Johnson, Mirmiran, & Thompson

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Calculated:	PPA	Date:	12/13/2019	
Checked:	NCM	Date:	12/17/2019	Sta
Concurred:	PPA	Date:	12/10/2015	PI
Back Checked:	NCM	Date:	12/19/2019	
Released:	PPA/NCM	Date:	12/19/2019	
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 Project:
 POR-76-(16.58)(21.18)

 Subject:
 ESTIMATED QUANTITIES FOR CR-73 (MILTON NEWTON ROAD OVER IR 76)

POR-76-2118 Replacement of Deck and pier caps (4 Span Continuous Steel Beam With Reinforced Concrete Deck And Substructure)

					ESTIMATED QUANTITIES
ITEM	EXT.	PARTICIPATION 01/IMS/BR	TOTAL	UNIT	DESCRIPTION
202	11203	LS	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
202	22900	112	112	SY	APPROACH SLAB REMOVED
202	38601	48	48	FT	BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN
503	11100	LS	LS		COFFERDAMS AND EXCAVATION BRACING
503	21100	177	177	CY	UNCLASSIFIED EXCAVATION
509	10000	86,185	86,185	LB	EPOXY COATED REINFORCING STEEL
510	10000	280	280	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT
511	21522	247	247	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE
511	33501	2	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN
511	34450	54	54	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)
511	41010	41	41	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS
511	43510	35	35	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
512	10100	745	745	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	33000	8	8	SY	TYPE 2 WATERPROOFING
512	74000	140	140	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES
513	20000	2,312	2,312	EACH	WELDED STUD SHEAR CONNECTORS
514	00050	2,736	2,736	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL
514	00056	2,736	2,736	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT
514	00060	2,736	2,736	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT
514	00067	2,736	2,736	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN
514	00504	6	6	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL
514	10000	3	3	EACH	FINAL INSPECTION REPAIR
516	10010	58	58	FT	ARMORLESS PREFORMED JOINT SEAL
516	13600	8	8	SF	1" PREFORMED EXPANSION JOINT FILLER
516	13900	56	56	SF	2" PREFORMED EXPANSION JOINT FILLER
516	14020	75	75	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL
516	44100	12	12	EACH	14" X 18" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 19" X 2") (NEOPRENE)
516	44200	8	8	EACH	13" X 16" X 3 3/16" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (14" X 17" X 2") (NEOPRENE)
516	47001	LS	LS	+	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
540	04004	00	20	01/	
518	21201	29	29	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN
518	40012	64	64	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE
540	44404	450	450	05	
519	11101	153	153	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN
506	25040	166	166	ev	REINFORCED CONCRETE APPROACH SLABS WITH QA/QC (T=15")
526 526	25010 90030	166 58	166 58	SY FT	TYPE C INSTALLATION
520	90030	30	00		
601	20000	206	206	ev	
601	20000	326	326	SY	CRUSHED AGGREGATE SLOPE PROTECTION
601	21050	3.56	3.56	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT
607	20000	200	200	ET	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC
607	39900	320	320	FT	VANUAL FRUTEUTION FENGE, 0 STRAIGHT, GUATEU FADRIG
614	00740		0	EACH	PRECAST REINFORCED CONCRETE OUTLET
611	99710	2	2		

Stage Submission: PID/Job No.: Final Tracings 102858 / 17-10221-001

POR-76-2118 Bridge No.: SFN: 6703216 CALCULATED BY: CHECKED BY: PPA NCM DATE: 12/13/2019 12/17/2019 DATE: ABUT. PIERS SUPER. GEN. SHT. REF. LS 2 112 48 2 LS 177 74<u>,</u>139 4,963 7,083 280 247 2 2 2 54 41 35 42 238 465 8 11 129 2,312 2,736 2,736 2,736 2,736 2 6 3 58 8 56 75 12 8 2 29 4 64 153 2 166 58 326 3.56 320 2

	2118 Input	
Bridge Limits	227.5	
Span 1	46.5	
Span 2	65	
Span 3	65	
Span 4	46.5	
C/C Bearings	223	
Deck Width	24.00	btw. Fascia beams
O/O Width	31.34	
# Beams	4	
Bm Spacing	8.00	
Lt Rail Area	2.94	
Rt Rail Area	2.94	
Skew	0.00	
Deck Area	7129.85	
Prop. Deck	31.33	

