E.L. ROBINSON
ENGINEERING

Computation for: **ESTIMATED QUANTITIES**

SFN: **4903189**

Structure: **MAD-00071-04.56R**

PID: **107630**

Design:	**JOL**	Date	**September 2, 2021**
Check:	**MMD**	Date	**September 8, 2021**
Update:		Date	
Recheck:		Date	

File Names

Comments

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DESIGN:	JOL	**DATE:**	9/2/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/8/21	**RECHECK:**		**DATE:**	
STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**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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CHECK:	MMD	DATE:	9/8/21	RECHECK:		DATE:	
STRUCTURE:	MAD-00071-04.56R			SFN:	4903189	PID:	107630

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

								SUBTOTAL	TOTAL
	L =	25	ft						
	W =	41	ft						
	A =	1025.0	sq ft						
		113.9	SY						
	# =	2							
	total A =	228	SY					228	228
	Curb:								
Forward	L =	23.75	ft	Forward	L =	16.89583	ft		
	W =	0.5	ft		W =	0.5	ft		
	A =	11.9	sq ft		A =	8.4	sq ft		
		1.3	SY			0.9	SY		
	# =	2			# =	2			
	total A =	3	SY		total A =	2	SY	5	232
SPECIAL INSTRUCTIONS:								TOTAL	232

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**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:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

			SUBTOTAL	TOTAL
ave depth =	5	ft		
width =	5.33	ft		
length =	77.67	ft		
# =	2			
volume =	4139.811	cu ft		
	153.3	CY	153	153
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE			**TOTAL**	**153**

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**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:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

ITEM: 507E00500 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Rear Abutment:		
est L = 65 ft		
# piles = 10		
total length = 650 FT	650	650
Forward Abutment:		
est L = 80 ft		
# piles = 10		
total length = 800 FT	800	1,450
SPECIAL INSTRUCTIONS:	**TOTAL**	**1,450**

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CHECK:	MMD	**DATE:**	9/8/21	**RECHECK:**		**DATE:**	
STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

ITEM: 507E00550 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: 12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
Rear Abutment:		
est L = 70 ft		
# piles = 10		
total length = 700 FT	700	700
Forward Abutment:		
est L = 85 ft		
# piles = 10		
total length = 850 FT	850	1,550
SPECIAL INSTRUCTIONS:	**TOTAL**	**1,550**

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

	SUBTOTAL	TOTAL
Rear Abutment:		
# piles = 10	10	10
Forward Abutment:		
# piles = 10	10	20
SPECIAL INSTRUCTIONS:	**TOTAL**	**20**

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STRUCTURE:	MAD-00071-04.56R			SFN:	4903189	PID:	107630

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

			SUBTOTAL	TOTAL
Railing =	5786	LB	5,786	5,786
Deck =	33662	LB	33,662	39,448
Rear Abutment =	5970	LB	5,970	45,418
Rear Diaphragm =	3850	LB	3,850	49,268
Forward Abutment =	5970	LB	5,970	55,238
Forward Diaphragm =	3850	LB	3,850	59,088
SPECIAL INSTRUCTIONS:			TOTAL	59,088

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

	SUBTOTAL	TOTAL
Railing = 4034 FT	4,034	4,034
SPECIAL INSTRUCTIONS:	**TOTAL**	**4,034**

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STRUCTURE:	MAD-00071-04.56R			SFN:	4903189	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 = 84.34 ft		
volume = 3544.4 cu ft		
131.3 CY	131	131
haunch width = 49 in		
ave depth = 3.2 in		
length = 84.34 ft		
# = 8		
volume = 734.7 cu ft		
27.2 CY	27	158
overhang width = 9.5 in		
ave depth = 3.2 in		
length = 84.34 ft		
volume = 35.6 cu ft		
1.3 CY	1	160
Diaphragm:		
ave depth = 4.5 ft		
width = 3.33 ft		
length = 59.33 ft		
# = 2		
volume = 1778.1 cu ft		
65.9 CY	66	226
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	TOTAL	226

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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 = 106.33 ft # = 2 total volume = 868.4 cu ft 32.2 cu yd	32	32
<u>transition:</u> 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	39
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	**TOTAL**	**39**

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STRUCTURE:	MAD-00071-04.56R			SFN:	4903189	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 = 3.33 ft		
depth = 4.97 ft		
length = 75.67 ft		
# = 2		
volume = 2504.7 cu ft		
92.8 CY	93	93
wingwall:		
constant ht = 5.03 ft		
width = 2.5 ft		
length = 1.5 ft		
# = 4		
volume = 75.5 cu ft		
2.8 CY	3	96
min ht = 1.63 ft		
ave ht = 3.33 ft		
width = 2.5 ft		
length = 6.5 ft		
# = 4		
volume = 216.5 cu ft		
8.0 CY	8	104
rear wingwalls:		
TBD ONCE SHEETS ARE DRAFTED		
fwd wingwalls:		
SPECIAL INSTRUCTIONS:	TOTAL	104

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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 = 84.34 ft; # sides = 2; A = 1609.5 sq ft; 178.8 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	263	263
abutment:		
ave face ht = 4.5 ft; ht on seat = 1 ft; width = 59.33 ft; # = 2; A = 652.6 sq ft; 72.5 SY	73	336
wingwall:		
constant ht = 6.03 ft; length = 1.5 ft; # = 4; A = 36.2 sq ft; 4.0 SY		
front shelf width = 0.83 ft; length = 8 ft; # = 4; A = 26.6 sq ft; 3.0 SY	7	343
min ht = 2.63 ft; ave ht = 4.33 ft; length = 6.5 ft; # = 4; A = 112.6 sq ft; 12.5 SY	13	355
top width = 2.5 ft; length = 8.8 ft; # = 4; A = 88.0 sq ft; 9.8 SY	10	365
back ht = 0.5 ft; length = 8.8 ft; # = 4; A = 17.6 sq ft; 2.0 SY	2	367
SPECIAL INSTRUCTIONS:	TOTAL	367

