ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS		PIERS		SUPER.	GEN.	SHEET NO.
				ESTIMATED QUANTITIES	WEST	EAST	WEST	EAST			
202	11201	1	LS	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN						1	2 / 18
509	10000	19792	LB	EPOXY COATED REINFORCING STEEL			9896	9896			
510	10000	72	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT			36	36			2 / 18
511	71100	180	CY	CONCRETE, MISC.: DECORATIVE PYLON CONCRETE			90	90			2 / 18
512	10051	2316	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN	411	411	363	363	598	170	2 / 18
514	00051	4313	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN					4313		3 / 18
514	00057	4313	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN					4313		3 / 18
514	00061	4313	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN					4313		3 / 18
514	00067	4313	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN					4313		3 / 18
516	10001	116	FT	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL, AS PER PLAN	58	58					3 / 18
516	31001	121	FT	JOINT SEALER, AS PER PLAN	43	42	18	18			3 / 18
516	44101	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN	4	4					14 / 18
516	47001	1	LS	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN						1	3 / 18
519	11101	184	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	30	85	11	58			3 / 18
845	60000	116	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	24	24			68		4 / 18
845	61000	8	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	2	2			4		4 / 18
845	62000	116	SF	FIELD METALLIZING OF EXISTING STRUCTURAL STEEL	24	24			68		4 / 18
848	10201	196	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1 3/4" THICK)	98	98					4 / 18
848	10201	1061	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (3" THICK)					1061		4 / 18
848	20000	1257	SY	SURFACE PREPARATION USING HYDRODEMOLITION	98	98			1061		
848	30200	22	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	3	3			16		
848	50000	38	SY	HAND CHIPPING	3	3			32		
848	50100	1	LS	TEST SLAB						1	
848	50320	1061	SY	EXISTING CONCRETE OVERLAY REMOVED (2" THICK)					1061		
848	50340	319	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY					319		

AECOM

ITEM 202E11201 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN   UNIT: LS

Total for Project   =   1 LS

Subtotal Sheet 1 of 1
1   LS

Total All Sheets
1   LS

AECOM

Project HAM-042-0329		Computed By KGR	Date 2/7/18
Description McMillan Street over Reading Road		Checked By KSC	Date 2/7/18

UNIT COST - ITEM 202E11201 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN   UNIT: LS

Pylon Removal

Total Quantity for Item 511E71100	=	180.00 CY
Average Bid Price for Item 202E11301	=	$ 471.78 /CY
Total Price Based on Average Bid	=	$ 84,920.82
Average Award Price for Item	=	$ 345.85 /CY
Total Price Based on Average Award	=	$ 62,253.78
Cost Estimate from Contractor	=	$ 355,000.00
Maximum Total Cost	=	$ 355,000.00
Maximum Unit Cost	=	$ 1,972.22 /CY
Assumed Unit Cost	=	$ 1,972.22 /CY
Assumed Total Cost	=	$ 355,000.00

Bearing Removal

Total Quantity for Item 516E44101	=	8 EA
Assumed Unit Cost	=	$ 1,000.00 /EA
Assumed Total Cost	=	$ 8,000.00

Total Item Cost

Pylon Removal	=	$ 355,000.00
Bearing Removal	=	$ 8,000.00
Total Cost	=	$ 363,000.00
Rounded Total Cost	=	$ 363,000.00

For 2021 Update, increase estimated cost by 5%

Unit Cost
$ 363,000 / LS

ITEM 509E10000 - EPOXY COATED REINFORCING STEEL   UNIT: LB

Per Pier Pylon

Total per Pylon	=	4948 lb (from bar schedule)
Number of Pylons per Pier	=	2
Total per Pier	=	9896 lb
Number of Piers	=	2
Total	=	19792 lb

Subtotal Sheet 1 of 1
19792   LB

Total All Sheets
19792   LB

ITEM 510E10000 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT   UNIT: EACH

Per Pylon

Number of Dowels	=	18 EA (from bar schedule)
Number of Pylons per Pier	=	2
Number of Dowel Holes per Pier	=	36 EA
Number of Piers	=	2
Total Number of Dowels	=	72 EA

Subtotal Sheet 1 of 1
72   EACH

Total All Sheets
72   EACH

AECOM

Project HAM-042-0329	Computed By KGR	Date	1/9/18
Description McMillan Street over Reading Road	Checked By KSC	Date	1/10/18

ITEM 511E71100 - CONCRETE, MISC.: DECORATIVE PYLON CONCRETE   UNIT: CY

Per Pylon

Section C-C

Section Area	=	37.19 ft^2 (from CAD)
Bottom Elevation	=	783.50 ft
Top Elevation	=	797.25 ft
Section Volume	=	511.31 ft^3
Section Volume	=	18.94 CY

Section B-B

Section Area	=	29.45 ft^2 (from CAD)
Bottom Elevation	=	797.25 ft
Top Elevation	=	808.83 ft
Section Volume	=	341.00 ft^3
Section Volume	=	12.63 CY

Section A-A

Section Area	=	15.43 ft^2 (from CAD)
Bottom Elevation	=	808.83 ft
Top Elevation	=	832.00 ft±
Section Volume	=	357.55 ft^3
Section Volume	=	13.24 CY

Total per Pylon	=	44.81 CY
Number of Pylons per Pier	=	2
Total per Pier	=	89.62 CY
Rounded Total per Pier	=	90.00 CY
Number of Piers	=	2
Total	=	180.00 CY

Subtotal Sheet 1 of 1
180 CY
Total All Sheets
180 CY

AECOM

UNIT COST - ITEM 511E71100 - CONCRETE, MISC.: DECORATIVE PYLON CONCRETE   UNIT: CY

Total Quantity for Item	=	180.00 CY
Average Bid Price	=	$ 675.57 /CY
Total Price Based on Average Bid	=	$ 121,603.31
Average Award Price	=	$ 620.23 /CY
Total Price Based on Average Award	=	$ 111,641.61
Cost Estimate from Contractor	=	$ 305,000.00
Maximum Total Cost	=	$ 305,000.00
Maximum Unit Cost	=	$ 1,694.44 /CY
Assumed Material Share of Cost	=	50%
Assumed Quoted Material Unit Cost	=	$ 847.22 /CY
Additional Material Premium	=	10% (quote did not include exp. agg. concrete)
Assumed Material Unit Cost	=	$ 931.94 /CY
Assumed Labor Share of Cost	=	50%
Assumed Labor Unit Cost	=	$ 847.22 /CY
Additional Labor Premium	=	50%
Assumed Labor Unit Cost	=	$ 1,270.83 /CY
Assumed Unit Cost	=	$ 2,202.78 /CY

