EUTHENICS

CLIENT	City of Parma Heights	PROJECT NO.	1124 - Independence Blvd Bridge
PROJECT	CUY Independence Blvd Bridge		
SUBJECT	Structure Estimated Quantities	COMP. BY	SRW DATE 5/27/2021
		CHECKED BY	BPS DATE 6/1/2021

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

This item is paid for Lump Sum.

General:

Estimate volume of concrete removal:

			Number		Length (ft)		Width (ft)		Height (ft)					
Existing deck:			1	x	45.43	x	41.00	x	0.40	/	27	=	27.31	CY
Existing sidewalks:			2	x	45.43	x	6.50	x	0.83	/	27	=	18.23	CY
Existing sidewalks (remove sonovoids):	3.14	x	-10	x	45.43	x	0.33	x	0.33	/	27	=	-5.87	CY
Existing box beams:			10	x	44.67	x	4.50		SF (CAD Area)	/	27	=	74.42	CY
Existing Abutments:			2	x	43.35	x	2.00	x	5.00	/	27	=	32.11	CY
Total for General:													146.20	CY
Total for General:												Say:	150	CY

ITEM 202 - APPROACH SLAB REMOVED

General:

	Number		Length (ft)		Width (ft)					
Existing Approach Slabs:	2	x	25.00	x	29.00	/	9	=	161.11	SY
Total for General:									161.11	SY
Total for General:								Say:	**162**	SY

Total for ITEM 202 - APPROACH SLAB REMOVED: **162** SY

ITEM 202 - WEARING COURSE REMOVED

General:

	Number		Length (ft)		Width (ft)					
Existing Bridge Deck:	1	x	45.43	x	28.00	/	9	=	141.34	SY
Existing Approach Slabs:	2	x	25.00	x	28.00	/	9	=	155.56	SY
Total for General:									296.89	SY
Total for General:								Say:	**297**	SY

Total for ITEM 202 - WEARING COURSE REMOVED: **297** SY

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING

This item is paid for Lump Sum.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

Rear Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)					
Abutment Footing:	2	x	24.03	x	6.00	x	7.42	/	27	=	79.29	CY
Abutment Wingwalls:	2	x	5.00	x	3.50	x	5.67	/	27	=	7.35	CY
Total for Rear Abutment:											86.65	CY
Total for Rear Abutment:										Say:	**87**	CY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)					
Abutment Footing:	2	x	24.03	x	6.00	x	7.42	/	27	=	79.29	CY
Abutment Wingwalls:	2	x	5.00	x	3.50	x	5.67	/	27	=	7.35	CY
Total for Forward Abutment:											86.65	CY
Total for Forward Abutment:										Say:	**87**	CY

Total for ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN: **174** CY

ITEM 509 - EPOXY COATED REINFORCING STEEL

General:

Superstructure:	17720	LB
Rear Abutment:	6043	LB
Forward Abutment:	6043	LB
Total for General:	29806	LB
Total for General:	Say: **29806**	LB

Total for ITEM 509 - EPOXY COATED REINFORCING STEEL: **29806** LB

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN

Superstructure:

	Number		Length (ft)		Width (ft)		Height (ft)				
Concrete Deck:	1	x	65.10	x	44.00	x	0.54	/	27	=	56.92 CY
Integral Diaphragm:	2	x	45.55	x	1.50	x	1.32	/	27	=	6.70 CY
Approach Slab Seat:	2	x	45.55	x	1.00	x	0.43	/	27	=	1.44 CY

Total for Superstructure:	65.05	CY
Total for Superstructure:	Say: **66**	CY

Total for ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN: **66** CY

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN

Rear Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)				
Abutment Cap:	1	x	48.97	x	3.00	x	3.21	/	27	=	17.44 CY
Abutment Footing:	2	x	22.03	x	4.00	x	3.00	/	27	=	19.58 CY
Wingwalls (above cap):	2	x	3.00	x	1.50	x	2.47	/	27	=	0.82 CY
Wingwalls (behind cap):	2	x	5.50	x	1.50	x	5.67	/	27	=	3.47 CY

