COMPOSITE PLATE GIRDERS (7' GIRDER SPACING, 0 DEGREE SKEW)

SPAN LENGTH	DIAPHRAGM SPACING	PLATE GIRDER SIZE			SHEAR CONNECTOR MAX. SPACING		TABLE NOTES
		TOP FLANGE PLATE	WEB PLATE	BOT FLANGE PLATE	(D)	(E)	
60	20.00	12 x 0.875	28 x 0.5000	12 x 1.000	24 @ 6	9	D
65	21.67	14 x 0.750	28 x 0.5000	14 x 1.125	34 @ 6	9	D
70	23.33	16 x 0.750	32 x 0.5000	16 x 1.000	22 @ 6	9	D
75	25.00	16 x 0.750	32 x 0.5000	16 x 1.125	24 @ 6	9	D
80	20.00	14 x 0.750	34 x 0.5000	14 x 1.250	16 @ 6	9	D
85	21.25	16 x 0.750	34 x 0.5000	16 x 1.375	18 @ 6	9	D
90	22.50	16 x 0.750	36 x 0.5000	16 x 1.375	18 @ 6	9	D
95	23.75	16 x 0.875	36 x 0.5000	16 x 1.500	-	9	D
100	25.00	18 x 1.000	40 x 0.5000	18 x 1.250	48 @ 9	12	D
105	21.00	18 x 1.000	44 x 0.5000	18 x 1.250	28 @ 9	12	F
110	22.00	18 x 1.000	46 x 0.5000	18 x 1.250	30 @ 9	12	F
115	23.00	18 x 1.000	48 x 0.5000	18 x 1.375	24 @ 9	12	F
120	24.00	18 x 1.000	48 x 0.5000	18 x 1.375	16 @ 9	12	F
125	25.00	18 x 1.000	50 x 0.5000	18 x 1.375	18 @ 9	12	F
130	26.00	20 x 1.000	52 x 0.5000	20 x 1.375	-	12	F
135	27.00	20 x 1.000	54 x 0.5000	20 x 1.375	-	12	F
140	28.00	20 x 1.000	56 x 0.5625	20 x 1.250	-	12	F

COMPOSITE PLATE GIRDERS (7' GIRDER SPACING, 30 DEGREE SKEW)

SPAN LENGTH	DIAPHRAGM SPACING	PLATE GIRDER SIZE			SHEAR CONNECTOR MAX. SPACING		TABLE NOTES
		TOP FLANGE PLATE	WEB PLATE	BOT FLANGE PLATE	(D)	(E)	
60	20.00	14 x 0.750	28 x 0.5000	14 x 1.125	-	6	B,D
65	21.67	16 x 0.750	30 x 0.5000	16 x 0.875	66 @ 6	9	D
70	23.33	16 x 0.750	32 x 0.5000	16 x 0.875	56 @ 6	9	D
75	25.00	16 x 0.750	34 x 0.5000	16 x 1.000	40 @ 6	9	D
80	20.00	14 x 0.750	36 x 0.5000	14 x 1.125	48 @ 6	9	D
85	21.25	16 x 0.750	36 x 0.5000	16 x 1.125	52 @ 6	9	D
90	22.50	16 x 0.750	36 x 0.5000	16 x 1.375	46 @ 6	9	D
95	23.75	16 x 0.875	36 x 0.5000	16 x 1.500	48 @ 6	9	D
100	25.00	16 x 1.000	36 x 0.5000	18 x 1.375	50 @ 6	9	D
105	21.00	16 x 1.000	36 x 0.5000	18 x 1.500	64 @ 6	9	D
110	22.00	18 x 1.000	44 x 0.5000	18 x 1.375	2 @ 6	9	F
115	23.00	18 x 1.000	48 x 0.5000	18 x 1.250	24 @ 6	9	F
120	24.00	18 x 1.000	50 x 0.5000	18 x 1.250	24 @ 6	9	F
125	25.00	18 x 1.000	52 x 0.5000	18 x 1.250	26 @ 6	9	F
130	26.00	20 x 1.000	52 x 0.5000	20 x 1.250	36 @ 9	12	F
135	27.00	20 x 1.000	52 x 0.5000	20 x 1.375	36 @ 9	12	F
140	28.00	20 x 1.000	52 x 0.5000	20 x 1.375	28 @ 6	9	F

TABLE NOTES:

A. SKEW INDEX EXCEEDS 0.30 ASSUMING 30° MAX SKEW

B. CONTRACTIBILITY OF THE EXTERIOR BEAM CONTROLS OVER ALL STRENGTH LIMIT STATES. A MORE THOROUGH EVALUATION MAY REDUCE BEAM SIZES.

