



Project: CUY-271-08.13 VAR Paint
Subject: Estimated Quantity Calcs

PID: 102451
Prepared By: KHD Date: 9/5/2019
Checked By: PS Date: 10/7/2019

ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL
ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT
ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT
ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT

Note:
Per CMS 514.23 (Method of Measurement): For steel beam and steel girder bridges, the Department will determine the surface area by taking a nominal measurement of the beams (i.e., **two times the beam depth plus three times the flange width**). In addition to this nominal measurement, the Department will add a percentage to account for incidentals such as cross frames, bearing assemblies, stiffeners, expansion joints, scuppers, etc. It is not necessary for the Engineer or Inspector to field measure every detail of the bridge to verify quantities. If there is a quantity dispute, exact field measurements of all painted surfaces and calculations will govern over the above percentage to account for incidentals.

Locations:

Number	C-R-S	Description	SFN	Plan Split Code	Est. Area (SQ FT)
1	CUY-422-11.22	CHAGRIN BLVD. OVER I-271	1811258	01/NFP/BR	79,600
2	CUY-271-09.72	FAIRMOUNT BLVD. OVER I-271	1811401	01/NFP/BR	21,600
3	CUY-271-09.74	FAIRMOUNT BLVD. OVER I-271	1811436	01/NFP/BR	21,600
4	CUY-271-10.86	CEDAR RD. OVER I-271	1811460	01/NFP/BR	115,700
5	CUY-271-11.13	BRAINARD RD. OVER I-271	1811495	01/NFP/BR	47,800
6	CUY-271-11.89	LANDER RD. OVER I-271	1811525	01/NFP/BR	25,200



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Location 1; CUY-422-11.22; CHAGRIN BLVD. OVER I-271; SFN 1811258

Skew = 24 deg 19 min 0 sec = 0.42441 radians

Description	Length	x (2 x	Depth	+ 3 x	Width	) = Area
G-1	471.50	x (2 x	4.03	+ 3 x	1.33	) = 5682.56 sf
G-1, Total						= 5682.56 sf

Description	Number	x	Area	= Total Area
G-1 thru G-10 (typical)	10	x	5682.56	= 56825.57 sf
Misc. (calc 40%)	0.40	x	56825.57	= 22730.23 sf

Total Area = 79555.80 sf Say = **79,600** sf

Location 2; CUY-271-09.72; FAIRMOUNT BLVD. OVER I-271; SFN 1811401

Skew = 9 deg 34 min 5 sec = 0.16699 radians

Description	Length	x (2 x	Depth	+ 3 x	Flange Width	) = Area
B-1, 36 WF 182	203.00	x (2 x	3.03	+ 3 x	1.01	) = 1846.03 sf
B-1, 36 WF 170	142.00	x (2 x	3.01	+ 3 x	1.00	) = 1280.96 sf
B-1, 36 WF 150	51.00	x (2 x	2.99	+ 3 x	1.00	) = 457.94 sf
B-1, Total						= 3584.93 sf

Description	Number	x	Area	= Total Area
B-1 thru B-5 (typical)	5	x	3584.93	= 17924.64 sf
Misc. (assume 20%)	0.20	x	17924.64	= 3584.93 sf

Total Area = 21509.56 sf Say = **21,600** sf



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Location 3; CUY-271-09.74; FAIRMOUNT BLVD. OVER I-271; SFN 1811436

Skew = 9 deg 34 min 5 sec = 0.16699 radians

Description	Length	x (2 x	Depth	+ 3 x	Flange Width	) = Area
B-1, 36 WF 182	203.00	x (2 x	3.03	+ 3 x	1.01	) = 1846.03 sf
B-1, 36 WF 170	142.00	x (2 x	3.01	+ 3 x	1.00	) = 1280.96 sf
B-1, 36 WF 150	51.00	x (2 x	2.99	+ 3 x	1.00	) = 457.94 sf
B-1, Total						= 3584.93 sf

Description	Number	x	Area	= Total Area
B-1 thru B-5 (typical)	5	x	3584.93	= 17924.64 sf
Misc. (assume 20%)	0.20	x	17924.64	= 3584.93 sf

Total Area = 21509.56 sf Say = 21,600 sf

Location 4; CUY-271-10.86; CEDAR RD. OVER I-271; SFN 1811460

Skew = 43 deg 59 min 21 sec = 0.76776 radians

Description	Length	x (2 x	Depth	+ 3 x	Width	) = Area
G-1	576.00	x (2 x	4.70	+ 3 x	1.00	) = 7140.00 sf
G-1, Total						= 7140.00 sf

Description	Number	x	Area	= Total Area
G-1 thru G-12 (typical)	12	x	7140.00	= 85680.00 sf
Misc. (calc 30%)	0.35	x	85680.00	= 29988.00 sf

Total Area = 115668.00 sf Say = 115,700 sf



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Location 5; CUY-271-11.13; BRAINARD RD. OVER I-271; SFN 1811495

Skew = 31 deg 55 min 15 sec = 0.55712 radians

Description	Length	x (2 x	Depth	+ 3 x	Flange Width	) = Area
B-1, 36 WF 170	114.00	x (2 x	3.01	+ 3 x	1.00	) = 1028.38 sf
B-1, 36 WF 230	336.00	x (2 x	2.99	+ 3 x	1.38	) = 3395.00 sf
B-1, Total						= 4423.38 sf

