



**CALCULATIONS**

**Project:** 2016-0421  
PID No. 102685  
MOT-741-0660

**Submittal:** Stage 3  
**Date:** Apr 18, 2018  
**By:** CAB  
**Checked:** IJP

**Bridge Quantity Calculations**

ITEM 202E11201 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (LS)

LUMP SUM

TOTAL LUMP

ITEM 251E01000 PARTIAL DEPTH PAVEMENT REPAIR (441) (SY)

2 X 5.00 X 2.00 = 20.00 SQ. FT. /9= 2.22 SQ. YD.

TOTAL 2 SQ. YD.

ITEM 503E11100 COFFERDAMS AND EXCAVATION BRACING (LS)

LUMP SUM

TOTAL LUMP

ITEM 509E10000 EPOXY COATED REINFORCING STEEL (LB)

End Post 375  
Piers 8161  
8536 POUND

TOTAL 8536 POUND

ITEM 509E10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN (LB)

Piers 2545  
Parapet 16  
2561 POUND

TOTAL 2561 POUND



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ITEM 510E10000 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT (EACH)

Pier 1		24	=	24	EACH	
Para	22 +	6	+ 8 =	<u>36</u>	EACH	
				60		
<b>TOTAL</b>					<b>60 EACH</b>	

ITEM 511E34448 CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET) (CY)

1.00 X	5.00	X	3.50	=	17.50	CU. FT.	
0.81 X	2.67	X	1.50	=	3.25	CU. FT.	
7.33 X	2.26	X	1.04	=	<u>17.24</u>	CU. FT.	
					37.99		/27= 1.41
<b>TOTAL</b>							<b>2 CU.YD.</b>

ITEM 511E71100 CONCRETE, MISC.: (CY)

PUMPED SELF CONSOLIDATING CONCRETE

P1	2.00 X	10.17	X	58.33	=	1186.08	CU. FT.	
P1	1.00 X	10.17	X	3.14	=	31.94	CU. FT.	
P2	2.00 X	11.17	X	58.33	=	1303.09	CU. FT.	
P2	1.00 X	11.17	X	3.14	=	35.09	CU. FT.	
P2	3.00 X	2.00	X	60.67	=	<u>364.00</u>	CU. FT.	
						2920.21		/27= 108.16
<b>TOTAL</b>								<b>108 CU.YD.</b>



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ITEM 512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SY)

Super	0.83 +	6.00 +	1.50 +	1.00 +	1.50		
	1.04 +	0.70 +	0.17 +	0.50 +	0.17 =	13.41 FT	
	1 X	125.57 X	13.41 =	1683.81	SQ.FT. /9=	187.09 SQ.YD.	
	0.83 +	2.00 +	1.50 +	1.00 +	1.50		
	0.91 +	0.70 +	0.17 +	0.50 +	0.17 =	9.28 FT	
	1 X	125.57 X	9.28 =	1165.84	SQ.FT. /9=	129.54 SQ.YD.	
	1 X	0.81 X	1.50 =	1.22	SQ.FT. /9=	0.14 SQ.YD.	
	2 X	5.00 X	2.00 =	20.00	SQ.FT. /9=	2.22 SQ.YD.	
	2 X	1.50 X	2.67 =	8.01	SQ.FT. /9=	0.89 SQ.YD.	
	1 X	0.63 X	2.67 =	1.67	SQ.FT. /9=	0.19 SQ.YD.	
	1 X	0.83 X	1.00 =	0.83	SQ.FT. /9=	0.09 SQ.YD.	
	1 X	0.83 X	3.24 =	2.70	SQ.FT. /9=	0.30 SQ.YD.	
	1 X	2.26 X	7.83 =	17.70	SQ.FT. /9=	1.97 SQ.YD.	
							<u>322.42 SQ. YD.</u>
							<u>TOTAL 322.00 SQ.YD.</u>

ITEM 513E10201 STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN (LB)

4.00 X	1.00 X	9.33 X	6.10 =	227.65	LB
4.00 X	2.00 X	9.75 X	6.10 =	475.80	LB
2.00 X	2.00 X	10.00 X	16.20 =	648.00	LB
1.00 X	2.00 X	14.50 X	16.20 =	469.80	LB
	4.00 X	10.00 X	20.40 =	816.00	LB
	2.00 X	14.50 X	20.40 =	591.60	LB
				<u>3228.85</u>	LB
					<u>TOTAL 3229 POUND</u>

