

**BUT-4-1488R Bridge Estimated Quantities**

Calculated By: CML Date: 3/9/2023 Job No.: 107695  
 Checked By: MJZ Date: 3/10/2023 Bridge No.: BUT-4-1488R  
 Project: BUT-4 SFN: 0900214

avg.

ESTIMATED QUANTITIES						CALC BY: CML	DATE: 3/9/2023
						CHECK BY: MJZ	DATE: 3/10/2023
ITEM	EXT	QUANTITY	UNIT	PART		DESCRIPTION	
				01/NHS/13	02/NHS/05		
202	11002	LS		LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
202	23500	190	SY	190		WEARING COURSE REMOVED	
503	11101	LS		LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	
503	21300	LS		LS		UNCLASSIFIED EXCAVATION	
505	11100	LS		LS		PILE DRIVING EQUIPMENT MOBILIZATION	
507	00700	770	FT	770		16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	
507	00751	880	FT	880		16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	
509	26000	67579	LB	67579		GALVANIZED STEEL REINFORCEMENT	
509	30020	4146	FT	4146		NO. 4 DEFORMED GFRP REINFORCEMENT	
511	34447	192	CY	192		CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	
511	34451	42	CY	42		CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	
511	43512	156	CY	156		CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
512	10050	523	SY	523		SEALING OF CONCRETE SURFACES (NON-EPOXY)	
515	15020	4	EACH	4		DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 4, (96'-4")	
515	20000	9	EACH	9		INTERMEDIATE DIAPHRAGMS	
516	13200	87	SF	87		1/2" PREFORMED EXPANSION JOINT FILLER	
516	13600	105	SF	105		1" PREFORMED EXPANSION JOINT FILLER	
516	13900	67	SF	67		2" PREFORMED EXPANSION JOINT FILLER	
516	14014	113	FT	113		INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
516	44001	8	EACH	8		ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (18"x10"x1.75"), AS PER PLAN	
518	21200	118	CY	118		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	153	FT	153		6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40010	65	FT	65		6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
523	20000	2	EACH	2		DYNAMIC LOAD TESTING	
526	25010	230	SY	230		REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")	
526	90010	86	FT	86		TYPE A INSTALLATION	
601	32100	1093	CY	1093		ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
846	00110	36	CF	36		POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

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						avg.
<b>202</b>	<b>23500</b>	<b>190</b>	<b>SY</b>	<b>WEARING COURSE REMOVED</b>		
		53.16	ft	bridge limits from ex. plans		
		32.00	ft	bridge width from ex. plans		
		1701.12	sq ft	area		
		<b>190.00</b>	<b>sq yd</b>	<b>total</b>		
<b>507</b>	<b>00700</b>	<b>770.00</b>	<b>FT</b>	<b>16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN</b>		
abutment		35.00	ft	length of pile		
		11.00	ea	number of piles in forward		
		11.00	ea	number of piles in rear		
		<b>770.00</b>	<b>ft</b>	<b>total length</b>		
<b>507</b>	<b>00751</b>	<b>880.00</b>	<b>FT</b>	<b>16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN</b>		
abutment		40.00	ft	length of pile		
		11.00	ea	number of piles in forward		
		11.00	ea	number of piles in rear		
		<b>880.00</b>	<b>ft</b>	<b>total length</b>		
<b>509</b>	<b>26000</b>	<b>67579.00</b>	<b>LB</b>	<b>GALVANIZED STEEL REINFORCEMENT</b>		
		7540.00	lb	rear abutment		
		3042.00	lb	rear diaphragm		
		7469.00	lb	forward abutment		
		2989.00	lb	forward diaphragm		
		41301.00	lb	deck slab		
		5238.00	lb	parapet		
		<b>67579.00</b>	<b>ft</b>	<b>total</b>		
<b>509</b>	<b>30020</b>	<b>4146.00</b>	<b>FT</b>	<b>NO. 4 DEFORMED GFRP REINFORCEMENT</b>		
		4146.00	ft	total from re-streel spreadsheet		
		<b>4146.00</b>	<b>ft</b>	<b>total</b>		
<b>511</b>	<b>34447</b>	<b>192</b>	<b>CY</b>	<b>CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN</b>		
deck + haunch		9.25	in	deck thickness		
		97.96	ft	length		
		41.33	ft	width		
		3121.09		main deck volume		
		2.00	in	haunch thickness		
		20.00	in	haunch ave width		
		2.00	ea	haunches		
		54.42	cu ft	haunch volume		
		3175.51	cu ft	deck subtotal volume		
edges	left	2.00	in	total overhang extra depth		
		3.79	ft	average overhang width		
	right	2.00	in	total overhang extra depth		
		4.21	ft	average overhang width		
		130.71	cu ft	edges total		
rear diaphragm		5.69	ft	avg diaphragm height		
		3.83	ft	width		
		43.32	ft	length		
		944.53	cu ft	total per end		
fwd diaphragm		5.66	ft	avg diaphragm height		
		3.83	ft	width		
		42.33	ft	length		
		917.88	cu ft	total per end		
		5168.63	cu ft	total volume		
		<b>191.43</b>	<b>cu yd</b>	<b>total volume</b>		