Description	Number	x	Area	= Total Area
B-1 thru B-9 (typical)	9	x	4423.38	= 39810.38 sf
Misc. (assume 20%)	0.20	x	39810.38	= 7962.08 sf

Total Area = 47772.45 sf Say = 47,800 sf

Location 6; CUY-271-11.89; LANDER RD. OVER I-271; SFN 1811525

Skew = 27 deg 45 min 8 sec = 0.48437 radians

Description	Length	x (2 x	Depth	+ 3 x	Flange Width	) = Area
B-1, 36 WF 150	105.00	x (2 x	2.99	+ 3 x	1.00	) = 942.81 sf
B-1, 36 WF 230	321.00	x (2 x	2.99	+ 3 x	1.38	) = 3243.44 sf
B-1, Total						= 4186.25 sf

Description	Number	x	Area	= Total Area
B-1 thru B-5 (typical)	5	x	4186.25	= 20931.25 sf
Misc. (assume 20%)	0.20	x	20931.25	= 4186.25 sf

Total Area = 25117.50 sf Say = 25,200 sf



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ITEM 514 - GRINDING FINNS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL

Location 1; CUY-422-11.22; CHAGRIN BLVD. OVER I-271; SFN 1811258

Total Beam/Girder Length = 4,715 ft Say = 79 Hours

Location 2; CUY-271-09.72; FAIRMOUNT BLVD. OVER I-271; SFN 1811401

Total Beam/Girder Length = 1,980 ft Say = 33 Hours

Location 3; CUY-271-09.74; FAIRMOUNT BLVD. OVER I-271; SFN 1811436

Total Beam/Girder Length = 1,980 ft Say = 33 Hours

Location 4; CUY-271-10.86; CEDAR RD. OVER I-271; SFN 1811460

Total Beam/Girder Length = 6,912 ft Say = 116 Hours

Location 5; CUY-271-11.13; BRAINARD RD. OVER I-271; SFN 1811495

Total Beam/Girder Length = 4,050 ft Say = 68 Hours

Location 6; CUY-271-11.89; LANDER RD. OVER I-271; SFN 1811525

Total Beam/Girder Length = 2,130 ft Say = 36 Hours



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ITEM 514 - FINAL INSPECTION REPAIR

Location 1; CUY-422-11.22; CHAGRIN BLVD. OVER I-271; SFN 1811258

			Final Inspection
			Required
Total Est. Paint Area =	79,556	sf	
Total Beam/Girder Length =	4,715	ft	32
Total Cross frame assemblies =	288	ea	15
Total =			<u>47</u>

Location 2; CUY-271-09.72; FAIRMOUNT BLVD. OVER I-271; SFN 1811401

			Final Inspection
			Required
Total Est. Paint Area =	21,510	sf	
Total Beam/Girder Length =	1,980	ft	14
Total Cross frame assemblies =	104	ea	6
Total =			<u>20</u>

Location 3; CUY-271-09.74; FAIRMOUNT BLVD. OVER I-271; SFN 1811436

			Final Inspection
			Required
Total Est. Paint Area =	21,510	sf	
Total Beam/Girder Length =	1,980	ft	14
Total Cross frame assemblies =	104	ea	6
Total =			<u>20</u>

Location 4; CUY-271-10.86; CEDAR RD. OVER I-271; SFN 1811460

			Final Inspection
			Required
Total Est. Paint Area =	115,668	sf	
Total Beam/Girder Length =	6,912	ft	47
Total Cross frame assemblies =	440	ea	22
Total =			<u>69</u>



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Location 5; CUY-271-11.13; BRAINARD RD. OVER I-271; SFN 1811495

			Final Inspection
			Required
Total Est. Paint Area =	47,772	sf	
Total Beam/Girder Length =	4,050	ft	27
Total Cross frame assemblies =	60	ea	3
Total =			30

Location 6; CUY-271-11.89; LANDER RD. OVER I-271; SFN 1811525

			Final Inspection
			Required
Total Est. Paint Area =	25,118	sf	
Total Beam/Girder Length =	2,130	ft	15
Total Cross frame assemblies =	56	ea	3
Total =			18

ITEM 630 - SIGNING, MISC.: OVERPASS NAME INSTALLATION

Location 1; CUY-422-11.22; CHAGRIN BLVD. OVER I-271; SFN 1811258

Total Signs on Bridge 2 Each

Location 2; CUY-271-09.72; FAIRMOUNT BLVD. OVER I-271; SFN 1811401

Total Signs on Bridge 1 Each

Location 3; CUY-271-09.74; FAIRMOUNT BLVD. OVER I-271; SFN 1811436

Total Signs on Bridge 1 Each

Location 4; CUY-271-10.86; CEDAR RD. OVER I-271; SFN 1811460

Total Signs on Bridge 2 Each



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Location 5; CUY-271-11.13; BRAINARD RD. OVER I-271; SFN 1811495

Total Signs on Bridge 2 Each

Location 6; CUY-271-11.89; LANDER RD. OVER I-271; SFN 1811525

Total Signs on Bridge 2 Each

MAINTENANCE OF TRAFFIC

Maintaining Traffic	LS	
Law Enforcement Officer with Patrol Car for Assistance	2000	Hour
Portable Changeable Message Sign, As Per Plan	15	SMNT
Field Office, Type B, As Per Plan	6	MNT
Construction Layout Stakes and Surveying, As Per Plan	LS	
Mobilization	LS	