



CLIENT City of Brecksville
 PROJECT PID 104983; Miller Road Interchange
 SUBJECT Estimated Structure Quantities
 Stage 3 Design

PROJECT NO. 1162 - Miller Road Interchange
 COMP. BY SRW DATE 2/21/2022
 CHECKED BY BPS DATE 2/28/2022

Piers:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)				
Pier 1 Footing:	2	x	11.00	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	35.85 CY
Pier 1 Footing:	1	x	8.41	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	13.70 CY
Pier 2 Footing:	2	x	11.00	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	35.85 CY
Pier 2 Footing:	1	x	8.41	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	13.70 CY
Pier 3 Footing:	2	x	11.00	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	35.85 CY
Pier 3 Footing:	1	x	8.41	x	11.00	x 0.5 x (	4.00	+	4.00	) /	27	=	13.70 CY
Total for Piers:													<u>148.65</u> CY
Total for Piers:													Say: <u>149</u> CY

Total for ITEM 503 - UNCLASSIFIED EXCAVATION:

255 CY

ITEM 505 - PILE DRIVING EQUIPMENT MOBILIZATION

This item is paid for Lump Sum.

Say: \$10,000.00

ITEM 507 - STEEL PILES HP10X42, FURNISHED

Rear Abutment:

	Number		Length (ft)			
Rear Abutment:	8	x	70.00	=	560.00	FT
Total for Rear Abutment:					<u>560.00</u>	FT
Total for Rear Abutment:						Say: <u>560</u> FT

Forward Abutment:

	Number		Length (ft)			
Rear Abutment:	8	x	75.00	=	600.00	FT
Total for Forward Abutment:					<u>600.00</u>	FT
Total for Forward Abutment:						Say: <u>600</u> FT

Piers:

	Number		Length (ft)			
Piers 1&3:	24	x	60.00	=	1440.00	FT
Pier 2:	12	x	50.00	=	600.00	FT
Total for Piers:					<u>2040.00</u>	FT
Total for Piers:						Say: <u>2040</u> FT

Total for ITEM 507 - STEEL PILES HP10X42, FURNISHED:

3200 FT

ITEM 507 - STEEL PILES HP10X42, DRIVEN

Rear Abutment:

	Number	x	Length (ft)	=		
Rear Abutment:	8	x	65.00	=	520.00	FT
Total for Rear Abutment:					520.00	FT
Total for Rear Abutment:				Say:	520	FT

Forward Abutment:

	Number	x	Length (ft)	=		
Rear Abutment:	8	x	70.00	=	560.00	FT
Total for Forward Abutment:					560.00	FT
Total for Forward Abutment:				Say:	560	FT

Piers:

	Number	x	Length (ft)	=		
Piers 1,3:	24	x	55.00	=	1320.00	FT
Pier 2:	12	x	45.00	=	540.00	FT
Total for Piers:					1860.00	FT
Total for Piers:				Say:	1860	FT

Total for ITEM 507 - STEEL PILES HP10X42, DRIVEN: 2940 FT

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

General:

Superstructure:	118989	LB
Rear Abutment:	2845	LB
Forward Abutment:	2692	LB
Piers:	23180	LB
Total for General:	147706	LB
Total for General:	Say: 147706	LB

Total for ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN: 147706 LB

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

Estimated quantity for this item: Say: 400 LB

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN

Superstructure:	=	138	EACH
Rear Abutment:	=	29	EACH
Forward Abutment:	=	27	EACH

Total for ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN: 194 EACH

ITEM 511 - SEMI-INTEGRAL DIAPHRAGM GUIDE

Total for ITEM 511 - SEMI-INTEGRAL DIAPHRAGM GUIDE: 2 EACH

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK

Superstructure:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)			
Bridge Deck	1	x	290.98	x	45.33	x 0.5 x (	0.71	+	0.71	) /	27	= 346.06 CY
Beam Haunch:	6	x	290.98	x	1.33	x 0.5 x (	0.17	+	0.17	) /	27	= 14.37 CY
Beam Haunch:	5.5	x	290.98	x	0.75	x 0.5 x (	0.29	+	0.29	) /	27	= 12.97 CY
Overhang:	1	x	290.98	x	2.00	x 0.5 x (	0.29	+	0.29	) /	27	= 6.29 CY
Sidewalk:	1	x	290.98	x	10.17	x 0.5 x (	0.67	+	1.00	) /	27	= 91.31 CY
Diaphragms:	2	x	30.22	x	3.75	x 0.5 x (	3.00	+	3.00	) /	27	= 25.18 CY
Total for Superstructure:												<u>496.17</u> CY
Total for Superstructure:											Say:	<u>497</u> CY

