E.L. ROBINSON
ENGINEERING

Computation for: **ESTIMATED QUANTITIES**

SFN: **6501835**

Structure: **PIC-00071-00.46R**

PID: **107630**

Design:	**JOL**	Date	**May 27, 2021**
Check:	**MMD**	Date	**September 20, 2021**
Update:		Date	
Recheck:		Date	

File Names

Comments

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DESIGN:	JOL	**DATE:**	5/27/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/20/21	**RECHECK:**		**DATE:**	
STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 202E11203 **PAY UNIT:** LS
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
SPECIAL INSTRUCTIONS:	**TOTAL**	**LS**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 202E22900 **PAY UNIT:** SY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: APPROACH SLAB REMOVED
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
L =	25	ft		
W =	40	ft		
A =	1000.0	sq ft		
	111.1	SY		
# =	2			
total A =	222	SY	222	
SPECIAL INSTRUCTIONS:			**TOTAL**	**222**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 503E11100 **PAY UNIT:** LS
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: COFFERDAMS AND EXCAVATION BRACING
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
SPECIAL INSTRUCTIONS:	**TOTAL**	**LS**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 503E21100 **PAY UNIT:** CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: UNCLASSIFIED EXCAVATION
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
ave depth =	5.5	ft		
width =	6.92	ft		
length =	96.89583	ft		
# =	2			
volume =	7375.711	cu ft		
	273.2	CY	273	273

SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	**TOTAL**	**273**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 505E11100 **PAY UNIT:** LS
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: PILE DRIVING EQUIPMENT MOBILIZATION
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
SPECIAL INSTRUCTIONS:	**TOTAL**	**LS**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 507E00600 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Rear Abutment:		
est L = 60 ft		
# piles = 12		
total length = 720 FT	720	720
Forward Abutment:		
est L = 75 ft		
# piles = 12		
total length = 900 FT	900	1,620
SPECIAL INSTRUCTIONS:	**TOTAL**	**1,620**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 507E00650 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Rear Abutment:		
est L = 65 ft		
# piles = 12		
total length = 780 FT	780	780
Forward Abutment:		
est L = 80 ft		
# piles = 12		
total length = 960 FT	960	1,740
SPECIAL INSTRUCTIONS:	**TOTAL**	**1,740**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 507E93300 **PAY UNIT:** EACH
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: STEEL POINTS OR SHOES
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Rear Abutment:		
# piles = 12 FT	12	12
Forward Abutment:		
# piles = 12 FT	12	24
SPECIAL INSTRUCTIONS:	**TOTAL**	**24**

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DESIGN: JOL **DATE:** 5/27/21 **UPDATE:** **DATE:**
CHECK: MMD **DATE:** 9/20/21 **RECHECK:** **DATE:**
STRUCTURE: PIC-00071-00.46R **SFN:** 6501835 **PID:** 107630

ITEM: 509E10000 **PAY UNIT:** LB
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: EPOXY COATED REINFORCING STEEL
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
Railing =	7266	LB	7,266	7,266
Deck =	47347	LB	47,347	54,613
Rear Abutment =	8644	LB	8,644	63,257
Rear Diaphragm =	5304	LB	5,304	68,561
Forward Abutment =	8644	LB	8,644	77,205
Forward Diaphragm =	5304	LB	5,304	82,509

SPECIAL INSTRUCTIONS: **TOTAL** **82,509**

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ITEM: 509E30020 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: NO. 4 GFRP DEFORMED BARS
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Railing = 4966 FT	4,966	4,966
SPECIAL INSTRUCTIONS:	**TOTAL**	**4,966**

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STRUCTURE:	PIC-00071-00.46R			SFN:	6501835	PID:	107630

ITEM: 511E34446 PAY UNIT: CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
Deck:				
width =	59.33	ft		
thickness =	8.5	in		
length =	115.52	ft		
volume =	4854.8	cu ft		
	179.8	CY	180	180
haunch width =	49	in		
ave depth =	3.4	in		
length =	115.52	ft		
# =	8			
volume =	1069.2	cu ft		
	39.6	CY	40	219
overhang width =	9.5	in		
ave depth =	3.4	in		
length =	115.52	ft		
volume =	51.8	cu ft		
	1.9	CY	2	221
Diaphragm:				
ave depth =	6.66	ft		
width =	4.92	ft		
length =	68.51	ft		
# =	2			
volume =	4489.7	cu ft		
	166.3	CY	166	388

SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE — TOTAL 388

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 511E34451 **PAY UNIT:** CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
A =	588	sq in		
	4.08	sq ft		
length =	137.52	ft		
# =	2			
total volume =	1123.1	cu ft		
	41.6	cu yd	42	42
transition:				
A1 =	588	sq in		
A2 =	352	sq in		
ave A =	470	sq in		
	3.26	sq ft		
length =	14.0	ft		
# =	4			
total volume =	182.8	cu ft		
	6.8	cu yd	7	48

SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE **TOTAL** **48**

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STRUCTURE:	PIC-00071-00.46R			SFN:	6501835	PID:	107630

ITEM: 511E43512 PAY UNIT: CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
seat:		
width = 4.92 ft		
depth = 4.97 ft		
length = 94.9 ft		
# = 2		
volume = 4640.9 cu ft		
171.9 CY	172	172
wingwall:		
constant ht = 6.73 ft		
width = 2.5 ft		
length = 1.5 ft		
# = 4		
volume = 101.0 cu ft		
3.7 CY	4	176
min ht = 1.63 ft		
ave ht = 4.18 ft		
width = 2.5 ft		
length = 11.5 ft		
# = 4		
volume = 480.7 cu ft		
17.8 CY	18	193
rear wingwalls:		
TBD ONCE SHEETS ARE DRAFTED		
fwd wingwalls:		
SPECIAL INSTRUCTIONS:	TOTAL	193

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ITEM: 512E10100 PAY UNIT: SY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
superstructure:		
perimeter = 114.5 in; 9.541667 ft; length = 115.52 ft; # sides = 2; A = 2204.5 sq ft; 244.9 SY		
AS perim = 94.8 in; 7.90 ft; length = 22 ft; # sides = 2; A = 347.6 sq ft; 38.6 SY		
ave trans perimeter = 7.38 ft; length = 14.00 ft; # = 4; A = 413.5 sq ft; 45.9 SY	330	330
abutment:		
ave face ht = 6.66 ft; ht on seat = 1 ft; width = 68.51 ft; # = 2; A = 1049.5 sq ft; 116.6 SY	117	446
wingwall:		
constant ht = 7.55 ft; length = 1.5 ft; # = 4; A = 45.3 sq ft; 5.0 SY		
front shelf width = 2.416667 ft; length = 25 ft; # = 2; A = 120.8 sq ft; 13.4 SY	18	465
min ht = 2.47 ft; ave ht = 5.01 ft; length = 23 ft; # = 2; A = 230.5 sq ft; 25.6 SY	26	490
top width = 2.5 ft; length = 28.1 ft; # = 2; A = 140.5 sq ft; 15.6 SY	16	506
back ht = 0.5 ft; length = 28.1 ft; # = 2; A = 28.1 sq ft; 3.1 SY	3	509
SPECIAL INSTRUCTIONS:	TOTAL	509

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630
ITEM:	512E33000	**PAY UNIT:**	SY				
SUBJECT:	ESTIMATED QUANTITIES						

DESCRIPTION: TYPE 2 WATERPROOFING

SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
wingwall construction joint:		
ht = 3 ft		
length = 13 ft		
# = 4		
A = 156.0 sq ft		
17.3 SY	17	17
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	**TOTAL**	**17**

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STRUCTURE: PIC-00071-00.46R **SFN:** 6501835 **PID:** 107630

ITEM: 515E15100 **PAY UNIT:** EACH
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF54-49
SUPPLEMENTAL DESCRIPTION: LENGTH = 112'-4"

		SUBTOTAL	TOTAL
8	each	8	8
SPECIAL INSTRUCTIONS: SPECIFY BEAM LENGTH		**TOTAL**	**8**

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ITEM: 515E20000 **PAY UNIT:** EACH
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: INTERMEDIATE DIAPHRAGMS
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL

# bays = 7 	
# rows = 3 	
total = 21 each
	21	21

SPECIAL INSTRUCTIONS:	**TOTAL**	**21**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 516E13200 **PAY UNIT:** SF
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 1/2" PREFORMED EXPANSION JOINT FILLER
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
width =	1	ft		
length =	68.51	ft		
# =	2			
A =	137.0	SF	137	137
SPECIAL INSTRUCTIONS:			**TOTAL**	**137**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 516E13600 **PAY UNIT:** SF
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 1" PREFORMED EXPANSION JOINT FILLER
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
width =	1	ft		
length =	68.51	ft		
# =	2			
A =	137.0	SF	137	137

SPECIAL INSTRUCTIONS:	**TOTAL**	**137**

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ITEM: 516E13900 **PAY UNIT:** SF
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 2" PREFORMED EXPANSION JOINT FILLER
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
ht = 6.6 ft width = 5.68 ft # = 4 A = 150.0 SF	150	150
SPECIAL INSTRUCTIONS:	**TOTAL**	**150**

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ITEM: 516E14014 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: INTEGRAL ABUTMENT EXPANSION JOINT SEAL
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
horizontal length =	71.51	ft		
vertical length =	3.35	ft		
# =	2			
total length =	156.4	FT	156	156

SPECIAL INSTRUCTIONS: **TOTAL** **156**

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ITEM: 516E44001 **PAY UNIT:** EACH
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN
SUPPLEMENTAL DESCRIPTION: 18"x10"x1.75" W/LOAD PLATE ASSEMBLY