202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
	deck removal	\$ 106,948.00		use \$15 / sf of deck area
	pier cap removal	\$ 6,300.00		use \$200 / cy, each cap has approximately 10.5 cy
	abut. Removal	\$ 6,000.00		use \$200 / cy, each abutment and 2 wingwalls are approximately 15 cy
	misc.	\$ 5,000.00		various incidentals such as end cross frames, scuppers,etc
		\$ 124,248.00		total
		\$125,000.00		
202	22900	112		APPROACH SLAB REMOVED
		20.00	ft	width (approximate)
		25.00		length
		2	each	# of approach slabs
		111.11	sy	total
202	38601	48		BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN
		12	ft	existing parapet length
		4	each	locations
		48	ft	total
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING
		\$ 5,000.00		no traffic to maintain, so it should be very straightforward
503	21100	177		UNCLASSIFIED EXCAVATION
abutments	end area	32		length
	(trapezoid)	36		6' deep, 3 feet wide at bottom, 6' under AS, assumes 1:1 layback
		2		number of abutments
		2304	cf	subtotal
WW	end area-1	13		length
	(trapezoid)	25	sf	6' deep, 1 feet wide at bottom, 6' under AS, assumes 1:1 layback to excavate for upper section
	end area-2	36		approximately 6' x 6 to excavate for footing extension
	(trapezoid)	8		length
		4		number of wingwalls
		2452.00	cf	subtotal
		177	су	total

509	10000	86,185	LB	EPOXY COATED REINFORCING STEEL
		4963	lb	abutments
		7083	lb	pier
		11459	lb	parapet
		58455		deck
		4225	lb	diaphragm
	for info only	487	lb	diaphragm guides
	for info only			approach slab
	for info only	1354	lb	sleeper slab
		86185	lb	total
510	10000	280		DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT
	RA	62		top of stem
		78		wingwall
		140	each	RA TOTAL
	FA	62		top of stem
		78		wingwall
		140	each	FA TOTAL
		280	each	total

511	21522	247	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE
diaphragm	RA	31.33	ft	length
aiapinagin		4.44	ft	avg. height (top of deck - btm diaphragm)
		3.75	ft	width
	subtract out	31.33	ft	length
	AS notch	2.04	ft	height [of approach slab at bridge limit]
	Action	0.50	ft	width
		490.11	cf	RA TOTAL
		400.11	01	
	FA	32.17	ft	length
	10	4.49	ft	avg. height (top of deck - btm diaphragm)
		3.75		width
	subtract out	29.0		length
	AS notch	2.04	ft	height [of approach slab at bridge limit]
	ASTICICI	0.50		width
		511.60	cf	FA TOTAL
		511.00	CI	
		37.1		diaphragm subtotal
		ə/.۱	су	นเลยแลงแรงเป็นได้ได้
deck		24.00		deak width between everhange
ueck		24.00		deck width between overhangs deck length
		8.5		nominal deck thickness
			in	
		4		number of beams
		0.86	in	largest top flange thickness, to be conservative
		11.5		largest top flange width, to be conservative
		2.3	in	haunch thickness (average from TS table)
		11.50		haunch width
		3.67		left overhang length
		3.67	ft	right overhang length
		11.66	in	overhang thickness
		3867.50	cf	nominal deck volume
		167.48	cf	haunch volume
		1409.16	cf	overhang volume
		2.04	ft	approach slab seat
		1.33		height btw diaphragm and deck
		2.75		avg. width of trapezoidal concrete between diaphragm and deck
		176.00		volume of trapezoid between diaphragm and deck
		5620.14	cf	deck total
		209	су	deck total
		• (=		
		247	су	SUPER = diaphragm + deck concrete
E 44	22504	•	FAOIL	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN
511	33501	2		
	RA	1		abutment
	FA		each	abutment
		2	each	total
511	34450	54	CY	
511 BR-1-13	34450 Parapet	54 2.94	sf	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET) parapet cross sectional area
DIV-1-19	гагарег	2.94 216.50	ft	total length main section on bridge + 3' on rear AS
		210.50		number of barriers
		44.01	cf	14'-0" transition integral barrier volume per std dwg
		44.01	each	number of transition integral barrier volume per std dwg number of transitions, 2 on bridge (FA), 2 on approach slabs (RA)
		4 1449.06	cf	total
		1449.00	CI	
		53.67		total
		55.07	су	

