



CLIENT ODOT District 12  
 PROJECT CUY-490-01.00 / PID 25622  
 SUBJECT Bridge No. CUY-490-0100  
 Estimated Quantity Calculations

PROJECT NO. 2022-1001-00  
 COMP. BY PAT DATE 1/14/2021  
 CHECKED BY MHK DATE 1/14/2021

**REVISION HISTORY**

Stage 1 Plans: COMP. BY CJS / PAT DATE 4/15/2020  
 CHECKED BY PAT / JAM DATE 4/28/2020  
 Stage 3R Plans: REVISED BY PAT DATE 1/14/2021  
 CHECKED BY MHK DATE 1/14/2021  
 Stage 3 Plans: REVISED BY PAT DATE 8/3/2020  
 CHECKED BY JAM DATE 8/5/2020  
 Final Plans: REVISED BY VS DATE 8/8/2023  
 CHECKED BY JDA DATE 8/9/2023

The initials and dates listed in the sheet header reflect the most recent revision of the estimated quantity calculations.

**BRIDGE PARAPET DATA**

Per Standard Drawing BR-1-13:  
 Area of standard 42" BR-1 cross-section = 474.50 sq in  
 Volume of 42" BR-1 14' transition section = 1.71 cy

The existing exterior parapets are 1" wider than BR-1 (9" at top vs 8") and include a 1'-2.25" depth x 2" width fascia. On the superstructure, the existing parapet includes an additional area of 1.25" depth x 19" width at the bottom below the wearing surface. Therefore, adjust values from BR-1-13 as follows:

Area of exterior parapet (abutment) + 474.50 sq in + ( 42.00 x 1.00 + 14.25 x 2.00 ) +  
 Area of wingwall to exist. C.J. = ( 8.75 x 19.00 + 1.25 x 2.00 ) = 713.75 sq in  
 4.96 sf  
 Volume of exterior parapet 14' transition + 1.71 cy + ( 0.29 x 14.00 + 0.20 x 10.00 ) / 27 +  
 Volume of wingwall to exist. C.J. = ( 1.15 x 14.00 + 0.02 x 14.00 ) / 27 = 2.54 cy  
 Area of exterior parapet (superstructure) =  
 + 19.00 x 4.25 + 15.50 x 10.00  
 + 10.50 x 29.00 + 2.00 x 14.25 = 568.75 sq in  
 3.95 sf

The existing median parapets are 50" height as measured from top of wearing surface, plus a 1.25" depth x 17" width at the bottom below the wearing surface.

Area of median parapet (superstructure) = 18.00 x 4.25 + 14.50 x 10.00 + 10.00 x 19.00  
 + 9.00 x 18.00 - 0.50 x 51.25 = 547.88 sq in  
 3.80 sf  
 Area of median parapet (abutment) = 38.00 x 3.00 + 31.00 x 10.00 + 22.00 x 19.00  
 + 20.00 x 18.00 - 0.00 x 50.00 = 1202.00 sq in  
 8.35 sf

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**

This item paid as a LUMP SUM.

**ITEM 202 - APPROACH SLAB REMOVED**

**General:**

	No.		Length (ft)		Width (ft)			
West Abutment, at Ramp C-7:	1	x	25.00	x	36.05	/	9	= 100.14 SY
West Abutment, at Mainline:	1	x	25.00	x	147.17	/	9	= 408.80 SY
East Abutment:	1	x	25.00	x	216.60	/	9	= 601.66 SY
Abutment B-C:	1	x	25.00	x	25.38	/	9	= 70.49 SY
Abutment C-B:	1	x	25.00	x	49.26	/	9	= 136.83 SY

Total: 1317.93 SY

Compare, 1986 Substructure Plans, Sheet 18/193, quantity: 1341.00 SY

Total for General: Say: 1341 SY

**Total for ITEM 202 - APPROACH SLAB REMOVED: 1341 SY**

**ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED**

**General:**

	No.		Length (ft)		Width (ft)			
East side of Independence Road, at Pier 14R south column:	1	x	15.00	x	30.00	/	9	= 50.00 SY

Total: 50.00 SY

Total for General: Say: 50 SY

**Total for ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED: 50 SY**

**ITEM 503 - COFFERDAMS AND EXCAVATION BRACING**

This item paid as a LUMP SUM.



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**ITEM 503 - UNCLASSIFIED EXCAVATION**

**West Abutment:**

	Number		Length (ft)		Width (ft)		Height (ft)						
End of Wingwall for Parapet Work:	1	x	5.00	x	1.00	x 0.5 x (	1.00	+	1.00	) /	27	=	0.19 CY
Other Quantity?	0	x	0.00	x	0.00	x 0.5 x (	0.00	+	0.00	) /	27	=	0.00 CY
Total:													0.19 CY

Total for West Abutment: Say: 0 CY

**East Abutment:**

	Number		Length (ft)		Width (ft)		Height (ft)						
End of Wingwall for Parapet Work:	2	x	5.00	x	1.00	x 0.5 x (	1.00	+	1.00	) /	27	=	0.37 CY
Other Quantity?	0	x	0.00	x	0.00	x 0.5 x (	0.00	+	0.00	) /	27	=	0.00 CY
Total:													0.37 CY

Total for East Abutment: Say: 0 CY

**Abutment B-C:**

	Number		Length (ft)		Width (ft)		Height (ft)						
End of Wingwall for Parapet Work:	1	x	5.00	x	1.00	x 0.5 x (	1.00	+	1.00	) /	27	=	0.19 CY
Other Quantity?	0	x	0.00	x	0.00	x 0.5 x (	0.00	+	0.00	) /	27	=	0.00 CY
Total:													0.19 CY

Total for Abutment B-C: Say: 0 CY

**Abutment C-B:**

	Number		Length (ft)		Width (ft)		Height (ft)						
End of Wingwall for Parapet Work:	2	x	5.00	x	1.00	x 0.5 x (	1.00	+	1.00	) /	27	=	0.37 CY
Other Quantity?	0	x	0.00	x	0.00	x 0.5 x (	0.00	+	0.00	) /	27	=	0.00 CY
Total:													0.37 CY

Total for Abutment C-B: Say: 0 CY

**Total for ITEM 503 - UNCLASSIFIED EXCAVATION: 0 CY**

**ITEM 509 - EPOXY COATED REINFORCING STEEL**

West Abutment:	=	3,105	LB
East Abutment:	=	3,648	LB
Abutment B-C:	=	769	LB
Abutment C-B:	=	1,715	LB
Piers:	=	0	LB
Superstructure:	=	6,011	LB
Total:		15,248	LB

**Total for ITEM 509 - EPOXY COATED REINFORCING STEEL: 15,248 LB**

**ITEM 509 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING REINFORCEMENT, AS PER PLAN**

West Abutment:	Say:	250	LB
East Abutment:	Say:	250	LB
Abutment B-C:	Say:	125	LB
Abutment C-B:	Say:	125	LB
Piers:	Say:	250	LB
Superstructure:	Say:	1,000	LB
Total:		2,000	LB

**Total for ITEM 509 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING REINFORCEMENT, AS PER PLAN: 2,000 LB**

**ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT**

	See Sheets	Number	Number	+	Number	+	Number	=	
West Abutment:	17-19/116:	82	74	+	76	+	226	=	458 EACH
East Abutment:	42-45/116:	142	90	+	92	+	120	=	444 EACH
Abutment B-C:	46/116:						52	=	52 EACH
Abutment C-B:	47/116:						100	=	100 EACH
Total:									1054 EACH

**Total for ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT: 1054 EACH**



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**ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK**

	Number		Length (ft)		Width (ft)		Depth (ft)						
Deck Reconstruction at West Abutment Joint, Left:	1	x	145.83	x	2.08	x	0.76	/	27	=	8.51	CY	
Deck Reconstruction at West Abutment Joint, Right:	1	x	78.33	x	2.08	x	0.76	/	27	=	4.57	CY	
Deck Reconstruction at East Abutment Joint, Left:	1	x	114.48	x	2.08	x	0.71	/	27	=	6.28	CY	
Deck Reconstruction at East Abutment Joint, Right:	1	x	95.70	x	2.08	x	0.71	/	27	=	5.25	CY	
Deck Reconstruction at Abutment B-C Joint:	1	x	26.92	x	2.08	x	0.78	/	27	=	1.62	CY	
Deck Reconstruction at Abutment C-B Joint:	1	x	53.74	x	2.08	x	0.73	/	27	=	3.04	CY	
Deck Reconstruction at Joint 6:	1	x	34.25	x	4.17	x	0.78	/	27	=	4.12	CY	
Total:											33.38	CY	
Total for Superstructure:										Say:	33	CY	
<b>Total for ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK:</b>											<u>33</u>	CY	

**ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)**

	No.		Length (ft)		Area (sf)							
Exterior Parapet, Reconstruction at Abutment Joints:	8	x	2.21	x	3.95	/	27	=	2.58	CY		
Median Parapet, Reconstruction at Abutment Joints:	2	x	2.21	x	3.80	/	27	=	0.62	CY		
Exterior Parapet, Reconstruction at Joint 6:	2	x	4.29	x	3.95	/	27	=	1.26	CY		
Total:											4.46	CY
<b>Total for ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET):</b>											<u>4</u>	CY

**ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT**

**West Abutment:**

Parapet Transition Reconstruction (Right Wingwall only, Left Wingwall to remain):					No.		Vol (cy)					
					1	x	2.54	=	2.54	CY		
					No.		Area (sf)					
Parapet Reconstruction, Left Wingwall (for abutment joint):	1	x	1.50	x	4.96	/	27	=	0.28	CY		
Parapet Reconstruction, Right Wingwall (beyond transition):	1	x	1.00	x	4.96	/	27	=	0.18	CY		
Parapet Reconstruction, Median:	1	x	1.25	x	8.35	/	27	=	0.39	CY		
Top of Backwall Reconstruction:	Number		Length (ft)		Width (ft)		Depth (ft)					
	1	x	223.98	x	1.25	x	1.33	/	27	=	13.83	CY
Total:											17.21	CY
Total for West Abutment:										Say:	<u>17</u>	CY