	SUBTOTAL	TOTAL
# per abutment = 8 # of abutments = 2 total = 16 EACH	16	16
SPECIAL INSTRUCTIONS: <2" THICK, SPECIFY DIMENSIONS	**TOTAL**	**16**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 518E21200 **PAY UNIT:** CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: POROUS BACKFILL WITH GEOTEXTILE FABRIC
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
abutment:		
ave ht = 10.38 ft		
width = 68.90 ft		
thickness = 2 ft		
# = 2		
volume = 2860.8 cu ft		
106.0 CY	106	106
wingwall:		
ave ht = 7.65 ft		
width = 13 ft		
thickness = 2 ft		
# = 4		
volume = 795.6 cu ft		
29.5 CY	29	135
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	**TOTAL**	**135**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 518E40000 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 6" PERFORATED CORRUGATED PLASTIC PIPE
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
length per abut = 94.90 ft # = 2		
total length = 189.8 FT	190	190
SPECIAL INSTRUCTIONS:	**TOTAL**	**190**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 518E40011 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
length per abut = 30 ft # = 2		
total length = 60.0 FT	60	60
SPECIAL INSTRUCTIONS:	**TOTAL**	**60**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 526E25001 **PAY UNIT:** SY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
length =	25	ft		
width =	59.33	ft		
# =	2			
A =	2966.5	sq ft		
	329.6	SY	330	330

SPECIAL INSTRUCTIONS:	**TOTAL**	**330**

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STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630
ITEM:	526E90010	**PAY UNIT:**	FT				
SUBJECT:	ESTIMATED QUANTITIES						

DESCRIPTION: TYPE A INSTALLATION

SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
length per AS = 64.66 ft # = 2		
total length = 129.3 FT	129	129
SPECIAL INSTRUCTIONS:	**TOTAL**	**129**

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DESIGN:	JOL	**DATE:**	5/27/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/20/21	**RECHECK:**		**DATE:**	
STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 601E32200 **PAY UNIT:** CY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
rear length =	23	ft		
rear width =	99.68	ft		
thickness =	2	ft		
volume =	4585.1	cu ft		
	169.8	CY	170	170
forward length =	20.1	ft		
forward width =	96.84	ft		
thickness =	2	ft		
volume =	3892.8	cu ft		
	144.2	CY	144	314
SPECIAL INSTRUCTIONS:			**TOTAL**	**314**

E.L. ROBINSON ENGINEERING
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DESIGN:	JOL	**DATE:**	5/27/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/20/21	**RECHECK:**		**DATE:**	
STRUCTURE:	PIC-00071-00.46R			**SFN:**	6501835	**PID:**	107630

ITEM: 846E00110 **PAY UNIT:** CF
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
SUPPLEMENTAL DESCRIPTION:

			SUBTOTAL	TOTAL
length =	64.7	ft		
width =	20	in		
thickness =	3	in		
# =	2			
volume =	53.9	CF	54	54
SPECIAL INSTRUCTIONS:			**TOTAL**	**54**

MADE BY: JOL DATE: 5/27/2021
CHECKED BY: MMD DATE: 9/20/2021

ESTIMATED QUANTITIES

STRUCTURE FILE NUMBER: 6501835

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER.	GEN.	REFERENCE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				
202	22900	222	SY	APPROACH SLAB REMOVED			222	
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING				
503	21100	273	CY	UNCLASSIFIED EXCAVATION	273			
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				
507	00600	1,620	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	1,620			
507	00650	1,740	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	1,740			
507	93300	24	EACH	STEEL POINTS OR SHOES	24			
509	10000	82,509	LB	EPOXY COATED REINFORCING STEEL	17,288	65,221		
509	30020	4,966	FT	NO. 4 GFRP DEFORMED BARS		4,966		
511	34446	388	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK		388		
511	34451	48	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN		48		
511	43512	193	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	193			
512	10100	509	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	179	330		
512	33000	17	SY	TYPE 2 WATERPROOFING	17			
515	15100	8	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF54-49 (LENGTH = 112'-4")		8		
515	20000	21	EACH	INTERMEDIATE DIAPHRAGMS		21		
516	13200	137	SF	1/2" PREFORMED EXPANSION JOINT FILLER	137			
516	13600	137	SF	1" PREFORMED EXPANSION JOINT FILLER	137			
516	13900	150	SF	2" PREFORMED EXPANSION JOINT FILLER	150			
516	14014	156	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	156			
516	44001	16	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (18"x10"x1.75" W/LOAD PLATE ASSEMBLY)		16		
518	21200	135	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	135			
518	40000	190	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	190			
518	40011	60	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	60			
526	25001	330	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN			330	
526	90010	129	FT	TYPE A INSTALLATION			129	
601	32200	314	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	314			
846	00110	54	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			54	