OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-60D-0005
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 202E11301 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUTMENT														
Rear Abutment Footer	1	x	39.5819		x	4.25		x	3		÷	27	=	18.7
Rear Turnback South Footer	1	x	6.6792		x	3		x	3		÷	27	=	2.2
Rear Abutment Breastwall	1	x	38.78		x	3.25		x	3.17		÷	27	=	14.8
Rear Abut. T.B. Wall South	1	x	7.43		x	1.5		x	3.67		÷	27	=	1.5
Rear Abut. T.B. Wall South Column	1	x	2		x	4.71		x	1		÷	27	=	0.3
Rear Abut. T.B. Wall South 2	1	x	16		x	1.6667		x	2.58		÷	27	=	2.5
Rear Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
Rear Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
Rear Abut. W.W. Wall North	1	x	0.8575	1.2536	x	1.6667		x	2.0833		÷	27	=	0.1
												REAR ABUTMENT TOTAL	=	42.9
FORWARD ABUTMENT														
Forward Abutment Footer	1	x	39.55		x	4.25		x	3		÷	27	=	18.7
Forward Turnback South Footer	1	x	6.23		x	3		x	3		÷	27	=	2.1
Forward Turnback North Footer	1	x	6.5833		x	3		x	3		÷	27	=	2.2
Fwd. Abutment Breastwall	1	x	38.04		x	3.25		x	3.1		÷	27	=	14.2
Fwd. Abut. T.B. Wall South	1	x	6.81		x	1.5		x	3.58		÷	27	=	1.4
Fwd. Abut. T.B. Wall South Column	1	x	2		x	4.71		x	1		÷	27	=	0.3
Fwd. Abut. T.B. Wall South 2	1	x	16		x	1.6667		x	2.58		÷	27	=	2.5
Fwd. Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
Fwd. Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
Fwd. Abut. T.B. Wall North	1	x	7.03		x	1.5		x	2.53		÷	27	=	1.0
Fwd. Abut. T.B. Wall North Column	1	x	2		x	4.71		x	1		÷	27	=	0.3
Fwd. Abut. T.B. Wall South 2	1	x	16		x	1.6667		x	2.64		÷	27	=	2.6
Fwd. Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
Fwd. Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.0
												PHASE 2 TOTAL	=	50.6
												TOTAL CARRIED TO GENERAL SUMMARY =		**93.6**

ITEM 202E22900 - APPROACH SLABS REMOVED

DESCRIPTION	#		L			W			T			S.F.		SQ YD
Rear Approach Slab	1	x	25		x	35		x			÷	9	=	97.2
Forward Approach Slab	1	x	25		x	35		x			÷	9	=	97.2
												TOTAL CARRIED TO GENERAL SUMMARY =		**194.4**

ITEM 510E10000 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	1	x	38		x			x			÷	1	=	38.0
PIER 2	1	x	38		x			x			÷	1	=	38.0
												TOTAL CARRIED TO GENERAL SUMMARY =		**76**

ITEM 511E21523 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
Bridge Deck	1	x	142.4907		x	38.3333		x	2.2104		÷	27	=	447.2
Rear Diaphragm Bottom	1	x	39.3293		x	2.25		x	1.5		÷	27	=	4.9
Rear Diaphragm Bearing Pad	-1	x	39.3287		x	0.6667		x	0.0833		÷	27	=	-0.1
Rear Diaphragm Top	1	x	39.3293		x	1.75		x	2.2076		÷	27	=	5.6
Forward Diaphragm Bottom	1	x	38.765		x	2.25		x	1.5		÷	27	=	4.8
Forward Diaphragm Bearing Pad	-1	x	38.7654		x	0.6667		x	0.0833		÷	27	=	-0.1
Forward Diaphragm Top	1	x	38.765		x	1.75		x	2.2082		÷	27	=	5.5
Pier 1	1	x	36.8562		x	3		x	1.6597		÷	27	=	6.8
Pier 1 PEJF	-2	x	36.5625		x	1		x	0.0833		÷	27	=	-0.2
Pier 2	1	x	36.8562		x	3		x	1.941		÷	27	=	7.9
Pier 2 PEJF	-2	x	36.5626		x	1		x	0.0833		÷	27	=	-0.2
												TOTAL CARRIED TO GENERAL SUMMARY =		482.2

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-60D-0005
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 511E34461 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN														
DESCRIPTION	#		L		W		T		C.F.		CU YD
LEFT PARAPET														
Lefft Parapet	1	x	165.2005		x	4.41		x	1		÷	27	=	27.0
Left Parapet Transition Section	1	x	53.73		x	1		x	1		÷	27	=	2.0
												LEFT PARAPET TOTAL	=	29.0
RIGHT PARAPET														
Right Parapet	1	x	170.9096		x	4.41		x	1		÷	27	=	27.9
Right Parapet Transition Section	2	x	53.73		x	1		x	1		÷	27	=	4.0
												RIGHT PARAPET TOTAL	=	31.9
												TOTAL CARRIED TO GENERAL SUMMARY =		60.9

ITEM 511E43510 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING, AS PER PLAN														
DESCRIPTION	#		L		W		T		C.F.		CU YD
REAR ABUTMENT														
Rear Abutment Footer	1	x	42.22		x	3.5		x	3		÷	27	=	16.4
Rear Abutment TB Footer	1	x	7.5		x	5.25		x	3		÷	27	=	4.4
Rear Abutment Breastwall	1	x	39.67		x	2.25		x	4.25		÷	27	=	14.0
Rear Abutment BW corner South	1	x	0.5129		x	4.45		x	1		÷	27	=	0.1
Rear Abutment BW corner North	1	x	0.5133		x	3.52		x	1		÷	27	=	0.1
Rear Abut. TB Wall bottom South	1	x	9.4208		x	1.5		x	4.44		÷	27	=	2.3
Rear Abut. TB Wall top South	1	x	15.19		x	1.5		x	3.64		÷	27	=	3.1
Rear Abut. TB Wall North	1	x	4.06		x	1.5		x	7.29		÷	27	=	1.6
												REAR ABUTMENT TOTAL	=	42.0
FORWARD ABUTMENT														
Forward Abutment Footer	1	x	43.1124		x	3.5		x	3		÷	27	=	16.8
Forward Abutment TB Footer South	1	x	6.8241		x	5.25		x	3		÷	27	=	4.0
Forward Abutment TB Footer North	1	x	7.3725		x	5.25		x	3		÷	27	=	4.3
Forward Abutment Breastwall	1	x	39.1057		x	2.25		x	3.1748		÷	27	=	10.3
Fwd. Abutment BW corner South	1	x	0.5055		x	3.21		x	1		÷	27	=	0.1
Fwd. Abutment BW corner North	1	x	0.5057		x	2.64		x	1		÷	27	=	0.0
Fwd. Abut. TB Wall bottom South	1	x	8.37		x	1.5		x	3.18		÷	27	=	1.5
Fwd. Abut. TB Wall top South	1	x	14.06		x	1.5		x	3.58		÷	27	=	2.8
Fwd. Abut. TB Wall bottom North	1	x	9.3019		x	1.5		x	2.64		÷	27	=	1.4
Fwd. Abut. TB Wall top North	1	x	14.9229		x	1.5		x	3.5728		÷	27	=	3.0
												FORWARD ABUTMENT TOTAL	=	44.1
												TOTAL CARRIED TO GENERAL SUMMARY =		86.1

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-60D-0005
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 512 - SEALING OF CONCRETE SURFACES, (NON-EPOXY)													
DESCRIPTION	#		L		W		T			C.F.		SQ YD
Rear Abutment													
Rear Abutment Face	1	x	39.67		1.75				÷	9	=	7.7
Rear Abutment Diaphragm Face	1	x	39.32		1.5				÷	9	=	6.6
Rear Abut. South WW Face	1	x	5.76		1.6653				÷	9	=	1.1
Rear Abut. South WW Side	1	x	14.94		2.81				÷	9	=	4.7
Rear Abut. South WW Top	1	x	15.19		1.5				÷	9	=	2.5
Rear Abut. North WW Face/Side	1	x	4.85		2.9				÷	9	=	1.6
Rear Abut. North WW Top	1	x	4.06		1.5				÷	9	=	0.7
										Rear Abutment TOTAL	=	**24.8**
Forward Abutment													
Forward Abutment Face	1	x	39.11		1.17				÷	9	=	5.1
Forward Abut. Diaphragm Face	1	x	38.78		1.5				÷	9	=	6.5
Forward Abut. South WW Face	1	x	1.52		5.04				÷	9	=	0.9
Forwad Abut. South WW Side	1	x	13.95		2.51				÷	9	=	3.9
Forward Abut. South WW Top	1	x	14.04		1.5				÷	9	=	2.3
Forward Abut. North WW Face	1	x	1.6707		4.48				÷	9	=	0.8
Forwad Abut. North WW Side	1	x	14.61		2.18				÷	9	=	3.5
Forward Abut. North WW Top	1	x	14.93		1.5				÷	9	=	2.5
										Forward Abutment TOTAL	=	**25.5**
Pier 1 and Pier 2													
Pier 1 Face	1	x	78.4248		5.16				÷	9	=	45.0
Pier 1 Bottom/End	1	x	36.86		3				÷	9	=	12.3
Columns	-3	x	7.0686		1				÷	9	=	-2.4
Pier 2 Face	1	x	78.4248		5.44				÷	9	=	47.4
Pier 2 Bottom/End	1	x	36.86		3				÷	9	=	12.3
Columns	-3	x	7.0686		1				÷	9	=	-2.4
										Pier 1 and Pier 2 TOTAL	=	**112.2**
Deck/Parapet													
Left Parapet	1	x	142.5416		10.8				÷	9	=	171.0
Parapet on Diaphragm/App. Slab	1	x	22.66		8.0102				÷	9	=	20.2
Parapet End	1	x	4.66		1				÷	9	=	0.5
Parapet Transitions 10'	1	x	10		7.3716				÷	9	=	8.2
Parapet Transitions 2.5'	1	x	2.5		6.7329				÷	9	=	1.9
Parapet Transitions 1.5'	1	x	1.5		6.7701				÷	9	=	1.1
Parapet Transitions End	1	x	1.0763		2.6667				÷	9	=	0.3
Right Parapet	1	x	142.44		10.8				÷	9	=	170.9
Parapet on Diaphragm/App. Slab	1	x	28.47		8.0102				÷	9	=	25.3
Parapet Transitions 10'	2	x	10		7.3716				÷	9	=	16.4
Parapet Transitions 2.5'	2	x	2.5		6.7329				÷	9	=	3.7
Parapet Transitions 1.5'	2	x	1.5		6.7701				÷	9	=	2.3
Parapet Transitions End	2	x	1.0763		2.6667				÷	9	=	0.6
										Deck/Parapet Total	=	**422.5**
										GRAND TOTAL =		**585**

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

DESCRIPTION	#		L		W		T		S.F.		SQ YD
Pier 1 (Columns)											
Pier 1 (Columns)	3	x	12.2917	x	9.4278	x		÷	9	=	38.6
									PHASE 1 TOTAL	=	38.6
Pier 2 (Columns)											
Pier 2 (Columns)	3	x	11.2708	x	9.4278	x		÷	9	=	35.4
									PHASE 2 TOTAL	=	35.4
									TOTAL CARRIED TO GENERAL SUMMARY =		**74.0**

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ.FT.
Rear Abutment											
Rear Abutment 11"	1	x	40.11	x	0.9167	x		÷	1	=	36.8
Rear Abutment 8"	1	x	39.32	x	0.6667	x		÷	1	=	26.2
									Rear Abutment TOTAL	=	63.0
Forward Abutment											
Forward Abutment 11"	1	x	39.53	x	0.9167	x		÷	1	=	36.2
Forward Abutment 8"	1	x	38.77	x	0.6667	x		÷	1	=	25.8
									Forward Abutment TOTAL	=	62.0
									TOTAL CARRIED TO GENERAL SUMMARY =		125.00

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ.FT.
Pier 1											
Pier 1	2	x	36.5626	x	1	x		÷	1	=	73.1
									Pier 1 TOTAL	=	73.1
Pier 2											
Pier 2	2	x	36.5625	x	1	x		÷	1	=	73.1
									Pier 2 TOTAL	=	73.1
Parapets											
Parapet at A.S./Deck Joint	4	x	3.5	x	1.2829	x		÷	1	=	18.0
									Parapet TOTAL	=	18.0
									TOTAL CARRIED TO GENERAL SUMMARY =		**164**

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ.FT.
Rear Abutment											
Rear Abut. South WW/Diaphragm	1	x	2.31	x	3.77	x		÷	1	=	8.7
Rear Abut. North WW/Diaphragm	1	x	2.31	x	3.78	x		÷	1	=	8.7
									Rear Abutment TOTAL	=	17.4
Forward Abutment											
Fwd. Abut. South WW/Diaphragm	1	x	2.28	x	3.79	x		÷	1	=	8.6
Fwd. Abut. North WW/Diaphragm	1	x	2.28	x	3.79	x		÷	1	=	8.6
									Forward Abutment TOTAL	=	17.2
Rear App. Slab											
Rear App. Slab South WW	1	x	13.31	x	1.4167	x		÷	1	=	18.9
Rear App. Slab North WW	1	x	2.35	x	1.4167	x		÷	1	=	3.3
Rear App. Slab North/Impact Att.	1	x	30.66	x	0.5	x		÷	1	=	15.3
									Rear App. Slab TOTAL	=	37.5
Forward App. Slab											
Forward App. Slab South WW	1	x	12.38	x	1.25	x		÷	1	=	15.5
Forward App. Slab North WW	1	x	13.13	x	1.25	x		÷	1	=	16.4
									Fwd. App. Slab TOTAL	=	31.9
									TOTAL CARRIED TO GENERAL SUMMARY =		**104.00**

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		FT
Rear Approach Slab	1	x	39.33	x		x		÷	1	=	39.3
Forward Approach Slab	1	x	38.76	x		x		÷	1	=	38.8
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
									TOTAL CARRIED TO GENERAL SUMMARY =		78

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L		W		T		C.F.		FT
Rear and Forward Abutment Diaphragms											
Rear Abutment Diaphragm	1	x	39.68						1	=	39.7
Forward Abutment Diaphragm	1	x	39.1						1	=	39.1
TOTAL CARRIED TO GENERAL SUMMARY =											**79**

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L		W		T		FT.		FT
Rear and Forward Approach Slabs											
Rear Approach Slab	1	x	39.84						1	=	39.8
Forward Approach Slab	1	x	36.33						1	=	36.3
TOTAL CARRIED TO GENERAL SUMMARY =											**76.10**

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L		W		T		C.F.		CU YD
Rear Abutment											
Rear Abutment	1	x	39.17		2		5.79		27	=	16.8
Rear Abutment A.S. Wedge	1	x	39.17		1.5		0.375		27	=	0.8
Rear Abutment South WW	1	x	5.52		2		6.17		27	=	2.5
Rear Abutment TOTAL										=	20.14
Forward Abutment											
Forward Abutment	1	x	38.59		2		4.78		27	=	13.7
Forward Abutment A.S. Wedge	1	x	38.59		1.5		0.375		27	=	0.8
Forward Abutment South WW	1	x	5.01		2		5.03		27	=	1.9
Forward Abutment North WW	1	x	5.4511		2		4.47		27	=	1.8
Forward Abutment TOTAL										=	18.14
TOTAL CARRIED TO GENERAL SUMMARY =											**38.28**

ITEM 518 - PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L		W		T		FT.		FT
Rear Abutment	1	x	46						1	=	46.0
Forward Abutment	1	x	51						1	=	51.0
TOTAL CARRIED TO GENERAL SUMMARY =											**97.00**

ITEM 518 - NON-PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L		W		T		FT.		FEET
Rear Abutment	1	x	17						1	=	17.0
Forward Abutment	1	x	17						1	=	17.0
TOTAL CARRIED TO GENERAL SUMMARY =											**34.00**

ITEM 519 - SPECIAL - COMPSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L		W		T		S.F.		SQ FT
Pier 1	3	x	12.2917		9.4278				1	=	347.7
Pier 2	3	x	11.2708		9.4278				1	=	318.8
TOTAL CARRIED TO GENERAL SUMMARY =											**667**

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN														
DESCRIPTION	#		L			W			T			S.F.		SQ YD
Forward Approach Slab	1	x	25		x	38.33		x			÷	9	=	106.5
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		106.47

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN														
DESCRIPTION	#		L			W			T			S.F.		SQ YD
Rear Approach Slab	1	x	28		x	37.17		x			÷	9	=	115.6
												9		
												TOTAL CARRIED TO GENERAL SUMMARY =		115.64

ITEM 530E00600 - STRUCTURES (AESTHETIC TREATMENT CONCRETE FORMLINER/STAIN)														
DESCRIPTION	#		L			W			T			C.F.		CU YD
LEFT PARAPET														
Lefft Parapet Transition	2	x	10		x	2.1667	3	x	1		÷	1	=	51.7
Left Parapet	1	x	170.94		x	3		x	1		÷	1	=	512.8
												LEFT PARAPET TOTAL	=	564.5
RIGHT PARAPET														
Right Parapet Transition	1	x	10		x	2.1667	3	x	1		÷	1	=	25.8
Right Parapet	1	x	161.22		x	3		x	1		÷	1	=	483.7
												RIGHT PARAPET TOTAL	=	509.5
												TOTAL CARRIED TO GENERAL SUMMARY =		1074.0

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-70-1186K
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L		W		T		C.F.		CU YD
Existing Bridge Deck	1	x	112.0325	x	30	x	1.6875	÷	27	=	210.1
Existing App. Slab Seat	2	x	28.297	x	0.75	x	0.4375	÷	27	=	0.7
Left Parapet	1	x	112.2567	x	4.26	x	1	÷	27	=	17.7
Right Parapet	1	x	111.8348	x	4.26	x	1	÷	27	=	17.6
		x		x		x		÷	27	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				246

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L		W		T		C.F.		CU YD
Existing Rear Abutment Footer	1	x	50.7238	x	3	x	3	÷	27	=	16.9
Ex. Rear Abut. Breatwall S. WW	1	x	43.6437	x	2	x	4.0914	÷	27	=	13.2
Ex. Forwad Abut. BW North Corner	1	x	2.55	x	1.3946	x	1	÷	27	=	0.1
Ex. Forwad Abut. BW North WW	1	x	16	x	1.5	x	3.8035	÷	27	=	3.4
Ex. Forwad Abut. BW North Shaft	1	x	2	x	1.77	x	1	÷	27	=	0.1
x. Fwd. Abut. BW North Parapet Trar	1	x	1.9	x	1	x	1	÷	1	=	1.9
Ex. Fwd. Abut. BW North Parapet	1	x	2	x	4.26	x	1	÷	27	=	0.3
Existing Forward Abut. Footer	1	x	41.7221	x	3	x	3	÷	27	=	13.9
Existing Forward Abut. Breatwall	1	x	30.4672	x	2	x	2.3431	÷	27	=	5.3
Ex. Forwad Abut. BW South Corner	1	x	2.71	x	1.41	x	1	÷	27	=	0.1
Ex. Forwad Abut. BW North Corner	1	x	2.04	x	1.53	x	1	÷	27	=	0.1
Ex. Forwad Abut. BW South WW	1	x	16	x	1.5	x	3.625	÷	27	=	3.2
Ex. Forwad Abut. BW South Shaft	1	x	2	x	1.77	x	1	÷	27	=	0.1
x. Fwd. Abut. BW South Parapet Trar	1	x	1.9	x	1	x	1	÷	1	=	1.9
Ex. Fwd. Abut. BW South Parapet	1	x	2	x	4.26	x	1	÷	27	=	0.3
Ex. Forwad Abut. BW North WW	1	x	16	x	1.5	x	3.25	÷	27	=	2.9
Ex. Forwad Abut. BW North Shaft	1	x	2	x	1.77	x	1	÷	27	=	0.1
x. Fwd. Abut. BW North Parapet Trar	1	x	1.9	x	1	x	1	÷	1	=	1.9
Ex. Fwd. Abut. BW North Parapet	1	x	2	x	4.26	x	1	÷	27	=	0.3
		x		x		x		÷	27	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				66

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L		W		T		C.F.		SQ YD
Rear App. Slab	1	x	25	x	28.6786	x		÷	9	=	79.7
Forward App. Slab	1	x	25	x	27.356	x		÷	9	=	76.0
		x		x		x		÷	9	=	
		x		x		x		÷	9	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				156

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L		W		T		C.F.		EACH
Pier 1	28	x		x		x		÷	1	=	28.0
Pier 2	28	x		x		x		÷	1	=	28.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				56

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-70-1186K
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING

DESCRIPTION	#		L		W		T		C.F.		CU YD
Rear Abutment Footer	1	x	41.6125	x	3.5	x	3	÷	27	=	16.2
Rear Abutment North TB Footer	1	x	7.0233	x	5.25	x	3	÷	27	=	4.1
Rear Abut. Breast Wall	1	x	31.9813	x	2.25	x	3.12	÷	27	=	8.3
Rear Abut. South WW Stem	1	x	7.6649	x	2.25	x	3.5546	÷	27	=	2.3
Rear Abut. South WW Cap	1	x	7.6649	x	2.25	x	4.0308	÷	27	=	2.6
Rear Abut. North WW Stem	1	x	8.6236	x	1.5	x	2.6854	÷	27	=	1.3
Rear Abut. North WW Cap	1	x	13.2511	x	1.5	x	3.4237	÷	27	=	2.5
Rear Abut. North WW Corner	1	x	2.6854	x	1	x	0.4643	÷	27	=	0.0462
Forward Abutment Footer	1	x	35.7753	x	3.5	x	3	÷	27	=	13.9
Forward Abutment South TB Footer	1	x	6.2949	x	5.25	x	3	÷	27	=	3.7
Forward Abutment North TB Footer	1	x	5.5175	x	5.25	x	3	÷	27	=	3.2
Forward Abut. Breast Wall	1	x	31.5961	x	2.25	x	2.555	÷	27	=	6.7
Forward Abut. South TB Stem	1	x	7.876	x	1.5	x	2.99	÷	27	=	1.3
Forward Abut. South TB Cap	1	x	12.5415	x	1.5	x	3.1762	÷	27	=	2.2
Forward Abut. South TB Corner	1	x	2.99	x	1	x	0.4985	÷	27	=	0.0552
Forward Abut. North TB Stem	1	x	7.5098	x	1.5	x	2.1154	÷	27	=	0.9
Forward Abut. North TB Cap	1	x	12.0371	x	1.5	x	3.1846	÷	27	=	2.1
Forward Abut. South TB Corner	1	x	2.1154	x	1	x	0.4985	÷	27	=	0.0391
		x		x		x		÷	27	=	
									TOTAL CARRIED TO GENERAL SUMMARY =		71.5

ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK

DESCRIPTION	#		L		W		T		C.F.		CU YD
Rear Diaphragm	1	x	31.6423	x	2.25	x	3.2917	÷	27	=	8.7
Rear Diaphragm App. Slab Seat	-1	x	31.6423	x	0.5	x	1.7917	÷	27	=	-1.0
Rear Diaphragm Bearing Pad	-1	x	31.6423	x	0.6667	x	0.08333	÷	27	=	-0.1
Pier 1 Top of Cap	1	x	28.3562	x	3	x	0.6981	÷	27	=	2.2
Pier 2 Top of Cap	1	x	28.3562	x	3	x	0.7338	÷	27	=	2.3
Piers 1" PEJF	-2	x	28.5777	x	2	x	0.0833	÷	27	=	-0.4
Forward Diaphragm	1	x	31.4289	x	2.25	x	3.2917	÷	27	=	8.6
Forward Diaphragm App. Slab Seat	-1	x	31.4289	x	0.5	x	1.7917	÷	27	=	-1.0
Rear Diaphragm Bearing Pad	-1	x	31.4289	x	0.6667	x	0.08333	÷	27	=	-0.1
Bridge Deck	1	x	109.91	x	31.3334	x	1.7917	÷	27	=	228.5
Pilaster	1	x	4.85	x	1	x	1.7917	÷	27	=	0.3
		x		x		x		÷	27	=	
									TOTAL CARRIED TO GENERAL SUMMARY =		248

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

DESCRIPTION	#		L		W		T		C.F.		CU YD
Left Parapet	1	x	135.4956	x	1	x	4.4077	÷	27	=	22.1
Right Parapet	1	x	135.0367	x	1	x	4.4077	÷	27	=	22.0
Parapet Transitions	4	x	2.033	x	1	x	1	÷	1	=	8.1
									TOTAL CARRIED TO GENERAL SUMMARY =		52

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20 INITIALS: CPS
PID: 93006 CHECKED BY:
CRS: MUS-70-1186K
DESCRIPTION: BRIDGE QUANTITIES

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

DESCRIPTION	#		L		W		T		C.F.		SQ YD
Rear Abutment											
Rear Abutment Face	1	x	35.82	x	1.12	x		÷	9	=	4.5
Rear Abutment Diaphragm Face	1	x	31.64	x	1.5	x		÷	9	=	5.3
Rear Abut. South WW Face	1	x	5.6	x	7.51	x		÷	9	=	4.7
Rear Abut. South WW Top	1	x	7.64	x	1.5	x		÷	9	=	1.3
Rear Abut. North WW Face	1	x	4	x	1.52	x		÷	9	=	0.7
Rear Abut. North WW Side	1	x	13.14	x	2.08	x		÷	9	=	3.0
Rear Abut. North WW Top	1	x	13.14	x	1.5	x		÷	9	=	2.2
							Rear Abutment TOTAL			=	**21.6**
Forward Abutment											
Forward Abutment Face	1	x	31.76	x	0.96	x		÷	9	=	3.4
Forward Abut. Diaphragm Face	1	x	31.43	x	1.5	x		÷	9	=	5.2
Forward Abut. South WW Face	1	x	4.75	x	1.51	x		÷	9	=	0.8
Forwad Abut. South WW Side	1	x	12.54	x	2.48	x		÷	9	=	3.5
Forward Abut. South WW Top	1	x	12.54	x	1.5	x		÷	9	=	2.1
Forward Abut. North WW Face	1	x	3.87	x	1.51	x		÷	9	=	0.6
Forwad Abut. North WW Side	1	x	12.03	x	2.03	x		÷	9	=	2.7
Forward Abut. North WW Top	1	x	12.03	x	1.5	x		÷	9	=	2.0
							Forward Abutment TOTAL			=	**20.3**
Pier 1 and Pier 2											
Pier 1 Face	1	x	61.4248	x	4.12	x		÷	9	=	28.1
Pier 1 Bottom/End	1	x	28.36	x	3	x		÷	9	=	9.5
Columns	-3	x	7.0686	x	1	x		÷	9	=	-2.4
Pier 2 Face	1	x	61.4248	x	4.15	x		÷	9	=	28.3
Pier 2 Bottom/End	1	x	28.36	x	3	x		÷	9	=	9.5
Columns	-3	x	7.0686	x	1	x		÷	9	=	-2.4
							Pier 1 and Pier 2 TOTAL			=	**70.6**
Deck/Parapet											
Left Parapet	1	x	111.604	x	10.39	x		÷	9	=	128.8
Parapet on Diaphragm/App. Slab	1	x	25.29	x	8.09	x		÷	9	=	22.7
Parapet Transitions 10'	2	x	10	x	7.3716	x		÷	9	=	16.4
Parapet Transitions 2.5'	2	x	2.5	x	6.7329	x		÷	9	=	3.7
Parapet Transitions 1.5'	2	x	1.5	x	6.7701	x		÷	9	=	2.3
Parapet Transitions End	2	x	1.0763	x	2.6667	x		÷	9	=	0.6
Right Parapet	1	x	109.63	x	10.39	x		÷	9	=	126.6
Parapet on Diaphragm/App. Slab	1	x	25.4083	x	8.09	x		÷	9	=	22.8
Parapet Transitions 10'	2	x	10	x	7.3716	x		÷	9	=	16.4
Parapet Transitions 2.5'	2	x	2.5	x	6.7329	x		÷	9	=	3.7
Parapet Transitions 1.5'	2	x	1.5	x	6.7701	x		÷	9	=	2.3
Parapet Transitions End	2	x	1.0763	x	2.6667	x		÷	9	=	0.6
							Deck/Parapet Total			=	**347.0**
									GRAND TOTAL =		**460**

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

DESCRIPTION	#		L		W		T		C.F.		SQ YD
Pier 1	3	x	11.8333	x	9.42	x		÷	9	=	37.2
Pier 2	3	x	12.375	x	9.42	x		÷	9	=	38.9
		x		x		x		÷	9	=	
		x		x		x		÷	9	=	
									TOTAL CARRIED TO GENERAL SUMMARY =		76

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-70-1186K
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		S.F.		SQ YD
Rear Abutment Diaphragm	1	x	31.6485	x	0.6667	x		÷	1	=	21.1
Rear Abutment Diaphragm	1	x	31.6467	x	0.9167	x		÷	1	=	29.0
Forward Abutment Diaphragm	1	x	31.429	x	0.6667	x		÷	1	=	21.0
Forward Abutment Diaphragm	1	x	31.4238	x	0.9167	x		÷	1	=	28.8
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				100

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		S.F.		EACH
Pier 1 PEJF, APP	1	x	28.5777	x	2	x		÷	1	=	57.2
Pier 2 PEJF, APP	1	x	28.5777	x	2	x		÷	1	=	57.2
Parapet Joints	4	x	4.4077	x	1	x		÷	1	=	17.6
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				132

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		S.F.		SQ. FT.
Rear Abutment South WW Footer	1	x	3	x	3	x		÷	1	=	9.0
Rear Abutment South WW	1	x	8.31	x	2.25	x		÷	1	=	18.7
Rear Abutment Diaphragm	2	x	2.272	x	3.34	x		÷	1	=	15.2
Rear Abutment North WW	1	x	11.09	x	1.25	x		÷	1	=	13.9
Forward Abutment Diaphragm	2	x	2.2569	x	3.35	x		÷	1	=	15.1
Forward Abutment South WW	2	x	10.4019	x	1.25	x		÷	1	=	26.0
Forward Abutment North WW	2	x	9.72	x	1.25	x		÷	1	=	24.3
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				122

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		FT
Rear Approach Slab	1	x	31.65	x		x		÷	1	=	31.7
Forward Approach Slab	1	x	31.43	x		x		÷	1	=	31.4
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				63

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L		W		T		C.F.		FT
Rear Approach Slab Sleeper Slab	1	x	29.33	x		x		÷	1	=	29.30
Fwd. Approach Slab Sleeper Slab	1	x	29	x		x		÷	1	=	29.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				58.30

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L		W		T		C.F.		FEET
Rear Abutment	1	x	35	x		x		÷	1	=	35.0
Forward Abutment	1	x	35	x		x		÷	1	=	35.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				70

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L		W		T		C.F.		CU YD
Rear Abutment	1	x	39.8639	x	2	x	5.3105	÷	27	=	15.7
Rear Abutment A.S. Wedge	-1	x	31.64	x	1.5	x	0.375	÷	27	=	-0.7
Rear Abut. North WW	1	x	5.216	x	2	x	4.7844	÷	27	=	1.8
Forward Abutment	1	x	32.2617	x	2	x	4.635	÷	27	=	11.1
Forward Abut. A.S. Wedge	-1	x	31.4289	x	1.5	x	0.375	÷	27	=	-0.7
Forward Abut. South WW	1	x	4.474	x	2	x	5.0469	÷	27	=	1.7
Forward Abut. North WW	1	x	3.6374	x	2	x	4.2232	÷	27	=	1.1
		x		x		x		÷	27	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				30.10

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FEET
Rear Abutment	1	x	39		x			x			÷	1	=	39.0
Forward Abutment	1	x	40		x			x			÷	1	=	40.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		79

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

DESCRIPTION	#		L			W			T			C.F.		FEET
Rear Abutment	1	x	17		x			x			÷	1	=	17.0
Forward Abutment	1	x	17		x			x			÷	1	=	17.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		34

ITEM 519 - SPECIAL - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ YD
Pier 1	3	x	11.84		x	9.42		x			÷	1	=	334.6
Pier 2	3	x	12.375		x	9.42		x			÷	1	=	349.7
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		684

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
Rear App. Slab	1	x	25		x	31.3334		x			÷	9	=	87.0
Fwd App. Slab	1	x	25		x	31.3334		x			÷	9	=	87.0
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		174

ITEM 530E00600 - STRUCTURES (AESTHETIC TREATMENT CONCRETE FORMLINER/STAIN)

DESCRIPTION	#		L			W			T			C.F.		CU YD
LEFT PARAPET														
Lefft Parapet Transition	2	x	10		x	2.1667	3	x	1		÷	1	=	51.7
Left Parapet	1	x	135.6069		x	3		x	1		÷	1	=	406.8
												LEFT PARAPET TOTAL	=	458.5
RIGHT PARAPET														
Right Parapet Transition	2	x	10		x	2.1667	3	x	1		÷	1	=	51.7
Right Parapet	1	x	135.0278		x	3		x	1		÷	1	=	405.1
												RIGHT PARAPET TOTAL	=	456.8
												TOTAL CARRIED TO GENERAL SUMMARY =		915.3

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L		W		T		C.F.		CU YD
BRIDGE DECK BET.EXT. BEAMS	1	x	157.0845	x	26.0625		x 0.72083	÷	27	=	109.3
OVERHUNG DECK-SPAN #1 (LT.)	1	x	45.875	x	3.0833	2.4375	x 0.75	÷	27	=	3.5
OVERHUNG DECK-SPAN #2 (LT.)	1	x	65.1771	x	2.4375	3.1094	x 0.75	÷	27	=	5.0
OVERHUNG DECK-SPAN #3(LT.)	1	x	45.9792	x	3.1094	2.0938	x 0.75	÷	27	=	3.3
OVERHUNG DECK-SPAN #1 (RT.)	1	x	45.875	x	2.9427	3.3854	x 0.75	÷	27	=	4.0
OVERHUNG DECK-SPAN #2 (RT.)	1	x	65.1771	x	3.3854	1.7344	x 0.75	÷	27	=	4.6
OVERHUNG DECK-SPAN #3 (RT.)	1	x	45.9792	x	1.7344	1.2813	x 0.75	÷	27	=	1.9
PARAPET (LEFT)	1	x	147.8	x	0.1667		x 1.40625	÷	27	=	1.3
PARAPET (LEFT)	1	x	147.8	x	0.75	0.9167	x 1.5833	÷	27	=	7.2
PARAPET (LEFT)	1	x	147.8	x	0.9167	1.5	x 0.8333	÷	27	=	5.5
PARAPET (LEFT)	1	x	147.8	x	1.5		x 0.375	÷	27	=	3.1
PARAPET (RIGHT)	1	x	148.49	x	0.1667		x 1.01042	÷	27	=	0.9
PARAPET (RIGHT)	1	x	148.49	x	0.75	0.9167	x 1.5833	÷	27	=	7.3
PARAPET (RIGHT)	1	x	148.49	x	0.9167	1.5	x 0.8333	÷	27	=	5.5
PARAPET (RIGHT)	1	x	148.49	x	1.5		x 0.375	÷	27	=	3.1
PARAPET ON REAR LT. WINGWALL	1	x	9.6667	x	0.1667		x 1.2083	÷	27	=	0.1
PARAPET ON REAR LT. WINGWALL	1	x	9.6667	x	0.75	0.9167	x 1.5833	÷	27	=	0.5
PARAPET ON REAR LT. WINGWALL	1	x	9.6667	x	0.9167	1.5	x 0.8333	÷	27	=	0.4
PARAPET ON REAR LT. WINGWALL	1	x	9.6667	x	1.5		x 0.375	÷	27	=	0.2
PARAPET ON REAR RT. WINGWALL	1	x	8.8333	x	0.1667		x 1.2083	÷	27	=	0.1
PARAPET ON REAR RT. WINGWALL	1	x	8.8333	x	0.75	0.9167	x 1.5833	÷	27	=	0.4
PARAPET ON REAR RT. WINGWALL	1	x	8.8333	x	0.9167	1.5	x 0.8333	÷	27	=	0.3
PARAPET ON REAR RT. WINGWALL	1	x	8.8333	x	1.5		x 0.375	÷	27	=	0.2
PARAPET ON FWD. LT. WINGWALL	1	x	9	x	0.1667		x 1.2083	÷	27	=	0.1
PARAPET ON FWD. LT. WINGWALL	1	x	9	x	0.75	0.9167	x 1.5833	÷	27	=	0.4
PARAPET ON FWD. LT. WINGWALL	1	x	9	x	0.9167	1.5	x 0.8333	÷	27	=	0.3
PARAPET ON FWD. LT. WINGWALL	1	x	9	x	1.5		x 0.375	÷	27	=	0.2
PARAPET ON FWD. RT. WINGWALL	1	x	12.6667	x	0.1667		x 1.2083	÷	27	=	0.1
PARAPET ON FWD. RT. WINGWALL	1	x	12.6667	x	0.75	0.9167	x 1.5833	÷	27	=	0.6
PARAPET ON FWD. RT. WINGWALL	1	x	12.6667	x	0.9167	1.5	x 0.8333	÷	27	=	0.5
PARAPET ON FWD. RT. WINGWALL	1	x	12.6667	x	1.5		x 0.375	÷	27	=	0.3
									TOTAL CARRIED TO GENERAL SUMMARY =		170

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
FWD. ABUT. FTG. BELOW BK WALL	1	x	25.3854		x	2.75		x	3		÷	27	=	7.8
FWD. ABUT. FTG. BELOW BM SEAT	1	x	25.3854		x	3		x	3.25	3	÷	27	=	8.8
FWD. ABUT. FTG. BELOW LT. WW	1	x	10.1198	9.2396	x	3		x	3		÷	27	=	3.2
FWD. ABUT. FTG. BELOW RT. WW	1	x	14.1823	12.75	x	3		x	3		÷	27	=	4.5
FWD. ABUT. FTG. NIB LT.	0.5	x	1		x	0.906		x	3		÷	27	=	0.1
FWD. ABUT. BK. WALL	1	x	26.8646		x	1.75		x	6.96	8.19	÷	27	=	13.2
FWD. ABUT. Approach Slab Seat DEDUCTION	-1	x	17.8125		x	0.5		x	1.25		÷	27	=	-0.4
FWD. ABUT. BEAM SEAT	1	x	26.8646		x	2		x	3.53		÷	27	=	7.0
FWD. ABUT. BEAM SEAT UNDER BEAM 2	1	x	7.5		x	2		x	0.42		÷	27	=	0.2
FWD. ABUT. BEAM SEAT UNDER BEAM 3	1	x	7.5		x	2		x	0.85		÷	27	=	0.5
FWD. ABUT. BEAM SEAT UNDER BEAM 4	1	x	9.8021		x	2		x	1.28		÷	27	=	0.9
FWD. ABUT. LT. CURTAIN WALL (LT.)	1	x	2.4479		x	0.4167		x	2.45		÷	27	=	0.1
FWD. ABUT. CURTAIN WALL (RT.)	1	x	1.8229		x	0.4167		x	2.46		÷	27	=	0.1
FWD. ABUT. WW UPPER (LT.)	1	x	16		x	1.5		x	2.4844		÷	27	=	2.2
FWD. ABUT. WW LOWER (LT.)	1	x	8		x	1.5		x	3.53		÷	27	=	1.6
FWD. ABUT. RT. WW UPPER	1	x	16		x	1.5		x	2.4687		÷	27	=	2.2
FWD. ABUT. WW LOWER (RT.)	1	x	11		x	1.5		x	4.75		÷	27	=	2.9
FWD. ABUT. BK WALL NIB (LT.)	0.5	x	2		x	1.8073		x	6.2487		÷	27	=	0.4
REAR ABUT. FTG. BELOW BK WALL	1	x	25.151		x	2.75		x	3		÷	27	=	7.7
REAR ABUT. FTG. BELOW BM SEAT	1	x	25.151		x	3		x	3.25	3	÷	27	=	8.7
REAR ABUT. FTG. BELOW WW (LT.)	1	x	9.7083		x	3		x	3		÷	27	=	3.2
REAR ABUT. FTG. BELOW WW (RT.)	1	x	10.1875		x	3		x	3		÷	27	=	3.4
REAR ABUT. FTG. NIB (RT.)	0.5	x	1		x	0.8438		x	3		÷	27	=	0.0
REAR ABUT. BK. WALL	1	x	26.6615		x	1.75		x	7.73	6.86	÷	27	=	12.6
REAR ABUT. App. Slab Seat DEDUCTION	-1	x	19		x	0.5		x	1.25		÷	27	=	-0.4
REAR ABUT. BEAM SEAT	1	x	26.6615		x	2		x	3.53		÷	27	=	7.0
REAR ABUT. BEAM SEAT UNDER BEAM 2	1	x	7.5		x	2		x	0.22		÷	27	=	0.1
REAR ABUT. BEAM SEAT UNDER BEAM 3	1	x	7.5		x	2		x	0.45		÷	27	=	0.3
REAR ABUT. BEAM SEAT UNDER BEAM 4	1	x	9.5625		x	2		x	0.69		÷	27	=	0.5
REAR ABUT. CURTAIN WALL (LT.)	1	x	1.8438		x	0.4167		x	2.3144		÷	27	=	0.1
REAR ABUT. CURTAIN WALL (RT.)	1	x	2.6458		x	0.4167		x	2.55		÷	27	=	0.1
REAR ABUT. WW UPPER (LT.)	1	x	16		x	1.5		x	2.4896	2.25	÷	27	=	2.1
REAR ABUT. WW LOWER (LT.)	1	x	7.6667		x	1.5		x	3.53		÷	27	=	1.5
REAR ABUT. WW UPPER (RT.)	1	x	8.5208		x	1.5		x	2.4896	2.25	÷	27	=	1.1
REAR ABUT. WW LOWER (RT.)	1	x	7.3958		x	1.5		x	3.53		÷	27	=	1.5
REAR ABUT. BK. WALL NIB (RT.)	0.5	x	1		x	0.8438		x	4.2		÷	27	=	0.1
												TOTAL CARRIED TO GENERAL SUMMARY =		105

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	19		x			÷	9	=	52.8
FWD. APP. SLAB	1	x	25		x	17.975		x			÷	9	=	49.9
												TOTAL CARRIED TO GENERAL SUMMARY =		103

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR EMBANKMENT	1.08	x	41.3333		x	36.3333		x			÷	9	=	180.2
FWD. EMBANKMENT	1.08	x	41.3333		x	36.3333		x			÷	9	=	180.2
												TOTAL CARRIED TO GENERAL SUMMARY =		360

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH SLAB	1	x	35		x	3	8.9235	X	8.52	9.25	÷	27	=	68.7
R. APP. S ABOVE FOOTING	1	x	35		x	1.25		X	5.52	6.25	÷	27	=	9.5
FWD. APPROACH SLAB	1	x	31.267		x	3	9.187	x	8.77	9.79	÷	27	=	65.5
F. APP. S ABOVE FOOTING	1	x	31.267		x	1.25		x	5.77	6.79	÷	27	=	9.1
												TOTAL CARRIED TO GENERAL SUMMARY =		153

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING

DESCRIPTION	#		L			W			T			C.F.		CU YD
FWD. ABUT. FTG. BELOW STEM WALL	1	x	24.9323		x	6		x	3		÷	27	=	16.6
FWD. ABUT. FTG. BELOW WW (LT.)	1	x	10.6667		x	5		x	3		÷	27	=	5.9
FWD. ABUT. FTG. BELOW WW (RT.)	1	x	11.75	14.1667	x	5		x	3		÷	27	=	7.2
FWD. ABUT. FTG. NIB (LT.)	0.5	x	1.1406		x	0.5		x	3		÷	27	=	0.0
FWD. ABUT. FTG. NIB (RT.)	0.5	x	2.1042		x	1.9739		x	3		÷	27	=	0.2
FWD. ABUT. STEM WALL	1	x	34.8073		x	4		x	3.0313	4.2552	÷	27	=	18.8
FWD. ABUT. WW FRONT (LT.)	1	x	8.8281		x	1.5		x	7.4687	7.3854	÷	27	=	3.6
FWD. ABUT. WW BACK (LT.)	1	x	3.5		x	1.5		x	4.4427	3	÷	27	=	0.7
FWD. ABUT. WW FRONT (RT.)	1	x	10.1562		x	1.5		x	8.5417		÷	27	=	4.8
FWD. ABUT. WW BACK (RT.)	1	x	3.5		x	1.5		x	4.2917	3	÷	27	=	0.7
FWD. ABUT. STEM WALL NIB (LT.)	0.5	x	2.4479		x	1		x	3.0313		÷	27	=	0.1
REAR ABUT. FTG. BELOW STEM WALL	1	x	25.1615		x	6		x	3		÷	27	=	16.8
REAR ABUT. FTG. BELOW WW (LT.)	1	x	11.5365	8.3229	x	6		x	3		÷	27	=	6.6
REAR ABUT. FTG. BELOW WW (RT.)	1	x	10.8489	8.9219	x	6		x	3		÷	27	=	6.6
REAR ABUT. FTG. NIB (LT.)	0.5	x	2.375		x	1		x	3		÷	27	=	0.1
REAR ABUT. FTG. NIB (RT.)	0.5	x	1.0989		x	0.5		x	3		÷	27	=	0.0
REAR ABUT. STEM WALL	1	x	37.0364		x	4		x	3.7187	3.0417	÷	27	=	18.5
REAR ABUT. WW FRONT (LT.)	1	x	7.7187	6.7552	x	1.5		x	7.29	7.09	÷	27	=	2.9
REAR ABUT. WW BACK (LT.)	1	x	3.5		x	1.5		x	4.0469	3	÷	27	=	0.7
REAR ABUT. WW FRONT (RT.)	1	x	8.9583		x	1.5		x	8.6875	7.776	÷	27	=	4.1
REAR ABUT. WW BACK (RT.)	1	x	3.5		x	1.5		x	4.0573	3	÷	27	=	0.7
REAR ABUT. STEM WALL NIB (RT.)	0.5	x	2.1771		x	0.9896		x	3.7187		÷	27	=	0.1
												TOTAL CARRIED TO GENERAL SUMMARY =		115.7

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK SLAB BET. PARAPETS	1	x	159.125		x	27.5		x	0.7083		÷	27	=	114.8
OVERHUNG DECK EDGE SPAN #1 (LT.)	1	x	45		x	3.7239	3.0521	x	1.0052	0.9583	÷	27	=	5.5
OVERHUNG DECK EDGE SPAN #2 (LT.)	1	x	64.5208		x	3.0521	3.6667	x	0.9583	1.1458	÷	27	=	8.4
OVERHUNG DECK EDGE SPAN #3(LT.)	1	x	45		x	3.6667	2.0365	x	1.1458	0.875	÷	27	=	4.8
OVERHUNG DECK EDGE SPAN #1 (RT.)	1	x	45		x	2.901	3.375	x	1.0781	0.875	÷	27	=	5.1
OVERHUNG DECK EDGE SPAN #2 (RT.)	1	x	64.5208		x	3.375	1.7604	x	0.875	0.9688	÷	27	=	5.7
OVERHUNG DECK EDGE SPAN #3 (RT.)	1	x	45		x	1.7604	1.7552	x	0.9688	0.875	÷	27	=	2.7
HAUNCH ON BEAM 1 (SPAN 1)	1	x	45		x	0.875		x	0.1667	0.2812	÷	27	=	0.3
HAUNCH ON BEAM 1 (SPAN 2)	1	x	64.5208		x	1.25		x	0.2812	0.4896	÷	27	=	1.2
HAUNCH ON BEAM 1 (SPAN 3)	1	x	45		x	0.875		x	0.4896	0.1667	÷	27	=	0.5
HAUNCH ON BEAM 2 (SPAN 1)	1	x	45		x	0.875		x	0.1667	0.2812	÷	27	=	0.3
HAUNCH ON BEAM 2 (SPAN 2)	1	x	64.5208		x	1.25		x	0.2812	0.3906	÷	27	=	1.0
HAUNCH ON BEAM 2 (SPAN 3)	1	x	45		x	0.875		x	0.3906	0.1667	÷	27	=	0.4
HAUNCH ON BEAM 3 (SPAN 1)	1	x	45		x	0.875		x	0.1667	0.2604	÷	27	=	0.3
HAUNCH ON BEAM 3 (SPAN 2)	1	x	64.5208		x	1.25		x	0.2604	0.3385	÷	27	=	0.9
HAUNCH ON BEAM 3 (SPAN 3)	1	x	45		x	0.875		x	0.3385	0.1667	÷	27	=	0.4
HAUNCH ON BEAM 4 (SPAN 1)	1	x	45		x	0.875		x	0.1667	0.1406	÷	27	=	0.2
HAUNCH ON BEAM 4 (SPAN 2)	1	x	64.5208		x	1.25		x	0.1406	0.3281	÷	27	=	0.7
HAUNCH ON BEAM 4 (SPAN 3)	1	x	45		x	0.875		x	0.3281	0.1667	÷	27	=	0.4
HAUNCH ON BEAM 5 (SPAN 1)	1	x	45		x	0.875		x	0.1667	0.1823	÷	27	=	0.3
HAUNCH ON BEAM 5(SPAN 2)	1	x	64.5208		x	1.25		x	0.1823	0.2708	÷	27	=	0.7
HAUNCH ON BEAM 5 (SPAN 3)	1	x	45		x	0.875		x	0.2708	0.1667	÷	27	=	0.3
FWD. ABUT. END DIA. (LT.)	1	x	24.2344		x	4		x	4.2192	4.2492	÷	27	=	15.2
FWD. ABUT. END DIA. (RT.)	1	x	10.1979		x	4		x	4.2492	4.0192	÷	27	=	6.2
FWD. ABUT. END DIA. APP. SEAT (LT.)	-1	x	24.2344		x	0.5		x	1.25		÷	27	=	-0.6
FWD. ABUT. END DIA. APP. SEAT (RT.)	-1	x	10.1979		x	0.5		x	1.25		÷	27	=	-0.2
REAR ABUT. END DIA. (LT.)	1	x	25.75		x	4		x	3.9592	4.1392	÷	27	=	15.4
REAR ABUT. END DIA. (RT.)	1	x	10.891		x	4		x	4.1392	4.0092	÷	27	=	6.6
REAR ABUT. END DIA. APP. SEAT (LT.)	-1	x	25.75		x	0.5		x	1.25		÷	27	=	-0.6
REAR ABUT. END DIA. APP. SEAT (RT.)	-1	x	10.891		x	0.5		x	1.25		÷	27	=	-0.3
												TOTAL CARRIED TO GENERAL SUMMARY =		197

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
BRIDGE PARAPET - UPPER (LT.)	1	x	159.9479		x	0.9167	0.7187	x	1.9167		÷	27	=	9.3
BRIDGE PARAPET - UPPER BASE (LT.)	1	x	159.9479		x	1.5	0.9167	x	0.8333		÷	27	=	6.0
BRIDGE PARAPET - LOWER BASE (LT.)	1	x	159.9479		x	1.5		x	0.25		÷	27	=	2.2
BRIDGE PARAPET - UPPER (RT.)	1	x	158.9323		x	0.9167	0.7187	x	1.9167		÷	27	=	9.2
BRIDGE PARAPET - UPPER BASE (RT.)	1	x	158.9323		x	1.5	0.9167	x	0.8333		÷	27	=	5.9
BRIDGE PARAPET - LOWER BASE (RT.)	1	x	158.9323		x	1.5		x	0.25		÷	27	=	2.2
R & FWD. APP. SLABS - UP. (LT. & RT.)	4	x	11		x	0.9167	0.7187	x	1.9167		÷	27	=	2.6
R&FWD. APP. SLABS-UP. BASE (LT.&RT.)	4	x	11		x	1.5	0.9167	x	0.8333		÷	27	=	1.6
R&FWD. APP. SLABS-L. BASE (LT. & RT.)	4	x	11		x	1.5		x	0.25		÷	27	=	0.6
			VOL.											
TRANSITION PARAPET (LT. & RT.)	4	x	1.63		x	1		x	1		÷	27	=	0.2
													TOTAL CARRIED TO GENERAL SUMMARY =	40

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
BRIDGE PARAPET (LT.)	1	x	159.9479		x	6.812		x			÷	9	=	121.1
BRIDGE PARAPET (RT.)	1	x	158.9323		x	6.812		x			÷	9	=	120.3
PARAPET ON APP. SLAB (LT. & RT.)	4	x	11		x	6.812		x			÷	9	=	33.3
TRANSITION PARAPET (LT. & RT.)	4	x	10		x	6.812	6.558	x			÷	9	=	29.7
TRANSITION PARAPET (LT. & RT.)	4	x	2.5		x	6.558		x			÷	9	=	7.3
TRANSITION PARAPET (LT. & RT.)	4	x	1.5		x	6.558	6.651	x			÷	9	=	4.4
FWD. ABUTMENT BACKWALL (LT.)	1	x	24.4219		x	4.507	5.8017	x			÷	9	=	14.0
FWD. ABUTMENT BACKWALL (RT.)	1	x	10.3854		x	5.8017	5.669	x			÷	9	=	6.6
FWD. ABUT. WW TOP SURFACES (LT.)	1	x	12.3229		x	1.5		x			÷	9	=	2.1
FWD. ABUT. WW TOP SURFACES (RT.)	1	x	14.375	13.6614	x	1.5		x			÷	9	=	2.3
FWD. ABUT. WW SIDE SURFACES (LT.)	1	x	12.3229		x	5.49	1	x			÷	9	=	4.4
FWD. ABUT. WW SIDE SURFACES (RT.)	1	x	13.6614		x	6.51	1	x			÷	9	=	5.7
FWD. ABUT. WW FRONT SURFACES(LT.)	1	x	5.49		x	1.5		x			÷	9	=	0.9
FWD. ABUT. WW FRONT SURFACES(RT.)	1	x	6.51		x	1.5		x			÷	9	=	1.1
REAR ABUTMENT BACKWALL (LT.)	1	x	25.9479		x	4.453	5.133	x			÷	9	=	13.8
REAR ABUTMENT BACKWALL (RT.)	1	x	11.0885		x	5.133	5.2517	x			÷	9	=	6.4
REAR ABUT. WW TOP SURFACES (LT.)	1	x	11.2187	10.2552	x	1.5		x			÷	9	=	1.8
REAR ABUT. WW TOP SURFACES (RT.)	1	x	12.4583		x	1.5		x			÷	9	=	2.1
REAR ABUT. WW SIDE SURFACES (LT.)	1	x	10.2552		x	5.23	1	x			÷	9	=	3.5
REAR ABUT. WW SIDE SURFACES (RT.)	1	x	12.4583		x	5.96	1	x			÷	9	=	4.8
RAER ABUT. WW FRONT SURFACES(LT.)	1	x	5.23		x	1.5		x			÷	9	=	0.9
REAR ABUT. WW FRONT SURFACES(RT.)	1	x	5.96		x	1.5		x			÷	9	=	1.0
Pier 1 Cap (SIDES)	2	x	33		x	3.5	4.4167	x			÷	9	=	29.0
Pier 1 Cap (ENDS)	2	x	3		x	3.5	4.4167	x			÷	9	=	2.6
Pier 2 Cap (SIDES)	2	x	33		x	3.5	4.5	x			÷	9	=	29.3
Pier 2 Cap (ENDS)	2	x	3		x	3.5	4.5	x			÷	9	=	2.7
													TOTAL CARRIED TO GENERAL SUMMARY =	451

ITEM 512 - SEALING OF CONCRETE SURFACES, (EPOXY-EURETHANE)

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 Details	3	x	9.42		x	11.2396		x			÷	9	=	35.3
PIER 2 Details	3	x	9.42		x	11.3698		x			÷	9	=	35.7
													TOTAL CARRIED TO GENERAL SUMMARY =	71

ITEM 512 - Type 2 Waterproofing

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R. A. Area contact w/ R. APP. SLAB	1	x	36.9531		x	1.9583		x			÷	9	=	8.0
F. A. Area contact w/ F. APP. SLAB	1	x	34.3333		x	1.9583		x			÷	9	=	7.5
													TOTAL CARRIED TO GENERAL SUMMARY =	16

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ. FT.
PARAPETS ON R & FWD. APP. SLABS - UP. (LT. & RT.)	4	x	1.9167	x	0.9167	0.7083	x	÷	1	=	6.2
ARAPETS ON R&FWD. APP. SLABS-UPPER BASE (LT.&RT	4	x	0.8333	x	1.5	0.9167	x	÷	1	=	4.0
ARAPETS ON R&FWD. APP. SLABS-LOWER BASE (LT.&RT	4	x	0.25	x	1.5		x	÷	1	=	1.5
							TOTAL CARRIED TO GENERAL SUMMARY =				12

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ. FT.
BET. REAR ABUT. WW & APP. SLAB(LT.)	1	x	7.0833	x	1.25		x	÷	1	=	8.9
BET. REAR ABUT. WW & APP. SLAB(RT.)	1	x	8.3333	x	1.25		x	÷	1	=	10.4
BET. FWD. ABUT. WW & APP. SLAB(LT.)	1	x	8.4167	x	1.25		x	÷	1	=	10.5
BET. FWD. ABUT. WW & APP. SLAB(RT.)	1	x	10.5	x	1.25		x	÷	1	=	13.1
BET. REAR ABUT. WW & DIAPHRAGM (LT.)	1	x	4.75	x	3.9583		x	÷	1	=	18.8
BET. REAR ABUT. WW & DIAPHRAGM (RT.)	1	x	4.75	x	4		x	÷	1	=	19.0
BET. FWD. ABUT. WW. & DIAPHRAGM (LT.)	1	x	4.5	x	4.1667		x	÷	1	=	18.8
BET. FWD. ABUT. WW. & DIAPHRAGM (RT.)	1	x	4.4167	`	4		x	÷	1	=	17.7
PERIMETER OF REAR ABUT. DIA. GUIDE	1	x	7	x	4.4583		x	÷	1	=	31.2
PERIMETER OF FWD. ABUT. DIA. GUIDE	1	x	7	x	4.5		x	÷	1	=	31.5
							TOTAL CARRIED TO GENERAL SUMMARY =				180

ITEM 516 - 3-1/4" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ. FT.
BETWEEN REAR. DIA. & STEM WALL	1	x	33.9167	x	4.25		x	÷	1	=	144.1
BETWEEN FWD. DIA. & STEM WALL	1	x	31.75	x	4.25		x	÷	1	=	134.9
							TOTAL CARRIED TO GENERAL SUMMARY =				279

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L		W		T		C.F.		FT
REAR ABUTMENT (Hor.)	1	x	39.5833	x			x	÷	1	=	39.6
REAR ABUTMENT(Vert.)	2	x	4.5	x			x	÷	1	=	9.0
FORWARD ABUTMENT (Hor.)	1	x	37.3333	x			x	÷	1	=	37.3
FORWARD ABUTMENT (Vert.)	2	x	4.5	x			x	÷	1	=	9.0
							TOTAL CARRIED TO GENERAL SUMMARY =				95

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		FT
REAR APP. SLAB	1	x	36.5833	x			x	÷	1	=	36.6
FORWARD APP. SLAB	1	x	34.3333	x			x	÷	1	=	34.3
							TOTAL CARRIED TO GENERAL SUMMARY =				71

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.42E
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APP. SLAB	1	x	36.5833		x			x			÷	1	=	36.6
FORWARD APP. SLAB	1	x	34.3333		x			x			÷	1	=	34.3
												TOTAL CARRIED TO GENERAL SUMMARY =		71

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
Rear Abutment (Area 1)	1	x	36.6667		x	1.25		x	2.52	5.52	÷	27	=	6.8
Rear Abutment (Area 2)	1	x	36.6667		x	2		x	3.25	6.25	÷	27	=	12.9
Forward Abutment (Area 1)	1	x	34.5		x	1.25		x	2.77	3.79	÷	27	=	5.2
Forward Abutment (Area 2)	1	x	34.5		x	2		x	5.77	6.79	÷	27	=	16.0
												TOTAL CARRIED TO GENERAL SUMMARY =		41

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	37		x			x			÷	1	=	37.0
FORWARD ABUTMENT	1	x	34.5833		x			x			÷	1	=	34.6
										TOTAL CARRIED TO GENERAL SUMMARY =				72

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	36		x			x			÷	1	=	36.0
FORWARD ABUTMENT	1	x	36		x			x			÷	1	=	36.0
										TOTAL CARRIED TO GENERAL SUMMARY =				72

ITEM 519 - Special Composite Fiber Wrap System

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
PIER 1 Details	3	x	10.92		x	11.2396		x			÷	1	=	368.2
PIER 2 Details	3	x	10.92		x	11.3698		x			÷	1	=	372.5
										TOTAL CARRIED TO GENERAL SUMMARY =				741

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	30.8333		x			÷	9	=	85.6
FWD. APP.SLAB	1	x	25		x	30.8333		x			÷	9	=	85.6
										TOTAL CARRIED TO GENERAL SUMMARY =				171

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR EMBANKMENT	1.08	x	36		x	36.8333		x			÷	9	=	159.1
FWD. EMBANKMENT	1.08	x	36.5		x	36.8333		x			÷	9	=	161.3
										TOTAL CARRIED TO GENERAL SUMMARY =				320

ITEM 613 - LOW STRENGTH MOTOR BACKFILL, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APP. SLAB	1	x	11.5		x	30.8333		x	3		÷	27	=	39.4
FWD. APP.SLAB	1	x	11.5		x	30.8333		x	3		÷	27	=	39.4
										TOTAL CARRIED TO GENERAL SUMMARY =				79

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 9-Oct-20 INITIALS: YEL
PID: 93006 CHECKED BY:
CRS: SFN6001890
DESCRIPTION: PAINTING

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

Descriptions	#	Size/ Description	Length (ft)	ft	SQ. FT.
Interior Beams	3	W30 x 108	45.29	7.50	1019
Exterior Beams	2	W30 x 108	45.29	7.50	679.4
Interior Beams	3	W30 x 172	65.18	8.62	1685.6
Exterior Beams	2	W30 x 172	65.18	8.62	1123.7
Interior Beams	3	W30 x 116	45.35	7.54	1025.8
Exterior Beams	2	W30 x 116	45.35	7.54	683.9
X-Frames (Bottom)	68	L3 x 3 x 5/16	6.5	1.00	442
pier stiffeners	120	4.5" x 30.4" x 3/4"	1	2.10	252
				TOTAL =	6911.0

ITEM 514 FINAL INSPECTION REPAIR

Descriptions	#	Size/ Description	Length (ft)	Total Linear (ft.)	EACH
Interior Beams	3	W30 x 108	155.82	467.46	3.1
Exterior Beams	2	W30 x 108	155.82	311.64	2.1
X-Frames	68				3.4
				TOTAL =	8.6

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-11.44A

DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL

CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)														
DESCRIPTION	#		L			W			T			C.F.		CU YD
BRIDGE DECK	1	x	148.2		x	30		x	0.7292		÷	27	=	120.1
PARAPET (LEFT)	1	x	147.8		x	0.1667		x	1.40625		÷	27	=	1.3
PARAPET (LEFT)	1	x	147.8		x	0.75	0.9167	x	1.5833		÷	27	=	7.2
PARAPET (LEFT)	1	x	147.8		x	0.9167	1.5	x	0.8333		÷	27	=	5.5
PARAPET (LEFT)	1	x	147.8		x	1.5		x	0.375		÷	27	=	3.1
PARAPET (RIGHT)	1	x	148.49		x	0.1667		x	1.01042		÷	27	=	0.9
PARAPET (RIGHT)	1	x	148.49		x	0.75	0.9167	x	1.5833		÷	27	=	7.3
PARAPET (RIGHT)	1	x	148.49		x	0.9167	1.5	x	0.8333		÷	27	=	5.5
PARAPET (RIGHT)	1	x	148.49		x	1.5		x	0.375		÷	27	=	3.1
PARAPET ON REAR LT. WINGWALL	1	x	8		x	0.1667		x	1.40625		÷	27	=	0.1
PARAPET ON REAR LT. WINGWALL	1	x	8		x	0.75	0.9167	x	1.5833		÷	27	=	0.4
PARAPET ON REAR LT. WINGWALL	1	x	8		x	0.9167	1.5	x	0.8333		÷	27	=	0.3
PARAPET ON REAR LT. WINGWALL	1	x	8		x	1.5		x	0.375		÷	27	=	0.2
PARAPET ON REAR RT. WINGWALL	1	x	13		x	0.1667		x	1.01042		÷	27	=	0.1
PARAPET ON REAR RT. WINGWALL	1	x	13		x	0.75	0.9167	x	1.5833		÷	27	=	0.6
PARAPET ON REAR RT. WINGWALL	1	x	13		x	0.9167	1.5	x	0.8333		÷	27	=	0.5
PARAPET ON REAR RT. WINGWALL	1	x	13		x	1.5		x	0.375		÷	27	=	0.3
PARAPET ON FWD. LT. WINGWALL	1	x	8.75		x	0.1667		x	1.40625		÷	27	=	0.1
PARAPET ON FWD. LT. WINGWALL	1	x	8.75		x	0.75	0.9167	x	1.5833		÷	27	=	0.4
PARAPET ON FWD. LT. WINGWALL	1	x	8.75		x	0.9167	1.5	x	0.8333		÷	27	=	0.3
PARAPET ON FWD. LT. WINGWALL	1	x	8.75		x	1.5		x	0.375		÷	27	=	0.2
PARAPET ON FWD. RT. WINGWALL	1	x	14.25		x	0.1667		x	1.01042		÷	27	=	0.1
PARAPET ON FWD. RT. WINGWALL	1	x	14.25		x	0.75	0.9167	x	1.5833		÷	27	=	0.7
PARAPET ON FWD. RT. WINGWALL	1	x	14.25		x	0.9167	1.5	x	0.8333		÷	27	=	0.5
PARAPET ON FWD. RT. WINGWALL	1	x	14.25		x	1.5		x	0.375		÷	27	=	0.3
													TOTAL CARRIED TO GENERAL SUMMARY =	159

