COMPOSITE PLATE GIRDERS (6 FT 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 0.750	28 x 0.5000	12 x 1.000	18 @ 6	9	D
65	21.67	12 x 0.875	30 x 0.5000	12 x 1.000	20 @ 6	9	D
70	23.33	14 x 0.750	32 x 0.5000	14 x 1.000	14 @ 6	9	D
75	25	14 x 0.875	34 x 0.5000	14 x 1.125	40 @ 9	12	B,D
80	20.00	12 x 0.875	34 x 0.5000	14 x 1.250	8 @ 6	9	F
85	21.25	14 x 0.750	34 x 0.5000	16 x 1.250	10 @ 6	9	D
90	22.50	16 x 0.750	34 x 0.5000	16 x 1.375	10 @ 6	9	D
95	23.75	16 x 0.750	36 x 0.5000	16 x 1.375	52 @ 9	12	B,D
100	25.00	16 x 0.875	36 x 0.5000	16 x 1.625	60 @ 9	12	D
105	21.00	16 x 0.875	36 x 0.5000	18 x 1.500	-	9	D
110	22.00	16 x 1.000	36 x 0.5000	18 x 1.625	-	9	D
115	23.00	18 x 1.000	48 x 0.5000	20 x 1.125	8 @ 9	12	F
120	24.00	18 x 1.000	50 x 0.5000	18 x 1.250	-	12	E
125	25.00	18 x 1.000	50 x 0.5000	18 x 1.375	-	12	E
130	26.00	20 x 1.000	52 x 0.5000	20 x 1.250	40 @ 12	15	E
135	27.00	20 x 1.000	54 x 0.5000	20 x 1.250	34 @ 12	15	E
140	28.00	20 x 1.000	56 x 0.5000	20 x 1.250	28 @ 12	15	E

COMPOSITE PLATE GIRDERS (6 FT 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	12 x 0.750	28 x 0.5000	12 x 0.875	48 @ 6	9	D
65	21.67	14 x 0.750	28 x 0.5000	16 x 0.875	48 @ 6	9	D
70	23.33	14 x 0.750	32 x 0.5000	16 x 0.875	36 @ 6	9	D
75	25.00	16 x 0.750	32 x 0.5000	16 x 1.000	40 @ 6	9	D
80	20.00	12 x 0.875	34 x 0.5000	12 x 1.375	32 @ 6	9	D
85	21.25	14 x 0.750	36 x 0.5000	16 x 1.125	26 @ 6	9	D
90	22.50	16 x 0.750	36 x 0.5000	16 x 1.250	28 @ 6	9	D
95	23.75	16 x 0.750	36 x 0.5000	16 x 1.375	30 @ 6	9	D
100	25.00	16 x 0.875	36 x 0.5000	16 x 1.500	30 @ 6	9	D
105	21.00	16 x 0.875	36 x 0.5000	18 x 1.500	34 @ 6	9	B,D
110	22.00	18 x 1.000	44 x 0.5000	18 x 1.250	52 @ 9	12	F
115	23.00	18 x 1.000	48 x 0.5000	20 x 1.125	32 @ 9	12	F
120	24.00	18 x 1.000	50 x 0.5000	20 x 1.125	24 @ 9	12	E
125	25.00	18 x 1.000	52 x 0.5000	20 x 1.125	18 @ 9	12	E
130	26.00	20 x 1.000	52 x 0.5000	20 x 1.250	18 @ 9	12	E
135	27.00	20 x 1.000	54 x 0.5000	20 x 1.250	10 @ 9	12	E
140	28.00	20 x 1.000	56 x 0.5000	20 x 1.250	-	12	E

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.

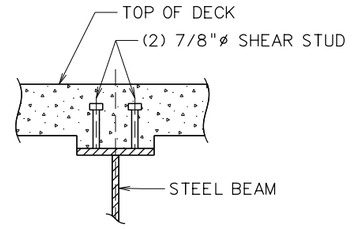
F. K SHAPED CROSSFRAMES ARE RECOMMENDED.

COMPOSITE ROLLED BEAMS (6 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	W14X74	-	6	D				
35	17.50	W18X86	-	6	D				
40	20.00	W30X90	-	9	D				
45	22.50	W30X99	-	9	B,D				
50	25.00	W30X116	10 @ 6	9	B,D				
55	18.33	W30X116	12 @ 6	9	D				
60	20.00	W33X118	12 @ 6	9	D				
65	21.67	W33X130	14 @ 6	9	D				
70	23.33	W36X150	38 @ 9	12	D	W40X149	34 @ 9	12	B,F
75	25.00	W36X160	40 @ 9	12	B,D				
80	20.00	W36X182	44 @ 9	12	D	W40X167	44 @ 9	12	F
85	21.25	W36X194	46 @ 9	12	D				
90	22.50	W33X221	18 @ 6	9	D	W40X199	42 @ 9	12	F
95	23.75	W36X231	52 @ 9	12	D	W40X215	38 @ 9	12	F
100	25.00	W36X247	54 @ 9	12	D	W44X230	28 @ 9	12	F
105	21.00	W36X262	64 @ 9	12	D	W44X230	28 @ 9	12	F
110	22.00	W36X282	66 @ 9	12	D	W44X262	30 @ 9	12	F

COMPOSITE ROLLED BEAMS (6 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	12 @ 6	9	A,D				
35	17.50	W30X90	22 @ 6	9	D				
40	20.00	W30X90	24 @ 6	9	D				
45	22.50	W30X108	28 @ 6	9	B,D				
50	25.00	W33X118	20 @ 6	9	B,D				
55	18.33	W33X118	34 @ 6	9	D				
60	20.00	W33X118	36 @ 6	9	D				
65	21.67	W36X135	40 @ 6	9	D				
70	23.33	W36X150	42 @ 6	9	B,D				
75	25.00	W30X173	60 @ 6	9	D				
80	20.00	W36X182	48 @ 6	9	D				
85	21.25	W36X194	52 @ 6	9	D				
90	22.50	W33X221	54 @ 6	9	D	W40X199	36 @ 6	9	F
95	23.75	W36X231	38 @ 6	9	D	W40X215	38 @ 6	9	F
100	25.00	W36X231	60 @ 6	9	D	W44X230	20 @ 6	9	F
105	21.00	W36X262	42 @ 6	9	D	W44X230	22 @ 6	9	F
110	22.00	W36X262	66 @ 6	9	D	W40X249	44 @ 6	9	F



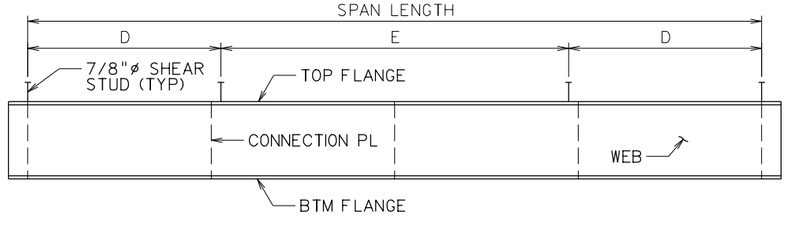
SHEAR STUD DETAIL

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 09:45

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 1 OF 6
SHEET NUMBER 3320SB1

19-SEP-2022 09:45