

BEAM VERTICAL SHEAR REACTION SCHEDULE

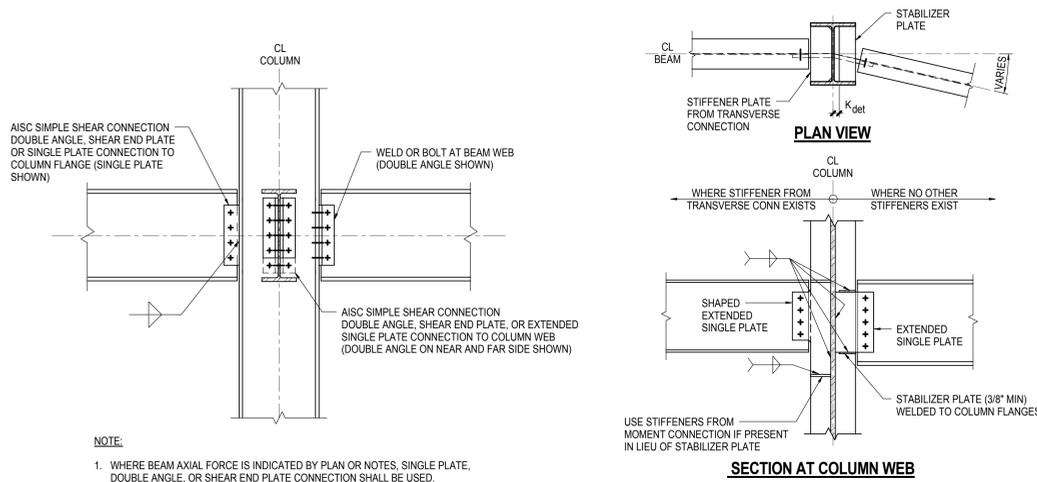
NOMINAL STEEL BEAM SIZE	FACTORED REACTION (KIPS)	
	NON-COMPOSITE BEAM	COMPOSITE BEAM
W8	5	5
W10	10	16
W12	12	16
W14	15	15
W16	17	33
W18	17	53
W21	33	65
W24	15	75
W27	15	75

BEAM END MOMENT SCHEDULE

NOMINAL STEEL BEAM SIZE	FACTORED MOMENT (KIP - FEET)
W12	35
W14	30
W18	20
W21	60
W24	76
W27	85

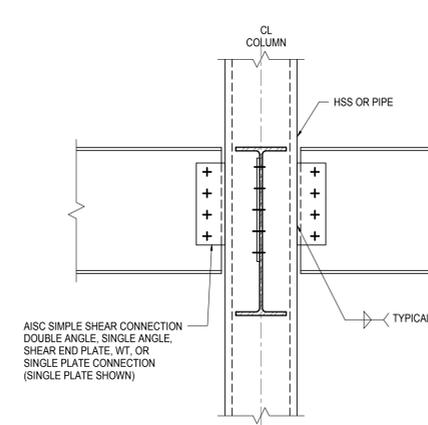
NOTES:
1. MOMENT APPLIES WHERE MOMENT SYMBOL APPEARS ON PLAN.
2. REFER TO PLAN FOR MOMENTS NOT PER SCHEDULE.

NOTES: REFER TO GENERAL NOTES SC-9 FOR ADDITIONAL INFORMATION AND REQUIREMENTS



NOTE:
1. WHERE BEAM AXIAL FORCE IS INDICATED BY PLAN OR NOTES, SINGLE PLATE, DOUBLE ANGLE, OR SHEAR END PLATE CONNECTION SHALL BE USED.

3 TYPICAL EXTENDED PLATE BEAM TO COLUMN WEB SHEAR CONNECTION
NOT TO SCALE

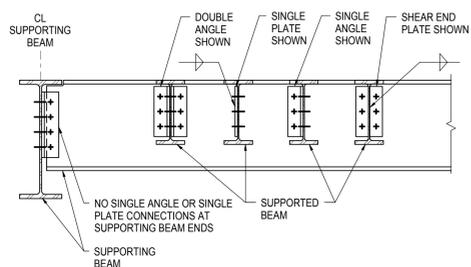


NOTES:
1. CONTRACTOR'S CALCULATIONS SHALL VERIFY HSS/PIPE WALL THICKNESS IS ADEQUATE FOR CONNECTION TYPE CHOSEN PER AISC.
2. BEAM TO HSS COLUMN CONNECTIONS THAT ARE EXPOSED TO VIEW ARE IDENTIFIED IN DETAIL 1/SS-4.1.