Total for ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:

497 CY

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)

Superstructure:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)			
Parapet:	2	x	292.00	x	1.00	x 0.5 x (	2.67	+	2.67	) /	27	= 57.68 CY
Total for Superstructure:												<u>57.68</u> CY
Total for Superstructure:											Say:	<u>58</u> CY

Total for ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET):

58 CY

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS

Piers:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)			
Pier Cap:	3	x	3.00	x	25.42	x 0.5 x (	4.50	+	4.83	) /	27	= 39.54 CY
Pier 1 Columns:	3	x	3.14	x	15.48	x 0.5 x (	1.50	+	1.50	) /	27	= 12.16 CY
Pier 2 Columns:	3	x	3.14	x	17.34	x 0.5 x (	1.50	+	1.50	) /	27	= 13.62 CY
Pier 3 Columns:	3	x	3.14	x	13.24	x 0.5 x (	1.50	+	1.50	) /	27	= 10.40 CY
Total for Piers:												<u>75.71</u> CY
Total for Piers:											Say:	<u>76</u> CY

Total for ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS:

76 CY

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENTS INCLUDING FOOTING

Rear Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)				
Footing:	1	x	27.00	x	5.75	x 0.5 x (	3.25	+	3.25	) /	27	=	18.69 CY
Breast Wall:	1	x	30.40	x	3.75	x 0.5 x (	3.25	+	3.25	) /	27	=	13.72 CY
Wingwall:	1	x	11.91	x	2.50	x 0.5 x (	3.25	+	3.25	) /	27	=	3.58 CY
Wingwall:	1	x	1.08	x	2.50	x 0.5 x (	5.68	+	5.68	) /	27	=	0.57 CY
Wingwall:	1	x	11.14	x	2.50	x 0.5 x (	5.68	+	2.02	) /	27	=	3.97 CY

Total for Rear Abutment: 40.53 CY

Total for Rear Abutment: Say: 41 CY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)				
Footing:	1	x	27.00	x	5.75	x 0.5 x (	3.25	+	3.25	) /	27	=	18.69 CY
Breast Wall:	1	x	30.40	x	3.75	x 0.5 x (	3.25	+	3.25	) /	27	=	13.72 CY
Wingwall:	1	x	11.89	x	2.50	x 0.5 x (	3.25	+	3.25	) /	27	=	3.58 CY
Wingwall:	1	x	1.08	x	2.50	x 0.5 x (	5.66	+	5.66	) /	27	=	0.57 CY
Wingwall:	1	x	10.49	x	2.50	x 0.5 x (	5.66	+	1.98	) /	27	=	3.71 CY

Total for Forward Abutment: 40.26 CY

Total for Forward Abutment: Say: 41 CY

Total for ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENTS INCLUDING FOOTING: 82 CY

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, FOOTING

Piers:

	Number		Length (ft)		Width (ft)		Height (ft)		Height (ft)				
Pier 1 Footing:	2	x	9.00	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	18.00 CY
Pier 1 Footing:	1	x	7.41	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	7.41 CY
Pier 2 Footing:	2	x	9.00	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	18.00 CY
Pier 2 Footing:	1	x	7.41	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	7.41 CY
Pier 3 Footing:	2	x	9.00	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	18.00 CY
Pier 3 Footing:	1	x	7.41	x	9.00	x 0.5 x (	3.00	+	3.00	) /	27	=	7.41 CY

Total for Piers: 76.22 CY

Total for Piers: Say: 77 CY

Total for ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, FOOTING: 77 CY

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)

Superstructure:

	Number		Length (ft)		Perimeter (ft)								
Left Sidewalk:	1	x	290.98	x	9.67	/	9	=	312.53	SY			
Right Sidewalk:	1	x	290.98	x	6.67	/	9	=	215.54	SY			

Total for Superstructure: 528.07 SY

Total for ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY): 529 SY

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

Superstructure:

	Number		Length (ft)		Perimeter (ft)					
Bridge Deck Fascia:	2	x	290.98	x	2.83	/	9	=	183.21	SY
Left Parapet:	1	x	290.98	x	6.33	/	9	=	204.76	SY
Right Parapet:	1	x	290.98	x	6.33	/	9	=	204.76	SY
Diaphragms:	2	x	108.76	x	3.00	/	9	=	72.51	SY
Total for Superstructure:									<u>665.24</u>	SY
Total for Superstructure:									Say: <u>665</u>	SY

