

HAM-75-0823C Quantities

Single Span Prestressed Concrete I Beam Bridge

Bridge Length = 77 ft

ESTIMATED QUANTITIES			CALC BY: CBY	DATE: 6/14/2023
			CHECKED BY: PPA	DATE: 6/18/2023

202	11003		LUMP		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
		EX. DECK AREA	149.08	ft	avg. length
			124	ft	avg. o/o width
			18486	sf	
			\$25.00	COST / SF	
			\$462,148.00	\$\$	
				\$\$	USE \$475,000 for estimate

202	22900		407	SY	APPROACH SLAB REMOVED
			122	ft	width
			15.00	ft	length
			1830.000	sf	total per appr. slab
			2.000	ea	RA & FA
			3660.0	sf	total
			407.0	sy	GRAND TOTAL FOR APPROACH SLABS REMOVED

503	21300		4704	CY	UNCLASSIFIED EXCAVATION
RA	ex RA		125	ft	length (approximate distance of existing bridge)
	to		528	sf	area flooded from microstation from ex P1 to ex RA
	ex P1		66000	cf	subtotal
			2444	cy	subtotal
FA	ex P2		125	ft	length (approximate distance of existing bridge)
	to		488	sf	area flooded from microstation from ex P1 to ex RA
	ex FA		61000	cf	subtotal
			2259	cy	subtotal
			4704	cy	total
				\$\$	USE \$50,000 for estimate

507	00700		11625	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN
RA			530.5	ft	BOT OF FTG
			1	ft	EMBED IN FTG
			458.8	ft	TIP EL FROM GEOTECH
			72.7	ft	LENGTH
			75	ft	ROUNDUP - ESTIMATED LENGTH
			80	ea	number
			6000	ft	total
FA			528.75	ft	BOT OF FTG
			1	ft	EMBED IN FTG
			456.5	ft	TIP EL FROM GEOTECH
			73.25	ft	LENGTH
			75	ft	ROUNDUP - ESTIMATED LENGTH
			75	ea	number
			5625	ft	total
			11625	ft	total

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507	00750	12400	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED		
RA		80	ft	length		
		80	ea	number		
		6400	ft	total		
FA		80	ft	length		
		75	ea	number		
		6000	ft	total		
		12400	ft	total		
509	10000	207660	LB	EPOXY COATED REINFORCING STEEL		
abutment		42493	lb	total abutment		
super		41905	lb	diaphragm		
		113270	lb	deck		
		9992	lb	railing		
		165167	lb	total superstructure		
		207660	lb	GRAND TOTAL FOR EPOXY STEEL		
509	30020	4288	FT	NO. 4 GFRP DEFORMED BARS		
		2757	ft	railing		
		1531	ft	approach slab		
		4288	ft	total		
509	30030	627	FT	NO. 5 GFRP DEFORMED BARS		
		357	ft	railing		
		270	ft	approach slab		
		627	ft	total		
509	30040	4168	FT	NO. 6 GFRP DEFORMED BARS		
		2388	ft	railing		
		1780	ft	approach slab		
		4168	ft	total		

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512	10100	1434	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		
outer		6.58	ft	beam perimeter		
parapet		0.90	ft	deck height		
deck		8.78	ft	parapet perimeter		
		2.83	ft	overhang length		
		77.46	ft	superstructure length		
		60.35	ft	length of approach slabs		
		2008.40	sf	subtotal		
		223.16	sy	subtotal		
inner		6.58	ft	beam height		
parapet		5.68	ft	parapet perimeter		
deck		2.83	ft	overhang length		
		77.00	ft	superstructure length		
		60.00	ft	length of approach slabs		
		1502.98	sf	subtotal		
		167.00	sy	subtotal		
inner		6.58	ft	beam height		
parapet		5.68	ft	parapet perimeter		
deck		1.69	ft	overhang length		
		77.00	ft	superstructure length		
		60.00	ft	length of approach slabs		
		1414.75	sf	subtotal		
		157.19	sy	subtotal		
outer		6.58	ft	beam perimeter		
parapet		0.90	ft	deck height		
deck		8.78	ft	parapet perimeter		
		1.69	ft	overhang length		
		77.00	ft	superstructure length		
		60.00	ft	length of approach slabs		
		1908.71	sf	subtotal		
		212.08	sy	subtotal		
RA		213.23	ft	length		
diaph		5.42	ft	height		
		97.22	sf	deduction for beam		
		1057.769	sf	subtotal		
		117.530	sy	subtotal		
FA		207.77	ft	length		
diaph		5.42	ft	height		
		97.22	sf	deduction for beam		
		1028.203	sf	subtotal		
		114.245	sy	subtotal		
		992.00	sy	SUPER SEALING TOTAL		