4 TYPICAL BEAM TO HSS/PIPE COLUMN SHEAR CONNECTION
NOT TO SCALE

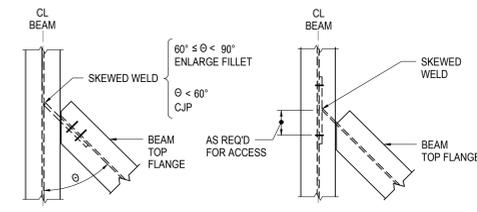
1 TYPICAL BEAM CONNECTION SCHEDULE
NOT TO SCALE

2 TYPICAL BEAM TO COLUMN SHEAR CONNECTION
3/4" x 1'-0"

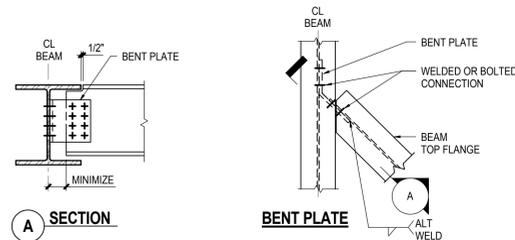


NOTES:
1. SUPPORTED BEAMS PRIMARILY SUPPORT DISTRIBUTED LOADS FROM SLABS OR DECKING.
2. SUPPORTING BEAMS SUPPORT SIGNIFICANT POINT LOADS FROM ONE OR MORE SUPPORTED BEAMS OR FROM COLUMNS BEING TRANSFERRED. SUPPORTING BEAMS MAY BE SUPPORTED BY COLUMNS OR BY OTHER SUPPORTING BEAMS.
3. FOR AISC SIMPLE SHEAR CONNECTIONS AT SUPPORTED BEAM ENDS, DOUBLE ANGLE, SINGLE PLATE, SINGLE ANGLE, OR SHEAR END PLATE MAY BE USED UON.
4. WELDED/BOLTED OR BOLTED/BOLTED CONNECTIONS PER AISC ARE PERMITTED.

