



CALCULATIONS

Project: 2020-0420
PID No. 105100
SCI-239-0.95
Bridge No.: SCI-00239-00.980

Submittal: Final
Date: Jul 26, 2021
By: CAB
Checked: CLP

Bridge Quantity Calculations

ITEM 202E11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (LS)

LUMP SUM

TOTAL LUMP

ITEM 202E22900 APPROACH SLAB REMOVED (SY)

2 x 15.00 x 22.00 = 660.00 SQ. FT. /9= 73.33 SQ. YD.

TOTAL 73 SQ. YD.

ITEM 202E23500 WEARING COURSE REMOVED (SY)

161.88 x 38.33 = 6205.35 SQ. FT. /9= 689.48 SQ. YD.
2.00 x 15.00 x 22.00 = 660.00 SQ. FT. /9= 73.33 SQ. YD.

TOTAL 763 SQ. YD.

ITEM 503E11100 COFFERDAMS AND EXCAVATION BRACING (LS)

LUMP SUM

TOTAL LUMP



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ITEM 503E21301 UNCLASSIFIED ExCAVATION, AS PER PLAN (LS)

LUMP SUM

TOTAL LUMP

ITEM 505E11100 PILE DRIVING EQUIPMENT MOBILIZATION (LS)

LUMP SUM

TOTAL LUMP

ITEM 507E00200 STEEL PILES HP12x53, FURNISHED (FT)

RA	6	x	40	=	240	L.F.
FA	4	x	40	=	<u>160</u>	L.F.
					400	

TOTAL 400 FT

ITEM 507E00250 STEEL PILES HP12x53, DRIVEN (FT)

RA	6	x	35	=	210	L.F.
FA	4	x	35	=	<u>140</u>	L.F.
					350	

TOTAL 350 FT



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ITEM 509E10000 EPOXY COATED REINFORCING STEEL (LB)

RA 7462
FA 6661
SUP 54814
68937 POUND

TOTAL 68937 POUND

ITEM 511E21522 CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE (CY)

0.71 x 38.00 x 152.08 = 4093.29 CU. FT. *Deck*
0.17 x 0.8417 x 152.08 x 6 = 128.03 CU. FT. *Haunch*
0.79 x 1.7083 x 152.08 x 2 = 411.36 CU. FT. *Overhang*
4.03 x 3.00 x 53.96 x 2 = 1304.71 CU. FT. *R.A. & F.A. Diaph.*
3.00 x 3.00 x -2.00 = -18.00 CU. FT. *R.A. Cut-out for guide*
3.00 x 3.00 x -2.00 = -18.00 CU. FT. *F.A. Cut-out for guide*
5901.40 /27= 218.57

TOTAL 219 CU.YD.

ITEM 511E33500 SEMI-INTEGRAL DIAPHRAGM GUIDE (EACH)

RA 1 x 1 = 1 EACH
FA 1 x 1 = 1 EACH
2 EACH

TOTAL 2 EACH



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ITEM 511E43512 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING (CY)

3.00	x	6.00	x	75.17	=	1353.00	CU. FT.		
2.65	x	3.00	x	79.46	=	631.69	CU. FT.		
4.02	x	3.00	x	2.31	=	27.91			
2.78	x	3.00	x	9.00	=	75.06	CU. FT.		
4.03	x	3.00	x	4.19	=	50.61			
2.27	x	3.00	x	10.00	=	68.10	CU. FT.		
2.00	x	3.00	x	3.00	=	18.00	CU. FT.		
						<u>2224.37</u>		/27=	82.38 CU.YD.
3.00	x	6.00	x	68.50	=	1233.00	CU. FT.		
2.67	x	3.00	x	70.08	=	561.34	CU. FT.		
4.03	x	3.00	x	2.52	=	30.43			
2.76	x	3.00	x	5.00	=	41.33	CU. FT.		
3.99	x	3.00	x	4.36	=	52.16			
3.42	x	3.00	x	4.25	=	43.54	CU. FT.		
2.00	x	3.00	x	3.00	=	18.00	CU. FT.		
						<u>1979.80</u>		/27=	73.33 CU.YD.
							<u>TOTAL</u>		<u>156 CU.YD.</u>



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ITEM 512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SY)										
RA	3.88	x	53.52	+	2.89	x	10.00	=	236.51	SQ. FT.
	3.50	x	17.31	+	2.55	x	9.00	=	83.49	SQ. FT.
	3.50	x	13.76	+	1.00	x	6.00	=	54.16	SQ. FT.
	1.06	x	4.64	+	5.44	x	4.64	=	30.16	SQ. FT.
									<u>404.32</u>	/9= 44.92 SQ.YD.
FA	3.90	x	53.52	+	3.37	x	5.00	=	225.58	SQ. FT.
	3.32	x	4.25	+	3.50	x	10.24	=	49.93	SQ. FT.
	3.50	x	10.90	+	2.00	x	6.00	=	50.15	SQ. FT.
	1.26	x	4.62	+	5.62	x	4.66	=	32.01	SQ. FT.
									<u>357.67</u>	/9= 39.74 SQ.YD.
Super	1.50	+	0.50	+	1.50	+	0.50	=	4.00	
	1	x	152.08	x	4.00	=	608.32	SQ.FT.	/9=	67.59 SQ.YD.
										<u>152.26</u> SQ. YD.
									<u>TOTAL</u>	<u>152 SQ.YD.</u>

ITEM 512E10600 CONCRETE REPAIR BY EPOXY INJECTION (FT)										
P1	8.00	+	18.50					=	26.50	FT.
P1	20.00	+	10.00					=	30.00	FT.
									<u>56.50</u>	FT.
P2	10.00	+	20.00					=	30.00	FT.
P2	20.00							=	20.00	FT.
									<u>50.00</u>	
										<u>106.50</u> FT.
									<u>TOTAL</u>	<u>107 SQ.YD.</u>