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512	10100	1434	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (CONT.)
RA		246.31	ft	length
foot		2.50	ft	height
		1.75	ft	top length
		1046.828	sf	subtotal
		116.314	sy	subtotal
RA		213.22	ft	length
stem		3.52	ft	height
		750.530	sf	subtotal
		83.392	sy	subtotal
RA	side	10.958	ft	length
WW Right		5.48	ft	height
	top	10.96	ft	length
		1.50	ft	height
	front	2.500	ft	length
		1.890	ft	height
	back	10.958	ft	length
		0.500	ft	height
		56.668	sf	subtotal
		6.296	sy	subtotal
RA	side	13.875	ft	length
WW Left		6.94	ft	height
	top	13.88	ft	length
		1.50	ft	height
	front	2.500	ft	length
		0.440	ft	height
	back	13.875	ft	length
		0.500	ft	height
		76.996	sf	subtotal
		8.555	sy	subtotal
FA		238.45	ft	length
foot		2.50	ft	height
		1.75	ft	top length
		1013.404	sf	subtotal
		112.600	sy	subtotal
FA		209.77	ft	length
stem		3.76	ft	height
		788.738	sf	subtotal
		87.638	sy	subtotal

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512	10100	1434	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (CONT.)
FA	side	17.000	ft	length
WW Right		5.49	ft	height
	top	17.00	ft	length
		1.50	ft	height
	front	17.000	ft	length
		5.490	ft	height
	back	17.000	ft	length
		0.500	ft	height
		173.995	sf	subtotal
		19.333	sy	subtotal
FA	side	15.150	ft	length
WW Left		7.33	ft	height
	top	15.15	ft	length
		1.50	ft	height
	front	2.500	ft	length
		1.970	ft	height
	back	15.150	ft	length
		0.500	ft	height
		90.750	sf	subtotal
	subtract	8.000	ft	length
		1.000	ft	min height
		4.090	ft	max height
		20.360	sf	subtract area
		7.821	sy	subtotal
		442.00	sy	ABUTMENT SEALING TOTAL
		1434	sy	TOTAL SEALING

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512	33000	9	SY	TYPE 2 WATERPROOFING		
		3.00	ft	footing height		
		2.25	ft	footing toe width		
		3.00	ft	strip width		
		536.50	ft	beam seat elevation, PC 1/2 Joint		
		530.50	ft	bottom of footing elevation		
		24.75	sq ft	PC 1/2 joint area		
		3.00	ft	strip width		
		536.50	ft	beam seat elevation, PC 2/3 Joint		
		540.11	ft	bottom of approach slab elevation (used average of deck elev above two adjacent beams minus depth of approach slab seat)		
		10.83	sq ft	PC 2/3 joint area		
		36.00	sq ft	total RA left		
		3.00	ft	footing height		
		2.25	ft	footing toe width		
		3.00	ft	strip width		
		535.00	ft	beam seat elevation, PC 1/2 Joint		
		528.75	ft	bottom of footing elevation		
		25.50	sq ft	PC 1/2 joint area		
		26.00	sq ft	total FA left		
		3.00	ft	strip width		
		535.00	ft	beam seat elevation, PC 2/3 Joint		
		538.47	ft	bottom of approach slab elevation (used average of deck elev above two adjacent beams minus depth of approach slab seat)		
		10.41	sq ft	PC 2/3 joint area		
		37.00	sq ft	total RA left		
		73	sq ft	total		
		9	sq yd	total		
515	15010	1	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 3 (LENGTH = 77'-1 1/4")		
		1	each	TOTAL (BEAM 1 ONLY)		
515	15010	24	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 3 (LENGTH = 76'-8")		
		24	each	TOTAL (BEAMS 2-25)		
515	20000	23	EACH	INTERMEDIATE DIAPHRAGMS		
		23	each	total		
516	13600	41	SF	1" PREFORMED EXPANSION JOINT FILLER		
outer		5.19	sf	area		
parapet		4.00	ea	locations		
		20.75	sf	subtotal		
inner		4.97	sf	area		
parapet		4.00	ea	locations		
		19.89	sf	subtotal		
		41	sf	GRAND TOTAL FOR 1" PEJF		

