Project: ODOT
Bridge: West Road Bridge

QUANTITY COMPUTATIONS

Date: 1/7/22
By: HM
Checked: BTJ
Sheet:

DESCRIPTION: STRUCTURAL STEEL MEMEBERS, LEVEL 2

ITEM NO. 513E10240
QUANTITY 35024
UNIT LB

Rolled Beam

Length of the Beam	Section	Weight of the Section (LB/FT)	Total Weight (LB)
54.08	33WF130	130	7030.4
117.33	33WF152	152	17834.7
53.85	33WF130	130	7000.6
			31865.7

Field Splice

Splice 1 & 4

Top Flange

Top Plate (3/4" x 11.50" x 2.75')	=	80.71	LB
Bottm Plates (2 - 7/8" x 4.50" x 2.75')	=	73.69	LB

Bottom Flange

Bottom Plate (3/4" x 11.50" x 2.75')	=	80.71	LB
Top Plates (2 - 7/8" x 4.50" x 2.75')	=	73.69	LB

Web Plates

Plates (2- 5/8"x30"x2'-3.50")	=	292.4262	LB

Fill Plates

Plate (3/16" x 11.50" x 1'-4.5")	=	10.0887	LB
Total Weight for Field Splice 1 & 4	=	1222.634	LB

Splice 2 & 3

Top Flange

Top Plate (3/4" x 11.50" x 2.75')	=	80.71	LB		
Bottm Plates (2 - 7/8" x 4.50" x 2.75')	=	73.69	LB		

Bottom Flange

Bottom Plate (3/4" x 11.50" x 2.75')	=	80.71	LB		
Top Plates (2 - 7/8" x 4.50" x 2.75')	=	73.69	LB		

Web Plates

Plates (2- 5/8"x30"x2'-3.50")	=	292.4262	LB		
Total Weight for Field Splice 2 & 3	=	1202.457	LB		

Filler Plates

Length	=	5	ft		
Thickness	=	0.03	ft		
Width	=	0.453	ft		
Weight of one filler plate	=	34.692	lb		
Weight of 16 - Filler Plates	=	555.1	lb		

Bolts in Splices

Total Number of Bolts in Field Splice 1	=	80			
Total Number of Bolts in Field Splice 2	=	80			
Total Number of Bolts in Field Splice 3	=	80			
Total Number of Bolts in Field Splice 4	=	80			
Diameter of the Bolt	=	1	in		
Height/Length of Bolt	=	2.5	in	(Assuming)	1.875
Weight of one bolt	=	0.556778	lb		
Total Weight of the Bolts	=	178.169	lb		

Level 2 as per plan includes Beam + Splices

= **35024.0** LB

DESCRIPTION: STRUCTURAL STEEL MEMEBERS, LEVEL UF, AS PER PLAN

ITEM NO. 513E10201
QUANTITY 9586
UNIT LB

Intermediate Cross Frames

Total Number of Cross Frames	=	14		
Size of the Angle For Intermediate CF's	=	L5x5x1/2"		
Weight of the Angle	=	16.2	lb/ft	
Length of the Top Struct	=	7.70	ft	
Length of the Bottom Struct	=	7.70	ft	
Length of the Diagonal - 1 Struct	=	7.70	ft	
Length of the Diagonal - 2 Struct	=	7.70	ft	
Total Length	=	30.8	ft	
Weight of One Cross Frame	=	499.2	LB	
Weight of 14 - Cross Frames	=	6988	LB	

End Cross Frames

Size of the Angle For Intermediate CF's	=	L5x5x1/2"		
Weight of the Angle	=	16.2	lb/ft	
Length of the Top Struct	=	7.70	ft	
Length of the Bottom Struct	=	7.70	ft	
Length of the Diagonal - 1 Struct	=	7.70	ft	
Length of the Diagonal - 2 Struct	=	7.70	ft	
Total Length	=	30.8	ft	
Weight of One End Cross Frame	=	499.2	LB	
Weight of 2 - End Cross Frames	=	998	LB	

Bolts in Intermediate and End Cross Frames

Dia of the Bolt	=	0.625	in	
Height/Length of Bolt	=	2.5	in	(Assuming)
No of bolts in One Intermediate Cross Frame	=	8		
No of Bolts in 14 Intermediate Cross Frames	=	112		
No of bolts in One End Cross Frame	=	8		
No of bolts in two End Cross Frame	=	16		
Total number of bolts	=	128		
Weight of one bolt	=	0.217491	lb	
Total weight of the Bolts	=	27.83891	lb	

Bolts in End Cross Frames

Dia of the Bolt	=	0.625	in	
Height/Length of Bolt	=	2.5	in	(Assuming)
No of bolts in One End Cross Frame	=	8		
No of bolts in two End Cross Frame	=	16		
Total number of bolts	=	16		
Weight of one bolt	=	0.217491	lb	
Total weight of the Bolts	=	3.479864	lb	

Strip Seal Joint Steel Members

Total number of L8x8x1/2"	=	4		
Weight of the L Angle	=	26.4	lb/ft	
Width	=	8.333	ft	
Weight	=	879.9648	LB	
Total number of 1/2" x7.75" Plates	=	2		
Weight of the plates	=	219.7539	LB	
Number of Cover Plates	=	2		
Area of the plate	=	453.5721	LB	
Total Weight	=	1553.291	LB	

Studs Weights

Total Number of Studs on one side	=	44.44427	Say 45	
On Both sides	=	90		
Weight of one bolt	=	0.166949	lb	
Total weight of bolts	=	15.02539	lb	