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ITEM 512E33000 TYPE 2 WATERPROOFING (SY)

RA	10.03	x	57.44	=	576.12	SQ. FT.	
	3.27	x	4.29	=	14.03	SQ. FT.	
	8.99	x	5.28	=	47.44	SQ. FT.	
	7.92	x	12.50	=	98.94	SQ. FT.	
					736.53	/9=	81.84 SQ.YD.
FA	10.05	x	57.44	=	577.27	SQ. FT.	
	4.23	x	1.58	=	6.69	SQ. FT.	
	9.30	x	4.72	=	43.90	SQ. FT.	
	8.40	x	6.34	=	53.26	SQ. FT.	
					681.11	/9=	<u>75.68</u> SQ.YD.
							157.52 SQ. YD.
					<u>TOTAL</u>		<u>158 SQ.YD.</u>

ITEM 513E10261 STRUCTURAL STEEL MEMBERS, LEVEL 3, AS PER PLAN (LB)

	6	x	157.31	x	114.00	=	107596.89 LB
5	x	11	x	6.75	x	33.90	= 12585.38 LB
10	x	11	x	2.12	x	13.07	= 3046.49 LB
10	x	11	x	8	x	1.35	= 1188.00 LB
6	x	4	x	1.75	x	17.03	= 715.26 LB
6	x	8	x	1.75	x	9.36	= 786.24 LB
6	x	4	x	1.75	x	34.45	= 1446.90 LB
6	x	2	x	36	x	1.46	= 630.72 LB
6	x	2	x	24	x	1.57	= 452.16 LB
	0.001	x	128448.03	=	<u>128.45</u>	LB	
					128576.48	LB	
					<u>TOTAL</u>		<u>128576 POUND</u>

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ITEM 513E20000 WELDED STUD SHEAR CONNECTORS (EACH)

$$6 \times 2 \times (151 + 150 + 54) = 4260 \text{ EACH}$$

TOTAL 4260 EACH

ITEM 516E13900 2" PREFORMED EXPANSION JOINT FILLER (SF)

RA 4.02 x 3.92 + 4.03 x 3.92 = 31.52 SQ. FT.

FA 4.02 x 3.92 + 4.03 x 3.92 = 31.52 SQ. FT.

63.05

TOTAL 63 SQ. FT.

ITEM 516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL (FT)

RA 56.52 + 4.28 + 4.27 = 65.07 FT.

FA 56.52 + 4.27 + 4.28 = 65.07 FT.

130.14

TOTAL 130.00 FT.

ITEM 516E44100 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (EACH)

2"x11"x8"

RA 1 x 6 = 6 EACH

FA 1 x 6 = 6 EACH

12 EACH

TOTAL 12 EACH

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ITEM	516E44100 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (EACH)					
	2"x1'-2"x10"					
P1	1	x	6	=	6	EACH
P2	1	x	6	=	<u>6</u>	EACH
					12	EACH
TOTAL						<u>12 EACH</u>

ITEM	517E70000 RAILING (TWIN STEEL TUBE) (FT)					
	2	x	(156.25 + 4.9167)	=	322.33	FT
TOTAL						<u>322.33 FT</u>

ITEM	518E21200 POROUS BACKFILL WITH GEOTExTILE FABRIC (CY)					
RA	2.0	x	5.53	x	57.44	= 635.26 CU. FT.
	2.0	x	3.93	x	9.57	= 75.22 CU. FT.
	2.0	x	3.42	x	12.45	= <u>85.03</u> CU. FT.
					795.52	CU. FT. /27 29.46 CU. YD.
FA	2.0	x	5.55	x	57.44	= 637.56 CU. FT.
	2.0	x	3.90	x	5.78	= 45.08 CU. FT.
	2.0	x	4.60	x	6.86	= <u>63.11</u> CU. FT.
					745.76	CU. FT. /27 27.62 CU. YD.
						<u>57.08</u> CU. YD.
TOTAL						<u>57 CU. YD.</u>



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ITEM 518E22300 SPECIAL - STEEL DRIP STRIP (FT)

$[(2 \times 152.08) + (48 \times 1.5)] = 376.17 \text{ FT.}$

TOTAL 376 FT

ITEM 518E40000 6" PERFORATED CORRUGATED PLASTIC PIPE (FT)

RA 80.95 FT.
FA 71.58 FT.
152.53 FT.

TOTAL 153 FT

ITEM 518E40010 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS (FT)

RA 20.00 FT. FT.
FA 20.00 FT. FT.
40.00 FT. FT.

TOTAL 40 FT

ITEM 523E20000 DYNAMIC LOAD TESTING (EACH)

RA 1 x 1 = 1 EACH

TOTAL 1 EACH



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ITEM 526E25010 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15") (SY)

2 x 38.00 x 25.00 = 1900.00 SQ. FT. /9= 211.11 SQ. YD.

TOTAL 211 SQ.YD.

ITEM 526E90010 TYPE A INSTALLATION (FT)

2 x 49.6055 = 99.21 FT

TOTAL 99.21 FT

ITEM 843E50000 PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR (SF)

P1 1.00 x 1.00 + 1.17 x 2.00 = 3.33 SQ. FT.

P1 1.00 x 1.00 + 2.00 x 2.00 = 5.00 SQ. FT.

8.33 + 10%

TOTAL 9 SQ. FT.

ITEM 846E00110 POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM (CF)

RA 0.25 x 1.67 x 49.61 = 20.67 CU. FT.

FA 0.25 x 1.67 x 49.61 = 20.67 CU. FT.

41 CU. FT.

TOTAL 41 CU. FT