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: YEL

PID: 93006 CHECKED BY:

CRS: MUS-70-11.44A

DESCRIPTION: BRIDGE QUANTITIES

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
FWD. ABUT. FTG. BELOW BK WALL	1	x	25.7344		x	2.75		x	3		÷	27	=	7.9
FWD. ABUT. FTG. BELOW BM SEAT	1	x	31.8281		x	3		x	3.25		÷	27	=	11.5
FWD. ABUT. FTG. BELOW LT. WW	1	x	11.75		x	3		x	3		÷	27	=	3.9
FWD. ABUT. FTG. BELOW RT. WW	1	x	6.25		x	3		x	3		÷	27	=	2.1
FWD. ABUT. FTG. NIB LT.	0.5	x	1		x	1.25		x	3		÷	27	=	0.1
FWD. ABUT. FTG. NIB RT.	0.5	x	1		x	1.25		x	3		÷	27	=	0.1
FWD. ABUT. BK. WALL	1	x	25.7344		x	1.75		x	9.05	6.71	÷	27	=	13.1
FWD. ABUT. BEAM SEAT	1	x	30.3177		x	2		x	3.29		÷	27	=	7.4
FWD. ABUT. BEAM SEAT UNDER BEAM 1	1	x	3.2552	2.8333	x	2		x	2.3698		÷	27	=	0.5
FWD. ABUT. BEAM SEAT UNDER BEAM 2	1	x	8.8542		x	2		x	1.5885		÷	27	=	1.0
FWD. ABUT. BEAM SEAT UNDER BEAM 3	1	x	8.8542		x	2		x	0.7813		÷	27	=	0.5
FWD. ABUT. LT. CURTAIN WALL	1	x	1.8646		x	0.5		x	2.41	2.25	÷	27	=	0.1
FWD. ABUT. RT. CURTAIN WALL	1	x	2.0417		x	0.8333		x	2.52	2.36	÷	27	=	0.2
FWD. ABUT. LT. WW UPPER	1	x	14.25		x	1.5		x	2.96	2.41	÷	27	=	2.1
FWD. ABUT. LT. WW LOWER	1	x	12.6146		x	1.5		x	5.66		÷	27	=	4.0
FWD. ABUT. RT. WW UPPER	1	x	8		x	1.5		x	2.52	2.9	÷	27	=	1.2
FWD. ABUT. RT. WW LOWER	1	x	9.8646		x	1.5		x	3.29		÷	27	=	1.8
FWD. ABUT. BK WALL NIB LT.	0.5	x	2.0469		x	2		x	9.05		÷	27	=	0.7
FWD. ABUT. BK. WALL NIB RT.	0.5	x	2.0469		x	2		x	6.71		÷	27	=	0.5
REAR ABUT. FTG. BELOW BK WALL	1	x	28.5		x	2.75		x	3		÷	27	=	8.7
REAR ABUT. FTG. BELOW BM SEAT	1	x	35.1146		x	3		x	3.25		÷	27	=	12.7
REAR ABUT. FTG. BELOW LT. WW	1	x	5.4948		x	3		x	3		÷	27	=	1.8
REAR ABUT. FTG. BELOW RT. WW	1	x	10.5		x	3		x	3		÷	27	=	3.5
REAR ABUT. FTG. NIB LT.	0.5	x	0.875		x	1		x	3		÷	27	=	0.0
REAR ABUT. FTG. NIB RT.	0.5	x	0.875		x	0.9948		x	3		÷	27	=	0.0
REAR ABUT. BK. WALL	1	x	28.5		x	2.75		x	9.19	6.62	÷	27	=	22.9
REAR ABUT. BEAM SEAT	1	x	34.3		x	2		x	3.27		÷	27	=	8.3
REAR ABUT. BEAM SEAT UNDER BEAM 1	1	x	6.58333	5.4843	x	2		x	2.3698		÷	27	=	1.1
REAR ABUT. BEAM SEAT UNDER BEAM 2	1	x	8.8542		x	2		x	1.5885		÷	27	=	1.0
REAR ABUT. BEAM SEAT UNDER BEAM 3	1	x	8.8542		x	2		x	0.8125		÷	27	=	0.5
REAR ABUT. LT. CURTAIN WALL	1	x	2.2813		x	0.8333		x	2.61	2.6	÷	27	=	0.2
REAR ABUT. RT. CURTAIN WALL	1	x	1.8229		x	0.8333		x	2.46	2.43	÷	27	=	0.1
REAR ABUT. LT. WW UPPER	1	x	13		x	1.5		x	2.61	2.18	÷	27	=	1.7
REAR ABUT. LT. WW LOWER	1	x	11.7813		x	1.5		x	5.61		÷	27	=	3.7
REAR ABUT. RT. WW UPPER	1	x	8		x	1.5		x	2.46	2.27	÷	27	=	1.1
REAR ABUT. RT. WW LOWER	1	x	6.3229		x	1.5		x	3.27		÷	27	=	1.1
REAR ABUT. BK WALL NIB LT.	0.5	x	2		x	1.7552		x	9.19		÷	27	=	0.6
REAR ABUT. BK. WALL NIB RT.	0.5	x	2		x	1.7552		x	6.62		÷	27	=	0.4
													TOTAL CARRIED TO GENERAL SUMMARY =	128

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.44A
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	30.3333		x			÷	9	=	84.3
FWD. APP. SLAB	1	x	25		x	30.333		x			÷	9	=	84.3
												TOTAL CARRIED TO GENERAL SUMMARY =		169

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR EMBANKMENT	1.08	x	40.5		x	36		x			÷	9	=	175.0
FWD. EMBANKMENT	1.08	x	34.5833		x	36		x			÷	9	=	149.4
												TOTAL CARRIED TO GENERAL SUMMARY =		324

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH SLAB	1	x	28.4948		x	4.25	11.27	X	9.87	11.19	÷	27	=	86.2
FWD. APPROACH SLAB	1	x	25.7344		x	4.25	10.85	x	8.71	11.05	÷	27	=	71.1
												TOTAL CARRIED TO GENERAL SUMMARY =		157

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-11.44A

DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL

CHECKED BY:

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING														
DESCRIPTION	#		L			W			T			C.F.		CU YD
FWD. ABUT. FTG. BELOW STEM WALL	1	x	25.4271		x	6		x	3		÷	27	=	17.0
FWD. ABUT. FTG. BELOW WW (LT.)	1	x	14.4167	15.4167	x	5		x	3		÷	27	=	8.3
FWD. ABUT. FTG. BELOW WW (RT.)	1	x	9.0833	9.6667	x	5		x	3		÷	27	=	5.2
FWD. ABUT. FTG. NIB (LT.)	0.5	x	2.1667		x	1.75		x	3		÷	27	=	0.2
FWD. ABUT. FTG. NIB (RT.)	0.5	x	1.5		x	0.4167		x	3		÷	27	=	0.0
FWD. ABUT. STEM WALL	1	x	31.3333		x	4.25		x	4.7292	2.3958	÷	27	=	17.6
FWD. ABUT. WW FRONT (LT.)	1	x	12.7917	13.0625	x	1.5		x	9.18	9.62	÷	27	=	6.8
FWD. ABUT. WW BACK (LT.)	1	x	3.4167		x	1.5		x	4.91	3	÷	27	=	0.8
FWD. ABUT. WW FRONT (RT.)	1	x	7.9167		x	1.5		x	7.0833	6.72	÷	27	=	3.0
FWD. ABUT. WW BACK (RT.)	1	x	3.5		x	1.5		x	4.6875	3	÷	27	=	0.7
FWD. ABUT. WW NIB (RT.)	0.5	x	1.8698		x	0.369		x	2.3958		÷	27	=	0.0
REAR ABUT. FTG. BELOW STEM WALL	1	x	28.9792		x	6		x	3		÷	27	=	19.3
REAR ABUT. FTG. BELOW WW (LT.)	1	x	10.1875	7.3542	x	5		x	3		÷	27	=	4.9
REAR ABUT. FTG. BELOW WW (RT.)	1	x	13.3073	14.6458	x	5		x	3		÷	27	=	7.8
REAR ABUT. FTG. NIB (LT.)	0.5	x	2.5208		x	1.5		x	3		÷	27	=	0.2
REAR ABUT. FTG. NIB (RT.)	0.5	x	2.0833		x	0.8542		x	3		÷	27	=	0.1
REAR ABUT. STEM WALL	1	x	34.67		x	4.25		x	4.6	2.2	÷	27	=	18.6
REAR ABUT. WW FRONT (LT.)	1	x	13.1042		x	1.5		x	9.29	9.75	÷	27	=	6.9
REAR ABUT. WW BACK (LT.)	1	x	4		x	1.5		x	4.25	3	÷	27	=	0.8
REAR ABUT. WW FRONT (RT.)	1	x	6.625	5.77	x	1.5		x	6.59	6.4	÷	27	=	2.2
REAR ABUT. WW BACK (RT.)	1	x	4		x	1.5		x	4.25	3	÷	27	=	0.8
REAR ABUT. WW NIB (LT.)	0.5	x	2.0833		x	0.8542		x	4.5989		÷	27	=	0.2
												TOTAL CARRIED TO GENERAL SUMMARY =		121.4

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.44A
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK SLAB BETWEEN EDGE BEAMS	1	x	143.7344		x	25.344		x	0.7292		÷	27	=	98.4
HAUNCH ON BEAM 1 (SPAN 1)	1	x	41.3802		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 1 (SPAN 2)	1	x	61.0781		x	1.25		x	0.1667		÷	27	=	0.5
HAUNCH ON BEAM 1 (SPAN 3)	1	x	41.276		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 2 (SPAN 1)	1	x	41.3802		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 2 (SPAN 2)	1	x	61.0781		x	1.25		x	0.1667		÷	27	=	0.5
HAUNCH ON BEAM 2 (SPAN 3)	1	x	41.276		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 3 (SPAN 1)	1	x	41.3802		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 3 (SPAN 2)	1	x	61.0781		x	1.25		x	0.1667		÷	27	=	0.5
HAUNCH ON BEAM 3 (SPAN 3)	1	x	41.276		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 4 (SPAN 1)	1	x	41.3802		x	1.25		x	0.1667		÷	27	=	0.3
HAUNCH ON BEAM 4 (SPAN 2)	1	x	61.0781		x	1.25		x	0.1667		÷	27	=	0.5
HAUNCH ON BEAM 4 (SPAN 3)	1	x	41.276		x	1.25		x	0.1667		÷	27	=	0.3
LT. DECK EDGE OVERHUNG (SPAN 1)	1	x	41.3802		x	2.7917	2.8281	x	1.21875	1.1719	÷	27	=	5.1
LT. DECK EDGE OVERHUNG (SPAN 2)	1	x	61.0781		x	2.8281	2.9792	x	1.1719	1.0625	÷	27	=	7.3
LT. DECK EDGE OVERHUNG (SPAN 3)	1	x	41.276		x	2.9792	3.0885	x	1.0625	1.0104	÷	27	=	4.8
RT. DECK EDGE OVERHUNG (SPAN 1)	1	x	41.3802		x	5.0312	3.5417	x	0.9219	0.8958	÷	27	=	6.0
RT. DECK EDGE OVERHUNG (SPAN 2)	1	x	61.0781		x	3.5417	1.9948	x	0.9219		÷	27	=	5.8
RT. DECK EDGE OVERHUNG (SPAN 3)	1	x	41.276		x	1.9948	1.3281	x	0.9219	0.9114	÷	27	=	2.3
REAR ABUT. END DIA.	1	x	34.75		x	4.25		x	4.4167	3.7552	÷	27	=	22.3
FWD. ABUT. END DIA.	1	x	31.25		x	4.25		x	4.5417	4.2708	÷	27	=	21.7
REAR ABUT. END DIA. APP. SEAT	-1	x	34.75		x	0.5		x	1.3333	1.5417	÷	27	=	-0.9
FWD. ABUT. END DIA. APP. SEAT	-1	x	31.25		x	0.5		x	1.3333		÷	27	=	-0.8
REAR DECK END	0.5	x	34.75		x	0.8333		x	1		÷	27	=	0.5
FWD. DECK END	0.5	x	31.25		x	0.3333		x	1		÷	27	=	0.2
													TOTAL CARRIED TO GENERAL SUMMARY =	177

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-11.44A

DESCRIPTION: BRIDGE QUANTITIES

INITIALS: YEL

CHECKED BY:

ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)														
DESCRIPTION	#		L			W			T			C.F.		CU YD
BRIDGE PARAPET - UPPER (LT.)	1	x	150.3385		x	0.9167	0.7187	x	1.9167		÷	27	=	8.7
BRIDGE PARAPET - UPPER BASE (LT.)	1	x	150.3385		x	1.5	0.9167	x	0.8333		÷	27	=	5.6
BRIDGE PARAPET - LOWER BASE (LT.)	1	x	150.3385		x	1.5		x	0.25		÷	27	=	2.1
BRIDGE PARAPET - UPPER (RT.)	1	x	151.5677		x	0.9167	0.7187	x	1.9167		÷	27	=	8.8
BRIDGE PARAPET - UPPER BASE (RT.)	1	x	151.5677		x	1.5	0.9167	x	0.8333		÷	27	=	5.7
BRIDGE PARAPET - LOWER BASE (RT.)	1	x	151.5677		x	1.5		x	0.25		÷	27	=	2.1
R & FWD. APP. SLABS - UP. (LT. & RT.)	4	x	11		x	0.9167	0.7187	x	1.9167		÷	27	=	2.6
R&FWD. APP. SLABS-UP. BASE (LT.&RT.)	4	x	11		x	1.5	0.9167	x	0.8333		÷	27	=	1.6
R&FWD. APP. SLABS-L. BASE (LT. & RT.)	4	x	11		x	1.5		x	0.25		÷	27	=	0.6
			VOL.											
TRANSITION PARAPET (LT. & RT.)	4	x	1.63		x	1		x	1		÷	27	=	0.2
Lamp Post Support	0.5	x	4.3333	1.5	x	1.5833		x	3		÷	27	=	0.3
Lamp Post Support Base	0.5	x	4.5	1.6667	x	1.75		x	1		÷	27	=	0.1
													TOTAL CARRIED TO GENERAL SUMMARY =	38

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
BRIDGE PARAPET (LT.)	1	x	151.2		x	8.65		x			÷	9	=	145.3
BRIDGE PARAPET (RT.)	1	x	150.6		x	8.55		x			÷	9	=	143.1
PARAPET ON APP. SLAB (LT. & RT.)	4	x	11		x	8.276		x			÷	9	=	40.5
TRANSITION PARAPET (LT. & RT.)	4	x	10		x	6.979	6.558	x			÷	9	=	30.1
TRANSITION PARAPET (LT. & RT.)	4	x	2.5		x	6.558		x			÷	9	=	7.3
TRANSITION PARAPET (LT. & RT.)	4	x	1.5		x	6.558	6.651	x			÷	9	=	4.4
FWD. ABUTMENT BACKWALL	1	x	31.3333		x	6.812	4.4792	x			÷	9	=	19.7
FWD. ABUT. WW TOP SURFACES (LT.)	1	x	16.229	16.5417	x	1.5		x			÷	9	=	2.7
FWD. ABUT. WW TOP SURFACES (RT.)	1	x	11.4167		x	1.5		x			÷	9	=	1.9
FWD. ABUT. WW SIDE SURFACES (LT.)	0.5	x	16.229		x	7.625	1	x			÷	9	=	3.9
FWD. ABUT. WW SIDE SURFACES (RT.)	0.5	x	11.4167		x	5.3333	1	x			÷	9	=	2.0
FWD. ABUT. WW FRONT SURFACES(LT.)	1	x	7.625		x	1.5		x			÷	9	=	1.3
FWD. ABUT. WW FRONT SURFACES(RT.)	1	x	5.3333		x	1.5		x			÷	9	=	0.9
REAR ABUTMENT BACKWALL	1	x	34.7396		x	5.3958	6.8542	x			÷	9	=	23.6
REAR ABUT. WW TOP SURFACES (LT.)	1	x	17.104		x	1.5		x			÷	9	=	2.9
REAR ABUT. WW TOP SURFACES (RT.)	1	x	10.625	9.7708	x	1.5		x			÷	9	=	1.7
REAR ABUT. WW SIDE SURFACES (LT.)	0.5	x	17.104		x	8.0833	1	x			÷	9	=	4.3
REAR ABUT. WW SIDE SURFACES (RT.)	0.5	x	9.7708		x	5.3958	1	x			÷	9	=	1.7
RAER ABUT. WW FRONT SURFACES(LT.)	1	x	8.0833		x	1.5		x			÷	9	=	1.3
REAR ABUT. WW FRONT SURFACES(RT.)	1	x	5.3958		x	1.5		x			÷	9	=	0.9
Pier 1 Cap (Sides)	2	x	29.5		x	4.0833	3.6667	x			÷	9	=	25.4
Pier 1 Cap (Ends)	2	x	3		x	4.08333	3.6667	x			÷	9	=	2.6
Pier 1 Cap (Sides)	2	x	29.5		x	4.0833	3.6667	x			÷	9	=	25.4
Pier 1 Cap (Ends)	2	x	3		x	4.0833	3.6667	x			÷	9	=	2.6
													TOTAL CARRIED TO GENERAL SUMMARY =	496

ITEM 512 - SEALING OF CONCRETE SURFACES, (EPOXY-EURETHANE)

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 (Col. 1)	1	x	9.42		x	12.2344		x			÷	9	=	12.8
PIER 1 (Col. 2)	1	x	9.42		x	11.3177		x			÷	9	=	11.8
PIER 1 (Col. 3)	1	x	9.42		x	10.4062		x			÷	9	=	10.9
PIER 2 (Col. 1)	1	x	9.42		x	14.0469		x			÷	9	=	14.7
PIER 2 (Col. 2)	1	x	9.42		x	13.1302		x			÷	9	=	13.7
PIER 2 (Col. 3)	1	x	9.42		x	12.2135		x			÷	9	=	12.8
													TOTAL CARRIED TO GENERAL SUMMARY =	77

ITEM 512 - Type 2 Waterproofing

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R. A. Area contact w/ R. APP. SLAB	1	x	34.75		x	1.9583		x			÷	9	=	7.6
F. A. Area contact w/ F. APP. SLAB	1	x	31.25		x	1.9583		x			÷	9	=	6.8
													TOTAL CARRIED TO GENERAL SUMMARY =	14

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
PARAPETS ON R & FWD. APP. SLABS - UP. (LT. & RT.)	4	x	1.9167		x	0.9167	0.7187	x			÷	1	=	6.3
PARAPETS ON R&FWD. APP. SLABS-UP. BASE (LT.&RT.)	4	x	0.8333		x	1.5	0.9167	x			÷	1	=	4.0
PARAPETS ON R&FWD. APP. SLABS-L. BASE (LT. & RT.)	4	x	0.25		x	1.5		x			÷	1	=	1.5
												TOTAL CARRIED TO GENERAL SUMMARY =		12

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
BET. REAR ABUT. WW & APP. SLAB(LT.)	1	x	11.3333		x	1.25		x			÷	1	=	14.2
BET. REAR ABUT. WW & APP. SLAB(RT.)	1	x	5.75		x	1.25		x			÷	1	=	7.2
BET. FWD. ABUT. WW & APP. SLAB(LT.)	1	x	12.25		x	1.25		x			÷	1	=	15.3
BETWEEN FWD. ABUT. & APP. SLAB(RT.)	1	x	6.75		x	1.25		x			÷	1	=	8.4
BET. REAR ABUT. WW & DIA. (LT.)	1	x	5.75		x	4.75		x			÷	1	=	27.3
BET. REAR ABUT. WW & DIA. (RT.)	1	x	4.8333		x	4.4167		x			÷	1	=	21.3
BET. FWD. ABUT. WW & DIA. (LT.)	1	x	3.8333		x	4.5		x			÷	1	=	17.2
BET. FWD. ABUT. WW & DIA. (RT.)	1	x	4.25		x	4.3333		x			÷	1	=	18.4
PERIMETER OF REAR ABUT. DIA. GUIDE	1	x	3.8646		x	7.846		x			÷	1	=	30.3
PERIMETER OF FWD. ABUT. DIA. GUIDE	1	x	3.8646		x	7.836		x			÷	1	=	30.3
												TOTAL CARRIED TO GENERAL SUMMARY =		190

ITEM 516 - 3-1/4" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
BETWEEN REAR. DIA. & BK. WALL	1	x	31.75		x	4.25		x			÷	1	=	134.9
BETWEEN FWD. DIA. & BK. WALL	1	x	28.25		x	4.25		x			÷	1	=	120.1
												TOTAL CARRIED TO GENERAL SUMMARY =		255

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT(Hor.)	1	x	37.75		x			x			÷	1	=	37.8
REAR ABUTMENT (Vert.)	2	x	4.5		x			x			÷	1	=	9.0
FORWARD ABUTMENT (Hor.)	1	x	34.25		x			x			÷	1	=	34.3
FORWARD ABUTMENT (Vert.)	2	x	4.5		x			x			÷	1	=	9.0
													TOTAL CARRIED TO GENERAL SUMMARY =	90

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APP. SLAB	1	x	34.75		x			x			÷	1	=	34.8
FORWARD APP. SLAB	1	x	31.25		x			x			÷	1	=	31.3
													TOTAL CARRIED TO GENERAL SUMMARY =	66

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APP. SLAB	1	x	34.75		x			x			÷	1	=	34.8
FORWARD APP. SLAB	1	x	31.25		x			x			÷	1	=	31.3
													TOTAL CARRIED TO GENERAL SUMMARY =	66

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
Rear Abutment (Area 1)	1	x	34.75		x	2		x	7.84	10.54	÷	27	=	23.7
Rear Abutment (Area 2)	1	x	34.75		x	1		x	4.84	7.54	÷	27	=	8.0
Fwd. Abutment (Area 1)	1	x	31.25		x	2		x	10.43	7.97	÷	27	=	21.3
Fwd. Abutment (Area 2)	1	x	31.25		x	1		x	7.43	4.97	÷	27	=	7.2
													TOTAL CARRIED TO GENERAL SUMMARY =	60

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	34.75		x			x			÷	1	=	34.8
FORWARD ABUTMENT	1	x	31.25		x			x			÷	1	=	31.3
													TOTAL CARRIED TO GENERAL SUMMARY =	66

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	32		x			x			÷	1	=	32.0
FORWARD ABUTMENT	1	x	32		x			x			÷	1	=	32.0
													TOTAL CARRIED TO GENERAL SUMMARY =	64

ITEM 519 - Special Composite Fiber Wrap System																
DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
PIER 1 (Col. 1)	1	x	10.92		x	12.2344		x			÷	1	=	133.6
PIER 1 (Col. 2)	1	x	10.92		x	11.3177		x			÷	1	=	123.6
PIER 1 (Col. 3)	1	x	10.92		x	10.4062		x			÷	1	=	113.6
PIER 2 (Col. 1)	1	x	10.92		x	14.0469		x			÷	1	=	153.4
PIER 2 (Col. 2)	1	x	10.92		x	13.1302		x			÷	1	=	143.4
PIER 2 (Col. 3)	1	x	10.92		x	12.2135		x			÷	1	=	133.4
													TOTAL CARRIED TO GENERAL SUMMARY =			801

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN																
DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	30.3333		x			÷	9	=	84.3
FWD. APP.SLAB	1	x	25		x	30.3333		x			÷	9	=	84.3
													TOTAL CARRIED TO GENERAL SUMMARY =			169

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN																
DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR EMBANKMENT	1.08	x	40.5		x	36.8333		x			÷	9	=	179.0
FWD. EMBANKMENT	1.08	x	34.5833		x	36.8333		x			÷	9	=	152.9
													TOTAL CARRIED TO GENERAL SUMMARY =			332

ITEM 613 - LOW STRENGTH MOTOR BACKFILL, AS PER PLAN																
DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APP. SLAB	1	x	11.5		x	30.3333		x	3		÷	27	=	38.8
FWD. APP.SLAB	1	x	11.5		x	30.3333		x	3		÷	27	=	38.8
													TOTAL CARRIED TO GENERAL SUMMARY =			78

ITEM 204 - SUBGRADE COMPACTION																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		SQ YD
	STA. 579+67.37 TO STA. 579+92.37	1	x	25		x	30.3333		x			÷	9	=	84.3
	STA. 581+19.88 TO STA. 581+44.88	1	x	25		x	30.3333		x			÷	9	=	84.3
			x			x			x			÷	9	=	
														TOTAL CARRIED TO GENERAL SUMMARY =		169

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-11.44A
DESCRIPTION: EROSION CONTROL QUANTITIES

INITIALS: YEL
CHECKED BY:

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	REAR ABUT.	1	x	4		x	4		x	1		÷	27	=	0.6
	FWD. ABUT.	1	x	4		x	4		x	1		÷	27	=	0.6
			x			x			x			÷	27	=	
			x			x			x			÷	27	=	
TOTAL CARRIED TO GENERAL SUMMARY =															1

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-11.44A

DESCRIPTION: PAVEMENT QUANTITIES

INITIALS: YEL

CHECKED BY:

ITEM 304 - AGGREGATE BASE																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	STA. 579+67.37 TO STA. 579+92.37	1	x	25		x	30.3333		x	0.5		÷	27	=	14.0
	STA. 581+19.88 TO STA. 581+44.88	1	x	25		x	30.3333		x	0.5		÷	27	=	14.0
			x			x			x	0.5		÷	27	=	
													TOTAL CARRIED TO GENERAL SUMMARY =		28

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: _____ INITIALS: Hipp

PID: 93006 CHECKED BY: _____

CRS: MUS-70-1089

DESCRIPTION: QUANTITIES

ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN												
DESCRIPTION	#	L		W		H/T		EACH				
LUMP	1							1.0				
						TOTAL =		1.0				
ITEM 202 APPROACH SLAB REMOVED												
DESCRIPTION (FORWARD)	#	L		W		H/T		SQ YD				
REAR	1	25		91				252.8				
FORWARD	1	25		91				252.8				
						TOTAL =		505.6				
ITEM 503 COFFERDAMS AND EXCAVATION BRACING												
DESCRIPTION	#	L		W		H/T		EACH				
LUMP	1							1.0				
						TOTAL =		1.0				
ITEM 503 UNCLASSIFIED EXCAVATION												
DESCRIPTION	#	L		W		H/T		CU YD				
LUMP	2	122		1		6		54.2				
						TOTAL =		54.2				
ITEM 510 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT												
DESCRIPTION	#	L		W		H/T		EACH				
RA502	3							3.0				
RA601	88							88.0				
RA602	194							194.0				
RA603	97							97.0				
RA604	24							24.0				
								0.0				
FA601	88							88.0				
FA602	194							194.0				
FA603	97							97.0				
FA604	24							24.0				
								0.0				
WA501	22							22.0				
WA601	9							9.0				
WB501	22							22.0				
WB506	15							15.0				
WB601	9							9.0				

WC501	22							22.0
WC506	15							15.0
WC601	9							9.0
WD501	22							22.0
WD506	15							15.0
WD601	9							9.0
								0.0
PA501	188							188.0
PB501	188							188.0
PC501	168							168.0
PC501	20							20.0
PD501	188							188.0
								0.0
								0.0
							TOTAL =	1730.0

ITEM 511 CLASS QC2 CONCRETE, SUPERSTRUCTURE

DESCRIPTION	#	L		W		H/T		CU YD
EASTBOUND DECK	1	397.4		47.46		0.708		494.8
WESTBOUND DECK	1	397.4		47.46		0.708		494.8
EASTBOUND DECK EDGES	1	397.4		4.25		0.278		17.4
WESTBOUND DECK EDGES	1	397.4		4.25		0.257		16.1
HAUNCH OVER BEAMS	14	397.4		1.375		0.167		47.2
							TOTAL =	1070.3

ITEM 511 CLASS QC2 CONCRETE, PARAPET

DESCRIPTION	#	L		W		H/T		CU YD
WESTBOUND OUTSIDE	1	408.4		4.083		1		61.8
WESTBOUND MEDIAN	1	397.4		6.15		1		90.5
EASTBOUND OUTSIDE	1	408.4		4.083		1		61.8
EASTBOUND MEDIAN	1	397.4		6.15		1		90.5
END TRANSITIONS	4	1.82		1		1		7.3
MEDIAN BARRIERS ON A.S.	2	25		12.51		1		23.2
							TOTAL =	335.1

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: _____ INITIALS: Hipp

PID: 93006 CHECKED BY: _____

CRS: MUS-70-1089

DESCRIPTION: QUANTITIES

ITEM 511 CLASS QC1 CONCRETE, ABUTMENT								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**CU YD**
REAR BACKWALL	1	95.35		1.75		4.8	5.56	32.0
MINUS APPROACH SLAB	-1	95.35		0.5		1.25		-2.2
REAR BEAM SEAT	1	89.3		2		1		6.6
WINGWALL 1 FOOTING	1	9.5		2.26		3.25		2.6
WINGWALL 1 MIDDLE SECTION	1	8		2.42		3.26		2.3
WINGWALL 1 TOP SECTION	1	10.5		1.5		4.93	4.8	2.8
WINGWALL 2 FOOTING	1	9.44		1.52		3.25		1.7
WINGWALL 2 MIDDLE SECTION	1	7.955		2.26		4.55		3.0
WINGWALL 2 TOP SECTION	1	10.46		1.5		5.4	5.57	3.2
FORWARD BACKWALL	1	95.8		1.75		5.53	4.87	32.3
MINUS APPROACH SLAB	-1	95.8		0.5		1.25		-2.2
REAR BEAM SEAT	1	72.69		2		1		5.4
WINGWALL 3 FOOTING	1	9.65		2		3.25		2.3
WINGWALL 3 MIDDLE SECTION	1	8.16		2.42		4.67		3.4
WINGWALL 3 TOP SECTION	1	10.66		1.5		5.23	5.37	3.1
WINGWALL 4 FOOTING	1	9.34		2.2		3.25		2.5
WINGWALL 4 MIDDLE SECTION	1	7.838		2.45		3.202		2.3
WINGWALL 4 TOP SECTION	1	10.34		1.5		4.87	4.73	2.8
							TOTAL =	103.9

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: _____ INITIALS: Hipp

PID: 93006 CHECKED BY: _____

CRS: MUS-70-1089

DESCRIPTION: QUANTITIES

ITEM 511 CLASS QC1 CONCRETE, PIER												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**CU YD**	
PIER 1 (EAST/WEST)	1	95.84			3			1			10.6	
PIER 2 (EAST/WEST)	1	113.7			3			1			12.6	
PIER 3 (EAST/WEST)	1	119.1			3			1			13.2	
PIER 4 (EAST/WEST)	1	113.1			3			1			12.6	
									TOTAL =		49.0	

ITEM 512 SEALING OF CONCRETE SURFACES												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**SQ YD**	
CENTER PARAPET	2	447.4			5.68						564.7	
UTSIDE PARAPET AND DECK EDG	2	447.4			9.5						944.5	
REAR BACKWALL	1	512.7			1						57.0	
REAR BEAM SEAT	1	94.14			2						20.9	
FORWARD BACKWALL	1	495.2			1						55.0	
FORWARD BEAM SEAT	1	94.05			2						20.9	
WINGWALL 1 TOP	1	6.142			10.51						7.2	
WINGWALL 2 TOP	1	6.74			10.46						7.8	
WINGWALL 3 TOP	1	6.713			10.66						7.9	
WINGWALL 4 TOP	1	6.124			10.34						7.0	
									TOTAL =		1692.9	

ITEM 512 TYPE 2 WATERPROOFING												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**SQ YD**	
REAR ABUTMENT	1	113			3						37.7	
FORWARD ABUTMENT	1	114			3						38.0	
									TOTAL =		75.7	

ITEM 513 STRUCTURAL STEEL, LEVEL 3												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**EACH**	
LUMP SUM	1										1.0	
									TOTAL =		1.0	

ITEM 513 WELDED STUD SHEAR CONNECTORS												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**EACH**	
BEAMS 1-14	18984										18984.0	
									TOTAL =		18984.0	

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: _____ INITIALS: Hipp

PID: 93006 CHECKED BY: _____

CRS: MUS-70-1089

DESCRIPTION: QUANTITIES

ITEM 516 STRUCTURAL EXPANSION JOINT INLCUDING ELASTOMERIC STRIP SEAL												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**FT**	
REAR WESTBOUND & EAST BOUN	2	46.22									92.4	
FWD. WESTBOUND & EAST BOUN	2	46.39									92.8	
									TOTAL =		185.2	
ITEM 516 1" PREFORMED EXPANSION JOINT FILLER												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**SQ YD**	
WINGWALL 1	1	9.27			1.25						1.3	
WINGWALL 2	1	9.207			1.25						1.3	
WINGWALL 3	1	9.39			1.25						1.3	
WINGWALL 4	1	9.086			1.25						1.3	
									TOTAL =		5.2	
ITEM 518 POROUS BACKFILL WITH GEOTEXTILE FABRIC												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**CU YD**	
REAR	1	95.35			1.5			4.79	5.56		27.4	
FORWARD	1	95.09			1.5			3.567	5.53		24.0	
									TOTAL =		51.4	
ITEM 518 SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**EACH**	
EASTBOUND	7										7.0	
WESTBOUND	5										5.0	
									TOTAL =		12.0	
ITEM 518 6" PERFORATED CORRUGATED PLASTIC PIPE												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**FT**	
REAR	1	99									99.0	
FORWARD	1	99									99.0	
									TOTAL =		198.0	
ITEM 518 6" NON-PERFORATED PIPE INCLUDING SPECIALS												
DESCRIPTION	**#**	**L**			**W**			**H/T**			**FT**	
OUTLETS	4	30									120.0	
									TOTAL =		120.0	
ITEM 526 REINFORCED CONCRETE APPROACH SLAB 15" QC/QA												
DESCRIPTION (REAR)	**#**	**L**			**W**			**H/T**			**SQ YD**	
REAR & FWD	2	25			95.33						529.6	
									SUB-TOTAL =		529.6	

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: _____ INITIALS: JPH

PID: 93006 CHECKED BY: _____

CRS: MUS-70-1089

DESCRIPTION: PAINTING QUANTITIES

ITEM 514 FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT					
Descriptions	**No. Beams / X-Frames**	**Beam Size/ X-frames**	**Length (ft)**	**Beam/ ft^2 or X-Frames/ft^2**	**SQ. FT.**
B1-B14	14	W36 X 231	20	9.97	2791.6
					0
X-Frames (Bottom)	26	L4 X 4 X 5/8	7	1.33	242.1
X-Frames (Diagonals)	26	L4 X 4 X 5/8	14	1.33	484.1
MISCELLANEOUS PLATES	78	1 SQ FT PLAT		1.00	156
				TOTAL =	3674.0

ITEM 514 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT					
Descriptions	**No. Beams / X-Frames**	**Beam Size/ X-frames**	**Length (ft)**	**Beam/ ft^2 or X-Frames/ft^2**	**SQ. FT.**
B1-B14	14	W36 X 231	20	9.97	2791.6
					0
X-Frames (Bottom)	26	L4 X 4 X 5/8	7	1.33	242.1
X-Frames (Diagonals)	26	L4 X 4 X 5/8	14	1.33	484.1
MISCELLANEOUS PLATES	78	1 SQ FT PLAT		1.00	156
				TOTAL =	3674.0

ITEM 514 FINAL INSPECTION REPAIR					
Descriptions	**No. Beams / X-Frames**	**Beam Size/ X-frames**	**Length (ft)**	**Total Linear (ft.)**	**EACH**
B1-B14	14	W36 X 231	20	280.00	2.0
X-Frames (Bottom)	26	L4 X 4 X 5/8			
X-Frames (Diagonals)	26	L4 X 4 X 5/8			
X-Frames (Diagonals)	78	L4 X 4 X 5/8			
				TOTAL =	2.0

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 7-Dec-20 INITIALS: JKS

PID: 93006 CHECKED BY:

CRS: SFN6002730

DESCRIPTION: FINAL BRIDGE QUANTITIES

ITEM 202 - PORTIONS OF STRUCTURE REMOVED (SUBSTRUCTURE)								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**EACH**
REAR ABUTMENT								
BACKWALL	1	43.5		1.75		4		11.3
BREASTWALL	1	42.875		3.75		4		23.8
WINGWALLS	2	11	12.0833	1.50		7.75	7	9.5
SIDEWALK & PARAPET	2	13.3333		6.50		1		6.4
APPROACH SLAB SEAT DEDUCTION	-1	30		0.50		1.4167		-0.8
FORWARD ABUTMENT								
BACKWALL	1	41		1.75		4.25		11.3
BREASTWALL	1	42.8333		3.75		3.8333		22.8
WINGWALLS	2	8.5	10.5833	1.50		7.9167		8.4
SIDEWALK & PARAPET	2	13.3333		6.50		1		6.4
FOOTING	1	50.3333		5.75		3	3.25	33.5
FOOTING UNDER WINGWALL	2	8	9.9167	3.00		3	3.25	6.2
APPROACH SLAB SEAT DEDUCTION	-1	30		0.50		1.4167		-0.8
							TOTAL =	138.0

ITEM 202 - APPROACH SLAB REMOVED								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ YD**
APPROACH SLAB	2	25		28				155.6
								0.0
							TOTAL =	155.6

ITEM 202 - RAILING REMOVED								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ YD**
RAILING	2	258		1				516.0
								0.0
							TOTAL =	516.0

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#	L		W		H/T		EACH
REAR ABUTMENT	0							0.0
PIER 1	54							54.0
PIER 2	54							54.0
PIER 3	54							54.0
FORWARD ABUTMENT	0							0.0
								0.0
							TOTAL =	162.0

ITEM 511 - SEMI-INTEGRAL DIAPHRAGM GUIDES

DESCRIPTION	#	L		W		H/T		EACH
REAR ABUTMENT	1							1.0
FORWARD ABUTMENT	1							1.0
								0.0
							TOTAL =	2.0

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

DESCRIPTION	#	L		W		H/T		CU YD
DECK (SPAN 1)	1	45.7812		34		0.7083		40.8
DECK (SPAN 2)	1	66.25		34		0.7083		59.1
DECK (SPAN 3)	1	53.1667		34		0.7083		47.4
DECK (SPAN 4)	1	43.1667		34		0.7083		38.5
DECK EDGE	2	208.3646		3.25		0.875		43.9
SIDEWALK	2	212.0833		6.1667		0.7917		76.7
DIAPHRAGM	2	43.5417		3		3.75		36.3
DIAPHRAGM APP SLAB DEDUCTION	-2	43.5417		0.5		1.25		-2.0
DIAPHRAGM GUIDE DEDUCTION	-2	3		3.3333		2.1667		-1.6
HAUNCH	4	208.3646		1.1667		0.1667		6.0
pedestals	6	4.5	1.5	1.5833		0.8698		0.9
								0.0
							TOTAL =	346.0

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, PARAPET								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**CU YD**
PARAPET	2	233.0833	237.0833	1.1667		3.5		71.1
PARAPET ENDS	3	4		1.1667		2.6667		1.4
PARAPET transitions	3	10		1.1667		3.5	2.6667	4.0
PARAPET forward left transition	1	6.5		1.6667	1.3333	4.375	3.5	1.4
								0.0
							TOTAL =	77.9

ITEM 511 - CLASS QC1 CONCRETE, PIER								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**CU YD**
PIERS	3	39.5417		3		1.61	2.61	27.8
								0.0
							TOTAL =	27.8

ITEM 511 - CLASS QC1 CONCRETE, SUBSTRUCTURE								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**EACH**
REAR ABUTMENT								
WINGWALL (RT.)	1	14.3958		1.5		6.94	6.2733	5.3
WINGWALL (RT.)	1	5.75		1.5		3		1.0
WINGWALL (LT.)	1	11.8333		1.5		6.05	5.45	3.8
WINGWALL (LT.)	1	5.75		1.5		3		1.0
WINGWALL chamfers	1	1.25	1	1.5		0.7		0.0
BREASTWALL	1	43.9167		3		2.41	1.66	9.9
BREASTWALL chamfers	1	2		2		2.41	1.66	0.3
FORWARD ABUTMENT								
WINGWALL (LT.)	1	13.776		1.5		8.5		6.5
WINGWALL (LT.)	1	4.1667		1.5		3		0.7
WINGWALL (RT.)	1	11.5469		1.5		8.5		5.5
WINGWALL (RT.)	1	7.25		1.5		3		1.2
WINGWALL chamfers	1	2	2.5	1.5		1.275		0.2
Breastwall chamfers	1	2		2		4.47	4.2	0.6
BREASTWALL	1	43.9167		3		4.47	4.2	21.2
							TOTAL =	57.2

ITEM 511 - CLASS QC1 CONCRETE, FOOTING								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**CU YD**
REAR footing	1	48.25		4		3		21.4
REAR footing under wingwalls	2	10.25	10.5	6.5		3		15.0
REAR footing chamfers	1	2		2		3		0.4
FWD footing	1	48.25		6		3		32.2
FWD footing under wingwalls	2	10.8333	10	6.5		3		15.0
FWD footing chamfers	1	2		2		3		0.4
							TOTAL =	84.4

ITEM 512- SEALING OF CONCRETE SURFACES, NONEPOXY								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**EACH**
REAR ABUTMENT								
ABUTMENT FACE	1	210		1				23.3
DIAPHRAGM FACE	1	111		1				12.3
WINGWALL	2	135	126	1				29.0
FORWARD ABUTMENT								
ABUTMENT FACE	1	120		1				13.3
DIAPHRAGM FACE	1	114		1				12.7
WINGWALL	2	112	86	1				22.0
PARAPET	2	233.0833	237.0833	16.1667				844.6
PARAPET END	3	4		12.1667				16.2
PARAPET TRANSITION	3	10		13.8333	12.1667			43.3
FWD LEFT TRANSITION	1	6.5		10.0833	8.0833			6.6
TYPE D	1	27		17.8333				53.5
TYPE D TRANSITION	1	10		17.8333	15.4167			18.5
TYPE D END	1	4		15.4167				6.9
							TOTAL =	1102.2

ITEM 512- SEALING OF CONCRETE SURFACES, EPOXY								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**CU YD**
PIER 1	3	15		3		3.14		47.1
PIER 2	2	15.75		3		3.14		33.0
PIER 2	1	21.25		3		3.14		22.2
PIER 3	2	21.25		3		3.14		44.5
PIER 3	1	23		3		3.14		24.1
							TOTAL =	170.9

ITEM 512 - TYPE 2 WATERPROOFING								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ YD**
REAR ABUTMENT BOTTOM	1	43.5417		6				29.0
REAR ABUTMENT SIDES	2	3.75		6				5.0
REAR ABUTMENT DIAPHRAGM GUIDE	2	1.5		6				2.0
FWD. ABUTMENT BOTTOM	1	43.5417		6				29.0
FWD. ABUTMENT SIDES	2	3.75		6				5.0
FWD. ABUTMENT DIAPHRAGM GUIDE	2	1.5		6				2.0
								0.0
							TOTAL =	72.0

ITEM 513 - WELDED STUD SHEAR CONNECTOR								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**EACH**
BEAM 1	945							945.0
BEAM 2	945							945.0
BEAM 3	945							945.0
BEAM 4	945							945.0
BEAM 5	945							945.0
								0.0
							TOTAL =	4725.0

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ. FT.**
REAR PARAPET	2	1.1667		3.5				8.2
REAR SIDEWALK	2	6.1667		0.6667	0.875			9.5
FWD. PARAPET	2	1.1667		3.5				8.2
FWD. SIDEWALK	2	6.1667		0.6667	0.875			9.5
							TOTAL =	35.4

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ. FT.**
REAR DIAPHRAGM	2	3.25		3.875				25.2
FWD. DIAPHRAGM	2	3.25		3.875				25.2
REAR WINGWALLS/APP SLAB	2	16.333	15	1.25				39.2
FWD. WINGWALLS/APP SLAB	2	16.1667	14.125	1.25				37.9
							TOTAL =	127.5

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**FT**
REAR ABUTMENT BOTTOM	1	43.5417						43.5
REAR ABUTMENT SIDES	2	2.75						5.5
REAR ABUTMENT DIAPHRAGM GUIDE	2	1.5						3.0
FWD. ABUTMENT BOTTOM	1	43.5417						43.5
FWD. ABUTMENT SIDES	2	2.75						5.5
FWD. ABUTMENT DIAPHRAGM GUIDE	2	1.5						3.0
								0.0
							TOTAL =	104.0

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**FT**
REAR APP SLAB	1	40.8333						40.8
FWD APP SLAB	1	49.5						49.5
							TOTAL =	90.3

ITEM 516 - 2" DEEP JOINT SEALER								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**FT**
REAR APP SLAB	1	43.5						43.5
FWD APP SLAB	1	43.5						43.5
							TOTAL =	87.0

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

DESCRIPTION	#	L		W		H/T		EACH
PIER 1	5							5.0
PIER 2	5							5.0
PIER 3	5							5.0
								0.0
							TOTAL =	15.0

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

DESCRIPTION	#	L		W		H/T		EACH
REAR ABUTMENT	5							5.0
FORWARD ABUTMENT	5							5.0
								0.0
							TOTAL =	10.0

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN

DESCRIPTION	#	L		W		H/T		EACH
RIGHT SIDE	3							3.0
LEFT SIDE	3							3.0
								0.0
							TOTAL =	6.0

ITEM 518 - POROUS BACKFILL

DESCRIPTION	#	L		W		H/T		CU YD
REAR ABUTMENT	1	59.5833		2		4.75	5.5833	22.8
FORWARD ABUTMENT	1	59.5833		2		7.25	7.3333	32.2
								0.0
							TOTAL =	55.0

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**FT**
REAR ABUTMENT	1	58.0833						58.1
FORWARD ABUTMENT	1	57.0833						57.1
								0.0
							TOTAL =	115.2

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**FT**
REAR ABUTMENT	2	12						24.0
FORWARD ABUTMENT	2	12						24.0
								0.0
							TOTAL =	48.0

ITEM 519- composite fiber wrap system								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**EACH**
PIER 1								0.0
COLUMNS	3	15		9.42				423.9
PIER 2								0.0
COLUMN	1	21.25		9.42				200.2
COLUMNS	2	15.75		9.42				296.7
PIER 3								0.0
COLUMN	1	23		9.42				216.7
COLUMNS	2	21.25		9.42				400.4
							TOTAL =	1537.9

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ YD**
REAR A.S.	1	25		40.5				112.5
FORWARD A.S.	1	24.0625		40.5				108.3
FORWARD A.S.	1	3.9427	5.4167	4.1302				2.1
							TOTAL =	222.9

ITEM 530- aesthetic treatment								
DESCRIPTION	**#**	**L**		**W**		**H/T**		**SQ FT**
REAR ABUTMENT								
ABUTMENT FACE	1	210		1				210.0
WINGWALL	2	135	126	1				261.0
FORWARD ABUTMENT								
ABUTMENT FACE	1	120		1				120.0
WINGWALL	2	112	86	1				198.0
PARAPET	2	233.08	237.08	6				2821.0
PARAPET END	3	4		4.3333				52.0
PARAPET TRANSITION	3	10		6	4.3333			155.0
FWD LEFT TRANSITION	1	6.5		3				19.5
TYPE D	1	27		3				81.0
TYPE D TRANSITION	1	10		3				30.0
TYPE D END	1	4		2.1667				8.7
							TOTAL =	3956.2

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 6-Jul-20 INITIALS: jks

PID: 93006 CHECKED BY:

CRS: SFN6002730

DESCRIPTION: PAINTING

ITEM 514 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL					
ITEM 514 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT					
ITEM 514 FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT					
ITEM 514 FIELD PAINTING OF STRUCTURAL STEEL, FINISH COAT					
Descriptions	**#**	**Size/ Description**	**Length (ft)**	**ft**	**SQ. FT.**
Interior Beams	3	W27 x 178	60	7.96	1432.8
Exterior Beams	2	W27 x 178	60	7.96	955.2
Interior Beams	3	W27 x 194	69	8.07	1670.5
Exterior Beams	2	W27 x 194	69	8.07	1113.7
Interior Beams	3	W27 x 146	81.8333	7.88	1934.5
Exterior Beams	2	W27 x 146	81.8333	7.88	1289.7
X-Frames (Channels)	69	MC 18 X 42.7	8.5	4.24	2486.8
X-Frames (stiffeners)	138	plates	1	2.07	285.7
pier stiffeners	50	4.5" x 28.5" x 3/4"	1	2.41	120.5
				TOTAL =	11289.0

ITEM 514 FINAL INSPECTION REPAIR					
Descriptions	**#**	**Size/ Description**	**Length (ft)**	**Total Linear (ft.)**	**EACH**
Interior Beams	3	W27 x 178	210.8333	632.50	4.2
Exterior Beams	2	W27 x 178	210.8333	421.67	2.8
X-Frames	69				3.5
				TOTAL =	10.5

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)														
DESCRIPTION	#		L			W			T			C.F.		EACH
0.34 LS	0.34	x			x			x			÷	1	=	0.34
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.34

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)														
DESCRIPTION	#		L			W			T			C.F.		EACH
0.34 LS	0.34	x			x			x			÷	9	=	0.34
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.34

ITEM 202 - APPROACH SLAB REMOVED														
DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	25.83		x			÷	9	=	71.8
FWD. A.S.	1	x	25		x	25.83		x			÷	9	=	71.8
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		144

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT														
DESCRIPTION	#		L			W			T			C.F.		EACH
MEDIAN BARRIER	19	x			x			x			÷	1	=	19.0
PIER 1	18	x			x			x			÷	1	=	18.0
PIER 2	18	x			x			x			÷	1	=	18.0
PIER 3	17	x			x			x			÷	1	=	17.0
PIER 4	17	x			x			x			÷	1	=	17.0
												TOTAL CARRIED TO GENERAL SUMMARY =		89

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	113.9235	113.9036	x	33.83		x	1.79		÷	27	=	255.7
REAR DIAPHRAGM	1	x	34.75		x	2.50		x	1.46		÷	27	=	4.7
REAR DIAPHRAGM	1	x	34.75		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	34.75		x	0.67		x	0.08		÷	27	=	-0.1
FWD. DIAPHRAGM	1	x	34.4792		x	2.50		x	1.46		÷	27	=	4.7
FWD. DIAPHRAGM	1	x	34.4792		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	34.4792		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier Cap 1	1	x	16.7757		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 2	1	x	16.7231		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 3	1	x	16.3745		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 4	1	x	16.3241		x	1.00		x	0.08		÷	27	=	0.1
BETWEEN DECK AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	1.5
													TOTAL CARRIED TO GENERAL SUMMARY =	268

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
MEDIAN BARRIER	1	x	163.9209		x	2.8125	1	x	4.75		÷	27	=	55.0
		x			x			x			÷	27	=	
		x			x			x			÷	27	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	55

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUTMENT FTG	1	x	34.75		x	3.5		x	3		÷	27	=	13.5
REAR ABUTMENT BREASTWALL	1	x	15.9345	15.9379	x	2.5		x	6.8506	7.4706	÷	27	=	10.6
REAR ABUTMENT BREASTWALL	1	x	2.8883	2.8889	x	2.5		x	7.4706		÷	27	=	2.0
REAR ABUTMENT BREASTWALL	1	x	15.9289	15.9323	x	2.5		x	7.4706	8.0806	÷	27	=	11.5
FWD ABUTMENT FTG	1	x	34.4792		x	3.5		x	3		÷	27	=	13.4
FWD ABUTMENT BREASTWALL	1	x	15.8073	15.8046	x	2.5		x	5.9417	6.5817	÷	27	=	9.2
FWD ABUTMENT BREASTWALL	1	x	2.8654	2.8649	x	2.5		x	6.5817		÷	27	=	1.7
FWD ABUTMENT BREASTWALL	1	x	15.8035	15.8008	x	2.5		x	6.5817	7.2217	÷	27	=	10.1
													TOTAL CARRIED TO GENERAL SUMMARY =	72

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	15.9289		x	3.4081	2.798	x			÷	9	=	5.5
R ABUTMENT BREASTWALL	1	x	2.8883		x	2.798		x			÷	9	=	0.9
R ABUTMENT BREASTWALL	1	x	15.9349		x	2.798	2.178	x			÷	9	=	4.4
REAR DIAPHRAGM	1	x	34.7521		x	1.625		x			÷	9	=	6.3
F ABUTMENT BREASTWALL	1	x	15.8035		x	3.477	2.837	x			÷	9	=	5.5
F ABUTMENT BREASTWALL	1	x	2.8654		x	2.837		x			÷	9	=	0.9
F ABUTMENT BREASTWALL	1	x	15.8073		x	2.837	2.197	x			÷	9	=	4.4
FWD DIAPHRAGM	1	x	34.4762		x	1.625		x			÷	9	=	6.2
PIER CAP (PIER 1)	2	x	16.7757		x	3.5		x			÷	9	=	13.0
PIER CAP (PIER 1)	1	x	3		x	3.5		x			÷	9	=	1.2
PIER CAP (PIER 1)	1	x	16.7938		x	3		x			÷	9	=	5.6
PIER CAP (PIER 1)	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER CAP (PIER 3)	2	x	16.3745		x	3.5		x			÷	9	=	12.7
PIER CAP (PIER 3)	1	x	3		x	3.5		x			÷	9	=	1.2
PIER CAP (PIER 3)	1	x	16.3817		x	3		x			÷	9	=	5.5
PIER CAP (PIER 3)	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER CAP (PIER 2)	2	x	16.7268		x	3.5		x			÷	9	=	13.0
PIER CAP (PIER 2)	1	x	3		x	3.5		x			÷	9	=	1.2
PIER CAP (PIER 2)	1	x	16.687		x	3		x			÷	9	=	5.6
PIER CAP (PIER 2)	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER CAP (PIER 4)	2	x	16.3241		x	3.5		x			÷	9	=	12.7
PIER CAP (PIER 4)	1	x	3		x	3.5		x			÷	9	=	1.2
PIER CAP (PIER 4)	1	x	16.3321		x	3		x			÷	9	=	5.4
PIER CAP (PIER 4)	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
MEDIAN BARRIER	1	x	163.9219		x	11.672		x			÷	9	=	212.6
													TOTAL CARRIED TO GENERAL SUMMARY =	322

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	9	=	15.2
PIER 3 COLUMN	1	x	14.71		x	3		x	3.14		÷	9	=	15.4
PIER 2 COLUMN	1	x	14.56		x	3		x	3.14		÷	9	=	15.2
PIER 4 COLUMN	1	x	14.88		x	3		x	3.14		÷	9	=	15.6
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	61

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	34.7754		x	1.6667		x			÷	1	=	58.0
FWD ABUTMENT	1	x	34.5021		x	1.6667		x			÷	1	=	57.5
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		116

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
MEDIAN BARRIER	4	x	4.75		x	1	2.8125	x			÷	1	=	36.2
PIER 1	1	x	17.1084	16.4439	x	2		x			÷	1	=	33.6
PIER 2	1	x	16.7022	16.0459	x	2		x			÷	1	=	32.7
PIER 3	1	x	17.0337	16.4134	x	2		x			÷	1	=	33.4
PIER 4	1	x	16.6301	16.0173	x	2		x			÷	1	=	32.6
												TOTAL CARRIED TO GENERAL SUMMARY =		169

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	34.75		x			x			÷	1	=	34.8
FWD ABUTMENT	1	x	34.5		x			x			÷	1	=	34.5
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		69

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APPROACH	1	x	34.83		x			x			÷	1	=	34.8
FWD APPROACH	1	x	34.42		x			x			÷	1	=	34.4
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		69

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (34'-9" X 8" X 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUTMENT	1	x			x			x			÷	1	=	1.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		1

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (34'-6" X 8" X 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
FWD ABUTMENT	1	x			x			x			÷	1	=	1.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			1

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 1	5	x			x			x			÷	1	=	5.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			5

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	15.921	15.9406	x	2		x	3.5999	4.2199	÷	27	=	4.6
REAR APPROACH	1	x	2.8889	2.8894	x	2		x	4.2199		÷	27	=	0.9
REAR APPROACH	1	x	15.9323	15.9349	x	2		x	4.2199	4.908	÷	27	=	5.4
REAR APPROACH	0.5	x	34.4722	34.7649	x	0.75		x	1.5		÷	27	=	0.7
		x			x			x			÷	27	=	
FWD APPROACH	1	x	15.8046	15.8024	x	2		x	3.62	4.2589	÷	27	=	4.6
FWD APPROACH	1	x	2.8649	2.8645	x	2		x	4.2589		÷	27	=	0.9
FWD APPROACH	1	x	15.8008	15.7986	x	2		x	4.2589	4.8989	÷	27	=	5.4
FWD APPROACH	0.5	x	34.4703	34.4655	x	0.75		x	1.5		÷	27	=	0.7
											TOTAL CARRIED TO GENERAL SUMMARY =			23

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. POROUS BACKFILL	1	x	34.5		x			x			÷	1	=	34.5
FWD ABUT. POROUS BACKFILL	1	x	34.17		x			x			÷	1	=	34.2
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			69

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. WEEPHOLE PIPES	4	x	3.58		x			x			÷	1	=	14.3
FWD ABUT. WEEPHOLE PIPES	4	x	3.58		x			x			÷	1	=	14.3
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			29

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM																
DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	1	=	137.1
PIER 3 COLUMN	1	x	14.71		x	3		x	3.14		÷	1	=	138.6
PIER 2 COLUMN	1	x	14.56		x	3		x	3.14		÷	1	=	137.2
PIER 4 COLUMN	1	x	14.88		x	3		x	3.14		÷	1	=	140.2
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		553

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN																
DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APPROACH	1	x	24.315		x	34.8301	34.7575	x			÷	9	=	94.0
FWD APPROACH	1	x	24.5625		x	34.4145	34.4175	x			÷	9	=	93.9
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		188

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	1	=	0.33
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				0.33

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	9	=	0.33
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				0.33

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	29.867	31.754	x			÷	9	=	85.6
FWD. A.S.	1	x	25		x	41.061	43.138	x			÷	9	=	116.9
		x			x			x			÷	9	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				203

ITEM 507 - 12" CAST-IN-PLACE CONCRETE PILES, DRIVEN

DESCRIPTION	#		L			W			T			C.F.		FT
FWD ABUTMENT FOOTER	3	x	49		x			x			÷	1	=	147.0
PIER 3 FOOTER	3	x	55		x			x			÷	1	=	165.0
PIER 4 FOOTER	2	x	55		x			x			÷	1	=	110.0
										TOTAL CARRIED TO GENERAL SUMMARY =				422

ITEM 507 - 12" CAST-IN-PLACE CONCRETE PILES, FURNISHED

DESCRIPTION	#		L			W			T			C.F.		FT
FWD ABUTMENT FOOTER	3	x	54		x			x			÷	1	=	162.0
PIER 3 FOOTER	3	x	60		x			x			÷	1	=	180.0
PIER 4 FOOTER	2	x	60		x			x			÷	1	=	120.0
										TOTAL CARRIED TO GENERAL SUMMARY =				462

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 3	20	x			x			x			÷	1	=	20.0
PIER 4	22	x			x			x			÷	1	=	22.0
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				42

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	113.9167		x	40.34	46.22	x	1.79		÷	27	=	327.2
REAR DIAPHRAGM	1	x	41.7969		x	2.50		x	1.46		÷	27	=	5.6
REAR DIAPHRAGM	1	x	41.7969		x	2.00		x	0.17		÷	27	=	0.5
SUBTRACT BEARING AREA	-1	x	41.7969		x	0.67		x	0.08		÷	27	=	-0.1
FWD DIAPHRAGM	1	x	47.7969		x	2.50		x	1.46		÷	27	=	6.5
FWD DIAPHRAGM	1	x	47.7969		x	2.00		x	0.17		÷	27	=	0.6
SUBTRACT BEARING AREA	-1	x	47.7969		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier Cap 3	1	x	42.4967		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 4	1	x	44.8186		x	1.00		x	0.08		÷	27	=	0.1
BETWEEN DECK AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	4.7
										TOTAL CARRIED TO GENERAL SUMMARY =				345

ITEM 511 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			AREA						C.F.		SQ YD
RIGHT PARAPET (ON BRIDGE)	1	x	115.4902		x	4.4166		x			÷	27	=	18.9
REAR APPROACH	1	x	11.265		x	4.4166		x			÷	27	=	1.8
REAR APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
REAR APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
REAR APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
FWD APPROACH	1	x	11.1712		x	4.4166		x			÷	27	=	1.8
FWD APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
FWD APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
FWD APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
										TOTAL CARRIED TO GENERAL SUMMARY =				26

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF

PID: 93006 CHECKED BY:

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
PIER CAP 3	1	x	23.478		x	3.5		x	3		÷	27	=	9.1
PIER CAP 4	1	x	23.4811		x	3.5		x	3		÷	27	=	9.1
PIER COLUMN 3	1	x	15.0372		x	3.14		x	2.25		÷	27	=	3.9
PIER COLUMN 4	1	x	15.1371		x	3.14		x	2.25		÷	27	=	4.0
												TOTAL CARRIED TO GENERAL SUMMARY =		26

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT. FTG	1	x	44.0763	35.1877	x	3.5		x	3		÷	27	=	15.4
REAR ABUT. FTG (CORNER)	1	x	9.8281		x	0.6301	1.2175	x	3		÷	27	=	1.0
REAR ABUT. FTG WINGWALL	1	x	12.7187	6.4693	x	8		x	3		÷	27	=	8.5
REAR ABUT. BREASTWALL	1	x	27.6485	27.5604	x	2.5		x	8.1729	9.1505	÷	27	=	22.1
REAR ABUT. BREASTWALL	1	x	14.3213		x	2.5		x	9.1505	8.7405	÷	27	=	11.9
REAR ABUT. BREASTWALL	0.5	x	1		x	1.0353		x	8.7405		÷	27	=	0.2
REAR ABUT. WINGWALL	1	x	10.9329	10.53111	x	1.5		x	8.7405		÷	27	=	5.2
REAR ABUT. WINGWALL	1	x	10.9329	10.5311	x	1.5		x	3.4022	3.3704	÷	27	=	2.0
REAR ABUT. WINGWALL	1	x	5		x	1.5		x	3.4022	2.9167	÷	27	=	0.9
REAR ABUT. WINGWALL	-0.5	x	0.5		x	0.5175		x	12.0268		÷	27	=	-0.1
FWD ABUT. FTG	1	x	50.4819	46.0872	x	3.5		x	3		÷	27	=	18.8
FWD ABUT. FTG (CORNER)	0.5	x	5.0397		x	1.6349		x	3		÷	27	=	0.5
FWD ABUT. FTG WINGWALL	1	x	8.2819	12	x	3.5		x	3		÷	27	=	3.9
FWD ABUT. BREASTWALL	1	x	33.6424	33.8325	x	2.5		x	7.2217	8.5917	÷	27	=	24.7
FWD ABUT. BREASTWALL	1	x	14.3259		x	2.5		x	8.5917	8.1914	÷	27	=	11.1
FWD ABUT. BREASTWALL	0.5	x	0.63		x	1.0357		x	8.1914		÷	27	=	0.1
FWD ABUT. WINGWALL	1	x	10.6374	10.2336	x	1.5		x	8.1914		÷	27	=	4.7
FWD ABUT. WINGWALL	1	x	10.6374	10.2336	x	1.5		x	3.3774	3.468	÷	27	=	2.0
FWD ABUT. WINGWALL	1	x	5		x	1.5		x	3.3774	2.9167	÷	27	=	0.9
												TOTAL CARRIED TO GENERAL SUMMARY =		134