C. LIVE LOAD DEFLECTION REQUIREMENTS CONTROL OVER ALL STRENGTH LIMIT STATES. A MORE THOROUGH EVALUATION MAY REDUCE BEAM SIZES.

D. DIAPHRAGMS ARE RECOMMENDED.

E. X SHAPED CROSSFRAMES ARE RECOMMENDED.

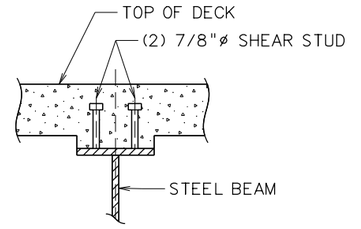
F. K SHAPED CROSSFRAMES ARE RECOMMENDED.

COMPOSITE ROLLED BEAMS (7 FT GIRDER SPACING, 0 DEGREE SKEW)

SPAN LENGTH	DIAPHRAGM SPACING	STANDARD DESIGN				OPTIONAL DESIGN			
		ROLLED SECTION	SHEAR CONNECTOR SPACING		TABLE NOTES	ROLLED SECTION	SHEAR CONNECTOR SPACING		TABLE NOTES
			(D)	(E)			(D)	(E)	
30	15.00	W18X76	-	6	D				
35	17.50	W30X90	-	9	D				
40	20.00	W30X90	-	9	B,D				
45	22.50	W24X104	36 @ 6	9	D				
50	25.00	W24X117	30 @ 6	9	D				
55	18.33	W33X118	12 @ 6	9	D				
60	20.00	W33X130	24 @ 6	9	D				
65	21.67	W36X135	14 @ 6	9	B,D				
70	23.33	W36X160	14 @ 6	9	D				
75	25.00	W36X182	16 @ 6	9	B,D				
80	20.00	W36X194	16 @ 6	9	D	W40X183	8 @ 6	9	F
85	21.25	W36X210	18 @ 6	9	D	W40X199	10 @ 6	9	F
90	22.50	W36X231	18 @ 6	9	D	W40X215	54 @ 9	12	F
95	23.75	W36X247	20 @ 6	9	D	W44X230	38 @ 9	12	F
100	25.00	W36X262	20 @ 6	9	D	W44X230	48 @ 9	12	F
105	21.00	W36X282	22 @ 6	9	C,D	W44X262	42 @ 9	12	F
110	22.00	W36X330	-	9	C,D	W44X262	52 @ 9	12	F

COMPOSITE ROLLED BEAMS (7 FT GIRDER SPACING, 30 DEGREE SKEW)

SPAN LENGTH	DIAPHRAGM SPACING	STANDARD DESIGN				OPTIONAL DESIGN			
		ROLLED SECTION	SHEAR CONNECTOR SPACING		TABLE NOTES	ROLLED SECTION	SHEAR CONNECTOR SPACING		TABLE NOTES
			(D)	(E)			(D)	(E)	
30	15.00	W30X90	30 @ 6	9	A,D				
35	17.50	W30X90	-	6	A,D				
40	20.00	W30X90	-	6	A,B,D				
45	22.50	W30X116	-	6	B,D				
50	25.00	W33X130	30 @ 6	9	B,D				
55	18.33	W33X130	34 @ 6	9	D				
60	20.00	W33X130	48 @ 6	9	D				
65	21.67	W36X150	40 @ 6	9	D				
70	23.33	W36X170	42 @ 6	9	B,D	W40X167	42 @ 6	9	B,F
75	25.00	W36X194	60 @ 6	9	B,D				
80	20.00	W36X194	64 @ 6	9	D				
85	21.25	W36X210	68 @ 6	9	D	W40X199	52 @ 6	9	F
90	22.50	W36X231	72 @ 6	9	D	W40X215	54 @ 6	9	F
95	23.75	W36X231	76 @ 6	9	D	W40X215	58 @ 6	9	F
100	25.00	W36X247	80 @ 6	9	D	W44X230	40 @ 6	9	F
105	21.00	W36X282	64 @ 6	9	C,D	W44X262	22 @ 6	9	F
110	22.00	W36X330	66 @ 6	9	C,D	W44X262	44 @ 6	9	F



