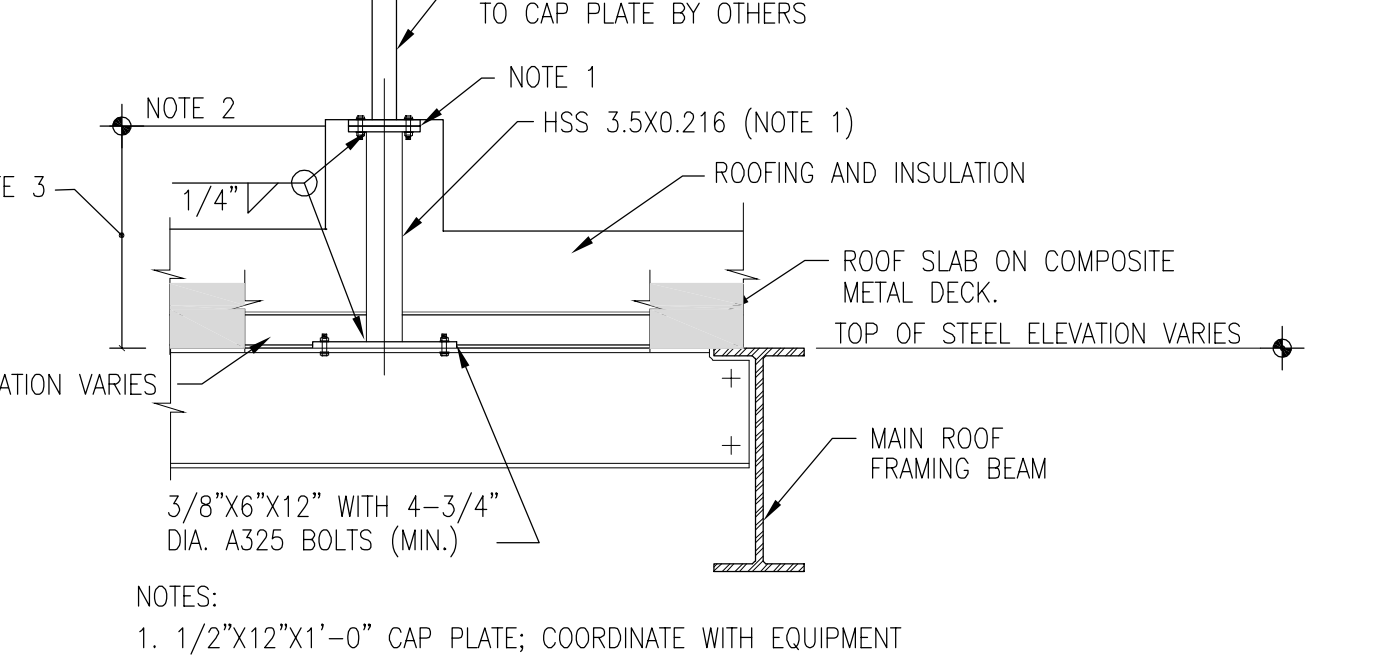
- TYPICAL OFFSET BEAM CONNECTION TO COLUMN FLANGE**
- NOTES:**
- WELDED CONNECTION AT CONTRACTOR'S OPTION IS ACCEPTABLE.
 - FULLY TENSIONED BOLTED CONNECTION.
 - FOR BEAMS PARALLEL TO COLUMN FLANGE, DIRECT WEB-TO-FLANGE CONNECTION IS ACCEPTABLE IF IT CAN DEVELOP REQUIRED STRENGTH. CAN USE ONE PAIR OF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

TS-9 TYPICAL OFFSET BEAM CONNECTION TO COLUMN FLANGE
3/4"=1'-0"

BRICK LOOSE LINTEL SCHEDULE	
CLEAR SPAN	ANGLE SIZE (LLV)
4'-0"	L3/2x3/2x3/16
6'-0"	L3/2x3/2x3/16
8'-0"	L3/2x4x3/16
10'-0"	L3/2x5x3/16

- NOTES:**
- ALL LINTELS ARE GALVANIZED.
 - 4" MINIMUM BEARING.
 - FOR DOUBLE WYTHE WALLS, USE TWO ANGLES BACK TO BACK. PLUG WELD TOGETHER AT 2'-0" O.C.