ITEM 511 - CLASS QC1 CONCRETE W/ QCQA, FOOTING

DESCRIPTION	#		L			W			T			C.F.		CU YD
PIER 3	1	x	13.6667		x	3.6667		x	3		÷	27	=	5.6
PIER 4	1	x	15		x	3.6667		x	3.5		÷	27	=	7.1
		x			x			x			÷	27	=	
		x			x			x			÷	27	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		13

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF

CHECKED BY:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	27.6485		x	3.408	4.4779	x			÷	9	=	12.1
R ABUTMENT BREASTWALL	1	x	14.3213		x	4.4779	4.0679	x			÷	9	=	6.8
R ABUTMENT WINGWALL	1	x	7.5263	7.4047	x	1.0353		x			÷	9	=	0.9
R ABUTMENT WINGWALL	1	x	7.4047	7.3597	x	0.6302		x			÷	9	=	0.5
R ABUTMENT WINGWALL	1	x	15.933	15.5311	x	1.5		x			÷	9	=	2.6
R ABUTMENT WINGWALL	-0.5	x	0.6302		x	0.4107		x			÷	9	=	0.0
R ABUTMENT WINGWALL	0.5	x	14.4112		x	7.1624		x			÷	9	=	5.7
REAR DIAPHRAGM	1	x	41.7973		x	1.625		x			÷	9	=	7.5
F ABUTMENT BREASTWALL	1	x	33.6424		x	3.477	4.847	x			÷	9	=	15.6
F ABUTMENT BREASTWALL	1	x	14.1533		x	4.847	4.4467	x			÷	9	=	7.3
F ABUTMENT WINGWALL	1	x	7.9054	7.7387	x	1.5534		x			÷	9	=	1.4
F ABUTMENT WINGWALL	1	x	15.6374	15.2336	x	1.5		x			÷	9	=	2.6
F ABUTMENT WINGWALL	1	x	7.5238	0.0393	x	15.2336		x			÷	9	=	6.4
FWD DIAPHRAGM	1	x	47.7957		x	1.625		x			÷	9	=	8.6
PIER 3 CAP	2	x	42.4967		x	3.5		x			÷	9	=	33.1
PIER 3 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 3 CAP	1	x	42.5091		x	3		x			÷	9	=	14.2
PIER 3 CAP	-2	x	1.5		x	1.5		x	3.14		÷	9	=	-1.6
PIER 4 CAP	2	x	44.8186		x	3.5		x			÷	9	=	34.9
PIER 4 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 4 CAP	1	x	44.8363		x	3		x			÷	9	=	14.9
PIER 4 CAP	-2	x	1.5		x	1.5		x	3.14		÷	9	=	-1.6
PARAPET (ON DECK)	1	x	115.4792		x	8.6463		x			÷	9	=	110.9
PARAPET (APPROACH SLAB)	2	x	11		x	8.6463		x			÷	9	=	21.1
PARAPET (APPROACH SLAB)	2	x	10		x	8.6463	7.151	x			÷	9	=	17.6
PARAPET (APPROACH SLAB)	2	x	2.5		x	7.151		x			÷	9	=	4.0
PARAPET (APPROACH SLAB)	2	x	1.5		x	7.151	7.226	x			÷	9	=	2.4
SLAB EDGE	1	x	111.2687		x	2.375		x			÷	9	=	29.4
APPROACH SLAB EDGE	2	x	25		x	0.0833		x			÷	9	=	0.5
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	360

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 3 COLUMN	1	x	14.71		x	3		x	3.14		÷	9	=	15.4
PIER 3 COLUMN	1	x	15.04		x	3		x	3.14		÷	9	=	15.7
PIER 4 COLUMN	1	x	14.75		x	3		x	3.14		÷	9	=	15.4
PIER 4 COLUMN	1	x	15.12		x	3		x	3.14		÷	9	=	15.8
													TOTAL CARRIED TO GENERAL SUMMARY =	62

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	41.8239		x	1.6667		x			÷	1	=	69.7
FWD ABUTMENT	1	x	47.8293		x	1.6667		x			÷	1	=	79.7
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	149

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PARAPET	2	x	0.8627	1.5454	x	3.5		x			÷	1	=	8.4
PIER 3	1	x	42.8252	42.1689	x	2		x			÷	1	=	85.0
PIER 4	1	x	45.1254	44.5104	x	2		x			÷	1	=	89.6
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	183

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
R. ABUT BETWEEN DIA./WING.	1	x	2.5882		x	3.4584		x			÷	1	=	9.0
F. ABUT BETWEEN DIA./WING.	1	x	2.589		x	3.4586		x			÷	1	=	9.0
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	18

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	41.91		x			x			÷	1	=	41.9
REAR ABUTMENT (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
FWD ABUTMENT	1	x	48.77		x			x			÷	1	=	48.8
FWD ABUTMET (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
													TOTAL CARRIED TO GENERAL SUMMARY =	94

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF

PID: 93006 CHECKED BY:

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L		W		T		C.F.		FT
REAR APPROACH	1	x	39.75	x		x		÷	1	=	39.8
FWD APPROACH	1	x	48.75	x		x		÷	1	=	48.8
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				89

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (41'-9" X 8" X 1 1/2")

DESCRIPTION	#		L		W		T		C.F.		EACH
REAR ABUTMENT	1	x		x		x		÷	1	=	1.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				1

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (47'-10" X 8" X 1 1/2")

DESCRIPTION	#		L		W		T		C.F.		EACH
FWD ABUTMENT	1	x		x		x		÷	1	=	1.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				1

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L		W		T		C.F.		EACH
PHASE 2	4	x		x		x		÷	1	=	4.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				4

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	27.5604	27.4916	x	4.908	5.8998	x	2		÷	27	=	11.0
REAR APPROACH	1	x	14.3213		x	5.8998	5.4898	x	2		÷	27	=	6.0
REAR APPROACH	-0.5	x	1		x	1.0353		x	3.9898		÷	27	=	-0.1
REAR APPROACH	0.5	x	41.8817	41.8129	x	0.75		x	1.5		÷	27	=	0.9
		x			x			x			÷	27	=	
FWD APPROACH	1	x	33.8325	33.9863	x	4.8989	6.2691	x	2		÷	27	=	14.0
FWD APPROACH	1	x	14.3259		x	6.2691	5.9472	x	2		÷	27	=	6.5
FWD APPROACH	-0.5	x	1.0001		x	0.63		x	4.4467		÷	27	=	-0.1
FWD APPROACH	0.5	x	48.1584	48.3122	x	0.75		x	1.5		÷	27	=	1.0
													TOTAL CARRIED TO GENERAL SUMMARY =	38

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. POROUS BACKFILL	1	x	41.5		x			x			÷	1	=	41.5
FWD ABUT. POROUS BACKFILL	1	x	47.75		x			x			÷	1	=	47.8
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	89

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. WEEPHOLE PIPES	4	x	3.58		x			x			÷	1	=	14.3
REAR ABUT. OUTLET PIPE	1	x	6.25		x			x			÷	1	=	6.3
FWD ABUT. WEEPHOLE PIPES	5	x	3.58		x			x			÷	1	=	17.9
FWD ABUT. OUTLET PIPE	1	x	4.75		x			x			÷	1	=	4.8
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	43

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 3 COLUMN	1	x	14.71		x	3		x	3.14		÷	1	=	138.6
PIER 3 COLUMN	1	x	15.04		x	3		x	3.14		÷	1	=	141.7
PIER 4 COLUMN	1	x	14.75		x	3		x	3.14		÷	1	=	139.0
PIER 4 COLUMN	1	x	15.12		x	3		x	3.14		÷	1	=	142.5
													TOTAL CARRIED TO GENERAL SUMMARY =	562

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF

PID: 93006 CHECKED BY:

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APPROACH	1	x	24.315		x	40.988	41.7266	x			÷	9	=	111.7
FWD APPROACH	1	x	24.5625		x	49.9323	47.9479	x			÷	9	=	133.6
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		245

ITEM 530 - SPECIAL - STRUCTURES (AESTHETIC TREATMENT CONCRETE FORMLINER/STAIN)

DESCRIPTION	#		L			W			T			S.F.		SQ FT
PARAPET	1	x	137.4115		x	3		x			÷	1	=	412.2
PARAPET TRANSITION	2	x	10		x	3	2.1667	x			÷	1	=	51.7
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		464

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE

DATE: 5-Jan-21 INITIALS: TDF
PID: 93006 CHECKED BY:
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

CALCULATION SHEET

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	1	=	0.33
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				0.33

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	9	=	0.33
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				0.33

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	27		x			÷	9	=	75.0
FWD. A.S.	1	x	25		x	27		x			÷	9	=	75.0
		x			x			x			÷	9	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				150

ITEM 507 - 12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT FOOTER	1	x	49		x			x			÷	1	=	49.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				49

ITEM 507 - 12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT FOOTER	1	x	54		x			x			÷	1	=	54.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				54

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF
PID: 93006 CHECKED BY:
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	29	x			x			x			÷	1	=	29.0
PIER 2	29	x			x			x			÷	1	=	29.0
		x			x			x			÷	1	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				58

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	113.9235	113.9423	x	28.75		x	1.79		÷	27	=	217.3
REAR DIAPHRAGM	1	x	29.5417		x	2.50		x	1.46		÷	27	=	4.0
REAR DIAPHRAGM	1	x	29.5417		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	29.5417		x	0.67		x	0.08		÷	27	=	-0.1
FWD DIAPHRAGM	1	x	29.3021		x	2.50		x	1.46		÷	27	=	4.0
FWD DIAPHRAGM	1	x	29.3021		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	29.3021		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier Cap 1	1	x	28.2347		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 2	1	x	28.2873		x	1.00		x	0.08		÷	27	=	0.1
BETWEEN DECK AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	1.7
										TOTAL CARRIED TO GENERAL SUMMARY =				228

ITEM 511 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			AREA						C.F.		SQ YD
LEFT PARAPET (ON BRIDGE)	1	x	113.9293		x	4.4166		x			÷	27	=	18.6
REAR APPROACH	1	x	10.7721		x	4.4166		x			÷	27	=	1.8
REAR APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
REAR APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
REAR APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
FWD APPROACH	1	x	11.0547		x	4.4166		x			÷	27	=	1.8
FWD APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
FWD APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
FWD APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
										TOTAL CARRIED TO GENERAL SUMMARY =				26

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF

PID: 93006 CHECKED BY:

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT. FTG	1	x	29.7906	28.26	x	3.5		x	3		÷	27	=	11.3
REAR ABUT. FTG (CORNER)	1	x	0.3592		x	4.5923		x	3		÷	27	=	0.2
REAR ABUT. FTG WINGWALL	1	x	4.1239	4.9211	x	3.5		x	3		÷	27	=	1.8
REAR ABUT. BREASTWALL	1	x	29.5391	28.517	x	2.5		x	6.8506	5.7206	÷	27	=	16.9
REAR ABUT. BREASTWALL	0.5	x	3.3285		x	0.2534		x	5.7206		÷	27	=	0.1
REAR ABUT. BREASTWALL	0.5	x	3.3285		x	0.3303		x	5.7206		÷	27	=	0.1
REAR ABUT. BREASTWALL	1	x	4.682		x	2.25		x	5.7206		÷	27	=	2.2
REAR ABUT. WINGWALL	1	x	4.0189	3.482	x	2.25		x	3.4583		÷	27	=	1.1
		x			x			x			÷	27	=	
FWD ABUT. FTG	1	x	31.1506	24.9113	x	3.5		x	3		÷	27	=	10.9
FWD ABUT. FTG (CORNER)	1	x	7.8747		x	0.6448	1.2574	x	3		÷	27	=	0.8
FWD ABUT. FTG WINGWALL	1	x	9.2807	4.0269	x	5.9693		x	3		÷	27	=	4.4
FWD ABUT. BREASTWALL	1	x	29.2995	29.4666	x	2.5		x	5.9417	4.7517	÷	27	=	14.5
FWD ABUT. BREASTWALL	0.5	x	1.2946		x	0.7873		x	4.7517		÷	27	=	0.1
FWD ABUT. WINGWALL	1	x	7.2782	7.5739	x	1.5		x	4.7517		÷	27	=	2.0
FWD ABUT. WINGWALL	-0.5	x	0.5001		x	0.5097		x	8.2104	8.0473	÷	27	=	0.0
FWD ABUT. WINGWALL	1	x	7.2782	7.5739	x	1.5		x	3.4403	3.3772	÷	27	=	1.4
FWD ABUT. WINGWALL	1	x	5		x	1.5		x	3.4403	3.9167	÷	27	=	1.0
													TOTAL CARRIED TO GENERAL SUMMARY =	69

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF

PID: 93006 CHECKED BY:

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	29.5391		x	2.178	1.048	x			÷	9	=	5.3
R ABUTMENT BREASTWALL	1	x	1.0999		x	1.048		x			÷	9	=	0.1
R ABUTMENT WINGWALL	1	x	4.5064		x	4.0181		x			÷	9	=	2.0
REAR DIAPHRAGM	1	x	30.639		x	1.625		x			÷	9	=	5.5
F ABUTMENT BREASTWALL	1	x	29.4706		x	2.197	1.007	x			÷	9	=	5.2
F ABUTMENT WINGWALL	1	x	4.4654	3.2917	x	1.0192		x			÷	9	=	0.4
F ABUTMENT WINGWALL	1	x	3.2917	3.2379	x	0.6474		x			÷	9	=	0.2
F ABUTMENT WINGWALL	1	x	12.2782	12.5739	x	1.5		x			÷	9	=	2.1
F ABUTMENT WINGWALL	-0.5	x	0.6474		x	0.3937		x			÷	9	=	0.0
F ABUTMENT WINGWALL	0.5	x	8.3501		x	4.1024		x			÷	9	=	1.9
FWD DIAPHRAGM	1	x	29.4706		x	1.625		x			÷	9	=	5.3
PIER 1 CAP	2	x	26.7347		x	3.5		x			÷	9	=	20.8
PIER 1 CAP	0.5	x	3		x	3.5		x	3.14		÷	9	=	1.8
PIER 1 CAP	1	x	26.7635		x	3		x			÷	9	=	8.9
PIER 1 CAP	-1.5	x	1.5		x	1.5		x	3.14		÷	9	=	-1.2
PIER 2 CAP	2	x	26.7873		x	3.5		x			÷	9	=	20.8
PIER 2 CAP	0.5	x	3		x	3.5		x	3.14		÷	9	=	1.8
PIER 2 CAP	1	x	26.8164		x	3		x			÷	9	=	8.9
PIER 2 CAP	-1.5	x	1.5		x	1.5		x	3.14		÷	9	=	-1.2
PARAPET (ON BRIDGE)	1	x	113.9479		x	8.6463		x			÷	9	=	109.5
PARAPET (APPROACH SLAB)	2	x	11		x	8.6463		x			÷	9	=	21.1
PARAPET (APPROACH SLAB)	2	x	10		x	8.6463	7.151	x			÷	9	=	17.6
PARAPET (APPROACH SLAB)	2	x	2.5		x	7.151		x			÷	9	=	4.0
PARAPET (APPROACH SLAB)	2	x	1.5		x	7.151	7.226	x			÷	9	=	2.4
SLAB EDGE	1	x	109.8554		x	2.375		x			÷	9	=	29.0
APPROACH SLAB EDGE	2	x	25		x	0.08333		x			÷	9	=	0.5
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	273

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	9	=	15.2
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	9	=	15.2
PIER 2 COLUMN	1	x	14.55		x	3		x	3.14		÷	9	=	15.2
PIER 2 COLUMN	1	x	14.55		x	3		x	3.14		÷	9	=	15.2
													TOTAL CARRIED TO GENERAL SUMMARY =	61

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	29.5607		x	1.6667		x			÷	1	=	49.3
FWD ABUTMENT	1	x	29.3237		x	1.6667		x			÷	1	=	48.9
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	98

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PARAPET	2	x	1.54	0.86	x	3.5		x			÷	1	=	8.4
PIER 1	1	x	26.40	27.07	x	2		x			÷	1	=	53.5
PIER 1 ROUNDED END	0.5	x	3.14		x	1.5		x	1.5		÷	1	=	3.5
PIER 1 ROUNDED END	-1	x	1.50		x	1		x			÷	1	=	-1.5
PIER 2	1	x	26.48	27.10	x	2		x			÷	1	=	53.6
PIER 2 ROUNDED END	0.5	x	3.14		x	1.5		x	1.5		÷	1	=	3.5
PIER 2 ROUNDED END	-1	x	1.50		x	1		x			÷	1	=	-1.5
BETWEEN 5TH ST. & RAMP WINGS	1	x	9.13		x	2.25		x			÷	1	=	20.5
													TOTAL CARRIED TO GENERAL SUMMARY =	140

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
R. ABUT BETWEEN DIA./WING.	1	x	2.313		x	3.4596		x			÷	1	=	8.0
F. ABUT BETWEEN DIA./WING.	1	x	2.5484		x	3.4654		x			÷	1	=	8.8
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	17

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

INITIALS: TDF
CHECKED BY:

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L		W		T		C.F.		FT
REAR ABUTMENT	1	x	30.38	x		x		÷	1	=	30.4
REAR ABUTMENT (VERT.)	1	x	1.5	x		x		÷	1	=	1.5
FWD ABUTMENT	1	x	29.74	x		x		÷	1	=	29.7
FWD ABUTMENT (VERT.)	1	x	1.5	x		x		÷	1	=	1.5
							TOTAL CARRIED TO GENERAL SUMMARY =				63

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L		W		T		C.F.		FT
REAR APPROACH	1	x	28.42	x		x		÷	1	=	28.4
FWD APPROACH	1	x	28.08	x		x		÷	1	=	28.1
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				57

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (29'-6" X 8" X 1 1/2")

DESCRIPTION	#		L		W		T		C.F.		EACH
REAR ABUTMENT	1	x		x		x		÷	1	=	1.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				1

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (29'-4" X 8" X 1 1/2")

DESCRIPTION	#		L		W		T		C.F.		EACH
FWD ABUTMENT	1	x		x		x		÷	1	=	1.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				1

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L		W		T		C.F.		EACH
PHASE 3	5	x		x		x		÷	1	=	5.0
		x		x		x		÷	1	=	
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				5

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21 INITIALS: TDF
PID: 93006 CHECKED BY:
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	29.7168	29.7203	x	3.5999	2.4699	x	2		÷	27	=	6.7
REAR APPROACH	1	x	3.5118	3.5112	x	2.4699		x	1.07		÷	27	=	0.3
REAR APPROACH	1	x	2.9876	3.4641	x	2.4699		x	2		÷	27	=	0.6
REAR APPROACH	-1	x	1.1999		x	2.4699		x	0.82		÷	27	=	-0.1
REAR APPROACH	0.5	x	29.5453		x	0.75		x	1.5		÷	27	=	0.6
		x			x			x			÷	27	=	
FWD APPROACH	1	x	29.4618	29.4666	x	3.62	2.43	x	2		÷	27	=	6.6
FWD APPROACH	-0.5	x	0.7873		x	1.2946		x	2.43		÷	27	=	0.0
FWD APPROACH	0.5	x	29.4666		x	0.75		x	1.5		÷	27	=	0.6
													TOTAL CARRIED TO GENERAL SUMMARY =	15

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. POROUS BACKFILL	1	x	34		x			x			÷	1	=	34.0
FWD ABUT. POROUS BACKFILL	1	x	29.17		x			x			÷	1	=	29.2
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	63

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT. WEEPHOLE PIPES	4	x	3.58		x			x			÷	1	=	14.3
FWD ABUT. WEEPHOLE PIPES	3	x	3.58		x			x			÷	1	=	10.7
FWD ABUT. OUTLET PIPE	1	x	5.5		x			x			÷	1	=	5.5
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	31

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		CU YD
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	1	=	137.1
PIER 1 COLUMN	1	x	14.55		x	3		x	3.14		÷	1	=	137.1
PIER 2 COLUMN	1	x	14.55		x	3		x	3.14		÷	1	=	137.1
PIER 2 COLUMN	1	x	14.55		x	3		x	3.14		÷	1	=	137.1
													TOTAL CARRIED TO GENERAL SUMMARY =	548

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE

DATE: 5-Jan-21
INITIALS: TDF
PID: 93006
CHECKED BY:
CRS: MUS-70-1186 (5TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

CALCULATION SHEET

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APPROACH	1	x	24.315		x	29.6072	29.5442	x			÷	9	=	79.9
FWD APPROACH	1	x	24.5625		x	29.2458	29.2954	x			÷	9	=	79.9
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		160

ITEM 530 - SPECIAL - STRUCTURES (AESTHETIC TREATMENT CONCRETE FORMLINER/STAIN)

DESCRIPTION	#		L			W			T			S.F.		SQ FT
PARAPET	1	x	135.9479		x	3		x			÷	1	=	407.8
PARAPET TRANSITION	2	x	10		x	3	2.1667	x			÷	1	=	51.7
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		460

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUTMENT PHASE 1	1.12	x	30.2	30.25	x	33.84		x			÷	9	=	127.3
REAR ABUTMENT PHASE 1	1	x	5.56	6.95	x	33.84		x			÷	9	=	23.5
FORWARD ABUTMENT PHASE 1	1.12	x	30.14	30.66	x	33.84		x			÷	9	=	128.0
FORWARD ABUTMENT PHASE 1	1	x	4.9	4.52	x	33.84		x			÷	9	=	17.7
REAR ABUTMENT PHASE 2	1.12	x	30.14	30.2	x	43.76	45.08	x			÷	9	=	166.8
REAR ABUTMENT PHASE 2	1	x	8.82	6.95	x	45.08	45.53	x			÷	9	=	39.7
FORWARD ABUTMENT PHASE 2	1.12	x	30.66	31.39	x	47.72	49.99	x			÷	9	=	188.6
FORWARD ABUTMENT PHASE 2	1	x	4.52	3.99	x	47.47	47.72	x			÷	9	=	22.5
REAR ABUTMENT PHASE 3	1.12	x	30.25	30.29	x	31.75		x			÷	9	=	119.6
REAR ABUTMENT PHASE 3	1	x	4.35	5.56	x	31.75		x			÷	9	=	17.5
FORWARD ABUTMENT PHASE 3	1.12	x	29.66	30.18	x	31.75		x			÷	9	=	118.2
FORWARD ABUTMENT PHASE 3	1	x	5.37	5.01	x	31.75		x			÷	9	=	18.3
													TOTAL CARRIED TO GENERAL SUMMARY =	988

ITEM 204 - SUBGRADE COMPACTION

DESCRIPTION	#		L			W			T			C.F.		SQ YD
UNDER REAR APPROACH SLAB	1	x	106.55	106.03	x	18.32		x			÷	9	=	216.4
UNDER REAR SLEEPER SLAB	1	x	102.96		x	5.75		x			÷	9	=	65.8
EXTRA AREA OUTSIDE SLAB	1	x	2.67		x	2.33		x			÷	9	=	0.7
EXTRA AREA OUTSIDE SLAB	1	x	1.5		x	13.19		x			÷	9	=	2.2
EXTRA AREA OUTSIDE SLAB	1	x	2.67		x	2.32		x			÷	9	=	0.7
EXTRA AREA OUTSIDE SLAB	1	x	1.5		x	22.83		x			÷	9	=	3.8
UNDER FWD APPROACH SLAB	1	x	111.71	113.59	x	18.56		x			÷	9	=	232.3
UNDER FWD SLEEPER SLAB	1	x	111.38		x	5.75		x			÷	9	=	71.2
EXTRA AREA OUTSIDE SLAB	1	x	2.67		x	2.29		x			÷	9	=	0.7
EXTRA AREA OUTSIDE SLAB	1	x	1.5		x	15.12		x			÷	9	=	2.5
EXTRA AREA OUTSIDE SLAB	1	x	2.67		x	2.33		x			÷	9	=	0.7
EXTRA AREA OUTSIDE SLAB	1	x	1.5		x	11.38		x			÷	9	=	1.9
													TOTAL CARRIED TO GENERAL SUMMARY =	599

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION

DESCRIPTION	#		R^2			T			PI			C.F.		CU YD
REAR ABUTMENT, SOUTH	1	x	4		x	1		x	3.14		÷	27	=	0.47
FORWARD ABUTMENT, NORTH	1	x	4		x	1		x	3.14		÷	27	=	0.47
FORWARD ABUTMENT, SOUTH	1	x	4		x	1		x	3.14		÷	27	=	0.47
		x			x			x			÷	27	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	1.41

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: ROADWAY QUANTITIES

INITIALS: TDF

CHECKED BY:

ITEM 601 - CONCRETE SLOPE PROTECTION														
DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUTMENT	1.12	x	30.29	31.14	x	109.34	110.67	x			÷	9	=	420.5
REAR ABUTMENT	1	x	4.28	8.83	x	110.67	111.16	x			÷	9	=	80.8
FWD ABUTMENT	1.12	x	29.77	31.49	x	113.31	115.58	x			÷	9	=	436.2
FWD ABUTMENT	1	x	3.81	4	x	113.06	113.31	x			÷	9	=	49.1
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	987

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: MUS-70-1186 (5TH STREET)

DESCRIPTION: ROADWAY QUANTITIES

INITIALS: TDF

CHECKED BY:

ITEM 304 - AGGREGATE BASE																
DESCRIPTION	#		L			W			T			C.F.		CU YD
SUBGRADE COMPACTION AREA, REAR	1	x	2605.18		x	1		x	0.5		÷	27	=	48.2
SUBTRACT UNDERDRAIN AREA	-1	x	102.46		x	1.25		x	0.5		÷	27	=	-2.4
SUBGRADE COMPACTION AREA, FWD	1	x	2605.18		x	1		x	0.5		÷	27	=	48.2
SUBTRACT UNDERDRAIN AREA	-1	x	111.38		x	1.25		x	0.5		÷	27	=	-2.6
		x			x			x			÷	27	=	
TOTAL CARRIED TO GENERAL SUMMARY =														91

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.34 LS	0.34	x			x			x			÷	1	=	0.34
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.34

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.34 LS	0.34	x			x			x			÷	9	=	0.3
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.34

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	25.83		x			÷	9	=	71.8
FWD. A.S.	1	x	25		x	25.83		x			÷	9	=	71.8
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		144

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
MEDIAN BARRIER	39	x			x			x			÷	1	=	39.0
PIERS 1 & 2	34	x			x			x			÷	1	=	34.0
PIERS 3 & 4	34	x			x			x			÷	1	=	34.0
												TOTAL CARRIED TO GENERAL SUMMARY =		107

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	146.4956	146.4861	x	34.01	33.88	x	2.21		÷	27	=	406.7
REAR DIAPHRAGM	1	x	34		x	2.50		x	1.46		÷	27	=	4.6
REAR DIAPHRAGM	1	x	34		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	34		x	0.67		x	0.08		÷	27	=	-0.1
FWD. DIAPHRAGM	1	x	33.875		x	2.50		x	1.46		÷	27	=	4.6
FWD. DIAPHRAGM	1	x	33.875		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	33.875		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier Cap 1	1	x	15.6103		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 2	1	x	15.8486		x	1.00		x	0.08		÷	27	=	0.0
On Top of Pier Cap 3	1	x	15.5813		x	1.00		x	0.08		÷	27	=	0.0
On Top of Pier Cap 4	1	x	15.8289		x	1.00		x	0.08		÷	27	=	0.0
BETWEEN DECK AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	1.2
												TOTAL CARRIED TO GENERAL SUMMARY =		418

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
MEDIAN BARRIER	1	x	196.507		x	2.8125	1	x	4.75		÷	27	=	65.9
		x			x			x			÷	27	=	
		x			x			x			÷	27	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		66

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

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUTMENT FOOTING	1	x	34.0046	34.0087	x	3.5		x	3		÷	27	=	13.2
REAR ABUTMENT BREASTWALL	1	x	15.5902	15.5916	x	2.5		x	4.245	4.905	÷	27	=	6.6
REAR ABUTMENT BREASTWALL	1	x	2.8264	2.8266	x	2.5		x	4.905		÷	27	=	1.3
REAR ABUTMENT BREASTWALL	1	x	15.5892	15.5906	x	2.5		x	4.905	5.565	÷	27	=	7.6
FWD ABUTMENT FOOTING	1	x	33.8813	33.8793	x	3.5		x	3		÷	27	=	13.2
FWD ABUTMENT BREASTWALL	1	x	15.5325	15.5318	x	2.5		x	4.235	4.875	÷	27	=	6.6
FWD ABUTMENT BREASTWALL	1	x	2.816	2.8159	x	2.5		x	4.875		÷	27	=	1.3
FWD ABUTMENT BREASTWALL	1	x	15.5323	15.5316	x	2.5		x	4.875	5.515	÷	27	=	7.5
												TOTAL CARRIED TO GENERAL SUMMARY =		57

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	15.58912		x	3.6209	2.9609	x			÷	9	=	5.7
R ABUTMENT BREASTWALL	1	x	2.8264		x	2.9609		x			÷	9	=	0.9
R ABUTMENT BREASTWALL	1	x	15.5902		x	2.9609	2.3009	x			÷	9	=	4.6
REAR DIAPHRAGM	1	x	34.0058		x	1.6247		x			÷	9	=	6.1
F ABUTMENT BREASTWALL	1	x	15.5323		x	3.4816	2.8416	x			÷	9	=	5.5
F ABUTMENT BREASTWALL	1	x	2.816		x	2.8416		x			÷	9	=	0.9
F ABUTMENT BREASTWALL	1	x	15.5325		x	2.8416	2.2016	x			÷	9	=	4.4
FWD DIAPHRAGM	1	x	33.8808		x	1.6253		x			÷	9	=	6.1
PIER 1 CAP	2	x	15.6103		x	3.5		x			÷	9	=	12.1
PIER 1 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 1 CAP	1	x	15.7553		x	3		x			÷	9	=	5.3
PIER 1 CAP	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER 2 CAP	2	x	15.8486		x	3.5		x			÷	9	=	12.3
PIER 2 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 2 CAP	1	x	15.7422		x	3		x			÷	9	=	5.2
PIER 2 CAP	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER 3 CAP	2	x	15.5813		x	3.5		x			÷	9	=	12.1
PIER 3 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 3 CAP	1	x	15.5996		x	3		x			÷	9	=	5.2
PIER 3 CAP	-1	x	1.5		x	1.5		x	3.14		÷	9	=	-0.8
PIER 4 CAP	2	x	15.8288		x	3.5		x			÷	9	=	12.3
PIER 4 CAP	1	x	3		x	3.5		x			÷	9	=	1.2
PIER 4 CAP	1	x	15.8475		x	3		x			÷	9	=	5.3
PIER 4 CAP	-1	x	1.5		x	1.5		x			÷	9	=	-0.3
MEDIAN BARRIER	1	x	196.5052		x	11.672		x			÷	9	=	254.8
													TOTAL CARRIED TO GENERAL SUMMARY =	361

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMN	1	x	12.49		x	3		x	3.14		÷	9	=	13.1
PIER 2 COLUMN	1	x	12.85		x	3		x	3.14		÷	9	=	13.5
PIER 3 COLUMN	1	x	13.9		x	3		x	3.14		÷	9	=	14.6
PIER 4 COLUMN	1	x	14.25		x	3		x	3.14		÷	9	=	14.9
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	56

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: TDF
CHECKED BY:

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	34.007		x	1.6667		x			÷	1	=	56.7
FWD ABUTMENT	1	x	33.8802		x	1.6667		x			÷	1	=	56.5
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		113

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
MEDIAN BARRIER REAR	1	x	4.75		x	1.0051	2.8266	x			÷	1	=	9.1
MEDIAN BARRIER FWD	1	x	4.75		x	1.0013	2.8159	x			÷	1	=	9.1
MEDIAN BARRIER @ LIGHT POLE	2	x	4.75		x	1	2.8125	x			÷	1	=	18.1
PIER 1	1	x	15.4844	15.7344	x	2		x			÷	1	=	31.2
PIER 2	1	x	15.724	15.973	x	2		x			÷	1	=	31.7
PIER 3	1	x	15.4845	15.6788	x	2		x			÷	1	=	31.2
PIER 4	1	x	15.7324	15.9245	x	2		x			÷	1	=	31.7
												TOTAL CARRIED TO GENERAL SUMMARY =		162

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	34.0337		x			x			÷	1	=	34.0
FORWARD ABUTMENT	1	x	33.9071		x			x			÷	1	=	33.9
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		68

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APPROACH	1	x	34.04		x			x			÷	1	=	34.0
FWD APPROACH	1	x	33.87		x			x			÷	1	=	33.9
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		68

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (34'-0" X 8" X 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUTMENT	1	x			x			x			÷	1	=	1.0
FWD ABUTMENT	1	x			x			x			÷	1	=	1.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		2

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 1	7	x			x			x			÷	1	=	7.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			7

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	15.5926		x	2		x	3.5926	4.2526	÷	27	=	4.5
REAR APPROACH	1	x	2.8268		x	2		x	4.2526		÷	27	=	0.9
REAR APPROACH	1	x	15.5916		x	2		x	4.2526	4.9126	÷	27	=	5.3
REAR APPROACH	0.5	x	34		x	0.75		x	1.5		÷	27	=	0.7
		x			x			x			÷	27	=	
FWD APPROACH	1	x	15.5313		x	2		x	3.4933	4.1333	÷	27	=	4.4
FWD APPROACH	1	x	2.8158		x	2		x	4.1333		÷	27	=	0.9
FWD APPROACH	1	x	15.5311		x	2		x	4.1333	4.7733	÷	27	=	5.1
FWD APPROACH	0.5	x	33.8782		x	0.75		x	1.5		÷	27	=	0.7
		x			x			x			÷	27	=	
		x			x			x			÷	27	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			23

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. POROUS BACKFILL	1	x	33.92		x			x			÷	1	=	33.9
F. ABUT. POROUS BACKFILL	1	x	33.83		x			x			÷	1	=	33.8
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			68

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

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. WEEPHOLES	4	x	3.58		x			x			÷	1	=	14.3
F. ABUT. WEEPHOLES	4	x	3.58		x			x			÷	1	=	14.3
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			29

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 1 COLUMN	1	x	12.49		x	3		x	3.14		÷	1	=	117.7
PIER 2 COLUMN	1	x	12.85		x	3		x	3.14		÷	1	=	121.1
PIER 3 COLUMN	1	x	13.9		x	3		x	3.14		÷	1	=	131.0
PIER 4 COLUMN	1	x	14.25		x	3		x	3.14		÷	1	=	134.3
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	504

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR	1	x	24.8655		x	34.0391	34.0081	x			÷	9	=	94.0
FORWARD	1	x	24.9757		x	33.8666	33.8796	x			÷	9	=	94.0
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	188

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	1	=	0.33
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.33

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	9	=	0.33
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.33

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	26.102	26.365	x			÷	9	=	72.9
FWD. A.S.	1	x	25		x	26.426	25.917	x			÷	9	=	72.7
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		146

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 2	28	x			x			x			÷	1	=	28.0
PIER 4	28	x			x			x			÷	1	=	28.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		56

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	146.4783	146.4861	x	28.78	28.89	x	2.21		÷	27	=	345.4
REAR DIAPHRAGM	1	x	28.8854		x	2.50		x	1.46		÷	27	=	3.9
REAR DIAPHRAGM	1	x	28.8854		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	28.8854		x	0.67		x	0.08		÷	27	=	-0.1
FWD. DIAPHRAGM	1	x	28.7813		x	2.50		x	1.46		÷	27	=	3.9
FWD. DIAPHRAGM	1	x	28.7813		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	28.7813		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier Cap 2	1	x	27.4014		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier Cap 4	1	x	27.4211		x	1.00		x	0.08		÷	27	=	0.1
BETWEEN DECK AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	0.3
												TOTAL CARRIED TO GENERAL SUMMARY =		354

ITEM 511 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			AREA					÷	C.F.		SQ YD
RIGHT PARAPET (ON BRIDGE)	1	x	146.4941		x	4.4166		x			÷	27	=	24.0
REAR APPROACH	1	x	5.25		x	4.4166	3.6216	x			÷	27	=	0.8
FWD APPROACH	1	x	10.8899		x	4.4166		x			÷	27	=	1.8
FWD APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
FWD APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
FWD APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
		x			x			x			÷	27	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				29

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

DESCRIPTION	#		L			W			T		÷	C.F.		CU YD
REAR ABUT. FTG	1	x	31.5384	31.0683	x	3.5		x	3		÷	27	=	12.2
REAR ABUT. BREASTWALL	1	x	29.0517	29.0543	x	2.5		x	5.565	6.793	÷	27	=	16.6
REAR ABUT. WINGWALL	1	x	2.3519	2.014	x	2.5		x	10.668		÷	27	=	2.2
		x			x			x			÷	27	=	
FWD ABUT. FTG	1	x	31.4538	26.9386	x	3.5		x	3		÷	27	=	11.4
FWD ABUT. FTG (CORNER)	0.5	x	1.4475		x	5.5325		x	3		÷	27	=	0.4
FWD ABUT. FTG WINGWALL	1	x	10.9145	6.5691	x	3.5		x	3		÷	27	=	3.4
FWD ABUT. FTG WINGWALL	1	x	6.0984		x	4		x	3		÷	27	=	2.7
FWD ABUT. BREASTWALL	1	x	28.9474	28.9407	x	2.5		x	5.515	6.705	÷	27	=	16.4
FWD ABUT. BREASTWALL	0.5	x	1.4475		x	0.6916		x	6.705		÷	27	=	0.1
FWD ABUT. WINGWALL	1	x	13.0272	12.959	x	1.5		x	6.705		÷	27	=	4.8
FWD ABUT. WINGWALL	1	x	13.0272	12.959	x	1.5		x	3.7675	4.1046	÷	27	=	2.8
FWD ABUT. WINGWALL	1	x	5		x	1.5		x	4.0146	2.9167	÷	27	=	1.0
		x			x			x			÷	27	=	
										TOTAL CARRIED TO GENERAL SUMMARY =				74

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 2)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	29.0517		x	3.6209	4.8488	x			÷	9	=	13.7
R ABUTMENT WINGWALL	1	x	2.353		x	8.7238		x			÷	9	=	2.3
REAR DIAPHRAGM	1	x	28.8847		x	1.6247		x			÷	9	=	5.2
F ABUTMENT BREASTWALL	1	x	28.9477		x	3.4816	4.6716	x			÷	9	=	13.1
F ABUTMENT WINGWALL	1	x	8.5466	8.4395	x	1.5021		x			÷	9	=	1.4
F ABUTMENT WINGWALL	1	x	18.0272	17.959	x	1.5		x			÷	9	=	3.0
F ABUTMENT WINGWALL	0.5	x	8.3216		x	17.562		x			÷	9	=	8.1
FWD DIAPHRAGM	1	x	28.7806		x	1.6253		x			÷	9	=	5.2
PIER 2 CAP	2	x	25.9014		x	3.5		x			÷	9	=	20.1
PIER 2 CAP	0.5	x	3		x	3.5		x	3.14		÷	9	=	1.8
PIER 2 CAP	1	x	25.9325		x	3		x			÷	9	=	8.6
PIER 2 CAP	-1.5	x	1.5		x	1.5		x	3.14		÷	9	=	-1.2
PIER 4 CAP	2	x	25.9211		x	3.5		x			÷	9	=	20.2
PIER 4 CAP	0.5	x	3		x	3.5		x	3.14		÷	9	=	1.8
PIER 4 CAP	1	x	25.9325		x	3		x			÷	9	=	8.6
PIER 4 CAP	-1.5	x	1.5		x	1.5		x	3.14		÷	9	=	-1.2
PARAPET (ON DECK)	1	x	146.5		x	8.6463		x			÷	9	=	140.7
PARAPET (APPROACH SLAB)	2	x	11		x	8.6463		x			÷	9	=	21.1
PARAPET (R APPROACH SLAB)	1	x	5.2917		x	8.6463	7.3877	x			÷	9	=	4.7
PARAPET (F APPROACH SLAB)	1	x	10		x	8.6463	7.151	x			÷	9	=	8.8
PARAPET (F APPROACH SLAB)	1	x	2.5		x	7.151		x			÷	9	=	2.0
PARAPET (F APPROACH SLAB)	1	x	1.5		x	7.151	7.226	x			÷	9	=	1.2
SLAB EDGE	1	x	142.4819		x	2.7916		x			÷	9	=	44.2
APPROACH SLAB EDGE	1	x	16.2917		x	0.08333		x			÷	9	=	0.2
APPROACH SLAB EDGE	1	x	25		x	0.0833		x			÷	9	=	0.2
													TOTAL CARRIED TO GENERAL SUMMARY =	334

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 2 COLUMN	1	x	13.74		x	3		x	3.14		÷	9	=	14.4
PIER 2 COLUMN	1	x	14.64		x	3		x	3.14		÷	9	=	15.3
PIER 4 COLUMN	1	x	15.13		x	3		x	3.14		÷	9	=	15.8
PIER 4 COLUMN	1	x	16.02		x	3		x	3.14		÷	9	=	16.8
													TOTAL CARRIED TO GENERAL SUMMARY =	62

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	28.8855		x	1.6667		x			÷	1	=	48.1
FWD ABUTMENT	1	x	28.7777		x	1.6667		x			÷	1	=	48.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		96

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PARAPET REAR	1	x	3.5		x	0.8373	1.5072	x			÷	1	=	4.1
PARAPET FWD	1	x	3.5		x	0.8343	1.5017	x			÷	1	=	4.1
PIER 2	1	x	26.0266	25.777	x	2		x			÷	1	=	51.8
PIER 2 ROUNDED END	0.5	x	3.141592654		x	1.5		x	1.5		÷	1	=	3.5
PIER 2 ROUNDED END	-1	x	1.5		x	1		x			÷	1	=	-1.5
PIER 4	1	x	26.0176	25.8255	x	2		x			÷	1	=	51.8
PIER 4 ROUNDED END	0.5	x	3.141592654		x	1.5		x	1.5		÷	1	=	3.5
PIER 4 ROUNDED END	-1	x	1.5		x	1		x			÷	1	=	-1.5
												TOTAL CARRIED TO GENERAL SUMMARY =		117

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
R. ABUT BETWEEN DIA./WING.	1	x	3.875		x	2.512		x			÷	1	=	9.7
F. ABUT BETWEEN DIA./WING.	1	x	3.875		x	2.5026		x			÷	1	=	9.7
R. ABUT BETWEEN WING./RAMP L	1	x	10.168		x	2.567		x			÷	1	=	26.1
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		46

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT (HORIZ.)	1	x	29.0777		x			x			÷	1	=	29.1
REAR ABUTMENT (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
FORWARD ABUTMENT (HORIZ.)	1	x	28.8887		x			x			÷	1	=	28.9
FORWARD ABUTMENT (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
												TOTAL CARRIED TO GENERAL SUMMARY =		61

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APPROACH	1	x	27.24		x			x			÷	1	=	27.2
FWD APPROACH	1	x	27.58		x			x			÷	1	=	27.6
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		55

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (28'-11" X 8" X 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUTMENT	1	x			x			x			÷	1	=	1.0
FORWARD ABUTMENT	1	x			x			x			÷	1	=	1.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		2

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	29.0549	29.0567	x	2		x	4.9126	6.1405	÷	27	=	11.9
REAR APPROACH	0.5	x	29.0543		x	0.75		x	1.5		÷	27	=	0.6
FWD APPROACH	1	x	28.775	28.9366	x	2		x	4.7733	5.9633	÷	27	=	11.5
FWD APPROACH	0.5	x	28.8867		x	0.75		x	1.5		÷	27	=	0.6
												TOTAL CARRIED TO GENERAL SUMMARY =		25

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. POROUS BACKFILL	1	x	29		x			x			÷	1	=	29.0
F. ABUT. POROUS BACKFILL	1	x	29		x			x			÷	1	=	29.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		58

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

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. WEEPHOLES	3	x	3.58		x			x			÷	1	=	10.7
F. ABUT. WEEPHOLES	3	x	3.58		x			x			÷	1	=	10.7
F. ABUT. OUTLET PIPE	1	x	10		x			x			÷	1	=	10.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		31

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 2 COLUMN	1	x	13.74		x	3		x	3.14		÷	1	=	129.5
PIER 2 COLUMN	1	x	14.64		x	3		x	3.14		÷	1	=	138.0
PIER 4 COLUMN	1	x	15.13		x	3		x	3.14		÷	1	=	142.6
PIER 4 COLUMN	1	x	16.02		x	3		x	3.14		÷	1	=	151.0
													TOTAL CARRIED TO GENERAL SUMMARY =	561

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR	1	x	24.8655		x	27.2359	27.2117	x			÷	9	=	75.2
REAR (EXTRA AREA)	1	x	1.6744	1.6753	x	5.1833		x			÷	9	=	1.0
REAR (EXTRA AREA)	0.5	x	1.6753		x	0.166		x			÷	9	=	0.0
FORWARD	1	x	24.9757		x	28.7529	28.7799	x			÷	9	=	79.8
FWD (SUBTRACT CORNER CHAMFER)	-0.5	x	0.065	1.6667	x			x			÷	9	=	0.0
													TOTAL CARRIED TO GENERAL SUMMARY =	156

ITEM 530 - SPECIAL - Structures (Aesthetic Treatment Concrete Formliner/Stain)

DESCRIPTION	#		L			W			T			S.F.		SQ FT
Parapet	1	x	157.5		x	3		x			÷	1	=	472.5
Parapet Transition FWD	1	x	10		x	3	2.1667	x			÷	1	=	25.8
Parapet Transition REAR	1	x	5.2917		x	3	2.33	x			÷	1	=	14.1
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	512

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	1	=	0.33
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.33

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		EACH
0.33 LS	0.33	x			x			x			÷	9	=	0.33
		x			x			x			÷	9	=	
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		0.33

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR A.S.	1	x	25		x	25.942	26.748	x			÷	9	=	73.2
FWD. A.S.	1	x	25		x	26.771	26.298	x			÷	9	=	73.7
		x			x			x			÷	9	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		147

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	29	x			x			x			÷	1	=	29.0
PIER 3	29	x			x			x			÷	1	=	29.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		58

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK	1	x	146.4956	146.504	x	28.78	28.89	x	2.21		÷	27	=	345.5
REAR DIAPHRAGM	1	x	28.8906		x	2.50		x	1.46		÷	27	=	3.9
REAR DIAPHRAGM	1	x	28.8906		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	28.8906		x	0.67		x	0.08		÷	27	=	-0.1
FWD. DIAPHRAGM	1	x	28.7813		x	2.50		x	1.46		÷	27	=	3.9
FWD. DIAPHRAGM	1	x	28.7813		x	2.00		x	0.17		÷	27	=	0.4
SUBTRACT BEARING AREA	-1	x	28.7813		x	0.67		x	0.08		÷	27	=	-0.1
On Top of Pier 1	1	x	27.6402		x	1.00		x	0.08		÷	27	=	0.1
On Top of Pier 2	1	x	27.6687		x	1.00		x	0.08		÷	27	=	0.1
BETWEEN DECK SLAB AND PIER CAPS (FROM MICROSTATION)	1	x			x			x			÷	27	=	1.9
												TOTAL CARRIED TO GENERAL SUMMARY =		356

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

INITIALS: TDF
CHECKED BY:

ITEM 511 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			AREA					÷	C.F.	=	SQ YD
LEFT PARAPET (ON BRIDGE)	1	x	146.52		x	4.4166		x			÷	27	=	24.0
REAR APPROACH	1	x	10.8471		x	4.4166		x			÷	27	=	1.8
REAR APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
REAR APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
REAR APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
FWD APPROACH	1	x	10.9441		x	4.4166		x			÷	27	=	1.8
FWD APPROACH	1	x	10		x	4.4166	3.2708	x			÷	27	=	1.4
FWD APPROACH	1	x	2.5		x	3.2708		x			÷	27	=	0.3
FWD APPROACH	1	x	1.5		x	3.2708	2.4305	x			÷	27	=	0.2
													TOTAL CARRIED TO GENERAL SUMMARY =	31

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

DESCRIPTION	#		L			W			T		÷	C.F.	=	CU YD
REAR ABUT. FTG	1	x	31.5677	25.1886	x	3.5		x	3		÷	27	=	11.0
REAR ABUT. FTG (CORNER)	0.5	x	1.4933		x	6.6368		x	3		÷	27	=	0.6
REAR ABUT. FTG WINGWALL	1	x	4.7912	8.7596	x	5.3582		x	3		÷	27	=	4.0
REAR ABUT. BREASTWALL	1	x	29.0585	29.0674	x	2.5		x	4.245	3.0179	÷	27	=	9.8
REAR ABUT. BREASTWALL	0.5	x	1.4933		x	0.6732		x	3.0179		÷	27	=	0.1
REAR ABUT. WINGWALL	1	x	7.0136	6.858	x	1.5		x	3.0179		÷	27	=	1.2
REAR ABUT. WINGWALL	1	x	7.0136	6.858	x	1.5		x	3.818	3.6482	÷	27	=	1.4
REAR ABUT. WINGWALL	1	x	5		x	1.5		x	3.6482	2.9167	÷	27	=	0.9
		x			x			x			÷	27	=	
FWD ABUT. FTG	1	x	31.451	24.5593	x	3.5		x	3		÷	27	=	10.9
FWD ABUT. FTG (CORNER)	0.5	x	1.3812		x	7.5283		x	3		÷	27	=	0.6
FWD ABUT. FTG WINGWALL	1	x	9.5122	4.7218	x	5.8859		x	3		÷	27	=	4.7
FWD ABUT. BREASTWALL	1	x	28.9492	28.9503	x	2.5		x	4.235	3.045	÷	27	=	9.8
FWD ABUT. BREASTWALL	0.5	x	1.3812		x	0.7249		x	3.045		÷	27	=	0.1
FWD ABUT. WINGWALL	1	x	7.3899	7.4626	x	3.0442		x	1.5		÷	27	=	1.3
FWD ABUT. WINGWALL	1	x	7.3899	7.4626	x	3.7648	3.9601	x	1.5		÷	27	=	1.6
FWD ABUT. WINGWALL	1	x	5		x	3.9601	2.9167	x	1.5		÷	27	=	1.0
													TOTAL CARRIED TO GENERAL SUMMARY =	59

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

INITIALS: TDF
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
R ABUTMENT BREASTWALL	1	x	29.0607		x	2.3009	1.0738	x			÷	9	=	5.4
R ABUTMENT WINGWALL	1	x	4.9559	4.7892	x	1.508		x			÷	9	=	0.8
R ABUTMENT WINGWALL	1	x	11.858	12.0136	x	1.5		x			÷	9	=	2.0
R ABUTMENT WINGWALL	0.5	x	4.827		x	8.7323		x			÷	9	=	2.3
REAR DIAPHRAGM	1	x	28.8909		x	1.6247		x			÷	9	=	5.2
F ABUTMENT BREASTWALL	1	x	28.9492		x	2.2016	1.0116	x			÷	9	=	5.2
F ABUTMENT WINGWALL	1	x	4.8866	4.7461	x	1.5018		x			÷	9	=	0.8
F ABUTMENT WINGWALL	1	x	12.4626	12.3899	x	1.5		x			÷	9	=	2.1
F ABUTMENT WINGWALL	0.5	x	4.6913		x	10.6324		x			÷	9	=	2.8
FWD DIAPHRAGM	1	x	28.7823		x	1.6253		x			÷	9	=	5.2
PIER 1 CAP	2	x	26.1402		x	3.5		x			÷	9	=	20.3
PIER 1 CAP	0.5	x	3		x	3.5		x	3.1416		÷	9	=	1.8
PIER 1 CAP	1	x	26.1713		x	3		x			÷	9	=	8.7
PIER 1 CAP	-1.5	x	1.5		x	1.5		x	3.1416		÷	9	=	-1.2
PIER 3 CAP	2	x	26.1687		x	3.5		x			÷	9	=	20.4
PIER 3 CAP	0.5	x	3		x	3.5		x	3.1416		÷	9	=	1.8
PIER 3 CAP	1	x	26.1996		x	3		x			÷	9	=	8.7
PIER 3 CAP	-1.5	x	1.5		x	1.5		x	3.1416		÷	9	=	-1.2
PARAPET (ON BRIDGE)	1	x	146.5208		x	8.6463		x			÷	9	=	140.8
PARAPET (APPROACH SLAB)	2	x	11		x	8.6463		x			÷	9	=	21.1
PARAPET (APPROACH SLAB)	2	x	10		x	8.6463	7.151	x			÷	9	=	17.6
PARAPET (APPROACH SLAB)	2	x	2.5		x	7.151		x			÷	9	=	4.0
PARAPET (APPROACH SLAB)	2	x	1.5		x	7.151	7.226	x			÷	9	=	2.4
SLAB EDGE	1	x	142.5078		x	2.7916		x			÷	9	=	44.2
APPROACH SLAB EDGE	2	x	25		x	0.0833		x			÷	9	=	0.5
		x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	322

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMN	1	x	10.71		x	3		x	3.14		÷	9	=	11.2
PIER 1 COLUMN	1	x	11.6		x	3		x	3.14		÷	9	=	12.1
PIER 3 COLUMN	1	x	12.12		x	3		x	3.14		÷	9	=	12.7
PIER 3 COLUMN	1	x	13.01		x	3		x	3.14		÷	9	=	13.6
													TOTAL CARRIED TO GENERAL SUMMARY =	50

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: MUS-70-1192 (6TH STREET)
DESCRIPTION: BRIDGE QUANTITIES (PHASE 3)

INITIALS: TDF
CHECKED BY:

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
REAR ABUTMENT	1	x	28.8948		x	1.6667		x			÷	1	=	48.2
FWD ABUTMENT	1	x	28.7825		x	1.6667		x			÷	1	=	48.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			96

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PARAPET REAR	1	x	3.50		x	0.8376	1.5077	x			÷	1	=	4.1
PARAPET FWD	1	x	3.50		x	0.8343	1.5018	x			÷	1	=	4.1
PIER 1	1	x	26.01	26.27	x	2		x			÷	1	=	52.3
PIER 1 ROUNDED EDGE	0.5	x	3.14		x	1.5		x	1.5		÷	1	=	3.5
PIER 1 ROUNDED EDGE	-1	x	1.50		x	1		x			÷	1	=	-1.5
PIER 3	1	x	26.07	26.27	x	2		x			÷	1	=	52.3
PIER 3 ROUNDED EDGE	0.5	x	3.14		x	1.5		x	1.5		÷	1	=	3.5
PIER 3 ROUNDED EDGE	-1	x	1.50		x	1		x			÷	1	=	-1.5
											TOTAL CARRIED TO GENERAL SUMMARY =			118

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
R. ABUT. BETWEEN DIA./WING.	1	x	3.875		x	2.5135		x			÷	1	=	9.7
F. ABUT. BETWEEN DIA./WING.	1	x	3.875		x	2.5029		x			÷	1	=	9.7
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			19

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT (HORIZ.)	1	x	29.0028		x			x			÷	1	=	29.0
REAR ABUTMENT (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
FORWARD ABUTMENT (HORIZ.)	1	x	28.8904		x			x			÷	1	=	28.9
FORWARD ABUTMENT (VERT.)	1	x	1.5		x			x			÷	1	=	1.5
											TOTAL CARRIED TO GENERAL SUMMARY =			61

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APPROACH	1	x	27.74		x			x			÷	1	=	27.7
FWD APPROACH	1	x	27.6		x			x			÷	1	=	27.6
		x			x			x			÷	1	=	
											TOTAL CARRIED TO GENERAL SUMMARY =			55

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (28'-11" X 8" X 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUTMENT	1	x			x			x			÷	1	=	1.0
FORWARD ABUTMENT	1	x			x			x			÷	1	=	1.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		2

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 3	7	x			x			x			÷	1	=	7.0
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		7

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH	1	x	29.073	29.0674	x	2		x	3.5926	2.3655	÷	27	=	6.4
REAR APPROACH	0.5	x	29.0674		x	0.75		x	1.5		÷	27	=	0.6
FWD APPROACH	1	x	28.9503	28.9497	x	2		x	3.4933	2.3033	÷	27	=	6.2
FWD APPROACH	0.5	x	28.9503		x	0.75		x	1.5		÷	27	=	0.6
												TOTAL CARRIED TO GENERAL SUMMARY =		14

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. POROUS BACKFILL	1	x	28.67		x			x			÷	1	=	28.7
F. ABUT. POROUS BACKFILL	1	x	28.92		x			x			÷	1	=	28.9
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		58

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

DESCRIPTION	#		L			W			T			C.F.		FT
R. ABUT. WEEPHOLES	3	x	3.58		x			x			÷	1	=	10.7
R. ABUT. OUTLET PIPE	1	x	5.5		x			x			÷	1	=	5.5
F. ABUT. WEEPHOLES	3	x	3.58		x			x			÷	1	=	10.7
F. ABUT. OUTLET PIPE	1	x	6.67		x			x			÷	1	=	6.7
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		34

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 1 COLUMN	1	x	10.71		x	3		x	3.14		÷	1	=	100.9
PIER 1 COLUMN	1	x	11.6		x	3		x	3.14		÷	1	=	109.3
PIER 3 COLUMN	1	x	12.12		x	3		x	3.14		÷	1	=	114.2
PIER 3 COLUMN	1	x	13.01		x	3		x	3.14		÷	1	=	122.6
													TOTAL CARRIED TO GENERAL SUMMARY =	447

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR	1	x	24.8655		x	28.9187	28.893	x			÷	9	=	79.9
REAR (SUBTRACT CORNER CHAMFER)	-0.5	x	0.1843		x	1.6667		x			÷	9	=	0.0
FORWARD	1	x	24.9157		x	28.7701	28.7813	x			÷	9	=	79.7
FWD (ADD CORNER CHAMFER)	0.5	x	0.0672		x	1.6667		x			÷	9	=	0.0
													TOTAL CARRIED TO GENERAL SUMMARY =	160

ITEM 526 - SPECIAL - Structures (Aesthetic Treatment Concrete Formliner/Stain)

DESCRIPTION	#		L			W			T			S.F.		SQ FT
Parapet	1	x	168.5208		x	3		x			÷	1	=	505.6
Parapet Transition	2	x	10		x	3	2.1667	x			÷	1	=	51.7
		x			x			x			÷	1	=	
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	557

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21
PID: 93006
CRS: MUS-70-1199
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

INITIALS: YEL
CHECKED BY:

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK(STA.143+46.47 TO STA.144+58.46)	1	x	111.99		x	33.8333		x	1.5625		÷	27	=	219.3
Median Parapets	2	x	111.99		x	7.983		x	1		÷	27	=	66.2
		x			x			x			÷	27	=	
		x			x			x			÷	27	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		286

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
R. ABUT. FOOTING	1	x	33.8333		x	4.25		x	3		÷	27	=	16.0
R. ABUT. BACKWALL	1	x	33.8333		x	3.25		x	7.3333	6.5	÷	27	=	28.2
F. ABUT. FOOTING	1	x	33.8333		x	4.25		x	3		÷	27	=	16.0
F. ABUT. BACKWALL	1	x	33.8333		x	3.25		x	7.25	7.6823	÷	27	=	30.4
												TOTAL CARRIED TO GENERAL SUMMARY =		91

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
Rear Approach Slab	1	x	25		x	33.8333		x			÷	9	=	94.0
Fwd. Approach Slab	1	x	25		x	33.8333		x			÷	9	=	94.0
												TOTAL CARRIED TO GENERAL SUMMARY =		188

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUTMENT (2:1 SLOPE)	1.12	x	27.5833	28.75	x	33.833		x			÷	9	=	118.6
REAR ABUTMENT	1	x	4.4583	1.0833	x	33.833		x			÷	9	=	10.4
REAR ABUTMENT	1	x	4.1667	6.5417	x	33.833		x			÷	9	=	20.1
REAR ABUTMENT	1	x	11.375	2.4583	x	33.833		x			÷	9	=	26.0
		x			x			x			÷	9	=	
FWD. ABUTMENT	1	x	4.2083	3.875	x	33.833		x			÷	9	=	15.2
FWD. ABUTMENT (2:1 SLOPE)	1.12	x	31.0833	31.9167	x	33.833		x			÷	9	=	132.6
												TOTAL CARRIED TO GENERAL SUMMARY =		323

ITEM 503 - UNCLASSIFIED EXCAVATION

DESCRIPTION	#		L			W			T			C.F.		CU YD
Rear Approach Slab	1	x	33.8333		x	9.1068	2	x	10.13	11.19	÷	27	=	74.2
Fwd. Approach Slab	1	x	33.8333		x	9.4675	2	x	10.96	11.35	÷	27	=	80.1
												TOTAL CARRIED TO GENERAL SUMMARY =		154

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NON METALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	22	x			x			x			÷	1	=	22.0
PIER 2	22	x			x			x			÷	1	=	22.0
												TOTAL CARRIED TO GENERAL SUMMARY =		44.0

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21 INITIALS: YEL
PID: 93006 CHECKED BY:
CRS: MUS-70-1199
DESCRIPTION: BRIDGE QUANTITIES (PHASE 1)

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT. BACK WALL	1	x	33.8333		x	2.5		x	6.4531	5.4219	÷	27	=	18.6
FWD. ABUT. BACK WALL	1	x	33.8333		x	2.5		x	6.25	6.6406	÷	27	=	20.2
REAR ABUTMENT	1	x	33.8333		x	3.5		x	3		÷	27	=	13.2
FWD. ABUTMENT	1	x	33.8333		x	3.5		x	3		÷	27	=	13.2
													TOTAL CARRIED TO GENERAL SUMMARY =	65.2

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK:STA.608+85.22 TO STA.609+99.22	1	x	114		x	33.8333		x	1.75		÷	27	=	250.0
REAR ABUT. DIAPHRAGM	1	x	33.8333		x	2.5		x	3.4167		÷	27	=	10.7
REAR ABUT. DIA. DEDUCTION	-1	x	33.8333		x	0.5		x	1.9167		÷	27	=	-1.2
FWD. ABUT. DIAPHRAGM	1	x	33.8333		x	2.5		x	3.4167		÷	27	=	10.7
FWD. ABUT. DIA. DEDUCTION	-1	x	33.8333		x	0.5		x	1.9167		÷	27	=	-1.2
PIER 1	1	x	33.8333		x	3		x	0.5	0.6667	÷	27	=	2.2
PIER 1 (shear key)	1	x	33.8333		x	1		x	0.2083		÷	27	=	0.3
PIER 2	1	x	33.8333		x	3		x	0.7396	0.7891	÷	27	=	2.9
PIER 2 (shear key)	1	x	33.8333		x	1		x	0.2083		÷	27	=	0.3
													TOTAL CARRIED TO GENERAL SUMMARY =	275

ITEM 511 - CLASS QC2 CONCRETE, MISC : MEDIAN BARRIER

DESCRIPTION	#		L			W			T			C.F.		CU YD
STA.608+60.22 TO STA.610+24.22	1	x	164		x	1	2.8125	x	4.75		÷	27	=	55.0
													TOTAL CARRIED TO GENERAL SUMMARY =	55

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. DIAPHRAGM	1	x	33.8333		x	6.2418	5.2117	x			÷	9	=	21.5
FWD. ABUT. DIAPHRAGM	1	x	33.8333		x	5.96	6.35	x			÷	9	=	23.1
MEDIAM BARRIER	1	x	164		x	10.612		x			÷	9	=	193.4
PIER 1 CAP	1	x	33.833		x	11.833		x			÷	9	=	44.5
PIER 2 CAP	1	x	33.833		x	12		x			÷	9	=	45.1
													TOTAL CARRIED TO GENERAL SUMMARY =	328

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1	2	x	12.5		x	9.42		x			÷	9	=	26.2
PIER 2	2	x	14.5		x	9.42		x			÷	9	=	30.4
													TOTAL CARRIED TO GENERAL SUMMARY =	57