For 2021 Update, increase estimated cost by 5%

Unit Cost
$ 2,203 / CY

AECOM

Project HAM-042-0329	Computed By KGR	Date 1/9/18
Description McMillan Street over Reading Road	Checked By KSC	Date 1/10/18

ITEM 512E10051 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN   UNIT: SY

Curb, Sidewalk, and Railing

Sidewalk Width (Flat Portion)	=	6 ft	6.00 in	=	6.50 ft	
Railing Height	=	3 ft	6.00 in	=	3.50 ft	
Railing Width	=	0 ft	9.00 in	=	0.75 ft	
Railing Post Height	=	4 ft	3.00 in	=	4.25 ft	
Railing Post Width	=	1 ft	0.00 in	=	1.00 ft	
Railing Post Length	=	1 ft	4.00 in	=	1.33 ft	
Railing Post Spacing	=	9 ft	0.00 in	=	9.00 ft	
Average Railing Height (Railing and Posts)	=	3 ft	7.33 in	=	3.61 ft	
Average Railing Width (Railing and Posts)	=	0 ft	9.44 in	=	0.79 ft	
Horizontal Length of Curb Slope	=	0 ft	2.00 in	=	0.17 ft	
Vertical Height of Curb Slope	=	0 ft	10.00 in	=	0.83 ft	
Length of Curb Slope	=	0 ft	10.20 in	=	0.85 ft	
Sealing Perimeter per Fascia	=	11 ft	8.98 in	=	11.75 ft	
Fascias	=	2				
Sealing Perimeter	=	23 ft	5.95 in	=	23.50 ft	
CL West Expansion Joint	=	3+37.5 ft				
CL East Expansion Joint	=	5+55.5 ft				
Approximate Bridge Deck Length	=	218 ft	0.00 in	=	218.00 ft	
Curb, Sidewalk, and Railing Subtotal	=	5122.1 ft^2				
Contingency (Railing Voids, Etc.)	=	5%				
Curb, Sidewalk, and Railing Total	=	5378.2 ft^2				
Curb, Sidewalk, and Railing Total	=	597.58 yd^2				
Curb, Sidewalk, and Railing Rounded Total	=	598.00 yd^2				

Piers

Pylon Section C-C

Section Perimeter (from CAD)	=	31 ft	0.77 in	=	31.06 ft	
Bottom Elevation	=	783.50 ft				
Top Elevation	=	797.25 ft				
Section Surface Area	=	427.13 ft^2				

AECOM

Project HAM-042-0329

Description McMillan Street over Reading Road

Computed By KGR   Date   1/9/18

Checked By   KSC   Date   1/10/18

ITEM 512E10051 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN   UNIT: SY

Top of Pylon Section C-C

Section C-C Plan Area	=	37.19 ft^2 (from CAD)
Section B-B Plan Area	=	29.45 ft^2 (from CAD)
Exposed Area	=	7.74 ft^2

Pylon Section B-B

Section Perimeter (from CAD)	=	22 ft	6.96 in	=	22.58 ft
Bottom Elevation	=	797.25 ft			
Top Elevation	=	808.83 ft			
Section Surface Area	=	261.48 ft^2			

Top of Pylon Section B-B

Section B-B Plan Area	=	29.45 ft^2 (from CAD)
Section A-A Plan Area	=	15.43 ft^2 (from CAD)
Exposed Area	=	14.02 ft^2

Pylon Section A-A

Section Perimeter (from CAD)	=	15 ft	4.49 in	=	15.37 ft
Bottom Elevation	=	808.83 ft			
Top Elevation	=	832.00 ft±			
Section Surface Area	=	356.22 ft^2			

Top of Pylon Section A-A

Section A-A Plan Area	=	15.43 ft^2 (from CAD)
Exposed Area	=	15.43 ft^2

Foundation/Footing

Gross Surface Area (in Plan)	=	452.84 ft^2 (from CAD)			
Reduction for Manholes and Openings	=	15%			
Surface Area (in Plan)	=	384.91 ft^2			
Foundation/Footing Perimeter	=	165 ft	4.29 in	=	165.36 ft (from CAD)
Approximate Grade Elevation	=	780.10 ft			
Top of Foundation/Footing Elevation	=	783.50 ft			
Surface Area (in Elevation)	=	562.21 ft^2			

Subtotal Sheet 2 of 5
    0   SY

AECOM

Project HAM-042-0329	Computed By KGR	Date	1/9/18
Description McMillan Street over Reading Road	Checked By KSC	Date	1/10/18

ITEM 512E10051 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN UNIT: SY

Subtotal per Pylon	=	1082.01 ft^2			
Number of Pylons per Pier	=	2			
Pylon Subtotal	=	2164.02 ft^2			
Foundation/Footing Subtotal	=	947.13 ft^2			
Pier Subtotal	=	3111.15 ft^2			
Contingency	=	5%			
Total per Pier	=	3266.70 ft^2			
Total per Pier	=	362.97 yd^2			
Rounded Total per Pier	=	363.00 yd^2			
Piers	=	2			
Piers Total	=	726.00 yd^2			

Abutments

Abutment Width	=	63 ft	6.00 in	=	63.50 ft
Approximate Ground Elevation	=	791.00 ft±			
Beam Seat Elevation	=	801.50 ft			
Approximate Backwall Height	=	6 ft	0.00 in	=	6.00 ft
Approximate Top of Backwall Elevation	=	807.50 ft±			
Abutment Face Area	=	1047.75 ft^2			
Approximate Beam Seat Width	=	52 ft	6.00 in	=	52.50 ft
Beam Seat Length	=	1 ft	5.50 in	=	1.46 ft
Beam Seat Area	=	76.56 ft^2			
Approx. Max. Exposed Wingwall Height	=	23 ft	0.50 in	=	23.04 ft
Approx. Min. Exposed Wingwall Height	=	6 ft	0.00 in	=	6.00 ft
Approx. Avg. Exposed Wingwall Height	=	14 ft	6.25 in	=	14.52 ft
Approx. Exposed Wingwall Length	=	49 ft	7.50 in	=	49.63 ft
Approx. Wingwall Area	=	720.60 ft^2			
Approx. Abutment Pylon Perimeter	=	15 ft	4.49 in	=	15.37 ft (CAD)
Pylon Top Elevation	=	822.20 ft			
Top of Curb Elevation	=	809.03 ft			
Pylon Height Above Curb	=	13 ft	2.04 in	=	13.17 ft
Approx. Abutment Pylon Area	=	202.48 ft^2			

