



DESIGN: TLC DATE: 9/23/22 UPDATE: _____ DATE: _____
 CHECK: JPC DATE: 9/29/22 RECHECK: _____ DATE: _____
 STRUCTURE: HAM-562-0147 SFN: 3113914 PID: 102886

ITEM: 513E10201 PAY UNIT: LB
 SUBJECT: ESTIMATED QUANTITIES

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

SUPPLEMENTAL DESCRIPTION: _____

	SUBTOTAL	TOTAL
Unit Wt = 490 lb/ft ³		
Rear Abutment		
<u>End Crossframe (Beam 1-2)</u>		
Angle Wt. = 9.8 lb/ft L4x4x3/8		
Beam Spacing = 8.42 ft		
Beam Depth = 48.00 in		
Horiz. Angle Length = 8.42 ft		
Dia. Angle 1 Length = 4.89 ft $\sqrt{[(Beam\ Spa./3)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Dia. Angle 2 Length = 4.24 ft $\sqrt{[(Beam\ Spa./6)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Total Angle Length = 26.67 ft		
Diaphragm Wt. = 261.4 lb/diaphragm		
# diaphragm = 1 each		
Total Wt. = 261.40 lb	261	261
<u>End Crossframe (Beam 2-5)</u>		
Angle Wt. = 9.8 lb/ft L4x4x3/8		
Beam Spacing = 10.94 ft		
Beam Depth = 48.00 in		
Horiz. Angle Length = 10.94 ft		
Dia. Angle 1 Length = 5.41 ft $\sqrt{[(Beam\ Spa./3)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Dia. Angle 2 Length = 4.40 ft $\sqrt{[(Beam\ Spa./6)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Total Angle Length = 30.56 ft		
Diaphragm Wt. = 299.5 lb/diaphragm		
# diaphragm = 3 each		
Total Wt. = 898.52 lb	899	1,160
<u>End Crossframe (Beam 6-9)</u>		
Angle Wt. = 9.8 lb/ft L4x4x3/8		
Beam Spacing = 10.83 ft		
Beam Depth = 46.00 in		
Horiz. Angle Length = 10.83 ft		
Dia. Angle 1 Length = 5.27 ft $\sqrt{[(Beam\ Spa./3)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Dia. Angle 2 Length = 4.24 ft $\sqrt{[(Beam\ Spa./6)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Total Angle Length = 29.84 ft		
Diaphragm Wt. = 292.4 lb/diaphragm		
# diaphragm = 3 each		



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	SUBTOTAL	TOTAL
Total Wt. = 877.31 lb	877	2,037
<u>End Crossframe (Beam 9-10)</u>		
Angle Wt. = 9.8 lb/ft L4x4x3/8		
Beam Spacing = 10.44 ft		
Beam Depth = 56.00 in		
Horiz. Angle Length = 10.44 ft		
Dia. Angle 1 Length = 5.82 ft $\sqrt{[(Beam\ Spa./3)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Dia. Angle 2 Length = 4.98 ft $\sqrt{[(Beam\ Spa./6)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Total Angle Length = 32.04 ft		
Diaphragm Wt. = 314.0 lb/diaphragm		
# diaphragm = 2 each		
Total Wt. = 627.98 lb	628	2,665
Forward Abutment		
<u>End Crossframe (Beam 1-10)</u>		
Angle Wt. = 9.8 lb/ft L4x4x3/8		
Beam Spacing = 8.75 ft		
Beam Depth = 36.00 in		
Horiz. Angle Length = 8.75 ft		
Dia. Angle 1 Length = 4.18 ft $\sqrt{[(Beam\ Spa./3)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Dia. Angle 2 Length = 3.34 ft $\sqrt{[(Beam\ Spa./6)^2 + Beam\ Depth^2]}$		
# angles = 2 each		
Total Angle Length = 23.79 ft		
Diaphragm Wt. = 233.1 lb/diaphragm		
# diaphragm = 8 each		
Total Wt. = 1865.11 lb	1,865	4,530
Hinge #1		
<u>Diaphragm D1 (EB)</u>		
Web Thick. = 0.375 in		
Web Ht. = 30.0 in		
Flange Thick. = 0.75 in		
Flange width = 6 in		
Stiffener Width = 6 in		
Beam Spacing = 8.65 ft		
Web Wt. = 330.97 lb/diaphragm		
Flange Wt. = 234.15 lb/diaphragm Girder 6-9		
# diaphragm = 3 each		
Total Wt. = 1695.38 lb		



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		SUBTOTAL	TOTAL
Beam Spacing =	6.27 ft		
Web Wt. =	240.06 lb/diaphragm		
Flange Wt. =	161.42 lb/diaphragm		
# diaphragm =	2 each		
Total Wt. =	802.95 lb	803	5,333
<u>Diaphragm D3 (WB)</u>			
Web Thick. =	0.375 in		
Web Ht. =	18.0 in		
Flange Thick. =	0.75 in		
Flange width =	4 in		
Stiffener Width =	6 in		
Beam Spacing =	8.77 ft		
Web Wt. =	201.34 lb/diaphragm		
Flange Wt. =	158.55 lb/diaphragm		
# diaphragm =	4 each		
Total Wt. =	1439.53 lb	1,440	6,773
Hinge #2			
<u>Diaphragm D2 (EB)</u>			
Web Thick. =	0.375 in		
Web Ht. =	30.0 in		
Flange Thick. =	0.75 in		
Flange width =	4 in		
Stiffener Width =	6 in		
Beam Spacing =	8.81 ft		
Web Wt. =	337.15 lb/diaphragm		
Flange Wt. =	159.40 lb/diaphragm		
# diaphragm =	4 each		
Total Wt. =	1986.21 lb	1,986	8,759
<u>Diaphragm D4 (WB)</u>			
Web Thick. =	0.375 in		
Web Ht. =	30.0 in		
Flange Thick. =	0.75 in		
Flange width =	4 in		
Stiffener Width =	6 in		
Beam Spacing =	8.81 ft		
Web Wt. =	337.35 lb/diaphragm		
Flange Wt. =	159.51 lb/diaphragm		
# diaphragm =	4 each		
Total Wt. =	1987.43 lb	1,987	10,746



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		SUBTOTAL	TOTAL
Hinge #3			
End Crossframe			
Angle Wt. =	9.8 lb/ft L4x4x3/8		
Beam Spacing =	8.81 ft		
Beam Depth =	36.00 in		
Horiz. Angle Length =	8.81 ft		
Dia. Angle 1 Length =	4.20 ft $\sqrt{([Beam\ Spa./3]^2 + Beam\ Depth^2)}$		
# angles =	2 each		
Dia. Angle 2 Length =	3.34 ft $\sqrt{([Beam\ Spa./6]^2 + Beam\ Depth^2)}$		
# angles =	2 each		
Total Angle Length =	23.89 ft		
Diaphragm Wt. =	234.1 lb/diaphragm		
# diaphragm =	8 each Beam 1-10		
Total Wt. =	1873.00 lb	1,873	12,619
Connection Material and Gussets			
→ Assume 5% of gross diaphragm and crossframe weight for connection material and gussets			
Total Wt. =	631.0 lb	631	13,250
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE		TOTAL	