cap on4.70ft a_{γ} cap height (and all beam sets - a_{2} all color dap)µrop pers3ft a_{2} cap withµrop pers3ft a_{2} withµrop pers3ftftµrop pers3ftftµrop pers3ftftµrop pers1ft a_{2} withµrop pers3ftftµrop pers1ftftµrop pers1ft a_{2} withµrop pers3ftftµrop pers3ftftµrop pers1ftµrop pers3ftµrop pers1ftµrop pers	511	41010	41	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS
prog plass 24 00 ft cop length (full with, center locate columns). Image: strain					avg. cap height (avg all beam seats - avg all bot of cap)
Image: Second			24.00	ft	cap length (full width, center to center fascia columns)
Image: set of the set of th				ft	cap width
Image: section of the subbla section of the subbla section of the subbla section of the sectio			7.07	sf	
Image of the second			371.56		subtotal
Image: space of the state of the space o					number of piers
Image: set of the set of th			1114.67		PROP CAP ON PIER TOTAL
511 43510 35 CY CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING RA diaph 3.75 R length A wing 1.00 R windth extension 5.24 R height (flop of deck to sawcul) extension 5.24 R height (flop of deck to sawcul) mid-wing 8.75 R height (flop of deck to sawcul) (Wr) beam 1.75 R windth (Wr) beam 1.76 R windth esert 6.101 8.67 R windth (Wr) beam 1.76 R windth (Wr) beam 5.62 C R (Wr) 1.00 R windth (Wr) 1.00 R windth (Wr) 1.00 R windth					
RAdiaph wing $3.7s$ ftlength with top of loss shouldextension5.24ftheight (top of deck to sawcut)extension5.24ftheight (top of deck to sawcut)mid-wing8.75ftheight (top of deck to sawcut)windmid-wing8.75ftheight (top of deck to sawcut)wind19.7dfsubtobalwind1.75ftkay, height (sawcut to top of ftg)set ft ftg3.67ftlengthwind (t)5.00ftkidhtrectangle-1100ftkidhtrectangle-1100ftkidhtrectangle-1100ftkidhtrectangle-13.00ftkidhtrectangle-1100ftkidhtrectangle-1100ftkidhtrectangle-2100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-3100ftkidhtrectangle-4100ftkidhtrectangle-5100ftkidhtrectangle-6rectangle-6rectangle-6rectangle-7100ftkidhtrectangle-7100ftkidhtr			41.28	су	total
RAdiaph $3.7s$ RentitRwing1.00Rwidthextension5.24Rheight (top of feck to sawcut)mid-wing8.75Rheight (top of feck to sawcut)mid-wing8.75Rheight (top of feck to sawcut)mid-wing8.75Rheight (top of feck to sawcut)sabitalsabitalsabitalsabital8.75Rheight (top of feck to sawcut)sabitalsay, height (sawcut to top of fig)say, height (sawcut to top of fig)fesay, height (sawcut to top of fig)sayfesay, height (sawcut to top of fig)sayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesayfesay <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
wing1.00ftwidh wingextension5.24ftheight (po fack to sawout)mid-wing8.75ftleghtmid-wing8.75ftleght(by beam1.75ftwidhset f (g)3.87ftleght (sawout to top of ftg)set f (g)5.62cfsubicialtop wing (f)5.00ftlengthtop wing (f)5.00ftlengthrectangle-11.00ftwidhrectangle-11.00ftlengthin top wing (f)5.00ftlengthrectangle-11.00ftlengthin top wing (f)5.00ftlengthin top wing (f)5.00ftlengthin top wing (f)5.00ftlengthin top wing (f)5.00ftlengthin top wing (f)6.00ftlengthin top wing (f)4.00ftlengthin top wing (g)4.00ftlengthin top wing (g)4.00 <td< td=""><td>511</td><td>43510</td><td>35</td><td>CY</td><td>CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING</td></td<>	511	43510	35	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