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
REAR ABUT. DIA. SEAT	1	x	33.8333		x	1.6667		x			÷	1	=	56.4
FWD. ABUT. DIA. SEAT	1	x	33.8333		x	1.6667		x			÷	1	=	56.4
													TOTAL CARRIED TO GENERAL SUMMARY =	113

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 1	2	x	33.833		x	1		x			÷	1	=	67.7
PIER 2	2	x	33.833		x	1		x			÷	1	=	67.7
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		135

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL (3'-0" WIDE)

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	33.8333		x			x			÷	1	=	33.8
FWD. ABUTMENT	1	x	33.8333		x			x			÷	1	=	33.8
												TOTAL CARRIED TO GENERAL SUMMARY =		68

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLABS

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUTMENT	1	x	33.8333		x			x			÷	1	=	33.8
FWD. ABUTMENT	1	x	33.8333		x			x			÷	1	=	33.8
												TOTAL CARRIED TO GENERAL SUMMARY =		68

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (33'-10" x 8" x 1 1/2")

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUTMENT	1	x			x			x			÷	1	=	1.0
FWD. ABUTMENT	1	x			x			x			÷	1	=	1.0
												TOTAL CARRIED TO GENERAL SUMMARY =		2

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 1	6	x			x			x			÷	1	=	6.0
		x			x			x			÷	1	=	
												TOTAL CARRIED TO GENERAL SUMMARY =		6

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC																
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**CU YD**		
REAR ABUTMENT	1	x	33.8333		x	5	6	x	2		÷	27	=	13.8		
FWD. ABUTMENT	1	x	33.8333		x	5	6	x	2		÷	27	=	13.8		
TOTAL CARRIED TO GENERAL SUMMARY =														28		

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE																
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**FT**		
REAR ABUTMENT	1	x	33.83333		x			x			÷	1	=	33.8		
FWD. ABUTMENT	1	x	33.83333		x			x			÷	1	=	33.8		
TOTAL CARRIED TO GENERAL SUMMARY =														68		

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS																
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**#REF!**		
REAR ABUTMENT WEEPHOLES	4	x	3.5833		x			x			÷	1	=	14.3		
FWD. ABUTMENT WEEPHOLES	4	x	3.5833		x			x			÷	1	=	14.3		
TOTAL CARRIED TO GENERAL SUMMARY =														29		

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM																
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**SQ FT**		
PIER 1 COLUMNS (EB)	1	x	12.4583		x	11		x			÷	1	=	137.0		
PIER 1 COLUMNS (WB)	1	x	12.4583		x	11		x			÷	1	=	137.0		
PIER 2 COLUMNS (EB)	1	x	14.4687		x	11		x			÷	1	=	159.2		
PIER 2 COLUMNS (WB)	1	x	14.4531		x	11		x			÷	1	=	159.0		
TOTAL CARRIED TO GENERAL SUMMARY =														592		

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN														
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**SQ YD**
REAR APPROACH SLAB	1	x	25		x	33.8333		x			÷	9	=	94.0
FWD. APPROACH SLAB	1	x	25		x	33.8333		x			÷	9	=	94.0
												TOTAL CARRIED TO GENERAL SUMMARY =		188

ITEM 601 - CONCRETE SLOPE PROTECTION														
DESCRIPTION	**#**		**L**			**W**			**T**			**C.F.**		**SQ YD**
REAR ABUT. (2:1 SLOPE)	1.12	x	28.3333	27.9427	x	33.8333		x			÷	9	=	118.5
REAR ABUT.	1	x	3.4323	2.3333	x	33.8333		x			÷	9	=	10.8
REAR ABUT.	1	x	4.8802	5.651	x	33.8333		x			÷	9	=	19.8
RER ABUT.	1	x	8.6823	5.8021	x	33.8333		x			÷	9	=	27.2
FWD. ABUT. (2:1 SLOPE)	1.12	x	30.9635	32	x	33.8333		x			÷	9	=	132.5
FWD. ABUT.	1	x	4.08333	3.9896	x	33.8333		x			÷	9	=	15.2
FWD. ABUT.	1	x	5		x	33.8333		x			÷	9	=	18.8
												TOTAL CARRIED TO GENERAL SUMMARY =		343

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK(STA. 143+46.47 TO STA. 144+58.46)	1	x	111.99		x	27.5833		x	1.5625		÷	27	=	178.8
Parapet on R. Abut. WW (R1)	1	x	6.4167		x	1.6667		x	1.5625		÷	27	=	0.6
Parapet on R. Abut. WW (R2)	1	x	9.5833		x	1.6667		x	3		÷	27	=	1.8
Parapet on R. Abut. WW (R3)	1	x	16		x	1.6667		x	2.7917		÷	27	=	2.8
Parapet on R. Abut. WW Drill Shaft	1	x	3.14		x	1.6667		x	2		÷	27	=	0.4
Parapet on F. Abut. WW (R1)	1	x	6.4167		x	1.6667		x	1.5625		÷	27	=	0.6
Parapet on F. Abut. WW (R2)	1	x	9.5833		x	1.6667		x	3		÷	27	=	1.8
Parapet on F. Abut. WW (R3)	1	x	16		x	1.66667		x	2.7917		÷	27	=	2.8
Parapet on F. Abut. WW Drill Shaft	1	x	3.14		x	1.66667		x	2		÷	27	=	0.4
Parapet on Bridge Deck	1	x	112		x	7.983		x	1		÷	27	=	33.1
													TOTAL CARRIED TO GENERAL SUMMARY =	223

Cbn jwd.f3f5i

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

1/	#		L			W			T			C.F.		CU YD
R. ABUT. FOOTING	1	x	28.6667		x	4.25		x	3		÷	27	=	13.5
R. ABUT. BACKWALL	1	x	26.25		x	3.25		x	4.9688	7.3333	÷	27	=	19.4
R.ABUT. WW. FOOTING	1	x	5.6875		x	3		x	3		÷	27	=	1.9
R. ABUT. WW	1	x	8.9792		x	1.5		x	4.9688		÷	27	=	2.5
R. ABUT. FOOTINGH NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
R. ABUT. BACKWALL NIB	0.5	x	1		x	1		x	4.9688		÷	27	=	0.1
F. ABUT. FOOTING	1	x	28.7239		x	4.25		x	3		÷	27	=	13.6
F. ABUT. BACKWALL	1	x	26.375		x	3.25		x	7.6823	5.0417	÷	27	=	20.2
F. ABUT. WW. FOOTING	1	x	7.25		x	4.25		x	3		÷	27	=	3.4
F. ABUT. WW	1	x	9.1667		x	1.5		x	5.0417		÷	27	=	2.6
F. ABUT. FOOTINGH NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
F. ABUT. BACKWALL NIB	0.5	x	1		x	1		x	5.0417		÷	27	=	0.1
													TOTAL CARRIED TO GENERAL SUMMARY =	78

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APPROACH SLAB	1	x	25		x	26.0833	26.75	x			÷	9	=	73.4
FWD. APPROACH SLAB	1	x	25		x	26.4167	26.5833	x			÷	9	=	73.6
													TOTAL CARRIED TO GENERAL SUMMARY =	147

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUTMENT (2:1 SLOPE)	1.12	x	27.5833	28.75	x	31.74		x			÷	9	=	111.3
REAR ABUTMENT	1	x	4.4583	1.0833	x	31.74		x			÷	9	=	9.8
REAR ABUTMENT	1	x	4.1667	6.5417	x	31.74		x			÷	9	=	18.9
REAR ABUTMENT	1	x	11.375	2.4583	x	31.74		x			÷	9	=	24.4
		x			x			x			÷	9	=	
FWD. ABUTMENT	1	x	4.2083	3.875	x	31.74		x			÷	9	=	14.3
FWD. ABUTMENT (2:1 SLOPE)	1.12	x	31.0833	31.9167	x	31.74		x			÷	9	=	124.4
													TOTAL CARRIED TO GENERAL SUMMARY =	303

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH SLAB	1	x	28.9167		x	9.3933	2	x	11.09		÷	27	=	67.7
FWD. APPROACH SLAB	1	x	28.9167		x	9.3133	2	x	10.97		÷	27	=	66.5
													TOTAL CARRIED TO GENERAL SUMMARY =	134

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NON METALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	18	x			x			x			÷	1	=	18.0
PIER 2	18	x			x			x			÷	1	=	18.0
													TOTAL CARRIED TO GENERAL SUMMARY =	36.0

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT. BACK WALL	1	x	28.9271		x	2.5		x	6.3802	6.4531	÷	27	=	17.2
REAR ABUT. BACK WALL NIB	0.5	x	1		x	1		x	6.3802		÷	27	=	0.1
REAR ABUT. WINGWALL	1	x	7.9375		x	1.5		x	9.6979	9.8385	÷	27	=	4.3
REAR ABUT. WINGWALL OVERHANG	1	x	2.5		x	1.5		x	3.3182	3	÷	27	=	0.4
FWD. ABUT. BACK WALL	1	x	28.9271		x	2.5		x	6.6406	6.2604	÷	27	=	17.3
FWD. ABUT. BACK WALL NIB	0.5	x	1		x	1		x	6.2604		÷	27	=	0.1
FWD. ABUT. WINGWALL	1	x	9.625		x	1.5		x	9.71875	9.9451	÷	27	=	5.3
FWD. ABUT. WINGWALL OVERHANG	1	x	2.5		x	1.5		x	3.6834	3	÷	27	=	0.5
UNDER REAR. ABUT. BACKWALL	1	x	31.16		x	3.5		x	3		÷	27	=	12.1
UNDER REAR. ABUT. WINGWALL	1	x	5.1667		x	3.5		x	3		÷	27	=	2.0
REAR FOOTING NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
UNDER FWD. ABUT. BACKWALL	1	x	31.06		x	3.5		x	3		÷	27	=	12.1
UNDER FWD. ABUT. WINGWALL	1	x	7.07		x	5.52		x	3		÷	27	=	4.3
FWD. FOOTING NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
													TOTAL CARRIED TO GENERAL SUMMARY =	75.9

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21
PID: 93006
CRS: MUS-70-1199
DESCRIPTION: BRIDGE QUANTITIES (Phase 2)

INITIALS: YEL
CHECKED BY:

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE (BRIDGE DECK)

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK STA. 608+85.22 TO STA. 608+99.22	1	x	114		x	28.7604		x	1.75		÷	27	=	212.5
REAR ABUT. DIAPHRAGM	1	x	15.8333		x	2.5		x	3.4167	3.8542	÷	27	=	5.3
REAR ABUT. DIAPHRAGM	1	x	13.0937		x	2.5		x	3.4167	3.8542	÷	27	=	4.4
REAR ABUT. DIA. DEDUCTION	-1	x	15.8333		x	0.5		x	1.9584	2.3959	÷	27	=	-0.6
REAR ABUT. DIA. DEDUCTION	-1	x	13.0937		x	0.5		x	1.9584	2.3959	÷	27	=	-0.5
FWD. ABUT. DIAPHRAGM	1	x	15.8333		x	2.5		x	3.7031	3.4167	÷	27	=	5.2
FWD. ABUT. DIAPHRAGM	1	x	13.0937		x	2.5		x	3.4167	3.7031	÷	27	=	4.3
FWD. ABUT. DIA DEDUCTION	-1	x	15.8333		x	0.5		x	2.2448	1.9584	÷	27	=	-0.6
FWD. ABUT. DIA DEDUCTION	-1	x	13.0937		x	0.5		x	1.9584	2.2448	÷	27	=	-0.5
Pier 1	1	x	14.3333		x	3		x	0.8229	0.0989	÷	27	=	0.7
Pier 1	1	x	13.0937		x	3		x	0.8229	0.6667	÷	27	=	1.1
Pier 1 (shear key)	1	x	25.9271		x	1		x	0.2083		÷	27	=	0.2
Pier 2	1	x	14.3333		x	3		x	0.6562	0.005	÷	27	=	0.5
Pier 2	1	x	13.0937		x	3		x	0.65625	0.7083	÷	27	=	1.0
Pier 2 (shear key)	1	x	25.9271		x	1		x	0.2083		÷	27	=	0.2
													TOTAL CARRIED TO GENERAL SUMMARY =	233

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

DESCRIPTION	#		L			A						C.F.		CU YD
SEC. ON DECK	1	x	113.9583		x	4.083		x	1		÷	27	=	17.2
SEC. ON APP. SLABS	2	x	11		x	4.083		x			÷	27	=	3.3
TRANSITION SEC. ON APP. SLABS (VOLUME)	2	x	1.8		x			x			÷	1	=	3.6
													TOTAL CARRIED TO GENERAL SUMMARY =	24

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. DIAPHRAGM	1	x	15.6667		x	6.17	6.8765	x			÷	9	=	11.4
REAR ABUT. DIAPHRAGM	1	x	13.0937		x	6.8765	6.2417	x			÷	9	=	9.5
REAR ABUT. WINGWALL FACE	1	x	7.92		x	1.5		x			÷	9	=	1.3
REAR ABUT. WINGWALL TOP	1	x	10.4375		x	1.5		x			÷	9	=	1.7
REAR ABUT. WINGWALL SIDE	1	x	10.4375		x	9.84	1	x			÷	9	=	6.3
FWD. ABUT. DIAPHRAGM	1	x	15.6667		x	5.9674	5.33	x			÷	9	=	9.8
FWD. ABUT. DIAPHRAGM	1	x	13.0937		x	7.08		x			÷	9	=	10.3
FWD. ABUT. WINGWALL FACE	1	x	7.08		x	1.5		x			÷	9	=	1.2
FWD. ABUT. WINGWALL TOP	1	x	12.125		x	1.5		x			÷	9	=	2.0
FWD. ABUT. WINGWALL SIDE	1	x	12.125		x	7.08	1	x			÷	9	=	5.4
RIGHT PARAPET ON DECK	1	x	113.9583		x	8.004		x			÷	9	=	101.3
RIGHT PARAPET ON APP. SLAB	2	x	11		x	8.004		x			÷	9	=	19.6
TRANSITION PARAPET ON APP. SLAB	2	x	10		x	5.676	8.004	x			÷	9	=	15.2
TRANSITION PARAPET ON APP. SLAB	2	x	4		x	5.676		x			÷	9	=	5.0
PIER 1 CAP SIDES AND BOTTOM	1	x	27.4167		x	10.8333	12.3333	x			÷	9	=	35.3
PIER 1 CAP END	1	x	3.6667		x	3.5		x			÷	9	=	1.4
PIER 2 CAP SIDES AND BOTTOM	1	x	27.5833		x	12	10.5	x			÷	9	=	34.5
PIER 2 CAP END	1	x	3.5		x	3.5		x			÷	9	=	1.4
													TOTAL CARRIED TO GENERAL SUMMARY =	273

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMNS	2	x	12.5		x	9.42		x			÷	9	=	26.2
PIER 2 COLUMNS	2	x	14.5		x	9.42		x			÷	9	=	30.4
													TOTAL CARRIED TO GENERAL SUMMARY =	57

ITEM 512 - TYPE 2 - WATER PROOFING

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. DIAPHRAGM	1	x	32.25		x	3		x			÷	9	=	10.8
FWD. ABUT. DIAPHRAGM	1	x	32.25		x	3		x			÷	9	=	10.8
													TOTAL CARRIED TO GENERAL SUMMARY =	22

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
REAR ABUT. DIA. SEAT	1	x	28.9271		x	1.6667		x			÷	1	=	48.2
FWD. ABUT. DIA. SEAT	1	x	28.9271		x	1.6667		x			÷	1	=	48.2
													TOTAL CARRIED TO GENERAL SUMMARY =	96

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ FT
PIER 1	2	x	27.4167	x	1	x		÷	1	=	54.8
PIER 2	2	x	27.583	x	1	x		÷	1	=	55.2
		x		x		x		÷	1	=	
							TOTAL CARRIED TO GENERAL SUMMARY =				110

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ. FT.
REAR ABUT. DIA. END	1	x	2.5	x	5.3333	x		÷	1	=	13.3
REAR APP. SLAB SIDE	1	x	5.4167	x	1.25	x		÷	1	=	6.8
FWD. ABUT. DIA. END	1	x	2.5	x	4.5833	x		÷	1	=	11.5
FWD. APP.SLAB SIDE	1	x	7.0833	x	1.25	x		÷	1	=	8.9
							TOTAL CARRIED TO GENERAL SUMMARY =				41

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL (3'-0" WIDE)

DESCRIPTION	#		L		W		T		C.F.		FT
REAR ABUT.	1	x	33.5	x		x		÷	1	=	33.5
FWD. ABUT.	1	x	33.5	x		x		÷	1	=	33.5
							TOTAL CARRIED TO GENERAL SUMMARY =				67

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLABS

DESCRIPTION	#		L		W		T		C.F.		FT
REAR ABUT.	1	x	28.9167	x		x		÷	1	=	28.9
FWD. ABUT.	1	x	28.9167	x		x		÷	1	=	28.9
							TOTAL CARRIED TO GENERAL SUMMARY =				58

ITEM 516 - ELASTOMERIC BEARING PAD, MISC.: (28'-9" x 8" x 1 1/2")

DESCRIPTION	#		L		W		T		C.F.		EACH
REAR ABUTMENT	1	x		x		x		÷	1	=	1.0
FWD. ABUTMENT	1	x		x		x		÷	1	=	1.0
							TOTAL CARRIED TO GENERAL SUMMARY =				2

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L		W		T		C.F.		EACH
PHASE 2	2	x		x		x		÷	1	=	2.0
							TOTAL CARRIED TO GENERAL SUMMARY =				2

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L		W		T		C.F.		CU YD
REAR ABUT.	1	x	28.9167	x	2	x	8	÷	27	=	17.1
FWD. ABUT.	1	x	28.9167	x	2	x	8	÷	27	=	17.1
							TOTAL CARRIED TO GENERAL SUMMARY =				34

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT.	1	x	28.9167		x			x			÷	1	=	28.9
FWD. ABUT.	1	x	28.9167		x			x			÷	1	=	28.9
												TOTAL CARRIED TO GENERAL SUMMARY =		58

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT.	1	x	10		x			x			÷	1	=	10.0
REAR ABUT. WEEPHOLES	3	x	3.5833		x			x			÷	1	=	10.7
FWD. ABUT.	1	x	10		x			x			÷	1	=	10.0
FWD. ABUT. WEEPHOLES	3	x	3.5833		x			x			÷	1	=	10.7
												TOTAL CARRIED TO GENERAL SUMMARY =		41

ITEM 519 COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
PIER 1 COLUMNS	2	x	12.5		x	11		x			÷	1	=	275.0
PIER 2 COLUMNS	2	x	14.5		x	11		x			÷	1	=	319.0
												TOTAL CARRIED TO GENERAL SUMMARY =		594

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	28.75		x			÷	9	=	79.9
FWD. APP.SLAB	1	x	25		x	28.75		x			÷	9	=	79.9
												TOTAL CARRIED TO GENERAL SUMMARY =		160

ITEM 530 - SPECIAL AESTHETIC TREATMENT

DESCRIPTION	#		L			W			T			C.F.		SQ. FT
RIGHT PARAPET	1	x	113.9583		x	3.5		x			÷	1	=	398.9
SEC. ON APP. SLABS	1	x	11		x	3.5		x			÷	1	=	38.5
TRANSITION SEC. ON APP. SLABS	1	x	14		x	3.5	2.6667	x			÷	1	=	43.2
												TOTAL CARRIED TO GENERAL SUMMARY =		481

ITEM 601 - CONCRETE SLOPE PROTECTION

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. (2:1 SLOPE)	1.12	x	27.5833	27.8698	x	31.5833	31.75	x			÷	9	=	109.3
REAR ABUT.	1	x	4.4583	3.4323	x	31.75		x			÷	9	=	13.9
REAR ABUT.	1	x	4.1667	4.8802	x	31.75		x			÷	9	=	16.0
RER ABUT.	1	x	11.375	8.6823	x	31.75	31.8073	x			÷	9	=	35.4
FWD. ABUT. (2:1 SLOPE)	1.12	x	31.9167		x	31.75		x			÷	9	=	126.1
FWD. ABUT.	1	x	3.875	3.9896	x	31.75		x			÷	9	=	13.9
FWD. ABUT.	1	x	5		x	31.75		x			÷	9	=	17.6
												TOTAL CARRIED TO GENERAL SUMMARY =		332

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUPERSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK(STA. 143+46.47 TO STA. 144+58.46)	1	x	111.99		x	41.0626	34.5626	x	1.5625		÷	27	=	245.1
Parapet on R. Abut. WW (R1)	1	x	6.4167		x	1.6667		x	1.5625		÷	27	=	0.6
Parapet on R. Abut. WW (R2)	1	x	9.5833		x	1.6667		x	3		÷	27	=	1.8
Parapet on R. Abut. WW (R3)	1	x	16		x	1.6667		x	2.7917		÷	27	=	2.8
Parapet on R. Abut. WW Drill Shaft	1	x	3.14		x	1.6667		x	2		÷	27	=	0.4
Parapet on F. Abut. WW (R1)	1	x	6.4167		x	1.6667		x	1.5625		÷	27	=	0.6
Parapet on F. Abut. WW (R2)	1	x	9.5833		x	1.6667		x	3		÷	27	=	1.8
Parapet on F. Abut. WW (R3)	1	x	16		x	1.66667		x	2.7917		÷	27	=	2.8
Parapet on F. Abut. WW Drill Shaft	1	x	3.14		x	1.66667		x	2		÷	27	=	0.4
Parapet on Bridge Deck	1	x	112		x	7.983		x	1		÷	27	=	33.1
													TOTAL CARRIED TO GENERAL SUMMARY =	289

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SUBSTRUCTURE)

DESCRIPTION	#		L			W			T			C.F.		CU YD
R. ABUT. FOOTING	1	x	34.8021		x	4.25		x	3		÷	27	=	16.4
R. ABUT. BACKWALL	1	x	32.4427		x	3.25		x	3		÷	27	=	11.7
R.ABUT. WW. FOOTING	1	x	6.9167		x	3		x	3		÷	27	=	2.3
R. ABUT. WW	1	x	9.1667		x	1.5		x	2.7083		÷	27	=	1.4
R. ABUT. FOOTINGH NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
R. ABUT. BACKWALL NIB	0.5	x	1		x	1		x	2.7083		÷	27	=	0.1
F. ABUT. FOOTING	1	x	41.2239		x	4.25		x	3		÷	27	=	19.5
F. ABUT. BACKWALL	1	x	39.1458		x	3.25		x	7.25	3.7292	÷	27	=	25.9
F. ABUT. WW. FOOTING	1	x	7.2604		x	3		x	3		÷	27	=	2.4
F. ABUT. WW	1	x	8.9792		x	1.5		x	3.7292		÷	27	=	1.9
F. ABUT. FOOTINGH NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
F. ABUT. BACKWALL NIB	0.5	x	1		x	1		x	3.7292		÷	27	=	0.1
													TOTAL CARRIED TO GENERAL SUMMARY =	82

ITEM 202 - APPROACH SLAB REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APPROACH SLAB	1	x	25		x	30.6667	32.25	x			÷	9	=	87.4
FWD. APPROACH SLAB	1	x	25		x	39.4427	40.6667	x			÷	9	=	111.3
													TOTAL CARRIED TO GENERAL SUMMARY =	199

ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUTMENT (2:1 SLOPE)	1.12	x	27.5833	28.75	x	38.4267	37.4684	x			÷	9	=	133.0
REAR ABUTMENT	1	x	4.4583	1.0833	x	38.4267	37.4684	x			÷	9	=	11.7
REAR ABUTMENT	1	x	4.1667	6.5417	x	38.4267	37.4684	x			÷	9	=	22.6
REAR ABUTMENT	1	x	11.375	2.4583	x	38.4267	37.4684	x			÷	9	=	29.2
		x			x			x			÷	9	=	
FWD. ABUTMENT	1	x	4.2083	3.875	x	41.385	42.3434	x			÷	9	=	18.8
FWD. ABUTMENT (2:1 SLOPE)	1.12	x	31.0833	31.9167	x	41.385	42.3434	x			÷	9	=	164.1
													TOTAL CARRIED TO GENERAL SUMMARY =	379

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR APPROACH SLAB	1	x	34.1719		x	8.0677	2	x	9.0989		÷	27	=	58.0
FWD. APPROACH SLAB	1	x	41.4635		x	8.8333	2	x	10.25		÷	27	=	85.3
													TOTAL CARRIED TO GENERAL SUMMARY =	143

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NON METALLIC GROUT

DESCRIPTION	#		L			W			T			C.F.		EACH
PIER 1	23	x			x			x			÷	1	=	23.0
PIER 2	25	x			x			x			÷	1	=	25.0
													TOTAL CARRIED TO GENERAL SUMMARY =	48.0

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT. BACK WALL	1	x	34.2604		x	2.5		x	5.4219	4.3906	÷	27	=	15.6
REAR ABUT. BACK WALL NIB	0.5	x	1		x	1		x	4.3906		÷	27	=	0.1
REAR ABUT. WINGWALL	1	x	7.25		x	1.5		x	7.85	7.7036	÷	27	=	3.1
REAR ABUT. WINGWALL OVERHANG	1	x	3.5		x	1.5		x	3.3119	3	÷	27	=	0.6
FWD. ABUT. BACK WALL	1	x	41.4375		x	2.5		x	5.6198	6.25	÷	27	=	22.8
FWD. ABUT. BACK WALL NIB	0.5	x	1		x	1		x	5.6198		÷	27	=	0.1
FWD. ABUT. WINGWALL	1	x	7.9792		x	1.5		x	9.2883	9.08	÷	27	=	4.1
FWD. ABUT. WINGWALL OVERHANG	1	x	3.5		x	1.5		x	3.6666	3	÷	27	=	0.6
UNDER REAR. ABUT. BACKWALL	1	x	36.6354		x	3.5		x	3		÷	27	=	14.2
UNDER REAR. ABUT. WINGWALL	1	x	5.7917		x	5.0573		x	3		÷	27	=	3.3
REAR FOOTING NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
UNDER FWD. ABUT. BACKWALL	1	x	43.4896	43.8361	x	3.5		x	3		÷	27	=	17.0
UNDER FWD. ABUT. WINGWALL	1	x	6.4611	7.016	x	5.0833		x	3		÷	27	=	3.8
FWD. FOOTING NIB	0.5	x	1		x	1		x	3		÷	27	=	0.1
													TOTAL CARRIED TO GENERAL SUMMARY =	85.5

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE

DESCRIPTION	#		L			W			T			C.F.		CU YD
DECK STA. 608+85.22 TO STA. 609+99.22	1	x	114		x	34	41.3333	x	1.75		÷	27	=	278.3
REAR ABUT. DIAPHRAGM	1	x	34.0937		x	2.5		x	3.4167		÷	27	=	10.8
REAR ABUT. DIA. DEDUCTION	-1	x	34.0937		x	0.5		x	1.9584		÷	27	=	-1.2
FWD. ABUT. DIAPHRAGM	1	x	41.2708		x	2.5		x	3.4167		÷	27	=	13.1
FWD. ABUT. DIA DEDUCTION	-1	x	41.2708		x	0.5		x	1.9584		÷	27	=	-1.5
Pier 1	1	x	35.0729		x	3		x	0.3333	0.5	÷	27	=	1.6
Pier 1 (shear key)	1	x	33.5729		x	1		x	0.2083		÷	27	=	0.3
Pier 2	1	x	37.5833		x	3		x	0.75	0.7812	÷	27	=	3.2
Pier 2 (shear key)	1	x	36.0833		x	1		x	0.2083		÷	27	=	0.3
													TOTAL CARRIED TO GENERAL SUMMARY =	305

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

DESCRIPTION	#		L			A						C.F.		CU YD
SEC. ON DECK	1	x	114.4167		x	4.083		x	1		÷	27	=	17.3
SEC. ON APP. SLABS	2	x	11		x	4.083		x			÷	27	=	3.3
TRANSITION SEC. ON APP. SLABS	2	x	1.8		x			x			÷	1	=	3.6
													TOTAL CARRIED TO GENERAL SUMMARY =	24

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. DIAPHRAGM	1	x	34.0938		x	5.21	4.18	x			÷	9	=	17.8
REAR ABUT. WINGWALL FACE	1	x	1.5		x	5.93		x			÷	9	=	1.0
REAR ABUT. WINGWALL TOP	1	x	10.6667		x	1.5		x			÷	9	=	1.8
REAR ABUT. WINGWALL SIDE	1	x	10.75		x	5.93	1	x			÷	9	=	4.1
FWD. ABUT. DIAPHRAGM	1	x	41.3125		x	5.9674	5.33	x			÷	9	=	25.9
FWD. ABUT. WINGWALL FACE	1	x	7.08		x	1.5		x			÷	9	=	1.2
FWD. ABUT. WINGWALL TOP	1	x	11.4792		x	1.5		x			÷	9	=	1.9
FWD. ABUT. WINGWALL SIDE	1	x	11.4792		x	7.08	1	x			÷	9	=	5.2
LEFT PARAPET ON DECK	1	x	114.4167		x	8.004		x			÷	9	=	101.8
LEFT PARAPET ON APP. SLAB	2	x	11		x	8.004		x			÷	9	=	19.6
TRANSITION PARAPET ON APP. SLAB	2	x	10		x	5.676	8.004	x			÷	9	=	15.2
TRANSITION PARAPET ON APP. SLAB	2	x	4		x	5.676		x			÷	9	=	5.0
PIER 1 SIDES AND BOTTOM FACES	1	x	35.9167		x	11.2	11.3	x			÷	9	=	44.9
PIER 1 END FACE	1	x	3.8333		x	3.5		x			÷	9	=	1.5
PIER 2 SIDES AND BOTTOM FACES	1	x	37.5833		x	12		x			÷	9	=	50.1
PIER 2 END FACE	1	x	4.25		x	3.5		x			÷	9	=	1.7
													TOTAL CARRIED TO GENERAL SUMMARY =	299

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
PIER 1 COLUMNS	3	x	12.5			9.42		x			÷	9	=	39.3
PIER 2 COLUMNS	3	x	14.5		x	9.42		x			÷	9	=	45.5
													TOTAL CARRIED TO GENERAL SUMMARY =	85

ITEM 512 - TYPE 2 WATER PROOFING

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. DIA.	1	x	32.9167		x	2.9167	1.7083	x			÷	9	=	8.5
FWD. BUT. DIA.	1	x	41.3333		x	3.1446	1.8698	x			÷	9	=	11.5
													TOTAL CARRIED TO GENERAL SUMMARY =	20

ITEM 516 - 1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
REAR ABUT. DIA. SEAT	1	x	34.1667		x	1.6667		x			÷	1	=	56.9
FWD. ABUT. DIA. SEAT	1	x	41.5833		x	1.6667		x			÷	1	=	69.3
													TOTAL CARRIED TO GENERAL SUMMARY =	126

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ FT
PIER 1	2	x	35.0833		x	1		x			÷	1	=	70.2
PIER 2	2	x	37.5833		x	1		x			÷	1	=	75.2
		x			x			x			÷	1	=	
													TOTAL CARRIED TO GENERAL SUMMARY =	145

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
REAR ABUT. DIA END	1	x	2.5		x	3.25		x			÷	1	=	8.1
REAR APP. SLAB SIDE	1	x	8.1667		x	1.25		x			÷	1	=	10.2
FWD. ABUT. DIA. END	1	x	2.5		x	3.3333		x			÷	1	=	8.3
FWD. APP.SLAB SIDE	1	x	9.25		x	1.25		x			÷	1	=	11.6
												TOTAL CARRIED TO GENERAL SUMMARY =		38

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL (3'-0" WIDE)

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT.	1	x	34.4167		x			x			÷	1	=	34.4
FWD. ABUT.	1	x	42.8333		x			x			÷	1	=	42.8
												TOTAL CARRIED TO GENERAL SUMMARY =		77

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC: EMSEAL WITH SLEEPER SLABS

DESCRIPTION	#		L			W			T			C.F.		FT
REAR APPROACH SLAB	1	x	32.8333		x			x			÷	1	=	32.8
FWD. APPROACH SLAB	1	x	43.5833		x			x			÷	1	=	43.6
												TOTAL CARRIED TO GENERAL SUMMARY =		76

ITEM 516 - ELSTOMERIC BEARING PAD, MISC,:

DESCRIPTION	#		L			W			T			C.F.		EACH
REAR ABUT. (34'-2" x 8" x 1-1/2")	1	x			x			x			÷	1	=	1.0
FWD. ABUT. (42'-7" x (8" x 1-1/2")	1	x			x			x			÷	1	=	1.0
												TOTAL CARRIED TO GENERAL SUMMARY =		2

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 3	11	x			x			x			÷	1	=	11.0
												TOTAL CARRIED TO GENERAL SUMMARY =		11

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L			W			T			C.F.		CU YD
REAR ABUT.	1	x	32.9167		x	2		x	7.5		÷	27	=	18.3
FWD. ABUT.	1	x	41.3333		x	2		x	7.5		÷	27	=	23.0
												TOTAL CARRIED TO GENERAL SUMMARY =		41

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT.	1	x	34.1667		x			x			÷	1	=	34.2
FWD. ABUT.	1	x	41.5833		x			x			÷	1	=	41.6
												TOTAL CARRIED TO GENERAL SUMMARY =		76

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

DESCRIPTION	#		L			W			T			C.F.		FT
REAR ABUT.	1	x	10		x			x			÷	1	=	10.0
REAR ABUT. (WEEPHOLES)	4	x	3.5833		x			x			÷	1	=	14.3
FWD. ABUT.	1	x	10		x			x			÷	1	=	10.0
FWD. ABUT. (WEEPHOLES)	4	x	3.5833		x			x			÷	1	=	14.3
												TOTAL CARRIED TO GENERAL SUMMARY =		49

ITEM 519 - COMPOSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L			W			T			C.F.		SQ FT.
PIER 1 COLUMNS	3	x	12.5			11		x			÷	1	=	412.5
PIER 2 COLUMNS	3	x	14.5		x	11		x			÷	1	=	478.5
												TOTAL CARRIED TO GENERAL SUMMARY =		891

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR APP. SLAB	1	x	25		x	32.8333	34	x			÷	9	=	92.8
FWD. APP.SLAB	1	x	25		x	41.3333	43.5833	x			÷	9	=	117.9
												TOTAL CARRIED TO GENERAL SUMMARY =		211

ITEM 530 - SPECIAL AESTHETIC TREATMENT

DESCRIPTION	#		L			W			T			C.F.		SQ. FT.
LEFT PARAPET	1	x	114.4167		x	3.5		x			÷	1	=	400.5
SEC. ON APP. SLABS	1	x	11		x	3.5		x			÷	1	=	38.5
TRANSITION SEC. ON APP. SLABS	1	x	14		x	3.5	2.6667	x			÷	1	=	43.2
												TOTAL CARRIED TO GENERAL SUMMARY =		482

ITEM 601 - CONCRETE SLOPE PROTECTION

DESCRIPTION	#		L			W			T			C.F.		SQ YD
REAR ABUT. (2:1 SLOPE)	1.12	x	28.75		x	37.0833	38.625	x			÷	9	=	135.4
REAR ABUT.	1	x	1.0833	2.3333	x	38.625	38.6667	x			÷	9	=	7.3
REAR ABUT.	1	x	6.5417	5.6667	x	38.6667	39	x			÷	9	=	26.3
RER ABUT.	1	x	5.8021	2.4583	x	39	39.25	x			÷	9	=	18.0
FWD. ABUT. (2:1 SLOPE)	1.12	x	31.0833		x	44.3333	41.75	x			÷	9	=	166.5
FWD. ABUT.	1	x	4.2083	4.0833	x	41.75	41.5	x			÷	9	=	19.2
FWD. ABUT.	1	x	4.9635	5	x	41.5	41.104	x			÷	9	=	22.9
												TOTAL CARRIED TO GENERAL SUMMARY =		396

ITEM 304 - AGGREGATE BASE																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	33.8333		x	0.5		÷	27	=	15.7
	STA. 609+99.22 TO 610+24.22	1	x	25		x	33.8333		x	0.5		÷	27	=	15.7
			x			x			x	0.5		÷	27	=	
													TOTAL CARRIED TO GENERAL SUMMARY =		31

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21
PID: 96306
CRS: MUS-70-1199
DESCRIPTION: PAVEMENT QUANTITIES (PHASE 2)

INITIALS: YEL
CHECKED BY:

ITEM 304 - AGGREGATE BASE																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	28.75		x	0.5		÷	27	=	13.3
	STA. 609+99.22 TO 610+24.22	1	x	25		x	28.75		x	0.5		÷	27	=	13.3
			x			x			x	0.5		÷	27	=	
TOTAL CARRIED TO GENERAL SUMMARY =															27

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21
PID: 96306
CRS: MUS-70-1199
DESCRIPTION: PAVEMENT QUANTITIES (PHASE 3)

INITIALS: YEL
CHECKED BY:

ITEM 304 - AGGREGATE BASE																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	32.8333	34	x	0.5		÷	27	=	15.5
	STA. 609+99.22 TO 610+24.22	1	x	25		x	41.3333	43.5833	x	0.5		÷	27	=	19.7
													TOTAL CARRIED TO GENERAL SUMMARY =		35

ITEM 204 - SUBGRADE COMPACTION																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		SQ YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	33.8333		x			÷	9	=	94.0
	STA. 609+99.22 TO 610+24.22	1	x	25		x	33.8333		x			÷	9	=	94.0
			x			x			x			÷	9	=	
													TOTAL CARRIED TO GENERAL SUMMARY =		188

ITEM 204 - SUBGRADE COMPACTION																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		SQ YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	28.75		x			÷	9	=	79.9
	STA. 609+99.22 TO 610+24.22	1	x	25		x	28.75		x			÷	9	=	79.9
			x			x			x			÷	9	=	
														TOTAL CARRIED TO GENERAL SUMMARY =		160

ITEM 204 - SUBGRADE COMPACTION

REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		SQ YD
	STA. 608+60.22 TO STA. 608+85.22	1	x	25		x	32.8333	34	x			÷	9	=	92.8
	STA. 609+99.22 TO 610+24.22	1	x	25		x	41.3333	43.5833	x			÷	9	=	117.9
			x			x			x			÷	9	=	
														TOTAL CARRIED TO GENERAL SUMMARY =	211

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Mar-21
PID: 96306
CRS: MUS-70-1199
DESCRIPTION: Erosion Controls

INITIALS: YEL
CHECKED BY:

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION																
REF #	STATION / DESCRIPTION	#		L			W			T			C.F.		CU YD
	REAR ABUT.	2	x	4		x	4		x	1		÷	27	=	1.2
	FWD. ABUT.	2	x	4		x	4		x	1		÷	27	=	1.2
			x			x			x			÷	27	=	
			x			x			x			÷	27	=	
													TOTAL CARRIED TO GENERAL SUMMARY =		2

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 29-Dec-20
PID: 93006
CRS: MUS-70-1212
DESCRIPTION: BRIDGE QUANTITIES

INITIALS: CPS
CHECKED BY:

ITEM 202E11201 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE																
DESCRIPTION	#		L			W			T			C.F.		CU YD
PHASE 1														
Rear Abutment Footer	1	x	33.8333		x	5.75		x	3		÷	27	=	21.6
Rear Abutment Footer Top	1	x	33.8333		x	1		x	0.25		÷	27	=	0.3
Rear Abutment Breastwall	1	x	33.8333		x	3.75		x	4.0287		÷	27	=	18.9
Rear Abutment Cap/backwall	1	x	33.8333		x	1.75		x	4.0065		÷	27	=	8.8
Rear Abutment App. Slab Seat	-1	x	33.8333		x	0.5		x	1.5833		÷	27	=	-1.0
Pier 1 Cap Center	1	x	33.6667		x	3		x	3.9828		÷	27	=	14.9
Pier 2 Cap Center	1	x	33.6667		x	3		x	4.0024		÷	27	=	15.0
Forward Abutment Footer	1	x	33.8333		x	5.75		x	3		÷	27	=	21.6
Forward Abutment Footer Top	1	x	33.8333		x	1		x	0.25		÷	27	=	0.3
Forward Abutment Breastwall	1	x	33.8333		x	3.75		x	3.989		÷	27	=	18.7
Forward Abutment Cap/backwall	1	x	33.8333		x	1.75		x	4.018		÷	27	=	8.8
Forward Abutment App. Slab Seat	-1	x	33.8333		x	0.5		x	1.5833		÷	27	=	-1.0
												PHASE 1 TOTAL	=	127.0
PHASE 2														
Rear Abutment Footer	1	x	28.6667		x	5.75		x	3		÷	27	=	18.3
Rear Abutment Footer Top	1	x	28.6667		x	1		x	0.25		÷	27	=	0.3
Rear Abutment Footer South WW	1	x	5.25		x	3		x	3		÷	27	=	1.8
Rear Abut. Footer South WW Top	1	x	10		x	0.75		x	0.25		÷	27	=	0.1
Rear Abut. Footer S. WW Chamfer	0.5	x	1		x	1		x	3		÷	27	=	0.1
Rear Abutment Breastwall	1	x	27.9167		x	3.75		x	3.6778		÷	27	=	14.3
Rear Abutment Cap/backwall	1	x	26.4167		x	1.75		x	3.887		÷	27	=	6.7
Rear Abutment App. Slab Seat	1	x	26.4167		x	0.5		x	1.5833		÷	27	=	0.8
Rear Abutment BW Chamfer	0.5	x	2		x	2		x	3.56		÷	27	=	0.3
Rear Abut. South Wing Wall Stem	1	x	14.25		x	1.5	1.6667	x	3.9669		÷	27	=	3.3
Rear Abut. South WW Shaft	1	x	2		x	5.2361		x	1		÷	27	=	0.4
Rear Abut. South WW Curtain Wall	1	x	2		x	2.75		x	0.8333		÷	27	=	0.2
Rear Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
Rear Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
Pier 1 Cap Right	1	x	26.5833		x	3		x	3.6754		÷	27	=	10.9
Pier 2 Cap Right	1	x	26.5833		x	3		x	3.6526		÷	27	=	10.8
Forward Abutment Footer	1	x	28.6667		x	5.75		x	3		÷	27	=	18.3
Forward Abutment Footer Top	1	x	28.6667		x	1		x	0.25		÷	27	=	0.3
FWD. Abutment Footer South WW	1	x	5.25		x	3		x	3		÷	27	=	1.8
FWD. Abut. Footer South WW Top	1	x	10		x	0.75		x	0.25		÷	27	=	0.1
FWD. Abut. Footer S. WW Chamfer	0.5	x	1		x	1		x	3		÷	27	=	0.1
FWD. Abutment Breastwall	1	x	27.9167		x	3.75		x	3.6691		÷	27	=	14.2
FWD. Abutment Cap/backwall	1	x	26.4167		x	1.75		x	3.8755		÷	27	=	6.6
FWD. Abutment App. Slab Seat	1	x	26.4167		x	0.5		x	1.5833		÷	27	=	0.8
FWD. Abutment BW Chamfer	0.5	x	2		x	2		x	3.52		÷	27	=	0.3
FWD. Abut. South Wing Wall Stem	1	x	14.25		x	1.5	1.6667	x	3.9669		÷	27	=	3.3
FWD. Abut. South WW Shaft	1	x	2		x	5.2361		x	1		÷	27	=	0.4
FWD. Abut. South WW Curtain Wall	1	x	2		x	2.75		x	0.8333		÷	27	=	0.2
FWD. Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
FWD. Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
												PHASE 2 TOTAL	=	119.5

PHASE 3														
Rear Abutment Footer	1	x	28.6667		x	5.75		x	3		÷	27	=	18.3
Rear Abutment Footer Top	1	x	28.6667		x	1		x	0.25		÷	27	=	0.3
Rear Abutment Footer South WW	1	x	5.25		x	3		x	3		÷	27	=	1.8
Rear Abut. Footer South WW Top	1	x	10		x	0.75		x	0.25		÷	27	=	0.1
Rear Abut. Footer S. WW Chamfer	0.5	x	1		x	1		x	3		÷	27	=	0.1
Rear Abutment Breastwall	1	x	27.9167		x	3.75		x	3.6919		÷	27	=	14.3
Rear Abutment Cap/backwall	1	x	26.4167		x	1.75		x	3.9039		÷	27	=	6.7
Rear Abutment App. Slab Seat	1	x	26.4167		x	0.5		x	1.5833		÷	27	=	0.8
Rear Abutment BW Chamfer	0.5	x	2		x	2		x	3.56		÷	27	=	0.3
Rear Abut. South Wing Wall Stem	1	x	14.25		x	1.5	1.6667	x	3.9669		÷	27	=	3.3
Rear Abut. South WW Shaft	1	x	2		x	5.2361		x	1		÷	27	=	0.4
Rear Abut. South WW Curtain Wall	1	x	2		x	2.75		x	0.8333		÷	27	=	0.2
Rear Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
Rear Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
Pier 1 Cap Left	1	x	26.5833		x	3		x	3.6605		÷	27	=	10.8
Pier 2 Cap Left	1	x	26.5833		x	3		x	3.6596		÷	27	=	10.8
Forward Abutment Footer	1	x	28.6667		x	5.75		x	3		÷	27	=	18.3
Forward Abutment Footer Top	1	x	28.6667		x	1		x	0.25		÷	27	=	0.3
FWD. Abutment Footer South WW	1	x	5.25		x	3		x	3		÷	27	=	1.8
FWD. Abut. Footer South WW Top	1	x	10		x	0.75		x	0.25		÷	27	=	0.1
FWD. Abut. Footer S. WW Chamfer	0.5	x	1		x	1		x	3		÷	27	=	0.1
FWD. Abutment Breastwall	1	x	27.9167		x	3.75		x	3.6564		÷	27	=	14.2
FWD. Abutment Cap/backwall	1	x	26.4167		x	1.75		x	3.8854		÷	27	=	6.7
FWD. Abutment App. Slab Seat	1	x	26.4167		x	0.5		x	1.5833		÷	27	=	0.8
FWD. Abutment BW Chamfer	0.5	x	2		x	2		x	3.53		÷	27	=	0.3
FWD. Abut. South Wing Wall Stem	1	x	14.25		x	1.5	1.6667	x	3.9669		÷	27	=	3.3
FWD. Abut. South WW Shaft	1	x	2		x	5.2361		x	1		÷	27	=	0.4
FWD. Abut. South WW Curtain Wall	1	x	2		x	2.75		x	0.8333		÷	27	=	0.2
FWD. Abut. South WW Rail/Cap	1	x	16		x	4.3786		x	1		÷	27	=	2.6
FWD. Abut. South WW Rail/Corble	1	x	12		x	1.2083		x	0.1667		÷	27	=	0.1
												PHASE 3 TOTAL	=	119.5
												TOTAL CARRIED TO GENERAL SUMMARY =		366.1

ITEM 202E22901 - APPROACH SLABS REMOVED, AS PER PLAN														
DESCRIPTION	#		L			W			T			S.F.		SQ YD
PHASE 1														
Rear Approach Slab	1	x	25		x	33.8333		x			÷	9	=	94.0
Forward Approach Slab	1	x	25		x	33.8333		x			÷	9	=	94.0
												PHASE 1 TOTAL	=	188.0
PHASE 2														
Rear Approach Slab	1	x	25		x	26.5833		x			÷	9	=	73.8
Forward Approach Slab	1	x	25		x	26.5833		x			÷	9	=	73.8
												PHASE 2 TOTAL	=	147.7
PHASE 3														
Rear Approach Slab	1	x	25		x	26.5833		x			÷	9	=	73.8
Forward Approach Slab	1	x	25		x	26.5833		x			÷	9	=	73.8
												PHASE 3 TOTAL	=	147.7
												TOTAL CARRIED TO GENERAL SUMMARY =		483.3

ITEM 510 - DOWEL HOLES WITH NONSHINK, NONMETALLIC GROUT														
DESCRIPTION	#		L			W			T			C.F.		EACH
PHASE 2														
Median Barrier	12	x	3		x			x			÷	1	=	36.0
												PHASE 2 TOTAL	=	36.0
												TOTAL CARRIED TO GENERAL SUMMARY =		36

ITEM 511E21523 - CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
PHASE 1														
Bridge Deck	1	x	156.25		x	32.8333		x	0.7367		÷	27	=	140.0
Rear Diaphragm	1	x	32.8333		x	3		x	3.7236		÷	27	=	13.6
Rear Diaphragm App. Slab	-1	x	32.8333		x	0.5		x	1.3715		÷	27	=	-0.8
Rear Diaphragm Wedge	1	x	32.8333		x	0.25		x	1		÷	27	=	0.3
Forward Diaphragm	1	x	32.8333		x	3		x	3.728		÷	27	=	13.6
Forward Diaphragm App. Slab	-1	x	32.8333		x	0.5		x	1.3737		÷	27	=	-0.8
Forward Diaphragm Wedge	1	x	32.8333		x	0.25		x	1		÷	27	=	0.3
												PHASE 1 TOTAL	=	166.1
PHASE 2														
Bridge Deck	1	x	156.25		x	29.25		x	0.7529		÷	27	=	127.4
Rear Diaphragm	1	x	29.25		x	3		x	4.0869		÷	27	=	13.3
Rear Diaphragm App. Slab	-1	x	29.25		x	0.5		x	1.3715		÷	27	=	-0.7
Rear Diaphragm Wedge	1	x	29.25		x	0.25		x	1		÷	27	=	0.3
Forward Diaphragm	1	x	29.25		x	3		x	4.0868		÷	27	=	13.3
Forward Diaphragm App. Slab	-1	x	29.25		x	0.5		x	1.3737		÷	27	=	-0.7
Forward Diaphragm Wedge	1	x	29.25		x	0.25		x	1		÷	27	=	0.3
												PHASE 2 TOTAL	=	153.1
PHASE 3														
Bridge Deck	1	x	156.25		x	29.25		x	0.7529		÷	27	=	127.4
Rear Diaphragm	1	x	29.25		x	3		x	4.0869		÷	27	=	13.3
Rear Diaphragm App. Slab	-1	x	29.25		x	0.5		x	1.3715		÷	27	=	-0.7
Rear Diaphragm Wedge	1	x	29.25		x	0.25		x	1		÷	27	=	0.3
Forward Diaphragm	1	x	29.25		x	3		x	4.0812		÷	27	=	13.3
Forward Diaphragm App. Slab	-1	x	29.25		x	0.5		x	1.3737		÷	27	=	-0.7
Forward Diaphragm Wedge	1	x	29.25		x	0.25		x	1		÷	27	=	0.3
												PHASE 3 TOTAL	=	153.0
												TOTAL CARRIED TO GENERAL SUMMARY =		472.2

ITEM 511E34451 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
PHASE 1														
Median Barrier	1	x	213.0833		x	9.0475		x	1		÷	27	=	71.4
												PHASE 1 TOTAL	=	71.4
												TOTAL CARRIED TO GENERAL SUMMARY =		71.4

ITEM 511E34461 - CLASS QC SCC CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

DESCRIPTION	#		L			W			T			C.F.		CU YD
PHASE 2														
Right Parapet	1	x	199.0833		x	4.41		x	1		÷	27	=	32.5
Right Parapet Transition Section	1	x	53.73		x	1		x	1		÷	27	=	2.0
												PHASE 2 TOTAL	=	34.5
PHASE 3														
Left Parapet	1	x	199.0833		x	4.41		x	1		÷	27	=	32.5
Left Parapet Transition Section	1	x	53.73		x	1		x	1		÷	27	=	2.0
												PHASE 3 TOTAL	=	34.5
												TOTAL CARRIED TO GENERAL SUMMARY =		69.0

ITEM 511E41010- CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS

DESCRIPTION	#		L			W			T			C.F.		CU YD
PHASE 1														
Pier 1 Cap (Center) Phase 1	1	x	32.8333		x	3		x	4.6954		÷	27	=	17.1
Pier 2 Cap (Center) Phase 1	1	x	32.8333		x	3		x	4.7755		÷	27	=	17.4
												PHASE 1 TOTAL	=	34.6
PHASE 2														
Pier 1 Cap (Right) Phase 2	1	x	27.3333		x	3		x	4.3054		÷	27	=	13.1
Pier 2 Cap (Right) Phase 2	1	x	27.3333		x	3		x	4.3802		÷	27	=	13.3
												PHASE 2 TOTAL	=	26.4
PHASE 3														
Pier 1 Cap (Left) Phase 3	1	x	27.3333		x	3		x	4.3054		÷	27	=	13.1
Pier 2 Cap (Left) Phase 3	1	x	27.3333		x	3		x	4.3802		÷	27	=	13.3
												PHASE 3 TOTAL	=	26.4
												TOTAL CARRIED TO GENERAL SUMMARY =		87.3

ITEM 511E43512 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING, AS PER PLAN																
DESCRIPTION	#		L			W			T			C.F.			CU YD	
PHASE 1																
Rear Abutment Footer	1	x	32.8333		x	6		x	3		÷	27	=		21.9	
Rear Abutment Breastwall	1	x	32.8333		x	3		x	4.0451		÷	27	=		14.8	
Forward Abutment Footer	1	x	32.8333		x	6		x	3		÷	27	=		21.9	
Forward Abutment Breastwall	1	x	32.8333		x	3		x	4.1216		÷	27	=		15.0	
PHASE 1 TOTAL													=		73.6	
PHASE 2																
Rear Abutment Footer	1	x	31.4167		x	6		x	3		÷	27	=		20.9	
Rear Abutment Footer South TB	1	x	5.625		x	6		x	3		÷	27	=		3.8	
Rear Abut. Footer South TB Corner	0.5	x	1		x	1		x	3		÷	27	=		0.1	
Rear Abutment Breastwall	1	x	30.9167		x	3		x	3.6726		÷	27	=		12.6	
Rear Abutment BW Corners	0.5	x	2		x	2		x	3.5		÷	27	=		0.3	
Rear Abut. South Wing Wall Stem	1	x	6.125		x	1.5		x	3.5		÷	27	=		1.2	
Rear Abut. South Wing Wall Cap	1	x	14.625		x	1.5		x	3.9573		÷	27	=		3.2	
Forward Abutment Footer	1	x	31.4167		x	6		x	3		÷	27	=		20.9	
Fwd. Abutment Footer South TB	1	x	5.625		x	6		x	3		÷	27	=		3.8	
Fwd. Abut. Footer South TB Corner	0.5	x	1		x	1		x	3		÷	27	=		0.1	
Forward Abutment Breastwall	1	x	30.9167		x	3		x	3.7522		÷	27	=		12.9	
Forward Abutment BW Corner	0.5	x	2		x	2		x	3.58		÷	27	=		0.3	
Fwd. Abut. South Wing Wall Stem	1	x	6.125		x	1.5		x	3.58		÷	27	=		1.2	
Fwd. Abut. South Wing Wall Cap	1	x	14.625		x	1.5		x	4.2523		÷	27	=		3.5	
PHASE 2 TOTAL													=		84.6	
PHASE 3																
Rear Abutment Footer	1	x	31.4167		x	6		x	3		÷	27	=		20.9	
Rear Abutment Footer North TB	1	x	5.625		x	6		x	3		÷	27	=		3.8	
Rear Abut. Footer North TB Corner	0.5	x	1		x	1		x	3		÷	27	=		0.1	
Rear Abutment Breastwall	1	x	30.9167		x	3		x	3.6726		÷	27	=		12.6	
Rear Abutment BW Corner	0.5	x	2		x	2		x	3.5		÷	27	=		0.3	
Rear Abut. North Wing Wall Stem	1	x	6.125		x	1.5		x	3.5		÷	27	=		1.2	
Rear Abutment North WW Cap	1	x	14.625		x	1.5		x	3.9547		÷	27	=		3.2	
Forward Abutment Footer	1	x	31.4167		x	6		x	3		÷	27	=		20.9	
Fwd. Abutment Footer North TB	1	x	5.625		x	6		x	3		÷	27	=		3.8	
Fwd. Abut. Footer North TB Corner	0.5	x	1		x	1		x	3		÷	27	=		0.1	
Forward Abutment Breastwall	1	x	30.9167		x	3		x	3.7522		÷	27	=		12.9	
Forward Abutment BW Corner	0.5	x	2		x	2		x	3.58		÷	27	=		0.3	
Fwd. Abut. North Wing Wall Stem	1	x	6.125		x	1.5		x	3.58		÷	27	=		1.2	
Fwd. Abut. North Wing Wall Cap	1	x	14.625		x	1.5		x	4.2523		÷	27	=		3.5	
PHASE 3 TOTAL													=		84.6	
TOTAL CARRIED TO GENERAL SUMMARY =															242.8	

ITEM 512 - SEALING OF CONCRETE SURFACES, (NON-EPOXY)																
DESCRIPTION	#		L			W			T			C.F.			SQ YD	
PHASE 1																
Rear Abutment Face	1	x	32.8333		x	2.4005		x			÷	9	=		8.8	
Rear Abutment Diaphragm Face	1	x	32.8333		x	2.988		x			÷	9	=		10.9	
Rear Abutment Diaphragm Wedge	1	x	32.8333		x	0.7		x			÷	9	=		2.6	
Pier 1 Face	2	x	32.8333		x	4.69		x			÷	9	=		34.2	
Pier 1 Bottom/End	1	x	42.0334		x	3		x			÷	9	=		14.0	
Columns	-2	x	7.0686		x	1		x			÷	9	=		-1.6	
Pier 2 Face	2	x	32.8333		x	4.78		x			÷	9	=		34.9	
Pier 2 Bottom/End	1	x	42.1734		x	3		x			÷	9	=		14.1	
Columns	-2	x	7.0686		x	1		x			÷	9	=		-1.6	
Forward Abutment Face	1	x	32.8333		x	2.3061		x			÷	9	=		8.4	
FWD. Abutment Diaphragm Face	1	x	32.8333		x	2.9903		x			÷	9	=		10.9	
FWD. Abut. Diaphragm Wedge	1	x	32.8333		x	0.7		x			÷	9	=		2.6	
Median Barrier	1	x	213.0833		x	10.5948		x			÷	9	=		250.8	
PHASE 1 TOTAL													=		389.0	

PHASE 2														
Rear Abutment Face	1	x	30.9167		x	1.8866		x			÷	9	=	6.5
Rear Abutment Diaphragm Face	1	x	29.25		x	3.338		x			÷	9	=	10.8
Rear Abutment Diaphragm Wedge	1	x	29.25		x	0.7		x			÷	9	=	2.3
Rear Abut. South WW Face	1	x	14.625		x	2.9965		x			÷	9	=	4.9
Rear Abut. South WW Top	1	x	14.625		x	1.5		x			÷	9	=	2.4
Pier 1 Face	2	x	27.3333		x	4.31		x			÷	9	=	26.2
Pier 1 Bottom/End	1	x	30.7194		x	3		x			÷	9	=	10.2
Columns	-2	x	7.0686		x	1		x			÷	9	=	-1.6
Pier 2 Face	2	x	27.3333		x	4.38		x			÷	9	=	26.6
Pier 2 Bottom/End	1	x	30.7994		x	3		x			÷	9	=	10.3
Columns	-2	x	7.0686		x	1		x			÷	9	=	-1.6
FWD. Abutment Face	1	x	30.9167		x	1.8		x			÷	9	=	6.2
FWD. Abutment Diaphragm Face	1	x	29.25		x	3.16		x			÷	9	=	10.3
FWD. Abutment Diaphragm Wedge	1	x	29.25		x	0.7		x			÷	9	=	2.3
FWD. Abut. South WW Face	1	x	14.625		x	2.59		x			÷	9	=	4.2
FWD. Abut. South WW Top	1	x	14.625		x	1.5		x			÷	9	=	2.4
Right Parapet	1	x	156.25		x	9.4814		x			÷	9	=	164.6
Parapet on Diaphragm/App. Slab	1	x	42.8333		x	8.0102		x			÷	9	=	38.1
Parapet Transitions 10'	1	x	10		x	7.3716		x			÷	9	=	8.2
Parapet Transitions 2.5'	1	x	2.5		x	6.7329		x			÷	9	=	1.9
Parapet Transitions 1.5'	1	x	1.5		x	6.7701		x			÷	9	=	1.1
Parapet Transitions End	1	x	1.0763		x	2.6667		x			÷	9	=	0.3
										PHASE 2 TOTAL			=	336.7
PHASE 3														
Rear Abutment Face	1	x	30.9167		x	1.8866		x			÷	9	=	6.5
Rear Abutment Diaphragm Face	1	x	29.25		x	3.338		x			÷	9	=	10.8
Rear Abutment Diaphragm Wedge	1	x	29.25		x	0.7		x			÷	9	=	2.3
Rear Abut. North WW Face	1	x	14.625		x	2.9664		x			÷	9	=	4.8
Rear Abut. North WW Top	1	x	14.625		x	1.5		x			÷	9	=	2.4
Pier 1 Face	2	x	27.3333		x	4.31		x			÷	9	=	26.2
Pier 1 Bottom/End	1	x	30.7194		x	3		x			÷	9	=	10.2
Columns	-2	x	7.0686		x	1		x			÷	9	=	-1.6
Pier 2 Face	2	x	27.3333		x	4.38		x			÷	9	=	26.6
Pier 2 Bottom/End	1	x	30.7994		x	3		x			÷	9	=	10.3
Columns	-2	x	7.0686		x	1		x			÷	9	=	-1.6
FWD. Abutment Face	1	x	30.9167		x	1.8		x			÷	9	=	6.2
FWD. Abutment Diaphragm Face	1	x	29.25		x	3.34		x			÷	9	=	10.9
FWD. Abutment Diaphragm Wedge	1	x	29.25		x	0.7		x			÷	9	=	2.3
FWD. Abut. North WW Face	1	x	14.625		x	2.61		x			÷	9	=	4.2
FWD. Abut. North WW Top	1	x	14.625		x	1.5		x			÷	9	=	2.4
Left Parapet	1	x	156.25		x	9.4814		x			÷	9	=	164.6
Parapet on Diaphragm/App. Slab	1	x	42.8333		x	8.0102		x			÷	9	=	38.1
Parapet Transitions 10'	1	x	10		x	7.3716		x			÷	9	=	8.2
Parapet Transitions 2.5'	1	x	2.5		x	6.7329		x			÷	9	=	1.9
Parapet Transitions 1.5'	1	x	1.5		x	6.7701		x			÷	9	=	1.1
Parapet Transitions End	1	x	1.0763		x	2.6667		x			÷	9	=	0.3
										PHASE 3 TOTAL			=	337.2
										GRAND TOTAL =				1063

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

DESCRIPTION	#		L		W		T		S.F.		SQ YD
PHASE 1											
Pier 1 Cap (Columns) Phase 1	2	x	12.68	x	9.4278	x		÷	9	=	26.6
Pier 2 Cap (Columns) Phase 1	2	x	14.28	x	9.4278	x		÷	9	=	29.9
							PHASE 1 TOTAL			=	56.5
PHASE 2											
Pier 1 Cap (Columns) Phase 2	2	x	12.68	x	9.4278	x		÷	9	=	26.6
Pier 2 Cap (Columns) Phase 2	2	x	14.28	x	9.4278	x		÷	9	=	29.9
							PHASE 2 TOTAL			=	56.5
PHASE 3											
Pier 1 Cap (Columns) Phase 3	2	x	12.68	x	9.4278	x		÷	9	=	26.6
Pier 2 Cap Columns) Phase 3	2	x	14.28	x	9.4278	x		÷	9	=	29.9
							PHASE 3 TOTAL			=	56.5
							TOTAL CARRIED TO GENERAL SUMMARY =				169.4

ITEM 512 - TYPE 2 WATERPROOFING

DESCRIPTION	#		L		W		T		C.F.		SQ YD
PHASE 1											
Rear Abutment	1	x	32.8333	x	6	x		÷	9	=	21.9
Forward Abutment	1	x	32.8333	x	6	x		÷	9	=	21.9
							PHASE 1 TOTAL			=	43.8
PHASE 2											
Rear Abutment	1	x	30.9167	x	6	x		÷	9	=	20.6
Forward Abutment	1	x	30.9167	x	6	x		÷	9	=	20.6
							PHASE 2 TOTAL			=	41.2
PHASE 3											
Rear Abutment	1	x	30.9167	x	6	x		÷	9	=	20.6
Forward Abutment	1	x	30.9167	x	6	x		÷	9	=	20.6
							PHASE 3 TOTAL			=	41.2
									TOTAL CARRIED TO GENERAL SUMMARY =		126