**East Abutment :**

Parapet Transition Reconstruction (Left & Right Wingwall):					No.		Vol (cy)					
					2	x	2.54	=	5.08	CY		
					No.		Area (sf)					
Parapet Reconstruction, Left Wingwall (beyond transition):	1	x	2.86	x	4.96	/	27	=	0.53	CY		
Parapet Reconstruction, Right Wingwall (beyond transition):	1	x	8.51	x	4.96	/	27	=	1.56	CY		
Parapet Reconstruction, Median:	1	x	1.25	x	8.35	/	27	=	0.39	CY		
Top of Backwall Reconstruction:	Number		Length (ft)		Width (ft)		Depth (ft)					
	1	x	219.48	x	1.25	x	1.33	/	27	=	13.55	CY
Total:											21.11	CY
Total for West Abutment:										Say:	<u>21</u>	CY

**Abutment B-C:**

Parapet Transition Reconstruction (Left Wingwall only):					No.		Vol (cy)					
					1	x	2.54	=	2.54	CY		
					No.		Area (sf)					
Parapet Reconstruction, Left Wingwall (beyond transition):	1	x	5.08	x	4.96	/	27	=	0.93	CY		
Parapet Reconstruction, Right Wingwall (for abutment joint):	1	x	1.50	x	4.96	/	27	=	0.28	CY		
Top of Backwall Reconstruction:	Number		Length (ft)		Width (ft)		Depth (ft)					
	1	x	28.13	x	1.25	x	1.33	/	27	=	1.74	CY
Total:											5.49	CY
Total for Abutment B-C:										Say:	<u>5</u>	CY



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**Abutment C-B:**

Parapet Transition Reconstruction (Left & Right Wingwall):	No.	x	Vol (cy)	=	5.08	CY		
	2		2.54					
Parapet Reconstruction, Left Wingwall (beyond transition):	No.	x	Length (ft)	x	Area (sf)	/ 27 =		
	1		5.04		4.96	0.93		
Parapet Reconstruction, Right Wingwall (for abutment joint):	No.	x	Length (ft)	x	Area (sf)	/ 27 =		
	1		14.50		4.96	2.66		
Top of Backwall Reconstruction:	Number	x	Length (ft)	x	Width (ft)	x	Depth (ft)	/ 27 =
	1		53.03		1.25		1.33	3.27
Total:								11.95
Total for Abutment C-B:							Say:	<u>12</u>
<b>Total for ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT:</b>								<u>55</u>

**ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)**

**West Abutment:**

	Number	x	Length (ft)	x	Perim, Width or Height (ft)	/	9	=	
North Wingwall Parapet, full height section:	1		3.64		9.26 + 9.26	) /	9	=	3.74 SY
North Wingwall Parapet, 10' transition section:	1		10.00		9.26 + 7.76	) /	9	=	9.45 SY
North Wingwall Parapet, 2.5' transition section:	1		2.50		7.76 + 5.79	) /	9	=	1.88 SY
North Wingwall Parapet, 1.5' transition section:	1		1.50		5.79 + 4.33	) /	9	=	0.84 SY
North Wingwall Exterior face below parapet:	1		10.64		3.50 + 0.00	) /	9	=	2.07 SY
South Wingwall Parapet, full height section:	1		6.00		9.26 + 9.26	) /	9	=	6.17 SY
South Wingwall Parapet, 10' transition section:	1		10.00		9.26 + 7.76	) /	9	=	9.45 SY
South Wingwall Parapet, 2.5' transition section:	1		2.50		7.76 + 5.79	) /	9	=	1.88 SY
South Wingwall Parapet, 1.5' transition section:	1		1.50		5.79 + 4.33	) /	9	=	0.84 SY
South Wingwall Exterior face below parapet:	1		8.00		3.61 + 0.00	) /	9	=	1.60 SY
Backwall :	1		223.98		4.62 + 4.64	) /	9	=	115.10 SY
Seat:	1		223.98		2.00 + 2.00	) /	9	=	49.77 SY
Breastwall:	1		223.98		1.00 + 1.25	) /	9	=	28.00 SY
Total:									230.81 SY
Total for West Abutment:							Say:		<u>231</u> SY

**East Abutment:**

	Number	x	Length (ft)	x	Width or Height (ft)	/	9	=	
North Wingwall Parapet, full height section:	1		2.86		9.28 + 9.28	) /	9	=	2.95 SY
North Wingwall Parapet, 10' transition section:	1		10.00		9.28 + 7.76	) /	9	=	9.46 SY
North Wingwall Parapet, 2.5' transition section:	1		2.50		7.76 + 5.79	) /	9	=	1.88 SY
North Wingwall Parapet, 1.5' transition section:	1		1.50		5.79 + 4.33	) /	9	=	0.84 SY
North Wingwall Exterior face below parapet:	1		10.86		6.04 + 0.00	) /	9	=	3.65 SY
South Wingwall Parapet, full height section:	1		8.51		9.32 + 9.32	) /	9	=	8.81 SY
South Wingwall Parapet, 10' transition section:	1		10.00		9.32 + 7.76	) /	9	=	9.49 SY
South Wingwall Parapet, 2.5' transition section:	1		2.50		7.76 + 5.79	) /	9	=	1.88 SY
South Wingwall Parapet, 1.5' transition section:	1		1.50		5.79 + 4.33	) /	9	=	0.84 SY
South Wingwall Exterior face below parapet:	1		12.51		7.00 + 0.00	) /	9	=	4.87 SY
Backwall :	1		219.48		6.80 + 6.88	) /	9	=	166.93 SY
Seat:	1		219.48		2.00 + 2.00	) /	9	=	48.77 SY
Breastwall:	1		219.48		1.00 + 1.25	) /	9	=	27.43 SY
Total:									287.82 SY
Total for East Abutment:							Say:		<u>288</u> SY

**Abutment B-C:**

	Number	x	Length (ft)	x	Width or Height (ft)	/	9	=	
North Wingwall Parapet, full height section:	1		5.08		9.38 + 9.38	) /	9	=	5.30 SY
North Wingwall Parapet, 10' transition section:	1		10.00		9.38 + 7.76	) /	9	=	9.52 SY
North Wingwall Parapet, 2.5' transition section:	1		2.50		7.76 + 5.79	) /	9	=	1.88 SY
North Wingwall Parapet, 1.5' transition section:	1		1.50		5.79 + 4.33	) /	9	=	0.84 SY
North Wingwall Exterior face below parapet:	1		13.08		6.22 + 0.00	) /	9	=	4.52 SY
South Wingwall Parapet:	1		5.93		9.38 + 9.38	) /	9	=	6.18 SY
South Wingwall Exterior face below parapet & above seat:	1		5.93		7.15 + 7.12	) /	9	=	4.70 SY
South Wingwall Exterior face below seat:	1		8.00		8.82 + 8.62	) /	9	=	7.75 SY
Backwall :	1		28.13		7.14 + 7.15	) /	9	=	22.33 SY
Seat:	1		28.13		2.00 + 2.00	) /	9	=	6.25 SY
Breastwall:	1		28.13		1.10 + 8.72	) /	9	=	15.34 SY
Total:									84.62 SY
Total for Abutment B-C:							Say:		<u>85</u> SY



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**Abutment C-B:**

	Number	Length (ft)	Width or Height (ft)					
North Wingwall Parapet, full height section:	1	x 5.04	x 0.5 x (	9.34	+	9.34	) /	9 = 5.23 SY
North Wingwall Parapet, 10' transition section:	1	x 10.00	x 0.5 x (	9.34	+	7.76	) /	9 = 9.50 SY
North Wingwall Parapet, 2.5' transition section:	1	x 2.50	x 0.5 x (	7.76	+	5.79	) /	9 = 1.88 SY
North Wingwall Parapet, 1.5' transition section:	1	x 1.50	x 0.5 x (	5.79	+	4.33	) /	9 = 0.84 SY
North Wingwall Exterior face below parapet:	1	x 6.04	x 0.5 x (	4.30	+	0.00	) /	9 = 1.44 SY
South Wingwall Parapet, full height section:	1	x 14.50	x 0.5 x (	9.34	+	9.34	) /	9 = 15.05 SY
South Wingwall Parapet, 10' transition section:	1	x 10.00	x 0.5 x (	9.34	+	7.76	) /	9 = 9.50 SY
South Wingwall Parapet, 2.5' transition section:	1	x 2.50	x 0.5 x (	7.76	+	5.79	) /	9 = 1.88 SY
South Wingwall Parapet, 1.5' transition section:	1	x 1.50	x 0.5 x (	5.79	+	4.33	) /	9 = 0.84 SY
South Wingwall Exterior face below parapet:	1	x 14.50	x 0.5 x (	7.63	+	0.00	) /	9 = 6.14 SY
Backwall:	1	x 53.03	x 0.5 x (	6.94	+	6.98	) /	9 = 41.01 SY
Seat:	1	x 53.03	x 0.5 x (	2.00	+	2.00	) /	9 = 11.78 SY
Breastwall:	1	x 53.03	x 0.5 x (	1.00	+	1.25	) /	9 = 6.63 SY

Total: 111.74 SY

Total for Abutment C-B: Say: 112 SY

**Piers:**

Notes: Seal All Surfaces, Including Tops of Cap: Piers 4L, 4R, 9L, 9R, 12L, 12R, 15L, 15R, 20L, 20R  
 Seal All Surfaces, Excluding Tops of Cap: Piers 13L, 13R, 14L, 14R  
 Seal Columns Only: Piers 7L, 7R, 8R  
 Seal Repair Areas Only, Cap & Column: Piers 6L, 6R, 10L, 10R  
 Seal Repair Areas Only, Cap: Piers 7L, 7R

