BRIDGE: CUY-90-1372 SFN: 1807870

CALCULATED BY: GDJ DATE: 03/16/21
CHECKED BY: ERK DATE: 03/16/21

CARPENTER MARTY transportation

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	DESCRIPTION

513E21501 REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN

End cross frames

Location	Bay	Length	#	Length	#	Total Length
RA	1	16.68 ft	1			16.68 ft
RA	2	13.90 ft	1			13.90 ft
RA	3	13.90 ft	1			13.90 ft
RA	4	13.90 ft	1			13.90 ft
RA	6	13.90 ft	1			13.90 ft
RA	7	13.90 ft	1	6.71 ft	1	20.61 ft
RA	8	13.90 ft	1	6.71 ft	1	20.61 ft
RA	10	13.90 ft	1			13.90 ft
RA	11	13.90 ft	1			13.90 ft
RA	12	13.90 ft	1			13.90 ft
RA	13	13.90 ft	1			13.90 ft
RA	14	13.90 ft	1			13.90 ft
RA	17	15.98 ft	1			15.98 ft
RA	18	15.98 ft	1			15.98 ft
FA	2	12.11 ft	1			12.11 ft
FA	4	12.11 ft	1			12.11 ft
FA	5	12.11 ft	1	6.00 ft	1	18.11 ft
FA	6	12.11 ft	1			12.11 ft
FA	8	14.97 ft	1			14.97 ft
FA	10	13.50 ft	1			13.50 ft
FA	11	12.19 ft	1			12.19 ft
FA	12	12.19 ft	1			12.19 ft
FA	13	12.19 ft	1			12.19 ft
FA	14	12.19 ft	1			12.19 ft
FA	15	12.19 ft	1			12.19 ft

Total length of angles = 358.84 ft
Weight of angles/ft = 8.20 lbs/ft
Total weight = 2942.50 lbs

Total Quantity = 3000 LB

513E95020 STRUCTURAL STEEL, MISC.: RE-WELD END CROSSFRAME MEMBERS

Total Quantity = LS

513E95030 STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MEMBERS - DRILLING

Number of locations = 2 EACH

Total Quantity = 2 EACH

514E00050 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL

Girders

	Girder A	Girder B	Girder C	Girder D
Flange width =	16.00 in	16.00 in	16.00 in	16.00 in
Web height =	72.00 in	72.00 in	72.00 in	72.00 in
Section length =	503.99 ft	506.91 ft	509.64 ft	512.32 ft
Area =	8,063.92 ft^2	8,110.58 ft^2	8,154.25 ft^2	8,197.12 ft^2

	Girder E	Girder F	Girder G	Girder H
Flange width =	16.00 in	16.00 in	16.00 in	16.00 in
Web height =	72.00 in	72.00 in	72.00 in	72.00 in
Section length =	515.10 ft	517.83 ft	520.56 ft	523.29 ft
Area =	8,241.67 ft^2	8,285.33 ft^2	8,329.00 ft^2	8,372.67 ft^2

Designer: GDJ Date: 3-16-21
Checker: ERK Date: 3/16/21

	Girder J	Girder K	Girder L	Girder M
Flange width =	16.00 in	16.00 in	16.00 in	16.00 in
Web height =	72.00 in	72.00 in	72.00 in	72.00 in
Section length =	524.22 ft	524.11 ft	525.99 ft	528.68 ft
Area =	8,387.58 ft^2	8,385.83 ft^2	8,415.83 ft^2	8,458.83 ft^2

	Girder N	Girder P	Girder Q	Girder R
Flange width =	16.00 in	16.00 in	16.00 in	16.00 in
Web height =	72.00 in	72.00 in	72.00 in	72.00 in
Section length =	531.36 ft	534.05 ft	536.74 ft	539.43 ft
Area =	8,501.83 ft^2	8,544.83 ft^2	8,587.83 ft^2	8,630.83 ft^2

	Girder S	Girder T	Girder U	Girder V
Flange width =	18.00 in	18.00 in	18.00 in	18.00 in
Web height =	72.00 in	72.00 in	72.00 in	72.00 in
Section length =	542.11 ft	569.22 ft	195.38 ft	125.58 ft
Area =	8,944.89 ft^2	9,392.20 ft^2	3,223.77 ft^2	2,072.13 ft^2

Total girder area = 157,300.93 ft^2
Additional for cross frames (10%) = 15,730.09 ft^2
Total with contingency = 173,031.03 ft^2

New Steel	Length	Perimeter	Area	# of pieces	Total Area
Bottom angle	16.68 ft	1.33 ft	22.24 ft^2	1 EACH	22.24 ft^2
	13.90 ft	1.33 ft	18.53 ft^2	11 EACH	203.86 ft^2
	15.98 ft	1.33 ft	21.31 ft^2	2 EACH	42.61 ft^2
	12.11 ft	1.33 ft	16.15 ft^2	4 EACH	64.59 ft^2
	14.97 ft	1.33 ft	19.96 ft^2	1 EACH	19.96 ft^2
	12.19 ft	1.33 ft	16.25 ft^2	6 EACH	97.52 ft^2
Diagonal angle	6.71 ft	1.33 ft	8.95 ft^2	2 EACH	17.89 ft^2
Vertical angle	6.00 ft	1.33 ft	8.00 ft^2	1 EACH	8.00 ft^2
				Total =	476.67 ft^2

Total area = 172,554.36 ft^2

Total Quantity = 172,600 SF

514E00056	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT

Total Quantity = 172,600 SF

514E00060	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT

Total Quantity = 173,100 SF

514E00066	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

Total Quantity = 173,100 SF

514E00504	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL

Total length of beams for grinding = 9786.55 ft

Total time for griding = 163.11 manhours

Total Quantity = 170 MNHR

514E10000	FINAL INSPECTION REPAIR

Length of beam to inspect = 9786.55 ft
Per CMS, inspection every = 150.00 ft
Quantity of inspections for beams = 66 each

Number of cross frames = 829 each
Per CMS, inspection for 5% of cross frames = 5%
Quantity of inspections for cross frames = 42 each

Total Quantity = 110 EACH