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511	34451	42	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	avg.
full height right		97.83	ft	length on deck right	
		11.30	ft	rear right approach length	
		10.61	ft	fwd right approach length	
		4.08	sq ft	cross sectional area	SBR-1-20
		488.98	cu ft	volume full height parapet	
full height left		98.06	ft	length on deck left	
		11.32	ft	rear left approach length	
		10.58	ft	fwd left approach length	
		3.64	sq ft	cross sectional area	SBR-3-20
		436.55	cu ft	volume full height parapet	
		925.53	cu ft	subtotal full height	
		34.28	cy	subtotal full height	
transition right		1.82	cy	volume transil from SCD	
		2.00	ea	number of transitions	
transition left		1.74	cy	volume transil from SCD	
		2.00	ea	number of transitions	
		7.12	cy	subtotal transitions	
		<b>41.40</b>	<b>cu yd</b>	<b>total volume</b>	
511	43512	156	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
rear abut		6.98	ft	max height	
below const joint		18.29	ft	length below rear right wingwall	
		5.29	ft	min height	
		14.53	ft	length below rear left wingwall	
		6.14	ft	average height below diaphragm	
		43.32	ft	length below diaphragm	
		3.83	ft	width	
		1803.04	cu ft	subtotal	
fwd abut		6.95	ft	max height	
below const joint		18.30	ft	length below fwd right wingwall	
		5.26	ft	min height	
		14.73	ft	length below fwd left wingwall	
		6.10	ft	average height below diaphragm	
		42.33	ft	length below diaphragm	
		3.83	ft	width	
		1775.04	cu ft	subtotal	
rear left wing		2.50	ft	thickness	
above const joint		0.50	ft	min height	
		6.42	ft	full height	
		13.37	ft	length	
		2.03	ft	short length at top	
		2.79	ft	long length at top	
		154.26	cu ft	rear left wingwall subtotal	
rear right wing		2.50	ft	thickness	
above const joint		1.21	ft	min height	
		6.46	ft	full height	
		12.25	ft	length	
		2.28	ft	short length at top	
		3.07	ft	long length at top	
		160.62	cu ft	rear left wingwall subtotal	
fwd left wing		2.50	ft	thickness	
above const joint		0.99	ft	min height	
		6.48	ft	full height	
		12.50	ft	length	
		1.66	ft	short length at top	
		2.23	ft	long length at top	
		148.16	cu ft	rear left wingwall subtotal	
fwd right wingwall		2.50	ft	thickness	
above const joint		0.50	ft	min height	
		6.43	ft	full height	
		13.09	ft	length	
		2.72	ft	short length at top	
		3.27	ft	long length at top	
		161.48	cu ft	rear left wingwall subtotal	
		4202.60	cu ft	total volume	
		<b>155.65</b>	<b>cu yd</b>	<b>total volume</b>	