ITEM 513 - WELDED STUD SHEAR CONNECTORS

DESCRIPTION	#		L		W		T		C.F.		EACH
PHASE 1											
Beam Line	5	x	202	x	3	x		÷	1	=	3030.0
							PHASE 1 TOTAL			=	3030.0
PHASE 2											
Beam Line	4	x	202	x	3	x		÷	1	=	2424.0
							PHASE 2 TOTAL			=	2424.0
PHASE 3											
Beam Line	4	x	202	x	3	x		÷	1	=	2424.0
							PHASE 3 TOTAL			=	2424.0
									TOTAL CARRIED TO GENERAL SUMMARY =		7878

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ.FT.
PHASE 1											
Median Barrier at A.S./Deck Joint	2	x	4.75	x	1.9047	x		÷	1	=	18.1
							PHASE 1 TOTAL			=	18.1
PHASE 2											
Parapet at A.S./Deck Joint	2	x	3.5	x	1.2594	x		÷	1	=	8.8
							PHASE 2 TOTAL			=	8.8
PHASE 3											
Parapet at A.S./Deck Joint	2	x	3.5	x	1.2594	x		÷	1	=	8.8
							PHASE 3 TOTAL			=	8.8
									TOTAL CARRIED TO GENERAL SUMMARY =		36

ITEM 516 - 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		SQ.FT.
PHASE 2											
Rear Abutment South Wing Wall	1	x	3	x	4.41	x		÷	1	=	13.2
Forward Abutment South Wing Wall	1	x	3	x	4.41	x		÷	1	=	13.2
							PHASE 2 TOTAL			=	26.4
PHASE 3											
Rear Abutment NorthWing Wall	1	x	3	x	4.41	x		÷	1	=	13.2
Forward Abutment North Wing Wall	1	x	3	x	4.41	x		÷	1	=	13.2
							PHASE 3 TOTAL			=	26.4
									TOTAL CARRIED TO GENERAL SUMMARY =		52.80

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

DESCRIPTION	#		L		W		T		C.F.		FT
PHASE 1											
Rear Approach Slab	1	x	32.83	x		x		÷	1	=	32.8
Forward Approach Slab	1	x	32.83	x		x		÷	1	=	32.8
							PHASE 1 TOTAL			=	65.60
PHASE 2											
Rear Approach Slab	1	x	29.25	x		x		÷	1	=	29.3
Forward Approach Slab	1	x	29.25	x		x		÷	1	=	29.3
							PHASE 2 TOTAL			=	58.60
PHASE 3											
Rear Approach Slab	1	x	29.25	x		x		÷	1	=	29.3
Forward Approach Slab	1	x	29.25	x		x		÷	1	=	29.3
							PHASE 3 TOTAL			=	58.60
									TOTAL CARRIED TO GENERAL SUMMARY =		183

ITEM 516 - SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

DESCRIPTION	#		L		W		T			C.F.		FT
PHASE 1												
Rear Abutment	1	x	32.8333	x				÷	1	=		32.8
Forward Abutment	1	x	32.8333	x				÷	1	=		32.8
							PHASE 1 TOTAL			=		65.60
PHASE 2												
Rear Abutment	1	x	29.4167	x				÷	1	=		29.4
Rear Abutment South Wing Wall	1	x	3.01	x				÷	1	=		3.0
Forward Abutment	1	x	29.4167	x				÷	1	=		29.4
FWD. Abutment South Wing Wall	1	x	3.01	x				÷	1	=		3.0
							PHASE 2 TOTAL			=		64.80
PHASE 3												
Rear Abutment	1	x	29.4167	x				÷	1	=		29.4
Rear Abutment North Wing Wall	1	x	3.01	x				÷	1	=		3.0
Forward Abutment	1	x	29.4167	x				÷	1	=		29.4
Forward Abutment North Wing Wall	1	x	3.01	x				÷	1	=		3.0
							PHASE 3 TOTAL			=		64.80
							TOTAL CARRIED TO GENERAL SUMMARY =					195

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB

DESCRIPTION	#		L		W		T			FT.		FT
PHASE 1												
Rear Approach Slab	1	x	32.8333	x				÷	1	=		32.8
Forward Approach Slab	1	x	32.8333	x				÷	1	=		32.8
							PHASE 1 TOTAL			=		65.60
PHASE 2												
Rear Approach Slab	1	x	29.25	x				÷	1	=		29.3
Forward Approach Slab	1	x	29.25	x				÷	1	=		29.3
							PHASE 2 TOTAL			=		58.60
PHASE 3												
Rear Approach Slab	1	x	29.25	x				÷	1	=		29.3
Forward Approach Slab	1	x	29.25	x				÷	1	=		29.3
							PHASE 3 TOTAL			=		58.60
							TOTAL CARRIED TO GENERAL SUMMARY =					182.80

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1'-3" x 1"-1" x 4.1479")

DESCRIPTION	#		L		W		T			EACH		EACH
PHASE 1												
Rear Abutment	5	x		x				÷	1	=		5.0
Forward Abutment	5	x		x				÷	1	=		5.0
							PHASE 1 TOTAL			=		10
PHASE 2												
Rear Abutment	4	x		x				÷	1	=		4.0
Forward Abutment	4	x		x				÷	1	=		4.0
							PHASE 2 TOTAL			=		8
PHASE 3												
Rear Abutment	4	x		x				÷	1	=		4.0
Forward Abutment	4	x		x				÷	1	=		4.0
							PHASE 3 TOTAL			=		8
							TOTAL CARRIED TO GENERAL SUMMARY =					26

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1'-6" x 1"-2" x 4.1479")

DESCRIPTION	#		L		W		T			EACH		EACH
PHASE 1												
Pier 1	5	x		x				÷	1	=		5.0
Pier 2	5	x		x				÷	1	=		5.0
							PHASE 1 TOTAL			=		10
PHASE 2												
Pier 1	4	x		x				÷	1	=		4.0
Pier 2	4	x		x				÷	1	=		4.0
							PHASE 2 TOTAL			=		8
PHASE 3												
Pier 1	4	x		x				÷	1	=		4.0
Pier 2	4	x		x				÷	1	=		4.0
							PHASE 3 TOTAL			=		8
							TOTAL CARRIED TO GENERAL SUMMARY =					26

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC

DESCRIPTION	#		L		W		T		C.F.		CU YD
PHASE 1											
Rear Abutment	1	x	32.8333	x	2	x	7.1	÷	27	=	17.3
Forward Abutment	1	x	32.8333	x	2	x	7.18	÷	27	=	17.5
									PHASE 1 TOTAL	=	34.73
PHASE 2											
Rear Abutment	1	x	28.4167	x	2	x	6.75	÷	27	=	14.2
Rear Abutment South Wing Wall	1	x	6.125	x	2	x	6.1	÷	27	=	2.8
Forward Abutment	1	x	28.4167	x	2	x	6.83	÷	27	=	14.4
FWD. Abutment South Wing Wall	1	x	6.125	x	2	x	6.38	÷	27	=	2.9
									PHASE 2 TOTAL	=	34.25
PHASE 3											
Rear Abutment	1	x	28.4167	x	2	x	6.75	÷	27	=	14.2
Rear Abutment North Wing Wall	1	x	6.125	x	2	x	6.02	÷	27	=	2.7
Forward Abutment	1	x	28.4167	x	2	x	6.83	÷	27	=	14.4
FWD. Abutment North Wing Wall	1	x	6.125	x	2	x	6.35	÷	27	=	2.9
									PHASE 3 TOTAL	=	34.20
									TOTAL CARRIED TO GENERAL SUMMARY =		103.18

ITEM 518 - PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L		W		T		FT.		FT
PHASE 1											
Rear Abutment	1	x	32.8333	x			x	÷	1	=	32.8
Forward Abutment	1	x	32.8333	x			x	÷	1	=	32.8
									PHASE 1 TOTAL	=	65.60
PHASE 2											
Rear Abutment	1	x	34	x			x	÷	1	=	34.0
Forward Abutment	1	x	34	x			x	÷	1	=	34.0
									PHASE 2 TOTAL	=	68.00
PHASE 3											
Rear Abutment	1	x	34	x			x	÷	1	=	34.0
Forward Abutment	1	x	34	x			x	÷	1	=	34.0
									PHASE 3 TOTAL	=	68.00
									TOTAL CARRIED TO GENERAL SUMMARY =		201.60

ITEM 518 - NON-PERFORATED CORRUGATED PLASTIC PIPE

DESCRIPTION	#		L		W		T		FT.		FEET
PHASE 2											
Rear Abutment	1	x	12	x			x	÷	1	=	12.0
Forward Abutment	1	x	12	x			x	÷	1	=	12.0
									PHASE 2 TOTAL	=	24
PHASE 3											
Rear Abutment	1	x	16	x			x	÷	1	=	16.0
Forward Abutment	1	x	12	x			x	÷	1	=	12.0
									PHASE 3 TOTAL	=	28
									TOTAL CARRIED TO GENERAL SUMMARY =		52.00

ITEM 519 - SPECIAL - COMPSITE FIBER WRAP SYSTEM

DESCRIPTION	#		L		W		T		S.F.		SQ FT
PHASE 1											
Pier 1	5	x	12.6823	x	9.4278	x		÷	1	=	597.8
Pier 2	5	x	14.2812	x	9.4278	x		÷	1	=	673.2
									PHASE 1 TOTAL	=	1271
PHASE 2											
Pier 1	4	x	12.6823	x	9.4278	x		÷	1	=	478.3
Pier 2	4	x	14.2812	x	9.4278	x		÷	1	=	538.6
									PHASE 2 TOTAL	=	1017
PHASE 3											
Pier 1	4	x	12.6823	x	9.4278	x		÷	1	=	478.3
Pier 2	4	x	14.2812	x	9.4278	x		÷	1	=	538.6
									PHASE 3 TOTAL	=	1017
									TOTAL CARRIED TO GENERAL SUMMARY =		3305

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN																
DESCRIPTION	#		L			W			T			S.F.		SQ YD
PHASE 1																
Rear Approach Slab	1	x	25		x	32.8333		x			÷	9	=	91.2
Forward Approach Slab	1	x	25		x	32.8333		x			÷	9	=	91.2
										PHASE 1 TOTAL			=	182.41
PHASE 2																
Rear Approach Slab	1	x	25		x	29.25		x			÷	9	=	81.3
Forward Approach Slab	1	x	25		x	29.25		x			÷	9	=	81.3
										PHASE 2 TOTAL			=	162.50
PHASE 3																
Rear Approach Slab	1	x	25		x	29.25		x			÷	9	=	81.3
Forward Approach Slab	1	x	25		x	29.25		x			÷	9	=	81.3
										PHASE 3 TOTAL			=	162.50
													TOTAL CARRIED TO GENERAL SUMMARY =			507.41

ITEM 530 - SPECIAL - Structures (Aesthetic Treatment Concrete Formliner/Stain)																
DESCRIPTION	#		L			W			T			S.F.		SQ FT
PHASE 1																
	0	x			x			x			÷	1	=	
	0	x			x			x			÷	1	=	
										PHASE 1 TOTAL			=	0
PHASE 2																
Parapet Transition	1	x	10		x	2.1667	3	x			÷	1	=	25.8
Parapet	1	x	193.0833		x	3		x			÷	1	=	579.2
										PHASE 2 TOTAL			=	605
PHASE 3																
Pier 1	1	x	10		x	2.1667	3	x			÷	1	=	25.8
Pier 2	1	x	193.0833		x	3		x			÷	1	=	579.2
										PHASE 3 TOTAL			=	605
													TOTAL CARRIED TO GENERAL SUMMARY =			1210

OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 5 BRIDGE

CALCULATION SHEET

DATE: 5-Jan-21

PID: 93006

CRS: SFN 6003001 (HAMLINE AVE)

DESCRIPTION: FINAL BRIDGE QUANTITIES

INITIALS: JKS

CHECKED BY:

ITEM 512 - SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN														
DESCRIPTION	#		L			W			T			C.F.		SQ YD
BRIDGE DECK TOE/TOE	1	x	281.5		x	28		x			÷	9	=	875.8
APPROACH SLAB	2	x	25		x	28		x			÷	9	=	156.0
												TOTAL CARRIED TO GENERAL SUMMARY =		1032

ITEM 512 - TREATING OF CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN														
DESCRIPTION	#		L			W			T			C.F.		SQ YD
SIDEWALK LT./RT.	2	x	281.5		x	5.6667		x			÷	9	=	354.5
APPROACH SLAB	4	x	31		x	5.6667		x			÷	9	=	78.0
												TOTAL CARRIED TO GENERAL SUMMARY =		433

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5 BRIDGE
CALCULATION SHEET

DATE: 5-Jan-21
PID: 93006
CRS: RETAINING WALLS
DESCRIPTION: FINAL BRIDGE QUANTITIES

INITIALS: JKS
CHECKED BY:

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

DESCRIPTION	#		L			W			T			C.F.		SQ YD
RETAINING WALL 1	1	x	481		x	2.5	12.5	x			÷	9	=	400.8
RETAINING WALL 2	1	x	257		x	2.5	16	x			÷	9	=	264.1
RETAINING WALL 3	1	x	567		x	2.5	15.5	x			÷	9	=	567.0
RETAINING WALL 4	1	x	580		x	2.5	14.5	x			÷	9	=	547.8
RETAINING WALL 5	1	x	574		x	3.5	21.5	x			÷	9	=	797.2
													TOTAL CARRIED TO GENERAL SUMMARY =	2577

ITEM 519 PATCHING CONCRETE STRUCTURES

DESCRIPTION	#		L			W			T			C.F.		SQ YD
RETAINING WALL 1	25	x	2		x	2		x			÷	0.87	=	115.0
RETAINING WALL 2	14	x	2		x	2		x			÷	0.87	=	64.4
RETAINING WALL 3	50	x	2		x	2		x			÷	0.87	=	230.0
RETAINING WALL 4	22	x	2		x	2		x			÷	0.87	=	101.2
RETAINING WALL 5	41	x	2		x	2		x			÷	0.87	=	188.6
													TOTAL CARRIED TO GENERAL SUMMARY =	699

FINAL BRIDGE QUANTITIES

BRIDGE NO. MUS-70-1066L (Phase 1)

INPUTS

General:

$CLtoCLBrg := 328.89\,ft$

$Skew_{Rear} := DMS(49,51,00) = 49.8500\cdot deg$

$Skew_{Fwd} := DMS(49,51,00) = 49.8500\cdot deg$

$Bridge_{Length} := 335.28\,ft$

$Roadway_{Width} := 15.50\,ft$ (Phase 1)

$ApprSlab_{Thick} := 17.00\,in$

$ApprSlab_{Length} := 30.00\,ft$

$RearApprSlab_{Width} := 17.167\,ft$ (Phase 1)

$FwdApprSlab_{Width} := 17.167\,ft$ (Phase 1)

Superstructure Data:

$Deck_{Width} := 17.167\,ft$ (Phase 1)

$Deck_{Thickness} := 8.50\,in$

$Parapet_{Area} := 4.0833\,SF$ *SBR-1-13*

$Beam_{No} := 3$ (Phase 1)

$TopFlange_{Width} := 12.000\,in$

$TopFlange_{Depth} := 1.100\,in$

$DeckOverhang_{Left} := 0\,ft$ (Phase 1)

$DeckOverhang_{Right} := 4.000\,ft$

$SteelDiaphragm_{WtperFt} := 42.70\,\frac{lbf}{ft}$ *MC 18x42.7*

$Beam_{Length} := CLtoCLBrg + 2\cdot(10\,in) = 330.56\,ft$

$Web_{Height} := 36.200\,in$

$HaunchThickness_{Avg} := 5.70\,in$

$Beam17_{Wt.perFt} := \frac{71200\,lbf}{Beam_{Length}} = 215.39\cdot\frac{lbf}{ft}$

$Beam234_{Wt.perFt} := \frac{57000\,lbf}{Beam_{Length}} = 172.44\cdot\frac{lbf}{ft}$

(Phase 1 Beam 7 Only)

$Beam56_{Wt.perFt} := \frac{50100\,lbf}{Beam_{Length}} = 151.56\cdot\frac{lbf}{ft}$

(Phase 1 Beams 5,6 Only)

Total beam weights from BrR self-weight reactions

$Beam_{Spacing} := \frac{\left(Deck_{Width} - DeckOverhang_{Left} - DeckOverhang_{Right}\right)}{\left(Beam_{No} - 1\right)} = 6.58\,ft$

$SteelDiaphragm_{No} := 23 + 6 + 32 + 6 + 33 + 6 + 25 = 131\cdot Each$

$Deck_{Overhang.Thickness.Left} := \left[\begin{array}{l} Deck_{Thickness} + HaunchThickness_{Avg} \ldots \\ + TopFlange_{Depth} - .04\cdot\left(DeckOverhang_{Left} - 1.6667\,ft\right) \end{array}\right]\cdot 0 = 0.00\cdot in$

(Phase 1)

$Deck_{Overhang.Thickness.Right} := Deck_{Thickness} + HaunchThickness_{Avg} \ldots + TopFlange_{Depth} - .024\cdot\left(DeckOverhang_{Right} - 1.6667\,ft\right) = 14.63\cdot in$

$Stud_{rows} := 337$

$Stud_{per.row} := 3\cdot Each$

$Stud_{per.row.EXT} := 3\cdot Each$

$PaintPerim_{36x150} := 8.73\,ft$

$PaintPerim_{36x170} := 8.79\,ft$

$PaintPerim_{36x194} := 8.85\,ft$

$PaintPerim_{36x262} := 9.88\,ft$

$PaintPerim_{36x282} := 9.91\,ft$

$PaintPerim_{Diaph} := 4.13\,ft$

General Abutment Data:

$AbutStem_{Width} := 4.00\,ft$ $AbutFtg_{Width} := 6.00\,ft$ $Wingwall_{Width} := 2.50\,ft$

Rear Abutment Data:

$AbutFtgHeight_{Rear} := 3.00\,ft$

$AbutFtgWidening_{Rear} := (21.48\,ft)\cdot 0 + 24.20\,ft = 24.200\,ft$ (Phase 1)

$ExAbutStemLength_{Rear} := 12.87\,ft$ (Phase 1)

$ExAbutFootingLength_{Rear} := 12.87\,ft$ (Phase 1)

$DiaphragmLength_{Rear} := 25.96\cdot ft$ (Phase 1)

$RearLeftWingwall_{Length} := 14.73\,ft\cdot 0 = 0.00\cdot ft$ (Phase 1)

$RearRightWingwall_{Length} := 14.07\,ft$

$WWElev_{TopRearLeft} := 735.04$

$WWElev_{TopRearRight} := 734.90$

$WWElev_{BotRearLeft} := 731.00$

$WWElev_{BotRearRight} := 731.00$

$TopSlopeElev_{RearAbut} := 729.00$

$ExTopSlope_{RearAbut} := 729.00$

$BotFtgElev_{RearAbut} := 721.75$

$$TopFtgElev_{RearAbut} := BotFtgElev_{RearAbut} + \frac{AbutFtgHeight_{Rear}}{ft} = 724.75$$

$PropBeamSeat_{Rear} := 729.97$

$CutlineElev_{RearAbut} := 723.75$

$ApprSlabElev_{Avg.Rear} := 735.09$

Forward Abutment Data:

$AbutFtgHeight_{Fwd} := 3.00\,ft$

$AbutFtgWidening_{Fwd} := (25.05\,ft)\cdot 0 + 22.07\,ft = 22.070\,ft$ (P1)

$ExAbutStemLength_{Fwd} := 22.96\,ft$ (Phase 1)

$ExAbutFootingLength_{Fwd} := 22.96\,ft$ (Phase 1)

$DiaphragmLength_{Fwd} := 27.96\cdot ft$ (Phase 1)

$FwdLeftWingwall_{Length} := (14.86)\cdot 0 = 0.00\cdot ft$ (Phase 1)

$FwdRightWingwall_{Length} := 13.63\,ft$

$WWElev_{TopFwdLeft} := 736.59$

$WWElev_{TopFwdRight} := 736.18$

$WWElev_{BotFwdLeft} := 732.95$

$WWElev_{BotFwdRight} := 732.95$

$TopSlopeElev_{FwdAbut} := 730.30$

$ExTopSlope_{FwdAbut} := 730.30$

$BotFtgElev_{FwdAbut} := 722.45$

$$TopFtgElev_{FwdAbut} := BotFtgElev_{FwdAbut} + \frac{AbutFtgHeight_{Fwd}}{ft} = 725.45$$

$PropBeamSeat_{Fwd} := 731.25$

$CutlineElev_{FwdAbut} := 724.45$

$ApprSlabElev_{Avg.Fwd} := 736.59$

$$TopDiaphElev_{Rear} := ApprSlabElev_{Avg.Rear} - \frac{ApprSlab_{Thick}}{12in} = 733.67$$

$$TopDiaphElev_{Fwd} := ApprSlabElev_{Avg.Fwd} - \frac{ApprSlab_{Thick}}{12in} = 735.17$$

$$WWSlopeLength_{LeftRear} := \left[\sqrt{(12.229ft)^2 + \left(WWElev_{TopRearLeft}\cdot ft - WWElev_{BotRearLeft}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Phase 1)

$$WWSlopeLength_{RightRear} := \sqrt{(10.385ft)^2 + \left(WWElev_{TopRearRight}\cdot ft - WWElev_{BotRearRight}\cdot ft\right)^2} = 11.09\ ft$$

$$WWSlopeLength_{LeftFwd} := \left[\sqrt{(10.760ft)^2 + \left(WWElev_{TopFwdLeft}\cdot ft - WWElev_{BotFwdLeft}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Ph 1)

$$WWSlopeLength_{RightFwd} := \sqrt{(10.911ft)^2 + \left(WWElev_{TopFwdRight}\cdot ft - WWElev_{BotFwdRight}\cdot ft\right)^2} = 11.38\ ft$$

$RearAbutPiles_{Number} := (6)\cdot 0 + 8 = 8$ (Phase 1)

$RearAbutPiles_{Length} := 50ft$

$FwdAbutPiles_{Number} := (8)\cdot 0 + 6 = 6$ (Phase 1)

$FwdAbutPiles_{Length} := 25ft$

QUANTITIES (Phase 1)

202E11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

*Deck & Parapet = [(335.28ft*44.00ft)]*$25/sf = $369,000*

Lump Sum

Total = $501,900

*Rear Abut = [104 CY] *$225/CY = $23,400*

*Fwd. Abut = [117 CY] *$225/CY = $26,300*

*Structural Steel = 605,000 lbs * $275/ton = $83,200*

202E22900 APPROACH SLAB REMOVED:

$ApprSlab_{Removed} := 2 \cdot 14ft \cdot 25ft = 700\ ft^2$ (Phase 1)

$ApprSlab_{Removed} = 77.8 \cdot SY$

503E11101 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

Lump Sum

503E21100 UNCLASSIFIED EXCAVATION:

$$UncExc_{R.Abut} := ExAbutFootingLength_{Rear} \cdot (729 - CutlineElev_{RearAbut}) \cdot ft \cdot 2ft \ ... + (729 - BotFtgElev_{RearAbut}) ft \cdot (AbutFtg_{Width} + 2ft) \cdot AbutFtgWidening_{Rear} = 1538.7\ ft^3$$

$$UncExc_{F.Abut} := ExAbutFootingLength_{Fwd} \cdot (730.30 - CutlineElev_{FwdAbut}) \cdot ft \cdot 2ft \ ... + (730.30 - BotFtgElev_{FwdAbut}) ft \cdot (AbutFtg_{Width} + 2ft) \cdot AbutFtgWidening_{Fwd} = 1654.6\ ft^3$$

$UncExc_{Total} := UncExc_{R.Abut} + UncExc_{F.Abut}$

$UncExc_{Total} = 118.3 \cdot CY$

Lump Sum

505E11100 PILE DRIVING EQUIPMENT MOBILIZATION:

$Cost := 2 \cdot 10000\$ = 20000.00\ \$$

Lump Sum

507E00600 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN:

$RearAbutPiles_{Driven.14inCIP} := RearAbutPiles_{Number} \cdot RearAbutPiles_{Length} = 400.00\ ft$

$FwdAbutPiles_{Driven.14inCIP} := FwdAbutPiles_{Number} \cdot FwdAbutPiles_{Length} = 150.00\ ft$

$TotalPiles_{Driven.14inCIP} := RearAbutPiles_{Driven.14inCIP} + FwdAbutPiles_{Driven.14inCIP}$

$TotalPiles_{Driven.14inCIP} = 550.00\ ft$

507E00650 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED:

$RearAbutPiles_{Furnished.14inCIP} := RearAbutPiles_{Number} \cdot (RearAbutPiles_{Length} + 5.00ft) = 440.00\ ft$

$FwdAbutPiles_{Furnished.14inCIP} := FwdAbutPiles_{Number} \cdot (FwdAbutPiles_{Length} + 5.00ft) = 180.00\ ft$

$TotalPiles_{Furnished.14inCIP} := RearAbutPiles_{Furnished.14inCIP} + FwdAbutPiles_{Furnished.14inCIP}$

$TotalPiles_{Furnished.14inCIP} = 620.00\ ft$

509E10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN: CALCULATED SEPARATELY IN SPREADSHEET

509E20001 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

$Reinf_{Replace} := 100lb \cdot 3 = 300\ lb$

510E10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, APP: Into existing footing

$DowelHoles_{Rear} := 7 \cdot 2$

$DowelHoles_{Fwd} := 12 \cdot 2$

$DowelHoles := DowelHoles_{Rear} + DowelHoles_{Fwd} = 38.00$

$DowelHoles = 38$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN:

$Guide := 2$ (Phase 1) $Guide = 2.0 \cdot Each$

511E34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:

$$Concrete_{Deck} := Bridge_{Length} \cdot Deck_{Width} \cdot Deck_{Thickness} = 151.0 \cdot CY$$

$$Concrete_{Haunch} := Bridge_{Length} \cdot \left[\left(HaunchThickness_{Avg} \cdot TopFlange_{Width} \right) \left(Beam_{No} - 2 \right) \right] = 5.9 \cdot CY$$

$$Concrete_{Overhang} := Bridge_{Length} \cdot \begin{bmatrix} \left(Deck_{Overhang.Thickness.Left} - Deck_{Thickness} \right) \cdot DeckOverhang_{Left} \ \ldots \\ + \left(Deck_{Overhang.Thickness.Right} - Deck_{Thickness} \right) \cdot DeckOverhang_{Right} \end{bmatrix} = 25.4 \cdot CY$$

$$Concrete_{RearDiaphragm} := DiaphragmLength_{Rear} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Rear} - PropBeamSeat_{Rear} \right) ft = 14.24 \cdot CY$$

$$Concrete_{FwdDiaphragm} := DiaphragmLength_{Fwd} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Fwd} - PropBeamSeat_{Fwd} \right) ft = 16.25 \cdot CY$$

$$Concrete_{Deck.Total} := Concrete_{Deck} + Concrete_{Haunch} + Concrete_{Overhang} + Concrete_{RearDiaphragm} + Concrete_{FwdDiaphragm}$$

$$Concrete_{Deck.Total} = 212.8 \cdot CY$$

511E34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN:

$$Concrete_{Parapet} := \left[1 \cdot Bridge_{Length} + [(0) ft + 0 ft + 30 ft + 30 ft] \right] \cdot Parapet_{Area}$$

(Phase 1)

$$Concrete_{Parapet} = 59.8 \cdot CY$$

511E44112 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING:

$$\text{ConcreteRearAbut}_{\text{Stem}} := \left[\begin{array}{l}\left(\text{DiaphragmLength}_{\text{Rear}} - \text{ExAbutStemLength}_{\text{Rear}}\right)\cdot\left(\text{PropBeamSeat}_{\text{Rear}} - \text{TopFtgElev}_{\text{RearAbut}}\right)\text{ft} \ldots \\ + \text{ExAbutStemLength}_{\text{Rear}}\cdot\left(\text{PropBeamSeat}_{\text{Rear}} - \text{CutlineElev}_{\text{RearAbut}}\right)\text{ft}\end{array}\right]\cdot \text{AbutStem}_{\text{Wi}}$$

$$\text{ConcreteRearAbut}_{\text{Stem}} = 21.98\cdot\text{CY}$$

$$\text{ConcreteRearAbut}_{\text{Wingwalls}} := \left[\begin{array}{l}\left(\text{RearLeftWingwall}_{\text{Length}} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopRearLeft}} + \text{WWElev}_{\text{BotRearLeft}}\right)}{2} - \text{TopFtgElev}_{\text{RearAbut}}\right]\text{ft} \\ + 1.5\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearLeft}} - \text{TopFtgElev}_{\text{RearAbut}}\right)\text{ft} + 1.5\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearRight}} - \text{TopFtgElev}_{\text{RearAb}}\right. \\ + \left(\text{RearRightWingwall}_{\text{Length}} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopRearRight}} + \text{WWElev}_{\text{BotRearRight}}\right)}{2} - \text{TopFtgElev}_{\text{Rear}}\right.\end{array}\right]$$

* [Wingwall Width]

$$\text{ConcreteRearAbut}_{\text{Wingwalls}} = 11.23\cdot\text{CY}$$

$$\text{ConcreteFwdAbut}_{\text{Stem}} := \left[\begin{array}{l}\left(\text{DiaphragmLength}_{\text{Fwd}} - \text{ExAbutStemLength}_{\text{Fwd}}\right)\cdot\left(\text{PropBeamSeat}_{\text{Fwd}} - \text{TopFtgElev}_{\text{FwdAbut}}\right)\text{ft} \ldots \\ + \text{ExAbutStemLength}_{\text{Fwd}}\cdot\left(\text{PropBeamSeat}_{\text{Fwd}} - \text{CutlineElev}_{\text{FwdAbut}}\right)\text{ft}\end{array}\right]\cdot \text{AbutStem}_{\text{Widt}}$$

$$\text{ConcreteFwdAbut}_{\text{Stem}} = 27.43\cdot\text{CY}$$

$$\text{ConcreteFwdAbut}_{\text{Wingwalls}} := \left[\begin{array}{l}\left(\text{FwdLeftWingwall}_{\text{Length}} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopFwdLeft}} + \text{WWElev}_{\text{BotFwdLeft}}\right)}{2} - \text{TopFtgElev}_{\text{FwdAbut}}\right]\text{ft} \\ + 1.5\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdLeft}} - \text{TopFtgElev}_{\text{FwdAbut}}\right)\text{ft} + 1.5\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdRight}} - \text{TopFtgElev}_{\text{FwdAbut}}\right. \\ + \left(\text{FwdRightWingwall}_{\text{Length}} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopFwdRight}} + \text{WWElev}_{\text{BotFwdRight}}\right)}{2} - \text{TopFtgElev}_{\text{FwdAb}}\right.\end{array}\right]$$

* [Wingwall Widt

$$\text{ConcreteFwdAbut}_{\text{Wingwalls}} = 11.98\cdot\text{CY}$$

$$\text{Concrete}_{\text{AbutmentTotal}} := \text{ConcreteRearAbut}_{\text{Stem}} + \text{ConcreteRearAbut}_{\text{Wingwalls}} + \text{ConcreteFwdAbut}_{\text{Stem}} + \text{ConcreteFwdAbut}_{\text{Wingwalls}}$$

$$\text{Concrete}_{\text{AbutmentTotal}} = 72.6\cdot\text{CY}$$

511E46512 CLASS QC1 CONCRETE WITH QC/QA, FOOTING:

$$\text{Concrete}_{\text{RearAbutFooting}} := \text{AbutFtgWidening}_{\text{Rear}}\cdot\text{AbutFtg}_{\text{Width}}\cdot\text{AbutFtgHeight}_{\text{Rear}} = 16.13\cdot\text{CY}$$

$$\text{Concrete}_{\text{FwdAbutFooting}} := \text{AbutFtgWidening}_{\text{Fwd}}\cdot\text{AbutFtg}_{\text{Width}}\cdot\text{AbutFtgHeight}_{\text{Fwd}} = 14.71\cdot\text{CY}$$

$$\text{Concrete}_{\text{FootingTotal}} := \text{Concrete}_{\text{RearAbutFooting}} + \text{Concrete}_{\text{FwdAbutFooting}} = 30.847\cdot\text{CY}$$

$$\text{Concrete}_{\text{FootingTotal}} = 30.8\cdot\text{CY}$$

512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

$$\text{Sealing}_{\text{Deck.Parapet}} := 1\cdot\text{Bridge}_{\text{Length}}\cdot\begin{pmatrix}7.83\text{ft}+2.00\text{in}\ \ldots\\ +\text{mean}\left(\text{Deck}_{\text{Overhang.Thickness.Left}},\text{Deck}_{\text{Overhang.Thickness.Right}}\right)\ \ldots\\ +6.00\text{in}\end{pmatrix} = 339.2\cdot\text{SY}$$ (Phase 1)

$$\text{Sealing}_{\text{Approach.Parapet}} := (0\text{ft}+0\text{ft}+30\text{ft}+30\text{ft})(7.83\text{ft}+2.00\text{in}) = 53.3\cdot\text{SY}$$ (Phase 1)

$$\text{Sealing}_{\text{RearAbutStem}} := \text{DiaphragmLength}_{\text{Rear}}\cdot\left(\text{TopDiaphElev}_{\text{Rear}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\cdot\text{ft} = 13.5\cdot\text{SY}$$

$$\text{Sealing}_{\text{FwdAbutStem}} := \text{DiaphragmLength}_{\text{Fwd}}\cdot\left(\text{TopDiaphElev}_{\text{Fwd}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\cdot\text{ft} = 15.1\cdot\text{SY}$$

$$\text{Sealing}_{\text{Wing.Left.Rear}} := \left[\begin{array}{l}\left(\text{WWSlopeLength}_{\text{LeftRear}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearLeft}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\text{ft}\ \ldots\\ +\left(\text{RearLeftWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\dfrac{\left(\text{WWElev}_{\text{TopRearLeft}}+\text{WWElev}_{\text{BotRearLeft}}\right)}{2}-\text{TopSlopeElev}_{\text{RearAbut}}\right]\text{ft}\end{array}\right.$$

(Phase 1) $\text{Sealing}_{\text{Wing.Left.Rear}} = 0.0\cdot\text{SY}$

$$\text{Sealing}_{\text{Wing.Right.Rear}} := \begin{array}{l}\left(\text{WWSlopeLength}_{\text{RightRear}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearRight}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\text{ft}\ \ldots\\ +\left(\text{RearRightWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\dfrac{\left(\text{WWElev}_{\text{TopRearRight}}+\text{WWElev}_{\text{BotRearRight}}\right)}{2}-\text{TopSlopeElev}_{\text{RearAb}}\right.\end{array}$$

$\text{Sealing}_{\text{Wing.Right.Rear}} = 11.3\cdot\text{SY}$

$$\text{Sealing}_{\text{Wing.Left.Fwd}} := \left[\begin{array}{l}\left(\text{WWSlopeLength}_{\text{LeftFwd}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdLeft}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\text{ft}\ \ldots\\ +\left(\text{FwdLeftWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\dfrac{\left(\text{WWElev}_{\text{TopFwdLeft}}+\text{WWElev}_{\text{BotFwdLeft}}\right)}{2}-\text{TopSlopeElev}_{\text{FwdAbut}}\right]\text{ft}\end{array}\right.$$

$\text{Sealing}_{\text{Wing.Left.Fwd}} = 0.0\cdot\text{SY}$

(Phase 1)

$$\text{Sealing}_{\text{Wing.Right.Fwd}} := \begin{array}{l}\left(\text{WWSlopeLength}_{\text{RightFwd}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdRight}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\text{ft}\ \ldots\\ +\left(\text{FwdRightWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\dfrac{\left(\text{WWElev}_{\text{TopFwdRight}}+\text{WWElev}_{\text{BotFwdRight}}\right)}{2}-\text{TopSlopeElev}_{\text{FwdAbut}}\right.\end{array}$$

$\text{Sealing}_{\text{Wing.Right.Fwd}} = 11.6\cdot\text{SY}$

$$Sealing_{PierCaps} := 0\cdot\left[\begin{matrix}2\cdot PierCap_{Length}\cdot NewPierCap_{AvgHeight} + \left(PierCap_{Length} - 4\cdot PierColumn_{Diameter}\right)\cdot PierCap_{Width} \cdots \\ + 2\cdot PierCap_{Width}\cdot NewPierCap_{AvgHeight}\end{matrix}\right] = 0\cdot SY$$

$$\begin{aligned}Sealing_{PierColumns} := {} & 0\cdot\left(AvgTopCapEl_{Pier1}\cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier1}\cdot ft\right)\pi\cdot PierColumn_{Diameter} \cdots \\ & + 0\cdot\left(AvgTopCapEl_{Pier2}\cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier2}\cdot ft\right)\pi\cdot PierColumn_{Diameter}\end{aligned} = 0\cdot SY$$

$$\begin{aligned}Sealing_{Total} := {} & Sealing_{Deck.Parapet} + Sealing_{Approach.Parapet} + Sealing_{RearAbutStem} \cdots \\ & + Sealing_{FwdAbutStem} + Sealing_{Wing.Left.Rear} + Sealing_{Wing.Right.Rear} \cdots \\ & + Sealing_{Wing.Left.Fwd} + Sealing_{Wing.Right.Fwd} + Sealing_{PierCaps} + Sealing_{PierColumns}\end{aligned}$$

$Sealing_{Total} = 444.0\cdot SY$

512E10601 CONCRETE REPAIR BY EPOXY INJECTION, APP:

$ConcRepair := 50ft$

512E33000 TYPE 2 WATERPROOFING:

$$Type2_{RearAbut} := \left[\begin{matrix}DiaphragmLength_{Rear} + RearLeftWingwall_{Length} + RearRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{RearAbut} - TopFtgElev_{RearAbut}\right)ft\end{matrix}\right]\cdot 3.00ft = 12.68\cdot SY$$ (Phase 1)

$$Type2_{FwdAbut} := \left[\begin{matrix}DiaphragmLength_{Fwd} + FwdLeftWingwall_{Length} + FwdRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{FwdAbut} - TopFtgElev_{FwdAbut}\right)ft\end{matrix}\right]\cdot 3.00ft = 13.2\cdot SY$$ (Phase 1)

$Type2_{Total} := Type2_{RearAbut} + Type2_{FwdAbut}$

$Type2_{Total} = 25.9\cdot SY$

513E20000 WELDED STUD SHEAR CONNECTORS:

$Shear_{Studs} := 2\cdot Stud_{rows}\cdot Stud_{per.row} + 1\cdot Stud_{rows}\cdot Stud_{per.row.EXT}$ (Phase 1)

$Shear_{Studs} = 3033.0\cdot Each$

516E10010 ARMORLESS PREFORMED JOINT SEAL:

$ArmorlessJoint_{RearApprSlabLength} := 25ft$ (Phase 1)

$ArmorlessJoint_{FwdApprSlabLength} := 26ft$ (Phase 1)

$ArmorlessJoint_{TotalLength} := ArmorlessJoint_{RearApprSlabLength} + ArmorlessJoint_{FwdApprSlabLength}$

$ArmorlessJoint_{TotalLength} = 51.0\ ft$

516E13900 2" PREFORMED EXPANSION JOINT FILLER:

$PEJF_{Rear} := 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Rear}\right)} = 19.4\ ft^2$ (Phase 1)

$PEJF_{Fwd} := 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Fwd}\right)} = 19.9\ ft^2$ (Phase 1)

$PEJF := PEJF_{Rear} + PEJF_{Fwd}$

$PEJF = 39.3 \cdot SF$

516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL:

$Joint_{Seal.Rear} := DiaphragmLength_{Rear} + 3ft + 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear} - 0.75 + 1.50\right)ft =$

$Joint_{Seal.Fwd} := DiaphragmLength_{Fwd} + 3ft + 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd} - 0.75 + 1.50\right)ft =$

$Joint_{Seal.Total} := Joint_{Seal.Rear} + Joint_{Seal.Fwd}$

$Joint_{Seal.Total} = 71.6\ ft$

516E44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), *AS PER PLAN (#" x #" x #" BEARING WITH #" x #" x #" LOAD PLATE & HP PEDESTAL ASSEMBLY):*

$Bearing_{Abut} := Beam_{No} \cdot 4$

$Bearing_{Abut} = 12.0 \cdot Each$

516E46900 BEARING DEVICE, MISC.: SEISMIC ISOLATION BEARING

$Bearing_{Pier} := Beam_{No} \cdot 1$

$Bearing_{Pier} = 3.0 \cdot Each$

518E12200 SCUPPER, INCLUDING SUPPORTS

$Scuppers := 5$

518E21200 POROUS BACKFILL WITH GEOTEXTILE FABRIC:

$$Backfill_{Rear} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Rear} - ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + RearLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \ldots \\ + RearRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \end{array}\right] 2.00ft =$$

$$Backfill_{Fwd} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Fwd} - ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + FwdLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \ldots \\ + FwdRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \end{array}\right] 2.00ft = 2$$

$$Backfill_{Total} := Backfill_{Rear} + Backfill_{Fwd}$$

$Backfill_{Total} = 53.0\cdot CY$

518E40000 6" PERFORATED CORRUGATED PLASTIC PIPE:

$$Pipe_{Perfor} := ExAbutFootingLength_{Rear} + AbutFtgWidening_{Rear} + ExAbutFootingLength_{Fwd} + AbutFtgWidening_{Fwd} + 2\cdot 3.00ft$$

$Pipe_{Perfor} = 88.1\ ft$

518E40011 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

$Pipe_{Non.Perfor} := 2\cdot 15.00ft$ (Phase 1)

$Pipe_{Non.Perfor} = 30.0\ ft$

526E25011 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA, (T=15"), AS PER PLAN:

$Concrete_{Appr.SlabRear} := ApprSlab_{Length}\cdot RearApprSlab_{Width} = 515\ ft^2$

$Concrete_{Appr.SlabFwd} := ApprSlab_{Length}\cdot FwdApprSlab_{Width} = 515\ ft^2$

$Concrete_{Appr.Slab} := Concrete_{Appr.SlabRear} + Concrete_{Appr.SlabFwd}$

$Concrete_{Appr.Slab} = 114.4\cdot SY$

601E20000 CRUSHED AGGREGATE SLOPE PROTECTION

Included under General Qty all combined

$$\text{SlopedAngle} := \operatorname{atan}\left(\frac{1}{2}\right)\cdot\frac{180}{\pi} = 26.57$$

$$\text{Width} := 53.333\,\text{ft}$$

$$\text{SlopedLength} := \frac{\operatorname{mean}(84.66\,\text{ft}, 87.73\,\text{ft})}{\cos\left(\text{SlopedAngle}\cdot\frac{\pi}{180}\right)} = 96.37\ \text{ft}$$

$$\text{CASP} := \text{Ceil}(\text{Width}\cdot\text{SlopedLength}, 1\,\text{SY}) = 572\cdot\text{SY}$$

CASP = 572·SY

1066L Rear Abutment Total General Qty

613E41201 LOW STRENGTH MORTAR BACKFILL, APP:

$\text{Slope} := 1.5$ $\quad\quad$ $\text{TopDiff} := 2\,\text{ft}$

$\text{TopLSM}_{\text{Rear}} := 732.91\,\text{ft}$ $\quad$ $\text{BotLSM}_{\text{Rear}} := 728.97\,\text{ft}$ $\quad$ $L_{\text{TpzdRear}} := \left(\text{TopLSM}_{\text{Rear}} - \text{TopDiff} - \text{BotLSM}_{\text{Rear}}\right)\cdot\text{Slope} = 2.91\ \text{ft}$

$\text{TopLSM}_{\text{Fwd}} := 734.43\,\text{ft}$ $\quad$ $\text{BotLSM}_{\text{Fwd}} := 730.25\,\text{ft}$ $\quad$ $L_{\text{TpzdFwd}} := \left(\text{TopLSM}_{\text{Fwd}} - \text{TopDiff} - \text{BotLSM}_{\text{Fwd}}\right)\cdot\text{Slope} = 3.27\ \text{ft}$

$$\text{LSM}_{\text{Rear}} := \left(\text{TopLSM}_{\text{Rear}} - \text{BotLSM}_{\text{Rear}}\right)\left(\frac{\text{RearApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Rear}}\right)} + 12\text{in}\right)\cdot(10\text{ft} - 0.5\text{ft}) \ \ldots + \text{TopDiff}\cdot L_{\text{TpzdRear}}\cdot\left(\frac{\text{RearApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Rear}}\right)} + 12\text{in}\right) \ \ldots + \frac{\left[\left(\left(\text{TopLSM}_{\text{Rear}} - \text{BotLSM}_{\text{Rear}} - \text{TopDiff}\right)\right)\cdot L_{\text{TpzdRear}}\right]}{2}\cdot\left(\frac{\text{RearApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Rear}}\right)} + 12\text{in}\right) = 47.14\cdot\text{CY}$$

$$\text{LSM}_{\text{Fwd}} := \left(\text{TopLSM}_{\text{Fwd}} - \text{BotLSM}_{\text{Fwd}}\right)\left(\frac{\text{FwdApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Fwd}}\right)} + 12\text{in}\right)\cdot(10\text{ft} - 0.5\text{ft}) \ \ldots + \text{TopDiff}\cdot L_{\text{TpzdFwd}}\cdot\left(\frac{\text{FwdApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Fwd}}\right)} + 12\text{in}\right) \ \ldots + \frac{\left[\left(\left(\text{TopLSM}_{\text{Fwd}} - \text{BotLSM}_{\text{Fwd}} - \text{TopDiff}\right)\right)\cdot L_{\text{TpzdFwd}}\right]}{2}\cdot\left(\frac{\text{FwdApprSlab}_{\text{Width}}}{\cos\left(\text{Skew}_{\text{Fwd}}\right)} + 12\text{in}\right) = 50.97\cdot\text{CY}$$

$$\text{LSM} := \text{Ceil}\left(\text{LSM}_{\text{Rear}} + \text{LSM}_{\text{Fwd}}, 1\,\text{CY}\right) = 99.00\cdot\text{CY}$$

LSM = 99·CY

FINAL BRIDGE QUANTITIES

BRIDGE NO. MUS-70-1066L (Phase 3)

INPUTS

General:

$CLtoCLBrg := 328.89\,ft$

$Skew_{Rear} := DMS(49,51,00) = 49.8500\cdot deg$

$Skew_{Fwd} := DMS(49,51,00) = 49.8500\cdot deg$

$Bridge_{Length} := 335.28\,ft$

$Roadway_{Width} := 29.00\,ft$ (Phase 3)

$ApprSlab_{Thick} := 17.00\,in$

$ApprSlab_{Length} := 30.00\,ft$

$RearApprSlab_{Width} := 30.167\,ft$ (Phase 3)

$FwdApprSlab_{Width} := 30.167\,ft$ (Phase 3)

Superstructure Data:

$Deck_{Width} := 30.167\,ft$ (Phase 3)

$Deck_{Thickness} := 8.50\,in$

$Parapet_{Area} := 4.0833\,SF$ *SBR-1-13*

$Beam_{No} := 4$ (Phase 3)

$TopFlange_{Width} := 12.000\,in$

$TopFlange_{Depth} := 1.100\,in$

$DeckOverhang_{Left} := 4\,ft$

$DeckOverhang_{Right} := 0\,ft$ (Phase 3)

$SteelDiaphragm_{WtperFt} := 42.70\,\frac{lbf}{ft}$ *MC 18x42.7*

$Beam_{Length} := CLtoCLBrg + 2\cdot(10in) = 330.56\,ft$

$Web_{Height} := 36.200\,in$

$HaunchThickness_{Avg} := 5.70\,in$

$Beam17_{Wt.perFt} := \frac{71200\,lbf}{Beam_{Length}} = 215.39\cdot\frac{lbf}{ft}$

(Phase 3 Beams 1 Only)

$Beam234_{Wt.perFt} := \frac{57000\,lbf}{Beam_{Length}} = 172.44\cdot\frac{lbf}{ft}$

(Phase 3 Beams 2, 3 & 4 Only)

$Beam56_{Wt.perFt} := \frac{50100\,lbf}{Beam_{Length}} = 151.56\cdot\frac{lbf}{ft}$

Total beam weights from BrR self-weight reactions

$Beam_{Spacing} := \frac{\left(Deck_{Width} - DeckOverhang_{Left} - DeckOverhang_{Right}\right)}{\left(Beam_{No} - 1\right)} = 8.72\,ft$

$SteelDiaphragm_{No} := 23 + 6 + 32 + 6 + 33 + 6 + 25 = 131\cdot Each$

$$Deck_{Overhang.Thickness.Left} := \left[\begin{array}{l} Deck_{Thickness} + HaunchThickness_{Avg} \ldots \\ + TopFlange_{Depth} - .04\cdot\left(DeckOverhang_{Left} - 1.6667\,ft\right) \end{array}\right] = 14.18\cdot in$$

$$Deck_{Overhang.Thickness.Right} := \left[\begin{array}{l} Deck_{Thickness} + HaunchThickness_{Avg} \ldots \\ + TopFlange_{Depth} - .024\cdot\left(DeckOverhang_{Right} - 1.6667\,ft\right) \end{array}\right]\cdot 0 = 0.00\cdot in$$ (Phase 3)

$Stud_{rows} := 337$

$Stud_{per.row} := 3\cdot Each$

$Stud_{per.row.EXT} := 3\cdot Each$

$PaintPerim_{36x150} := 8.73\,ft$

$PaintPerim_{36x170} := 8.79\,ft$

$PaintPerim_{36x194} := 8.85\,ft$

$PaintPerim_{36x262} := 9.88\,ft$

$PaintPerim_{36x282} := 9.91\,ft$

$PaintPerim_{Diaph} := 4.13\,ft$

General Abutment Data:

$AbutStem_{Width} := 4.00\,ft$ $AbutFtg_{Width} := 6.00\,ft$ $Wingwall_{Width} := 2.50\,ft$

Rear Abutment Data:

$AbutFtgHeight_{Rear} := 3.00\,ft$

$AbutFtgWidening_{Rear} := 21.48\,ft + (24.20\,ft)\cdot 0 = 21.480\,ft$ (Phase 3)

$ExAbutStemLength_{Rear} := 41.45\,ft$ (Phase 3)

$ExAbutFootingLength_{Rear} := 41.45\,ft$ (Phase 3)

$DiaphragmLength_{Rear} := 44.94\cdot ft$ (Phase 3)

$RearLeftWingwall_{Length} := 14.73\,ft$

$RearRightWingwall_{Length} := (14.07\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 3)

$WWElev_{TopRearLeft} := 735.04$

$WWElev_{TopRearRight} := 734.90$

$WWElev_{BotRearLeft} := 731.00$

$WWElev_{BotRearRight} := 731.00$

$TopSlopeElev_{RearAbut} := 729.00$

$ExTopSlope_{RearAbut} := 729.00$

$BotFtgElev_{RearAbut} := 721.75$

$$TopFtgElev_{RearAbut} := BotFtgElev_{RearAbut} + \frac{AbutFtgHeight_{Rear}}{ft} = 724.75$$

$PropBeamSeat_{Rear} := 729.97$

$CutlineElev_{RearAbut} := 723.75$

$ApprSlabElev_{Avg.Rear} := 735.09$

Forward Abutment Data:

$AbutFtgHeight_{Fwd} := 3.00\,ft$

$AbutFtgWidening_{Fwd} := 25.05\,ft + (22.07\,ft)\cdot 0 = 25.050\,ft$ (P3)

$ExAbutStemLength_{Fwd} := 34.91\,ft$ (Phase 3)

$ExAbutFootingLength_{Fwd} := 34.91\,ft$ (Phase 3)

$DiaphragmLength_{Fwd} := 48.25\cdot ft$ (Phase 3)

$FwdLeftWingwall_{Length} := 14.86\,ft$

$FwdRightWingwall_{Length} := (13.63\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 3)

$WWElev_{TopFwdLeft} := 736.59$

$WWElev_{TopFwdRight} := 736.18$

$WWElev_{BotFwdLeft} := 732.95$

$WWElev_{BotFwdRight} := 732.95$

$TopSlopeElev_{FwdAbut} := 730.30$

$ExTopSlope_{FwdAbut} := 730.30$

$BotFtgElev_{FwdAbut} := 722.45$

$$TopFtgElev_{FwdAbut} := BotFtgElev_{FwdAbut} + \frac{AbutFtgHeight_{Fwd}}{ft} = 725.45$$

$PropBeamSeat_{Fwd} := 731.25$

$CutlineElev_{FwdAbut} := 724.45$

$ApprSlabElev_{Avg.Fwd} := 736.52$

$$TopDiaphElev_{Rear} := ApprSlabElev_{Avg.Rear} - \frac{ApprSlab_{Thick}}{12in} = 733.67$$

$$TopDiaphElev_{Fwd} := ApprSlabElev_{Avg.Fwd} - \frac{ApprSlab_{Thick}}{12in} = 735.1$$

$$WWSlopeLength_{LeftRear} := \sqrt{(12.229ft)^2 + \left(WWElev_{TopRearLeft}\cdot ft - WWElev_{BotRearLeft}\cdot ft\right)^2} = 12.88\cdot ft$$

$$WWSlopeLength_{RightRear} := \left[\sqrt{(10.385ft)^2 + \left(WWElev_{TopRearRight}\cdot ft - WWElev_{BotRearRight}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Phase 3)

$$WWSlopeLength_{LeftFwd} := \sqrt{(10.760ft)^2 + \left(WWElev_{TopFwdLeft}\cdot ft - WWElev_{BotFwdLeft}\cdot ft\right)^2} = 11.36\cdot ft$$

$$WWSlopeLength_{RightFwd} := \left[\sqrt{(10.911ft)^2 + \left(WWElev_{TopFwdRight}\cdot ft - WWElev_{BotFwdRight}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Ph 3)

$RearAbutPiles_{Number} := 6 + (8)\cdot 0 = 6$ (Phase 3)

$RearAbutPiles_{Length} := 50ft$

$FwdAbutPiles_{Number} := 8 + (6)\cdot 0 = 8$ (Phase 3)

$FwdAbutPiles_{Length} := 25ft$

QUANTITIES (Phase 3)

202E11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

*Deck & Parapet = [(335.28ft*44.00ft)]*$25/sf = $369,000*

*Item Total being on Phase 1

Lump Sum

Total = $501,900

*Rear Abut = [104 CY] *$225/CY = $23,400*

*Fwd. Abut = [117 CY] *$225/CY = $26,300*

*Structural Steel = 605,000 lbs * $275/ton = $83,200*

202E22900 APPROACH SLAB REMOVED:

$\text{ApprSlab}_{\text{Removed}} := 2 \cdot 27\text{ft} \cdot 25\text{ft} = 1350\ \text{ft}^2$ (Phase 3)

$\text{ApprSlab}_{\text{Removed}} = 150.0 \cdot \text{SY}$

503E11101 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

Lump Sum

503E21100 UNCLASSIFIED EXCAVATION:

$$\text{UncExc}_{\text{R.Abut}} := \text{ExAbutFootingLength}_{\text{Rear}} \cdot \left(729 - \text{CutlineElev}_{\text{RearAbut}}\right) \cdot \text{ft} \cdot 2\text{ft} \ldots + \left(729 - \text{BotFtgElev}_{\text{RearAbut}}\right)\text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Rear}} = 1681.1\ \text{ft}^3$$

$$\text{UncExc}_{\text{F.Abut}} := \text{ExAbutFootingLength}_{\text{Fwd}} \cdot \left(730.30 - \text{CutlineElev}_{\text{FwdAbut}}\right) \cdot \text{ft} \cdot 2\text{ft} \ldots + \left(730.30 - \text{BotFtgElev}_{\text{FwdAbut}}\right)\text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Fwd}} = 1981.6\ \text{ft}^3$$

$\text{UncExc}_{\text{Total}} := \text{UncExc}_{\text{R.Abut}} + \text{UncExc}_{\text{F.Abut}}$

$\text{UncExc}_{\text{Total}} = 135.7 \cdot \text{CY}$

Lump Sum

505E11100 PILE DRIVING EQUIPMENT MOBILIZATION:

$\text{Cost} := 2 \cdot 10000\$ = 20000.00\ \$$

Lump Sum

507E00600 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN:

$RearAbutPiles_{Driven.14inCIP} := RearAbutPiles_{Number} \cdot RearAbutPiles_{Length} = 300.00\ ft$

$FwdAbutPiles_{Driven.14inCIP} := FwdAbutPiles_{Number} \cdot FwdAbutPiles_{Length} = 200.00\ ft$

$TotalPiles_{Driven.14inCIP} := RearAbutPiles_{Driven.14inCIP} + FwdAbutPiles_{Driven.14inCIP}$

$TotalPiles_{Driven.14inCIP} = 500.00\ ft$

507E00650 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED:

$RearAbutPiles_{Furnished.14inCIP} := RearAbutPiles_{Number} \cdot (RearAbutPiles_{Length} + 5.00ft) = 330.00\ ft$

$FwdAbutPiles_{Furnished.14inCIP} := FwdAbutPiles_{Number} \cdot (FwdAbutPiles_{Length} + 5.00ft) = 240.00\ ft$

$TotalPiles_{Furnished.14inCIP} := RearAbutPiles_{Furnished.14inCIP} + FwdAbutPiles_{Furnished.14inCIP}$

$TotalPiles_{Furnished.14inCIP} = 570.00\ ft$

509E10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN: CALCULATED SEPARATELY IN SPREADSHEET

509E20001 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN*:*

$Reinf_{Replace} := 100lb \cdot 3 = 300\ lb$

510E10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, APP: Into existing footing

$DowelHoles_{Rear} := 22 \cdot 2$

$DowelHoles_{Fwd} := 18 \cdot 2$

$DowelHoles := DowelHoles_{Rear} + DowelHoles_{Fwd} = 80.00$

$DowelHoles = 80$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN:

$Guide := 0$ (Phase 3) $Guide = 0.0 \cdot Each$

511E34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:

$$Concrete_{Deck} := Bridge_{Length} \cdot Deck_{Width} \cdot Deck_{Thickness} = 265.3 \cdot CY$$

$$Concrete_{Haunch} := Bridge_{Length} \cdot \left[\left(HaunchThickness_{Avg} \cdot TopFlange_{Width} \right) \left(Beam_{No} - 2 \right) \right] = 11.8 \cdot CY$$

$$Concrete_{Overhang} := Bridge_{Length} \cdot \begin{bmatrix} \left(Deck_{Overhang.Thickness.Left} - Deck_{Thickness} \right) \cdot DeckOverhang_{Left} \ \cdots \\ + \left(Deck_{Overhang.Thickness.Right} - Deck_{Thickness} \right) \cdot DeckOverhang_{Right} \end{bmatrix} = 23.5 \cdot CY$$

$$Concrete_{RearDiaphragm} := DiaphragmLength_{Rear} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Rear} - PropBeamSeat_{Rear} \right) ft = 24.66 \cdot CY$$

$$Concrete_{FwdDiaphragm} := DiaphragmLength_{Fwd} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Fwd} - PropBeamSeat_{Fwd} \right) ft = 27.54 \cdot CY$$

$$Concrete_{Deck.Total} := Concrete_{Deck} + Concrete_{Haunch} + Concrete_{Overhang} + Concrete_{RearDiaphragm} + Concrete_{FwdDiaphragm}$$

$$Concrete_{Deck.Total} = 352.9 \cdot CY$$

511E34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN:

$$Concrete_{Parapet} := \left[1 \cdot Bridge_{Length} + [(0) ft + 0 ft + 30 ft + 30 ft] \right] \cdot Parapet_{Area}$$

(Phase 3)

$$Concrete_{Parapet} = 59.8 \cdot CY$$

511E44112 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING:

$$\text{ConcreteRearAbut}_{Stem} := \left[\begin{array}{l}\left(\text{DiaphragmLength}_{Rear} - \text{ExAbutStemLength}_{Rear}\right)\cdot\left(\text{PropBeamSeat}_{Rear} - \text{TopFtgElev}_{RearAbut}\right)\text{ft} \ldots \\ + \text{ExAbutStemLength}_{Rear}\cdot\left(\text{PropBeamSeat}_{Rear} - \text{CutlineElev}_{RearAbut}\right)\text{ft}\end{array}\right]\cdot \text{AbutStem}_{Wi}$$

$$\text{ConcreteRearAbut}_{Stem} = 40.89\cdot\text{CY}$$

$$\text{ConcreteRearAbut}_{Wingwalls} := \left[\begin{array}{l}\left(\text{RearLeftWingwall}_{Length} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{TopRearLeft} + \text{WWElev}_{BotRearLeft}\right)}{2} - \text{TopFtgElev}_{RearAbut}\right]\text{ft} \\ + 1.5\text{ft}\cdot\left(\text{WWElev}_{TopRearLeft} - \text{TopFtgElev}_{RearAbut}\right)\text{ft} + 1.5\text{ft}\cdot\left(\text{WWElev}_{TopRearRight} - \text{TopFtgElev}_{RearAbu} \right. \\ + \left(\text{RearRightWingwall}_{Length} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{TopRearRight} + \text{WWElev}_{BotRearRight}\right)}{2} - \text{TopFtgElev}_{RearA}\right.\end{array}\right]$$

* [Wingwall Width]

$$\text{ConcreteRearAbut}_{Wingwalls} = 11.83\cdot\text{CY}$$

$$\text{ConcreteFwdAbut}_{Stem} := \left[\begin{array}{l}\left(\text{DiaphragmLength}_{Fwd} - \text{ExAbutStemLength}_{Fwd}\right)\cdot\left(\text{PropBeamSeat}_{Fwd} - \text{TopFtgElev}_{FwdAbut}\right)\text{ft} \ldots \\ + \text{ExAbutStemLength}_{Fwd}\cdot\left(\text{PropBeamSeat}_{Fwd} - \text{CutlineElev}_{FwdAbut}\right)\text{ft}\end{array}\right]\cdot \text{AbutStem}_{Widt}$$

$$\text{ConcreteFwdAbut}_{Stem} = 46.63\cdot\text{CY}$$

$$\text{ConcreteFwdAbut}_{Wingwalls} := \left[\begin{array}{l}\left(\text{FwdLeftWingwall}_{Length} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{TopFwdLeft} + \text{WWElev}_{BotFwdLeft}\right)}{2} - \text{TopFtgElev}_{FwdAbut}\right]\text{ft} \\ + 1.5\text{ft}\cdot\left(\text{WWElev}_{TopFwdLeft} - \text{TopFtgElev}_{FwdAbut}\right)\text{ft} + 1.5\text{ft}\cdot\left(\text{WWElev}_{TopFwdRight} - \text{TopFtgElev}_{FwdAbut} \right. \\ + \left(\text{FwdRightWingwall}_{Length} - 1.5\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{TopFwdRight} + \text{WWElev}_{BotFwdRight}\right)}{2} - \text{TopFtgElev}_{FwdAb}\right.\end{array}\right]$$