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ESTIMATED QUANTITIES					CALC BY: CBY	DATE: 6/14/2023
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516	13900	91	SF	2" PREFORMED EXPANSION JOINT FILLER		
RA btw		7.00	ft	footing width		
abut diaphragm		3.00	ft	footing height		
and wingwall		8.02	ft	beam seat + diaphragm		
		3.00	ft	width		
		45.06	sf	subtotal		
FA btw		7.00	ft	footing width		
abut diaphragm		3.00	ft	footing height		
and wingwall		8.13	ft	beam seat + diaphragm		
		3.00	ft	width		
		45.39	sf	subtotal		
		90.45	sf	TOTAL ABUTMENT 2" PEJF		
		91	sf	GRAND TOTAL FOR 2" PEJF		
516	14020	454	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL		
RA	horiz. Joint	113.79	ft	left		
	horiz. Joint	102.69		right		
	vert. joint	6.80		left		
	vert. joint	6.95		right		
FA	horiz. Joint	106.85	ft	left		
	horiz. Joint	102.71		right		
	vert. joint	6.79		left		
	vert. joint	6.80		right		
		454	ft	GRAND TOTAL FOR SEMI-INTEGRAL ABUTMENT EXP. JT. SEAL		
516	44200	50	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (1'-1" x 1'-8" x 3 13/16")		
RA		25	each			
FA		25	each			
		50	total			
523	20000	4	EACH	DYNAMIC LOAD TESTING		
		2	ea	Per substructure unit		
		2	ea	Substructure units		
		4	ea	GRAND TOTAL		
511	33501	4	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN		
		2	ea	Per substructure unit		
		2	ea	Substructure units		
		4	ea	GRAND TOTAL		

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511	53014	689	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN		
RA right	diaphragm	112.167	ft	length		
		3	ft	width		
		5.333	ft	depth		
		1794.7	cf	subtotal		
		12.0	ea	number of beams		
		560.0	sq in	beam area		
		2.5	ft	length		
		116.7	cu ft	beam total		
		1678.0	cu ft	subtotal		
		62.1	cy	subtotal		
RA left	diaphragm	101.063	ft	length		
		3	ft	width		
		5.333	ft	depth		
		1617.0	cf	subtotal		
		13.0	ea	number of beams		
		560.0	sq in	beam area		
		2.5	ft	length		
		126.4	cu ft	beam total		
		1490.6	cu ft	subtotal		
		55.2	cy	subtotal		
FA left	diaphragm	106.719	ft	length		
		3	ft	width		
		5.333	ft	depth		
		1707.5	cf	subtotal		
		13.0	ea	number of beams		
		560.0	sq in	beam area		
		2.5	ft	length		
		126.4	cu ft	beam total		
		1581.1	cu ft	subtotal		
		58.6	cy	subtotal		
FA right	diaphragm	101.052	ft	length		
		3	ft	width		
		5.333	ft	depth		
		1616.8	cf	subtotal		
		12.0	ea	number of beams		
		560.0	sq in	beam area		
		2.5	ft	length		
		116.7	cu ft	beam total		
		1500.2	cu ft	subtotal		
		55.6	cy	subtotal		
		231.477	cy	GRAND TOTAL FOR BOTH DIAPHRAGMS		

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511	53014	689	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN (CONT.)	
main portion		210.302	ft	ave o/o deck	
of deck		0.729	ft	thickness	
		153.345	sf	deck	
exterior		3.495	ft	length	
haunch		0.167	ft	height	
at B1		0.582	sf	exterior haunch area	
exterior		3.500	ft	length	
haunch		0.167	ft	height	
at B13		0.583	sf	exterior haunch area	
exterior		2.354	ft	length	
haunch		0.167	ft	height	
at B14		0.392	sf	exterior haunch area	
exterior		2.354	ft	length	
haunch		0.167	ft	height	
at B25		0.392	sf	exterior haunch area	
interior		0.167	ft	haunch thickness	
haunch		1.333	ft	flange width	
		0.222	sf	flange area	
		23	each	number of interior haunches	
		5.111	sf	interior haunch total	
		77.000	ft	length of deck	
		457.457	cy	GRAND TOTAL FOR DECK	
		688.934	cy	GRAND TOTAL FOR TOTAL DECK QUANTITY	

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511	53014	36	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE WITH QC/QA, BRIDGE DECK (MEDIAN PARAPET), AS PER PLAN	
511	53014	30	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE WITH QC/QA, BRIDGE DECK (EXTERIOR PARAPET), AS PER PLAN	
parapet	left bridge	5.19	sf	area	
left edge		77.46	ft	length	
		401.91	cf	subtotal	
right edge		6.16	sf	area	
		77.23	ft	length revised with new median dwgs	
		475.74	cf	subtotal	
parapet	right bridge	6.16	sf	area	
left edge		77.00	ft	length	
		474.33	cf	subtotal	
right edge		5.19	sf	area	
		77.00	ft	length	
		399.53	cf	subtotal	
		36.00	cy	total for median	
		30.00	cy	total for exterior	
		1751.51	cf	total for parapet	
		64.87	cy	total for parapet	
511	53014	148	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	
RA	right bridge	10.79	ft	wingwall angled length	
		4.17	ft	wingwall straight length	
		7.37	ft	wingwall max height	
		1.89	ft	wingwall min height	
		2.50	ft	wingwall thickness	
		201.68	cu ft	wingwall total	
		101.19	ft	beam seat length	
		2.36	ft	beam seat height	
		3.00	ft	beam seat width	
		717.42	cu ft	beam seat total	
		919.10	cu ft	RA right bridge subtotal	
RA	left bridge	13.71	ft	wingwall angled length	
		4.17	ft	wingwall straight length	
		7.30	ft	wingwall max height	
		0.44	ft	wingwall min height	
		2.50	ft	wingwall thickness	
		208.67	cu ft	wingwall total	
		112.29	ft	beam seat length	
		2.50	ft	beam seat height	
		3.00	ft	beam seat width	
		842.19	cu ft	beam seat total	
		1050.86	cu ft	RA left bridge subtotal	