	Number	Length (ft)	Width or Height (ft)						
Pier 4L, Cap Top:	1	x 99.88	x 0.5 x (	4.00	+	4.00	) /	9 = 44.39 SY	
Pier 4L, Cap Face:	2	x 12.50	x 0.5 x (	6.00	+	9.09	) /	9 = 20.96 SY	
Pier 4L, Cap Face:	2	x 74.88	x 0.5 x (	9.09	+	9.09	) /	9 = 151.25 SY	
Pier 4L, Cap Face:	2	x 12.50	x 0.5 x (	9.09	+	6.00	) /	9 = 20.96 SY	
Pier 4L, Cap End:	1	x 6.00	x 0.5 x (	4.00	+	4.00	) /	9 = 2.67 SY	
Pier 4L, Cap End:	1	x 6.00	x 0.5 x (	4.00	+	4.00	) /	9 = 2.67 SY	
Pier 4L, Cap Bottom:	1	x 12.88	x 0.5 x (	4.00	+	4.00	) /	9 = 5.72 SY	
Pier 4L, Cap Bottom:	2	x 59.88	x 0.5 x (	4.00	+	4.00	) /	9 = 53.22 SY	
Pier 4L, Cap Bottom:	1	x 12.88	x 0.5 x (	4.00	+	4.00	) /	9 = 5.72 SY	
Pier 4L, Column Face:	2	x 31.87	x 0.5 x (	5.00	+	5.00	) /	9 = 35.41 SY	
Pier 4L, Column Face:	2	x 32.19	x 0.5 x (	5.00	+	5.00	) /	9 = 35.77 SY	
Pier 4L, Column Face:	2	x 32.51	x 0.5 x (	5.00	+	5.00	) /	9 = 36.12 SY	
Pier 4L, Column Side:	2	x 31.87	x 0.5 x (	4.00	+	5.99	) /	9 = 35.38 SY	
Pier 4L, Column Side:	2	x 32.19	x 0.5 x (	4.00	+	6.01	) /	9 = 35.81 SY	
Pier 4L, Column Side:	2	x 32.51	x 0.5 x (	4.00	+	6.03	) /	9 = 36.24 SY	
Pier 4R, Cap Top:	1	x 69.88	x 0.5 x (	4.00	+	4.00	) /	9 = 31.06 SY	
Pier 4R, Cap Face:	2	x 12.50	x 0.5 x (	6.00	+	9.00	) /	9 = 20.83 SY	
Pier 4R, Cap Face:	2	x 44.88	x 0.5 x (	9.00	+	9.00	) /	9 = 89.75 SY	
Pier 4R, Cap Face:	2	x 12.50	x 0.5 x (	9.00	+	6.00	) /	9 = 20.83 SY	
Pier 4R, Cap End:	1	x 6.00	x 0.5 x (	4.00	+	4.00	) /	9 = 2.67 SY	
Pier 4R, Cap End:	1	x 6.00	x 0.5 x (	4.00	+	4.00	) /	9 = 2.67 SY	
Pier 4R, Cap Bottom:	1	x 12.85	x 0.5 x (	4.00	+	4.00	) /	9 = 5.71 SY	
Pier 4R, Cap Bottom:	1	x 34.88	x 0.5 x (	4.00	+	4.00	) /	9 = 15.50 SY	
Pier 4R, Cap Bottom:	1	x 12.85	x 0.5 x (	4.00	+	4.00	) /	9 = 5.71 SY	
Pier 4R, Column Face:	2	x 32.60	x 0.5 x (	5.00	+	5.00	) /	9 = 36.22 SY	
Pier 4R, Column Face:	2	x 32.79	x 0.5 x (	5.00	+	5.00	) /	9 = 36.43 SY	
Pier 4R, Column Side:	2	x 32.60	x 0.5 x (	4.00	+	6.04	) /	9 = 36.36 SY	
Pier 4R, Column Side:	2	x 32.79	x 0.5 x (	4.00	+	6.05	) /	9 = 36.61 SY	
Pier 7L, Column Face:	2	x 62.23	x 0.5 x (	6.00	+	6.00	) /	9 = 82.97 SY	
Pier 7L, Column Face:	2	x 62.39	x 0.5 x (	6.00	+	6.00	) /	9 = 83.19 SY	
Pier 7L, Column Side:	2	x 62.23	x 0.5 x (	4.50	+	8.39	) /	9 = 89.12 SY	
Pier 7L, Column Side:	2	x 62.39	x 0.5 x (	4.50	+	8.40	) /	9 = 89.42 SY	
Pier 7R, Column Face:	2	x 59.34	x 0.5 x (	5.00	+	5.00	) /	9 = 65.93 SY	
Pier 7R, Column Face:	2	x 59.34	x 0.5 x (	5.00	+	5.00	) /	9 = 65.93 SY	
Pier 7R, Column Side:	2	x 59.34	x 0.5 x (	4.00	+	7.71	) /	9 = 77.20 SY	
Pier 7R, Column Side:	2	x 59.34	x 0.5 x (	4.00	+	7.71	) /	9 = 77.20 SY	
Pier 8R, Column Face:	2	x 66.29	x 0.5 x (	5.00	+	5.00	) /	9 = 73.66 SY	
Pier 8R, Column Face:	2	x 66.29	x 0.5 x (	5.00	+	5.00	) /	9 = 73.66 SY	
Pier 8R, Column Side:	2	x 66.29	x 0.5 x (	4.00	+	8.14	) /	9 = 89.44 SY	
Pier 8R, Column Side:	2	x 66.29	x 0.5 x (	4.00	+	8.14	) /	9 = 89.44 SY	
Pier 9L, Cap Top:	1	x 67.33	x 0.5 x (	5.00	+	5.00	) /	9 = 37.41 SY	
Pier 9L, Cap Face:	2	x 21.00	x 0.5 x (	18.43	+	22.93	) /	9 = 96.51 SY	
Pier 9L, Cap Face:	2	x 25.33	x 0.5 x (	22.93	+	22.67	) /	9 = 128.36 SY	
Pier 9L, Cap Face:	2	x 21.00	x 0.5 x (	22.67	+	18.17	) /	9 = 95.29 SY	
Pier 9L, Cap End:	1	x 18.43	x 0.5 x (	5.00	+	5.00	) /	9 = 10.24 SY	
Pier 9L, Cap End:	1	x 18.17	x 0.5 x (	5.00	+	5.00	) /	9 = 10.09 SY	
Pier 9L, Cap Bottom:	1	x 21.48	x 0.5 x (	5.00	+	5.00	) /	9 = 11.93 SY	
Pier 9L, Cap Bottom:	1	x 21.48	x 0.5 x (	5.00	+	5.00	) /	9 = 11.93 SY	
Pier 9L, Stem Face:	(Ignore Corner Bevel)	2	x 61.79	x 0.5 x (	25.33	+	25.33	) /	9 = 347.85 SY
Pier 9L, Stem Side:	(Ignore Corner Bevel)	2	x 61.79	x 0.5 x (	5.00	+	8.86	) /	9 = 95.17 SY
Pier 9R, Cap Top:	1	x 67.33	x 0.5 x (	4.50	+	4.50	) /	9 = 33.67 SY	
Pier 9R, Cap Face:	2	x 14.00	x 0.5 x (	9.00	+	12.46	) /	9 = 33.38 SY	
Pier 9R, Cap Face:	2	x 39.33	x 0.5 x (	12.46	+	12.18	) /	9 = 107.69 SY	
Pier 9R, Cap Face:	2	x 14.00	x 0.5 x (	12.18	+	9.00	) /	9 = 32.95 SY	
Pier 9R, Cap End:	1	x 9.00	x 0.5 x (	4.50	+	4.50	) /	9 = 4.50 SY	
Pier 9R, Cap End:	1	x 9.00	x 0.5 x (	4.50	+	4.50	) /	9 = 4.50 SY	



CLIENT ODOT District 12  
 PROJECT CUY-490-01.00 / PID 25622  
 SUBJECT Bridge No. CUY-490-0100  
 Estimated Quantity Calculations