* [Wingwall Widt

$$\text{ConcreteFwdAbut}_{Wingwalls} = 13.30\cdot\text{CY}$$

$$\text{Concrete}_{AbutmentTotal} := \text{ConcreteRearAbut}_{Stem} + \text{ConcreteRearAbut}_{Wingwalls} + \text{ConcreteFwdAbut}_{Stem} + \text{ConcreteFwdAbut}_{Wingwalls}$$

$$\text{Concrete}_{AbutmentTotal} = 112.7\cdot\text{CY}$$

511E46512 CLASS QC1 CONCRETE WITH QC/QA, FOOTING:

$$\text{Concrete}_{RearAbutFooting} := \text{AbutFtgWidening}_{Rear}\cdot\text{AbutFtg}_{Width}\cdot\text{AbutFtgHeight}_{Rear} = 14.32\cdot\text{CY}$$

$$\text{Concrete}_{FwdAbutFooting} := \text{AbutFtgWidening}_{Fwd}\cdot\text{AbutFtg}_{Width}\cdot\text{AbutFtgHeight}_{Fwd} = 16.70\cdot\text{CY}$$

$$\text{Concrete}_{FootingTotal} := \text{Concrete}_{RearAbutFooting} + \text{Concrete}_{FwdAbutFooting} = 31.02\cdot\text{CY}$$

$$\text{Concrete}_{FootingTotal} = 31.0\cdot\text{CY}$$

512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

$$\text{Sealing}_{\text{Deck.Parapet}} := 1\cdot\text{Bridge}_{\text{Length}}\cdot\begin{pmatrix}7.83\text{ft}+2.00\text{in}\ \ldots\\ +\text{mean}\left(\text{Deck}_{\text{Overhang.Thickness.Left}},\text{Deck}_{\text{Overhang.Thickness.Right}}\right)\ \ldots\\ +6.00\text{in}\end{pmatrix} = 338.5\cdot\text{SY}$$ (Phase 3)

$$\text{Sealing}_{\text{Approach.Parapet}} := (0\text{ft}+0\text{ft}+30\text{ft}+30\text{ft})(7.83\text{ft}+2.00\text{in}) = 53.3\cdot\text{SY}$$ (Phase 3)

$$\text{Sealing}_{\text{RearAbutStem}} := \text{DiaphragmLength}_{\text{Rear}}\cdot\left(\text{TopDiaphElev}_{\text{Rear}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\cdot\text{ft} = 23.3\cdot\text{SY}$$

$$\text{Sealing}_{\text{FwdAbutStem}} := \text{DiaphragmLength}_{\text{Fwd}}\cdot\left(\text{TopDiaphElev}_{\text{Fwd}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\cdot\text{ft} = 25.8\cdot\text{SY}$$

$$\begin{aligned}\text{Sealing}_{\text{Wing.Left.Rear}} := {} & \left(\text{WWSlopeLength}_{\text{LeftRear}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ & +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearLeft}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\text{ft}\ \ldots\\ & +\left(\text{RearLeftWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopRearLeft}}+\text{WWElev}_{\text{BotRearLeft}}\right)}{2}-\text{TopSlopeElev}_{\text{RearAbut}}\right]\text{ft}\end{aligned}$$

$$\text{Sealing}_{\text{Wing.Left.Rear}} = 12.3\cdot\text{SY}$$

$$\begin{aligned}\text{Sealing}_{\text{Wing.Right.Rear}} := {} & \left[\left(\text{WWSlopeLength}_{\text{RightRear}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\right.\\ & +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopRearRight}}-\text{TopSlopeElev}_{\text{RearAbut}}\right)\text{ft}\ \ldots\\ & \left.+\left(\text{RearRightWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopRearRight}}+\text{WWElev}_{\text{BotRearRight}}\right)}{2}-\text{TopSlopeElev}_{\text{RearA}}\right.\right.\end{aligned}$$

$$\text{Sealing}_{\text{Wing.Right.Rear}} = 0.0\cdot\text{SY}$$

$$\begin{aligned}\text{Sealing}_{\text{Wing.Left.Fwd}} := {} & \left(\text{WWSlopeLength}_{\text{LeftFwd}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\\ & +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdLeft}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\text{ft}\ \ldots\\ & +\left(\text{FwdLeftWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopFwdLeft}}+\text{WWElev}_{\text{BotFwdLeft}}\right)}{2}-\text{TopSlopeElev}_{\text{FwdAbut}}\right]\text{ft}\end{aligned}$$

$$\text{Sealing}_{\text{Wing.Left.Fwd}} = 12.5\cdot\text{SY}$$

$$\begin{aligned}\text{Sealing}_{\text{Wing.Right.Fwd}} := {} & \left[\left(\text{WWSlopeLength}_{\text{RightFwd}}+1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}}+6\text{in}\right)+\text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft}\ \ldots\right.\\ & +1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdRight}}-\text{TopSlopeElev}_{\text{FwdAbut}}\right)\text{ft}\ \ldots\\ & \left.+\left(\text{FwdRightWingwall}_{\text{Length}}-1.50\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopFwdRight}}+\text{WWElev}_{\text{BotFwdRight}}\right)}{2}-\text{TopSlopeElev}_{\text{FwdAbu}}\right.\right.\end{aligned}$$

$$\text{Sealing}_{\text{Wing.Right.Fwd}} = 0.0\cdot\text{SY}$$

$$Sealing_{PierCaps} := 0\cdot\begin{bmatrix} 2\cdot PierCap_{Length}\cdot NewPierCap_{AvgHeight} + \left(PierCap_{Length} - 4\cdot PierColumn_{Diameter}\right)\cdot PierCap_{Width} \cdots \\ + 2\cdot PierCap_{Width}\cdot NewPierCap_{AvgHeight} \end{bmatrix} = 0\cdot SY$$

$$Sealing_{PierColumns} := 0\cdot\left(AvgTopCapEl_{Pier1}\cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier1}\cdot ft\right)\pi\cdot PierColumn_{Diameter} \cdots = 0\cdot SY$$
$$+ 0\cdot\left(AvgTopCapEl_{Pier2}\cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier2}\cdot ft\right)\pi\cdot PierColumn_{Diameter}$$

$$Sealing_{Total} := Sealing_{Deck.Parapet} + Sealing_{Approach.Parapet} + Sealing_{RearAbutStem} \cdots$$
$$+ Sealing_{FwdAbutStem} + Sealing_{Wing.Left.Rear} + Sealing_{Wing.Right.Rear} \cdots$$
$$+ Sealing_{Wing.Left.Fwd} + Sealing_{Wing.Right.Fwd} + Sealing_{PierCaps} + Sealing_{PierColumns}$$

$Sealing_{Total} = 465.7\cdot SY$

512E10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

At joints between phases
Only included in Phase 3 Qty

$$HMWM := Ceil\left[Bridge_{Length}\cdot\left(\frac{2ft}{9}\right), 1SF\right] = 75.00\cdot SF$$

$HMWM = 75\cdot SF$

512E10601 CONCRETE REPAIR BY EPOXY INJECTION, APP:

$ConcRepair := 50ft$

512E33000 TYPE 2 WATERPROOFING:

$$Type2_{RearAbut} := \begin{bmatrix} DiaphragmLength_{Rear} + RearLeftWingwall_{Length} + RearRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{RearAbut} - TopFtgElev_{RearAbut}\right)ft \end{bmatrix}\cdot 3.00ft = 19.22\cdot SY$$ (Phase 3)

$$Type2_{FwdAbut} := \begin{bmatrix} DiaphragmLength_{Fwd} + FwdLeftWingwall_{Length} + FwdRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{FwdAbut} - TopFtgElev_{FwdAbut}\right)ft \end{bmatrix}\cdot 3.00ft = 20.37\cdot SY$$ (Phase 3)

$$Type2_{Total} := Type2_{RearAbut} + Type2_{FwdAbut}$$

$Type2_{Total} = 39.6\cdot SY$

513E20000 WELDED STUD SHEAR CONNECTORS:

$$Shear_{Studs} := 3\cdot Stud_{rows}\cdot Stud_{per.row} + 1\cdot Stud_{rows}\cdot Stud_{per.row.EXT}$$ (Phase 3)

$Shear_{Studs} = 4044.0\cdot Each$

516E10010 ARMORLESS PREFORMED JOINT SEAL:

$ArmorlessJoint_{RearApprSlabLength} := 44ft$ (Phase 3)

$ArmorlessJoint_{FwdApprSlabLength} := 47ft$ (Phase 3)

$ArmorlessJoint_{TotalLength} := ArmorlessJoint_{RearApprSlabLength} + ArmorlessJoint_{FwdApprSlabLength}$

$ArmorlessJoint_{TotalLength} = 91.0\ ft$

516E13900 2" PREFORMED EXPANSION JOINT FILLER:

$PEJF_{Rear} := 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Rear}\right)} = 19.4\ ft^2$ (Phase 3)

$PEJF_{Fwd} := 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Fwd}\right)} = 19.9\ ft^2$ (Phase 3)

$PEJF := PEJF_{Rear} + PEJF_{Fwd}$

$PEJF = 39.3 \cdot SF$

516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL:

$Joint_{Seal.Rear} := DiaphragmLength_{Rear} + 3ft + 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear} - 0.75 + 1.50\right)ft$

$Joint_{Seal.Fwd} := DiaphragmLength_{Fwd} + 3ft + 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd} - 0.75 + 1.50\right)ft$

$Joint_{Seal.Total} := Joint_{Seal.Rear} + Joint_{Seal.Fwd}$

$Joint_{Seal.Total} = 110.8\ ft$

516E44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), *AS PER PLAN (#" x #" x #" BEARING WITH #" x #" x #" LOAD PLATE & HP PEDESTAL ASSEMBLY):*

$Bearing_{Abut} := Beam_{No} \cdot 4$

$Bearing_{Abut} = 16.0 \cdot Each$

516E46900 BEARING DEVICE, MISC.: SEISMIC ISOLATION BEARING

$Bearing_{Pier} := Beam_{No} \cdot 1$

$Bearing_{Pier} = 4.0 \cdot Each$

518E12200 SCUPPER, INCLUDING SUPPORTS

$Scuppers := 2$

518E21200 POROUS BACKFILL WITH GEOTEXTILE FABRIC:

$$Backfill_{Rear} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Rear} - ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + RearLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \ldots \\ + RearRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \end{array}\right] 2.00ft =$$

$$Backfill_{Fwd} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Fwd} - ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + FwdLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \ldots \\ + FwdRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \end{array}\right] 2.00ft = 4$$

$$Backfill_{Total} := Backfill_{Rear} + Backfill_{Fwd}$$

$Backfill_{Total} = 81.3\cdot CY$

518E40000 6" PERFORATED CORRUGATED PLASTIC PIPE:

$$Pipe_{Perfor} := ExAbutFootingLength_{Rear} + AbutFtgWidening_{Rear} + ExAbutFootingLength_{Fwd} + AbutFtgWidening_{Fwd} + 2\cdot 3.00ft$$

$Pipe_{Perfor} = 128.9\ ft$

518E40011 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

$Pipe_{Non.Perfor} := 2\cdot 15.00ft$ (Phase 3)

$Pipe_{Non.Perfor} = 30.0\ ft$

526E25011 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA, (T=15"), AS PER PLAN:

$Concrete_{Appr.SlabRear} := ApprSlab_{Length}\cdot RearApprSlab_{Width} = 905\ ft^2$

$Concrete_{Appr.SlabFwd} := ApprSlab_{Length}\cdot FwdApprSlab_{Width} = 905\ ft^2$

$Concrete_{Appr.Slab} := Concrete_{Appr.SlabRear} + Concrete_{Appr.SlabFwd}$

$Concrete_{Appr.Slab} = 201.1\cdot SY$

601E20000 CRUSHED AGGREGATE SLOPE PROTECTION

Included under General Qty all combined

$$SlopedAngle := atan\left(\frac{1}{2}\right)\cdot\frac{180}{\pi} = 26.57$$

$$Width := 53.333\,ft$$

$$SlopedLength := \frac{mean(71.57\,ft, 70.70\,ft)}{\cos\left(SlopedAngle\cdot\frac{\pi}{180}\right)} = 79.53\ ft$$

$$CASP := Ceil(Width\cdot SlopedLength, 1SY) = 472\cdot SY$$

$CASP = 472\cdot SY$

1066L Foward Abutment Total General Qty

613E41201 LOW STRENGTH MORTAR BACKFILL, APP:

$Slope := 1.5$ $TopDiff := 2\,ft$

$TopLSM_{Rear} := 733.16\,ft$ $BotLSM_{Rear} := 728.97\,ft$ $L_{TpzdRear} := \left(TopLSM_{Rear} - TopDiff - BotLSM_{Rear}\right)\cdot Slope = 3.28\ ft$

$TopLSM_{Fwd} := 734.80\,ft$ $BotLSM_{Fwd} := 730.25\,ft$ $L_{TpzdFwd} := \left(TopLSM_{Fwd} - TopDiff - BotLSM_{Fwd}\right)\cdot Slope = 3.82\ ft$

$$LSM_{Rear} := \left(TopLSM_{Rear} - BotLSM_{Rear}\right)\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right)\cdot(10ft - 0.5ft)\ \ldots + TopDiff\cdot L_{TpzdRear}\cdot\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right)\ \ldots + \frac{\left[\left(\left(TopLSM_{Rear} - BotLSM_{Rear} - TopDiff\right)\right)\cdot L_{TpzdRear}\right]}{2}\cdot\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right) = 88.44\cdot CY$$

$$LSM_{Fwd} := \left(TopLSM_{Fwd} - BotLSM_{Fwd}\right)\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)\cdot(10ft - 0.5ft)\ \ldots + TopDiff\cdot L_{TpzdFwd}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)\ \ldots + \frac{\left[\left(\left(TopLSM_{Fwd} - BotLSM_{Fwd} - TopDiff\right)\right)\cdot L_{TpzdFwd}\right]}{2}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right) = 98.67\cdot CY$$

$$LSM := Ceil\left(LSM_{Rear} + LSM_{Fwd}, 1CY\right) = 188.00\cdot CY$$

$LSM = 188\cdot CY$

	Beam					Bearing Stiffener						Connection Plate							Diaphragm					Total	
Section	Beam Length	Beam #/ft	Beam Paint Perimeter (ft)	Weight (lbs)	Paint Area (ft^2)	Bearing Stiffener Width (in)	Bearing Stiffener Area (in^2)	Bearing Stiffener Thickness (in)	# of Bearing Stiffeners	Weight (lbs)	Paint Area (ft^2)	Connection Plate Width (in)	Gap Ref	Connection Plate Area (ft^2)	Connection Plate Thickness (in)	# of Connection Plate & Pier Stiffener	Weight (lbs)	Paint Area (ft^2)	Diaphragm Length	Diaphragm #/ft	Diaphragm Paint Perimeter (ft)	Weight (lbs)	Paint Area (ft^2)	Total Weight (lbs)	Total Paint Area (ft^2)
B1A	47.75	194	8.98	9264	429	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	2	100	10	15.33	42.7	4.24	655	65	10098	509
B2A	47.75	170	8.92	8118	426	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	15.33	42.7	4.24	655	65	9103	521
B3A	45.75	170	8.92	7778	408	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	4	201	20	15.33	42.7	4.24	655	65	8713	498
B4A	48.75	170	8.92	8288	435	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	9.33	42.7	4.24	399	40	9017	504
B5A	46.75	150	8.88	7013	415	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	4	201	20	11.67	42.7	4.24	498	49	7792	490
B6A	49.75	150	8.88	7463	442	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	8591	551
B7A	47.75	194	8.98	9264	429	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	3	151	15	0.00	42.7	4.24	0	0	9494	449
B1B	50.00	262	10.16	13100	508	11.50	391.23	0.75	0	0	0	11.5	15.60	2.61	0.50	5	266	26	34.89	42.7	4.24	1490	148	14856	682
B2B	49.00	194	8.98	9506	440	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	5	251	25	19.56	42.7	4.24	835	83	10592	548
B3B	51.00	194	8.98	9894	458	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	7	352	34	34.89	42.7	4.24	1490	148	11735	640
B4B	52.00	194	8.98	10088	467	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	9	452	44	25.90	42.7	4.24	1106	110	11646	621
B5B	51.00	170	8.92	8670	455	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	9	452	44	26.55	42.7	4.24	1134	113	10256	612
B6B	47.00	170	8.92	7990	419	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	20.71	42.7	4.24	884	88	9176	537
B7B	50.00	262	10.16	13100	508	11.50	391.23	0.75	0	0	0	11.5	15.60	2.61	0.50	5	266	26	0.00	42.7	4.24	0	0	13366	534
B1C	37.00	194	8.98	7178	332	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	15.33	42.7	4.24	655	65	7933	407
B2C	36.00	170	8.92	6120	321	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7404	448
B3C	35.00	170	8.92	5950	312	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	15.33	42.7	4.24	655	65	6806	397
B4C	37.00	170	8.92	6290	330	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	9.33	42.7	4.24	399	40	6890	389
B5C	35.00	150	8.88	5250	311	11.50	391.23	0.75	0	0	0	11.5	36.29	2.46	0.50	4	201	20	11.67	42.7	4.24	498	49	5949	380
B6C	38.00	150	8.88	5700	337	11.50	391.23	0.75	0	0	0	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	6749	441
B7C	37.00	194	8.98	7178	332	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	0.00	42.7	4.24	0	0	7278	342
B1D	55.00	282	10.19	15510	560	11.50	390.54	0.75	0	0	0	11.5	15.77	2.60	0.50	6	319	31	42.56	42.7	4.24	1817	181	17646	772
B2D	56.00	194	8.98	10864	503	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	8	402	39	34.89	42.7	4.24	1490	148	12756	690
B3D	57.00	194	8.98	11058	512	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	9	452	44	27.22	42.7	4.24	1162	115	12672	672
B4D	55.00	194	8.98	10670	494	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	9	452	44	25.90	42.7	4.24	1106	110	12228	648
B5D	57.00	170	8.92	9690	508	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	9	452	44	26.55	42.7	4.24	1134	113	11276	665
B6D	55.00	170	8.92	9350	491	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	7	352	34	26.55	42.7	4.24	1134	113	10835	638
B7D	56.00	262	10.16	14672	569	11.50	391.23	0.75	0	0	0	11.5	15.60	2.61	0.50	6	320	31	0.00	42.7	4.24	0	0	14992	600
B1E	37.00	194	8.98	7178	332	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	15.33	42.7	4.24	655	65	7933	407
B2E	37.00	170	8.92	6290	330	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7574	457
B3E	36.00	170	8.92	6120	321	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	15.33	42.7	4.24	655	65	6976	406
B4E	36.00	170	8.92	6120	321	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	9.33	42.7	4.24	399	40	6720	380
B5E	36.00	150	8.88	5400	320	11.50	391.23	0.75	0	0	0	11.5	36.29	2.46	0.50	4	201	20	11.67	42.7	4.24	498	49	6099	389
B6E	37.00	150	8.88	5550	329	11.50	391.23	0.75	0	0	0	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	6599	432
B7E	36.00	194	8.98	6984	323	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	0.00	42.7	4.24	0	0	7084	333
B1F	48.00	262	10.16	12576	488	11.50	391.23	0.75	0	0	0	11.5	15.60	2.61	0.50	5	266	26	34.89	42.7	4.24	1490	148	14332	662
B2F	49.00	194	8.98	9506	440	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	7	352	34	27.22	42.7	4.24	1162	115	11020	590
B3F	54.00	194	8.98	10476	485	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	8	402	39	34.89	42.7	4.24	1490	148	12368	672
B4F	48.00	194	8.98	9312	431	11.50	390.77	0.75	0	0	0	11.5	36.52	2.46	0.50	7	352	34	21.24	42.7	4.24	907	90	10570	556
B5F	53.00	170	8.92	9010	473	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	9	452	44	26.55	42.7	4.24	1134	113	10596	630
B6F	50.00	170	8.92	8500	446	11.50	391.00	0.75	0	0	0	11.5	36.61	2.46	0.50	7	352	34	26.55	42.7	4.24	1134	113	9985	593
B7F	53.00	262	10.16	13886	538	11.50	391.23	0.75	0	0	0	11.5	15.60	2.61	0.50	6	320	31	0.00	42.7	4.24	0	0	14206	570
B1G	52.20	194	8.98	10127	469	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	4	201	20	30.67	42.7	4.24	1309	130	11717	624
B2G	52.84	170	8.92	8983	471	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	10346	604
B3G	49.48	170	8.92	8411	441	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	23.00	42.7	4.24	982	98	9724	569
B4G	52.13	170	8.92	8861	465	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	6	301	30	14.00	42.7	4.24	598	59	9840	559
B5G	50.52	150	8.88	7578	449	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	5	252	25	17.50	42.7	4.24	747	74	8657	553
B6G	53.02	150	8.88	7953	471	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	9082	580
B7G	50.53	194	8.98	9802	454	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	2	100	10	0.00	42.7	4.24	0	0	9982	469
						Exterior Beam Connection Plate						Sidewalk Stinger Connection Plate							Diaphragm						

PHASE 1
PHASE 2
PHASE 3

Sum= 487259 26218

FINAL INSPECTION REPAIR
21.58975694
12.33700397

FINAL BRIDGE QUANTITIES

BRIDGE NO. MUS-70-1066R (Phase 1)

INPUTS

General:

$CLtoCLBrg := 319.00\,ft$

$Skew_{Rear} := DMS(48, 22, 15) = 48.3708 \cdot deg$

$Skew_{Fwd} := DMS(48, 37, 25) = 48.6236 \cdot deg$

$Bridge_{Length} := 325.80\,ft$

$Roadway_{Width} := 15.00\,ft$ (Phase 1)

$ApprSlab_{Thick} := 17.00\,in$

$ApprSlab_{Length} := 30.00\,ft$

$RearApprSlab_{Width} := 17.167\,ft$ (Phase 1)

$FwdApprSlab_{Width} := 17.167\,ft$ (Phase 1)

Superstructure Data:

$Deck_{Width} := 17.167\,ft$ (Phase 1)

$Deck_{Thickness} := 8.50\,in$

$Parapet_{Area} := 4.0833\,SF$ *SBR-1-13*

$Beam_{No} := 3$ (Phase 1)

$TopFlange_{Width} := 12.000\,in$

$TopFlange_{Depth} := 1.100\,in$

$DeckOverhang_{Left} := 4.000\,ft$

$DeckOverhang_{Right} := 0\,ft$ (Phase 1)

$SteelDiaphragm_{WtperFt} := 42.70\,\frac{lbf}{ft}$ *MC 18x42.7*

$Beam_{Length} := CLtoCLBrg + 2 \cdot (9\,in) = 320.50\,ft$

$Web_{Height} := 36.200\,in$

$HaunchThickness_{Avg} := 5.70\,in$

$Beam814_{Wt.perFt} := \frac{68900\,lbf}{Beam_{Length}} = 214.98 \cdot \frac{lbf}{ft}$ (Phase 1 Beams 8 Only)

$Beam910_{Wt.perFt} := \frac{48400\,lbf}{Beam_{Length}} = 151.01 \cdot \frac{lbf}{ft}$ (Phase 1 Beams 9 & 10 Only)

$Beam456_{Wt.perFt} := \frac{55200\,lbf}{Beam_{Length}} = 172.23 \cdot \frac{lbf}{ft}$

$Stud_{rows} := 331$

$Stud_{per.row} := 3 \cdot Each$

$Stud_{per.row.EXT} := 3 \cdot Each$

$Beam_{Spacing} := \frac{(Deck_{Width} - DeckOverhang_{Left} - DeckOverhang_{Right})}{(Beam_{No} - 1)} = 6.58\,ft$

Total beam weights from BrR self-weight reactions

$SteelDiaphragm_{No} := 24 + 6 + 31 + 6 + 32 + 6 + 23 = 128.00 \cdot Each$

$Deck_{Overhang.Thickness.Left} := Deck_{Thickness} + HaunchThickness_{Avg} \ldots + TopFlange_{Depth} - .04 \cdot (DeckOverhang_{Left} - 1.6667\,ft) = 14.18 \cdot in$

$Deck_{Overhang.Thickness.Right} := 0 \cdot [Deck_{Thickness} + HaunchThickness_{Avg} \ldots + TopFlange_{Depth} - .032 \cdot (DeckOverhang_{Right} - 1.6667\,ft)] = 0.00 \cdot in$ (P1)

$PaintPerim_{36x150} := 8.73\,ft$

$PaintPerim_{36x170} := 8.79\,ft$

$PaintPerim_{36x194} := 8.85\,ft$

$PaintPerim_{36x262} := 9.88\,ft$

$PaintPerim_{36x282} := 9.91\,ft$

$PaintPerim_{Diaph} := 4.13\,ft$

General Abutment Data:

$AbutStem_{Width} := 4.00\,ft$ $AbutFtg_{Width} := 6.00\,ft$ $Wingwall_{Width} := 2.50\,ft$

Rear Abutment Data:

$AbutFtgHeight_{Rear} := 3.00\,ft$

$AbutFtgWidening_{Rear} := 21.18\cdot ft + (23.41\,ft)\cdot 0 = 21.180\,ft$ (Phase 1)

$ExAbutStemLength_{Rear} := 21.49\,ft$ (Phase 1)

$ExAbutFootingLength_{Rear} := 21.49\,ft$ (Phase 1)

$DiaphragmLength_{Rear} := 24.81\cdot ft$ (Phase 1)

$RearLeftWingwall_{Length} := 14.70\,ft$

$RearRightWingwall_{Length} := (13.56\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 1)

$WWElev_{TopRearLeft} := 735.23$

$WWElev_{TopRearRight} := 734.81$

$WWElev_{BotRearLeft} := 731.25$

$WWElev_{BotRearRight} := 731.75$

$TopSlopeElev_{RearAbut} := 728.20$

$ExTopSlope_{RearAbut} := 722.00$

$BotFtgElev_{RearAbut} := 721.75$

$$TopFtgElev_{RearAbut} := BotFtgElev_{RearAbut} + \frac{AbutFtgHeight_{Rear}}{ft} = 724.75$$

$PropBeamSeat_{Rear} := 729.88$

$CutlineElev_{RearAbut} := 723.75$

$ApprSlabElev_{Avg.Rear} := 735.16$

Forward Abutment Data:

$AbutFtgHeight_{Fwd} := 3.00\,ft$

$AbutFtgWidening_{Fwd} := 25.90\,ft + (20.33\,ft)\cdot 0 = 25.900\,ft$ (P1)

$ExAbutStemLength_{Fwd} := 13.85\,ft$ (Phase 1)

$ExAbutFootingLength_{Fwd} := 13.85\,ft$ (Phase 1)

$DiaphragmLength_{Fwd} := 27.96\cdot ft$ (Phase 1)

$FwdLeftWingwall_{Length} := 14.78\,ft$

$FwdRightWingwall_{Length} := (13.34\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 1)

$WWElev_{TopFwdLeft} := 736.15$

$WWElev_{TopFwdRight} := 735.37$

$WWElev_{BotFwdLeft} := 732.95$

$WWElev_{BotFwdRight} := 732.70$

$TopSlopeElev_{FwdAbut} := 728.82$

$ExTopSlope_{FwdAbut} := 722.70$

$BotFtgElev_{FwdAbut} := 722.45$

$$TopFtgElev_{FwdAbut} := BotFtgElev_{FwdAbut} + \frac{AbutFtgHeight_{Fwd}}{ft} = 725.45$$

$PropBeamSeat_{Fwd} := 730.45$

$CutlineElev_{FwdAbut} := 724.45$

$ApprSlabElev_{Avg.Fwd} := 735.92$

$$TopDiaphElev_{Rear} := ApprSlabElev_{Avg.Rear} - \frac{ApprSlab_{Thick}}{12in} = 733.74$$

$$TopDiaphElev_{Fwd} := ApprSlabElev_{Avg.Fwd} - \frac{ApprSlab_{Thick}}{12in} = 734.5$$

$$WWSlopeLength_{LeftRear} := \sqrt{(12.515ft)^2 + \left(WWElev_{TopRearLeft} \cdot ft - WWElev_{BotRearLeft} \cdot ft\right)^2} = 13.13\ ft$$

$$WWSlopeLength_{RightRear} := \left[\sqrt{(11.351ft)^2 + \left(WWElev_{TopRearRight} \cdot ft - WWElev_{BotRearRight} \cdot ft\right)^2}\right] \cdot 0 = 0.00 \cdot ft$$ (Phase 1)

$$WWSlopeLength_{LeftFwd} := \sqrt{(12.480ft)^2 + \left(WWElev_{TopFwdLeft} \cdot ft - WWElev_{BotFwdLeft} \cdot ft\right)^2} = 12.88\ ft$$

$$WWSlopeLength_{RightFwd} := \left[\sqrt{(10.979ft)^2 + \left(WWElev_{TopFwdRight} \cdot ft - WWElev_{BotFwdRight} \cdot ft\right)^2}\right] \cdot 0 = 0.00 \cdot ft$$ (Ph 1)

$RearAbutPiles_{Number} := 6 + 8 \cdot 0 = 6$ (Phase 1)

$RearAbutPiles_{Length} := 50ft$

$FwdAbutPiles_{Number} := 8 + (6) \cdot 0 = 8$ (Phase 1)

$FwdAbutPiles_{Length} := 25ft$

QUANTITIES **(Phase 1)**

202E11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

*Deck & Parapet = [(325.80ft*44.00ft)]*$25/sf = $358,400*

Lump Sum

*Rear Abut = [107 CY] *$225/CY = $24,100* *Total = $489,300*

*Fwd. Abut = [113 CY] *$225/CY = $25,400*

*Structural Steel = 592,000 lbs * $275/ton = $81,400*

202E22900 APPROACH SLAB REMOVED:

$\text{ApprSlab}_{\text{Removed}} := 2 \cdot 14.00\,\text{ft} \cdot 25\,\text{ft} = 700\ \text{ft}^2$ (Phase 1)

$\text{ApprSlab}_{\text{Removed}} = 77.8 \cdot \text{SY}$

503E11101 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

Lump Sum

503E21100 UNCLASSIFIED EXCAVATION:

$$\text{UncExc}_{\text{R.Abut}} := \text{ExAbutFootingLength}_{\text{Rear}} \cdot \left(728.20 - \text{CutlineElev}_{\text{RearAbut}}\right) \cdot \text{ft} \cdot 2\,\text{ft} \ldots + \left(728.20 - \text{BotFtgElev}_{\text{RearAbut}}\right) \text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\,\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Rear}} = 1284.1\ \text{ft}^3$$

$$\text{UncExc}_{\text{F.Abut}} := \text{ExAbutFootingLength}_{\text{Fwd}} \cdot \left(728.82 - \text{CutlineElev}_{\text{FwdAbut}}\right) \cdot \text{ft} \cdot 2\,\text{ft} \ldots + \left(728.82 - \text{BotFtgElev}_{\text{FwdAbut}}\right) \text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\,\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Fwd}} = 1440.9\ \text{ft}^3$$

$\text{UncExc}_{\text{Total}} := \text{UncExc}_{\text{R.Abut}} + \text{UncExc}_{\text{F.Abut}}$

$\text{UncExc}_{\text{Total}} = 100.9 \cdot \text{CY}$

Lump Sum

505E11100 PILE DRIVING EQUIPMENT MOBILIZATION:

$\text{Cost} := 2 \cdot 10000\$ = 20000.00\,\$$

Lump Sum

507E00600 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN:

$RearAbutPiles_{Driven.14inCIP} := RearAbutPiles_{Number} \cdot RearAbutPiles_{Length} = 300.00\ ft$

$FwdAbutPiles_{Driven.14inCIP} := FwdAbutPiles_{Number} \cdot FwdAbutPiles_{Length} = 200.00\ ft$

$TotalPiles_{Driven.14inCIP} := RearAbutPiles_{Driven.14inCIP} + FwdAbutPiles_{Driven.14inCIP}$

$TotalPiles_{Driven.14inCIP} = 500.00\ ft$

507E00650 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED:

$RearAbutPiles_{Furnished.14inCIP} := RearAbutPiles_{Number} \cdot (RearAbutPiles_{Length} + 5.00ft) = 330.00\ ft$

$FwdAbutPiles_{Furnished.14inCIP} := FwdAbutPiles_{Number} \cdot (FwdAbutPiles_{Length} + 5.00ft) = 240.00\ ft$

$TotalPiles_{Furnished.14inCIP} := RearAbutPiles_{Furnished.14inCIP} + FwdAbutPiles_{Furnished.14inCIP}$

$TotalPiles_{Furnished.14inCIP} = 570.00\ ft$

509E10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN: CALCULATED SEPARATELY IN SPREADSHEET

509E20001 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN*:*

$Reinf_{Replace} := 100lb \cdot 3 = 300\ lb$

510E10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, APP: Into existing footing

$DowelHoles_{Rear} := 9 \cdot 2 = 18.00$

$DowelHoles_{Fwd} := 8 \cdot 2 = 16.00$

$DowelHoles := DowelHoles_{Rear} + DowelHoles_{Fwd} = 34.00$

$DowelHoles = 34$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN:

$Guide := 2$ (Phase 1)

$Guide = 2.0 \cdot Each$

511E34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:

$$Concrete_{Deck} := Bridge_{Length} \cdot Deck_{Width} \cdot Deck_{Thickness} = 146.7 \cdot CY$$

$$Concrete_{Haunch} := Bridge_{Length} \cdot \left[\left(HaunchThickness_{Avg} \cdot TopFlange_{Width} \right) \left(Beam_{No} - 2 \right) \right] = 5.7 \cdot CY$$

$$Concrete_{Overhang} := Bridge_{Length} \cdot \begin{bmatrix} \left(Deck_{Overhang.Thickness.Left} - Deck_{Thickness} \right) \cdot DeckOverhang_{Left} \ldots \\ + \left(Deck_{Overhang.Thickness.Right} - Deck_{Thickness} \right) \cdot DeckOverhang_{Right} \end{bmatrix} = 22.8 \cdot CY$$

$$Concrete_{RearDiaphragm} := DiaphragmLength_{Rear} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Rear} - PropBeamSeat_{Rear} \right) ft = 14.20 \cdot CY$$

$$Concrete_{FwdDiaphragm} := DiaphragmLength_{Fwd} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Fwd} - PropBeamSeat_{Fwd} \right) ft = 16.79 \cdot CY$$

$$Concrete_{Deck.Total} := Concrete_{Deck} + Concrete_{Haunch} + Concrete_{Overhang} + Concrete_{RearDiaphragm} + Concrete_{FwdDiaphragm}$$

$$Concrete_{Deck.Total} = 206.3 \cdot CY$$

511E34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN:

$$Concrete_{Parapet} := \left[1 \cdot Bridge_{Length} + (0ft + 0ft + 30ft + 30ft) \right] \cdot Parapet_{Area}$$ (Phase 1)

$$Concrete_{Parapet} = 58.3 \cdot CY$$

511E44112 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING:

$$\text{ConcreteRearAbut}_{Stem} := \left[\begin{matrix} \left(\text{DiaphragmLength}_{Rear} - \text{ExAbutStemLength}_{Rear}\right) \cdot \left(\text{PropBeamSeat}_{Rear} - \text{TopFtgElev}_{RearAbut}\right) \text{ft} \ldots \\ + \text{ExAbutStemLength}_{Rear} \cdot \left(\text{PropBeamSeat}_{Rear} - \text{CutlineElev}_{RearAbut}\right) \text{ft} \end{matrix} \right] \cdot \text{AbutStem}_{Wi}$$

$$\text{ConcreteRearAbut}_{Stem} = 22.04 \cdot \text{CY}$$

$$\text{ConcreteRearAbut}_{Wingwalls} := \left[\begin{matrix} \left(\text{RearLeftWingwall}_{Length} - 1.5\text{ft}\right) \cdot \left[\frac{\left(\text{WWElev}_{TopRearLeft} + \text{WWElev}_{BotRearLeft}\right)}{2} - \text{TopFtgElev}_{RearAbut} \right] \text{ft} \\ + 1.5\text{ft} \cdot \left(\text{WWElev}_{TopRearLeft} - \text{TopFtgElev}_{RearAbut}\right) \text{ft} + 1.5\text{ft} \cdot \left(\text{WWElev}_{TopRearRight} - \text{TopFtgElev}_{RearAbu} \right. \\ + \left(\text{RearRightWingwall}_{Length} - 1.5\text{ft}\right) \cdot \left[\frac{\left(\text{WWElev}_{TopRearRight} + \text{WWElev}_{BotRearRight}\right)}{2} - \text{TopFtgElev}_{RearA} \right. \end{matrix} \right]$$

$$\text{ConcreteRearAbut}_{Wingwalls} = 12.04 \cdot \text{CY}$$

$$\text{ConcreteFwdAbut}_{Stem} := \left[\begin{matrix} \left(\text{DiaphragmLength}_{Fwd} - \text{ExAbutStemLength}_{Fwd}\right) \cdot \left(\text{PropBeamSeat}_{Fwd} - \text{TopFtgElev}_{FwdAbut}\right) \text{ft} \ldots \\ + \text{ExAbutStemLength}_{Fwd} \cdot \left(\text{PropBeamSeat}_{Fwd} - \text{CutlineElev}_{FwdAbut}\right) \text{ft} \end{matrix} \right] * [\text{Wingwall Width}]$$

$$\text{ConcreteFwdAbut}_{Stem} = 22.76 \cdot \text{CY}$$

$$\text{ConcreteFwdAbut}_{Wingwalls} := \left[\begin{matrix} \left(\text{FwdLeftWingwall}_{Length} - 1.5\text{ft}\right) \cdot \left[\frac{\left(\text{WWElev}_{TopFwdLeft} + \text{WWElev}_{BotFwdLeft}\right)}{2} - \text{TopFtgElev}_{FwdAbut} \right] \text{ft} \\ + 1.5\text{ft} \cdot \left(\text{WWElev}_{TopFwdLeft} - \text{TopFtgElev}_{FwdAbut}\right) \text{ft} + 1.5\text{ft} \cdot \left(\text{WWElev}_{TopFwdRight} - \text{TopFtgElev}_{FwdAbut} \right. \\ + \left(\text{FwdRightWingwall}_{Length} - 1.5\text{ft}\right) \cdot \left[\frac{\left(\text{WWElev}_{TopFwdRight} + \text{WWElev}_{BotFwdRight}\right)}{2} - \text{TopFtgElev}_{FwdAb} \right. \end{matrix} \right]$$

$$\text{ConcreteFwdAbut}_{Wingwalls} = 12.86 \cdot \text{CY}$$

$$\text{Concrete}_{AbutmentTotal} := \text{ConcreteRearAbut}_{Stem} + \text{ConcreteRearAbut}_{Wingwalls} + \text{ConcreteFwdAbut}_{Stem} + \text{ConcreteFwdAbut}_{Wingwalls} * [\text{Wingwall Widt}$$

$$\text{Concrete}_{AbutmentTotal} = 69.7 \cdot \text{CY}$$

511E46512 CLASS QC1 CONCRETE WITH QC/QA, FOOTING:

$$\text{Concrete}_{RearAbutFooting} := \text{AbutFtgWidening}_{Rear} \cdot \text{AbutFtg}_{Width} \cdot \text{AbutFtgHeight}_{Rear} = 14.12 \cdot \text{CY}$$

$$\text{Concrete}_{FwdAbutFooting} := \text{AbutFtgWidening}_{Fwd} \cdot \text{AbutFtg}_{Width} \cdot \text{AbutFtgHeight}_{Fwd} = 17.27 \cdot \text{CY}$$

$$\text{Concrete}_{FootingTotal} := \text{Concrete}_{RearAbutFooting} + \text{Concrete}_{FwdAbutFooting} = 31.387 \cdot \text{CY}$$

$$\text{Concrete}_{FootingTotal} = 31.4 \cdot \text{CY}$$

512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

$$Sealing_{Deck.Parapet} := 1 \cdot Bridge_{Length} \cdot \begin{pmatrix} 7.83\,ft + 2.00\,in \ ... \\ + mean\left(Deck_{Overhang.Thickness.Left}, Deck_{Overhang.Thickness.Right}\right) \ ... \\ + 6.00\,in \end{pmatrix} = 329.0 \cdot SY$$ (Phase 1)

$$Sealing_{Approach.Parapet} := (0\,ft + 0\,ft + 30\,ft + 30\,ft)(7.83\,ft + 2.00\,in) = 53.3 \cdot SY$$ (Phase 1)

$$Sealing_{RearAbutStem} := DiaphragmLength_{Rear} \cdot \left(TopDiaphElev_{Rear} - TopSlopeElev_{RearAbut}\right) \cdot ft = 15.3 \cdot SY$$

$$Sealing_{FwdAbutStem} := DiaphragmLength_{Fwd} \cdot \left(TopDiaphElev_{Fwd} - TopSlopeElev_{FwdAbut}\right) \cdot ft = 17.7 \cdot SY$$

$$Sealing_{Wing.Left.Rear} := \left(WWSlopeLength_{LeftRear} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ...$$
$$+ 1.50\,ft \cdot \left(WWElev_{TopRearLeft} - TopSlopeElev_{RearAbut}\right) ft \ ...$$
$$+ \left(RearLeftWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopSlopeElev_{RearAbut}\right] ft$$

$$Sealing_{Wing.Left.Rear} = 14.0 \cdot SY$$

$$Sealing_{Wing.Right.Rear} := \left[\left(WWSlopeLength_{RightRear} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ...\right.$$
$$+ 1.50\,ft \cdot \left(WWElev_{TopRearRight} - TopSlopeElev_{RearAbut}\right) ft \ ...$$
$$\left. + \left(RearRightWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopSlopeElev_{RearA}\right.\right.$$

$$Sealing_{Wing.Right.Rear} = 0.0 \cdot SY$$

$$Sealing_{Wing.Left.Fwd} := \left(WWSlopeLength_{LeftFwd} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ...$$
$$+ 1.50\,ft \cdot \left(WWElev_{TopFwdLeft} - TopSlopeElev_{FwdAbut}\right) ft \ ...$$
$$+ \left(FwdLeftWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopSlopeElev_{FwdAbut}\right] ft$$

$$Sealing_{Wing.Left.Fwd} = 15.0 \cdot SY$$

$$Sealing_{Wing.Right.Fwd} := \left[\left(WWSlopeLength_{RightFwd} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ...\right.$$
$$+ 1.50\,ft \cdot \left(WWElev_{TopFwdRight} - TopSlopeElev_{FwdAbut}\right) ft \ ...$$
$$\left. + \left(FwdRightWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopSlopeElev_{FwdAbu}\right.\right.$$

$Sealing_{Wing.Right.Fwd} = 0.0 \cdot SY$

$$Sealing_{PierCaps} := 0 \cdot \left[\begin{array}{l} 2 \cdot PierCap_{Length} \cdot NewPierCap_{AvgHeight} + \left(PierCap_{Length} - 4 \cdot PierColumn_{Diameter} \right) \cdot PierCap_{Width} \cdots \\ + 2 \cdot PierCap_{Width} \cdot NewPierCap_{AvgHeight} \end{array} \right] = 0 \cdot SY$$

$$\begin{aligned} Sealing_{PierColumns} := {} & 0 \cdot \left(AvgTopCapEl_{Pier1} \cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier1} \cdot ft \right) \pi \cdot PierColumn_{Diameter} \cdots \\ & + 0 \cdot \left(AvgTopCapEl_{Pier2} \cdot ft - NewPierCap_{AvgHeight} - ExGroundElev_{Pier2} \cdot ft \right) \pi \cdot PierColumn_{Diameter} \end{aligned} = 0 \cdot SY$$

$$\begin{aligned} Sealing_{Total} := {} & Sealing_{Deck.Parapet} + Sealing_{Approach.Parapet} + Sealing_{RearAbutStem} \cdots \\ & + Sealing_{FwdAbutStem} + Sealing_{Wing.Left.Rear} + Sealing_{Wing.Right.Rear} \cdots \\ & + Sealing_{Wing.Left.Fwd} + Sealing_{Wing.Right.Fwd} + Sealing_{PierCaps} + Sealing_{PierColumns} \end{aligned}$$

$Sealing_{Total} = 444.2 \cdot SY$

512E10601 CONCRETE REPAIR BY EPOXY INJECTION, APP:

$ConcRepair := 50ft$

512E33000 TYPE 2 WATERPROOFING:

$$Type2_{RearAbut} := \left[\begin{array}{l} DiaphragmLength_{Rear} + RearLeftWingwall_{Length} + RearRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{RearAbut} - TopFtgElev_{RearAbut} \right) ft \end{array} \right] \cdot 3.00ft = 12.5 \cdot SY$$

$$Type2_{FwdAbut} := \left[\begin{array}{l} DiaphragmLength_{Fwd} + FwdLeftWingwall_{Length} + FwdRightWingwall_{Length} \cdots \\ + 2\left(CutlineElev_{FwdAbut} - TopFtgElev_{FwdAbut} \right) ft \end{array} \right] \cdot 3.00ft = 13.58 \cdot SY$$

$Type2_{Total} := Type2_{RearAbut} + Type2_{FwdAbut}$ $Type2_{Total} = 26.1 \cdot SY$

513E20000 WELDED STUD SHEAR CONNECTORS:

$Shear_{Studs} := 2 \cdot Stud_{rows} \cdot Stud_{per.row} + 1 \cdot Stud_{rows} \cdot Stud_{per.row.EXT}$ (Phase 1) $Shear_{Studs} = 2979.0 \cdot Each$

516E10010 ARMORLESS PREFORMED JOINT SEAL:

$ArmorlessJoint_{RearApprSlabLength} := 25ft$ (Phase 1)

$ArmorlessJoint_{FwdApprSlabLength} := 26ft$ (Phase 1)

$ArmorlessJoint_{TotalLength} := ArmorlessJoint_{RearApprSlabLength} + ArmorlessJoint_{FwdApprSlabLength}$

$ArmorlessJoint_{TotalLength} = 51.0\ ft$

516E13900 2" PREFORMED EXPANSION JOINT FILLER:

$PEJF_{Rear} := 2\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Rear}\right)} = 38.7\ ft^2$ (Phase 1)

$PEJF_{Fwd} := 2\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Fwd}\right)} = 40.2\ ft^2$ (Phase 1)

$PEJF := PEJF_{Rear} + PEJF_{Fwd}$

$PEJF = 78.9 \cdot SF$

516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL:

$Joint_{Seal.Rear} := DiaphragmLength_{Rear} + 3ft + 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear} - 0.75 + 1.50\right)ft =$

$Joint_{Seal.Fwd} := DiaphragmLength_{Fwd} + 3ft + 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd} - 0.75 + 1.50\right)ft =$

$Joint_{Seal.Total} := Joint_{Seal.Rear} + Joint_{Seal.Fwd}$

$Joint_{Seal.Total} = 70.7\ ft$

516E44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), *AS PER PLAN (#" x #" x #" BEARING WITH #" x #" x #" LOAD PLATE & HP PEDESTAL ASSEMBLY):*

$Bearing_{Abut} := Beam_{No} \cdot 4$

$Bearing_{Abut} = 12.0 \cdot Each$

516E46900 BEARING DEVICE, MISC.: SEISMIC ISOLATION BEARING

$Bearing_{Pier} := Beam_{No} \cdot 1$

$Bearing_{Pier} = 3.0 \cdot Each$

518E12200 SCUPPER, INCLUDING SUPPORTS

$Scuppers := 2$

518E21200 POROUS BACKFILL WITH GEOTEXTILE FABRIC:

$$Backfill_{Rear} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Rear} - ExAbutFootingLength_{Rear}\right)\cdot\left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right)ft \ldots \\ + RearLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \ldots \\ + RearRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopFtgElev_{RearAbut} - 1.00\right]ft \end{array}\right] 2.00ft =$$

$$Backfill_{Fwd} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + \left(DiaphragmLength_{Fwd} - ExAbutFootingLength_{Fwd}\right)\cdot\left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right)ft \ldots \\ + FwdLeftWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \ldots \\ + FwdRightWingwall_{Length}\cdot\left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00\right]ft \end{array}\right] 2.00ft = 2'$$

$$Backfill_{Total} := Backfill_{Rear} + Backfill_{Fwd}$$

$Backfill_{Total} = 52.3 \cdot CY$

518E40000 6" PERFORATED CORRUGATED PLASTIC PIPE:

$$Pipe_{Perfor} := ExAbutFootingLength_{Rear} + AbutFtgWidening_{Rear} + ExAbutFootingLength_{Fwd} + AbutFtgWidening_{Fwd} + 2\cdot 3.00ft$$

$Pipe_{Perfor} = 88.4\ ft$

518E40011 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

$Pipe_{Non.Perfor} := 2\cdot 15.00ft$ (Phase 1)

$Pipe_{Non.Perfor} = 30.0\ ft$

526E25011 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA, (T=15"), AS PER PLAN:

$Concrete_{Appr.SlabRear} := ApprSlab_{Length}\cdot RearApprSlab_{Width} = 515\ ft^2$

$Concrete_{Appr.SlabFwd} := ApprSlab_{Length}\cdot FwdApprSlab_{Width} = 515\ ft^2$

$Concrete_{Appr.Slab} := Concrete_{Appr.SlabRear} + Concrete_{Appr.SlabFwd}$

$Concrete_{Appr.Slab} = 114.4 \cdot SY$

601E20000 CRUSHED AGGREGATE SLOPE PROTECTION

Included under General Qty all combined

$$SlopedAngle := \operatorname{atan}\left(\frac{1}{2}\right)\cdot\frac{180}{\pi} = 26.57$$

$$Width := 53.333\,ft$$

$$SlopedLength := \frac{\operatorname{mean}(83.95\,ft, 85.45\,ft)}{\cos\left(SlopedAngle\cdot\frac{\pi}{180}\right)} = 94.70\ ft$$

$$CASP := \operatorname{Ceil}(Width\cdot SlopedLength, 1SY) = 562\cdot SY$$

$CASP = 562\cdot SY$

1066L Rear Abutment Total General Qty

613E41201 LOW STRENGTH MORTAR BACKFILL, APP:

$Slope := 1.5$ $TopDiff := 2\,ft$

$TopLSM_{Rear} := 733.73\,ft$ $BotLSM_{Rear} := 728.88\,ft$ $L_{TpzdRear} := \left(TopLSM_{Rear} - TopDiff - BotLSM_{Rear}\right)\cdot Slope = 4.27\ ft$

$TopLSM_{Fwd} := 734.67\,ft$ $BotLSM_{Fwd} := 729.45\,ft$ $L_{TpzdFwd} := \left(TopLSM_{Fwd} - TopDiff - BotLSM_{Fwd}\right)\cdot Slope = 4.83\ ft$

$$LSM_{Rear} := \left(TopLSM_{Rear} - BotLSM_{Rear}\right)\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right)\cdot(10ft - 0.5ft)\ \ldots + TopDiff\cdot L_{TpzdRear}\cdot\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right)\ \ldots + \frac{\left[\left(\left(TopLSM_{Rear} - BotLSM_{Rear} - TopDiff\right)\right)\cdot L_{TpzdRear}\right]}{2}\cdot\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right) = 60.36\cdot CY$$

$$LSM_{Fwd} := \left(TopLSM_{Fwd} - BotLSM_{Fwd}\right)\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)\cdot(10ft - 0.5ft)\ \ldots + TopDiff\cdot L_{TpzdFwd}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)\ \ldots + \frac{\left[\left(\left(TopLSM_{Fwd} - BotLSM_{Fwd} - TopDiff\right)\right)\cdot L_{TpzdFwd}\right]}{2}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right) = 66.95\cdot CY$$

$$LSM := \operatorname{Ceil}\left(LSM_{Rear} + LSM_{Fwd}, 1CY\right) = 128.00\cdot CY$$

$LSM = 128\cdot CY$

FINAL BRIDGE QUANTITIES

BRIDGE NO. MUS-70-1066R (Phase 2)

INPUTS

General:

$CLtoCLBrg := 319.00\,ft$

$Skew_{Rear} := DMS(48,22,15) = 48.3708\cdot deg$

$Skew_{Fwd} := DMS(48,37,25) = 48.6236\cdot deg$

$Bridge_{Length} := 325.80\,ft$

$Roadway_{Width} := 29.00\,ft$ (Phase 2)

$ApprSlab_{Thick} := 17.00\,in$

$ApprSlab_{Length} := 30.00\,ft$

$RearApprSlab_{Width} := 30.167\,ft$ (Phase 2)

$FwdApprSlab_{Width} := 30.167\,ft$ (Phase 2)

Superstructure Data:

$Deck_{Width} := 30.167\,ft$ (Phase 2)

$Deck_{Thickness} := 8.50\,in$

$Parapet_{Area} := 4.0833\,SF$ *SBR-1-13*

$Beam_{No} := 4$ (Phase 2)

$TopFlange_{Width} := 12.000\,in$

$TopFlange_{Depth} := 1.100\,in$

$DeckOverhang_{Left} := 0\,ft$ (Phase 2)

$DeckOverhang_{Right} := 4.00\,ft$

$SteelDiaphragm_{WtperFt} := 42.70\,\frac{lbf}{ft}$ *MC 18x42.7*

$Beam_{Length} := CLtoCLBrg + 2\cdot(10in) = 320.67\,ft$

$Web_{Height} := 36.200\,in$

$HaunchThickness_{Avg} := 5.70\,in$

$Beam814_{Wt.perFt} := \frac{68900\,lbf}{Beam_{Length}} = 214.86\cdot\frac{lbf}{ft}$

$Beam910_{Wt.perFt} := \frac{48400\,lbf}{Beam_{Length}} = 150.94\cdot\frac{lbf}{ft}$

(Phase 2 Beams 14 Only)

$Beam111213_{Wt.perFt} := \frac{55200\,lbf}{Beam_{Length}} = 172.14\cdot\frac{lbf}{ft}$

(Phase 2 Beams 11,12 & 13 Only)

$Stud_{rows} := 331$

$Stud_{per.row} := 3\cdot Each$

$Stud_{per.row.EXT} := 3\cdot Each$

$$Beam_{Spacing} := \frac{\left(Deck_{Width} - DeckOverhang_{Left} - DeckOverhang_{Right}\right)}{\left(Beam_{No} - 1\right)} = 8.72\,ft$$

Total beam weights from BrR self-weight reactions

$SteelDiaphragm_{No} := 24 + 6 + 31 + 6 + 32 + 6 + 23 = 128.00\cdot Each$

$$Deck_{Overhang.Thickness.Left} := 0\cdot\left[\begin{array}{l} Deck_{Thickness} + HaunchThickness_{Avg} \ldots \\ + TopFlange_{Depth} - .04\cdot\left(DeckOverhang_{Left} - 1.6667\,ft\right) \end{array}\right] = 0.00\cdot in$$ (P2)

$$Deck_{Overhang.Thickness.Right} := Deck_{Thickness} + HaunchThickness_{Avg} \ldots + TopFlange_{Depth} - .032\cdot\left(DeckOverhang_{Right} - 1.6667\,ft\right) = 14.40\cdot in$$

$PaintPerim_{36x150} := 8.73\,ft$

$PaintPerim_{36x170} := 8.79\,ft$

$PaintPerim_{36x194} := 8.85\,ft$

$PaintPerim_{36x262} := 9.88\,ft$

$PaintPerim_{36x282} := 9.91\,ft$

$PaintPerim_{Diaph} := 4.13\,ft$

General Abutment Data:

$AbutStem_{Width} := 4.00\,ft$ $AbutFtg_{Width} := 6.00\,ft$ $Wingwall_{Width} := 2.50\,ft$

Rear Abutment Data:

$AbutFtgHeight_{Rear} := 3.00\,ft$

$AbutFtgWidening_{Rear} := (21.18\,ft)\cdot 0 + 23.41\,ft = 23.410\,ft$ (Phase 2)

$ExAbutStemLength_{Rear} := 12.55\,ft$ (Phase 2)

$ExAbutFootingLength_{Rear} := 12.55\,ft$ (Phase 2)

$DiaphragmLength_{Rear} := 44.50\cdot ft$ (Phase 2)

$RearLeftWingwall_{Length} := (14.70\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 2)

$RearRightWingwall_{Length} := 13.56\,ft$

$WWElev_{TopRearLeft} := 735.23$

$WWElev_{TopRearRight} := 734.81$

$WWElev_{BotRearLeft} := 731.25$

$WWElev_{BotRearRight} := 731.75$

$TopSlopeElev_{RearAbut} := 728.20$

$ExTopSlope_{RearAbut} := 722.00$

$BotFtgElev_{RearAbut} := 721.75$

$$TopFtgElev_{RearAbut} := BotFtgElev_{RearAbut} + \frac{AbutFtgHeight_{Rear}}{ft} = 724.75$$

$PropBeamSeat_{Rear} := 729.88$

$CutlineElev_{RearAbut} := 723.75$

$ApprSlabElev_{Avg.Rear} := 735.16$

Forward Abutment Data:

$AbutFtgHeight_{Fwd} := 3.00\,ft$

$AbutFtgWidening_{Fwd} := (25.90\,ft)\cdot 0 + 20.33\,ft = 20.330\,ft$ (P2)

$ExAbutStemLength_{Fwd} := 42.92\,ft$ (Phase 2)

$ExAbutFootingLength_{Fwd} := 42.92\,ft$ (Phase 2)

$DiaphragmLength_{Fwd} := 46.28\cdot ft$ (Phase 2)

$FwdLeftWingwall_{Length} := (14.78\,ft)\cdot 0 = 0.00\cdot ft$ (Phase 2)

$FwdRightWingwall_{Length} := 13.34\,ft$

$WWElev_{TopFwdLeft} := 736.15$

$WWElev_{TopFwdRight} := 735.37$

$WWElev_{BotFwdLeft} := 732.95$

$WWElev_{BotFwdRight} := 732.70$

$TopSlopeElev_{FwdAbut} := 728.82$

$ExTopSlope_{FwdAbut} := 722.70$

$BotFtgElev_{FwdAbut} := 722.45$

$$TopFtgElev_{FwdAbut} := BotFtgElev_{FwdAbut} + \frac{AbutFtgHeight_{Fwd}}{ft} = 725.45$$

$PropBeamSeat_{Fwd} := 730.45$

$CutlineElev_{FwdAbut} := 724.45$

$ApprSlabElev_{Avg.Fwd} := 735.92$

$$TopDiaphElev_{Rear} := ApprSlabElev_{Avg.Rear} - \frac{ApprSlab_{Thick}}{12in} = 733.74$$

$$TopDiaphElev_{Fwd} := ApprSlabElev_{Avg.Fwd} - \frac{ApprSlab_{Thick}}{12in} = 734.5$$

$$WWSlopeLength_{LeftRear} := \left[\sqrt{(12.515ft)^2 + \left(WWElev_{TopRearLeft}\cdot ft - WWElev_{BotRearLeft}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Phase 2)

$$WWSlopeLength_{RightRear} := \sqrt{(11.351ft)^2 + \left(WWElev_{TopRearRight}\cdot ft - WWElev_{BotRearRight}\cdot ft\right)^2} = 11.76\cdot ft$$

$$WWSlopeLength_{LeftFwd} := \left[\sqrt{(12.480ft)^2 + \left(WWElev_{TopFwdLeft}\cdot ft - WWElev_{BotFwdLeft}\cdot ft\right)^2}\right]\cdot 0 = 0.00\cdot ft$$ (Ph 2)

$$WWSlopeLength_{RightFwd} := \sqrt{(10.979ft)^2 + \left(WWElev_{TopFwdRight}\cdot ft - WWElev_{BotFwdRight}\cdot ft\right)^2} = 11.30\cdot ft$$

$RearAbutPiles_{Number} := 6\cdot 0 + 8 = 8$ (Phase 2)

$RearAbutPiles_{Length} := 50ft$

$FwdAbutPiles_{Number} := 8\cdot 0 + 6 = 6$ (Phase 2)

$FwdAbutPiles_{Length} := 25ft$

QUANTITIES (Phase 2)

202E11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

*Deck & Parapet = [(325.80ft*44.00ft)]*$25/sf = $358,400*

*Rear Abut = [107 CY] *$225/CY = $24,100*

*Fwd. Abut = [113 CY] *$225/CY = $25,400*

*Structural Steel = 592,000 lbs * $275/ton = $81,400*

*Item Total being on Phase 1

Lump Sum

Total = $489,300

202E22900 APPROACH SLAB REMOVED:

$\text{ApprSlab}_{\text{Removed}} := 2 \cdot 27.00\,\text{ft} \cdot 25\,\text{ft} = 1350\,\text{ft}^2$ (Phase 2)

$\text{ApprSlab}_{\text{Removed}} = 150.0 \cdot \text{SY}$

503E11101 COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

Lump Sum

503E21100 UNCLASSIFIED EXCAVATION:

$$\text{UncExc}_{\text{R.Abut}} := \text{ExAbutFootingLength}_{\text{Rear}} \cdot \left(728.20 - \text{CutlineElev}_{\text{RearAbut}}\right) \cdot \text{ft} \cdot 2\,\text{ft} \ldots + \left(728.20 - \text{BotFtgElev}_{\text{RearAbut}}\right) \text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\,\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Rear}} = 1319.7\,\text{ft}^3$$

$$\text{UncExc}_{\text{F.Abut}} := \text{ExAbutFootingLength}_{\text{Fwd}} \cdot \left(728.82 - \text{CutlineElev}_{\text{FwdAbut}}\right) \cdot \text{ft} \cdot 2\,\text{ft} \ldots + \left(728.82 - \text{BotFtgElev}_{\text{FwdAbut}}\right) \text{ft} \cdot \left(\text{AbutFtg}_{\text{Width}} + 2\,\text{ft}\right) \cdot \text{AbutFtgWidening}_{\text{Fwd}} = 1411.1\,\text{ft}^3$$

$\text{UncExc}_{\text{Total}} := \text{UncExc}_{\text{R.Abut}} + \text{UncExc}_{\text{F.Abut}}$

$\text{UncExc}_{\text{Total}} = 101.1 \cdot \text{CY}$

Lump Sum

505E11100 PILE DRIVING EQUIPMENT MOBILIZATION:

$\text{Cost} := 2 \cdot 10000\$ = 20000.00\,\$$

Lump Sum

507E00600 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN:

$RearAbutPiles_{Driven.14inCIP} := RearAbutPiles_{Number} \cdot RearAbutPiles_{Length} = 400.00\ ft$

$FwdAbutPiles_{Driven.14inCIP} := FwdAbutPiles_{Number} \cdot FwdAbutPiles_{Length} = 150.00\ ft$

$TotalPiles_{Driven.14inCIP} := RearAbutPiles_{Driven.14inCIP} + FwdAbutPiles_{Driven.14inCIP}$

$TotalPiles_{Driven.14inCIP} = 550.00\ ft$

507E00650 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED:

$RearAbutPiles_{Furnished.14inCIP} := RearAbutPiles_{Number} \cdot \left(RearAbutPiles_{Length} + 5.00ft\right) = 440.00\ ft$

$FwdAbutPiles_{Furnished.14inCIP} := FwdAbutPiles_{Number} \cdot \left(FwdAbutPiles_{Length} + 5.00ft\right) = 180.00\ ft$

$TotalPiles_{Furnished.14inCIP} := RearAbutPiles_{Furnished.14inCIP} + FwdAbutPiles_{Furnished.14inCIP}$

$TotalPiles_{Furnished.14inCIP} = 620.00\ ft$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN:

$Guide := 0$ (Phase 2)

$Guide = 0.0 \cdot Each$

509E10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN: CALCULATED SEPARATELY IN SPREADSHEET

509E20001 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN*:*

510E10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, APP: Into existing footing

$DowelHoles_{Rear} := 16 \cdot 2 = 32.00$

$DowelHoles_{Fwd} := 21 \cdot 2 = 42.00$

$DowelHoles := DowelHoles_{Rear} + DowelHoles_{Fwd} = 74.00$

$DowelHoles = 74$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN:

$Guide := 0$ (Phase 3)

$Guide = 0.0 \cdot Each$

511E34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:

$$Concrete_{Deck} := Bridge_{Length} \cdot Deck_{Width} \cdot Deck_{Thickness} = 257.8 \cdot CY$$

$$Concrete_{Haunch} := Bridge_{Length} \cdot \left[\left(HaunchThickness_{Avg} \cdot TopFlange_{Width} \right) \left(Beam_{No} - 2 \right) \right] = 11.5 \cdot CY$$

$$Concrete_{Overhang} := Bridge_{Length} \cdot \begin{bmatrix} \left(Deck_{Overhang.Thickness.Left} - Deck_{Thickness} \right) \cdot DeckOverhang_{Left} \ldots \\ + \left(Deck_{Overhang.Thickness.Right} - Deck_{Thickness} \right) \cdot DeckOverhang_{Right} \end{bmatrix} = 23.7 \cdot CY$$

$$Concrete_{RearDiaphragm} := DiaphragmLength_{Rear} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Rear} - PropBeamSeat_{Rear} \right) ft = 25.47 \cdot CY$$

$$Concrete_{FwdDiaphragm} := DiaphragmLength_{Fwd} \cdot AbutStem_{Width} \cdot \left(TopDiaphElev_{Fwd} - PropBeamSeat_{Fwd} \right) ft = 27.79 \cdot CY$$

$$Concrete_{Deck.Total} := Concrete_{Deck} + Concrete_{Haunch} + Concrete_{Overhang} + Concrete_{RearDiaphragm} + Concrete_{FwdDiaphragm}$$

$$Concrete_{Deck.Total} = 346.3 \cdot CY$$

511E34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN:

$$Concrete_{Parapet} := \left[1 \cdot Bridge_{Length} + (0ft + 0ft + 30ft + 30ft) \right] \cdot Parapet_{Area}$$