Subtotal Sheet 3 of 5
726 SY

ITEM 512E10051 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN   UNIT: SY

Approx. Wingwall Pylon Perimeter	=	8 ft	4.30 in	=	8.36 ft (CAD)		
Pylon Height Above Curb	=	7 ft	2.00 in	=	7.17 ft		
Approx. Wingwall Pylon Area	=	59.90 ft^2					
Abutment Face Area	=	1047.75 ft^2	x	1 EA	=	1047.75 ft^2	
Beam Seat Area	=	76.56 ft^2	x	1 EA	=	76.56 ft^2	
Approx. Wingwall Area	=	720.60 ft^2	x	2 EA	=	1441.19 ft^2	
Approx. Abutment Pylon Area	=	202.48 ft^2	x	2 EA	=	404.95 ft^2	
Approx. Wingwall Pylon Area	=	59.90 ft^2	x	4 EA	=	239.61 ft^2	
Area per Abutment	=	3210.06 ft^2					
Contingency	=	15%					
Total Area per Abutment	=	3691.57 ft^2					
Total Area per Abutment	=	410.17 yd^2					
Rounded Total Area per Abutment	=	411.00 yd^2					
Abutments	=	2					
Total Abutment Area	=	822.00 yd^2					

Subtotal Sheet 4 of 5

822   SY

AECOM

ITEM 512E10051 - SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN   **UNIT: SY**

Approach Curb, Sidewalk, and Railing

Sidewalk Width (Flat Portion)	=	6 ft	6.00 in	=	6.50 ft
Railing Height	=	3 ft	6.00 in	=	3.50 ft
Railing Width	=	0 ft	9.00 in	=	0.75 ft
Railing Post Height	=	4 ft	3.00 in	=	4.25 ft
Railing Post Width	=	1 ft	0.00 in	=	1.00 ft
Railing Post Length	=	1 ft	4.00 in	=	1.33 ft
Railing Post Spacing	=	9 ft	0.00 in	=	9.00 ft
Average Railing Height (Railing and Posts)	=	3 ft	7.33 in	=	3.61 ft
Average Railing Width (Railing and Posts)	=	0 ft	9.44 in	=	0.79 ft
Horizontal Length of Curb Slope	=	0 ft	2.00 in	=	0.17 ft
Vertical Height of Curb Slope	=	0 ft	10.00 in	=	0.83 ft
Length of Curb Slope	=	0 ft	10.20 in	=	0.85 ft
Sealing Perimeter per Side	=	11 ft	8.98 in	=	11.75 ft
Sides	=	2			
Sealing Perimeter	=	23 ft	5.95 in	=	23.50 ft
Approximate Approach Railing Length	=	30 ft	11.00 in	=	30.92 ft
Appr. Curb, Sidewalk, and Railing Subtotal	=	726.42 ft^2			
Contingency (Railing Voids, Etc.)	=	5%			
Appr. Curb, SW, and Railing Total per Abut.	=	762.74 ft^2			
Appr. Curb, SW, and Railing Total per Abut.	=	84.75 yd^2			
Abutments	=	2			
Total Appr. Sidewalk and Railing Area	=	169.50 yd^2			
Rounded Appr. Sidewalk and Railing Area	=	170.00 yd^2			

AECOM

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN — UNIT: SF

ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN — UNIT: SF

ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN — UNIT: SF

ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN — UNIT: SF

Girders G1 & G4

B-B Angle Distance at Sec. C-C	=	5 ft	0.00 in	=	60.00 in
B-B Angle Distance at Sec. A-A	=	10 ft	0.00 in	=	120.00 in
Distance Between Secs. C-C & A-A	=	44 ft	11.00 in	=	539.00 in
Length of Painting from Girder End	=	10 ft	0.00 in	=	120.00 in
B-B Angle Distance at Painting Limit	=	6 ft	1.36 in	=	73.36 in
Avg. B-B Angle Dist. thru Painting Limits	=	5 ft	6.68 in	=	66.68 in

Top Flange Cover Plate Width	=	13.50 in
Bottom Flange Cover Plate Width	=	13.50 in
Web Thickness	=	0.438 in

Left Face Painting Height	=	66.68 in
Right Face Painting Height	=	66.68 in
Bottom of Top Flange Painting Width	=	13.06 in
Top of Bottom Flange Painting Width	=	13.06 in
Bottom of Bottom Flange Painting Width	=	13.50 in
Total Painting Perimeter	=	172.98 in

Painting Area per Girder End	=	144.15 ft^2
Additional for Stiffeners	=	5%
Painting Area per Girder End	=	151.36 ft^2
Number of Girder Ends	=	4
G1 & G4 End Painting Area	=	605.44 ft^2

Subtotal Sheet 1 of 6

605   SF

AECOM

Project HAM-042-0329	Computed By KGR Date 1/10/18
Description McMillan Street over Reading Road	Checked By KSC Date 1/10/18

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	UNIT: SF
ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN	UNIT: SF
ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN	UNIT: SF
ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	UNIT: SF

Girders G2 & G3

B-B Angle Distance at Sec. C-C	=	5 ft	0.00 in	=	60.00 in
B-B Angle Distance at Sec. A-A	=	10 ft	0.00 in	=	120.00 in
Distance Between Secs. C-C & A-A	=	44 ft	11.00 in	=	539.00 in
Length of Painting from Girder End	=	10 ft	0.00 in	=	120.00 in
B-B Angle Distance at Painting Limit	=	6 ft	1.36 in	=	73.36 in
Avg. B-B Angle Dist. thru Painting Limits	=	5 ft	6.68 in	=	66.68 in
Top Flange Cover Plate Width	=	18.00 in			
Bottom Flange Cover Plate Width	=	18.00 in			
Web Thickness	=	0.438 in			
Left Face Painting Height	=	66.68 in			
Right Face Painting Height	=	66.68 in			
Bottom of Top Flange Painting Width	=	17.56 in			
Top of Bottom Flange Painting Width	=	17.56 in			
Bottom of Bottom Flange Painting Width	=	18.00 in			
Total Painting Perimeter	=	186.48 in			
Painting Area per Girder End	=	155.40 ft^2			
Additional for Stiffeners	=	5%			
Painting Area per Girder End	=	163.17 ft^2			
Number of Girder Ends	=	4			
G1 & G4 End Painting Area	=	652.69 ft^2			