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511	53014	148	CY	CLASS QC3 CONCRETE, MISC.: CONCRETE QITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN (CONT.)	
FA	left bridge	17.00	ft	wingwall length	
		7.57	ft	wingwall max height	
		7.09	ft	wingwall min height	
		1.50	ft	wingwall thickness	
		8.96	ft	rectangular length	
		3.00	ft	end depth	
		1.00	ft	end offset up	
		8.04	ft	trapezoidal length	
		128.69	sq ft	gross area	
		8.16	sq ft	top grade subtract area	
		8.04	sq ft	bottom rectangle subtract area	
		16.44	sq ft	bottom triangle subtract area	
		144.07	cu ft	wingwall total	
		106.85	ft	beam seat length	
		2.75	ft	beam seat height	
		3.00	ft	beam seat width	
		881.55	cu ft	beam seat total	
		1025.62	cu ft	FA left bridge subtotal	
FA	right bridge	10.65	ft	wingwall angled length	
		4.33	ft	wingwall straight length	
		7.38	ft	wingwall max height	
		1.97	ft	wingwall min height	
		2.50	ft	wingwall thickness	
		204.37	cu ft	wingwall total	
		101.19	ft	beam seat length	
		2.58	ft	beam seat height	
		3.00	ft	beam seat width	
		784.20	cu ft	beam seat total	
		988.58	cu ft	FA right bridge subtotal	
		3984.2	cf	total	
		147.56	cy	GRAND TOTAL FOR SUBSTRUCTURE	

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511	46512	372	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING		
RA	right bridge	116.15	ft	footing length		
		7.00	ft	footing width		
		3.00	ft	footing depth		
		2439.06	cu ft	footing total		
RA	left bridge	130.17	ft	footing length		
		7.00	ft	footing width		
		3.00	ft	footing depth		
		2733.50	cu ft	footing total		
		5172.56	cu ft	RA bridge subtotal		
FA	right bridge	116.17	ft	footing length		
		7.00	ft	footing width		
		3.00	ft	footing depth		
		2439.50	cu ft	footing total		
FA	left bridge	115.28	ft	footing length		
		7.00	ft	footing width		
		3.00	ft	footing depth		
		2420.91	cu ft	footing total		
		4860.41	cu ft	FA bridge subtotal		
		10033.0	cf	total		
		371.59	cy	GRAND TOTAL FOR ABUTMENT INCLUDING FOOTING		

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526	30001	1404	SY	REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN		
RA		30.0	ft	length		
		215.54	ft	width		
		6466.25	sf	total		
		718.47	sy	R.A. TOTAL		
FA		30	ft	length		
		205.61	ft	width		
		6168.44	sf	total		
		685.38	sy	F.A. SUBTOTAL		
		1403.9	sy	GRAND TOTAL BEHIND BOTH APPROACHES		
526	90010	422	FT	TYPE A INSTALLATION		
RA		215.54	ft	width		
		215.54	ft	R.A. TOTAL		
FA		205.61	ft	width		
		205.61	ft	F.A. TOTAL		
		421.2	ft	GRAND TOTAL BOTH APPROACHES		
622	25001	2	EACH	CONCRETE BARRIER END SECTION, TYPE D, AS PER PLAN		
RA		2.0	each	number of transitions		
		2.00	each	R.A. TOTAL		
FA		0.0	each	number of transitions		
		0.00	each	F.A. TOTAL		
		2.0	each	GRAND TOTAL BEHIND BOTH APPROACHES		
846	00110	176	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM		
		1.67	ft	width per AS-2-15 sheet 1 note 11		
		0.25	ft	thick per AS-2-15 sheet 1 note 12		
RA		215.54	ft	width		
		89.81	cf	R.A. TOTAL		
FA		205.61	ft	width		
		85.67	cf	F.A. TOTAL		
		175.5	CF	GRAND TOTAL BOTH APPROACHES		