Rear Abutment:

	Number		Length (ft)		Height (ft)		Height (ft)			
Front Face, Abutment Wall:	1	x	108.76	x 0.5 x (	1.75	+	1.75	) /	9	= 21.15 SY
Front Face, Left Wingwall:	1	x	11.91	x 0.5 x (	5.68	+	2.02	) /	9	= 5.09 SY
Top Face, Left Wingwall:	1	x	11.91	x 0.5 x (	2.50	+	2.50	) /	9	= 3.31 SY
Back Face, Left Wingwall:	1	x	11.91	x 0.5 x (	0.50	+	0.50	) /	9	= 0.66 SY
Front Face, Right Wingwall:	1	x	11.91	x 0.5 x (	5.68	+	2.02	) /	9	= 5.09 SY
Top Face, Right Wingwall:	1	x	11.91	x 0.5 x (	2.50	+	2.50	) /	9	= 3.31 SY
Back Face, Right Wingwall:	1	x	11.91	x 0.5 x (	0.50	+	0.50	) /	9	= 0.66 SY
Total for Rear Abutment:									<u>39.27</u>	SY
Total for Rear Abutment:									Say: <u>40</u>	SY

Forward Abutment:

	Number		Length (ft)		Height (ft)		Height (ft)			
Front Face, Abutment Wall:	1	x	108.76	x 0.5 x (	1.75	+	1.75	) /	9	= 21.15 SY
Front Face, Left Wingwall:	1	x	11.91	x 0.5 x (	5.68	+	2.02	) /	9	= 5.09 SY
Top Face, Left Wingwall:	1	x	11.91	x 0.5 x (	2.50	+	2.50	) /	9	= 3.31 SY
Back Face, Left Wingwall:	1	x	11.91	x 0.5 x (	0.50	+	0.50	) /	9	= 0.66 SY
Front Face, Right Wingwall:	1	x	11.91	x 0.5 x (	5.68	+	2.02	) /	9	= 5.09 SY
Top Face, Right Wingwall:	1	x	11.91	x 0.5 x (	2.50	+	2.50	) /	9	= 3.31 SY
Back Face, Right Wingwall:	1	x	11.91	x 0.5 x (	0.50	+	0.50	) /	9	= 0.66 SY
Total for Forward Abutment:									<u>39.27</u>	SY
Total for Forward Abutment:									Say: <u>40</u>	SY

Pier:

	Number		Pi		Dia. (ft)		Height (ft)		Height (ft)	
Pier 1 Columns:	8	x	3.14	x	3.00	x 0.5 x (	15.48	+	15.48	) / 9 = 129.68 SY
Pier 2 Columns:	8	x	3.14	x	3.00	x 0.5 x (	17.34	+	17.34	) / 9 = 145.27 SY
Pier 3 Columns:	8	x	3.14	x	3.00	x 0.5 x (	13.24	+	13.24	) / 9 = 110.92 SY
	Number		Length (ft)		Height (ft)		Height (ft)			
Pier Cap (Faces):	6	x	80.97	x 0.5 x (	4.50	+	4.50	) /	9	= 242.91 SY
Pier Cap (Ends):	6	x	3.00	x 0.5 x (	4.50	+	4.50	) /	9	= 9.00 SY
Total for Pier:									<u>637.78</u>	SY
Total for Pier:									Say: <u>638</u>	SY

Total for ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

1383 SY

ITEM 512 - TYPE 2 WATERPROOFING

Rear Abutment:

	Number		Width (ft)		Height (ft)					
Rear Abutment:	1	x	3.00	x	10.01	/	9	=	3.34	SY
Total for Rear Abutment:									3.34	SY
Total for Rear Abutment:									Say: 4	SY

Forward Abutment:

Forward Abutment:	1	x	3.00	x	10.13	/	9	=	3.38	SY
Total for Forward Abutment:									3.38	SY
Total for Forward Abutment:									Say: 4	SY

Total for ITEM 512 - TYPE 2 WATERPROOFING:

8 SY

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 2

Superstructure:

	Number		Length (ft)		Weight (lb/ft)				
Beams: W33x201	4	x	200.33	x	201	=	161068	LBS	
Beams: W33x221	4	x	86.00	x	221	=	76024	LBS	
Add 10% to account for weight of cross frames, splice plates, and miscellaneous hardware:						=	23709	LBS	
Total for Superstructure:							260801	LBS	
Total for Superstructure:							Say: 261000	LBS	