Subtotal Sheet 2 of 6
653   SF

AECOM

Project HAM-042-0329	Computed By KGR Date 1/10/18
Description McMillan Street over Reading Road	Checked By KSC Date 1/10/18

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	UNIT: SF
ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN	UNIT: SF
ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN	UNIT: SF
ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	UNIT: SF

End Floor Beam

Section Depth	=	21.00 in			
Flange Width	=	8.25 in			
Approximate Perimeter	=	75.00 in			
Girder Spacing	=	16 ft	0.00 in	=	192.00 in
Painting Area per Floor Beam	=	100.00 ft^2			
Bays	=	3			
Abutments	=	2			
End Floor Beam Painting Area	=	600.00 ft^2			

Lateral Frame No. 5

Total Frame Height	=	5 ft	2.25 in	=	62.25 in
Girder Spacing	=	16 ft	0.00 in	=	192.00 in
Gross Face Area	=	83.00 ft^2			
Horiz. Dist. from CL Girder to Frame Flange	=	1 ft	9.00 in	=	21.00 in
Opening Width	=	12 ft	6.00 in	=	150.00 in
Top Chord Section Height	=	21.00 in			
Bottom Chord Section Height	=	12.00 in			
Opening Height	=	2 ft	5.25 in	=	29.25 in
Gross Opening Area	=	30.47 ft^2			
Opening Corner Fillet Radius	=	12.00 in			
Additional Face Area per Fillet	=	0.21 ft^2			
Net Face Area	=	53.39 ft^2			
Faces	=	2			
Face Area per Bay	=	106.78 ft^2			

Subtotal Sheet 3 of 6
600 SF

AECOM

Project HAM-042-0329	Computed By KGR	Date	1/10/18
Description McMillan Street over Reading Road	Checked By KSC	Date	1/10/18

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	UNIT: SF

ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN	UNIT: SF

ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN	UNIT: SF

ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	UNIT: SF

Top Chord Flange Width	=	8.25 in				
Bottom Chord Flange Width	=	8.00 in				
Girder Spacing	=	16 ft	0.00 in	=	192.00 in	
Top Chord Top, Bot. Chord Bot. Flange Area	=	43.33 ft^2				
Opening Height	=	2 ft	5.25 in	=	29.25 in	
Opening Corner Fillet Radius	=	12.00 in				
Straight, Vertical Portion of Opening Perim.	=	0 ft	5.25 in	=	5.25 in	
Flange Width	=	8.25 in				
Straight, Vertical Portions of Opening Flange	=	1.20 ft^2				
Opening Width	=	12 ft	6.00 in	=	150.00 in	
Opening Corner Fillet Radius	=	12.00 in				
Straight, Horiz. Portion of Opening Perim.	=	10 ft	6.00 in	=	126.00 in	
Flange Width (Top of Opening)	=	8.25 in				
Flange Width (Bot. of Opening)	=	8.00 in				
Straight, Horiz. Portions of Opening Flange	=	28.44 ft^2				
Opening Corner Fillet Radius	=	12.00 in				
Fillet Length	=	1 ft	6.85 in	=	18.85 in	
Flange Width	=	8.25 in				
Filleted Portions of Opening Flange	=	8.64 ft^2				
Face Area per Bay	=	106.78 ft^2				
Top Chord Top, Bot. Chord Bot. Flange Area	=	43.33 ft^2				
Straight, Vertical Portion of Opening Flange	=	1.20 ft^2				
Straight, Horiz. Portion of Opening Flange	=	28.44 ft^2				
Filleted Portion of Opening Flange	=	8.64 ft^2				
Total Area per Lateral Frame	=	188.39 ft^2				
Bays	=	3				
Abutments	=	2				
Lateral Frame No. 5 Painting Area	=	1130.36 ft^2				

Subtotal Sheet 4 of 6
1130 SF

AECOM

Project HAM-042-0329	Computed By KGR	Date	1/10/18
Description McMillan Street over Reading Road	Checked By KSC	Date	1/10/18

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN	UNIT: SF
ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN	UNIT: SF
ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN	UNIT: SF
ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	UNIT: SF

G1 and Transverse Bent

B-B Angle Distance of Girder Angles	=	6 ft	6.00 in	=	78.00 in	
Girder Flange/Cover Plate Width	=	13.50 in				
Girder Web Thickness	=	0.4375 in				
B-B Angle Distance of Bent Angles	=	3 ft	6.00 in	=	42.00 in	
Bent Flange/Cover Plate Width	=	8.00 in				
Bent Web Thickness	=	0.4375 in				
Total Painting Perimeter	=	26 ft	10.50 in	=	322.50 in	
Elevation of Top of Pier Vault	=	783.50 ft				
Elevation of Center of Pin	=	777.79 ft				
Painting Height	=	5 ft	8.52 in	=	68.52 in	
Painting Area per Pier Leg	=	153.46 ft^2				
Additional for Stiffeners, Etc.	=	5%				
Painting Area per Pier Leg	=	161.13 ft^2				
Number of G1 Pier Legs	=	4				
G1 Pier Leg Painting Area	=	644.52 ft^2				

Subtotal Sheet 5 of 6
645   SF

AECOM

ITEM 514E00051 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, AS PER PLAN — UNIT: SF

ITEM 514E00057 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, AS PER PLAN — UNIT: SF

ITEM 514E00061 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, SYSTEM OZEU, AS PER PLAN — UNIT: SF

ITEM 514E00067 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN — UNIT: SF

G2 and Transverse Bent

B-B Angle Distance of Girder Angles	=	6 ft	6.00 in	=	78.00 in		
Girder Flange/Cover Plate Width	=	18.00 in					
Girder Web Thickness	=	0.4375 in					
B-B Angle Distance of Bent Angles	=	3 ft	6.00 in	=	42.00 in		
Bent Flange/Cover Plate Width	=	8.00 in					
Bent Web Thickness	=	0.4375 in					
Total Painting Perimeter	=	28 ft	4.50 in	=	340.50 in		
Elevation of Top of Pier Vault	=	783.50 ft					
Elevation of Center of Pin	=	777.79 ft					
Painting Height	=	5 ft	8.52 in	=	68.52 in		
Painting Area per Pier Leg	=	162.02 ft^2					
Additional for Stiffeners, Etc.	=	5%					
Painting Area per Pier Leg	=	170.12 ft^2					
Number of G2 Pier Legs	=	4					
G2 Pier Leg Painting Area	=	680.49 ft^2					