PROJECT NO. 2022-1001-00  
 COMP. BY PAT DATE 1/14/2021  
 CHECKED BY MHK DATE 1/14/2021

Pier 9R, Cap Bottom:	1	x	14.42	x 0.5 x (	4.50	+	4.50	) /	9	=	7.21	SY
Pier 9R, Cap Bottom:	1	x	23.33	x 0.5 x (	4.50	+	4.50	) /	9	=	11.67	SY
Pier 9R, Cap Bottom:	1	x	14.36	x 0.5 x (	4.50	+	4.50	) /	9	=	7.18	SY
Pier 9R, Column Face:	2	x	62.55	x 0.5 x (	8.00	+	8.00	) /	9	=	111.20	SY
Pier 9R, Column Face:	2	x	62.22	x 0.5 x (	8.00	+	8.00	) /	9	=	110.61	SY
Pier 9R, Column Side:	2	x	62.55	x 0.5 x (	4.50	+	8.41	) /	9	=	89.72	SY
Pier 9R, Column Side:	2	x	62.22	x 0.5 x (	4.50	+	8.39	) /	9	=	89.10	SY
Pier 12L, Cap Top:	1	x	67.33	x 0.5 x (	4.50	+	4.50	) /	9	=	33.67	SY
Pier 12L, Cap Face:	2	x	14.00	x 0.5 x (	9.00	+	12.22	) /	9	=	33.01	SY
Pier 12L, Cap Face:	2	x	39.33	x 0.5 x (	12.22	+	12.00	) /	9	=	105.85	SY
Pier 12L, Cap Face:	2	x	14.00	x 0.5 x (	12.00	+	9.00	) /	9	=	32.67	SY
Pier 12L, Cap End:	1	x	9.00	x 0.5 x (	4.50	+	4.50	) /	9	=	4.50	SY
Pier 12L, Cap End:	1	x	9.00	x 0.5 x (	4.50	+	4.50	) /	9	=	4.50	SY
Pier 12L, Cap Bottom:	1	x	14.37	x 0.5 x (	4.50	+	4.50	) /	9	=	7.18	SY
Pier 12L, Cap Bottom:	1	x	23.33	x 0.5 x (	4.50	+	4.50	) /	9	=	11.67	SY
Pier 12L, Cap Bottom:	1	x	14.32	x 0.5 x (	4.50	+	4.50	) /	9	=	7.16	SY
Pier 12L, Column Face:	2	x	76.40	x 0.5 x (	8.00	+	8.00	) /	9	=	135.82	SY
Pier 12L, Column Face:	2	x	75.69	x 0.5 x (	8.00	+	8.00	) /	9	=	134.56	SY
Pier 12L, Column Side:	2	x	76.40	x 0.5 x (	4.50	+	9.28	) /	9	=	116.93	SY
Pier 12L, Column Side:	2	x	75.69	x 0.5 x (	4.50	+	9.23	) /	9	=	115.47	SY
Pier 12R, Cap Top:	1	x	67.33	x 0.5 x (	4.50	+	4.50	) /	9	=	33.67	SY
Pier 12R, Cap Face:	2	x	14.00	x 0.5 x (	9.00	+	12.42	) /	9	=	33.32	SY
Pier 12R, Cap Face:	2	x	39.33	x 0.5 x (	12.42	+	12.00	) /	9	=	106.72	SY
Pier 12R, Cap Face:	2	x	14.00	x 0.5 x (	12.00	+	9.00	) /	9	=	32.67	SY
Pier 12R, Cap End:	1	x	9.00	x 0.5 x (	4.50	+	4.50	) /	9	=	4.50	SY
Pier 12R, Cap End:	1	x	9.00	x 0.5 x (	4.50	+	4.50	) /	9	=	4.50	SY
Pier 12R, Cap Bottom:	1	x	14.41	x 0.5 x (	4.50	+	4.50	) /	9	=	7.21	SY
Pier 12R, Cap Bottom:	1	x	23.33	x 0.5 x (	4.50	+	4.50	) /	9	=	11.67	SY
Pier 12R, Cap Bottom:	1	x	14.32	x 0.5 x (	4.50	+	4.50	) /	9	=	7.16	SY
Pier 12R, Column Face:	2	x	75.41	x 0.5 x (	8.00	+	8.00	) /	9	=	134.06	SY
Pier 12R, Column Face:	2	x	74.81	x 0.5 x (	8.00	+	8.00	) /	9	=	133.00	SY
Pier 12R, Column Side:	2	x	75.41	x 0.5 x (	4.50	+	9.21	) /	9	=	114.90	SY
Pier 12R, Column Side:	2	x	74.81	x 0.5 x (	4.50	+	9.18	) /	9	=	113.67	SY
Pier 13L, Cap Top:	0	x	67.33	x 0.5 x (	4.50	+	4.50	) /	9	=	0.00	SY
Pier 13L, Cap Face:	2	x	13.00	x 0.5 x (	7.78	+	10.78	) /	9	=	26.81	SY
Pier 13L, Cap Face:	2	x	41.33	x 0.5 x (	10.78	+	10.48	) /	9	=	97.64	SY
Pier 13L, Cap Face:	2	x	13.00	x 0.5 x (	10.48	+	7.48	) /	9	=	25.94	SY
Pier 13L, Cap End:	1	x	7.78	x 0.5 x (	4.50	+	4.50	) /	9	=	3.89	SY
Pier 13L, Cap End:	1	x	7.48	x 0.5 x (	4.50	+	4.50	) /	9	=	3.74	SY
Pier 13L, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 13L, Cap Bottom:	1	x	29.33	x 0.5 x (	4.50	+	4.50	) /	9	=	14.67	SY
Pier 13L, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 13L, Column Face:	2	x	67.95	x 0.5 x (	6.00	+	6.00	) /	9	=	90.60	SY
Pier 13L, Column Face:	2	x	74.19	x 0.5 x (	6.00	+	6.00	) /	9	=	98.92	SY
Pier 13L, Column Side:	2	x	67.95	x 0.5 x (	4.50	+	8.75	) /	9	=	100.01	SY
Pier 13L, Column Side:	2	x	74.19	x 0.5 x (	4.50	+	9.14	) /	9	=	112.41	SY
Pier 13R, Cap Top:	0	x	67.33	x 0.5 x (	4.50	+	4.50	) /	9	=	0.00	SY
Pier 13R, Cap Face:	2	x	13.00	x 0.5 x (	7.79	+	10.79	) /	9	=	26.84	SY
Pier 13R, Cap Face:	2	x	41.33	x 0.5 x (	10.79	+	10.52	) /	9	=	97.87	SY
Pier 13R, Cap Face:	2	x	13.00	x 0.5 x (	10.52	+	7.52	) /	9	=	26.06	SY
Pier 13R, Cap End:	1	x	7.79	x 0.5 x (	4.50	+	4.50	) /	9	=	3.89	SY
Pier 13R, Cap End:	1	x	7.52	x 0.5 x (	4.50	+	4.50	) /	9	=	3.76	SY
Pier 13R, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 13R, Cap Bottom:	1	x	29.33	x 0.5 x (	4.50	+	4.50	) /	9	=	14.67	SY
Pier 13R, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 13R, Column Face:	2	x	68.69	x 0.5 x (	6.00	+	6.00	) /	9	=	91.59	SY
Pier 13R, Column Face:	2	x	76.99	x 0.5 x (	6.00	+	6.00	) /	9	=	102.65	SY
Pier 13R, Column Side:	2	x	68.69	x 0.5 x (	4.50	+	8.79	) /	9	=	101.46	SY
Pier 13R, Column Side:	2	x	76.99	x 0.5 x (	4.50	+	9.31	) /	9	=	118.15	SY
Pier 14L, Cap Top:	0	x	72.34	x 0.5 x (	4.50	+	4.50	) /	9	=	0.00	SY
Pier 14L, Cap Face:	2	x	13.00	x 0.5 x (	7.76	+	10.76	) /	9	=	26.75	SY
Pier 14L, Cap Face:	2	x	46.34	x 0.5 x (	10.76	+	10.44	) /	9	=	109.17	SY
Pier 14L, Cap Face:	2	x	13.00	x 0.5 x (	10.44	+	7.44	) /	9	=	25.83	SY
Pier 14L, Cap End:	1	x	7.76	x 0.5 x (	4.50	+	4.50	) /	9	=	3.88	SY
Pier 14L, Cap End:	1	x	7.44	x 0.5 x (	4.50	+	4.50	) /	9	=	3.72	SY
Pier 14L, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 14L, Cap Bottom:	1	x	34.34	x 0.5 x (	4.50	+	4.50	) /	9	=	17.17	SY
Pier 14L, Cap Bottom:	1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 14L, Column Face:	2	x	49.81	x 0.5 x (	6.00	+	6.00	) /	9	=	66.41	SY
Pier 14L, Column Face:	2	x	50.90	x 0.5 x (	6.00	+	6.00	) /	9	=	67.87	SY
Pier 14L, Column Side:	2	x	49.81	x 0.5 x (	4.50	+	7.61	) /	9	=	67.04	SY
Pier 14L, Column Side:	2	x	50.90	x 0.5 x (	4.50	+	7.68	) /	9	=	68.89	SY



CLIENT ODOT District 12  
 PROJECT CUY-490-01.00 / PID 25622  
 SUBJECT Bridge No. CUY-490-0100  
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 CHECKED BY MHK DATE 1/14/2021

Pier 14R, Cap Top:	(Do Not Seal)	0	x	67.33	x 0.5 x (	4.50	+	4.50	) /	9	=	0.00	SY
Pier 14R, Cap Face:		2	x	13.00	x 0.5 x (	7.81	+	10.81	) /	9	=	26.90	SY
Pier 14R, Cap Face:		2	x	41.33	x 0.5 x (	10.81	+	10.57	) /	9	=	98.19	SY
Pier 14R, Cap Face:		2	x	13.00	x 0.5 x (	10.57	+	7.57	) /	9	=	26.20	SY
Pier 14R, Cap End:		1	x	7.81	x 0.5 x (	4.50	+	4.50	) /	9	=	3.91	SY
Pier 14R, Cap End:		1	x	7.57	x 0.5 x (	4.50	+	4.50	) /	9	=	3.78	SY
Pier 14R, Cap Bottom:		1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 14R, Cap Bottom:		1	x	29.33	x 0.5 x (	4.50	+	4.50	) /	9	=	14.67	SY
Pier 14R, Cap Bottom:		1	x	13.34	x 0.5 x (	4.50	+	4.50	) /	9	=	6.67	SY
Pier 14R, Column Face:		2	x	54.58	x 0.5 x (	6.00	+	6.00	) /	9	=	72.77	SY
Pier 14R, Column Face:		2	x	60.33	x 0.5 x (	6.00	+	6.00	) /	9	=	80.44	SY
Pier 14R, Column Side:		2	x	54.58	x 0.5 x (	4.50	+	7.91	) /	9	=	75.27	SY
Pier 14R, Column Side:		2	x	60.33	x 0.5 x (	4.50	+	8.27	) /	9	=	85.61	SY
Pier 15L, Cap Top:		1	x	74.23	x 0.5 x (	4.00	+	4.00	) /	9	=	32.99	SY
Pier 15L, Cap Face:		2	x	12.50	x 0.5 x (	6.00	+	9.44	) /	9	=	21.44	SY
Pier 15L, Cap Face:		2	x	49.23	x 0.5 x (	9.44	+	9.13	) /	9	=	101.58	SY
Pier 15L, Cap Face:		2	x	12.50	x 0.5 x (	9.13	+	6.00	) /	9	=	21.01	SY
Pier 15L, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 15L, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 15L, Cap Bottom:		1	x	12.96	x 0.5 x (	4.00	+	4.00	) /	9	=	5.76	SY
Pier 15L, Cap Bottom:		1	x	39.23	x 0.5 x (	4.00	+	4.00	) /	9	=	17.44	SY
Pier 15L, Cap Bottom:		1	x	12.89	x 0.5 x (	4.00	+	4.00	) /	9	=	5.73	SY
Pier 15L, Column Face:		2	x	43.56	x 0.5 x (	5.00	+	5.00	) /	9	=	48.40	SY
Pier 15L, Column Face:		2	x	42.57	x 0.5 x (	5.00	+	5.00	) /	9	=	47.30	SY
Pier 15L, Column Side:		2	x	43.56	x 0.5 x (	4.00	+	6.72	) /	9	=	51.90	SY
Pier 15L, Column Side:		2	x	42.57	x 0.5 x (	4.00	+	6.66	) /	9	=	50.42	SY
Pier 15R, Cap Top:		1	x	67.33	x 0.5 x (	4.00	+	4.00	) /	9	=	29.93	SY
Pier 15R, Cap Face:		2	x	12.50	x 0.5 x (	6.00	+	9.28	) /	9	=	21.22	SY
Pier 15R, Cap Face:		2	x	42.33	x 0.5 x (	9.28	+	9.11	) /	9	=	86.50	SY
Pier 15R, Cap Face:		2	x	12.50	x 0.5 x (	9.11	+	6.00	) /	9	=	20.99	SY
Pier 15R, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 15R, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 15R, Cap Bottom:		1	x	12.92	x 0.5 x (	4.00	+	4.00	) /	9	=	5.74	SY
Pier 15R, Cap Bottom:		1	x	32.33	x 0.5 x (	4.00	+	4.00	) /	9	=	14.37	SY
Pier 15R, Cap Bottom:		1	x	12.88	x 0.5 x (	4.00	+	4.00	) /	9	=	5.72	SY
Pier 15R, Column Face:		2	x	44.41	x 0.5 x (	5.00	+	5.00	) /	9	=	49.34	SY
Pier 15R, Column Face:		2	x	47.57	x 0.5 x (	5.00	+	5.00	) /	9	=	52.86	SY
Pier 15R, Column Side:		2	x	44.41	x 0.5 x (	4.00	+	6.78	) /	9	=	53.17	SY
Pier 15R, Column Side:		2	x	47.57	x 0.5 x (	4.00	+	6.97	) /	9	=	58.00	SY
Pier 20L, Cap Top:		1	x	67.33	x 0.5 x (	4.00	+	4.00	) /	9	=	29.93	SY
Pier 20L, Cap Face:		2	x	12.50	x 0.5 x (	6.00	+	9.26	) /	9	=	21.19	SY
Pier 20L, Cap Face:		2	x	42.33	x 0.5 x (	9.26	+	8.76	) /	9	=	84.76	SY
Pier 20L, Cap Face:		2	x	12.50	x 0.5 x (	8.76	+	6.00	) /	9	=	20.50	SY
Pier 20L, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 20L, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 20L, Cap Bottom:		1	x	12.92	x 0.5 x (	4.00	+	4.00	) /	9	=	5.74	SY
Pier 20L, Cap Bottom:		1	x	32.33	x 0.5 x (	4.00	+	4.00	) /	9	=	14.37	SY
Pier 20L, Cap Bottom:		1	x	12.80	x 0.5 x (	4.00	+	4.00	) /	9	=	5.69	SY
Pier 20L, Column Face:		2	x	7.73	x 0.5 x (	5.00	+	5.00	) /	9	=	8.59	SY
Pier 20L, Column Face:		2	x	17.93	x 0.5 x (	5.00	+	5.00	) /	9	=	19.92	SY
Pier 20L, Column Side:		2	x	7.73	x 0.5 x (	4.00	+	4.48	) /	9	=	7.29	SY
Pier 20L, Column Side:		2	x	17.93	x 0.5 x (	4.00	+	5.12	) /	9	=	18.17	SY
Pier 20R, Cap Top:		1	x	75.13	x 0.5 x (	4.00	+	4.00	) /	9	=	33.39	SY
Pier 20R, Cap Face:		2	x	12.50	x 0.5 x (	6.00	+	9.03	) /	9	=	20.88	SY
Pier 20R, Cap Face:		2	x	50.13	x 0.5 x (	9.03	+	8.87	) /	9	=	99.69	SY
Pier 20R, Cap Face:		2	x	12.50	x 0.5 x (	8.87	+	6.00	) /	9	=	20.65	SY
Pier 20R, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 20R, Cap End:		1	x	6.00	x 0.5 x (	4.00	+	4.00	) /	9	=	2.67	SY
Pier 20R, Cap Bottom:		1	x	12.86	x 0.5 x (	4.00	+	4.00	) /	9	=	5.72	SY
Pier 20R, Cap Bottom:		1	x	40.13	x 0.5 x (	4.00	+	4.00	) /	9	=	17.83	SY
Pier 20R, Cap Bottom:		1	x	12.83	x 0.5 x (	4.00	+	4.00	) /	9	=	5.70	SY
Pier 20R, Column Face:		2	x	34.65	x 0.5 x (	5.00	+	5.00	) /	9	=	38.50	SY
Pier 20R, Column Face:		2	x	51.17	x 0.5 x (	5.00	+	5.00	) /	9	=	56.86	SY
Pier 20R, Column Side:		2	x	34.65	x 0.5 x (	4.00	+	6.17	) /	9	=	39.14	SY
Pier 20R, Column Side:		2	x	51.17	x 0.5 x (	4.00	+	7.20	) /	9	=	63.67	SY