(Phase 2)

$$Concrete_{Parapet} = 58.3 \cdot CY$$

511E44112 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING:

$$ConcreteRearAbut_{Stem} := \left[\begin{array}{l} \left(DiaphragmLength_{Rear} - ExAbutStemLength_{Rear}\right) \cdot \left(PropBeamSeat_{Rear} - TopFtgElev_{RearAbut}\right) ft \ ... \\ + ExAbutStemLength_{Rear} \cdot \left(PropBeamSeat_{Rear} - CutlineElev_{RearAbut}\right) ft \end{array} \right] \cdot AbutStemWi$$

$$ConcreteRearAbut_{Stem} = 35.68 \cdot CY$$

$$ConcreteRearAbut_{Wingwalls} := \left[\begin{array}{l} \left(RearLeftWingwall_{Length} - 1.5ft\right) \cdot \left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopFtgElev_{RearAbut} \right] ft \\ + 1.5ft \cdot \left(WWElev_{TopRearLeft} - TopFtgElev_{RearAbut}\right) ft + 1.5ft \cdot \left(WWElev_{TopRearRight} - TopFtgElev_{RearAb} \right. \\ + \left(RearRightWingwall_{Length} - 1.5ft\right) \cdot \left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopFtgElev_{Rear} \right. \end{array} \right]$$

* [Wingwall Width]

$$ConcreteRearAbut_{Wingwalls} = 11.20 \cdot CY$$

$$ConcreteFwdAbut_{Stem} := \left[\begin{array}{l} \left(DiaphragmLength_{Fwd} - ExAbutStemLength_{Fwd}\right) \cdot \left(PropBeamSeat_{Fwd} - TopFtgElev_{FwdAbut}\right) ft \ ... \\ + ExAbutStemLength_{Fwd} \cdot \left(PropBeamSeat_{Fwd} - CutlineElev_{FwdAbut}\right) ft \end{array} \right] \cdot AbutStemWidt$$

$$ConcreteFwdAbut_{Stem} = 40.64 \cdot CY$$

$$ConcreteFwdAbut_{Wingwalls} := \left[\begin{array}{l} \left(FwdLeftWingwall_{Length} - 1.5ft\right) \cdot \left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopFtgElev_{FwdAbut} \right] ft \\ + 1.5ft \cdot \left(WWElev_{TopFwdLeft} - TopFtgElev_{FwdAbut}\right) ft + 1.5ft \cdot \left(WWElev_{TopFwdRight} - TopFtgElev_{FwdAbut} \right. \\ + \left(FwdRightWingwall_{Length} - 1.5ft\right) \cdot \left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopFtgElev_{FwdAb} \right. \end{array} \right]$$

* [Wingwall Widt

$$ConcreteFwdAbut_{Wingwalls} = 11.01 \cdot CY$$

$$Concrete_{AbutmentTotal} := ConcreteRearAbut_{Stem} + ConcreteRearAbut_{Wingwalls} + ConcreteFwdAbut_{Stem} + ConcreteFwdAbut_{Wingwalls}$$

$$Concrete_{AbutmentTotal} = 98.5 \cdot CY$$

511E46512 CLASS QC1 CONCRETE WITH QC/QA, FOOTING:

$$Concrete_{RearAbutFooting} := AbutFtgWidening_{Rear} \cdot AbutFtg_{Width} \cdot AbutFtgHeight_{Rear} = 15.61 \cdot CY$$

$$Concrete_{FwdAbutFooting} := AbutFtgWidening_{Fwd} \cdot AbutFtg_{Width} \cdot AbutFtgHeight_{Fwd} = 13.55 \cdot CY$$

$$Concrete_{FootingTotal} := Concrete_{RearAbutFooting} + Concrete_{FwdAbutFooting} = 29.16 \cdot CY$$

$$Concrete_{FootingTotal} = 29.2 \cdot CY$$

512E10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE):

$$Sealing_{Deck.Parapet} := 1 \cdot Bridge_{Length} \cdot \begin{pmatrix} 7.83\,ft + 2.00\,in \ ... \\ + mean\left(Deck_{Overhang.Thickness.Left}, Deck_{Overhang.Thickness.Right}\right) \ ... \\ + 6.00\,in \end{pmatrix} = 329.3 \cdot SY$$ (Phase 2)

$$Sealing_{Approach.Parapet} := (0\,ft + 0\,ft + 30\,ft + 30\,ft)(7.83\,ft + 2.00\,in) = 53.3 \cdot SY$$ (Phase 2)

$$Sealing_{RearAbutStem} := DiaphragmLength_{Rear} \cdot \left(TopDiaphElev_{Rear} - TopSlopeElev_{RearAbut}\right) \cdot ft = 27.4 \cdot SY$$

$$Sealing_{FwdAbutStem} := DiaphragmLength_{Fwd} \cdot \left(TopDiaphElev_{Fwd} - TopSlopeElev_{FwdAbut}\right) \cdot ft = 29.2 \cdot SY$$

$$Sealing_{Wing.Left.Rear} := \begin{bmatrix} \left(WWSlopeLength_{LeftRear} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ... \\ + 1.50\,ft \cdot \left(WWElev_{TopRearLeft} - TopSlopeElev_{RearAbut}\right) ft \ ... \\ + \left(RearLeftWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopSlopeElev_{RearAbut}\right] ft \end{bmatrix}$$

$$Sealing_{Wing.Left.Rear} = 0.0 \cdot SY$$

$$Sealing_{Wing.Right.Rear} := \left(WWSlopeLength_{RightRear} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ...$$
$$+ 1.50\,ft \cdot \left(WWElev_{TopRearRight} - TopSlopeElev_{RearAbut}\right) ft \ ...$$
$$+ \left(RearRightWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopSlopeElev_{RearAb}\right.$$

$$Sealing_{Wing.Right.Rear} = 12.9 \cdot SY$$

$$Sealing_{Wing.Left.Fwd} := \begin{bmatrix} \left(WWSlopeLength_{LeftFwd} + 1.50\,ft\right) \cdot \left(Wingwall_{Width} + 6\,in\right) + Wingwall_{Width} \cdot 2.00\,ft \ ... \\ + 1.50\,ft \cdot \left(WWElev_{TopFwdLeft} - TopSlopeElev_{FwdAbut}\right) ft \ ... \\ + \left(FwdLeftWingwall_{Length} - 1.50\,ft\right) \cdot \left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopSlopeElev_{FwdAbut}\right] ft \end{bmatrix}$$

$$Sealing_{Wing.Left.Fwd} = 0.0 \cdot SY$$

$$\text{Sealing}_{\text{Wing.Right.Fwd}} := \left(\text{WWSlopeLength}_{\text{RightFwd}} + 1.50\text{ft}\right)\cdot\left(\text{Wingwall}_{\text{Width}} + 6\text{in}\right) + \text{Wingwall}_{\text{Width}}\cdot 2.00\text{ft} \ldots + 1.50\text{ft}\cdot\left(\text{WWElev}_{\text{TopFwdRight}} - \text{TopSlopeElev}_{\text{FwdAbut}}\right)\text{ft} \ldots + \left(\text{FwdRightWingwall}_{\text{Length}} - 1.50\text{ft}\right)\cdot\left[\frac{\left(\text{WWElev}_{\text{TopFwdRight}} + \text{WWElev}_{\text{BotFwdRight}}\right)}{2} - \text{TopSlopeElev}_{\text{FwdAbut}}\right.$$

$$\text{Sealing}_{\text{Wing.Right.Fwd}} = 12.8\cdot\text{SY}$$

$$\text{Sealing}_{\text{PierCaps}} := 0\cdot\left[2\cdot\text{PierCap}_{\text{Length}}\cdot\text{NewPierCap}_{\text{AvgHeight}} + \left(\text{PierCap}_{\text{Length}} - 4\cdot\text{PierColumn}_{\text{Diameter}}\right)\cdot\text{PierCap}_{\text{Width}} \ldots + 2\cdot\text{PierCap}_{\text{Width}}\cdot\text{NewPierCap}_{\text{AvgHeight}}\right] = 0\cdot\text{SY}$$

$$\text{Sealing}_{\text{PierColumns}} := 0\cdot\left(\text{AvgTopCapEl}_{\text{Pier1}}\cdot\text{ft} - \text{NewPierCap}_{\text{AvgHeight}} - \text{ExGroundElev}_{\text{Pier1}}\cdot\text{ft}\right)\pi\cdot\text{PierColumn}_{\text{Diameter}} \ldots + 0\cdot\left(\text{AvgTopCapEl}_{\text{Pier2}}\cdot\text{ft} - \text{NewPierCap}_{\text{AvgHeight}} - \text{ExGroundElev}_{\text{Pier2}}\cdot\text{ft}\right)\pi\cdot\text{PierColumn}_{\text{Diameter}} = 0\cdot\text{SY}$$

$$\text{Sealing}_{\text{Total}} := \text{Sealing}_{\text{Deck.Parapet}} + \text{Sealing}_{\text{Approach.Parapet}} + \text{Sealing}_{\text{RearAbutStem}} \cdots + \text{Sealing}_{\text{FwdAbutStem}} + \text{Sealing}_{\text{Wing.Left.Rear}} + \text{Sealing}_{\text{Wing.Right.Rear}} \cdots + \text{Sealing}_{\text{Wing.Left.Fwd}} + \text{Sealing}_{\text{Wing.Right.Fwd}} + \text{Sealing}_{\text{PierCaps}} + \text{Sealing}_{\text{PierColumns}}$$

$$\text{Sealing}_{\text{Total}} = 464.9\cdot\text{SY}$$

512E10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

At joints between phases
Only included in Phase 2 Qty

$$\text{HMWM} := \text{Ceil}\left[\text{Bridge}_{\text{Length}}\cdot\left(\frac{2\text{ft}}{9}\right), 1\text{SF}\right] = 73.00\cdot\text{SF}$$

$$\text{HMWM} = 73\cdot\text{SF}$$

512E10601 CONCRETE REPAIR BY EPOXY INJECTION, APP:

$$\text{ConcRepair} := 50\text{ft}$$

512E33000 TYPE 2 WATERPROOFING:

$$Type2_{RearAbut} := \left[\begin{matrix} DiaphragmLength_{Rear} + RearLeftWingwall_{Length} + RearRightWingwall_{Length} \ldots \\ + 2\left(CutlineElev_{RearAbut} - TopFtgElev_{RearAbut}\right)ft \end{matrix}\right] \cdot 3.00ft = 18.69 \cdot SY$$

$$Type2_{FwdAbut} := \left[\begin{matrix} DiaphragmLength_{Fwd} + FwdLeftWingwall_{Length} + FwdRightWingwall_{Length} \ldots \\ + 2\left(CutlineElev_{FwdAbut} - TopFtgElev_{FwdAbut}\right)ft \end{matrix}\right] \cdot 3.00ft = 19.21 \cdot SY$$

$$Type2_{Total} := Type2_{RearAbut} + Type2_{FwdAbut}$$

$Type2_{Total} = 37.9 \cdot SY$

513E20000 WELDED STUD SHEAR CONNECTORS:

$$Shear_{Studs} := 3 \cdot Stud_{rows} \cdot Stud_{per.row} + 1 \cdot Stud_{rows} \cdot Stud_{per.row.EXT}$$ (Phase 2)

$Shear_{Studs} = 3972.0 \cdot Each$

516E10010 ARMORLESS PREFORMED JOINT SEAL:

$ArmorlessJoint_{RearApprSlabLength} := 44ft$ (Phase 2)

$ArmorlessJoint_{FwdApprSlabLength} := 47ft$ (Phase 2)

$$ArmorlessJoint_{TotalLength} := ArmorlessJoint_{RearApprSlabLength} + ArmorlessJoint_{FwdApprSlabLength}$$

$ArmorlessJoint_{TotalLength} = 91.0\ ft$

516E13900 2" PREFORMED EXPANSION JOINT FILLER:

$$PEJF_{Rear} := 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Rear}\right)} = 19.3\ ft^2$$ (Phase 2)

$$PEJF_{Fwd} := 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd}\right)ft \cdot \frac{Wingwall_{Width}}{\cos\left(Skew_{Fwd}\right)} = 20.1\ ft^2$$ (Phase 2)

$$PEJF := PEJF_{Rear} + PEJF_{Fwd}$$

$PEJF = 39.4 \cdot SF$

516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL:

$$Joint_{Seal.Rear} := DiaphragmLength_{Rear} + 3ft + 1\left(mean\left(WWElev_{TopRearLeft}, WWElev_{TopRearRight}\right) - PropBeamSeat_{Rear} - 0.75 + 1.50\right)ft =$$

$$Joint_{Seal.Fwd} := DiaphragmLength_{Fwd} + 3ft + 1\left(mean\left(WWElev_{TopFwdLeft}, WWElev_{TopFwdRight}\right) - PropBeamSeat_{Fwd} - 0.75 + 1.50\right)ft =$$

$$Joint_{Seal.Total} := Joint_{Seal.Rear} + Joint_{Seal.Fwd}$$

$Joint_{Seal.Total} = 108.7\ ft$

516E44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), *AS PER PLAN (#" x #" x #" BEARING WITH #" x #" x #" LOAD PLATE & HP PEDESTAL ASSEMBLY):*

$$Bearing_{Abut} := Beam_{No} \cdot 4$$

$$Bearing_{Abut} = 16.0 \cdot Each$$

516E46900 BEARING DEVICE, MISC.: SEISMIC ISOLATION BEARING

$$Bearing_{Pier} := Beam_{No} \cdot 1$$

$$Bearing_{Pier} = 4.0 \cdot Each$$

518E12200 SCUPPER, INCLUDING SUPPORTS

$$Scuppers := 5$$

518E21200 POROUS BACKFILL WITH GEOTEXTILE FABRIC:

$$Backfill_{Rear} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Rear}\right) \cdot \left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right) ft \ ... \\ + \left(DiaphragmLength_{Rear} - ExAbutFootingLength_{Rear}\right) \cdot \left(TopDiaphElev_{Rear} - TopFtgElev_{RearAbut}\right) ft \ ... \\ + RearLeftWingwall_{Length} \cdot \left[\frac{\left(WWElev_{TopRearLeft} + WWElev_{BotRearLeft}\right)}{2} - TopFtgElev_{RearAbut} - 1.00 \right] ft \ ... \\ + RearRightWingwall_{Length} \cdot \left[\frac{\left(WWElev_{TopRearRight} + WWElev_{BotRearRight}\right)}{2} - TopFtgElev_{RearAbut} - 1.00 \right] ft \end{array} \right] 2.00ft =$$

$$Backfill_{Fwd} := \left[\begin{array}{l} \left(ExAbutFootingLength_{Fwd}\right) \cdot \left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right) ft \ ... \\ + \left(DiaphragmLength_{Fwd} - ExAbutFootingLength_{Fwd}\right) \cdot \left(TopDiaphElev_{Fwd} - TopFtgElev_{FwdAbut}\right) ft \ ... \\ + FwdLeftWingwall_{Length} \cdot \left[\frac{\left(WWElev_{TopFwdLeft} + WWElev_{BotFwdLeft}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00 \right] ft \ ... \\ + FwdRightWingwall_{Length} \cdot \left[\frac{\left(WWElev_{TopFwdRight} + WWElev_{BotFwdRight}\right)}{2} - TopFtgElev_{FwdAbut} - 1.00 \right] ft \end{array} \right] 2.00ft = 3$$

$$Backfill_{Total} := Backfill_{Rear} + Backfill_{Fwd}$$

$$Backfill_{Total} = 75.7 \cdot CY$$

518E40000 6" PERFORATED CORRUGATED PLASTIC PIPE:

$$Pipe_{Perfor} := ExAbutFootingLength_{Rear} + AbutFtgWidening_{Rear} + ExAbutFootingLength_{Fwd} + AbutFtgWidening_{Fwd} + 2 \cdot 3.00ft$$

$$Pipe_{Perfor} = 105.2\ ft$$

518E40011 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

$Pipe_{Non.Perfor} := 2 \cdot 15.00\,ft$ (Phase 2)

$Pipe_{Non.Perfor} = 30.0\ ft$

526E25011 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA, (T=15"), AS PER PLAN:

$Concrete_{Appr.SlabRear} := ApprSlab_{Length} \cdot RearApprSlab_{Width} = 905\ ft^2$

$Concrete_{Appr.SlabFwd} := ApprSlab_{Length} \cdot FwdApprSlab_{Width} = 905\ ft^2$

$Concrete_{Appr.Slab} := Concrete_{Appr.SlabRear} + Concrete_{Appr.SlabFwd}$

$Concrete_{Appr.Slab} = 201.1 \cdot SY$

601E20000 CRUSHED AGGREGATE SLOPE PROTECTION Included under General Qty all combined

$SlopedAngle := atan\left(\frac{1}{2}\right) \cdot \frac{180}{\pi} = 26.57$

$Width := 53.333\,ft$

$SlopedLength := \frac{mean(68.96\,ft, 69.85\,ft)}{\cos\left(SlopedAngle \cdot \frac{\pi}{180}\right)} = 77.60\ ft$

$CASP := Ceil(Width \cdot SlopedLength, 1\,SY) = 460 \cdot SY$

$CASP = 460 \cdot SY$

1066L Forward Abutment Total General Qty

613E41201 LOW STRENGTH MORTAR BACKFILL, APP:

$Slope := 1.5$ $TopDiff := 2\,ft$

$TopLSM_{Rear} := 733.65\,ft$ $BotLSM_{Rear} := 728.88\,ft$ $L_{TpzdRear} := \left(TopLSM_{Rear} - TopDiff - BotLSM_{Rear}\right) \cdot Slope = 4.15\ ft$

$TopLSM_{Fwd} := 734.22\,ft$ $BotLSM_{Fwd} := 729.45\,ft$ $L_{TpzdFwd} := \left(TopLSM_{Fwd} - TopDiff - BotLSM_{Fwd}\right) \cdot Slope = 4.16\ ft$

$$LSM_{Rear} := \left(TopLSM_{Rear} - BotLSM_{Rear}\right)\left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right) \cdot (10ft - 0.5ft) \ldots + TopDiff \cdot L_{TpzdRear} \cdot \left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right) \ldots + \frac{\left[\left(\left(TopLSM_{Rear} - BotLSM_{Rear} - TopDiff\right)\right) \cdot L_{TpzdRear}\right]}{2} \cdot \left(\frac{RearApprSlab_{Width}}{\cos\left(Skew_{Rear}\right)} + 12in\right) = 102.07 \cdot CY$$

$$LSM_{Fwd} := \left(TopLSM_{Fwd} - BotLSM_{Fwd}\right)\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)\cdot(10ft - 0.5ft) \ \ldots \quad = 102.57\cdot CY$$

$$+ TopDiff\cdot L_{TpzdFwd}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right) \ \ldots$$

$$+ \frac{\left[\left(\left(TopLSM_{Fwd} - BotLSM_{Fwd} - TopDiff\right)\right)\cdot L_{TpzdFwd}\right]}{2}\cdot\left(\frac{FwdApprSlab_{Width}}{\cos\left(Skew_{Fwd}\right)} + 12in\right)$$

$$LSM := Ceil\left(LSM_{Rear} + LSM_{Fwd}, 1CY\right) = 205.00\cdot CY$$

$LSM = 205\cdot CY$

	Beam					Abutment Bearing Stiffener						Connection Plate & Pier Stiffener							Diaphragm					Total	
Section	Beam Length	Beam #/ft	Beam Paint Perimeter (ft)	Weight (lbs)	Paint Area (ft^2)	Bearing Stiffener Width (in)	Bearing Stiffener Area (in^2)	Bearing Stiffener Thickness (in)	# of Bearing Stiffeners	Weight (lbs)	Paint Area (ft^2)	Connection Plate Width (in)	Connection Plate Gap Area (in^2)	Connection Plate Area (ft^2)	Connection Plate Thickness (in)	# of Connection Plate and Pier Stiffener	Weight (lbs)	Paint Area (ft^2)	Diaphragm Length	Diaphragm #/ft	Diaphragm Paint Perimeter (ft)	Weight (lbs)	Paint Area (ft^2)	Total Weight (lbs)	Total Paint Area (ft^2)
B8A	45.75	194	8.98	8876	411	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	2	100	10	20.71	42.7	4.24	884	88	9940	514
B9A	47.75	150	8.88	7163	424	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	6	302	30	26.55	42.7	4.24	1134	113	8678	571
B10A	47.75	150	8.88	7163	424	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	5	252	25	16.57	42.7	4.24	708	70	8201	524
B11A	49.75	170	8.92	8458	444	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	6	301	30	34.89	42.7	4.24	1490	148	10328	626
B12A	47.75	170	8.92	8118	426	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	27.22	42.7	4.24	1162	115	9611	571
B13A	48.75	170	8.92	8288	435	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	6	301	30	34.89	42.7	4.24	1490	148	10158	618
B14A	47.75	194	8.98	9264	429	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	3	151	15	0.00	42.7	4.24	0	0	9494	449
B8B	52.00	262	10.16	13624	528	5.50	187.11	0.75	0	0	0	11.5	15.60	2.61	0.50	5	266	26	26.55	42.7	4.24	1134	113	15024	667
B9B	48.00	170	8.92	8160	428	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	20.71	42.7	4.24	884	88	9346	546
B10B	50.00	170	8.92	8500	446	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	8	402	39	21.24	42.7	4.24	907	90	9809	575
B11B	50.00	194	8.98	9700	449	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	6	301	30	27.22	42.7	4.24	1162	115	11164	594
B12B	51.00	194	8.98	9894	458	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	8	402	39	34.89	42.7	4.24	1490	148	11786	645
B13B	49.00	194	8.98	9506	440	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	6	301	30	27.22	42.7	4.24	1162	115	10970	585
B14B	50.00	262	10.16	13100	508	5.50	187.11	0.75	0	0	0	11.5	15.60	2.61	0.50	6	320	31	0.00	42.7	4.24	0	0	13420	539
B8C	35.00	194	8.98	6790	314	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	11.67	42.7	4.24	498	49	7389	374
B9C	38.00	150	8.88	5700	337	5.50	187.11	0.75	0	0	0	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	6749	441
B10C	37.00	150	8.88	5550	329	5.50	187.11	0.75	0	0	0	11.5	36.29	2.46	0.50	4	201	20	9.33	42.7	4.24	399	40	6150	388
B11C	37.00	170	8.92	6290	330	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7574	457
B12C	37.00	170	8.92	6290	330	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	15.33	42.7	4.24	655	65	7146	415
B13C	37.00	170	8.92	6290	330	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7574	457
B14C	37.00	194	8.98	7178	332	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	0.00	42.7	4.24	0	0	7278	342
B8D	54.00	262	10.16	14148	549	5.50	187.11	0.75	0	0	0	11.5	15.60	2.61	0.50	6	320	31	32.38	42.7	4.24	1383	137	15850	717
B9D	52.00	170	8.92	8840	464	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	8	402	39	20.71	42.7	4.24	884	88	10126	591
B10D	53.00	170	8.92	9010	473	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	8	402	39	21.24	42.7	4.24	907	90	10319	602
B11D	52.00	194	8.98	10088	467	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	6	301	30	27.22	42.7	4.24	1162	115	11552	612
B12D	53.00	194	8.98	10282	476	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	8	402	39	34.89	42.7	4.24	1490	148	12174	663
B13D	53.00	194	8.98	10282	476	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	7	352	34	34.89	42.7	4.24	1490	148	12123	658
B14D	54.00	282	10.19	15228	550	5.50	186.78	0.75	0	0	0	11.5	15.77	2.60	0.50	8	425	42	0.00	42.7	4.24	0	0	15653	592
B8E	36.00	194	8.98	6984	323	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	11.67	42.7	4.24	498	49	7583	383
B9E	37.00	150	8.88	5550	329	5.50	187.11	0.75	0	0	0	11.5	36.29	2.46	0.50	6	302	30	17.50	42.7	4.24	747	74	6599	432
B10E	36.00	150	8.88	5400	320	5.50	187.11	0.75	0	0	0	11.5	36.29	2.46	0.50	4	201	20	9.33	42.7	4.24	399	40	6000	379
B11E	37.00	170	8.92	6290	330	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7574	457
B12E	36.00	170	8.92	6120	321	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	4	201	20	15.33	42.7	4.24	655	65	6976	406
B13E	37.00	170	8.92	6290	330	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	23.00	42.7	4.24	982	98	7574	457
B14E	36.00	194	8.98	6984	323	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	2	100	10	0.00	42.7	4.24	0	0	7084	333
B8F	50.00	262	10.16	13100	508	5.50	187.11	0.75	0	0	0	11.5	15.60	2.61	0.50	6	320	31	32.38	42.7	4.24	1383	137	14802	677
B9F	47.00	170	8.92	7990	419	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	8	402	39	20.71	42.7	4.24	884	88	9276	546
B10F	45.00	170	8.92	7650	401	5.50	187.00	0.75	0	0	0	11.5	36.61	2.46	0.50	6	301	30	16.57	42.7	4.24	708	70	8659	501
B11F	45.00	194	8.98	8730	404	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	6	301	30	27.22	42.7	4.24	1162	115	10194	549
B12F	46.00	194	8.98	8924	413	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	6	301	30	27.22	42.7	4.24	1162	115	10388	558
B13F	47.00	194	8.98	9118	422	5.50	186.89	0.75	0	0	0	11.5	36.52	2.46	0.50	7	352	34	34.89	42.7	4.24	1490	148	10959	605
B14E	50.00	262	10.16	13100	508	5.50	187.11	0.75	0	0	0	11.5	15.60	2.61	0.50	8	426	42	0.00	42.7	4.24	0	0	13526	550
B8G	47.29	194	8.98	9174	425	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	3	151	15	26.55	42.7	4.24	1134	113	10537	557
B9G	50.76	150	8.88	7614	451	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	6	302	30	26.55	42.7	4.24	1134	113	9129	598
B10G	52.23	150	8.88	7835	464	5.50	187.11	0.75	2	80	5	11.5	36.29	2.46	0.50	6	302	30	21.24	42.7	4.24	907	90	9124	589
B11G	50.62	170	8.92	8605	452	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	34.89	42.7	4.24	1490	148	10426	629
B12G	51.26	170	8.92	8713	457	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	6	301	30	34.89	42.7	4.24	1490	148	10584	640
B13G	50.89	170	8.92	8651	454	5.50	187.00	0.75	2	80	5	11.5	36.61	2.46	0.50	5	251	25	34.89	42.7	4.24	1490	148	10472	632
B14G	48.54	194	8.98	9416	436	5.50	186.89	0.75	2	79	5	11.5	36.52	2.46	0.50	3	151	15	0.00	42.7	4.24	0	0	9646	456
						Exterior Beam Connection Plate						Sidewalk Stinger Connection Plate							Diaphragm						
																270									

PHASE 1
PHASE 2

Sum= 482696 26269

FINAL BRIDGE QUANTITIES

BRIDGE NO. MUS-70-1142

INPUTS

General:

$CLtoCLBrg := 191.75\,ft = 191.75\,ft$

$Skew_{Rear} := DMS(35,51,01) = 35.8503\cdot deg$

$Skew_{Fwd} := DMS(35,51,01) = 35.8503\cdot deg$

$Bridge_{Length} := 195.677\,ft$

$Roadway_{Width} := 26.00\,ft$

$ApprSlab_{Thick} := 17.00\,in$

$ApprSlab_{Length} := 30.00\,ft$

$RearApprSlab_{Width} := 29.333\,ft$

$FwdApprSlab_{Width} := 29.333\,ft$

Superstructure Data:

$Deck_{Width} := 29.333\,ft$

$Deck_{Thickness} := 8.50\,in$

$Parapet_{Area} := 4.16\,SF$ *SBR-1-13 - Modified*

$Beam_{No} := 4$

$TopFlange_{Width.ave} := 18.26\,in$

$Beam_{Spacing} := 8.1667\,ft$

$Crossframe_{No} := 37 = 37.00\cdot Each$

$Deck_{Overhang.Thickness.Left} := 13.5\,in$

$Deck_{Overhang.Thickness.Right} := 13.5\,in$

$DeckOverhang_{Left} := 2.4167\,ft$

$DeckOverhang_{Right} := 2.4167\,ft$

$Beam_{Length.Ave} := CLtoCLBrg + 2\cdot(12\,in) = 193.75\,ft$

$Web_{Height.Ave} := \frac{(43+49+55+57)}{4}\,in = 4.25\,ft$

$Web_{Thickness} := 0.625\,in$

$HaunchThickness_{Avg} := 2\,in$

$Stud_{rows} := 27+47+9+26+4+62 = 175.00$

$Stud_{per.row} := 3\cdot Each$

General Abutment Data:

$AbutStem_{Width} := 4.00\,ft$ $AbutFtg_{Width} := 7.5\,ft$ $Wingwall_{Width} := 3.5\,ft$

Rear Abutment Data:

$AbutFtgHeight_{Rear} := 3.00\,ft$

$AbutFtgLength_{Rear} := 73.00\,ft$

$AbutStemLength_{Rear} := 31.83\,ft$

$DiaphragmLength_{Rear} := 31.83 \cdot ft$

$RearLeftWingwall_{Length} := 18.24\,ft$

$RearRightWingwall_{Length} := 22.56\,ft$

$WWElev_{TopRearLeft} := 734.76$

$WWElev_{TopRearRight} := 735.98$

$WWElev_{BotRearLeft} := 728.40$

$WWElev_{BotRearRight} := 728.40$

$TopSlopeElev_{RearAbut} := 727.80$

$BotFtgElev_{RearAbut} := 724.40$

$TopFtgElev_{RearAbut} := 727.40$

$PropBeamSeat_{Rear} := 728.94$

$ApprSlabElev_{Avg.Rear} := 736.04$ *@ (CL Const)*

Forward Abutment Data:

$AbutFtgHeight_{Fwd} := 3.00\,ft$

$AbutFtgLength_{Fwd} := 100.00\,ft$

$AbutStemLength_{Fwd} := 46.16\,ft$

$DiaphragmLength_{Fwd} := 46.16\,ft$

$FwdLeftWingwall_{Length} := 25.94\,ft$

$FwdRightWingwall_{Length} := 27.34\,ft$

$WWElev_{TopFwdLeft} := 730.69$

$WWElev_{TopFwdRight} := 732.63$

$WWElev_{BotFwdLeft} := 724.60$

$WWElev_{BotFwdRight} := 724.60$

$TopSlopeElev_{FwdAbut} := 723.63$

$BotFtgElev_{FwdAbut} := 720.60$

$TopFtgElev_{FwdAbut} := 723.60$

$PropBeamSeat_{Fwd} := 724.84$

$ApprSlabElev_{Avg.Fwd} := 732.48$ *@ (CL Const)*

$$TopDiaphElev_{Rear} := ApprSlabElev_{Avg.Rear} - \frac{ApprSlab_{Thick}}{12in} = 734.62$$

$$TopDiaphElev_{Fwd} := ApprSlabElev_{Avg.Fwd} - \frac{ApprSlab_{Thick}}{12in} = 731.06$$

$$WWSlopeLength_{LeftRear} := \sqrt{(12.506ft)^2 + \left(WWElev_{TopRearLeft} \cdot ft - WWElev_{BotRearLeft} \cdot ft\right)^2} = 14.03\ ft$$

$$WWSlopeLength_{RightRear} := \sqrt{(11.933ft)^2 + \left(WWElev_{TopRearRight} \cdot ft - WWElev_{BotRearRight} \cdot ft\right)^2} = 14.14\ ft$$

$$WWSlopeLength_{LeftFwd} := \sqrt{(12.469ft)^2 + \left(WWElev_{TopFwdLeft} \cdot ft - WWElev_{BotFwdLeft} \cdot ft\right)^2} = 13.88\ ft$$

$$WWSlopeLength_{RightFwd} := \sqrt{(11.154ft)^2 + \left(WWElev_{TopFwdRight} \cdot ft - WWElev_{BotFwdRight} \cdot ft\right)^2} = 13.74\ ft$$

$RearAbutPiles_{Number} := 10 + 10 = 20$

$RearAbutPiles_{Length} := 45ft$

$FwdAbutPiles_{Number} := 13 + 13 = 26$

$FwdAbutPiles_{Length} := 40ft$

General Pier Data:

$PierFooting_{Width} := 12.00\,ft$

$PierFooting_{Length} := 43.75\,ft$

$PierFooting_{Height} := 3.00\,ft$

Pier 1 Data:

$Pier1Wall_{Width} := 3.00\,ft$

$Pier1Wall_{Length} := 35.5\,ft$

$Pier1Wall_{Height} := 15.35\,ft$

$Pier1Cap_{Width} := 5.50\,ft$

$Pier1Cap_{Length} := 35.50\,ft$

$Pier1Cap_{Height.ave} := 3.40\,ft$

$AvgTopCapElev_{Pier1} := 727.94\,ft$

$TopFtgElev_{Pier1} := 709.20\,ft$

$ExGroundElev_{Pier1} := 711.75\,ft$

$Pier1Piles_{Number} := 18$

$Pier1Piles_{Length} := 25\,ft$

QUANTITIES

202E11003 STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (LS):

*Deck & Parapet = [(240.40ft*30.00ft)]*$25/sf = $180,300*

*Abutments = [126 CY] *$225/CY = $28,400*

*Piers = [80 CY] *$225/CY = $18,000*

*Footings = [112 CY] *$200/CY = $22,400*

*Structural Steel = 201,600 lbs * $275/ton = $27,700*

Lump Sum

Total = $277,000

202E22900 APPROACH SLAB REMOVED (SY):

$$\text{ApprSlab}_{\text{Removed}} := 1350\text{ft}^2$$

$$\text{ApprSlab}_{\text{Removed}} = 150.0 \cdot \text{SY}$$

503E11100 COFFERDAMS AND EXCAVATION BRACING (LS):

Lump Sum

Total = $10,000

503E21100 UNCLASSIFIED EXCAVATION (CY):

$$\text{UncExc}_{\text{Pier1}} := \left(\text{PierFooting}_{\text{Width}} + 2.00\text{ft}\right) \cdot \left(\text{PierFooting}_{\text{Length}} + 2.00\text{ft}\right) \cdot \left(\text{ExGroundElev}_{\text{Pier1}} - \text{TopFtgElev}_{\text{Pier1}} + \text{PierFooting}_{\text{Height}}\right)$$

$$\text{UncExc}_{\text{Total}} := \text{UncExc}_{\text{Pier1}}$$

$$\text{UncExc}_{\text{Total}} = 131.7 \cdot \text{CY}$$

Use 140 CY

505E11100 PILE DRIVING EQUIPMENT MOBILIZATION (LS):

$$\text{Cost} := 3 \cdot 7500\$ = 22500.00\,\$$$

Lump Sum

Total = $22,500

507E00100 Steel Piles HP10x42, Furnished (FT):

$HP10PilesFurnished_{RearAbut} := RearAbutPiles_{Number} \cdot \left(RearAbutPiles_{Length} + 5.0ft\right) = 1000.00\ ft$

$HP10PilesFurnished_{FwdAbut} := FwdAbutPiles_{Number} \cdot \left(FwdAbutPiles_{Length} + 5.0ft\right) = 1170.00\ ft$

$HP10PilesFurnished := HP10PilesFurnished_{RearAbut} + HP10PilesFurnished_{FwdAbut}$

$HP10PilesFurnished = 2170\ ft$

507E00150 Steel Piles HP10x42, Driven (FT):

$HP10PilesDriven_{RearAbut} := RearAbutPiles_{Number} \cdot RearAbutPiles_{Length} = 900.00\ ft$

$HP10PilesDriven_{FwdAbut} := FwdAbutPiles_{Number} \cdot FwdAbutPiles_{Length} = 1040.00\ ft$

$HP10PilesDriven := HP10PilesDriven_{RearAbut} + HP10PilesDriven_{FwdAbut}$

$HP10PilesDriven = 1940\ ft$

507E00200 Steel Piles HP12x53, Furnished (FT):

$HP12PilesFurnished_{Pier1} := Pier1Piles_{Number} \cdot \left(Pier1Piles_{Length} + 5.0ft\right) = 540.00\ ft$

$HP12PilesFurnished := HP12PilesFurnished_{Pier1}$

$HP12PilesFurnished = 540\ ft$

507E00250 Steel Piles HP12x53, Driven (FT):

$HP12PilesDriven_{Pier1} := Pier1Piles_{Number} \cdot Pier1Piles_{Length} = 450.00\ ft$

$HP12PilesDriven := HP12PilesDriven_{Pier1}$

$HP12PilesDriven = 450\ ft$

511E33501 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN (EACH):

$Guide := 2$

$Guide = 2.0 \cdot Each$

511E34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (CY):

$$Concrete_{Deck} := Bridge_{Length} \cdot Deck_{Width} \cdot Deck_{Thickness} = 150.6 \cdot CY$$

$$Concrete_{Haunch} := Bridge_{Length} \cdot \left[\left(HaunchThickness_{Avg} \cdot TopFlange_{Width.ave} \right) \left(Beam_{No} - 2 \right) \right] = 3.7 \cdot CY$$

$$Concrete_{Overhang} := Bridge_{Length} \cdot \begin{bmatrix} \left(Deck_{Overhang.Thickness.Left} - Deck_{Thickness} \right) \cdot DeckOverhang_{Left} \ldots \\ + \left(Deck_{Overhang.Thickness.Right} - Deck_{Thickness} \right) \cdot DeckOverhang_{Right} \end{bmatrix} = 14.6 \cdot CY$$

$$Concrete_{RearDiaphragm} := 22CY$$

$$Concrete_{FwdDiaphragm} := 35CY$$

$$Concrete_{Deck.Total} := Concrete_{Deck} + Concrete_{Haunch} + Concrete_{Overhang} + Concrete_{RearDiaphragm} + Concrete_{FwdDiaphragm}$$

$Concrete_{Deck.Total} = 225.9 \cdot CY$

Total = 230 CY

511E34463 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN (CY)*:*

$$Concrete_{Parapet} := [202.33\,ft + 194.01\,ft + (29.79\,ft + 30.12\,ft + 29.25\,ft + 32.72\,ft)] \cdot Parapet_{Area}$$

$Concrete_{Parapet} = 79.8 \cdot CY$

Total = 80 CY

511E40512 CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS (CY):

$$Pier1Cap_{ElevSurfaceArea} := 119.41\,ft^2$$

$$Concrete_{Pier1Wall} := Pier1Cap_{ElevSurfaceArea} \cdot Pier1Cap_{Width} \ldots + Pier1Wall_{Length} \cdot Pier1Wall_{Width} \cdot Pier1Wall_{Height} = 84.87 \cdot CY$$

$Concrete_{Pier1Wall} = 84.9 \cdot CY$

Total = 90 CY

511E44112 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING (CY):

$$ConcreteRearAbut_{Stem} := \left[AbutStemLength_{Rear} \cdot \left(PropBeamSeat_{Rear} - TopFtgElev_{RearAbut}\right) ft\right] \cdot AbutStem_{Width}$$

$$ConcreteRearAbut_{Stem} = 7.26 \cdot CY$$

$$ConcreteRearAbut_{Wingwalls} := \left(67.23\,ft^2 + 97.02\,ft^2\right) \cdot Wingwall_{Width} + \left(8.73\,ft^2 \cdot 8.58\,ft\right) + \left(8.93\,ft^2 \cdot 7.36\,ft\right) = 26.50 \cdot CY$$

$$ConcreteRearAbut_{Wingwalls} = 26.50 \cdot CY$$

$$ConcreteFwdAbut_{Stem} := \left[AbutStemLength_{Fwd} \cdot \left(PropBeamSeat_{Fwd} - TopFtgElev_{FwdAbut}\right) ft\right] \cdot AbutStem_{Width} \ldots + .0729\,ft^2 \cdot \left(PropBeamSeat_{Fwd} - TopFtgElev_{FwdAbut}\right) ft$$

$$ConcreteFwdAbut_{Stem} = 8.48 \cdot CY$$

$$ConcreteFwdAbut_{Wingwalls} := \left(84.00\,ft^2 + 121.25\,ft^2\right) \cdot Wingwall_{Width} + \left(18.56\,ft^2 \cdot 7.09\,ft\right) + \left(13.56\,ft^2 \cdot 9.03\,ft\right) = 36.02 \cdot CY$$

$$ConcreteFwdAbut_{Wingwalls} = 36.02 \cdot CY$$

$$Concrete_{AbutmentTotal} := ConcreteRearAbut_{Stem} + ConcreteRearAbut_{Wingwalls} + ConcreteFwdAbut_{Stem} + ConcreteFwdAbut_{Wingwalls}$$

$$Concrete_{AbutmentTotal} = 78.3 \cdot CY$$

Total = 80 CY

511E46512 CLASS QC1 CONCRETE WITH QC/QA, FOOTING (CY):

$Concrete_{RearAbutFooting} := AbutFtgLength_{Rear} \cdot AbutFtg_{Width} \cdot AbutFtgHeight_{Rear} = 60.83 \cdot CY$

$Concrete_{FwdAbutFooting} := AbutFtgLength_{Fwd} \cdot AbutFtg_{Width} \cdot AbutFtgHeight_{Fwd} = 83.33 \cdot CY$

$Concrete_{FootingAbutments} := Concrete_{RearAbutFooting} + Concrete_{FwdAbutFooting} = 144.17 \cdot CY$

$Concrete_{FootingAbutments} = 144.17 \cdot CY$

Total = 145 CY

$Concrete_{Pier1Footing} := PierFooting_{Length} \cdot PierFooting_{Width} \cdot PierFooting_{Height} = 58.33 \cdot CY$

$Concrete_{Pier1Footing} = 58.33 \cdot CY$

Total = 59 CY

$Concrete_{FootingTotal} := Concrete_{RearAbutFooting} + Concrete_{FwdAbutFooting} + Concrete_{Pier1Footing} = 202.5 \cdot CY$

$Concrete_{FootingTotal} = 202.5 \cdot CY$

Total = 204 CY

512E10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) (SY):

$Sealing_{Deck.Parapet} := 9.45\,ft \cdot (200.74\,ft + 193.57\,ft) = 414.0 \cdot SY$

$Sealing_{Approach.Parapet} := (30.81\,ft + 29.40\,ft + 32.78\,ft + 31.333\,ft)(9.53\,ft) = 131.6 \cdot SY$

$Sealing_{RearAbutStem} := DiaphragmLength_{Rear} \cdot \left(TopDiaphElev_{Rear} - TopSlopeElev_{RearAbut}\right) \cdot ft = 24.1 \cdot SY$

$Sealing_{FwdAbutStem} := DiaphragmLength_{Fwd} \cdot \left(TopDiaphElev_{Fwd} - TopSlopeElev_{FwdAbut}\right) \cdot ft = 38.1 \cdot SY$

$Sealing_{WingLeftRearTop} := 69.48\,ft^2$ $Sealing_{WingLeftRearFront} := 83.12\,ft^2$

$$Sealing_{Wing.Left.Rear} := Sealing_{WingLeftRearTop} + \left(WWSlopeLength_{RightRear} + 1\,ft\right) \cdot 6\,in + Sealing_{WingLeftRearFront} \cdots + \left(WWElev_{BotRearLeft} - TopFtgElev_{RearAbut}\right) ft \cdot Wingwall_{Width}$$

$Sealing_{Wing.Left.Rear} = 18.2 \cdot SY$

$Sealing_{WingRightRearTop} := 84.42\,ft^2$ $Sealing_{WingRightRearFront} := 116.744\,ft^2$

$$Sealing_{Wing.Right.Rear} := Sealing_{WingRightRearTop} + \left(WWSlopeLength_{RightRear} + 1\,ft\right) \cdot 6\,in + Sealing_{WingRightRearFront} \cdots + \left(WWElev_{BotRearRight} - TopFtgElev_{RearAbut}\right) ft \cdot Wingwall_{Width}$$

$Sealing_{Wing.Right.Rear} = 23.6 \cdot SY$

$Sealing_{WingLeftFwdTop} := 94.32ft^2$ $Sealing_{WingLeftFwdFront} := 120.71ft^2$

$Sealing_{Wing.Left.Fwd} := Sealing_{WingLeftFwdTop} + \left(WWSlopeLength_{LeftFwd} + 3.83ft\right)\cdot 6in + Sealing_{WingLeftFwdFront} \cdots$
$+ \left(WWElev_{BotFwdLeft} - TopFtgElev_{FwdAbut}\right)ft\cdot Wingwall_{Width}$

$Sealing_{Wing.Left.Fwd} = 25.3\cdot SY$

$Sealing_{WingRightFwdTop} := 102.78ft^2$ $Sealing_{WingRightFwdFront} := 149.77ft^2$

$Sealing_{Wing.Right.Fwd} := Sealing_{WingRightFwdTop} + \left(WWSlopeLength_{RightFwd} + 6.911899ft\right)\cdot 6in + Sealing_{WingRightFwdFront} \cdots$
$+ \left(WWElev_{BotFwdRight} - TopFtgElev_{FwdAbut}\right)ft\cdot Wingwall_{Width}$

$Sealing_{Wing.Right.Fwd} = 29.6\cdot SY$

$Sealing_{Pier1CapSidePerimeter} := 3.77ft$ $Sealing_{Pier1Cap1ftTopArea} := 2.06ft^2$

$Sealing_{Pier1} := 2\left(Pier1Wall_{Length} + Pier1Wall_{Width}\right)\cdot\left(Pier1Wall_{Height}\right) + Pier1Wall_{Length}\cdot Sealing_{Pier1CapSidePerimeter}\cdot 2 \ldots = 161.53\cdot SY$
$+ 2\cdot Sealing_{Pier1Cap1ftTopArea}$

$Sealing_{Pier1} = 161.5\cdot SY$

$Sealing_{AbutTotal} := Sealing_{RearAbutStem} \cdots$
$+ Sealing_{FwdAbutStem} + Sealing_{Wing.Left.Rear} + Sealing_{Wing.Right.Rear} \cdots$
$+ Sealing_{Wing.Left.Fwd} + Sealing_{Wing.Right.Fwd}$

$Sealing_{AbutTotal} = 158.89\cdot SY$

$Sealing_{PierTotal} := 150SY$

$Sealing_{PierTotal} = 150.00\cdot SY$

$RearMSEwall := 1935ft^2 + 11in\cdot(34ft + 81ft + 34ft) + 59.73ft^2 + 125.49ft^2 + 73ft\cdot 2.4167ft = 270.36\cdot SY$

$ForwardMSEWall := 1960ft^2 + 11in\cdot(66.71ft + 25.80ft) + 116.57ft^2 + 2.4167ft\cdot 100ft = 267.00\cdot SY$

$Sealing_{Total} := Sealing_{Deck.Parapet} + Sealing_{Approach.Parapet} + Sealing_{RearAbutStem} \cdots$
$+ Sealing_{FwdAbutStem} + Sealing_{Wing.Left.Rear} + Sealing_{Wing.Right.Rear} \cdots$
$+ Sealing_{Wing.Left.Fwd} + Sealing_{Wing.Right.Fwd} + Sealing_{PierTotal} + RearMSEwall + ForwardMSEWall$

$Sealing_{Total} = 1391.9\cdot SY$

Total = 1392 SY

513E10301 STRUCTURAL STEEL MEMBERS, LEVEL 5, AS PER PLAN (LB):

Total = 256,298 lbs

513E20000 WELDED STUD SHEAR CONNECTORS (EACH):

$Shear_{Studs} := Beam_{No} \cdot Stud_{rows} \cdot Stud_{per.row} + 48$

$Shear_{Studs} = 2148.0 \cdot Each$

514E00061 FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN (SF):

Total = 16,900 SF

514E00067 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN (SF):

Total = 16,900 SF

516E14600 STRUCTURAL JOINT OR JOINT SEALER, MISC.: EMSEAL WITH SLEEPER SLAB (FT):

$ArmorlessJoint_{RearApprSlabLength} := 29ft$

$ArmorlessJoint_{FwdApprSlabLength} := 47ft$

$ArmorlessJoint_{TotalLength} := ArmorlessJoint_{RearApprSlabLength} + ArmorlessJoint_{FwdApprSlabLength}$

$ArmorlessJoint_{TotalLength} = 76.0\ ft$

516E13601 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN (SF):

$PEJF_{1IN} := 19.87ft^2$

$PEJF_{1IN} = 19.9 \cdot SF$

Total = 20 SF

516E13901 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN (SF):

$PEJF_{2INRear} := 7.0400ft \cdot 4.849101ft + 5.820ft \cdot 4.91ft = 62.7\ ft^2$

$PEJF_{2INFwd} := 5.85ft \cdot 6.87ft + 7.79ft \cdot 6.75ft = 92.8\ ft^2$

$PEJF_{2IN} := PEJF_{2INRear} + PEJF_{2INFwd}$

$PEJF_{2IN} = 155.5 \cdot SF$

Total = 156 SF

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

$Joint_{Seal.Rear} := 45ft = 45.0\ ft$

$Joint_{Seal.Fwd} := 64ft = 64.0\ ft$

$Joint_{Seal.Total} := Joint_{Seal.Rear} + Joint_{Seal.Fwd}$ $Joint_{Seal.Total} = 109.0\ ft$

869E00101 HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN (EACH):

$Bearing_{Abut} := 8$ $Bearing_{Abut} = 8.0 \cdot Each$

$Bearing_{Pier} := 4$ $Bearing_{Pier} = 4.0 \cdot Each$

518E21200 POROUS BACKFILL WITH GEOTEXTILE FABRIC (CY):

$Backfill_{Rear} := 3.5ft \cdot 1ft \cdot 34.0833ft + 49ft^2 \cdot 2.5ft + 76ft^2 \cdot 2.5ft = 16.0 \cdot CY$

$Backfill_{Fwd} := 3.5ft \cdot 1ft \cdot 50ft + 97.65ft^2 \cdot 2.5ft + 95ft^2 \cdot 2.5ft = 24.3 \cdot CY$

$Backfill_{Total} := Backfill_{Rear} + Backfill_{Fwd} = 40.31 \cdot CY$ $Backfill_{Total} = 40.3 \cdot CY$

Total = 45 CY

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

$Pipe_{Perfor} := 146.83ft + 123.35ft + 17.75ft + (153.62ft + 180.92ft + 18.29ft)$ $Pipe_{Perfor} = 640.8\ ft$

Total = 645 ft

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

$Pipe_{Non.Perfor} := 4.49ft + 13.10ft = 17.59\ ft$ $Pipe_{Non.Perfor} = 17.6\ ft$

Total = 20 ft

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

$Reinforce_{Bars} := 110224lb$

$Reinforce_{Bars} = 110224\,lb$

840E20000 MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN (SF):

$RearAbutMSE_{Area} := 2943SF$

$RearAbutMSE_{Area} = 2943.0 \cdot SF$

$FwdAbutMSE_{Area} := 2777SF$

$FwdAbutMSE_{Area} = 2777.0 \cdot SF$

$Total\_MSE\_Wall_{Area} := RearAbutMSE_{Area} + FwdAbutMSE_{Area}$

$Total\_MSE\_Wall_{Area} = 5720.0 \cdot SF$

840E26000 CONCRETE COPING (FT):

$Coping_{Rear} := 35.44ft + 81.00ft + 37.68ft = 154.12\,ft$

$Coping_{Fwd} := 188.56ft$

$Coping_{Total} := Coping_{Rear} + Coping_{Fwd} = 342.68\,ft$

Total = 345 ft

526E30010 REINFORCED CONCRETE APPROACH SLABS WITH OA/OC (T=17") (SY):

$ApproachSlabConcrete := 882.21SF + 909.47SF = 1791.68 \cdot SF$

$ApproachSlabConcrete = 199.08 \cdot SY$

Total = 200 sy

204E30010 GRANULAR MATERIAL, TYPE B (CY):

$$GranularB_{Rear} := \frac{(367SF + 545SF + 78SF)}{3} \cdot 120ft = 1466.67 \cdot CY$$

$$GranularB_{Fwd} := \frac{(82SF + 217SF + 280SF)}{3} \cdot 155ft = 1107.96 \cdot CY$$

$$GranularB := GranularB_{Rear} + GranularB_{Fwd} = 2574.63 \cdot CY$$

$GranularB = 2575 \cdot CY$

Total = 2580 cy

204E30020, GRANULAR MATERIAL, TYPE C (CY):

$$Granular_{TypeC.Rear} := 101CY$$

$$Granular_{TypeC.Fwd} := 104CY$$

$$Granular_{CTotal} := Granular_{TypeC.Rear} + Granular_{TypeC.Fwd} = 205.00 \cdot CY$$

$Granular_{CTotal} = 205.00 \cdot CY$

Total = 210 cy

204E50000 GEOTEXTILE FABRIC (SY):

$$Geotextile_{Rear} := 2699SF$$

$$Geotextile_{Fwd} := 2616SF$$

$$Geotextile := Geotextile_{Rear} + Geotextile_{Fwd} = 590.56 \cdot SY$$

$Geotextile = 591 \cdot SY$

840E23000 SELECT GRANULAR BACKFILL (CY):

$\text{SelectGranular}_{\text{Rear}} := 25.90\text{ft}\cdot 1447\text{SF} + 17\text{ft}\cdot 430\text{SF} + 18\text{ft}\cdot 500\text{SF} = 1992.12\cdot\text{CY}$

$\text{SelectGranular}_{\text{Fwd}} := 22.10\text{ft}\cdot 452\text{SF} + 19.10\text{ft}\cdot 667\text{SF} + 15.60\text{ft}\cdot 288\text{SF} + 9.53\text{ft}\cdot 190\text{SF} + 16\text{ft}\cdot 613\text{SF} = 1438.53\cdot\text{CY}$

$\text{SelectGranular}_{\text{MSE.Total}} := \text{SelectGranular}_{\text{Rear}} + \text{SelectGranular}_{\text{Fwd}} = 3430.66\cdot\text{CY}$

$\text{SelectGranular}_{\text{MSE.Total}} = 3430.66\cdot\text{CY}$

Total = 3435 cy

840E21000 WALL EXCAVATION (CY):

$\text{Wall}_{\text{Excavation.Rear}} := \frac{(436\text{SF} + 450\text{SF} + 250\text{SF})}{3}\cdot 135\text{ft} = 1893.33\cdot\text{CY}$

$\text{Wall}_{\text{Excavation.Fwd}} := \frac{(85\text{SF} + 185\text{SF} + 325\text{SF})}{3}\cdot 160\text{ft} = 1175.31\cdot\text{CY}$

$\text{TypeBGranular} := 2580\text{CY}$

$\text{Wall}_{\text{ExcavationTotal}} := \text{Wall}_{\text{Excavation.Rear}} + \text{Wall}_{\text{Excavation.Fwd}} + \text{TypeBGranular} = 5648.64\cdot\text{CY}$

$\text{Wall}_{\text{ExcavationTotal}} = 5648.64\cdot\text{CY}$

Total = 5649 cy

840E22000 FOUNDATION PREPARATION (SY):

$\text{Foundation}_{\text{Prep.Rear}} := 2697\text{SF} = 299.67\cdot\text{SY}$

$\text{Foundation}_{\text{Prep.Forward}} := 2615\text{SF} = 290.56\cdot\text{SY}$

$\text{Foundation}_{\text{Prep.}} := \text{Foundation}_{\text{Prep.Rear}} + \text{Foundation}_{\text{Prep.Forward}} = 590.22\cdot\text{SY}$

Total = 595 sy

840E27000 ON-SITE ASSISTANCE (DAYS):

Total = 5 days

503E21301 UNCLASSIFIED EXCAVATION, AS PER PLAN (LS):

Total = $10,000

613E41201 LOW STRENGTH MORTAR BACKFILL, AS PER PLAN (CY):

$$LSM_{Rear} := \left[(733.75ft - 727.40ft)\cdot 10ft + (733.75ft - 731.75ft)\cdot 6.52ft + 4.35ft\cdot\frac{6.52}{2}ft\right]\cdot 16ft \ldots = 104.39\cdot CY$$
$$+\left[(732.75ft - 727.40ft)\cdot 10ft + (732.75ft - 730.75ft)\cdot 5.02ft + 5.02ft\cdot\frac{3.35}{2}ft\right]\cdot 19ft$$

$$LSM_{Forward} := \left[(727.50ft - 723.60ft)\cdot 10ft + (727.50ft - 725.50ft)\cdot 2.85ft + 2.85ft\cdot\frac{1.9ft}{2}\right]\cdot 32ft \ldots = 126.13\cdot CY$$
$$+\left[(729.50ft - 723.60ft)\cdot 10ft + (729.50ft - 727.50ft)\cdot 5.85ft + 5.85ft\cdot\frac{3.9ft}{2}\right]\cdot 23ft$$

$$LSM_{Total} := LSM_{Rear} + LSM_{Forward} = 230.52\cdot CY$$

Total = 240 CY

512E10300 SEALING CONCRETE BRIDGE DECK WITH HMWM RESIN (SY):

Total = 20 sy

514E10000 FINAL INSPECTION REPAIR (EACH):

One per 150ft and 5% of crossframes

Total = 8 (each)

507E93300 STEEL POINTS OR SHOES (EACH):

$$Total_{numbers} := RearAbutPiles_{Number} + FwdAbutPiles_{Number} + Pier1Piles_{Number} = 64.00$$

Total = 64 (each)

530E00600 STRUCTURES - AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN) (SF):

$$Total_{area} := RearAbutMSE_{Area} + FwdAbutMSE_{Area} + \frac{Concrete_{Parapet}}{Parapet_{Area}}\cdot 3ft = 7274.66\cdot SF$$

Total = 7275 SF

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Calculation	Steel Quantity
Description	MUS-70-1142

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review
•064771	•6002766	•AH, 12/16/20	• RSN, 12/2920	•	•	•

Structural Steel

								CF	LB	Total - LB
G1	3.583333	0.625	68.612	18	0.875	18	1	28.89	14154.2	**256297.31**
G2	4.083333	0.625	73.594	18	0.875	18	1	32.90	16121.0	
G3	4.583333	0.625	63.847	18	0.875	18	1	30.21	14800.6	
G4	4.75	0.625	68.503	18	0.875	18	1	33.00	16171.3	
G1	3.583333	0.625	52.043	18	1.5	22	1.75	33.39	16358.8	
G2	4.083333	0.625	53.128	20	1	20	1.5	29.75	14575.6	
G3	4.583333	0.625	54.22	20	1	20	1.5	31.77	15567.1	
G4	4.75	0.625	55.314	18	1.5	22	1.5	36.73	17998.7	
G1	3.583333	0.625	79.26	18	0.875	18	1	33.37	16350.8	
G2	4.083333	0.625	70.369	18	0.875	18	1	31.46	15414.6	
G3	4.583333	0.625	76.509	18	0.875	18	1	36.20	17735.9	
G4	4.75	0.625	68.503	18	0.875	18	1	33.00	16171.3	

Bearing Stiffener

1	3.583333	10	0.875				0.22	106.7
2	4.083333	10	0.875				0.50	243.2
2	4.583333	10	0.875				0.56	272.9
1	4.75	10	0.875				0.29	141.4

Jacking Stiffener

4	3.583333	11	0.875				0.96	469.4
4	4.083333	11	0.875				1.09	534.9
4	4.583333	11	0.875				1.23	600.4
4	4.75	11	0.875				1.27	622.3

End Diaphragm Steel

	6.583333	104						684.7
	6.583333	104						684.7
	6.583333	104						684.7
1	3.583333	10	0.875				0.22	106.7
2	4.083333	10	0.875				0.50	243.2
2	4.583333	10	0.875				0.56	272.9
1	4.75	10	0.875				0.29	141.4
6	1.5	20	0.875				1.09	535.9

End Diaphragm Steel

	10.16667	104						1057.3
	9.833333	104						1022.7
	9.5	104						988.0
1	3.583333	10	0.875				0.22	106.7
2	4.083333	10	0.875				0.50	243.2
2	4.583333	10	0.875				0.56	272.9
1	4.75	10	0.875				0.29	141.4
6	1.5	20	0.875				1.09	535.9

Splice

16	2.791667	1.5	0.75					2051.9
32	2.791667	0.625	0.75					1709.9
4	2.708333	1.458333	0.625					403.2
4	3.375	1.458333	0.625					502.4
4	3.708333	1.458333	0.625					552.1
4	4	1.458333	0.625					595.5

Intermediate Diaphragms + Plate

13	8	3.5	0.625	8	0.625		26.18	12828.5
13	8	4	0.625	8	0.625		28.89	14155.6
12	8	4.3333	0.625	8	0.625		28.33	13883.3
12	3.583333	8	0.625				1.49	731.6
24	4.083333	8	0.625				3.40	1667.4
23	4.583333	8	0.625				3.66	1793.5
11	4.75	8	0.625				1.81	889.0

Top Bracing

8	20	15						2400.0

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Calculation: **Paint Quantity**

Description: MUS-70-1142

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review
•064771	•6002766	•AH, 12/16/20	• RSN, 12/2920	•	•	•

Structural Steel

								Premiter - FT	SF	**Total - SF**
G1	3.583	0.625	68.612	18	0.875	18	1	11.88	814.77	**16809.8**
G2	4.083	0.625	73.594	18	0.875	18	1	12.88	947.52	
G3	4.583	0.625	63.847	18	0.875	18	1	13.88	885.88	
G4	4.750	0.625	68.503	18	0.875	18	1	14.21	973.31	
G1	3.583	0.625	52.043	18	1.5	22	1.75	12.77	664.63	
G2	4.083	0.625	53.128	20	1	20	1.5	13.48	716.12	
G3	4.583	0.625	54.22	20	1	20	1.5	14.48	785.06	
G4	4.750	0.625	55.314	18	1.5	22	1.5	15.06	833.17	
G1	3.583	0.625	79.26	18	0.875	18	1	11.88	941.21	
G2	4.083	0.625	70.369	18	0.875	18	1	12.88	906.00	
G3	4.583	0.625	76.509	18	0.875	18	1	13.88	1061.56	
G4	4.750	0.625	68.503	18	0.875	18	1	14.21	973.31	

Bearing Stiffener

1	3.583	10	0.875				6.23	6.23
2	4.083	10	0.875				7.10	14.21
2	4.583	10	0.875				7.97	15.95
1	4.750	10	0.875				8.26	8.26

Jacking Stiffener

4	3.583	11	0.875				6.83	27.32
4	4.083	11	0.875				7.78	31.14
4	4.583	11	0.875				8.74	34.95
4	4.750	11	0.875				9.05	36.22

End Diaphragm Steel

	6.58	12.8	0.75	22.5	0.5		8.18	53.87
	6.58	12.8	0.75	22.5	0.5		8.18	53.87
	6.58	12.8	0.75	22.5	0.5		8.18	53.87
1	3.58	10	0.875				6.23	6.23
2	4.08	10	0.875				7.10	14.21
2	4.58	10	0.875				7.97	15.95
1	4.75	10	0.875				8.26	8.26
6	1.50	20	0.875				5.46	32.77

End Diaphragm Steel

	10.17	12.8	0.75	22.5	0.5		8.18	83.20
	9.83	12.8	0.75	22.5	0.5		8.18	80.47
	9.50	12.8	0.75	22.5	0.5		8.18	77.74
1	3.58	10	0.875				6.23	6.23
2	4.08	10	0.875				7.10	14.21
2	4.58	10	0.875				7.97	15.95
1	4.75	10	0.875				8.26	8.26
6	1.50	20	0.875				5.46	32.77

Splice

16	2.79	1.5	0.75			8.91	142.58
32	2.79	7.5	0.75			3.92	125.33
4	2.71	1.458333	0.625			8.33	33.33
4	3.38	1.458333	0.625			10.35	41.39
4	3.71	1.458333	0.625			11.35	45.42
4	4.00	1.458333	0.625			12.24	48.94

Intermediate Diaphragms + Plate

13	8	3.5	0.625	8	0.625	9.77	1016.17
13	8	4	0.625	8	0.625	10.77	1120.17
12	8	4.3333	0.625	8	0.625	11.44	1097.99
12	3.58	8	0.625			4.96	59.57
24	4.08	8	0.625			5.66	135.77
23	4.58	8	0.625			6.35	146.05
11	4.75	8	0.625			6.58	72.39

Top Bracing

8	15	8	0.5	5.5	0.375	12.41667	1490.00

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 — ()

Tight, phased removal — 3125 SqFt X $50.0 /SF = $ 156,230

202E 22900 APPROACH SLAB REMOVED — (SY) = 58.0 — ()

Approach removed
515 SqFt / 9 = 57.2 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING — (LS) = 1.0 — ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN — (LS) = 1.0 — (CHECK UNIT OF MEASURE)