Subtotal Sheet 6 of 6
680 SF

Total All Sheets
4313 SF

AECOM

Project HAM-042-0329

Description McMillan Street over Reading Road

Computed By KGR   Date   1/9/18

Checked By   KSC   Date   1/10/18

ITEM 516E10001 - PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL, AS PER PLAN   UNIT: FT

Both Abutments

Half Roadway Width	=	22 ft	0.00 in	=	22.00 ft
Vertical Height of Curb	=	0 ft	10.00 in	=	0.83 ft
Horizontal Projection of Curb	=	0 ft	2.00 in	=	0.17 ft
Seal Length Along Curb	=	0 ft	10.20 in	=	0.85 ft
Maximum Sidewalk Width	=	6 ft	6.00 in	=	6.50 ft
Protrusion of Pylon into Sidewalk	=	0 ft	10.00 in	=	0.83 ft
Seal Length Along Sidewalk	=	5 ft	8.00 in	=	5.67 ft
Half Joint Seal Length per Abutment	=	28 ft	6.20 in	=	28.52 ft
Total per Abutment	=	57 ft	0.40 in	=	57.03 ft
Rounded Total per Abutment	=	58 ft	0.00 in	=	58.00 ft
Abutments	=	2		
Total	=	116 ft	0.00 in	=	116.00 ft

Subtotal Sheet 1 of 1
116   FT

Total All Sheets
116   FT

AECOM

ITEM 516E31001 - JOINT SEALER, AS PER PLAN   UNIT: FT

Abutments

Contingency	=	5%		

West Abutment

Joints Between Abutment and Wingwall

NW Wingwall Field Measurement	=	9 ft	6.00 in	=	9.50 ft
Rounded Length with Contingency	=	10 ft	1.00 in	=	10.08 ft
SW Wingwall Field Measurement	=	12 ft	0.00 in	=	12.00 ft
Rounded Length with Contingency	=	12 ft	9.00 in	=	12.75 ft

Joints Between Retaining Wall and Wingwall

NW Wingwall Field Measurement	=	9 ft	0.00 in	=	9.00 ft
Rounded Length with Contingency	=	9 ft	7.00 in	=	9.58 ft
SW Wingwall Field Measurement	=	10 ft	0.00 in	=	10.00 ft
Rounded Length with Contingency	=	10 ft	7.00 in	=	10.58 ft
Abutment Total	=	43 ft	0.00 in	=	43.00 ft

East Abutment

Joints Between Abutment and Wingwall

NE Wingwall Field Measurement	=	11 ft	0.00 in	=	11.00 ft
Rounded Length with Contingency	=	11 ft	9.00 in	=	11.75 ft
SE Wingwall Field Measurement	=	10 ft	5.00 in	=	10.42 ft
Rounded Length with Contingency	=	11 ft	1.00 in	=	11.08 ft

Joints Between Retaining Wall and Wingwall

NE Wingwall Field Measurement	=	9 ft	0.00 in	=	9.00 ft
Rounded Length with Contingency	=	9 ft	7.00 in	=	9.58 ft
SE Wingwall Field Measurement	=	9 ft	0.00 in	=	9.00 ft
Rounded Length with Contingency	=	9 ft	7.00 in	=	9.58 ft
Abutment Total	=	42 ft	0.00 in	=	42.00 ft

Subtotal Sheet 1 of 2

85   FT

AECOM

Project HAM-042-0329

Description McMillan Street over Reading Road

Computed By KGR Date 1/9/18	
Checked By KSC Date 1/10/18	

ITEM 516E31001 - JOINT SEALER, AS PER PLAN   UNIT: FT

Piers

Joints Between Pylons and Sidewalk

Sealing Length per Pylon	=	8 ft	11.50 in	=	8.96 ft (from CAD)	
Number of Pylons per Pier	=	2				
Sealing Length per Pier	=	17 ft	11.00 in	=	17.92 ft	
Rounded Sealing Length per Pier	=	18 ft	0.00 in	=	18.00 ft	
Number of Piers	=	2				
Total Pier Sealing Length	=	36 ft	0.00 in	=	36.00 ft	

Subtotal Sheet 2 of 2
36   FT
Total All Sheets
121   FT

ITEM 516E44101 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN

UNIT: EACH

Number of Girder Lines	=	4
Number of Abutments	=	2
Number of Bearings	=	8 EA

Subtotal Sheet 1 of 1

8   EACH

Total All Sheets

8   EACH

AECOM

Project HAM-042-0329

Description McMillan Street over Reading Road

Computed By KGR Date 2/7/18

Checked By KSC Date 2/7/18

UNIT COST - ITEM 516E44101 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES   UNIT: EACH
AND LOAD PLATE (NEOPRENE), AS PER PLAN

Average Bid Price =	$ 764.80 /EACH
Average Award Price for Item =	$ 734.35 /EACH
Assumed Unit Cost =	$ 2,000.00 /EACH

For 2021 Update, increase
estimated cost by 5%

Unit Cost
$ 2,000 / EACH

AECOM

ITEM 516E47001 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN   UNIT: LS

Total for Project   =   1 LS

Subtotal Sheet 1 of 1
1   LS

Total All Sheets
1   LS

AECOM

UNIT COST - ITEM 516E47001 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN   UNIT: LS

Support Rental

Assumed Cost	=	$	2,500.00 /month
Assumed Duration	=		1 month
Subtotal	=	$	2,500.00

Incidentals/Wood/Cribbing/Jacks/Tools

Assumed Cost	=	$	2,000.00

Backhoe (with Operator)

Assumed Cost	=	$	5,000.00 /month
Assumed Duration	=		1 month
Subtotal	=	$	5,000.00

Labor

   Laborers

Assumed Cost	=	$	400.00 /day/each
Quantity	=		4 each
Assumed Cost	=	$	1,600.00 /day

   Foreman

Assumed Cost	=	$	800.00 /day/each
Quantity	=		1 each
Assumed Cost	=	$	800.00 /day

  Total

Total Labor Cost	=	$	2,400.00 /day
Assumed Duration	=		20 days
Subtotal	=	$	48,000.00