	From Sheet	Location No.	Concrete Repair Area Length (ft)	Concrete Repair Area Length (ft)	Sealing Area (+1' All Around) Length (ft)	Sealing Area (+1' All Around) Length (ft)							
Pier 6L & Pier 6R:	22/116	1	2.00	x	4.00	3.00	x	5.00	/	9	=	1.67	SY
Pier 7L & Pier 7R:	24/116	3	6.00	x	6.75	7.00	x	7.75	/	9	=	6.03	SY
Pier 10L & Pier 10R:	29/116	1	1.00	x	1.00	2.00	x	2.00	/	9	=	0.44	SY
Pier 10L & Pier 10R:	29/116	2	3.00	x	5.00	4.00	x	6.00	/	9	=	2.67	SY
Pier 10L & Pier 10R:	30/116	1	1.00	x	1.00	2.00	x	2.00	/	9	=	0.44	SY

Contingency for Sealing Repair Areas Above: Add: 50% = 5.63 SY  
 Total: 8425.58 SY  
 Total for Piers: Say: 8426 SY



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**Superstructure:**

	Number		Length (ft)		Perimeter (ft)				
Unit 1L North Parapet:	1	x	246.05	x	9.51	/	9	=	259.98 SY
Unit 1L North Median Barrier:	1	x	241.79	x	5.11	/	9	=	137.26 SY
Unit 1R South Median Barrier:	1	x	241.79	x	5.11	/	9	=	137.26 SY
Unit 1R South Parapet:	1	x	241.79	x	9.51	/	9	=	255.47 SY
Unit 2L North Parapet:	1	x	689.13	x	9.51	/	9	=	728.12 SY
Unit 2L North Median Barrier:	1	x	687.44	x	5.11	/	9	=	390.26 SY
Unit 2R South Median Barrier:	1	x	738.44	x	5.11	/	9	=	419.21 SY
Unit 2R South Parapet:	1	x	738.48	x	9.51	/	9	=	780.27 SY
Unit 3L North Parapet:	1	x	785.16	x	9.51	/	9	=	829.59 SY
Unit 3L North Median Barrier:	1	x	778.46	x	5.11	/	9	=	441.93 SY
Unit 3R South Median Barrier:	1	x	763.67	x	5.11	/	9	=	433.53 SY
Unit 3R South Parapet:	1	x	756.20	x	9.51	/	9	=	798.99 SY
Unit 4L North Parapet:	1	x	527.97	x	9.51	/	9	=	557.84 SY
Unit 4L North Median Barrier:	1	x	526.50	x	5.11	/	9	=	298.89 SY
Unit 4R South Median Barrier:	1	x	490.49	x	5.11	/	9	=	278.45 SY
Unit 4R South Parapet:	1	x	485.58	x	9.51	/	9	=	513.06 SY
Unit 5L North Parapet:	1	x	659.24	x	9.51	/	9	=	696.54 SY
Unit 5L North Median Barrier:	1	x	658.67	x	5.11	/	9	=	373.92 SY
Unit 5R South Median Barrier:	1	x	658.67	x	5.11	/	9	=	373.92 SY
Unit 5R South Parapet:	1	x	651.98	x	9.51	/	9	=	688.87 SY
Unit 6L North Parapet:	1	x	504.10	x	9.51	/	9	=	532.63 SY
Unit 6L North Median Barrier:	1	x	563.89	x	5.11	/	9	=	320.12 SY
Unit 6R South Median Barrier:	1	x	563.89	x	5.11	/	9	=	320.12 SY
Unit 6R North and South Inside Parapet:	1	x	312.95	x	9.51	/	9	=	330.66 SY
Unit 6R South Parapet:	1	x	389.92	x	9.51	/	9	=	411.98 SY
Unit 6CB North Parapet:	1	x	575.11	x	9.51	/	9	=	607.66 SY
Unit 6CB South Parapet:	1	x	585.79	x	9.51	/	9	=	618.94 SY
Total:									12535.49 SY
Total for Superstructure:								Say:	<u>12535</u> SY

**General:**

	Number		Length (ft)		Perimeter (ft)				
Approach Slab Median Barrier, West Abutment:	1	x	20.00	x	10.05	/	9	=	22.34 SY
Approach Slab Median Barrier, East Abutment:	1	x	20.00	x	10.05	/	9	=	22.34 SY
Total:									44.68 SY
Total for General:								Say:	<u>45</u> SY

**Total for ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):** 21,722 SY

**ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION**

**West Abutment:**

See Tables on Sheets 17/116 - 19/116:	Length (ft)		Length (ft)		Length (ft)				
	0.0	+	1.5	+	0.0	=	1.5	FT	
Total:									1.5 FT
Total for West Abutment:								Say:	<u>2</u> FT

**East Abutment:**

See Tables on Sheets 42/116 - 45/116:	Length (ft)		Length (ft)		Length (ft)		Length (ft)		
	6.0	+	30.8	+	33.0	+	0.0	=	69.8 FT
Total:									69.8 FT
Total for East Abutment:								Say:	<u>70</u> FT

**Abutment B-C:**

See Table on Sheet 46/116:	Length (ft)								
	0.0	=	0.0	FT					
Total:									0.0 FT
Total for Abutment B-C:								Say:	<u>0</u> FT

**Abutment C-B:**

See Tables on Sheets 47/116 - 48/116:	Length (ft)		Length (ft)						
	35.6	+	0.0	=	35.6	FT			
Total:									35.6 FT
Total for Abutment C-B:								Say:	<u>36</u> FT





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**Piers:**

		Length (ft)		Length (ft)	=	
Pier 4L/4R:	See Table on Sheet 20/116:			223.5	=	223.5 FT
Pier 5L/5R:	See Table on Sheet 21/116:			129.8	=	129.8 FT
Pier 6L/6R:	See Tables on Sheets 22/116 & 23/116:	75.0	+	109.3	=	184.3 FT
Pier 7L/7R:	See Tables on Sheets 24/116 & 25/116:	234.0	+	207.5	=	441.5 FT
Pier 8R:	See Table on Sheet 26/116:			39.0	=	39.0 FT
Pier 9L/9R:	See Tables on Sheets 27/116 & 28/116:	208.3	+	97.5	=	305.8 FT
Pier 10L/10R:	See Tables on Sheets 29/116 & 30/116:	293.6	+	334.5	=	628.1 FT
Pier 11L/11R:	See Table on Sheet 31/116:			37.5	=	37.5 FT
Pier 12L/12R:	See Table on Sheet 32/116:			361.5	=	361.5 FT
Pier 13L/13R:	See Table on Sheet 33/116:			52.5	=	52.5 FT
Pier 16L/16R:	See Table on Sheet 34/116:			12.0	=	12.0 FT
Pier 17L/17R:	See Table on Sheet 35/116:			19.5	=	19.5 FT
Pier 18L/18R:	See Table on Sheet 36/116:			24.0	=	24.0 FT
Pier 19L/19R:	See Table on Sheet 37/116:			49.5	=	49.5 FT
Pier 20L/20R:	See Table on Sheet 38/116:			46.5	=	46.5 FT
Pier 21L/21R:	See Table on Sheet 39/116:			24.0	=	24.0 FT
Pier 22L/22R:	See Table on Sheet 40/116:			24.0	=	24.0 FT
Pier 23L/23R, 27C-B:	See Table on Sheet 41/116:			12.0	=	12.0 FT