wing1.00Rwidhextension5.24Rheight (top deck to sawcut)i19.7iofsubtolaliimidwing8.75Rii(by beam17.5Ri(by beam66.2ofseaf & g)5.67Rwidhiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii<	RA	diaph	3.75	ft	length
Image: set of the set of th		wing		ft	width
Image: set of the set of th		extension			height (top of deck to sawcut)
Image: dbw beam1.75ftwidthset 8 ft)3.67ftavg. height (associal to top of fg)iconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconiconicon <td></td> <td></td> <td>19.7</td> <td>cf</td> <td>subtotal</td>			19.7	cf	subtotal
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It with $be beam$ 3.87 ft with $be set & fig)$ 3.87 ft $aught (back accut to top of fig)$ $be wing (1)$ 5.00 ft $aught (back accut to top of fig)$ $ectargle-1$ 100 ft $length$ $ectargle-1$ 100 ft $widh$ $ectargle-1$ 100 ft $widh$ $ectargle-1$ 100 ft $widh$ $ectargle-1$ 100 ft $widh$ $ectargle-1$ 2.61 cf $subtotal$ $ectargle-2$ 1.00 ft $widh$ $ectargle-2$					
set & fg) 3.67 ft avg_ height (swout to top of fg) - 56.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
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retargle-11.00ftwidh 5.23 ftheight 26.1 cf subtotaltop wing (2)4.00ftlengthrectargle-21.00ftwidh $rectargle-3$ 30.0 ftheight $rectargle-3$ 10.0 ftlength $rectargle-3$ 10.0 ftlength<					
Image: second		top wing (1)		ft	length
c_{c} c_{c} c_{d} $subtolal$ top wing (2)4.00ftlengthrectangle-21.00ftwidtha.00ftheighta.12.0cfsubtolalsubtolalftwidtha.12.0cfsubtolalbase of the subtolalftwidtha.12.0ftwidthbase of the subtolalftwidtha.12.0ftwidthbase of the subtolalftwidthbase of the subtolalftwidthconstrained of the subtolalft <td< td=""><td></td><td>rectangle-1</td><td></td><td>ft</td><td>width</td></td<>		rectangle-1		ft	width
Iop wing (2) 4.00 ft length rectangle-2 1.00 ft width 3.00 ft height 12.0 cf subtotal top wing (3) 4.00 ft top wing (3) 4.00 ft triangle 1.00 ft triangle 1.00 ft vial 4.5 cf subtotal ft width it angle 1.00 ft triangle 1.00 ft 4.5 cf subtotal it angle 2.23 ft height ft width it angle 2.23 ft it angle 2.23 ft it angle 2.23 ft it angle 4.5 cf subtotal ft it angle 3.5 ft it angle it angle it angle it angle 3.32.0 cf				ft	height
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2.23ftheight 4.5 cf subtolafooting 9.75 ft 1.50 ft 1.50 ft 47.5 cf 3.25 ft 47.5 cf $axis 23$ <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
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1.50ftwidth 3.25 ftheight 47.5 cfsubtal2eachlocations 332.0 cfsubtal $axxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx$			4.5	cf	subtotal
1.50ftwidth 3.25 ftheight 47.5 cfsubtal2eachlocations 332.0 cfsubtal $axxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx$					
Image: style		footing			length
47.5cfsubtal 1 2 47.5 2 $each$ $locations$ 332.0 cf $subtal$ 332.0 cf $subtal$ a a a $beam seat$ 30.17 ft 1 ft $length$ a 0.61 ft $beight$ cf a </td <td></td> <td></td> <td></td> <td></td> <td></td>					
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Image: seat seat seat seat seat seat seat seat					
3.75 ft width 0.61 ft height 69.0 cf subtotal			332.0	cf	subtotal
3.75 ft width 0.61 ft height 69.0 cf subtotal					
0.61 ft height 69.0 cf subtotal		beam seat			
69.0 cf subtotal					
14.9 cy RA TOTAL			69.0	cf	subtotal
14.9 cy RA TOTAL					
			14.9	су	RA TOTAL