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ITEM: 512E33000 **PAY UNIT:** SY
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: TYPE 2 WATERPROOFING
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
wingwall construction joint:		
ht = 3 ft		
length = 8 ft		
# = 4		
A = 96.0 sq ft		
10.7 SY	11	11
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	**TOTAL**	**11**

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ITEM: 515E15070 **PAY UNIT:** EACH
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF36-49
SUPPLEMENTAL DESCRIPTION: LENGTH = 83'-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:	MAD-00071-04.56R			**SFN:**	4903189	**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 =	59.33	ft		
# =	2			
A =	118.7	SF	119	119

SPECIAL INSTRUCTIONS: **TOTAL** **119**

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

	SUBTOTAL	TOTAL
width = 1 ft length = 59.33 ft # = 2 A = 118.7 SF	119	119
SPECIAL INSTRUCTIONS:	**TOTAL**	**119**

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

	SUBTOTAL	TOTAL
ht = 5 ft width = 3.33 ft # = 4 A = 66.6 SF	67	67
SPECIAL INSTRUCTIONS:	**TOTAL**	**67**

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

			SUBTOTAL	TOTAL
horizontal length =	62.33	ft		
vertical length =	1.75	ft		
# =	2			
total length =	131.7	FT	132	132

SPECIAL INSTRUCTIONS: **TOTAL** **132**

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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:	MAD-00071-04.56R			SFN:	4903189	PID:	107630

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

	SUBTOTAL	TOTAL
abutment:		
ave ht = 8.22 ft		
width = 59.67 ft		
thickness = 2 ft		
# = 2		
volume = 1961.9 cu ft		
72.7 CY	73	73
wingwall:		
ave ht = 6.86 ft		
width = 8 ft		
thickness = 2 ft		
# = 4		
volume = 439.0 cu ft		
16.3 CY	16	89
SPECIAL INSTRUCTIONS: CHECK UNIT OF MEASURE	TOTAL	89

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

	SUBTOTAL	TOTAL
length per abut = 75.67 ft # = 2		
total length = 151.3 FT	151	151
SPECIAL INSTRUCTIONS:	**TOTAL**	**151**

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STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**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:	MAD-00071-04.56R			**SFN:**	4903189	**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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ITEM: 526E90010 **PAY UNIT:** FT
SUBJECT: ESTIMATED QUANTITIES
DESCRIPTION: TYPE A INSTALLATION
SUPPLEMENTAL DESCRIPTION:

	SUBTOTAL	TOTAL
length per AS = 56 ft # = 2		
total length = 112.0 FT	112	112
SPECIAL INSTRUCTIONS:	**TOTAL**	**112**

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DESIGN:	JOL	**DATE:**	9/2/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/8/21	**RECHECK:**		**DATE:**	
STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

			SUBTOTAL	TOTAL
length =	16.25	ft		
width =	81.84	ft		
thickness =	2	ft		
# =	2			
volume =	5319.6	cu ft		
	197.0	CY	197	197

SPECIAL INSTRUCTIONS:	**TOTAL**	**197**

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DESIGN:	JOL	**DATE:**	9/2/21	**UPDATE:**		**DATE:**	
CHECK:	MMD	**DATE:**	9/8/21	**RECHECK:**		**DATE:**	
STRUCTURE:	MAD-00071-04.56R			**SFN:**	4903189	**PID:**	107630

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

			SUBTOTAL	TOTAL
length =	56	ft		
width =	20	in		
thickness =	3	in		
# =	2			
volume =	46.7	CF	47	47

SPECIAL INSTRUCTIONS:	**TOTAL**	**47**

MADE BY: JOL DATE: 9/2/2021
CHECKED BY: MMD DATE: 9/8/2021

ESTIMATED QUANTITIES

STRUCTURE FILE NUMBER: 4903189

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	232	SY	APPROACH SLAB REMOVED			232	
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING				
503	21100	153	CY	UNCLASSIFIED EXCAVATION	153			
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				
507	00500	1,450	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	1,450			
507	00550	1,550	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED	1,550			
507	93300	20	EACH	STEEL POINTS OR SHOES	20			
509	10000	59,088	LB	EPOXY COATED REINFORCING STEEL	11,940	47,148		
509	30020	4,034	FT	NO. 4 GFRP DEFORMED BARS		4,034		
511	34446	226	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK		226		
511	34451	39	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN		39		
511	43512	104	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	104			
512	10100	367	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	104	263		
512	33000	11	SY	TYPE 2 WATERPROOFING	11			
515	15070	8	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF36-49 (LENGTH = 83'-4")		8		
515	20000	21	EACH	INTERMEDIATE DIAPHRAGMS		21		
516	13200	119	SF	1/2" PREFORMED EXPANSION JOINT FILLER	119			
516	13600	119	SF	1" PREFORMED EXPANSION JOINT FILLER	119			
516	13900	67	SF	2" PREFORMED EXPANSION JOINT FILLER	67			
516	14014	132	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	132			
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	89	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	89			
518	40000	151	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	151			
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	112	FT	TYPE A INSTALLATION			112	
601	32200	197	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	197			
846	00110	47	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			47	