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512	10050	523	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	avg.
full height right		7.93	ft	perimeter parapet sides	
		97.83	ft	length	
		775.93	sq ft	total	
full height left		6.98	ft	perimeter parapet sides	
		98.06	ft	length	
		684.60	sq ft	total	
transition right		10.00	ft	transition length	
		7.931	ft	perimeter 1	
		6.65	ft	perimeter 2	
		7.29	ft	transition avg perimeter	
		2.00	ea	sides	
		145.82	sq ft	volume transition	
transition right		10.00	ft	transition length	
		6.981	ft	perimeter 1	
		6.65	ft	perimeter 2	
		6.82	ft	transition avg perimeter	
		2.00	ea	sides	
		136.33	sq ft	volume transition	
low height (both sides)		4.00	ft	transition length	
		6.65	ft	perimeter 1 (max)	
		6.83	ft	perimeter 2 (min)	
		6.74	ft	avg perimeter	
		4.00	ea	sides	
		107.88	sq ft	volume low height	
		1850.56	sq ft	parapet total	
beam outside sides		7.85	ft	perimeter beam sides	
		96.33	ft	length	
		2.00	ea	number of beams to coat	
		1512.64	sq ft	total	
deck over left		2.12	ft	average overhang sealing width	
		1.15	ft	average deck thickness at edge	
		0.17	ft	exposed edge at top	
		3.44	ft	edge perimeter	
		89.34	ft	exposed deck edge left	
		307.50	sq ft	area of left edge	
right		2.55	ft	average overhang sealing width	
		0.17	ft	exposed edge at top	
		1.06	ft	average deck thickness at edge	
		3.77	ft	edge perimeter	
		90.30	ft	exposed deck edge right	
		340.64	sq ft	area of left edge	
		2160.78	sq ft	deck and beam total	
rear abut		237.66	sq ft	front of abutment and wingwalls (measured in ORD)	
rear wingwall right		16.97	ft	length of wingwall along slope	
		2.79	ft	length of wingwall top back	
		2.50	ft	width of wingwall	
		0.50	ft	depth of coating wingwall back	
		60.52	sq ft	area of top, back, and side of wingwall	
rear wingwall left		13.33	ft	length of wingwall along slope	
		2.28	ft	length of wingwall top back	
		2.50	ft	width of wingwall	
		0.50	ft	depth of coating wingwall back	
		48.08	sq ft	area of top, back, and side of wingwall	
forward abut		237.40	sq ft	front of abutment and wingwalls (measured in ORD)	
fwd wingwall right		17.14	ft	length of wingwall along slope	
		2.79	ft	length of wingwall top back	
		2.50	ft	width of wingwall	
		0.50	ft	depth of coating wingwall back	
		61.04	sq ft	area of top, back, and side of wingwall	
fwd wingwall left		13.65	ft	length of wingwall along slope	
		2.23	ft	length of wingwall top back	
		2.50	ft	width of wingwall	
		0.50	ft	depth of coating wingwall back	
		48.89	sq ft	area of top, back, and side of wingwall	
		693.59	sq ft	substructure total	
		4704.94	sq ft	total	
		522.77	sq yd	total	

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Project:	BUT-4	SFN:	0900214	avg.	