Freight

Assumed Cost	=	$	3,000.00

Engineering/Drawings

Assumed Cost	=	$	2,000.00

	Unit Cost
	$ 62,500 / LS

AECOM

ITEM 519E11101 - PATCHING CONCRETE STRUCTURE, AS PER PLAN   UNIT: SF

West Abutment

Stem

Delamination or Spall	Approx. Width	Approx. Height	Approx. Area
1	2.00 ft	4.00 ft	8.00 ft^2
2	3.00 ft	2.00 ft	6.00 ft^2
3	2.00 ft	2.00 ft	4.00 ft^2
4	2.00 ft	1.00 ft	2.00 ft^2
		Subtotal =	20.00 ft^2
		Contingency =	20%
		Total =	24.00 ft^2
		Rounded Total =	24.00 ft^2

Top of Header

Delamination or Spall	Approx. Width	Approx. Length	Approx. Area
N. End of Joint	5.00 ft	0.50 ft	2.50 ft^2
S. End of Joint	5.00 ft	0.50 ft	2.50 ft^2
		Subtotal =	5.00 ft^2
		Contingency =	20%
		Total =	6.00 ft^2
		Rounded Total =	6.00 ft^2

AECOM

ITEM 519E11101 - PATCHING CONCRETE STRUCTURE, AS PER PLAN   **UNIT: SF**

East Abutment

Stem

Delamination or Spall	Approx. Width	Approx. Height	Approx. Area
1	4.00 ft	10.00 ft	40.00 ft^2
2	1.00 ft	3.00 ft	3.00 ft^2
3	1.00 ft	4.00 ft	4.00 ft^2
4	2.00 ft	1.00 ft	2.00 ft^2
5	2.00 ft	1.00 ft	2.00 ft^2

North Pylon

Delamination or Spall	Approx. Width	Approx. Height	Approx. Area
1	1.00 ft	6.00 ft	6.00 ft^2
2	1.00 ft	6.00 ft	6.00 ft^2
3	1.00 ft	3.00 ft	3.00 ft^2

Subtotal	=	66.00 ft^2
Contingency	=	20%
Total	=	79.20 ft^2
Rounded Total	=	79.00 ft^2

Top of Header

Delamination or Spall	Approx. Width	Approx. Length	Approx. Area
N. End of Joint	5.00 ft	0.50 ft	2.50 ft^2
S. End of Joint	5.00 ft	0.50 ft	2.50 ft^2

Subtotal	=	5.00 ft^2
Contingency	=	20%
Total	=	6.00 ft^2
Rounded Total	=	6.00 ft^2

Subtotal Sheet 2 of 3
85   SF

AECOM

Project HAM-042-0329	Computed By	KGR	Date	1/9/18
Description McMillan Street over Reading Road	Checked By	KSC	Date	1/10/18

ITEM 519E11101 - PATCHING CONCRETE STRUCTURE, AS PER PLAN			UNIT: SF

West Pier Foundation

Delamination or Spall	Approx. Width	Approx. Height	Approx. Area
1	1.00 ft	1.00 ft	1.00 ft^2
2	1.00 ft	1.50 ft	1.50 ft^2
3	2.00 ft	2.50 ft	5.00 ft^2
4	1.00 ft	1.50 ft	1.50 ft^2
		Subtotal =	9.00 ft^2
		Contingency =	20%
		Total =	10.80 ft^2
		Rounded Total =	11.00 ft^2

East Pier Foundation

Delamination or Spall	Approx. Width	Approx. Height	Approx. Area
1	4.83 ft	2.50 ft	12.08 ft^2
2	1.50 ft	2.50 ft	3.75 ft^2
3	1.00 ft	1.00 ft	1.00 ft^2
4	2.00 ft	2.00 ft	4.00 ft^2
5	1.00 ft	2.00 ft	2.00 ft^2
6	1.00 ft	2.00 ft	2.00 ft^2
7	4.00 ft	2.00 ft	8.00 ft^2
8	5.00 ft	2.50 ft	12.50 ft^2
9	2.00 ft	1.00 ft	2.00 ft^2
10	1.00 ft	1.00 ft	1.00 ft^2
		Subtotal =	48.33 ft^2
		Contingency =	20%
		Total =	58.00 ft^2
		Rounded Total =	58.00 ft^2

Subtotal Sheet 3 of 3
69 SF
Total All Sheets
184 SF

ITEM 845E60000 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	UNIT: SF
ITEM 845E62000 - FIELD METALLIZING OF EXISTING STRUCTURAL STEEL	UNIT: SF

Half Roadway Width	=	22 ft	0.00 in	=	22.00 ft
Roadway Joint Length	=	44 ft	0.00 in	=	44.00 ft
Sidewalk Width	=	6 ft	6.00 in	=	6.50 ft
Additional Sidewalk Width Past Plate	=	0 ft	2.00 in	=	0.17 ft
Sidewalk Armor Width	=	6 ft	4.00 in	=	6.33 ft

Bridge Joint Armor

Roadway Joint

Armor Angle Horiz. Leg Length	=	0 ft	4.00 in	=	0.33 ft
Additional Length of Retainer	=	0 ft	1.00 in	=	0.08 ft
Net Length of Metalizing	=	0 ft	5.00 in	=	0.42 ft
Metalizing Area per Joint	=	18.33 ft^2			

Sidewalk Joints

Assumed Sliding Plate Length	=	1 ft	2.00 in	=	1.17 ft
Metalizing Area per Sidewalk	=	7.39 ft^2			
Sidewalks per Joint	=	2			
Metalizing Area per Joint	=	14.78 ft^2			

Total

Roadway Metalizing Area per Joint	=	18.33 ft^2
Sidewalk Metalizing Area per Joint	=	14.78 ft^2
Total per Joint	=	33.11 ft^2
Rounded Total per Joint	=	34.00 ft^2
Joints	=	2
Total Area	=	68.00 ft^2

Subtotal Sheet 1 of 2

68   SF

AECOM

| Project HAM-042-0329 | Computed By | KGR | Date | 1/9/18 |
| Description McMillan Street over Reading Road | Checked By | KSC | Date | 1/10/18 |

| ITEM 845E60000 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL | UNIT: SF |
| ITEM 845E62000 - FIELD METALLIZING OF EXISTING STRUCTURAL STEEL | UNIT: SF |