509E 10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN — (LB) = 361,108 — ()

361,108.0 LB

FOR REBAR QUANTITY SEE REBAR CALCS

509E 20001 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN — (LB) = 300 — ()

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN — (EACH) = 59 — ()

Rear Abutment = 17.0 EACH
Pier 2 = 42.0 EACH

511E 33500 SEMI-INTEGRAL DIAPHRAGM GUIDE — (EACH) = 1 — ()

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN — (CY) = 77 — (CHECK UNIT OF MEASURE)

Deck - Above Flange Span 1			2,412.00 sf	X	8.50 in	/ (27 cf/cy)) =	63.3	CU YD
Deck - Haunch	414.31 ft (Length)	X	0.167 sf (Area)			/ (27 cf/cy)) =	2.6	CU YD
Median Overhang	136.99 ft	X	0.552 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	2.8	CU YD
Diaphragm	59.46 SqFt (CAD Area)		3.75 ft (Width)			/ (27 cf/cy)) =	8.3	CU YD

511E 34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN — (CY) = 37 — (CHECK UNIT OF MEASURE)

Median	161.99 ft (Length)	X 1 X	6.16 sf (CAD Area)			/ (27 cf/cy)) =	37.0	CU YD

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP — (CY) = 12 — ()

Pier 2 Cap			2.08 ft (Width)	X	139.90 sf (CAD Area)	/ (27 cf/cy)) =	10.8	CU YD
			0.58 ft	X	31.32 sf	/ (27 cf/cy)) =	0.7	CU YD
			0.29 ft	X	5.94 sf	/ (27 cf/cy)) =	0.1	CU YD

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT — (CY) = 4 — (REPAIR OR RECONSTRUCTION)

Rear, Stem	28 SqFt (Length)	X	3.75 ft (Width)			/ (27 cf/cy)) =	3.8	CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 434 — ()

Rear Abutment					479.76 sf (CAD Area)	=	479.76 sf	/(9 sf/sy) =	53	SqYd
Pier 1					650.65 sf	=	650.65 sf	/(9 sf/sy) =	72	SqYd
Pier 2					867.00 sf (CAD Area)	=	867.00 sf	/(9 sf/sy) =	96	SqYd
Median and Deck Underside	137.0 ft (Total Length)	X	12.00 ft (Curb/Parapet perimeter)	25.0 ft (A.S.)	x	10.4 ft (Perimeter)	1,903.88 sf	/(9 sf/sy) =	212	SqYd

512E 10601	CONCRETE REPAIR BY EPOXY INJECTION, AS PER PLAN	(FT) = 100	()	
512E 33000	TYPE 2 WATERPROOFING	(SY) = 8	(CHECK UNIT OF MEASURE)	
Rear abutment	22.38 ft (Stem Length + Stem Height)	x 3' strip /'(9 sf/sy)	=	7.5 SqYd
513E 10260	STRUCTURAL STEEL MEMBERS, LEVEL 3	(LB) = 361,913	(CHECK UNIT OF MEASURE)	
				361,913 LB
513E 20000	WELDED STUD SHEAR CONNECTORS	(EACH) = 14,355	()	
				14,355 Each
513E 90000	STRUCTURAL STEEL, MISC.:	(LB) = 5,000	(ADD SUPPLEMENTAL DESCRIPTION)	
	STEEL GIRDER REPAIRS			5,000 LB
514E 00050	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	(SF) = 76,700	()	
				76,700 SF
514E 00056	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	(SF) = 76,700	()	
				76,700 SF
514E 00061	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN	(SF) = 97,000	()	
				97,000 SF
514E 00061	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN	(SF) = 97,000	()	
				97,000 SF
514E 00067	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	(SF) = 97,000	()	
				97,000 SF
514E 00504	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	(MNHR) = 43	()	
				43 MNHR
514E 10000	FINAL INSPECTION REPAIR	(EACH) = 37	()	
				37 EACH
516E 11211	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	(FT) = 21	()	
Pier 2	20.364 ft		=	20.4 Feet
516E 13601	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	(SF) = 7	()	
Approach Slab Medians	6.16 SqFt (CAD Area) X 1 (Number of Joints)		=	6.2 Sq. Ft.
516E 13901	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	(SF) = 23	()	
diaphragm guide	3.75 SqFt (length) X 5.89 ft (length)		=	22.1 Sq. Ft.
516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	(FT) = 18	()	
Rear Abutment	17.630 ft		=	17.6 Feet
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:	(FT) = 18	(ADD SUPPLEMENTAL DESCRIPTION)	
	17.6 ft			17.6 ft
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN	(EACH) = 6	(2"-3" TK, SPECIFY DIMENSIONS)	
Rear Abutment	3 (Girders)		=	3.0 EACH
Pier 2	3 (Girders)		=	3.0 EACH
516E 46900	BEARING DEVICE, MISC.:	(EACH) = 3	(ADD SUPPLEMENTAL DESCRIPTION)	
Pier 1	3		=	3.0 EACH
	SEISMIC ISOLATION BEARINGS			
518E 12201	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN	(EACH) = 2	(STEEL BEAM BRIDGES)	
				2.0 EACH
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC	(CY) = 4	(CHECK UNIT OF MEASURE)	
Rear Abutment	15.28 sf X 2.0 ft (Thickness) / (27 cf/cy)) =			1.1 CU YD

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Calculation	**Final Tracings Bridge Quantities**
Description	*MUS-70-1159 WEST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

518E 63300	**STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM, AS PER PLAN**		**(LS) =**	**1**	

519E 11101	**PATCHING CONCRETE STRUCTURE, AS PER PLAN**		**(SF) =**	**24**	0
Rear abutment	10 SqFt			=	**10.0** *Sq. Ft.*
Pier 1	0 SqFt			=	**0.0** *Sq. Ft.*
Pier 2	14 SqFt			=	**14.0** *Sq. Ft.*
526E 25010	**REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")**		**(SY) =**	**48**	0
	431 SqFt *CAD Area Rear*	**/9**		=	**47.9** *SY*
613E 41201	**LOW STRENGTH MORTAR BACKFILL, AS PER PLAN**		**(CY) =**	**37**	0

9.500 ft *width*	17.35 sf *length*	**X**	4.620 ft *HEIGHT*	**/ (27 cf/cy)) =**			**28.2** *CU YD*
3.930 ft *width (1 to 1.5 section)*	17.3 ft *length*	**X**	1.310 ft *HEIGHT*	**/ (27 cf/cy)) =**			**3.3** *CU YD*
3.9 ft *width (1 to 1.5 section)*	17.3 ft *length*	**X**	2.000 ft *HEIGHT*	**/ (27 cf/cy)) =**			**5.1** *CU YD*

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (LS) = 1.0 ()

Tight, phased removal 2755 SqFt X $50.0 /SF $ 137,767

202E 22900 APPROACH SLAB REMOVED (SY) = 54.0 ()

Approach removed
485 SqFt / 9 53.9 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING (LS) = 1.0 ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN (LS) = 1.0 (CHECK UNIT OF MEASURE)

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN (EACH) = 54 ()

Rear Abutment	=	14.0 EACH
Pier 2	=	40.0 EACH

511E 33500 SEMI-INTEGRAL DIAPHRAGM GUIDE (EACH) = 1 ()

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN (CY) = 77 (CHECK UNIT OF MEASURE)

Deck - Above Flange Span 1			1,166.00 sf	X	8.75 in	/ (27 cf/cy)) =	31.5 CU YD
Deck - Above Flange Span 2			1,125.00 sf	X	8.75 in	/ (27 cf/cy)) =	30.4 CU YD
Deck - Haunch	391.56 ft (Length)	X	0.167 sf (Area)	X		/ (27 cf/cy)) =	2.4 CU YD
Median Overhang	136.50 ft (Length)	X	0.796 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	4.0 CU YD
Diaphragm	59.82 SqFt (CAD Area)		3.75 ft (Width)			/ (27 cf/cy)) =	8.3 CU YD

511E 34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN (CY) = 37 (CHECK UNIT OF MEASURE)

Median 161.50 ft X 1 X 6.16 sf / (27 cf/cy)) = 36.8 CU YD

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP (CY) = 11 ()

Pier 2 Cap			2.08 ft (Width)	X	126.48 sf (CAD Area)	/ (27 cf/cy)) =	9.8 CU YD
			0.58 ft (Width)	X	34.08 sf (CAD Area)	/ (27 cf/cy)) =	0.7 CU YD
			0.29 ft (Width)	X	5.90 sf (CAD Area)	/ (27 cf/cy)) =	0.1 CU YD

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT (CY) = 4 (REPAIR OR RECONSTRUCTION)

Rear, Stem 24 SqFt (Length) X 3.75 ft (Width) / (27 cf/cy)) = 3.4 CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) (SY) = 417 ()

Rear Abutment					455.10 sf	=	455.1 sf	/(9 sf/sy) =	51 SqYd
Pier 1					642.73 sf	=	642.7 sf	/(9 sf/sy) =	71 SqYd
Pier 2					754.21 sf	=	754.2 sf	/(9 sf/sy) =	84 SqYd
Median and Deck Underside	136.5 ft (Total Length)	X	12.00 ft (Curb/Parapet perimeter)	+	25.0 ft (A.S.)	x	10.4 ft (Perimeter)	/(9 sf/sy) =	211 SqYd

512E 33000	TYPE 2 WATERPROOFING						(SY) =	8	(CHECK UNIT OF MEASURE)
Rear abutment	22.45 ft Stem Length + Stem Height			x 3' strip	/'(9 sf/sy)		=		7.5 SqYd
516E 11211	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN						(FT) =	20	()
Pier 2	19.165 ft						=		19.2 Feet
516E 13601	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) =	12	()
Approach Slab Medians	6.16 SqFt CAD Area	X	1 Number of Joints				=		6.2 Sq. Ft.
Abutment	3.75 ft depth	X	1.333 ft Number of Joints				=		5.0 Sq. Ft.
516E 13901	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) =	58	()
diaphragm guide	3.750 ft CAD Area	X	5.90 ft height				=		22.1 Sq. Ft.
Abutment	3.750 ft CAD Area	X	9.50 ft height				=		35.6 Sq. Ft.
516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL						(FT) =	18	()
Rear Abutment	17.700 ft						=		17.7 Feet
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:						(FT) =	18	(ADD SUPPLEMENTAL DESCRIPTION)
	17.7 ft								17.7 ft
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN						(EACH) =	6	(2"-3" TK, SPECIFY DIMENSIONS)
Rear Abutment	3 Girders						=		3.0 EACH
Pier 2	3 Girders						=		3.0 EACH
516E 46900	BEARING DEVICE, MISC.:						(EACH) =	3	(ADD SUPPLEMENTAL DESCRIPTION)
Pier 1	3		SEISMIC ISOLATION BEARINGS				=		3.0 EACH
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC						(CY) =	2	(CHECK UNIT OF MEASURE)
Rear Abutment	18.00 sf	X	2.0 ft Thickness	/	(27 cf/cy)) =				1.3 CU YD
519E 11101	PATCHING CONCRETE STRUCTURE, AS PER PLAN						(SF) =	64	()
Pier 1	0 SqFt						=		0.0 Sq. Ft.
Pier 2	64 SqFt						=		64.0 Sq. Ft.
526E 25010	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")						(SY) =	48	()
	431 SqFt CAD Area Rear				/9		=		47.9 SY
613E 41201	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN						(CY) =	37	()
9.500 ft width	17.34 sf length	X	4.620 ft HEIGHT	/	(27 cf/cy)) =				28.2 CU YD
3.930 ft width (1 to 1.5 section)	17.3 ft length	X	1.310 ft HEIGHT	/	(27 cf/cy)) =				3.3 CU YD
3.9 ft width (1 to 1.5 section)	17.3 ft length	X	2.000 ft HEIGHT	/	(27 cf/cy)) =				5.0 CU YD

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 RIVER SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 — ()

Deck Removed (2 Stages, tight clearances)

13118 SqFt X $20.0 /SF $ 262,360

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN — (CY) = 372 — (CHECK UNIT OF MEASURE)

Deck - Above Flange			11,036 sf (CAD Area)	X	9.50 in (Thickness)	/ (27 cf/cy)) =	323.6	CU YD
Deck - Haunch	637.10 ft	X	0.550 sf	X	1 Girders	/ (27 cf/cy)) =	13.0	CU YD
	638.02 ft	X	0.567 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	13.4	CU YD
Median Overhang	639.71 ft	X	0.920 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	21.8	CU YD

511E 34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN — (CY) = 146 — (CHECK UNIT OF MEASURE)

Median	639.71 ft (Length)	X	1	X	6.16 sf (CAD Area)	/ (27 cf/cy)) =	145.9	CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 845 — ()

Median and Deck Underside: 639.7 ft (Total Length) X 11.83 ft (Curb/Paraper perimeter) /(9 sf/sy)= 841 SqYd

516E 44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN — (EACH) = 4 — (2"-3" TK, SPECIFY DIMENSIONS)

2 Girders X 2 (Substructure) — 4 Each

516E 46900 BEARING DEVICE, MISC.: — (EACH) = 4 — (ADD SUPPLEMENTAL DESCRIPTION)

2 Girders X 2 (Substructures) ELASTOMERIC BEARING WITH INTERNAL LAMINATES, LOAD PLATE, AND PTFE SURFACE — 4 Each

516E 46900 BEARING DEVICE, MISC.: — (EACH) = 4 — (ADD SUPPLEMENTAL DESCRIPTION)

2 Girders X 2 (Substructures) SEISMIC ISOLATION BEARINGS — 4 Each

516E 47001 JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN — (LS) = 1 — ()

2 Girders X 6 (Substructures) x $2500/brg = $ 30,000

518E 12500 SCUPPER, MISC.: — (EACH) = 3 — (ADD SUPPLEMENTAL DESCRIPTION)

3 Median — 3 Each

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 RIVER SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203	**PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**							**(LS) = 1.0**		*()*
Deck Removed (2 Stages, tight clearances)										
12809 SqFt	**X**	**$20.0**	**/SF**	**$ 256,180**						
511E 34447	**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN**							**(CY) = 372**		*(CHECK UNIT OF MEASURE)*
Deck - Above Flange span 3				1,944 sf *CAD Area*	**X**	10.00 in *Thickness*		**/ (27 cf/cy)) =**		**60.0** *CU YD*
Deck - Above Flange span 4 and 7				9,092 sf *CAD Area*	**X**	9.50 in *Thickness*		**/ (27 cf/cy)) =**		**266.6** *CU YD*
Deck - Haunch	638.17 ft	**X**		0.538 sf *Area*	**X**	1 Girders *# of Haunches*		**/ (27 cf/cy)) =**		**12.7** *CU YD*
	639.13 ft	**X**		0.478 sf *Area*	**X**	1 Girders *# of Haunches*		**/ (27 cf/cy)) =**		**11.3** *CU YD*
Median Overhang	639.71 ft	**X**		0.899 sf *Area*	**X**	1 Girders *# of Haunches*		**/ (27 cf/cy)) =**		**21.3** *CU YD*
511E 34451	**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN**							**(CY) = 146**		*(CHECK UNIT OF MEASURE)*
Median	639.71 ft *Length*	**X**	**1**	**X** 6.14 sf *CAD Area*				**/ (27 cf/cy)) =**		**145.5** *CU YD*
512E 10050	**SEALING OF CONCRETE SURFACES (NON-EPOXY)**							**(SY) = 842**		*()*
Median and Deck Underside	639.7 ft *Total Length*	**X**	11.83 ft *Curb/Parapet perimeter*							**/(9 sf/sy)= 841 SqYd**
516E 44101	**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN**							**(EACH) = 4**		*(2"-3" TK, SPECIFY DIMENSIONS)*
2 Girders	**X**	2 *Substructure*								**4** *Each*
516E 46900	**BEARING DEVICE, MISC.:**							**(EACH) = 4**		*(ADD SUPPLEMENTAL DESCRIPTION)*
2 Girders	**X**	2 *Substructures*	**ELASTOMERIC BEARING WITH INTERNAL LAMINATES, LOAD PLATE, AND PTFE SURFACE**							**4** *Each*
516E 46900	**BEARING DEVICE, MISC.:**							**(EACH) = 4**		*(ADD SUPPLEMENTAL DESCRIPTION)*
2 Girders	**X**	2 *Substructures*	**SEISMIC ISOLATION BEARINGS**							**4** *Each*
516E 47001	**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN**							**(LS) = 1**		*()*
2 Girders	**X**	6 *Substructures*	**x**	**$2500/brg**	**=**	**$ 30,000**				
518E 12500	**SCUPPER, MISC.:**							**(EACH) = 9**		*(ADD SUPPLEMENTAL DESCRIPTION)*
	9 *Scuppers*	**Median**								**9** *Each*

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 EAST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 — ()

Tight, phased removal: 2893 SqFt X $50.0 /SF $ 144,650

202E 22900 APPROACH SLAB REMOVED — (SY) = 58.0 — ()

Approach removed: 514 SqFt / 9 = 57.1 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING — (LS) = 1.0 — ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN — (LS) = 1.0 — (CHECK UNIT OF MEASURE)

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN — (EACH) = 50 — ()

Forward Abutment	=	14.0 EACH
Pier 7	=	36.0 EACH

511E 33500 SEMI-INTEGRAL DIAPHRAGM GUIDE — (EACH) = 1 — ()

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN — (CY) = 79 — (CHECK UNIT OF MEASURE)

Deck - Above Flange Span 1			2,477.00 sf	X	8.50 in	/ (27 cf/cy)) =	65.0	CU YD
Deck - Haunch	423.80 ft (Length)	X	0.160 sf (Area)	X		/ (27 cf/cy)) =	2.5	CU YD
Median Overhang	143.44 ft	X	0.554 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	2.9	CU YD
Rear Abutment Diaph Conc	59 SqFt (CAD Area)		3.75 ft (Width)			/ (27 cf/cy)) =	8.3	CU YD

511E 34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN — (CY) = 39 — (CHECK UNIT OF MEASURE)

Median	168.44 ft (Length)	X 1 X	6.16 sf (CAD Area)			/ (27 cf/cy)) =	38.4	CU YD

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP — (CY) = 12 — ()

Pier 2 Cap			2.08 ft (Width)	X	139.44 sf (CAD Area)	/ (27 cf/cy)) =	10.8	CU YD
			0.58 ft	X	35.07 sf	/ (27 cf/cy)) =	0.8	CU YD
			0.29 ft	X	5.76 sf	/ (27 cf/cy)) =	0.1	CU YD

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT — (CY) = 6 — (REPAIR OR RECONSTRUCTION)

Rear, Stem	41 SqFt (CAD Area)	X	3.75 ft (Width)			/ (27 cf/cy)) =	5.7	CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 450 — ()

Pier 7					1038.74 sf	=	1,038.7 ft	/(9 sf/sy)=	115 SqYd
Pier 8					581.10 sf	=	581.1 ft	/(9 sf/sy)=	65 SqYd
Forward Abutment					457.20 sf	=	457.2 ft	/(9 sf/sy)=	51 SqYd
Median and Deck Underside	143.4 ft (Total Length)	X	11.83 ft (Curb/Parapet perimeter)	25.0 ft (A.S.)	x	10.4 ft (Perimeter)	1,957.3 ft	/(9 sf/sy)=	217 SqYd

512E 33000	**TYPE 2 WATERPROOFING**						**(SY) =**	**7**	*(CHECK UNIT OF MEASURE)*
forward abutment	20.58 ft *Stem Length + Stem Height*			**x 3' strip**	**/'(9 sf/sy)**		**=**	6.9 SqYd	
516E 11211	**STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN**						**(FT) =**	**20**	*()*
Pier 2	19.750 ft						**=**	**19.8** *Feet*	
516E 13601	**1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN**						**(SF) =**	**7**	*()*
Approach Slab Medians	6.16 SqFt *CAD Area*	**X**	1 *Number of Joints*				**=**	**6.2** *Sq. Ft.*	
516E 13901	**2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN**						**(SF) =**	**66**	*()*
diaphragm guide	4.10 ft *length along skew*	**X**	6.61 ft *height*				**=**	**27.1** *Sq. Ft.*	
Abutment	4.10 ft *length along skew*	**X**	9.27 ft *height*				**=**	**38.0** *Sq. Ft.*	
516E 14020	**SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL**						**(FT) =**	**21**	*()*
Rear Abutment	20.580 ft						**=**	**20.6** *Feet*	
516E 14600	**STRUCTURAL JOINT OR JOINT SEALER, MISC.:**						**(FT) =**	**39**	*(ADD SUPPLEMENTAL DESCRIPTION)*
	39.0 ft							**39.0** *ft*	
516E 44101	**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN**						**(EACH) =**	**6**	*(2"-3" TK, SPECIFY DIMENSIONS)*
Forward Abutment	3 *Girders*						**=**	**3.0** *EACH*	
Pier 7	3 *Girders*						**=**	**3.0** *EACH*	
516E 46900	**BEARING DEVICE, MISC.:**						**(EACH) =**	**3**	*(ADD SUPPLEMENTAL DESCRIPTION)*
Pier 8	3		**SEISMIC ISOLATION BEARINGS**				**=**	**3.0** *EACH*	
518E 21200	**POROUS BACKFILL WITH GEOTEXTILE FABRIC**						**(CY) =**	**3**	*(CHECK UNIT OF MEASURE)*
Forward Abutment	30.60 sf	**X**	2.0 ft *Thickness*	**/ (27 cf/cy)) =**				**2.3** *CU YD*	
519E 11101	**PATCHING CONCRETE STRUCTURE, AS PER PLAN**						**(SF) =**	**53**	*()*
Frwd. abutment	10 SqFt								
Pier 8	0 SqFt						**=**	**53.0** *Sq. Ft.*	
Pier 7	43 SqFt								
526E 25010	**REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")**						**(SY) =**	**49**	*()*
			432 SqFt *CAD Area Fwd*	**/9**			**=**	**48.0** *SY*	
613E 41201	**LOW STRENGTH MORTAR BACKFILL, AS PER PLAN**						**(CY) =**	**46**	*()*
9.500 ft *width*	19.15 sf *length*	**X**	5.070 ft *HEIGHT*	**/ (27 cf/cy)) =**				**34.2** *CU YD*	
4.605 ft *CAD AREA*	19.2 ft *CAD AREA*	**X**	1.535 ft *HEIGHT*	**/ (27 cf/cy)) =**				**5.0** *CU YD*	
4.6 ft *width (1 to 1.5 section)*	19.2 ft *length*	**X**	2.000 ft *HEIGHT*	**/ (27 cf/cy)) =**				**6.5** *CU YD*	

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Calculation: Final Tracings Bridge Quantities
Description: MUS-70-1159 EAST SPANS - RIGHT

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (LS) = 1.0 ()

Tight, phased removal 2478 SqFt X $50.0 /SF $ 123,878

202E 22900 APPROACH SLAB REMOVED (SY) = 58.0 ()

Approach removed
515 SqFt / 9 57.2 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING (LS) = 1.0 ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN (LS) = 1.0 (CHECK UNIT OF MEASURE)

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN (EACH) = 46 ()

Forward Abutment = 14.0 EACH
Pier 7 = 32.0 EACH

511E 33500 SEMI-INTEGRAL DIAPHRAGM GUIDE (EACH) = 1 ()

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN (CY) = 84 (CHECK UNIT OF MEASURE)

Deck - Above Flange Span 1			2,473.58 sf	X	9.00 in	/ (27 cf/cy)) =	68.7	CU YD
Deck - Haunch	423.80 ft (Length)	X	0.160 sf (Area)	X		/ (27 cf/cy)) =	2.5	CU YD
Median Overhang	143.00 ft	X	0.798 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	4.2	CU YD
Rear Abutment Diaph Conc	60 SqFt (CAD Area)		3.75 ft (Width)			/ (27 cf/cy)) =	8.4	CU YD

511E 34451 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN (CY) = 39 (CHECK UNIT OF MEASURE)

Median	168.00 ft (Length)	X 1 X	6.16 sf (CAD Area)			/ (27 cf/cy)) =	38.3	CU YD

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP (CY) = 11 ()

Pier 2 Cap			2.08 ft (Width)	X	126.13 sf (CAD Area)	/ (27 cf/cy)) =	9.7	CU YD
			0.58 ft (Width)	X	31.40 sf (CAD Area)	/ (27 cf/cy)) =	0.7	CU YD
			0.29 ft (Width)	X	16.04 sf (CAD Area)	/ (27 cf/cy)) =	0.2	CU YD

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT (CY) = 6 (REPAIR OR RECONSTRUCTION)

Rear, Stem	36 SqFt (CAD area)	X	3.75 ft (Width)			/ (27 cf/cy)) =	5.1	CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) (SY) = 434 ()

Pier 7					916.08 sf	=	916.1 ft	/(9 sf/sy) =	102	SqYd
Pier 8					561.55 sf	=	561.6 ft	/(9 sf/sy) =	62	SqYd
Forward Abutment					475.43 sf	=	475.4 ft	/(9 sf/sy) =	53	SqYd
Median and Deck Underside	143.0 ft (Total Length)	X	11.83 ft (Curb/Parapet perimeter)	+	25.0 ft (A.S.)	x	10.4 ft (Perimeter)	/(9 sf/sy) =	217	SqYd

512E 33000	TYPE 2 WATERPROOFING						(SY) = 8		(CHECK UNIT OF MEASURE)
Rear abutment	23.58 ft Stem Length + Stem Height			x 3' strip	/'(9 sf/sy)			=	7.9 SqYd
516E 11211	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN						(FT) = 19		()
Pier 7	18.240 ft							=	18.2 Feet
516E 13601	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) = 14		()
Forward Abutment	3.75 Ft depth	X	1.91667 height					=	7.2 Sq. Ft.
Approach Slab Medians	6.16 SqFt CAD Area	X	1 Number of Joints					=	6.2 Sq. Ft.
516E 13901	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) = 27		()
diaphragm guide	4.12 ft depth along skew	X	6.55 ft height					=	27.0 Sq. Ft.
516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL						(FT) = 20		()
Forward Abutment	19.077 ft							=	19.1 Feet
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:						(FT) = 19		(ADD SUPPLEMENTAL DESCRIPTION)
	19.08 ft								19.1 ft
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN						(EACH) = 6		(2"-3" TK, SPECIFY DIMENSIONS)
Forward Abutment	3 Girders							=	3.0 EACH
Pier 7	3 Girders							=	3.0 EACH
516E 46900	BEARING DEVICE, MISC.:						(EACH) = 3		(ADD SUPPLEMENTAL DESCRIPTION)
Pier 8	3		SEISMIC ISOLATION BEARINGS					=	3.0 EACH
518E 12201	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN						(EACH) = 3		(STEEL BEAM BRIDGES)
	3								3.0 EACH
			Thickness						
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC						(CY) = 2		(CHECK UNIT OF MEASURE)
Forward Abutment	18.78 sf	X	2.0 ft Thickness	/	(27 cf/cy)) =				1.4 CU YD
519E 11101	PATCHING CONCRETE STRUCTURE, AS PER PLAN						(SF) = 138		()
Frwd. abutment	10 SqFt								
Pier 8	0 SqFt							=	138.0 Sq. Ft.
Pier 7	128 SqFt								
526E 25010	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")						(SY) = 49		()
			433 SqFt CAD Area Fwd		/9			=	48.1 SY
613E 41201	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN						(CY) = 46		()
9.500 ft width	19.12 sf length	X	5.070 ft HEIGHT	/	(27 cf/cy)) =				34.1 CU YD
4.605 ft CAD AREA	19.1 ft CAD AREA	X	1.535 ft HEIGHT	/	(27 cf/cy)) =				5.0 CU YD
4.6 ft width (1 to 1.5 section)	19.1 ft length	X	2.000 ft HEIGHT	/	(27 cf/cy)) =				6.5 CU YD

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	(LS) = 1.0	()

Tight, phased removal: 8375 SqFt X $50.0 /SF $ 418,750

202E 22900	APPROACH SLAB REMOVED	(SY) = 159.0	()

Approach removed
1430 SqFt / 9 158.9 SqYd

503E 11100	COFFERDAMS AND EXCAVATION BRACING	(LS) = 1.0	()

(Assume $5,000 @ PC joint)

503E 21301	UNCLASSIFIED EXCAVATION, AS PER PLAN	(LS) = 1.0	(CHECK UNIT OF MEASURE)
509E 10001	EPOXY COATED REINFORCING STEEL, AS PER PLAN	(LB) = 377,154	()

377,154.0 *LB*

FOR REBAR QUANTITY SEE REBAR CALCS

510E 10001	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	(EACH) = 182	()

Rear abutment = **68.0** *EACH*
Pier 2 = **114.0** *EACH*

511E 34447	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN						(CY) = 213	(CHECK UNIT OF MEASURE)
Deck - Above Flange			3,450.18 sf	X	8.75 in	/ (27 cf/cy)) =	**93.2** *CU YD*	
			2,348.19 sf	X	8.75 in	/ (27 cf/cy)) =	**63.4** *CU YD*	
Deck - Haunch	597.47 ft	X	0.167 sf	X		/ (27 cf/cy)) =	**0.0** *CU YD*	
	112.22 ft	X	0.168 sf	X	1 Girders	/ (27 cf/cy)) =	**0.7** *CU YD*	
Parapet Overhang	113.17 ft	X	0.455 sf	X	1 Girders	/ (27 cf/cy)) =	**1.9** *CU YD*	
			Area		*# of Haunches*			
Sidewalk	107.13 ft	X	4.65 sf			/ (27 cf/cy)) =	**18.4** *CU YD*	
			CAD Area					
Diaphragm	248 SqFt		3.75 ft			/ (27 cf/cy)) =	**34.5** *CU YD*	
	CAD Area		*width*					
511E 34463	CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PL						(CY) = 21	
Parapet	138.17 ft	X 1 X	4.08 sf			/ (27 cf/cy)) =	**20.9** *CU YD*	
	Length		*CAD Area*					
511E 42512	CLASS QC1 CONCRETE WITH QC/QA, PIER CAP						(CY) = 25	()
Pier 2 Cap			2.08 ft	X	287.81 sf	/ (27 cf/cy)) =	**22.2** *CU YD*	
			Width		*CAD Area*			
cheekwall			1.97 ft	X	4.50 sf	/ (27 cf/cy)) =	**0.3** *CU YD*	
			Width		*CAD Area*			
			0.58 ft	X	77.08 sf	/ (27 cf/cy)) =	**1.7** *CU YD*	
			Width		*CAD Area*			
			0.29 ft	X	12.86 sf	/ (27 cf/cy)) =	**0.1** *CU YD*	
			Width		*CAD Area*			
511E 45712	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT						(CY) = 18	(REPAIR OR RECONSTRUCTION)
Rear, Stem	123.44 ft	X	3.75 ft			/ (27 cf/cy)) =	**17.1** *CU YD*	
	Length		*Width*					
Rear, Backwall	0.00 sf	X	0.00 ft			/ (27 cf/cy)) =	**0.0** *CU YD*	
	CAD Area		*Thickness*					
Rear, WW	1.40 sf	X	2.50 ft			/ (27 cf/cy)) =	**0.1** *CU YD*	
	CAD Area		*width*					

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 935

		Rear abutment	2029.50 sf	+	12.00 sf	+	75.29 sf					
			CAD Area Abutment and WW		top/porp WW		top of WW					
						+	25.10 sf	=	2,141.9 sf	/(9 sf/sy)=	238 SqYd	
							6" behind WW					
							246.92 sf	=	246.9 sf	/(9 sf/sy)=	27 SqYd	
							diaphragm					
							6" behind WW					
		Sidewalk	107.1 ft	+	25.0 ft	x	7.9 ft		=	/(9 sf/sy)=	116 SqYd	
			Total Length		A.S.		Sidewalk Width		Sidewalk Width			
Pier 1	810.20 sf	+	152.61 sf	+	71.09 sf	+	666.32 sf	=	1,700.2 ft	/(9 sf/sy)=	189 SqYd	
	CAD Area (faces)		beam seat		capside		column sides					
Pier 2	364.00 sf	+	287.00 sf	+	27.00 sf	+	28.76 sf					
	CAD Area (west face)		east face (cad area)		cheeckwall		fillet bumpout					
	91.66 sf	+	86.23 sf	+	0.87 sf							
	sideface bumpout		prop beamseat		leftface bumpout							
	64.05 sf	+	323.50 sf	+	233.50 sf	+	624.60 sf		2,131.2 ft	/(9 sf/sy)=	237 SqYd	
	existing side face		east face (cad area)		east face (cad area)		column sides					
	Parapet and Deck Underside		113.2 ft	X	8.03 ft	+	25.0 ft	x	7.8 ft	/(9 sf/sy)=	123 SqYd	
			Total Length		Curb/Paraper perimeter		A.S.		Curb/Paraper perimeter			

512E 10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN — (SY) = 82

PC Joint	130.0 ft	X	2.0 ft	/9	2 ea		57.8
Sidewalk Joint	107.1 ft	X	2.0 ft	/9			23.8

512E 33000 TYPE 2 WATERPROOFING — (SY) = 25 (CHECK UNIT OF MEASURE)

Rear abutment	70.89 ft	+	4.0 ft	x 3' strip	/'(9 sf/sy)	=	25.0 SqYd
	Stem Length + Stem Height		WW Length				

513E 10260 STRUCTURAL STEEL MEMBERS, LEVEL 3 — (LB) = 424,375 (CHECK UNIT OF MEASURE)

= **424,375** *LB*

513E 20000 WELDED STUD SHEAR CONNECTORS — (EACH) = 12,276

= **12,276** *Each*

514E 00050 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL — (SF) = 57,400

= **57,400** *SF*

514E 00056 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT — (SF) = 57,400

= **57,400** *SF*

514E 00061 FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN — (SF) = 84,300

= **84,300** *SF*

514E 00067 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN — (SF) = 84,300

= **84,300** *SF*

514E 00504 GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL — (MNHR) = 33

= **33** *MNHR*

514E 10000 FINAL INSPECTION REPAIR — (EACH) = 41

= **41** *EACH*

516E 11211 STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN — (FT) = 45

Pier 2	44.230 ft	=	**44.2** *Feet*

516E 13601	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) =	5	()
Approach Slab Parapets	4.08 SqFt (CAD Area)	X	1 (Number of Joints)			=	4.1 Sq. Ft.		
516E 13901	2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN						(SF) =	29	()
Wingwall	4.25 ft (Width)	X	6.71 ft (height)			=	28.5 Sq. Ft.		
516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL						(FT) =	62	()
Rear Abutment	61.560 ft					=	61.6 Feet		
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:						(FT) =	65	(ADD SUPPLEMENTAL DESCRIPTION)
	65.0 ft						65.0 ft		
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN						(EACH) =	12	(2"-3" TK, SPECIFY DIMENSIONS)
Rear Abutment	6 (Girders)					=	6.0 EACH		
Pier 2	6 (Girders)					=	6.0 EACH		
516E 46900	BEARING DEVICE, MISC.:						(EACH) =	6	(ADD SUPPLEMENTAL DESCRIPTION)
Pier 1	6		SEISMIC ISOLATION BEARINGS			=	6.0 EACH		
518E 12201	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN						(EACH) =	5	(STEEL BEAM BRIDGES)
	5						5.0 EACH		
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC						(CY) =	7	(CHECK UNIT OF MEASURE)
Rear Abutment	91.88 sf	X	2.0 ft (Thickness)	/	(27 cf/cy)) =		6.8 CU YD		
526E 25010	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")						(SY) =	176	()
	1581 SqFt (CAD Area Rear)			/9		=	175.7 SY		
SPECIAL 53000200	STRUCTURES - MEASUREMENTS FOR PROPOSED BEARINGS						(LS) =	1	
SPECIAL 53000600	STRUCTURES - AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN)						(SF) =	2,811	
Parapet						=	2,811.0 SF		
607E 39900	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC						(FT) =	125	()
	113.2 ft (Length)	+	11.0 ft (A.S.)						
607E 39930	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC						(FT) =	108	()
	107.1 ft (Length)								
613E 41201	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN						(CY) =	173	()
9.500 ft (width)	63.980 ft (length)	X	5.560 ft (HEIGHT)	/	(27 cf/cy)) =		125.2 CU YD		
5.340 ft (width)	63.980 ft (length)	X	1.780 ft (HEIGHT)	/	(27 cf/cy)) =		22.5 CU YD		
5.340 ft (width)	63.980 ft (length)	X	2.000 ft (HEIGHT)	/	(27 cf/cy)) =		25.3 CU YD		

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 RIVER SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 — ()

Deck Removed (2 Stages, tight clearances)

19900 SqFt X $20.0 /SF $ 398,000

511E 34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK — (CY) = 768 — *(CHECK UNIT OF MEASURE)*

Deck - Above Flange			4,254 sf (CAD Area)	X	10.00 in (Thickness)	/ (27 cf/cy)) =	131.3	CU YD
Span 3								
Deck - Above Flange			17,405 sf (CAD Area)	X	9.50 in (Thickness)	/ (27 cf/cy)) =	510.3	CU YD
Deck - Haunch	Girder 8	642.00 ft (Avg Girder Length) X	0.450 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	10.7	CU YD
	Girder 9	643.15 ft X	0.429 sf	X	1 Girders	/ (27 cf/cy)) =	10.2	CU YD
	Girder 10	643.08 ft X	0.438 sf	X	1 Girders	/ (27 cf/cy)) =	10.4	CU YD
	Exterior Overhang	643.08 ft X	0.570 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	13.6	CU YD
	Sidewalk	642.00 ft X	3.404 sf			/ (27 cf/cy)) =	80.9	CU YD

511E 34463 CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER — (CY) = 101

Parapet	4.20 sf (Area)	X	643.00 ft (Length)			/ (27 cf/cy)) =	100.0 CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 1,075 — ()

Sidewalk	643.0 ft (Total Length)		25.0 ft (A.S.)	x	6.7 ft (Sidewalk Width)	= (Sidewalk Width)	/(9 sf/sy) =	498 SqYd
Parapet and Deck Underside	8.03 ft (Perimeter)	Underside		x	643.00 ft (Total Length)		/(9 sf/sy) =	574 SqYd

512E 10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN — (SY) = 427 — ()

PC Deck Joint	640.0 ft X	2.0 ft	/9	2 ea	joints		284.4
Sidewalk Joint	640.0 ft X	2.0 ft	/9				142.2

516E 44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN — (EACH) = 6 — *(2"-3" TK, SPECIFY DIMENSIONS)*

3 Girders	X	2 (Substructure)					6 Each

516E 46900	BEARING DEVICE, MISC.:				(EACH) = 6	(ADD SUPPLEMENTAL DESCRIPTION)
3 Girders	X	2 Substructures	ELASTOMERIC BEARING WITH INTERNAL LAMINATES, LOAD PLATE, AND PTFE SURFACE			6 Each
516E 46900	BEARING DEVICE, MISC.:				(EACH) = 6	(ADD SUPPLEMENTAL DESCRIPTION)
3 Girders	X	2 Substructures	SEISMIC ISOLATION BEARINGS			6 Each
516E 47001	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				(LS) = 1	()
3 Girders	X	6 Substructures	x	$2500/brg =	$ 45,000	
518E 12500	SCUPPER, MISC.:				(EACH) = 7	(ADD SUPPLEMENTAL DESCRIPTION)
		7 Scuppers	Exterior			7 Each
607E 39900	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC				(FT) = 643	()
		643.0 ft Length				
607E 39930	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC				(FT) = 643	()
		643.0 ft Length				

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Calculation	Final Tracings Bridge Quantities
Description	*MUS-70-1159 EAST SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 ()

Tight, phased removal: 6203 SqFt X $50.0 /SF $ 310,150

202E 22900 APPROACH SLAB REMOVED — (SY) = 127.0 ()

Approach removed
1137 SqFt / 9 126.3 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING — (LS) = 1.0 ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN — (LS) = 1.0 (CHECK UNIT OF MEASURE)

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN — (EACH) = 139 ()

Forward Abutment	=	61.0 EACH
Pier 7	=	78.0 EACH

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN — (CY) = 223 (CHECK UNIT OF MEASURE)

Deck - Above Flange			5,745.53 sf (CAD Area)	X	9.00 in (Thickness)	/ (27 cf/cy)) =	159.6 CU YD
Deck - Haunch Girders 31-34	556.74 ft	X	0.218 sf			/ (27 cf/cy)) =	4.5 CU YD
Deck - Haunch Girders 35	135.02 ft	X	0.221 sf			/ (27 cf/cy)) =	1.1 CU YD
Parapet Overhang	138.00 ft	X	0.455 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	2.3 CU YD
Sidewalk	134.66 ft		4.65 sf			/ (27 cf/cy)) =	23.2 CU YD
Diaphragm	231 SqFt (CAD Area)		3.75 ft (WIDTH)			/ (27 cf/cy)) =	32.1 CU YD

511E 34463 CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN — (CY) = 25

Parapet	163.00 ft (Length)	X	1	X	4.08 sf (CAD Area)		/ (27 cf/cy)) =	24.6 CU YD

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP — (CY) = 18 ()

Pier 7 Cap			2.08 ft (Width)	X	202.33 sf (CAD Area)	/ (27 cf/cy)) =	15.6 CU YD
cheekwall			1.97 ft (Width)	X	4.50 sf (CAD Area)	/ (27 cf/cy)) =	0.3 CU YD
			0.58 ft (Width)	X	68.48 sf (CAD Area)	/ (27 cf/cy)) =	1.5 CU YD
			0.29 ft (Width)	X	10.72 sf (CAD Area)	/ (27 cf/cy)) =	0.1 CU YD

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT — (CY) = 14 (REPAIR OR RECONSTRUCTION)

Forward, Stem	94 SqFt (CAD Area)	X	3.75 ft (Width)			/ (27 cf/cy)) =	13.0 CU YD
Forward, Backwall	0.00 sf (CAD Area)	X	0.00 ft (Thickness)			/ (27 cf/cy)) =	0.0 CU YD
Forward, WW	0.00 sf (No WW)					/ (27 cf/cy)) =	0.0 CU YD

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 EAST SPANS - RIGHT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 1,160

		forward abutment	2234.74 sf CAD Area Abutment and WW	+	14.50 sf top/porp WW	+	75.47 sf top of WW					
						+	25.16 sf 6" behind WW	=	2,349.9 sf	/(9 sf/sy)=	261 SqYd	
							209.85 sf diaphragm	=	209.8 sf	/(9 sf/sy)=	23 SqYd	
							6" behind WW					
		Sidewalk	134.7 ft Total Length	+	25.0 ft A.S.	x	7.9 ft Sidewalk Width side	=	Sidewalk Width	/(9 sf/sy)=	141 SqYd	
Pier 7	318.19 sf CAD Area (west face)	+	249.71 sf east face (cad area)	+	23.98 sf fillet	+	76.30 sf prop beam seat					
	70.47 sf exist beam seat	+	26.75 sf cheeckwall	+	0.87 sf bumpout							
	251.12 sf column east face	+	171.90 sf column westface	+	54.64 sf side Face cap	+	1474.12 sf		2,718.1 ft	/(9 sf/sy)=	302 SqYd	
Pier 8	787.24 sf cap faces	+	151.34 sf beam seat	+	69.44 sf cap side	+	984.78 sf column faces		1,992.8 ft	/(9 sf/sy)=	221 SqYd	
		Parapet and Deck Underside	134.7 ft Total Length	X	8.03 ft Curb/Paraper perimeter	+	25.0 ft A.S.	x	7.8 ft Curb/Paraper perimeter	/(9 sf/sy)=	142 SqYd	
		pier	568.5 ft CAD Area	+	2.08 ft length	X	9.56 ft height	=	588.4 ft	/(9 sf/sy)=	65 SqYd	
		pier cheekwall			2.64 ft perimeter of wall	X	12.08 ft height	=	3.5 ft	/(9 sf/sy)=	0.39 SqYd	

512E 10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN — (SY) = 94

		PC Joint	143.3 ft	X	2.0 ft	/9	2 ea				63.7	
		Sidewalk Joint	134.7 ft	X	2.0 ft	/9					29.9	

512E 33000 TYPE 2 WATERPROOFING — (SY) = 24

		Forward abutment	70.17 ft Stem Length + Stem Height			x 3' strip	/'(9 sf/sy)				23.4 SqYd	(CHECK UNIT OF MEASURE)

516E 11211 STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN — (FT) = 53

		Pier 7	52.950 ft								53.0 Feet	

516E 13601 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN — (SF) = 5

		Approach Slab Parapets	4.08 SqFt CAD Area	X	1 Number of Joints						4.1 Sq. Ft.	
		Approach Slab Medians	0.00 SqFt CAD Area	X	0 Number of Joints						0.0 Sq. Ft.	

516E 13901 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN — (SF) = 25

		Wingwall	3.86 ft length	X	6.40 ft height						24.7 Sq. Ft.	

516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL						(FT) = 62		()
Forward Abutment	61.17 ft							=	61.2 Feet
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:						(FT) = 63		(ADD SUPPLEMENTAL DESCRIPTION)
	63.0 ft								63.0 ft
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN						(EACH) = 10		(2"-3" TK, SPECIFY DIMENSIONS)
Forward Abutment	5 Girders							=	5.0 EACH
Pier 7	5 Girders							=	5.0 EACH
516E 46900	BEARING DEVICE, MISC.:						(EACH) = 5		(ADD SUPPLEMENTAL DESCRIPTION)
Pier 8	5		SEISMIC ISOLATION BEARINGS					=	5.0 EACH
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC						(CY) = 7		(CHECK UNIT OF MEASURE)
Forward Abutment	92.30 sf	X	2.0 ft Thickness	/	(27	cf/cy)) =			6.8 CU YD
526E 25010	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")						(SY) = 158		()
			1417 SqFt CAD Area Fwd		/9			=	157.4 SY
607E 39900	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC						(FT) = 148		()
	138.0 ft Length	+	10.0 ft A.S.						
607E 39930	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC						(FT) = 135		()
	134.7 ft Length								
613E 41201	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN						(CY) = 77		()
9.500 ft width	63.21 sf length	X	3.020 ft HEIGHT	/	(27	cf/cy)) =			67.2 CU YD
1.530 ft width	63.21 sf length	X	0.510 ft HEIGHT	/	(27	cf/cy)) =			1.8 CU YD
1.530 ft width	63.21 sf length	X	2.000 ft HEIGHT	/	(27	cf/cy)) =			7.2 CU YD

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (LS) = 1.0 ()

Tight, phased removal 5871 SqFt X $50.0 /SF $ 293,550

202E 22900 APPROACH SLAB REMOVED (SY) = 152.0 ()

Approach removed
1362 SqFt / 9 151.3 SqYd

202E 23501 WEARING COURSE REMOVED, AS PER PLAN (SY) = 804.0 ()

Wearing removed (includes A.S.)
7233 SqFt / 9 803.7 SqYd

503E 11100 COFFERDAMS AND EXCAVATION BRACING (LS) = 1.0 ()

(Assume $5,000 @ PC joint)

503E 21301 UNCLASSIFIED EXCAVATION, AS PER PLAN (LS) = 1.0 (CHECK UNIT OF MEASURE)

509E 10001 EPOXY COATED REINFORCING STEEL, AS PER PLAN (LB) = 301,579 ()

301,579.0 *CU YD*

FOR REBAR QUANTITY SEE REBAR CALCS

510E 10001 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN (EACH) = 133 ()

Rear abutment = **61.0** *EACH*
Pier 2 = **72.0** *EACH*

511E 34447 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN (CY) = 206 (CHECK UNIT OF MEASURE)

Deck - Above Flange			6,367.96 sf *CAD Area*	X	8.50 in *Thickness*	/ (27 cf/cy)) =	**167.1** *CU YD*
Deck - Haunch	901.19 ft *Length*	X	0.168 sf *Area*	X		/ (27 cf/cy)) =	**5.6** *CU YD*
Exterior Overhang			0.272 sf *Area*	X	391.30 ft *Length*	/ (27 cf/cy)) =	**3.9** *CU YD*
Diaphragm	208 SqFt *CAD Area*		3.75 ft *width*			/ (27 cf/cy)) =	**28.8** *CU YD*

511E 34463 CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN (CY) = 28

Parapet	183.00 ft *Length*	X 1 X	4.08 sf *CAD Area*			/ (27 cf/cy)) =	**27.7** *CU YD*

511E 42512 CLASS QC1 CONCRETE WITH QC/QA, PIER CAP (CY) = 21 ()

Pier 2 Cap			2.08 ft *Width*	X	242.78 sf *CAD Area*	/ (27 cf/cy)) =	**18.7** *CU YD*
cheekwall			1.97 ft *Width*	X	4.52 sf *CAD Area*	/ (27 cf/cy)) =	**0.3** *CU YD*
			0.58 ft *Width*	X	59.97 sf *CAD Area*	/ (27 cf/cy)) =	**1.3** *CU YD*
			0.29 ft *Width*	X	10.30 sf *CAD Area*	/ (27 cf/cy)) =	**0.1** *CU YD*

511E 45712 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT (CY) = 17 (REPAIR OR RECONSTRUCTION)

Rear, Stem	94 SqFt *CAD AREA*	X	3.75 ft *Width*			/ (27 cf/cy)) =	**13.1** *CU YD*
Rear, Backwall	0.00 sf *CAD Area*	X	0.00 ft *Thickness*			/ (27 cf/cy)) =	**0.0** *CU YD*
Rear, WW	21 SqFt *CAD Area*	X	4.25 ft *width*			/ (27 cf/cy)) =	**3.2** *CU YD*

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 830

Rear abutment	2197.15 sf	+	14.50 sf	+	82.02 sf					
	CAD Area Abutment and WW		*top/porp WW*		*top of WW*					
				+	27.34 sf	=	2,321.0 sf	/(9 sf/sy) =	**258 SqYd**	
					6" behind WW					
Diaphragm					209.91 sf	=	209.9 sf	/(9 sf/sy) =	**23 SqYd**	
					6" behind WW					
Pier 1					1534.31 sf	=	1,534.3 ft	/(9 sf/sy) =	**170 SqYd**	
					CAD area					
Pier 2					1697.90 sf	=	1,697.9 ft	/(9 sf/sy) =	**189 SqYd**	
					height					
Parapet and Deck Underside	158.0 ft	X	9.50 ft	+	25.0 ft	x	7.9 ft	/(9 sf/sy) =	**189 SqYd**	
	Total Length		*Curb/Paraper perimeter*		*A.S.*		*Curb/Paraper perimeter*			

512E 10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN — (SY) = 64

PC Joint	143.3 ft	X	2.0 ft	/9	2 ea				**63.7**	

512E 33000 TYPE 2 WATERPROOFING — (SY) = 30 — *(CHECK UNIT OF MEASURE)*

Rear abutment	63.40 ft	+	4.00 ft	6.60 ft	x 3' strip	/'(9 sf/sy)	=	24.7 SqYd		
	*Stem Length + 2*Stem Height*		*WW Length*	*WW Length*						

513E 10260 STRUCTURAL STEEL MEMBERS, LEVEL 3 — (LB) = 391,298 — *(CHECK UNIT OF MEASURE)*

= **391,298** *LB*

513E 20000 WELDED STUD SHEAR CONNECTORS — (EACH) = 12,567

= **12,567** *Each*

514E 00050 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL — (SF) = 59,000

= **59,000** *SF*

514E 00056 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT — (SF) = 59,000

= **59,000** *SF*

514E 00061 FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT, AS PER PLAN — (SF) = 80,700

= **80,700** *SF*

514E 00067 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN — (SF) = 80,700

= **80,700** *SF*

514E 00504 GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL — (MNHR) = 32

= **32** *MNHR*

514E 10000 FINAL INSPECTION REPAIR — (EACH) = 26

= **26** *EACH*

516E 11211 STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN — (FT) = 36

Pier 2 35.301 ft = **35.3** *Feet*

516E 13601 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN — (SF) = 5

Approach Slab Parapets	4.08 SqFt	X	1	=	**4.1** *Sq. Ft.*
	CAD Area		*Number of Joints*		

516E 13901 2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN — (SF) = 29

Wingwall	4.25 ft	X	6.59 ft	=	**28.0** *Sq. Ft.*
	width		*height*		

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 WEST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

516E 14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL							(FT) = 52		()
	Rear Abutment	51.360 ft							=	51.4 *Feet*
516E 14600	STRUCTURAL JOINT OR JOINT SEALER, MISC.:							(FT) = 59		*(ADD SUPPLEMENTAL DESCRIPTION)*
		58.8 ft								58.8 *ft*
516E 44101	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN							(EACH) = 14		*(2"-3" TK, SPECIFY DIMENSIONS)*
	7 Girders	X	2 *Substructure*							14 *Each*
516E 46900	BEARING DEVICE, MISC.:							(EACH) = 7		*(ADD SUPPLEMENTAL DESCRIPTION)*
	Pier 1		7		SEISMIC ISOLATION BEARINGS				=	7.0 *EACH*
518E 12201	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN							(EACH) = 3		*(STEEL BEAM BRIDGES)*
			3 *Thickness*							3.0 *EACH*
518E 21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC							(CY) = 5		*(CHECK UNIT OF MEASURE)*
	Rear Abutment	66.22 sf	X	2.00 ft *Thickness*	/	(27	cf/cy)) =			4.9 *CU YD*
526E 25010	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")							(SY) = 157		()
		1404 SqFt *CAD Area Rear*			/9				=	156.0 *SY*
SPECIAL 53000200	STRUCTURES - MEASUREMENTS FOR PROPOSED BEARINGS							(LS) = 1		
SPECIAL 53000600	STRUCTURES - AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN)							(SF) = 2,955		
	Parapet								=	2,955.0 *SF*
607E 39900	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC							(FT) = 169		()
		158.0 ft *Length*	+	11.0 ft *A.S.*						
613E 41201	LOW STRENGTH MORTAR BACKFILL, AS PER PLAN							(CY) = 126		()
	9.500 ft *width*	57.00 ft *length*	X	4.760 ft *HEIGHT*	/	(27	cf/cy)) =			95.5 *CU YD*
	4.140 ft *width*	57.00 ft *length*	X	1.430 ft *HEIGHT*	/	(27	cf/cy)) =			12.5 *CU YD*
	4.140 ft *width*	57.00 ft *length*	X	2.000 ft *HEIGHT*	/	(27	cf/cy)) =			17.5 *CU YD*

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 RIVER SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN — (LS) = 1.0 — ()

Deck Removed (2 Stages, tight clearances)

19010 SqFt X $20.0 /SF $ 380,200

511E 34446 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK — (CY) = 632 — (CHECK UNIT OF MEASURE)

Deck - Above Flange				21,148 sf (CAD Area)	X	9.50 in (Thickness)	/ (27 cf/cy)) =	620.1 CU YD
Deck - Haunch	Girder 1	638.00 ft (Avg Girder Length)	X	0.046 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	1.1 CU YD
	Girder 2	638.04 ft	X	0.046 sf	X	1 Girders	/ (27 cf/cy)) =	1.1 CU YD
	Girder 3	638.05 ft	X	0.046 sf	X	1 Girders	/ (27 cf/cy)) =	1.1 CU YD
	Exterior Overhang	638.00 ft	X	0.329 sf (Area)	X	1 Girders (# of Haunches)	/ (27 cf/cy)) =	7.8 CU YD

511E 34463 CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER — (CY) = 97

Parapet: 640.00 ft (Length) X 1 X 4.08 sf (CAD Area) / (27 cf/cy)) = 96.7 CU YD

512E 10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) — (SY) = 695 — ()

Parapet and Deck Underside: 640.0 ft (Total Length) X 9.75 ft (Curb/Paraper perimeter) /(9 sf/sy)= 693 SqYd

512E 10300 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN — (SY) = 285 — ()

PC Deck Joint: 641.0 ft X 2.0 ft /9 2 ea = 284.9

516E 44101 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN — (EACH) = 6 — (2"-3" TK, SPECIFY DIMENSIONS)

3 Girders X 2 (Substructure) = 6 Each

516E 46900 BEARING DEVICE, MISC.: — (EACH) = 6 — (ADD SUPPLEMENTAL DESCRIPTION)

3 Girders X 2 (Substructures) ELASTOMERIC BEARING WITH INTERNAL LAMINATES, LOAD PLATE, AND PTFE SURFACE = 6 Each

516E 46900 BEARING DEVICE, MISC.: — (EACH) = 6 — (ADD SUPPLEMENTAL DESCRIPTION)

3 Girders X 2 (Substructures) SEISMIC ISOLATION BEARINGS = 6 Each

516E 47001 JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN — (LS) = 1 — ()

3 Girders X 6 (Substructures) x $2500/brg = $ 45,000

518E 12201 SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN — (EACH) = 15 — (STEEL BEAM BRIDGES)

15 (Scuppers) Exterior = 15 Each

607E 39900 VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC — (FT) = 640 — ()

640.0 ft (Length)

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Calculation: **Final Tracings Bridge Quantities**

Description: *MUS-70-1159 EAST SPANS - LEFT*

GF Job No:	Bridge SFN	Calculated	Checked	Updated	Verified	Level 2 Review/Update
•064771	•6002854	•RSN, 12/15/2020	• SAT 12/21/2020	• RSN 12/23/2020	•	• CMT 12/28/2020

Quantities

202E 11203	**PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**							**(LS) = 1.0**	()
Tight, phased removal	**4842 SqFt**	**X**	**$50.0**	**/SF**	**$ 242,100**				
202E 22900	**APPROACH SLAB REMOVED**							**(SY) = 102.0**	()
Approach removed									
914 SqFt	**/ 9**		**101.6 SqYd**						
503E 11101	**COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN**							**(LS) = 1.0**	()
	(Assume $5,000 @ PC joint)								
503E 21301	**UNCLASSIFIED EXCAVATION, AS PER PLAN**							**(LS) = 30.0**	*(CHECK UNIT OF MEASURE)*
510E 10001	**DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN**							**(EACH) = 125**	()
								Forward Abutment =	**53.0** *EACH*
								Pier 7 =	**72.0** *EACH*
511E 34447	**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN**							**(CY) = 170**	*(CHECK UNIT OF MEASURE)*
Deck - Above Flange			5,256.88 sf *CAD Area*	**X**	8.50 in *Thickness*		**/ (27 cf/cy)) =**	**137.9** *CU YD*	
Deck - Haunch	712.47 ft *Length*	**X**	0.218 sf *Area*	**X**			**/ (27 cf/cy)) =**	**5.8** *CU YD*	
Exterior Overhang			0.263 sf *Area*	**X**	269.000 sf *CAD Area*		**/ (27 cf/cy)) =**	**2.6** *CU YD*	
Diaphragm	166 SqFt *CAD Area*		3.75 ft *Length*				**/ (27 cf/cy)) =**	**23.1** *CU YD*	
511E 34463	**CLASS QC SCC CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER**							**(CY) = 26**	
Parapet	171.45 ft *Length*	**X 1 X**	4.08 sf *CAD Area*				**/ (27 cf/cy)) =**	**25.9** *CU YD*	
511E 42512	**CLASS QC1 CONCRETE WITH QC/QA, PIER CAP**							**(CY) = 21**	()
Pier 7 Cap			2.08 ft *Width*	**X**	240.40 sf *CAD Area*		**/ (27 cf/cy)) =**	**18.5** *CU YD*	
cheekwall			1.97 ft *Width*	**X**	4.50 sf *CAD Area*		**/ (27 cf/cy)) =**	**0.3** *CU YD*	
			0.58 ft *Width*	**X**	60.51 sf *CAD Area*		**/ (27 cf/cy)) =**	**1.3** *CU YD*	
			0.29 ft *Width*	**X**	10.09 sf *CAD Area*		**/ (27 cf/cy)) =**	**0.1** *CU YD*	
511E 45712	**CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT**							**(CY) = 16**	*(REPAIR OR RECONSTRUCTION)*
Forward, Stem	94 SqFt *CAD Area*	**X**	3.75 ft *Width*				**/ (27 cf/cy)) =**	**13.0** *CU YD*	
Forward, Backwall	0.00 sf *CAD Area*	**X**	0.00 ft *Thickness*				**/ (27 cf/cy)) =**	**0.0** *CU YD*	
Forward, WW	11.83 sf *Plan View*	**X**	6.40 ft *Height*				**/ (27 cf/cy)) =**	**2.8** *CU YD*	

512E 10050	**SEALING OF CONCRETE SURFACES (NON-EPOXY)**								**(SY) =**	**885**		()
Pier 7						2426.00 sf *CAD Area*	=	2,426.0 sf	**/(9 sf/sy) =**	**270 SqYd**		
Pier 8						1592.34 sf	=	1,592.3 sf	**/(9 sf/sy) =**	**177 SqYd**		
Forward Abutment						2359.33 sf	=	2,359.3 sf	**/(9 sf/sy) =**	**262 SqYd**		
Parapet and Deck Underside	146.5 ft *Total Length*	**X**	9.50 ft *Curb/Paraper perimeter*	**+**	25.0 ft *A.S.*	**x**	7.8 ft *Curb/Paraper perimeter*	**/(9 sf/sy) =**	**176 SqYd**			
512E 10300	**SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN**								**(SY) =**	**64**		()
PC Joint	144.0 ft	**X**	2.0 ft	**/9**	**2 ea**					**64.0**		
512E 33000	**TYPE 2 WATERPROOFING**								**(SY) =**	**21**		*(CHECK UNIT OF MEASURE)*
Forward abutment	53.58 ft *Stem Length + Stem Height*	**+**	2.00 ft *WW Length*	6.40 ft *WW Height*	**x 3' strip**	**/'(9 sf/sy)**	**=**	20.7 SqYd				
516E 11211	**STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN**								**(FT) =**	**35**		()
Pier 7	34.580 ft							=	**34.6** *Feet*			
516E 13600	**1" PREFORMED EXPANSION JOINT FILLER**								**(SF) =**	**5**		()
Approach Slab Parapets	4.08 SqFt *CAD Area*	**X**	1 *Number of Joints*					=	**4.1** *Sq. Ft.*			
516E 13900	**2" PREFORMED EXPANSION JOINT FILLER**								**(SF) =**	**29**		()
Wingwall	4.50 ft *Width*	**X**	6.39 ft *height*					=	**28.8** *Sq. Ft.*			
516E 14020	**SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL**								**(FT) =**	**45**		()
Forward Abutment	44.583 ft							=	**44.6** *Feet*			
516E 14600	**STRUCTURAL JOINT OR JOINT SEALER, MISC.:**								**(FT) =**	**48**		*(ADD SUPPLEMENTAL DESCRIPTION)*
	48.00 ft									**48.0** *ft*		
516E 44101	**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN**								**(EACH) =**	**10**		*(2"-3" TK, SPECIFY DIMENSIONS)*
5 Girders	**X**	2 *Substructure*								**10** *Each*		
516E 46900	**BEARING DEVICE, MISC.:**								**(EACH) =**	**5**		*(ADD SUPPLEMENTAL DESCRIPTION)*
Pier 8	5							=	**5.0** *EACH*			
					SEISMIC ISOLATION BEARINGS							
518E 12201	**SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN**								**(EACH) =**	**4**		*(STEEL BEAM BRIDGES)*
	4									**4.0** *EACH*		
518E 21200	**POROUS BACKFILL WITH GEOTEXTILE FABRIC**								**(CY) =**	**5**		*(CHECK UNIT OF MEASURE)*
Forward Abutment	66.57 sf *CAD Area*	**X**	2.00 sf *Thickness*	**/ (27 cf/cy)) =**						**4.9** *CU YD*		
526E 25010	**REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")**								**(SY) =**	**113**		()
			1012 SqFt *CAD Area Fwd*	**/9**				=	**112.5** *SY*			
607E 39900	**VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC**								**(FT) =**	**158**		()
	146.5 ft *Length*	**+**	11.0 ft *A.S.*									
613E 41201	**LOW STRENGTH MORTAR BACKFILL, AS PER PLAN**								**(CY) =**	**104**		()
9.500 ft *width*	45.84 ft *length*	**X**	4.860 ft *HEIGHT*	**/ (27 cf/cy)) =**						**78.4** *CU YD*		
4.290 ft *width*	45.84 ft *length*	**X**	1.430 ft *HEIGHT*	**/ (27 cf/cy)) =**						**10.4** *CU YD*		
4.290 ft *width*	45.84 ft *length*	**X**	2.000 ft *HEIGHT*	**/ (27 cf/cy)) =**						**14.6** *CU YD*		