TS-10 BRICK LOOSE LINTEL SCHEDULE
3/4"=1'-0"



- ROOF TOP EQUIPMENT SUPPORT**
- NOTES:**
- $1/2" \times 12" \times 1'-0"$ CAP PLATE; COORDINATE WITH EQUIPMENT SUPPORTS FOR STUD LOCATION HOLES, NOTCHES, OR ANY OTHER ATTACHMENT DETAILS.
 - COORDINATE TOP OF PLATE ELEVATION WITH ROOFING, INSULATION, FLASHING DETAILS AND SLOPING ROOF STEEL STRUCTURE.
 - GALVANIZE STEEL AND CONNECTORS FROM CAP PLATE TO BASE PLATE.
 - SEE A AND H SERIES DRAWINGS FOR ROOFING, INSULATION & FLASHING.
 - PLUG WELD GALVANIZING DRAIN HOLE. PAINT WELD WITH ZINC-RICH PAINT FORMULATION.

TS-11 ROOF TOP EQUIPMENT SUPPORT
3/4"=1'-0"

General Notes:

SGH
Simpson Gumpertz & Heger Inc.
Consulting Engineers

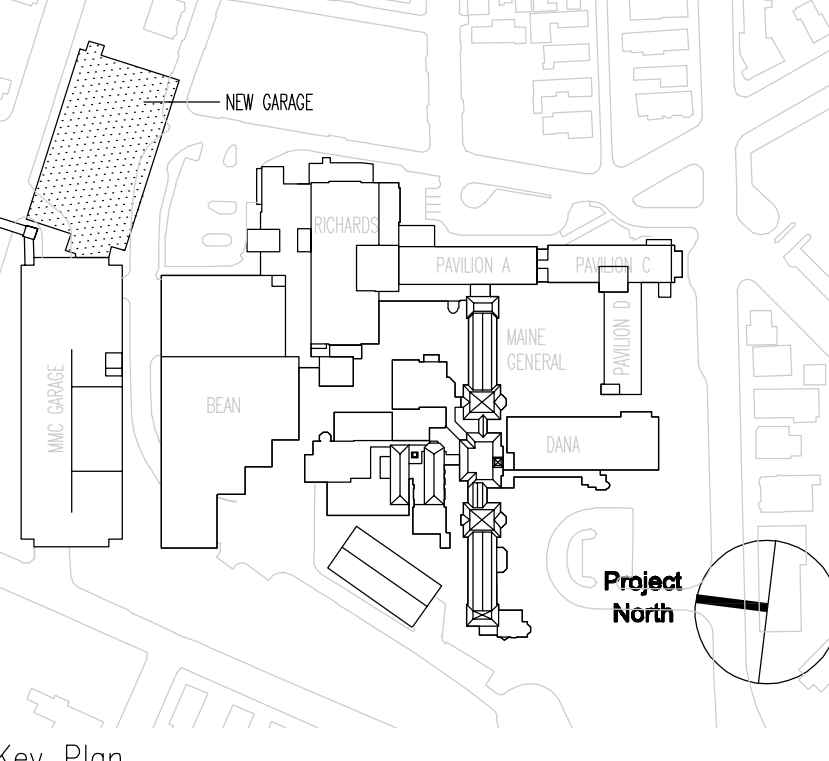
Boston, MA 41 Bayon Street, Suite 500, Waltham, MA 02453
Telephone: (781) 907 9000, Facsimile: (781) 907 9009

San Francisco, CA The Landmark at One Market, Suite 600, San Francisco, CA 94105
Telephone: (415) 498 3700, Facsimile: (415) 498 3550

Washington, DC 1885 Ploard Drive, Suite 225, Rockville, MD 20850
Telephone: (301) 417 0999, Facsimile: (301) 417 9825

MARK	ISSUE DATE	DESCRIPTION
PERMIT	09/16/04	PERMIT SET
BD	05/17/04	BD SET

Issue Log



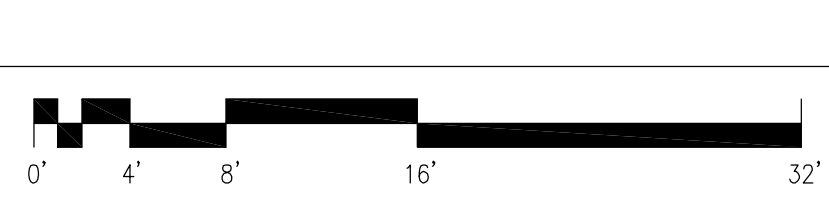
Key Plan

TRO
ARCHITECTUR
PLANNING
ENGINEERING
INTERIOR DESIGN

The Ritchie Organization
80 Bridge Street
Newton, MA 02458-1154
617-869-9400

Maine Medical Center
Pkg E - Garage Foundation and Precast
Portland, ME MMC Project No. 21845

Drawing Title
TYPICAL STEEL DETAILS
(SHEET 1 OF 2)



Commission No.	4678	Date Issued	10/05/04/09/1
Scale	3/4"=1'-0"	Sheet Number	
Drawn By	SWW	PKG-E	
Approved By	JHT/JZJ	S103	
Designer	S103		