Total: 2614.9 FT

Total for Piers: Say: 2615 FT

**Total for ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION: 2723 FT**

**ITEM 512 - REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES**

**West Abutment:**

Area calculated for sealing, less new parapets: Area (sy) 230.81 - Area (sy) 18.35 = 212.46 SY

Total: 212.46 SY

Total for West Abutment: Say: 212 SY

**East Abutment:**

Area calculated for sealing, less new parapets: Area (sy) 287.82 - Area (sy) 41.03 = 246.78 SY

Total: 246.78 SY

Total for East Abutment: Say: 247 SY

**Abutment B-C:**

Area calculated for sealing, less new parapets: Area (sy) 84.62 - Area (sy) 17.55 = 67.07 SY

Total: 67.07 SY

Total for Abutment B-C: Say: 67 SY

**Abutment C-B:**

Area calculated for sealing, less new parapets: Area (sy) 111.74 - Area (sy) 44.73 = 67.01 SY

Total: 67.01 SY

Total for Abutment C-B: Say: 67 SY

**Superstructure:**

Area calculated for sealing, less new parapets: Area (sy) 12535.49 - Area (sy) 26.96 = 12508.53 SY

Total: 12508.53 SY

Total for Superstructure: Say: 12509 SY

**Total for ITEM 512 - REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES: 13102 SY**

**ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF**

**Superstructure:**

	Number		Length (ft)		Weight (lb/ft)	=	
End Crossframes (using L4x4x3/8") at West Abutment, Left:	17	x	20.33	x	9.80	=	3387.68 LB
End Crossframes (using L4x4x3/8") at West Abutment, Right:	8	x	21.51	x	9.80	=	1686.35 LB
End Crossframes (using L4x4x3/8") at East Abutment, Left:	12	x	28.43	x	9.80	=	3342.82 LB
End Crossframes (using L4x4x3/8") at East Abutment, Right:	10	x	29.42	x	9.80	=	2883.51 LB
End Crossframes (using L4x4x3/8") at Abutment B-C:	3	x	29.71	x	9.80	=	873.56 LB
End Crossframes (using L4x4x3/8") at Abutment C-B:	4	x	32.63	x	9.80	=	1278.93 LB
End Crossframes (using L4x4x3/8") at Joint 6:	3	x	30.22	x	9.80	=	888.46 LB
Contingency for Crossframe Gusset Plates, add 10%:						=	1434.13 LB

Total: 15775.45 LB

Total for Superstructure: Say: 15,800 LB

**Total for ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF: 15,800 LB**



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**ITEM 513 - STRUCTURAL STEEL, MISC.: INSPECTION SAFETY CABLE SYSTEM REPAIR**

This item paid as a LUMP SUM.

**ITEM 513 - STRUCTURAL STEEL, MISC.: FINGER JOINT EXPANSION PLATE REPAIR**

**Superstructure:**

Total for Superstructure: Repair at Joint 2L: Say: 1 EACH

**Total for ITEM 513 - STRUCTURAL STEEL, MISC.: FINGER JOINT EXPANSION PLATE REPAIR:** 1 EACH

**ITEM 513 - STRUCTURAL STEEL, MISC.: FINGER JOINT SINGLE FINGER REPAIR**

**Superstructure:**

Total for Superstructure: Repairs at Joints 2R, 3L & 3R: Say: 3 EACH

**Total for ITEM 513 - STRUCTURAL STEEL, MISC.: FINGER JOINT SINGLE FINGER REPAIR:** 3 EACH

**ITEM 513 - STRUCTURAL STEEL, MISC.: STRUCTURAL STEEL, MISC.: REPLACE LOOSE OR MISSING BOLT**

**Superstructure:**

Total for Superstructure: Estimate per Framing Plan plus Contingency: Say: 125 EACH

**Total for ITEM 513 - STRUCTURAL STEEL, MISC.: STRUCTURAL STEEL, MISC.: REPLACE LOOSE OR MISSING BOLT:** 125 EACH

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

**Superstructure:**

			Number		Perimeter (ft)		Length (ft)			
Girder Ends at West Abutment:	W36x135		27	x	8.80	x	10.00	=	2376.45	SF
Girder Ends at East Abutment:	Plate Girders		24	x	13.15	x	10.00	=	3155.00	SF
Girder Ends at Abutment B-C:	Plate Girders		4	x	13.31	x	10.00	=	532.50	SF
Girder Ends at Abutment C-B:	Plate Girders		5	x	13.63	x	10.00	=	681.25	SF
Girder Ends at Joint 1, Unit 1:	W36x150		23	x	8.82	x	10.00	=	2029.27	SF
Cross Beam at Joint 1, Unit 1:	W36x150		1	x	8.82	x	164.00	=	1446.96	SF
Girder Ends at Joint 1, Unit 2:	Plate Girders		7	x	20.17	x	10.00	=	1411.88	SF
Girder Ends at Joint 1, Unit 2:	Plate Girders		5	x	19.20	x	10.00	=	960.21	SF
Stringer Ends at Joint 1, Unit 2:	W18x46	X-Frames: 10	10	x	4.43	x	10.00	=	443.08	SF
Girder Ends at Joint 2, Unit 2:	Plate Girders		1	x	21.81	x	10.00	=	218.13	SF
Girder Ends at Joint 2, Unit 2:	Plate Girders		4	x	20.32	x	10.00	=	812.92	SF
Girder Ends at Joint 2, Unit 2:	Plate Girders		5	x	19.20	x	10.00	=	960.00	SF
Stringer Ends at Joint 2, Unit 2:	W18x46	X-Frames: 8	8	x	4.43	x	10.00	=	354.47	SF
Girder Ends at Joint 2, Unit 3:	Plate Girders		4	x	21.15	x	10.00	=	845.83	SF
Girder Ends at Joint 2, Unit 3:	Plate Girders		6	x	22.69	x	10.00	=	1361.25	SF
Stringer Ends at Joint 2, Unit 3:	W18x46	X-Frames: 8	8	x	4.43	x	10.00	=	354.47	SF
Girder Ends at Joint 3, Unit 3:	Plate Girders		4	x	21.15	x	10.00	=	845.83	SF
Girder Ends at Joint 3, Unit 3:	Plate Girders		6	x	22.69	x	10.00	=	1361.25	SF
Stringer Ends at Joint 3, Unit 3:	W18x46	X-Frames: 8	8	x	4.43	x	10.00	=	354.47	SF
Girder Ends at Joint 3, Unit 4:	Plate Girders		2	x	20.31	x	10.00	=	406.25	SF
Girder Ends at Joint 3, Unit 4:	Plate Girders		3	x	21.33	x	10.00	=	640.00	SF
Girder Ends at Joint 3, Unit 4:	Plate Girders		2	x	19.38	x	10.00	=	387.50	SF
Girder Ends at Joint 3, Unit 4:	Plate Girders		3	x	19.92	x	10.00	=	597.50	SF
Stringer Ends at Joint 3, Unit 4:	W18x46	X-Frames: 8	8	x	4.43	x	10.00	=	354.47	SF
Girder Ends at Joint 4, Unit 4:	Plate Girders		2	x	20.17	x	10.00	=	403.33	SF
Girder Ends at Joint 4, Unit 4:	Plate Girders		3	x	21.21	x	10.00	=	636.25	SF
Girder Ends at Joint 4, Unit 4:	Plate Girders		2	x	19.19	x	10.00	=	383.75	SF
Girder Ends at Joint 4, Unit 4:	Plate Girders		3	x	19.75	x	10.00	=	592.50	SF
Stringer Ends at Joint 4, Unit 4:	W18x46	X-Frames: 8	9	x	4.43	x	10.00	=	398.78	SF
Girder Ends at Joint 4, Unit 4:	Plate Girders	X-Frames: 18	20	x	13.20	x	10.00	=	2640.42	SF
Girder Ends at Joint 5, Unit 5:	Plate Girders	X-Frames: 17	19	x	13.21	x	10.00	=	2510.21	SF
Girder Ends at Joint 5, Unit 6:	Plate Girders		18	x	13.17	x	10.00	=	2369.79	SF
Girder Ends at Joint 5, Unit 6:	Plate Girders	X-Frames: 19	3	x	13.69	x	10.00	=	410.63	SF
Girder Ends at Joint 6, Unit 6:	Plate Girders		4	x	13.78	x	10.00	=	551.04	SF
Girder Ends at Joint 6, Unit 6CB:	Plate Girders		5	x	13.73	x	10.00	=	686.46	SF
End Crossframes at West Abutment, Left:			17	x	1.33	x	20.33	=	460.91	SF
End Crossframes at West Abutment, Right:			8	x	1.33	x	21.51	=	229.44	SF
End Crossframes at East Abutment, Left:			12	x	1.33	x	28.43	=	454.81	SF
End Crossframes at East Abutment, Right:			10	x	1.33	x	29.42	=	392.31	SF
End Crossframes at Abutment B-C:			3	x	1.33	x	29.71	=	118.85	SF
End Crossframes at Abutment C-B:			4	x	1.33	x	32.63	=	174.00	SF
End Crossframes at Joint 6:			3	x	1.33	x	30.22	=	120.88	SF
For Crossframes at Rollers and Misc. Area, add 20% (and refine calculations at Stage 3):								=	7285.05	SF



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Subtotal:		43710.32	SF
Prop. Crossframes:	Deduct for prime coat in the shop:	= -1951.20	SF
Subtotal, Deductions for Surface Prep and Prime Coat:		-1951.20	SF
Total for Superstructure, Existing (for Surface Preparation and Prime Coat):		Say: <u>41,800</u>	SF
Total for Superstructure, Existing and Proposed (for Intermediate Coat and Finish Coat):		Say: <u>43,800</u>	SF
<b>Total for ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL:</b>		<u>41,800</u>	SF
<b>Total for ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT:</b>		<u>41,800</u>	SF
<b>Total for ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT:</b>		<u>43,800</u>	SF
<b>Total for ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT:</b>		<u>43,800</u>	SF



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

Total for Superstructure: Say: 40 MNHR  
**Total for ITEM 514 - GRINDING FINNS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL: 40 MNHR**

**ITEM 514 - FINAL INSPECTION REPAIR**

Total for Superstructure: Per CMS 514.21, 1 location per 150' of beam lines + 5% of crossframes. Say: 27 EACH  
**Total for ITEM 514 - FINAL INSPECTION REPAIR: 27 EACH**

**ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL**

**Superstructure:**

	Length (ft)	+	Length (ft)	+	Length (ft)	=	
West Abutment Left:	1.25	+	142.61	+	1.25	=	145.11 FT
West Abutment Right:	1.25	+	75.17	+	1.25	=	77.67 FT
East Abutment Left:	1.25	+	110.68	+	1.25	=	113.18 FT
East Abutment Right:	1.25	+	91.61	+	1.25	=	94.11 FT
Abutment B-C:	1.25	+	23.75	+	1.25	=	26.25 FT
Abutment C-B:	1.25	+	49.26	+	1.25	=	51.76 FT
Total:							508.07 FT

Total for Superstructure: Say: 508 FT  
**Total for ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL: 508 FT**

**ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN**

**Superstructure:**

	Length (ft)	+	Length (ft)	+	Length (ft)	=	
Expansion Joint 6:	1.25	+	31.91	+	1.25	=	34.41 FT
Total:							34.41 FT

Total for Superstructure: Say: 34 FT  
**Total for ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN: 34 FT**

**ITEM 516 - RESET BEARING, AS PER PLAN**

**Superstructure:**

Total for Superstructure: Floating bearings at West Abutment: Say: 3 EACH  
**Total for ITEM 516 - RESET BEARING, AS PER PLAN: 3 EACH**

**ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN**

This item paid as a LUMP SUM.