FA	diaph	3.75	ft	length
	wing	1.00	ft	width
	extension	5.30	ft	height (top of deck to sawcut)
		19.9	cf	subtotal
	mid-wing	8.75	ft	length
	(btw beam	3.17	ft	width
	seat & ftg)	3.64	ft	avg. height (sawcut to top of ftg)
		100.9	cf	subtotal
	top wing (1)	5.00	ft	length
	rectangle-1	1.00	ft	width
		5.27	ft	height
		26.4	cf	subtotal
	top wing (2)	4.00	ft	length
	rectangle-2	1.00	ft	width
		3.00	ft	height
		12.0	cf	subtotal
	top wing (3)	4.00	ft	length
	triangle	1.00	ft	width
		2.27	ft	height
		4.5	cf	subtotal
	footing	9.75	ft	length
		2.17	ft	width
		3.25	ft	height
		68.7	cf	subtotal
		2	each	locations
		464.6	cf	subtotal
		00.47		
	beam seat	30.17	ft	length
		3.75	ft	width
		0.62	ft	height
		70.1	cf	subtotal
		10.0		
		19.8	су	FA TOTAL
		34.7		totol
		34./	су	total
			II	

512	10100	745	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
RA	main	31.33	ft	length (use length of diaphragm, conservative)
		3.27	ft	height (deck elev - app slab seat - level sawcut elev)
		102.51	sf	subtotal
	WW	5	ft	length (str.)
		4.50	ft	estimated height (str.) (wingwall height + distance to ground line)
		4	ft	length (sloped)
		2.50	ft	estimated height (str.) (wingwall height + distance to ground line)
		9	ft	top of wingwall
		1	ft	thickness of wingwall
		2	each	number of wings
		83.00	sf	subtotal
FA	main	32.17	ft	length (use length of diaphragm, conservative)
		3.34	ft	height (deck elev - app slab seat - level sawcut elev)
		107.28	sf	subtotal
	WW	5	ft	length (str.)
		4.50	ft	estimated height (str.) (wingwall height + distance to ground line)
		4	ft	length (sloped)
		2.50	ft	estimated height (str.) (wingwall height + distance to ground line)
		9	ft	top of wingwall
		1	ft	thickness of wingwall
		2	each	number of wings
		83.00	sf	subtotal
		42.00	sy	ABUTMENT TOTAL
BR-1-13	main parapet	213.50	ft	total length
	btw	8.68	ft	perimeter (Section E)overhang assumed as 1'
	transitions	2	each	number of barriers
		3705.76	sf	subtotal
	3' btw	3	ft	length
	RA deck &	7.01	ft	perimeter (Section D)
	RA transition	2	each	locations
ļ		42.07	sf	subtotal
	RA	14	ft	length
	transitions	7.00	ft	avg. perimeter (section A-C similar, use section C)
		2	each	locations
		196.00	sf	subtotal
	FA	14	ft	length
	transitions	8.50	ft	avg. perimeter (section G-J similar, use section G) overhang assumed as 1'
		2	each	locations
		238.00	sf	subtotal
		465.00	sy	PARAPET/DECK TOTAL

proposed	cap	24.0	ft	cap length (full width, center to center fascia columns)
piers		9.42	ft	nose circumference
		3	ft	width
		4.70		avg. height
		269.85	sf	cap sides
		57.86	sf	cap bottom (total - column holes)
		327.71	sf	subtotal (1 cap only)
	columns	13.64	ft	avg height to existing ground
		3	ft	diameter
		3	each	number of columns
		385.63	sf	subtotal (3 columns per pier)
		3	each	locations
		2140.03	sf	subtotal (all piers)
		238.00	sy	PIER TOTAL
		745.00	sy	total
512	33000	8	SY	TYPE 2 WATERPROOFING
	both	6	ft	new wingwall / existing wingwall joint
	abuts	4	each	number of WW (2 at each abut)
		3	ft	width (minimum per 711.25)
		8	sy	total
512	74000	140	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES
	abutments	30.17	ft	length
		1.5	ft	height (below removal line to existing grade)
		2	each	number of abutments
		90.50	sf	total for abutments
		11	sy	total for abutments
	niere	205.02		lana af asluman ta ba asalad
	piers	385.63 3	sf	area of column to be sealed
		1156.89		number of piers
		1156.89	sf	total for piers
		129	sy	total for piers
		140		total
		140	sy	
513	20000	2312	EACH	WELDED STUD SHEAR CONNECTORS
515	20000	289	each	number of studs along beam
		209	each	studs per beam
		4		number of beams
		2312	each	total
		2012	each	