Total for Rear Abutment:	41.32	CY
Total for Rear Abutment:	Say: **42**	CY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)				
Abutment Cap:	1	x	48.97	x	3.00	x	3.17	/	27	=	17.25 CY
Abutment Footing:	2	x	22.03	x	4.00	x	3.00	/	27	=	19.58 CY
Wingwalls (above cap):	2	x	3.00	x	1.50	x	2.47	/	27	=	0.82 CY
Wingwalls (behind cap):	2	x	5.50	x	1.50	x	5.64	/	27	=	3.45 CY

Total for Forward Abutment:	41.10	CY
Total for Forward Abutment:	Say: **42**	CY

Total for ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN: **84** CY

ITEM 511 - CLASS QC2 CONCRETE, SIDEWALK, AS PER PLAN

Superstructure:

	Number		Length (ft)		Width (ft)		Height (ft)				
Sidewalks:	2	x	95.10	x	8.00	x	0.75	/	27	=	42.08 CY

Total for Superstructure:	42.08	CY
Total for Superstructure:	Say: **43**	CY

Total for ITEM 511 - CLASS QC2 CONCRETE, SIDEWALK, AS PER PLAN: **43** CY

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

Superstructure:

	Number		Length (ft)		Width (ft)		Height (ft)					
Superstructure Fascia:	2	x	95.10	x (	7.00	+	2.67	) /	9	=	204.30	SY
Total for Superstructure:											204.30	SY
Total for Superstructure:										Say:	**205**	SY

Total for ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY): **205** SY

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

Superstructure:

	Number		Length (ft)		Heigth (ft)		Width (ft)					
Superstructure Fascia:	2	x	59.10	x 0.5 x (	2.79	+	2.79	) /	9	=	36.60	SY
Total for Superstructure:											36.60	SY
Total for Superstructure:										Say:	**37**	SY

Rear Abutment:

	Number		Length (ft)		Width (ft)		Width (ft)					
Abutment (front face):	1	x	48.97	x 0.5 x (	1.50	+	1.50	) /	9	=	8.16	SY
Wingwalls (front face):	2	x	1.50	x 0.5 x (	2.47	+	2.47	) /	9	=	0.82	SY
Wingwalls (side face):	2	x	8.50	x 0.5 x (	3.97	+	0.50	) /	9	=	4.22	SY
Wingwalls (tops):	2	x	8.50	x 0.5 x (	1.50	+	1.50	) /	9	=	2.83	SY
Total for Rear Abutment:											16.04	SY
Total for Rear Abutment:										Say:	**17**	SY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Width (ft)					
Abutment (front face):	1	x	48.97	x 0.5 x (	1.50	+	1.50	) /	9	=	8.16	SY
Wingwalls (front face):	2	x	1.50	x 0.5 x (	2.47	+	2.47	) /	9	=	0.82	SY
Wingwalls (side face):	2	x	8.50	x 0.5 x (	3.97	+	0.50	) /	9	=	4.22	SY
Wingwalls (tops):	2	x	8.50	x 0.5 x (	1.50	+	1.50	) /	9	=	2.83	SY
Total for Forward Abutment:											16.04	SY
Total for Forward Abutment:										Say:	**17**	SY

Total for ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE): **71** SY

ITEM 515 - PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB21-48, 63'-0 1/2" LONG

Superstructure:

Box Beams:	=	11	EACH		
Total for Superstructure:		11	EACH		
Total for Superstructure:	Say:	**11**	EACH		

Total for ITEM 515 - PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB21-48, 63'-0 1/2" LONG: **11** EACH

ITEM 516 - 3/4" PREFORMED EXPANSION JOINT FILLER

Superstructure:

	Number		Width (ft)		Height (ft)			
Between Rail Barrier at each end of the bridge:	4	x	1.00	x	2.00	=	8.00	SF
Total for Superstructure:							8.00	SF
Total for Superstructure:						Say:	**8**	SF