Total for ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 2:

261000 LBS

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

Superstructure:

	Number		Length (ft)		Perimeter(ft)				
Beams (Original Plans): W36x160	5	x	145.00	x	9.00	=	6525.00	SF	
W36x194	5	x	141.33	x	9.11	=	6436.56	SF	
Beams (Rehabilitation Plans): W33x201	2	x	199.33	x	9.54	=	3803.94	SF	
W33x221	2	x	87.00	x	9.60	=	1670.40	SF	
Add 10% to account for all cross frames and other steel within limits:			10.00%	x	18436	=	1843.59	SF	
Total for Superstructure:							20279.49	SF	
Total for Superstructure:							Say: 20280	SF	

Total for ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL:

20280 SF

Total for ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT:

20280 SF

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

Superstructure:

		Number		Length (ft)		Perimeter(ft)			
Beams (Original Plans):	W36x160	5	x	145.00	x	9.00	=	6525.00	SF
	W36x194	5	x	141.33	x	9.11	=	6436.56	SF
Beams (Rehabilitation Plans):	W33x201	2	x	199.33	x	9.54	=	3803.94	SF
	W33x221	2	x	87.00	x	9.60	=	1670.40	SF
Beams (Proposed):	W33x201	4	x	200.33	x	9.54	=	7646.06	SF
	W33x221	4	x	86.00	x	9.60	=	3302.40	SF
Add 10% to account for all cross frames and other steel within limits:				10.00%	x	29384	=	2938.44	SF
Total for Superstructure:								32322.79	SF
Total for Superstructure:								Say: 32330	SF
Total for ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT:								32330	SF
Total for ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT:								32330	SF

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

Superstructure: Per BDM 404.2, provide 1 minute for each linear foot of beam/girder to be coated.

		Number		Length (ft)		Time (mnh)			
Girders (Original Plans):	W36x160	5	x	145.00	x	0.02	=	12.08	MNHR
	W36x194	5	x	141.33	x	0.02	=	11.78	MNHR
Girders (Rehabilitation Plans):	W33x201	2	x	199.33	x	0.02	=	6.64	MNHR
	W33x221	2	x	87.00	x	0.02	=	2.90	MNHR
Total for Superstructure:								33.41	MNHR
Total for Superstructure:								Say: 34	MNHR
Total for ITEM 514 - GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL:								34	MNHR

ITEM 514 - FINAL INSPECTION REPAIR

Superstructure: Per CMS 514.21, remove a minimum of one location per 300 linear feet of beam line for webs and flanges and 2.5 percent of all cross frame assemblies and other secondary structural members.

		Number		Length (ft)		Locations			
Girders (Original Plans):	W36x160	5	x	145.00	x	0.003	=	2.42	EACH
	W36x194	5	x	141.33	x	0.003	=	2.36	EACH
Girders (Rehabilitation Plans):	W33x201	2	x	199.33	x	0.003	=	1.33	EACH
	W33x221	2	x	87.00	x	0.003	=	0.58	EACH
Girders (Proposed):	W33x201	4	x	200.33	x	0.003	=	2.67	EACH
	W33x221	4	x	86.00	x	0.003	=	1.15	EACH
Cross Frames (All):				Number		Percent			
				194	x	0.025	=	4.85	EACH
Total for Superstructure:								15.35	EACH
Total for Superstructure:								Say: 16	EACH
Total for ITEM 514 - FINAL INSPECTION REPAIR:								16	EACH

ITEM 516 - ARMORLESS PREFORMED JOINT SEAL

General:

	Number		Length (ft)				
Approach Slabs:	2	x	81.40	=	162.80		FT
Total for General:					<u>162.80</u>		FT
Total for General:						Say:	<u>163</u> FT
Total for ITEM 516 - ARMORLESS PREFORMED JOINT SEAL:							<u>163</u> FT

ITEM 516 - 3/4" PREFORMED EXPANSION JOINT FILLER

Piers:

	Number		Height (ft)		Width (ft)			
Between Existing & Proposed Pier Footing:	3	x	3.00	x	9.00	=	81.00	SF
Total for Piers:							<u>81.00</u>	SF
Total for ITEM 516 - 3/4" PREFORMED EXPANSION JOINT FILLER:							<u>81</u>	SF

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER

Superstructure:

	Number		Height (ft)		Width (ft)			
Between diaphragm and wingwalls:	4	x	5.67	x	2.58	=	58.59	SF
Total for Between diaphragm and wingwalls:							<u>58.59</u>	SF
Total for ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER:							<u>59</u>	SF