514	00050	2736	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL
field	existing	10	ft	beam length
lield	beam ends	8.14	ft	perimeter
	at abutments	8	each	number of beams (4 beams x 2 abutments)
	arabathonto	651.47	sf	subtotal
		0.05	%	assume additional 5% for flange sides
		684.04	sf	loaded subtotal
	existing	20	ft	beam length (10' EACH - 2 directions)
	beam ends	8	ft	perimeter
	at piers	12	each	number of beams (4 beams x 3 piers)
		1954.40	sf	subtotal
		0.05	%	assume additional 5% for flange sides
		2052.12	sf	loaded subtotal
		2736	sf	TOTAL
514	00056	2736	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT
		2736	sf	TOTAL - match 514E00050
514	00060	2736	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT
		2736	sf	TOTAL - match 514E00050
514	00067	2736	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN
		2736	sf	TOTAL - match 514E00050
514	00504	6	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL
		320	ft	total length of existing beam on structure
		320	min	1 minute per linear foot of beam (in BDM)
		6	mnhr	conversion
514	10000	3	EACH	FINAL INSPECTION REPAIR
		320	ft	total length of existing beam on structure
		150	ft	1 inspection per every 150 feet of girder
		1	each	# of bridges
		-		
		3	each	final repair total
	10010			
516	10010	58	FT	ARMORLESS PREFORMED JOINT SEAL
	┨─────┤	29	ft	at sleeper slab
		2	each	
		58	ft	total
540	42000	0	05	
516	13600	8	SF	1" PREFORMED EXPANSION JOINT FILLER
RA	Interface	2.94	sf	area
BR-1-13	at deck/AS	2	each	locations
	┨─────┤	5.9	sf	subtotal
	Interface	0.40		flooded area (area of rail which is larger than such but as small say all)
	Interface	0.49	sf	flooded area (area of rail which is larger than curb, but so small say ok)
	at end	2	each	locations
	transiton/curb	1.0	sf	subtotal
	Interface	0.40		flooded area (area of rail which is larger than such but as small say all)
FA	Interface	0.49	sf	flooded area (area of rail which is larger than curb, but so small say ok)
BR-1-13	at end	<u>2</u> 1.0	each	locations
	transiton/curb	1.0	sf	subtotal
	┨─────┤	7.8		
L	┨─────┤	1.0	sf	total
			1	1