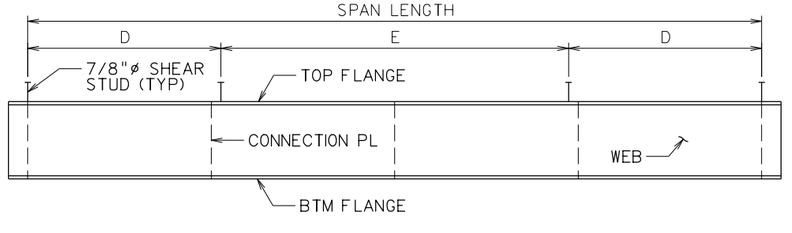
SHEAR STUD DETAIL

NOTES:

1. THE ENGINEER SHOULD NOTE THAT DATA WITHIN THE TABLES ARE BASED ON THE DESIGN METHODS NOTED ON STANDARD SHEETS 3300GN1 AND 3300GN2. DEVIATIONS FROM THE CRITERIA USED MAY NECESSITATE MODIFICATION TO THE BEAM SIZES.
2. THE ENGINEER, FABRICATOR, AND ERECTOR SHALL BE AWARE THAT THE BEAM ENDS MAY TWIST OR WARP DURING ERECTION. THE CONTRACTOR IS REQUIRED TO MAKE ANY CORRECTIONS BEFORE THE BEAMS ARE SECURED IN PLACE.
3. THE ENGINEER MAY USE PLATE SIZES OR ROLLED BEAMS LARGER THAN THOSE NOTED WITHIN THE TABLE GIVEN THE MOMENT OF INERTIA AND SECTION MODULUS IN BOTH AXIS ARE GREATER OR EQUAL TO THOSE SPECIFIED FOR BOTH THE NON-COMPOSITE AND COMPOSITE CASES AS APPLICABLE.
4. THE ENGINEER MAY SUBSTITUTE THREE (3) SHEAR STUDS PER ROW GIVEN THE TOTAL NUMBER OF SHEAR STUDS PER FOOT REMAINS EQUAL OR GREATER AND ALL MINIMUM SPACING'S NOTED WITHIN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS ARE MET WITHOUT FURTHER EVALUATION.
5. THE ENGINEER SHOULD VERIFY AVAILABILITY OF ROLLED BEAMS LARGER THAN W36. INFREQUENT ROLL SCHEDULES MAY DELAY FABRICATION AND CONSTRUCTION.
6. ROLLED BEAMS SHALL NOT BE CAMBERED FOR LESS THAN ¾". NATURAL MILL CAMBER SHOULD BE PLACED TO MINIMIZE HAUNCH THICKNESS FROM UNCAMBERED BEAMS.
7. THE ENGINEER SHOULD VERIFY WITH LOCAL FABRICATORS IF THEY ARE CAPABLE OF CAMBERING ROLLED BEAMS LARGER THAN W27 WITHOUT THE USE OF HEAD. A PLATE GIRDER SOLUTION MAY WARRANT CONSIDERATION IF LOCAL FABRICATOR DOES NOT HAVE THIS CAPABILITY.

NOTES (CONT.):

8. THE ENGINEER SHOULD CONSIDER TRANSPORTATION FOR LONG BEAMS. THE DESIGN AND DETAILING OF OPTIONAL FIELD SPLICES MAY BE PRUDENT IF TRANSPORTATION IS IN QUESTION.
9. THE ENGINEER MAY SUBSTITUTE A DECK SYSTEM WHICH IS LIGHTER THAN ASSUMED HEREIN WITHOUT FURTHER EVALUATION.
10. THE ENGINEER MAY UTILIZE DATA WITHIN THE TABLES FOR BEAM SPACINGS NOT SHOWN WITHOUT FURTHER EVALUATION GIVEN THE LARGER BEAM FOR ADJACENT SPACINGS IS SELECTED.



BEAM ELEVATION

NOT TO SCALE

PRINT DATE
19-SEP-2022 09:49

19-SEP-2022 09:49

NO.	REVISION	DATE	BY

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DESIGNED	DATE	CHECKED	DATE
DRAWN	DATE	REVIEWED	DATE

STANDARD BRIDGE PLANS
COMPOSITE STEEL BEAM
SHEET 2 OF 6
SHEET NUMBER 3320SB2