<b>515</b>	<b>15020</b>	<b>4.00</b>	<b>EACH</b>	<b>DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 4, (96'-4")</b>	
		4.00	ea	number of beams	
		<b>4.00</b>	<b>ea</b>	<b>total area</b>	
<b>516</b>	<b>13200</b>	<b>87.00</b>	<b>SF</b>	<b>1/2" PREFORMED EXPANSION JOINT FILLER</b>	
		42.77	ft	length forward abut diaphragm along slope	
		43.70	ft	length rear abut diaphragm along slope	
		1.00	ft	width	
		<b>86.47</b>	<b>sq ft</b>	<b>total</b>	
<b>516</b>	<b>13600</b>	<b>105.00</b>	<b>SF</b>	<b>1" PREFORMED EXPANSION JOINT FILLER</b>	
parapet		4.08	sq ft	area parapet right	
		2.00	ea	number of ends	
		3.64	sq ft	area parapet left	
		2.00	ea	number of ends	
		15.44	sq ft	total at parapet	
appr. Slab		15.00	in	approach slab depth at abut	
		6.00	in	approach slab seat width	
		2.00	ea	sides	
		2.00	ea	number of approach slabs	
		2.50	sq ft	subtotal	
butment dia		42.77	ft	length forward abut diaphragm along slope	
		43.70	ft	length rear abut diaphragm along slope	
		1.00	ft	width	
		86.47	sq ft	total	
		<b>104.41</b>	<b>sq ft</b>	<b>total area</b>	
<b>516</b>	<b>13900</b>	<b>67</b>	<b>SF</b>	<b>2" PREFORMED EXPANSION JOINT FILLER</b>	
fwd abut		2.57	ft	width on left	
		6.48	ft	height on left	
		2.56	ft	width on right	
		6.43	ft	height on right	
		33.07	sq ft	subtotal	
rear abut		2.62	ft	width on left	
		6.46	ft	height on left	
		2.62	ft	width on right	
		6.42	ft	height on right	
		33.73	sq ft	subtotal	
		<b>66.79</b>	<b>sq ft</b>	<b>total area</b>	
<b>516</b>	<b>14014</b>	<b>113.00</b>	<b>FT</b>	<b>INTEGRAL ABUTMENT EXPANSION JOINT SEAL</b>	
rear joint lenth		43.70	ft	length at rear	
		6.46	ft	left height	
		6.42	ft	right height	
fwd joint lenth		42.77	ft	length at forward	
		6.48	ft	left height	
		6.43	ft	right height	
		<b>112.25</b>	<b>ft</b>	<b>total</b>	
<b>516</b>	<b>44001</b>	<b>8</b>	<b>EACH</b>	<b>ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (18"x10"x1.75"), AS PER PLAN</b>	
		4.00	ea	beams	
		2.00	ea	abutments	
		<b>8.00</b>	<b>ea</b>	<b>total</b>	
<b>518</b>	<b>21200</b>	<b>118</b>	<b>CY</b>	<b>POROUS BACKFILL WITH GEOTEXTILE FABRIC</b>	
rear		796.52	sf	area of abutment and wingwalls to approach slab seat and 0.5 ft below ground (measured in ORD)	
		2.00	ft	width	
		1593.04	cu ft	volume behind rear abut	
fwd		786.38	sf	area of abutment and wingwalls to approach slab seat and 0.5 ft below ground (measured in ORD)	
		2.00	ft	width	
		1572.76	cu ft	volume behind rear abut	
		3165.81	cu ft	total	
		<b>118.00</b>	<b>cu yd</b>	<b>total</b>	

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						avg.
<b>518</b>	<b>40000</b>	<b>153</b>	<b>FT</b>	<b>6" PERFORATED CORRUGATED PLASTIC PIPE</b>		
		76.50	ft	length rear		
		75.71	ft	length fwd		
		<b>153.00</b>	<b>ft</b>	<b>total</b>		
<b>518</b>	<b>40010</b>	<b>65</b>	<b>FT</b>	<b>6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS</b>		
		20.00	ft	rear left		
		15.00	ft	rear right		
		16.00	ft	fwd left		
		14.00	ft	fwd right		
		<b>65.00</b>	<b>ft</b>	<b>total</b>		
<b>523</b>	<b>20000</b>	<b>2</b>	<b>EACH</b>	<b>1MIC LOAD TESTING</b>		
		1.00	ea	number per sub. Unit		
		2.00	ea	number of units		
		<b>2.00</b>	<b>ea</b>	<b>total</b>		
<b>526</b>	<b>25010</b>	<b>230</b>	<b>SY</b>	<b>REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")</b>		
rear		1049.75	sq ft	plan area from microstation		
forward		1020.08	sq ft	plan area from microstation		
		2069.83	sq ft	total		
		<b>230.00</b>	<b>sq yd</b>	<b>total</b>		
<b>526</b>	<b>90010</b>	<b>86.00</b>	<b>FT</b>	<b>TYPE A INSTALLATION</b>		
		41.33	ft	width approach		
		15.00	deg	skew		
		42.79	ft	length along skew		
		2.00	ea	sides		
		<b>85.58</b>	<b>ft</b>	<b>total</b>		
<b>601</b>	<b>32100</b>	<b>1093</b>	<b>CY</b>	<b>ROCK CHANNEL PROTECTION, TYPE B WITH FILTER</b>		
		7932.79	sq ft	area at rear (measured in ORD)		
		3869.24	sq ft	area at fwd (measured in ORD)		
		11802.03	sq ft	total area		
		2.50	ft	thickness		
		29505.08	cf			
		<b>1092.78</b>	<b>cy</b>	<b>total</b>		
<b>846</b>	<b>00110</b>	<b>36.00</b>	<b>CF</b>	<b>POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM</b>		
		41.33	ft	width approach		
		15.00	deg	skew		
		42.79	ft	length along skew		
		3.00	in	depth joint		
		20.00	in	width joint		
		2.00	ea	sides		
		<b>36.00</b>	<b>cu ft</b>	<b>total</b>		