516	13900	56	SF	2" PREFORMED EXPANSION JOINT FILLER
RA	WW	9.0	ft	length
	at AS	1.25	ft	height
		2	each	locations
		_		
	WW	3.75	ft	length
	at diaph	4.37	ft	avg height (top deck - btm of diaphragm)
	ut utup:	2	each	locations
		56.0	sf	total
516	14020	75	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL
	RA	37.3	ft	length
	FA	37.3	ft	length
		74.7	ft	total
			~ ~	
516	44100	12	EACH	14" X 18" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 19" X 2") (NEOPRENE)
		0	each	abutments
		3	each	piers
		4	each	beamlines
		12	each	total
516	44200	8	EACH	13" X 16" X 3 3/16" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (14" X 17" X 2") (NEOPRENE)
		2	each	abutments
		0	each	piers
		4	each	beamlines
		8	each	total
516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE
516	47000			(Estimate based on values used for PE Report)
		\$ 22,000.00		(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments
516 	21201	\$22,000.00 29	СҮ	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN
		\$ 22,000.00 29 31.33	ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits)
	21201	\$ 22,000.00 29 31.33 6.12	ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep))
	21201	\$ 22,000.00 29 31.33 6.12 2	ft ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness
	21201	\$ 22,000.00 29 31.33 6.12	ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep))
	21201 RA	\$ 22,000.00 29 31.33 6.12 2 383.73	ft ft ft cf	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL
	21201	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17	ft ft ft cf ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length
	21201 RA	\$22,000.00 29 31.33 6.12 2 383.73 32.17 6.18	ft ft ft cf ft ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness
	21201 RA	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2	ft ft ft cf ft ft ft ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness
	21201 RA	\$22,000.00 29 31.33 6.12 2 383.73 32.17 6.18	ft ft ft cf ft ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness
	21201 RA	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37	ft ft ft cf ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOTAL
	21201 RA	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2	ft ft ft cf ft ft ft ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL
	21201 RA	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37	ft ft ft cf ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOTAL
518	E Contraction Cont	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93	ft ft ft cf ft ft ft cf ft ft cf ft cf cf cf cf cf cf	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOTAL FA PROP TOTAL NOTE - item to include "retain and clean out existing weepholes for drainage"
	21201 RA FA 40012	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64	ft ft ft cf ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL vortex Vortex NOTE - item to include "retain and clean out existing weepholes for drainage" G" NON-PERFORATED CORRUGATED PLASTIC PIPE
518	E Contraction Cont	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 32	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL varg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL varget below VOTE - item to include "retain and clean out existing weepholes for drainage" G" NON-PERFORATED CORRUGATED PLASTIC PIPE drainage behind WW to outlet at tied concrete block mat (west WW)
518	21201 RA FA 40012	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 32 32 32	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL total NOTE - item to include "retain and clean out existing weepholes for drainage" drainage behind WW to outlet at tied concrete block mat (west WW) drainage behind WW to outlet at tied concrete block mat (east WW)
518	E Contraction Cont	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 32	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL varg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL varget below VOTE - item to include "retain and clean out existing weepholes for drainage" G" NON-PERFORATED CORRUGATED PLASTIC PIPE drainage behind WW to outlet at tied concrete block mat (west WW)
518 518 518	EXA STATES OF CONTROL	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 64	ft ft ft cf ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL dott NOTE - item to include "retain and clean out existing weepholes for drainage" G" NON-PERFORATED CORRUGATED PLASTIC PIPE drainage behind WW to outlet at tied concrete block mat (west WW) drainage behind WW to outlet at tied concrete block mat (east WW) total
518	21201 RA FA FA 40012 FA FA FA 11101	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 32 32 64 153	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL length avg height (avg top deck - AS thick - beam out existing weepholes for drainage" fotal NOTE - item to include "retain and clean out existing weepholes for drainage" drainage behind WW to outlet at tied concrete block mat (west WW) drainage behind WW to outlet at tied concrete block mat (east WW) total
518 518 518	21201 RA FA FA 40012 FA FA FA FA FA FA FA FA	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 64 32 32 64 153 33	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP F
518 518 518	21201 RA FA FA 40012 FA FA FA P1 P1 P2	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 64 32 32 64 153 33 45	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOT
518 518 518	EXA STATE OF CONTRACT OF CONTR	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 64 32 32 64 153 33 45 75	ft ft ft cf ft ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOT
518 518 518	21201 RA FA FA 40012 FA FA FA P1 P1 P2	\$ 22,000.00 29 31.33 6.12 2 383.73 32.17 6.18 2 397.37 28.93 64 64 32 32 64 153 33 45	ft ft ft cf ft	(Estimate based on values used for PE Report) Support at piers will probably require shoring towers, use \$1500 per bearing at piers; \$500 per bearing at abutments POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN length (along entire diaphragm limits) avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness RA PROP TOTAL length avg height (avg top deck - AS thick - beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep)) thickness FA PROP TOTAL FA PROP TOT

526	25010	166	SY	REINFORCED CONCRETE APPROACH SLABS WITH QA/QC (T=15")
	RA-1	29	ft	width
		7.92	ft	length
	RA-2	31.33	ft	width
		17.08	ft	length
		764.86	sf	RA total
	FA	29	ft	width
		25	ft	length
		725	sf	FA total
		165.54	sy	total
526	90030	58		TYPE C INSTALLATION
		29	ft	AS Width
		2	each	number of approach slabs
├ ──── ├		58	ft	total
601	20000	326	SY	CRUSHED AGGREGATE SLOPE PROTECTION
601	RA	37.50	ft	
	КА	2	п.	approx. length (not along slope) slope (X:1)
		41.93		length along slope
		37.33	ft ft	width (bridge width/cos(skew) + 3' each end)
		1399.88	sf	subtotal
		1399.00	51	Sublota
	FA	41.00	ft	approx. length (not along slope)
	IΛ	2	n n	slope (X:1)
		45.84	ft	length along slope
		37.33	ft	width (bridge width/cos(skew) + 3' each end)
		1530.53	sf	subtotal
		325.60	sy	total
601	21050	3.56	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT
	FA	1.78	sy	drainage behind west WW
	FA	1.78	sy	drainage behind east WW
		3.56	sy	total
607	39900	320	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC
		160	ft	length per parapet
		2	each	number of parapets
		320	ft	total
611	99710	2	EACH	PRECAST REINFORCED CONCRETE OUTLET
		1	each	drainage behind west WW
		1	each	drainage behind east WW
		2	each	total