Total for ITEM 516 - 3/4" PREFORMED EXPANSION JOINT FILLER: **8** SF

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER

Superstructure:

	Number		Width (ft)		Height (ft)			
Between Diaphragm & Wingwalls:	4	x	3.10	x	2.47	=	30.64	SF
Total for Superstructure:							30.64	SF
Total for Superstructure:						Say:	**31**	SF
Total for ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER:							**31**	SF

ITEM 516 - INTEGRAL ABUTMENT EXPANSION JOINT SEAL

Superstructure:

	Number		Length (ft)			
Behind End Diaphragm:	2	x	48.55	=	97.10	FT
Total for Superstructure:					97.10	FT
Total for Superstructure:				Say:	**98**	FT
Total for ITEM 516 - INTEGRAL ABUTMENT EXPANSION JOINT SEAL:					**98**	FT

ITEM 516 - 1/8" PREFORMED BEARING PAD

Superstructure:

	Number		Beams			
Bearing Pads:	2	x	11	=	22	EACH
Total for Superstructure:					22	EACH
Total for Superstructure:				Say:	**22**	EACH
Total for ITEM 516 - 1/8" PREFORMED BEARING PAD:					**22**	EACH

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), (6" X 9" X 1.74")

Superstructure:

	Number		Beams			
Bearing Pads:	4	x	11	=	44	EACH
Total for Superstructure:					44	EACH
Total for Superstructure:				Say:	**44**	EACH
Total for ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), (6" X 9" X 1.74"):					**44**	EACH

ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN:

Superstructure:

	Number		Length (ft)		Length (ft)		Length (ft)			
TST Railing:	2	x (	15.00	+	65.10	+	15.00	) =	190.21	FT
Total for Superstructure:									190.21	FT
Total for Superstructure:								Say:	**191**	FT
Total for ITEM 517 - RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN::									**191**	FT

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

Rear Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)				
Behind Abutment:	1	x	45.97	x	2.00	x	3.21	/	27	=	10.92 CY
Behind Diaphragm:	1	x	45.97	x	2.00	x	0.82	/	27	=	2.80 CY

Total for Rear Abutment: 13.72 CY

Total for Rear Abutment: Say: **14** CY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)				
Behind Abutment:	1	x	45.97	x	2.00	x	3.21	/	27	=	10.92 CY
Behind Diaphragm:	1	x	45.97	x	2.00	x	0.82	/	27	=	2.80 CY

Total for Forward Abutment: 13.72 CY

Total for Forward Abutment: Say: **14** CY

Total for ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC: 28 CY

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

Rear Abutment:

	Number		Length (ft)		Length (ft)		Length (ft)		
Behind Abutment:	1	x (	45.97	+	0.00	+	0.00	) =	45.97 FT

Total for Rear Abutment: 45.97 FT

Total for Rear Abutment: Say: **46** FT

Forward Abutment:

	Number		Length (ft)		Length (ft)		Length (ft)		
Behind Abutment:	1	x (	45.97	+	0.00	+	0.00	) =	45.97 FT

Total for Forward Abutment: 45.97 FT

Total for Forward Abutment: Say: **46** FT

Total for ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE: 92 FT

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

Rear Abutment:

	Number		Length (ft)		Length (ft)		Length (ft)		
Behind Abutment:	1	x (	4.10	+	0.00	+	4.10	) =	8.21 FT

Total for Rear Abutment: 8.21 FT

Total for Rear Abutment: Say: **9** FT

Forward Abutment:

	Number		Length (ft)		Length (ft)		Length (ft)		
Behind Abutment:	1	x (	4.10	+	0.00	+	4.10	) =	8.21 FT

Total for Forward Abutment: 8.21 FT

Total for Forward Abutment: Say: **9** FT

Total for ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS: 18 FT

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK

Rear Abutment:

	Number		Length (ft)			
Drilled Shafts	4	x	9.50	=	38.00	FT
Total for Rear Abutment:					38.00	FT
Total for Rear Abutment:				Say:	**38**	FT

Forward Abutment:

	Number		Length (ft)			
Drilled Shafts	4	x	9.50	=	38.00	FT
Total for Forward Abutment:					38.00	FT
Total for Forward Abutment:				Say:	**38**	FT

Total for ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK: **76** FT

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T = 12"), AS PER PLAN

General:

	Number		Length (ft)		Width (ft)		Width (ft)				
Approach Slabs:	2	x	15.00	x 0.5 x (	44.00	+	44.00	) /	9	=	146.67 SY
Total for General:											146.67 SY
Total for General:										Say:	**147** SY

ITEM 526 - TYPE A INSTALLATION, AS PER PLAN

General:

	Number		Length (ft)		Length (ft)		Length (ft)		
End of Approach Slabs:	2	x (	45.55	+	0.00	+	0.00	) =	91.10 FT
Total for General:									91.10 FT
Total for General:								Say:	**92** FT

Total for ITEM 526 - TYPE A INSTALLATION, AS PER PLAN: **92** FT

ITEM 530 - SPECIAL - FORM LINER

General:

	Number		Height (ft)		Length (ft)		
End of Approach Slabs:	2	x (	2.00	x	95.10	) =	380.42 SF
Total for General:							380.42 SF
Total for General:						Say:	**381** SF

Total for ITEM 530 - SPECIAL - FORM LINER: **381** SF

ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC

Rear Abutment:

	Slope		Factor		CAD Area (sf)		Depth (ft)					
In front of abutment:	2.0 :1		1.12	x	328.4	x	2.00	/	27	=	27.20	CY
Total for Rear Abutment:											27.20	CY
Total for Rear Abutment:										Say:	**27**	CY

Forward Abutment:

	Slope		Factor		CAD Area (sf)		Depth (ft)					
In front of abutment:	2.0 :1		1.12	x	328.4	x	2.00	/	27	=	27.20	CY
Total for Forward Abutment:											27.20	CY
Total for Forward Abutment:										Say:	**27**	CY

Total for ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC: **54** CY

ITEM 613 - LOW STRENGTH MORTAR BACKFILL

Rear Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)					
Behind Abutment:	1	x	45.97	x	2.00	x	3.00	/	27	=	10.22	CY
Between Footings:	1	x	5.96	x	3.00	x	3.00	/	27	=	1.99	CY
					Width (ft)		Dia. (ft)					
Pipe Area:					3.00	x	3.50	/	27	=	-1.07	CY
Total for Rear Abutment:											11.13	CY
Total for Rear Abutment:										Say:	**12**	CY

Forward Abutment:

	Number		Length (ft)		Width (ft)		Height (ft)					
Behind Abutment:	1	x	45.97	x	2.00	x	3.00	/	27	=	10.22	CY
Between Footings:	1	x	5.96	x	3.00	x	3.00	/	27	=	1.99	CY
					Width (ft)		Dia. (ft)					
Pipe Area:					3.00	x	3.50	/	27	=	-1.07	CY
Total for Forward Abutment:											11.13	CY
Total for Forward Abutment:										Say:	**12**	CY

Total for ITEM 613 - LOW STRENGTH MORTAR BACKFILL: **24** CY

ITEM 625 - STRUCTURE GROUNDING SYSTEM

General:

Structure Grounding System										=	1	EACH
Total for General:											1	EACH
Total for General:										Say:	**1**	EACH

Total for ITEM 625 - STRUCTURE GROUNDING SYSTEM: **1** EACH

ITEM 846 - POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

General:

	Number		Length (ft)		Depth (ft)		Width (ft)				
End of Approach Slabs:	2	x (	28.99	+	0.25	+	1.67	) =	24.16	CF
Total for General:									24.16	CF
Total for General:								Say:	**25**	CF

Total for ITEM 846 - POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM: **25** CF