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 1**

**Superstructure:**

		Length (ft)	=	
Joint 1L:	See Sheet 83/116:	101.79	=	101.79 FT
Joint 1R:	See Sheet 83/116:	70.85	=	70.85 FT
Total:				172.65 FT

Total for Superstructure: Say: 173 FT  
**Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 1: 173 FT**

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 2**

**Superstructure:**

		Length (ft)	=	
Joint 2L:	See Sheet 85/116:	67.33	=	67.33 FT
Joint 2R:	See Sheet 85/116:	67.33	=	67.33 FT
Total:				134.67 FT

Total for Superstructure: Say: 135 FT  
**Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 2: 135 FT**

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 3**

**Superstructure:** Length (ft)



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Joint 3L:	See Sheet 86/116:	67.33	=	67.33	FT
Joint 3R:	See Sheet 86/116:	67.33	=	67.33	FT
Total:				134.67	FT
Total for Superstructure:			Say:	<u>135</u>	FT
<b>Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 3:</b>				<u>135</u>	FT



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**ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 4**

**Superstructure:**

Joint 4L:	See Sheet 88/116:	Length (ft)	75.91	=	75.91	FT
Joint 4R:	See Sheet 88/116:		67.33	=	67.33	FT
Total:					143.24	FT
Total for Superstructure:				Say:	<b>143</b>	FT
<b>Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 4:</b>						<b>143</b> FT

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 5**

**Superstructure:**

Joint 5L:	See Sheet 89/116:	Length (ft)	67.74	=	67.74	FT
Joint 5R:	See Sheet 89/116:		75.92	=	75.92	FT
Total:					143.66	FT
Total for Superstructure:				Say:	<b>144</b>	FT
<b>Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: DRAINAGE TROUGH SYSTEM, EXPANSION JOINT 5:</b>						<b>144</b> FT

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: 10" GALVANIZED STEEL PIPE, INCLUDING SPECIALS**

**Superstructure:**

				COMP. BY	P. Trana	DATE	6/30/2020
				CHECKED BY	JFM	DATE	7/7/2020
Pier 2C-7:	Length (ft)	Length (ft)	Length (ft)	=	42.23	FT	<b>USE 45 FT</b>
	5.52	+	22.35	+	14.36		

**Pier 4L/4R:**

Install new trough collectors to pier. (these pipes run diagonally from trough to face of pier)	Joint 1L & 1R:	Number	3	x	Length (ft)	13.28	+	Number	2	x	Length (ft)	13.28	=	66.38	FT
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Install new downspouts on pier 4L  
(these pipes run down the pier)

Left Scupper pipe:	Length (ft)	1.75	+	1.58	+	10.72	=	14.04	FT
Left Trough pipe:	2.00	+	5.79	+	2.91	=	10.70	FT	
Pipe at left column (cl):	25.42	+	1.14	+	4.71	=	31.26	FT	
Pipe at left column (side):	3.22	+	19.36	=	22.58	FT			
Center Trough Pipe:	2.00	+	1.22	+	27.27	=	30.49	FT	
Righth Trough pipe:	2.00	+	4.74	=	6.74	FT			
Righth Scupper pipe:	1.75	+	1.58	+	11.60	=	14.93	FT	
Pipe at right column (cl):	25.42	+	1.14	+	4.71	=	31.26	FT	
Pipe at right column (side):	3.22	+	19.36	=	22.58	FT			

Install new downspouts on pier 4R  
(these pipes run down the pier)

Left Scupper pipe:	Length (ft)	1.75	+	1.58	+	11.60	=	14.93	FT
Left Trough pipe:	2.00	+	5.30	=	7.30	FT			
Pipe at left column (cl):	25.42	+	1.14	+	4.71	=	31.26	FT	
Pipe at left column (side):	3.22	+	19.36	=	22.58	FT			
Righth Trough pipe:	2.00	+	1.00	+	11.83	=	16.41	FT	
Righth Scupper pipe:	1.75	+	1.58	+	11.62	=	14.95	FT	
Pipe at right column (cl):	25.42	+	1.14	+	4.71	=	31.26	FT	
Pipe at right column (side):	3.22	+	19.36	=	22.58	FT			

TOTAL PIER 4L/4R: = 412.23 FT  
**USE: 415 FT**

**Pier 5L/5R:**

Pier 5L:	Length (ft)	11.87	+	37.26	+	14.36	=	63.50	FT	<b>USE 65 FT</b>
Pier 5R:	Length (ft)	11.93	+	37.27	+	14.36	=	63.56	FT	<b>USE 65 FT</b>

**Pier 9L/9R:**

Install new trough collectors to pier. (these pipes run diagonally from trough to face of pier)	Joint 2L & 2R:	Number	2	x	Length (ft)	25.36	+	Number	2	x	Length (ft)	18.74	=	88.21	FT
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Install new downspouts on pier 9L  
(these pipes run down the pier)

Left Scupper pipe:	Length (ft)	1.75	+	0.83	+	1.58	+	20.78	=	24.93	FT
Left Trough pipe:	2.00	+	4.01	=	6.01	FT					
Pipe at wall, left:	2.00	+	56.79	+	14.36	=	73.15	FT			
Righth Trough pipe:	2.00	+	1.34	+	1.06	=	4.40	FT			
Righth Scupper pipe:	1.75	+	1.09	+	1.58	+	20.78	=	25.19	FT	
Pipe at wall, righth:	11.69	+	56.79	+	14.36	=	82.85	FT			

Install new downspouts on pier 9R  
(these pipes run down the pier)

Left Scupper pipe:	Length (ft)	1.75	+	1.14	+	22.57	=	25.46	FT	
Left Trough pipe:	2.00	+	5.71	=	7.71	FT				
Pipe at wall, left:	-3.00	+	57.55	+	14.36	=	68.91	FT		
Righth Trough pipe:	2.00	+	1.14	+	5.66	=	8.80	FT		
Righth Scupper pipe:	1.75	+	1.33	+	22.57	=	25.65	FT		
Pipe at wall, righth:	8.34	+	57.22	+	14.36	=	79.92	FT		

TOTAL PIER 9L/9R: = 521.21 FT  
**USE: 525 FT**



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**Pier 10L/10R:**

	Length (ft)	+	Length (ft)	+	Length (ft)	=						
Pier 10L:	18.97	+	59.68	+	14.36	=	93.01	FT	USE	95	FT	
Pier 10R:	18.97	+	59.11	+	14.36	=	92.44	FT	USE	95	FT	

**Pier 12L/12R:**

Install new trough collectors to pier. (these pipes run diagonally from trough to face of pier)	Joint 3L & 3R:	Number	x	Length (ft)	+	Number	x	Length (ft)	=		
		2	x	26.60	+	2	x	26.60	=	106.41	FT
Install new downspouts on pier 12L (these pipes run down the pier)	Left Trough pipe:	Length (ft)	+	Length (ft)	+	Length (ft)			=		
		2.00	+	1.60	+	22.50			=	26.10	FT
	Righth Trough pipe:	2.00	+	1.14	+	12.61			=	15.75	FT
	Pipe at column, left:	3.84	+	70.69	+	14.36			=	88.89	FT



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Install new downspouts on pier 12R (these pipes run down the pier)	Left Trough pipe:	Length (ft)	+	Length (ft)	+	Length (ft)	=	41.92	FT	
	Righth Trough pipe:	2.00		1.92		38.00				
	Pipe at column, left:	2.00		10.00				12.00	FT	
		2.85		69.81		14.36		87.02	FT	
TOTAL PIER 12L/12R:								=	378.10	FT
USE:								=	380	FT

Pier 15L/15R:

Install new trough collectors to pier. (these pipes run diagonally from trough to face of pier)	Joint 4L & 4R:	Number	x	Length (ft)	+	Number	x	Length (ft)	=	53.14	FT
		2		13.29		2		13.29			

Install new downspouts on pier 15L (these pipes run down the pier)	Left Scupper pipe:	Length (ft)	+	Length (ft)	+	Length (ft)	+	Length (ft)	=	16.81	FT
	Left Trough pipe:	1.75		0.78		1.80		12.48		7.00	FT
	Pipe at column, left:	2.00		5.00						63.93	FT
	Righth Trough pipe:	2.00		37.57		24.36				21.80	FT
	Righth Scupper pipe:	1.75		0.78		1.58		11.83		15.94	FT
	Pipe at column, righth:	2.19		38.56		14.36				55.11	FT

Install new downspouts on pier 15R (these pipes run down the pier)	Left Scupper pipe:	Length (ft)	+	Length (ft)	+	Length (ft)	+	Length (ft)	=	14.82	FT
	Left Trough pipe:	1.75		0.78		1.58		10.72		16.05	FT
	Pipe at column, left:	2.00		0.78		1.58		11.69		58.93	FT
	Righth Trough pipe:	2.00		42.57		14.36				7.42	FT
	Righth Scupper pipe:	1.75		0.78		1.58		12.21		16.32	FT
	Pipe at column, righth:	2.19		39.41		24.36				65.96	FT
TOTAL PIER 9L/9R:								=	413.24	FT	
USE:								=	415	FT	

Pier 20L/20R:

Install new trough collectors to pier. (these pipes run diagonally from trough to face of pier)	Joint 5L & 5R:	Number	x	Length (ft)	+	Number	x	Length (ft)	=	73.22	FT
		4		8.14		5		8.14			