Abutment Joint Armor

Roadway Joint

Armor Angle Horiz. Leg Length	=	0 ft	4.00 in	=	0.33 ft	
Additional Length of Retainer	=	0 ft	1.00 in	=	0.08 ft	
Net Length of Metalizing	=	0 ft	5.00 in	=	0.42 ft	
Metalizing Area per Joint	=	18.33 ft^2				

Sidewalk Joints

Assumed Exposed Armor Length	=	0 ft	5.00 in	=	0.42 ft	
Metalizing Area per Sidewalk	=	2.64 ft^2				
Sidewalks per Joint	=	2				
Metalizing Area per Joint	=	5.28 ft^2				

Total

Roadway Metalizing Area per Joint	=	18.33 ft^2
Sidewalk Metalizing Area per Joint	=	5.28 ft^2
Total per Joint	=	23.61 ft^2
Rounded Total per Joint	=	24.00 ft^2
Joints	=	2
Total Area	=	48.00 ft^2

| Subtotal Sheet 2 of 2 |
| 48   SF |
| Total All Sheets |
| 116   SF |

AECOM

UNIT COST - ITEM 845E60000 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL   UNIT: SF

Similar Projects

  PID 91939

    HAM-US 50-03.76L/21.80N: Bridge Repair

	Average Bid Price	=	$	44.49	/SF
	Award Bid Price	=	$	48.98	/SF

Assumed Cost

	Assumed Cost	=	$	50.00	/SF

Unit Cost

$ 50   / SF

AECOM

Project HAM-042-0329
Description McMillan Street over Reading Road

Computed By KGR Date 2/7/18
Checked By KSC Date 2/7/18

UNIT COST - ITEM 845E62000 - FIELD METALLIZING OF EXISTING STRUCTURAL STEEL   UNIT: SF

Similar Projects

   PID 87164

      PRE-SR 177-06.67/09.22: Bridge Repair
                  Average Bid Price = $ 82.23   /SF
                  Award Bid Price   = $ 140.00   /SF

Assumed Cost

                  Assumed Cost   = $ 80.00   /SF

	Unit Cost
$	80 / SF

AECOM

ITEM 845E61000 - GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL UNIT: MNHR

Grinding Rate	=	1	min/ft			
Half Roadway Width	=	22 ft	0.00 in	=	22.00 ft	
Roadway Joint Length	=	44 ft	0.00 in	=	44.00 ft	
Sidewalk Width	=	6 ft	6.00 in	=	6.50 ft	
Additional Sidewalk Width Past Plate	=	0 ft	2.00 in	=	0.17 ft	
Sidewalk Armor Width	=	6 ft	4.00 in	=	6.33 ft	

Bridge Joint Armor

Roadway Joint Metalizing Length	=	44 ft	0.00 in	=	44.00 ft	
Total Sidewalk Joint Metalizing Length	=	12 ft	8.00 in	=	12.67 ft	
Total Length	=	56 ft	8.00 in	=	56.67 ft	
Grinding Time per Joint	=	56.67 min				
Contingency	=	20%				
Grinding Time per Joint	=	68.00 min				
Grinding Time per Joint	=	1.13 hour				
Rounded Grinding Time per Joint	=	2.00 hour				
Joints	=	2				
Total Grinding Time	=	4.00 hour				

Abutment Joint Armor

Roadway Joint Metalizing Length	=	44 ft	0.00 in	=	44.00 ft	
Total Sidewalk Joint Metalizing Length	=	12 ft	8.00 in	=	12.67 ft	
Total Length	=	56 ft	8.00 in	=	56.67 ft	
Grinding Time per Joint	=	56.67 min				
Contingency	=	20%				
Grinding Time per Joint	=	68.00 min				
Grinding Time per Joint	=	1.13 hour				
Rounded Grinding Time per Joint	=	2.00 hour				
Joints	=	2				
Total Grinding Time	=	4.00 hour				

Subtotal Sheet 1 of 1
8 MNHR

Total All Sheets
8 MNHR

AECOM

UNIT COST - ITEM 845E61000 - GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL   UNIT: MNHR

Similar Projects

PID 91939

HAM-US 50-03.76L/21.80N: Bridge Repair

Average Bid Price	= $	135.29 /MNHR
Award Bid Price	= $	185.57 /MNHR

Assumed Cost

Assumed Cost	= $	150.00 /MNHR

Unit Cost

$ 150 / MNHR

ITEM 848E10201 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1 3/4" THICK) UNIT: SY

Approach Slabs

Approach Slab Length Behind Header	=	20 ft	0.00 in	=	20.00 ft	
Roadway Width	=	44 ft	0.00 in	=	44.00 ft	
Header and Approach Slab Area	=	880.00 ft^2				
Header and Approach Slab Area	=	97.78 yd^2				
Rounded Header and Approach Slab Area	=	98.00 yd^2				
Number of Approach Slabs	=	2				
Total Approach Slab Area	=	196.00 yd^2				

Subtotal Sheet 1 of 1

196   SY

Total All Sheets

196   SY

AECOM

ITEM 848E10201 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (3" THICK) UNIT: SY

Bridge Deck

CL West Expansion Joint	=	3+37.5 ft				
CL East Expansion Joint	=	5+55.5 ft				
CL Joint to CL Joint	=	218 ft	0.00 in	=	218.00 ft	
Joint Opening	=	0 ft	5.00 in	=	0.42 ft	
Armor Angle Leg Length	=	0 ft	4.00 in	=	0.33 ft	
Distance from Toe of Angle to CL Joint	=	0 ft	6.50 in	=	0.54 ft	
Length of Overlay	=	216 ft	11.00 in	=	216.92 ft	
Roadway Width	=	44 ft	0.00 in	=	44.00 ft	
Bridge Deck Overlay Area	=	9544.33 ft^2				
Bridge Deck Overlay Area	=	1060.48 yd^2				
Rounded Bridge Deck Overlay Area	=	1061.00 yd^2				