5 TYPICAL BEAM TO BEAM SHEAR CONNECTION (4 TYPES)
NOT TO SCALE

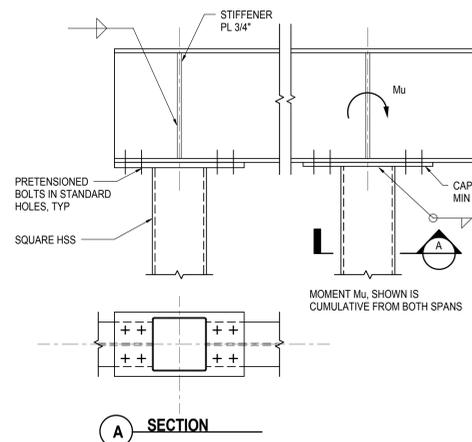


SKEWED SINGLE PLATE **SKEWED SHEAR END PLATE**

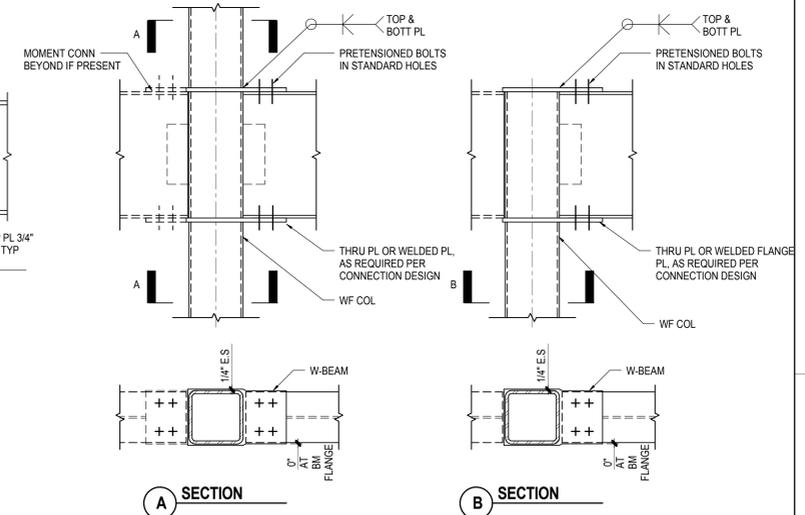


A SECTION **BENT PLATE**

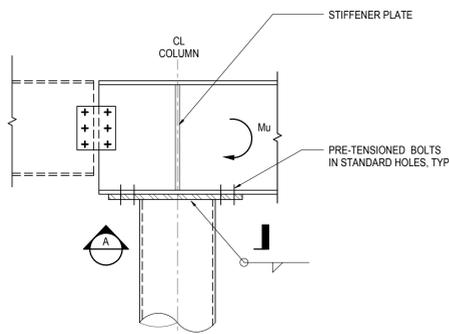
6 TYPICAL SKEWED BEAM SHEAR CONNECTION
NOT TO SCALE



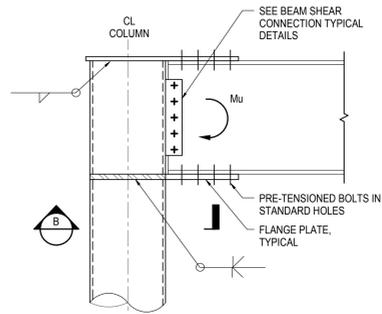
7 TYPICAL BEAM TO SQUARE HSS COLUMN MOMENT CONNECTION
NOT TO SCALE



8 MOMENT CONN. TO SQUARE HSS
NOT TO SCALE

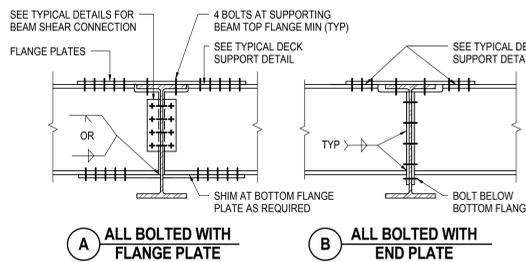


A

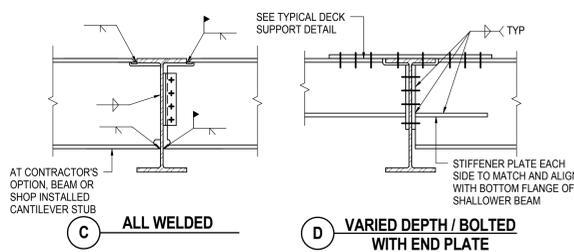


B

9 TYPICAL BEAM TO ROUND HSS COLUMN MOMENT CONNECTION
NOT TO SCALE

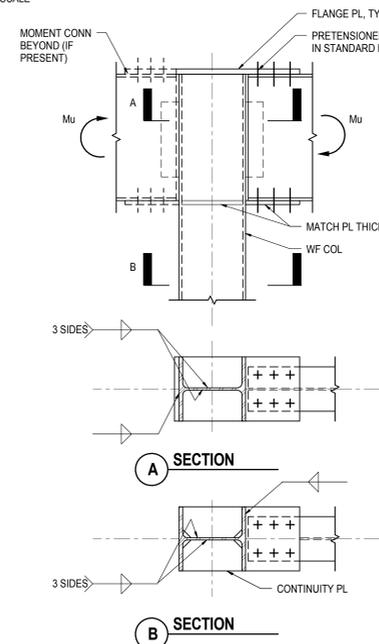


A ALL BOLTED WITH FLANGE PLATE **B ALL BOLTED WITH END PLATE**



C ALL WELDED **D VARIED DEPTH / BOLTED WITH END PLATE**

10 TYPICAL BEAM TO BEAM MOMENT CONNECTION
NOT TO SCALE



TYP. BEAM TO WF COL MOMENT CONNECTION - STRONG AXIS
NOT TO SCALE

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SEALS AND SIGNATURES



ISSUED FOR CONSTRUCTION 07/01/12

REV. NO. DESCRIPTION BY APVD DATE

Argonne
NATIONAL LABORATORY

FMS
Facilities Management Services

PROJECT TITLE ADVANCED PROTEIN CRYSTALLIZATION FACILITY, ARGONNE NATIONAL LABORATORY

PROJECT NO C10539.00

DRAWING TITLE

TYPICAL STEEL BEAM DETAILS

DESIGNED	AE CAD FILE	FACILITY (NOI)
Designer	SS.1.2	
DRAWN	AE DWG. NO.	
Author	SS.1.2	
CHECKED	CAD NO.	
Checker		
PROJECT MANAGER	DWG STATE	
ANL - JESSE ADAMS	BND ORDER	
DATE - 08/11/11		
FACILITY DOCUMENT NUMBER		
J446-101-W-	S5.1.2	