Install new downspouts on pier 20R (these pipes run down the pier)	Left Scupper pipe:	Length (ft)	+	Length (ft)	+	Length (ft)	+	Length (ft)	=	15.66	FT
	Left 1 Trough pipe:	1.75		0.50		1.58		11.83		5.03	FT
	Left 2 Trough pipe:	2.00		3.03						7.97	FT
	Left 3 Trough pipe:	2.00		5.97		2.04		22.45		28.19	FT
	Pipe at left column (cl):	2.58		39.17		1.14		4.71		47.60	FT
	Pipe at left column (side):	3.22		44.36						47.58	FT
	Righth 1 Trough pipe:	2.00		1.88		1.58		7.34		12.80	FT
	Righth 2 Trough pipe:	2.00		2.92						4.92	FT
	Righth Scupper pipe:	1.75		0.50		1.58		11.60		15.43	FT
	Pipe at right column (cl):	2.66		22.15		1.14		4.71		30.66	FT
	Pipe at right column (side):	3.22		39.36						42.58	FT

Install new downspouts on pier 20L (these pipes run down the pier)	Left Scupper pipe:	Length (ft)	+	Length (ft)	+	Length (ft)	+	Length (ft)	=	15.88	FT
	Left 1 Trough pipe:	1.75		0.50		1.58		12.05		4.67	FT
	Left 2 Trough pipe:	2.00		2.67						8.83	FT
	Left 3 Trough pipe:	2.00		6.83		5.84				7.84	FT
	Righth 1 Trough pipe:	2.00		2.16		2.15		37.86		44.17	FT
	Pipe at left column (cl):	2.47		15.73		1.14		4.71		24.05	FT
Pipe at left column (side):	3.22		39.36						42.58	FT	

TOTAL PIER 4L/4R:								=	479.64	FT
USE:								=	480	FT

<u>Pier 23-CB:</u>	Length (ft)	+	Length (ft)	+	Length (ft)	=	67.77	FT	USE	70	FT
	6.54		41.86		19.36						

<u>Pier 24-CB:</u>	Length (ft)	+	Length (ft)	+	Length (ft)	=	61.53	FT	USE	65	FT
	5.17		37.00		19.36						

<u>Pier 25-CB:</u>	Length (ft)	+	Length (ft)	+	Length (ft)	=	72.15	FT	USE	75	FT
	5.04		32.75		34.36						

East Abutment:

From existing plans:											
	P-112		P-114		P-115		P-116				
	Length (ft)	+	Length (ft)	+	Length (ft)	+	Length (ft)	+			
E. Abut. Pipes:	44.00		46.00		43.00		44.00		=	177.00	FT
								USE	180	FT	

Total for Superstructure: 2970 FT

**Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: 10" GALVANIZED STEEL PIPE, INCLUDING SPECIALS:** 2970 FT

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER CLEANOUT**

**Superstructure:**

Total for Superstructure: Scuppers on bridge: Say: 35 EACH

**Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER CLEANOUT:** 35 EACH

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER GRATE REPLACEMENT**





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**Superstructure:**

Total for Superstructure: Scuppers needing grate replacement: Say: 1 EACH

**Total for ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER GRATE REPLACEMENT:** 1 EACH

**ITEM 518 - STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANING**

This item paid as a **LUMP SUM**.



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**ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13")**

**General:**

	Number		Length (ft)		Width (ft)				
West Abutment (Mainline, Gore, and Ramp C-7):	1	x	20.00	x	221.54	/	9	=	492.31 SY
East Abutment:	1	x	20.00	x	216.60	/	9	=	481.33 SY
Abutment B-C:	1	x	20.00	x	25.38	/	9	=	56.39 SY
Abutment C-B:	1	x	20.00	x	49.26	/	9	=	109.47 SY
Total:									1139.50 SY

**Total for ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13"):** 1,140 SY

**ITEM 526 - TYPE A INSTALLATION**

	No.		Length (ft)					
West Abutment (Mainline, Extension and Ramp C-7):	1	x	221.54	=	221.54	FT		
East Abutment:	1	x	216.60	=	216.60	FT		
Abutment B-C:	1	x	25.38	=	25.38	FT		
Abutment C-B:	1	x	49.26	=	49.26	FT		
Total:					512.78	FT		

**Total for ITEM 526 - TYPE A INSTALLATION:** 513 FT

**ITEM 601 - CONCRETE SLOPE PROTECTION**

**General:**

	No.		Length (ft)		Width (ft)				
East side of Independence Road, at Pier 14R south column:	1	x	30.00	x	15.00	/	9	=	50.00 SY
Total:									50.00 SY

Total for General: Say: 50 SY

**Total for ITEM 601 - CONCRETE SLOPE PROTECTION:** 50 SY

**ITEM 844 - CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION, AS PER PLAN**

**West Abutment:**

See Tables on Sheets 17/116 - 19/116:	Area (sf)	+	Area (sf)	+	Area (sf)	=	0.0	SF
	0.0		0.0		0.0			
Total:							0.0	SF

Total for West Abutment: Say: 0 SF

**East Abutment:**

See Tables on Sheets 42/116 - 45/116:	Area (sf)	+	Area (sf)	+	Area (sf)	+	Area (sf)	=	14.3	SF
	14.3		0.0		0.0		0.0			
Total:									14.3	SF

Total for East Abutment: Say: 15 SF

**Abutment B-C:**

See Table on Sheet 46/116:	Area (sf)	=	0.0	SF
	0.0			
Total:			0.0	SF

Total for Abutment B-C: Say: 0 SF

**Abutment C-B:**

See Tables on Sheets 47/116 - 48/116:	Area (sf)	+	Area (sf)	=	54.0	SF
	54.0		0.0			
Total:					54.0	SF

Total for Abutment C-B: Say: 54 SF

**Piers:**

	Area (sf)		Area (sf)			
Pier 4L/4R:	See Table on Sheet 20/116:		0.0	=	0.0	SF
Pier 5L/5R:	See Table on Sheet 21/116:		0.0	=	0.0	SF
Pier 6L/6R:	See Tables on Sheets 22/116 & 23/116:	12.0	+	0.0	=	12.0 SF
Pier 7L/7R:	See Tables on Sheets 24/116 & 25/116:	66.8	+	0.0	=	66.8 SF
Pier 8R:	See Table on Sheet 26/116:			3.0	=	3.0 SF
Pier 9L/9R:	See Tables on Sheets 27/116 & 28/116:	506.3	+	0.0	=	506.3 SF
Pier 10L/10R:	See Tables on Sheets 29/116 & 30/116:	24.0	+	1.5	=	25.5 SF
Pier 11L/11R:	See Table on Sheet 31/116:			0.0	=	0.0 SF
Pier 12L/12R:	See Table on Sheet 32/116:			0.0	=	0.0 SF
Pier 13L/13R:	See Table on Sheet 33/116:			1.5	=	1.5 SF
Pier 16L/16R:	See Table on Sheet 34/116:			0.0	=	0.0 SF
Pier 17L/17R:	See Table on Sheet 35/116:			24.0	=	24.0 SF
Pier 18L/18R:	See Table on Sheet 36/116:			1.5	=	1.5 SF
Pier 19L/19R:	See Table on Sheet 37/116:			1.5	=	1.5 SF



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Pier 20L/20R:	See Table on Sheet 38/116:	0.0	=	0.0	SF
Pier 21L/21R:	See Table on Sheet 39/116:	0.0	=	0.0	SF
Pier 22L/22R:	See Table on Sheet 40/116:	5.3	=	5.3	SF
Pier 23L/23R, 27C-B:	See Table on Sheet 41/116:	7.5	=	7.5	SF
Total:				654.8	SF
Total for Piers:			Say:	655	SF
<b>Total for ITEM 844 - CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION, AS PER PLAN:</b>					<b>724</b> SF



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**ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (1.25" THICK)**  
**ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION**  
**ITEM 848 - EXISTING CONCRETE OVERLAY REMOVED**

**Superstructure:**

	Length (ft)	Width (ft)	Area (sf)				
Deck Area per Inventory Data:			= 478,632	/	9	=	53181.3 SY
Deduct Exterior Parapets:	8133.4	x 1.58	= -12,878	/	9	=	-1430.9 SY
Deduct Median Parapets:	6905.7	x 1.50	= -10,359	/	9	=	-1150.9 SY
Deduct at West Abutment Joint:	( 145.83 + 78.33 )	x 2.08	= -467	/	9	=	-51.9 SY
Deduct at East Abutment Joint:	( 114.48 + 95.70 )	x 2.08	= -438	/	9	=	-48.7 SY
Deduct at Abutment B-C Joint:	26.9	x 2.08	= -56	/	9	=	-6.2 SY
Deduct at Abutment C-B Joint:	53.7	x 2.08	= -112	/	9	=	-12.4 SY
Deduct at Joints 1, 4 & 5:	( 169.65 + 140.24 + 140.66 )	x 1.71	= -770	/	9	=	-85.5 SY
Deduct at Joints 2 & 3:	( 131.67 + 131.67 )	x 2.13	= -560	/	9	=	-62.2 SY
Deduct at Joint 6:	34.3	x 4.17	= -143	/	9	=	-15.9 SY

Total: 452851 SF 50316.7 SY

Total for Superstructure: Say: **50320** SY

**Total for ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (1.25" THICK):** **50320** SY  
**Total for ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION:** **50320** SY  
**Total for ITEM 848 - EXISTING CONCRETE OVERLAY REMOVED:** **50320** SY

**ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY**

**Superstructure:**

Deck Slab:	Percent	Area (sf)	Depth (ft)				
	20%	x 452851	x 0.10	/	27	=	349.42 CY

Total: 349.42 CY

Total for Superstructure: Say: **350** CY

**Total for ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY:** **350** CY

**ITEM 848 - HAND CHIPPING**

**Superstructure:**

Deck Slab:	Percent	Area (sf)	Depth (ft)				
	5%	x 452851	/	9	=	2515.84 SY	

Total: 2515.84 SY

Total for Superstructure: Say: **2516** SY

**Total for ITEM 848 - HAND CHIPPING:** **2516** SY

**ITEM 848 - TEST SLAB**

This item paid as a LUMP SUM.

**ITEM 848 - FULL DEPTH REPAIR**

**Superstructure:**

Deck Slab:	Percent	Area (sf)	Depth (ft)				
See Table on Sheet 51/116:	2.5%	x 452851	x 0.54	/	27	=	227.12 CY

Total: 227.12 CY

Total for Superstructure: Say: **228** CY

**Total for ITEM 848 - FULL DEPTH REPAIR:** **228** CY