Subtotal Sheet 1 of 1
1061   SY

Total All Sheets
1061   SY

AECOM

ITEM 848E30200 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY UNIT: CY

Bridge Deck

CL West Expansion Joint	=	3+37.5 ft				
CL East Expansion Joint	=	5+55.5 ft				
CL Joint to CL Joint	=	218 ft	0.00 in	=	218.00 ft	
Joint Opening	=	0 ft	5.00 in	=	0.42 ft	
Armor Angle Leg Length	=	0 ft	4.00 in	=	0.33 ft	
Distance from Toe of Angle to CL Joint	=	0 ft	6.50 in	=	0.54 ft	
Length of Overlay	=	216 ft	11.00 in	=	216.92 ft	
Roadway Width	=	44 ft	0.00 in	=	44.00 ft	
Overlay Area	=	9544.33 ft^2				
Variable-Depth Overlay Area	=	30%	*(BDM 412.2)*			
Variable-Depth Overlay Area	=	2863.30 ft^2				
Top of Deck to Bottom of Top Mat Reinf.	=	0 ft	2.75 in	=	0.23 ft	
Hydrodemolition Depth	=	0 ft	1.00 in	=	0.08 ft	
Avg. Variable-Depth Overlay Thickness	=	0 ft	1.75 in	=	0.15 ft *(BDM 412.2)*	
Variable-Depth Overlay Volume	=	417.56 ft^2				
Variable-Depth Overlay Volume	=	15.47 yd^3				
Rounded Variable-Depth Overlay Volume	=	16.00 yd^3				

Subtotal Sheet 1 of 2

16 CY

AECOM

ITEM 848E30200 - SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY   UNIT: CY

Approach Slabs

Approach Slab Length Behind Header	=	20 ft	0.00 in	=	20.00 ft	
Roadway Width	=	44 ft	0.00 in	=	44.00 ft	
Header and Approach Slab Area	=	880.00 ft^2				
Variable-Depth Overlay Area	=	30%	*(BDM 412.2)*			
Variable-Depth Overlay Area	=	264.00 ft^2				
Top of Slab to Bottom of Top Mat Reinf.	=	0 ft	4.25 in	=	0.35 ft	
Hydrodemolition Depth	=	0 ft	1.75 in	=	0.15 ft	
Avg. Variable-Depth Overlay Thickness	=	0 ft	2.50 in	=	0.21 ft	*(BDM 412.2)*
Variable-Depth Overlay Volume	=	55.00 ft^2				
Variable-Depth Overlay Volume	=	2.04 yd^3				
Rounded Variable-Depth Overlay Volume	=	3.00 yd^3				
Number of Approach Slabs	=	2				
Total Approach Slab Volume	=	6.00 yd^3				

Subtotal Sheet 2 of 2
6 CY

Total All Sheets
22 CY

AECOM

ITEM 848E50000 - HAND CHIPPING   UNIT: SY

Portion of Variable-Depth

Overlay Area Requiring Hand Chipping = 10%

Bridge Deck

Variable-Depth Overlay Area = 2863.30 ft^2

Hand Chipping Area = 286.33 ft^2

Hand Chipping Area = 31.81 yd^2

Rounded Hand Chipping Area = 32.00 yd^2

Approach Slabs

Variable-Depth Overlay Area = 264.00 ft^2

Hand Chipping Area = 26.40 ft^2

Hand Chipping Area = 2.93 yd^2

Rounded Hand Chipping Area = 3.00 yd^2

Number of Approach Slabs = 2

Total Hand Chipping Area = 6.00 yd^2

Subtotal Sheet 1 of 1

38   SY

Total All Sheets

38   SY

AECOM

ITEM 848E20000 - SURFACE PREPARATION USING HYDRODEMOLITION   **UNIT: SY**

Bridge Deck

CL West Expansion Joint	=	3+37.5 ft			
CL East Expansion Joint	=	5+55.5 ft			
CL Joint to CL Joint	=	218 ft	0.00 in	=	218.00 ft
Joint Opening	=	0 ft	5.00 in	=	0.42 ft
Armor Angle Leg Length	=	0 ft	4.00 in	=	0.33 ft
Distance from Toe of Angle to CL Joint	=	0 ft	6.50 in	=	0.54 ft
Length of Hydrodemolition	=	216 ft	11.00 in	=	216.92 ft
Roadway Width	=	44 ft	0.00 in	=	44.00 ft
Bridge Deck Hydrodemolition Area	=	9544.33 ft^2			
Bridge Deck Hydrodemolition Area	=	1060.48 yd^2			
Rounded Bridge Deck Hydrodemolition Area	=	1061.00 yd^2			

Approach Slabs

Approach Slab Length Behind Header	=	20 ft	0.00 in	=	20.00 ft
Roadway Width	=	44 ft	0.000 in	=	44.00 ft
Header and Approach Slab Area	=	880.00 ft^2			
Header and Approach Slab Area	=	97.78 yd^2			
Rounded Header and Approach Slab Area	=	98.00 yd^2			
Number of Approach Slabs	=	2			
Total Approach Slab Area	=	196.00 yd^2			

Subtotal Sheet 1 of 1
1257   SY
Total All Sheets
1257   SY

ITEM 848E50100 - TEST SLAB   UNIT: LS

Total for Project   =   1 LS

Subtotal Sheet 1 of 1
1   LS

Total All Sheets
1   LS

ITEM 848E50320 - EXISTING CONCRETE OVERLAY REMOVED (2" THICK)　　　　　UNIT: SY

Bridge Deck

CL West Expansion Joint	=	3+37.5 ft	
CL East Expansion Joint	=	5+55.5 ft	
CL Joint to CL Joint	=	218 ft	0.00 in	=	218.00 ft
Joint Opening	=	0 ft	5.00 in	=	0.42 ft
Armor Angle Leg Length	=	0 ft	4.00 in	=	0.33 ft
Distance from Toe of Angle to CL Joint	=	0 ft	6.50 in	=	0.54 ft
Length of Overlay	=	216 ft	11.00 in	=	216.92 ft
Roadway Width	=	44 ft	0.00 in	=	44.00 ft
Bridge Deck Overlay Removal Area	=	9544.33 ft^2	
Bridge Deck Overlay Removal Area	=	1060.48 yd^2	
Rounded Bridge Deck Overlay Removal Area	=	1061.00 yd^2	

Subtotal Sheet 1 of 1

1061　SY

Total All Sheets

1061　SY

ITEM 848E50340 - REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY   UNIT: SY

Assume area is equal to variable-thickness overlay area

Bridge Deck

Proposed Variable-Depth Overlay Area	=	2863.30 ft^2
Ex. Variable-Depth Overlay Removal Area	=	2863.30 ft^2
Ex. Variable-Depth Overlay Removal Area	=	318.14 yd^2
Rounded Var.-Depth Overlay Removal Area	=	319.00 yd^2

Subtotal Sheet 1 of 1
319   SY

Total All Sheets
319   SY