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

Rear Abutment:

	Number		Length (ft)				
Length of diaphragm:	1	x	33.22	=	33.22		FT
Total for Rear Abutment:					<u>33.22</u>		FT
Total for Rear Abutment:						Say:	<u>34</u> FT

Forward Abutment

	Number		Length (ft)				
Length of diaphragm:	1	x	33.22	=	33.22		FT
Total for Forward Abutment					<u>33.22</u>		FT
Total for Forward Abutment						Say:	<u>34</u> FT

Total for ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL:

68 FT

**ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)
 AS PER PLAN (LOAD PLATE 13" x 17" x 1.50", NEOPRENE 12" x 16" x 3.55")**

Superstructure:

	Beams		Locations				
Elastomeric Bearings:	4	x	2	=	8		EACH
Total for Superstructure:					<u>8</u>		EACH
Total for Superstructure:						Say:	<u>8</u> EACH
Total for ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE):							<u>8</u> EACH

**ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)
 AS PER PLAN (LOAD PLATE 16" x 19" x 1.50", NEOPRENE 15" x 18" x 3.00")**

Superstructure:

Elastomeric Bearings:	Beams		x	Locations		=		8		EACH
	4			2				8		EACH
Total for Superstructure:								<u>8</u>		EACH
Total for Superstructure:								Say: <u>8</u>		EACH
Total for ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE):								<u>8</u>		EACH

**ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE)
 AS PER PLAN (LOAD PLATE 16" x 27" x 1.50", NEOPRENE 15" x 18" x 3.00")**

Superstructure:

Elastomeric Bearings:	Beams		x	Locations		=		4		EACH
	4			1				4		EACH
Total for Superstructure:								<u>4</u>		EACH
Total for Superstructure:								Say: <u>4</u>		EACH
Total for ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE):								<u>4</u>		EACH

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

Rear Abutment:

	Number		x	Length (ft)		x	Width (ft)		x	0.5 x (	Height (ft)		+	Height (ft)		) /	27		=		22.05		CY
Abutment Backwall:	1			43.23			2.00				7.18			6.60							22.05		CY
Total for Rear Abutment:																					<u>22.05</u>		CY
Total for Rear Abutment:																					Say: <u>23</u>		CY

Forward Abutment:

	Number		x	Length (ft)		x	Width (ft)		x	0.5 x (	Height (ft)		+	Height (ft)		) /	27		=		22.32		CY
Abutment Backwall:	1			43.23			2.00				7.20			6.75							22.32		CY
Total for Forward Abutment:																					<u>22.32</u>		CY
Total for Forward Abutment:																					Say: <u>23</u>		CY

Total for ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC:

46 CY

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

	Number		x	Length (ft)		=		44.00		FT
Rear Abutment	1			44.00				44.00		FT
Forward Abutment	1			44.00				<u>44.00</u>		FT
								88.00		FT
Total for ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE:								<u>88</u>		FT

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS

	Number		x	Length (ft)		=		12.00		FT
Rear Abutment	1			12.00				12.00		FT
Forward Abutment	1			12.00				<u>12.00</u>		FT
								24.00		FT
Total for ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS:								<u>24</u>		FT

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

Patching on Rear Abutment: = 4.00 SF
 Patching on Forward Abutment: = 3.00 SF
 Patching on Piers: = 10.00 SF

Total for ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN: 17 SF

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T = 13"), AS PER PLAN

General:

Approach Slabs: $2 \times 20.00 \times 0.5 \times (79.00 + 79.00) / 9 = 351.11$ SY

Total for General: 351.11 SY

Total for General: Say: 352 SY

Total for ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T = 13"), AS PER PLAN: 352 SY

ITEM 526 - TYPE C INSTALLATION

General:

Approach Slabs: $2 \times 81.40 = 162.80$ FT

Total for General: 162.80 FT

Total for General: Say: 163 FT

Total for ITEM 526 - TYPE C INSTALLATION : 163 FT

SPECIAL ITEM 530 - STRUCTURAL SURVEY AND MONITORING OF VIBRATION

This item is paid for Lump Sum. Say: **\$10,000.00**

ITEM 601 - SLOPE PROTECTION, MISC.: GROUT FILLED FABRIC MATS

Rear Abutment:

Rear Abutment: $2.0 :1$ Slope 1.12×1085.0 Factor Area (sf) / 9 = 134.79 SY

Total: 134.79 SY

Total for Rear Abutment: Say: 135 SY

Forward Abutment:

Forward Abutment: $2.0 :1$ Slope 1.12×1085.0 Factor Area (sf) / 9 = 134.79 SY

Total: 134.79 SY

Total for Forward Abutment: Say: 135 SY

Total for ITEM 601 - SLOPE PROTECTION, MISC.: GROUT FILLED FABRIC MATS: 270 SY

ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC

Superstructure:

	Number	Length (ft)	Length (ft)	Length (ft)	
Left Parapet:	1	x (292.00	+ 0.00	+ 0.00	) = 292.00 FT
Right Parapet:	1	x (292.00	+ 0.00	+ 0.00	) = 292.00 FT
Total for Superstructure:					<u>584.00</u> FT
Total for Superstructure:				Say:	<u>584</u> FT

Total for ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC: 584 FT

ITEM 607 - TEMPORARY VANDAL FENCE

Superstructure:

	Number	Length (ft)	Length (ft)	Length (ft)	
Phase 1 Construction:	1	x (20.00	+ 292.00	+ 20.00	) = 332.00 FT
Phase 1 Construction (Bridge Ends):	1	x (100.00	+ 0.00	+ 0.00	) = 100.00 FT
Phase 2 Construction:	1	x (20.00	+ 292.00	+ 20.00	) = 332.00 FT
Phase 2 Construction (Bridge Ends):	1	x (100.00	+ 0.00	+ 0.00	) = 100.00 FT
Total for Superstructure:					<u>864.00</u> FT
Total for Superstructure:				Say:	<u>864</u> FT

Total for ITEM 607 - TEMPORARY VANDAL FENCE: 864 FT

ITEM 607 - FENCE, MISC.: ALUMINUM LETTERING

This item is paid for Lump Sum.

Superstructure:

In 2016, the similar two "Westlake" signs on Crocker Road were fabricated and installed for \$36,492.

For Stage 3 Cost Estimate, assume price of one sign is:

		<u>\$ 20,000</u>
Inflate to year 2023 using: 5.00%		<u>\$28,143</u>
Total for Superstructure:		Say: <u>\$ 30,000</u>

Total for ITEM 607 - FENCE, MISC.: ALUMINUM LETTERING: \$30,000

ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, 1 1/2" THICK

Superstructure:

	Number	Length (ft)	Width (ft)	Width (ft)	
Existing Bridge Deck:	1	x 292.00	x 0.5 x (28.67	+ 28.67	) / 9 = 930.07 SY
Total for Superstructure:					<u>930.07</u> SY
Total for Superstructure:				Say:	<u>931</u> SY

Total for ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, 1 1/2" THICK: 931 SY

ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, MATERIAL ONLY

Superstructure:

	Number		Depth (ft)		Length (ft)		Width (ft)		Width (ft)			
Existing Bridge Deck:	1	x	0.25	x	290.98	x 0.5 x (	28.67	+	28.67	) /	27	= 77.24 CY
Total for Superstructure:												<u>77.24</u> CY
5% estimate for this item:												<u>3.86</u>
Total for Superstructure:											Say:	<u>4</u> CY
Total for ITEM 847 - MICRO SILICA MODIFIED CONCRETE OVERLAY, MATERIAL ONLY:												<u>4</u> CY

ITEM 847 - TEST SLAB

This item is paid for Lump Sum. Say: **\$2,500.00**

ITEM 847 - FULL DEPTH REPAIR

Superstructure:

	Number		Depth (ft)		Length (ft)		Width (ft)		Width (ft)			
Existing Bridge Deck:	1	x	0.58	x	290.98	x 0.5 x (	28.67	+	28.67	) /	27	= 180.22 CY
Total for Superstructure:												<u>180.22</u> CY
1% estimate for this item:												<u>1.80</u> CY
Total for Superstructure:											Say:	<u>2</u> CY
Total for ITEM 847 - FULL DEPTH REPAIR :												<u>2</u> CY

ITEM 847 - HAND CHIPPING

Superstructure:

	Number		Length (ft)		Width (ft)		Width (ft)					
Existing Bridge Deck:	1	x	290.98	x 0.5 x (	28.67	+	28.67	) /	9	=	926.83	SY
Total for Superstructure:											<u>926.83</u>	SY
6% estimate for this item (5% for materials only + 1% for full depth):											<u>55.61</u>	SY
Total for Superstructure:										Say:	<u>56</u>	SY
Total for ITEM 847 - HAND CHIPPING:											<u>56</u>	SY