ITEM 514E00050 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL (SF)

2.00 X	2.74 X	124.53 =	682.42	SQ. FT.
3.00 X	0.96 X	124.53 =	358.01	SQ. FT.
	0.10 X	1040.44 =	104.04	SQ. FT.
			<u>1144.48</u>	SQ. FT. per Beam
	7 X	1144.48 =	8011.35	SQ. FT.
			<u>115.00</u>	SQ. FT.
			<u>8126.35</u>	SQ. FT.
				<u>TOTAL 8126 SQ. FT.</u>



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ITEM 514E00056 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT (SF)

2.00 X	2.74	X	124.53	=	682.42	SQ. FT.
3.00 X	0.96	X	124.53	=	358.01	SQ. FT.
	0.10	X	1040.44	=	<u>104.04</u>	SQ. FT.
					1144.48	SQ. FT. per Beam
	7 X		1144.48	=	8011.35	SQ. FT.
					<u>115.00</u>	SQ. FT.
					8126.35	SQ. FT.

TOTAL 8126 SQ. FT.

ITEM 514E00060 FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT (SF)

2.00 X	2.74	X	124.53	=	682.42	SQ. FT.
3.00 X	0.96	X	124.53	=	358.01	SQ. FT.
	0.10	X	1040.44	=	<u>104.04</u>	SQ. FT.
					1144.48	SQ. FT. per Beam
	7 X		1144.48	=	8011.35	SQ. FT.

TOTAL 8011 SQ. FT.

ITEM 514E00066 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT (SF)

2.00 X	2.74	X	124.53	=	682.42	SQ. FT.
3.00 X	0.96	X	124.53	=	358.01	SQ. FT.
	0.10	X	1040.44	=	<u>104.04</u>	SQ. FT.
					1144.48	SQ. FT. per Beam
	7 X		1144.48	=	8011.35	SQ. FT.

TOTAL 8011 SQ. FT.

ITEM 514E00504 GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL (MNHR)

1.00 X	7.00	X	124.53	/	60.00	=	<u>14.53</u>	hours
min/ft	beams		ft		min/hour		14.53	Hours

TOTAL 15 HOURS



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ITEM 514E10000 FINAL INSPECTION REPAIR (EACH)

$$\begin{array}{rclclcl}
 7.00 & \times & 124.53 & / & 150.00 & = & 5.81 & \text{EACH} \\
 & & 0.05 & \times & 60.00 & = & \underline{3.00} & \text{EACH} \\
 & & & & & & 8.81 & 
 \end{array}$$

TOTAL 9.00 EACH

ITEM 516E45305 REFURBISH BEARING DEVICE, AS PER PLAN (EACH)

$$\begin{array}{rclclcl}
 \text{P1} & 1 & \times & 5 & = & 5 & \text{EACH} \\
 \text{P2} & 1 & \times & 5 & = & \underline{5} & \text{EACH} \\
 & & & & & 10 & \text{EACH}
 \end{array}$$

TOTAL 10 EACH

ITEM 516E46900 BEARING DEVICE, MISC.: (EACH)  
ELASTOMERIC BEARING PAD WITH LOAD PLATE

$$\begin{array}{rclclcl}
 \text{P1} & 1 & \times & 2 & = & 2 & \text{EACH} \\
 \text{P2} & 1 & \times & 2 & = & \underline{2} & \text{EACH} \\
 & & & & & 4 & \text{EACH}
 \end{array}$$

TOTAL 4 EACH

ITEM 516E47001 JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (LS)

LUMP SUM

TOTAL LUMP

ITEM 519E11101 PATCHING CONCRETE STRUCTURE, AS PER PLAN (SF)

$$\begin{array}{rclclcl}
 \text{deck} & 4.33 & + & 3.25 & + & 0.25 & + & 0.25 \\
 \text{deck} & 0.25 & + & 0.25 & + & 0.23 & + & 0.22 \\
 \text{Pier} & 0.56 & + & 2.29 & + & 3.11 & = & 14.99 \text{ SQ. FT.}
 \end{array}$$

TOTAL 15 SQ. FT.