



Project **Portsmouth- Phase 1 Stage 3**

Compute EJM Date: 10/18/2010

Subject **Estimated Quantities**

Checked: *D.A.T.* Date: *5-23-13*

Task: **Right Bridge**

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Job #: **00000045878 212**

No:

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Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
503 21301	LS	Unclassified Excavation	Right Bridge					LS
ITEM 503 21301 Unclassified Excavation As per Plan (LS) =								LS

Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
503 22200	CY	Unclassified Excavation	Pier 1	23	15	1.00	1	13
			Pier 2	23	15	2.70	1	34
			Pier 3	23	15	1.90	1	24
ITEM 503 22200 Unclassified Excavation Including Rock and/or Shale								72

505 11100	LS	Pile Driving Equip. Mobilization	Right Bridge					LS
ITEM 505 11100 Pile Driving Equip. Mobilization (LS) =								LS

507 00200	FT	Furnished HP 12x53 - Bearing Piles	Rear Abut.	35			16	560
			Fwd Abut.	60			16	960
ITEM 507 00200 - Furnished HP 12x53 (FT) =								1520

507 00250	FT	Driven HP 12x53 - Bearing Piles	Fwd Abut.	55			16	880
			Rear Abut.	30			16	480
ITEM 507- Driven HP 12x53 (FT) =								1360

507 92200	FT	Prebored Holes	Fwd Abut.	55			16	880
			Rear Abut.	30			16	480
ITEM 507 92200 - Prebored Holes (FT) =								1360

507 933010	EACH	Steel Points or Shoes, As Per Plan	Rear Abut.				16	16
			Fwd Abut.				16	16
ITEM 507 93301 - Steel Points or Shoes As Per Plan (EACH) =								32

509 10000	LB	Epoxy Coated Reinforcing Steel	Right Bridge	From Reinforcing Steel List					
			Abutment						16640
			Piers						167504
			Superstructure						202387
			General						57720

ITEM 509 10000- Epoxy Coated Reinforcing Steel (LB) =								444251
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= I agree and its on the plans

= I agree and its not on the plans

512 10100	SY	Sealing of Concrete Surfaces (Epoxy Urethane)	Rear Abut. Face	51.95		8	1	46	
			Fwd Abut. Face	50.72		8	1	45	
			Rear Wingw top	13.51	2.5		1	4	
			Fwd wingw.top	13.51	2.5		1	4	
					Area				
			Rear Wingw Face		92.0		1	10	
			Fwd wingw.face		91.8		1	10	
			Total for Abut.					119	
			Pier 1 - Cap Top	49	4.75		1	26	
			Pier 1 - Cap side	19.98	4.75		2	21	
					Area				
			Pier 1 - Cap Face		412.96		2	92	
			Pier 1 - Column face		487.78		2	108	
			Pier 1 - Column side		237.79		2	53	
			Pier 2 - Cap Top	49	4.75			26	
			Pier 2 - Cap side	19.98	4.75		2	21	
					Area				
			Pier 2 - Cap Face		412.62		2	92	
			Pier 2 - Column face		651.05		2	145	
			Pier 2 - Column side		317.38		2	71	
			Pier 3 - Cap Top	49	4.75		1	26	
			Pier 3 - Cap side	19.98	4.75		2	21	
					Area				
			Pier 3 - Cap Face		412.96		2	92	
			Pier 3 - Column face		598.85		2	133	
			Pier 3 - Column side		291.93		2	65	
			Total for Piers					990	
Exterior Parapet 1	461.25		8.58	1	440				
Interior Parapet 2	460.58		6.02	1	308				
Deck & Beam	400.77		11.73	1	522				
Total for Superstructure					1270				

ITEM 512 10100 - Sealing of Concrete Surfaces (Epoxy-Urethane) (SQ YD)= 2380

513 21000	EACH	Trimming of Beam End				20	20
ITEM 513 21000 - Trimming of Beam End (EACH) =							

515 15040	EACH	Draped Strand Prestressed Concrete I-Beams	Right Bridge			20	20
ITEM 515 15040- Draped Strand Prestressed Concrete Bridge I Beams Level 3, Type 4 Mod (66") (EACH) =							

515 20000	EACH	Conc. Inter. Diaphragms	Right Bridge					48	48
ITEM 515 20000 - Intermediate Diaphragms (EACH) =									48

					Area				
516 13600	SQ FT	1" Preformed Expansion Joint Filler	Interior Parapet		4.6		2		9
			Exterior Parapet		4.1		2		8
ITEM 516 13600 - 1" Preformed Expansion Joint Filler (SQ FT) =									17

Microstation									
516 13900	SQ FT	2" Preformed Expansion Joint filler	Rear Abut. Ext	2.68		7.79			21
			Fwd Abut. Ext.	2.68		7.78			21
			Approach Slab	30.00		6.17	2		370
ITEM 516 13900 - 2" Preformed Expansion Joint Filler (SQ FT) =									42

516 14021	FT	Semi-Integral Abutment Expansion Joint Seal	Rear Abut.	52.11					52
			Fwd Abut.	50.89					51
ITEM 516 14021 - Semi-Integral Abutment Expansion Joint Material, As Per Plan (FT) =									103

516 44200	EACH	Elastomeric Bearing with Internal Laminates and Load Plate	Piers					30	30
ITEM 516 44200 - Elastomeric Bearing with Internal Laminates and Load Plate (EACH) =									30

516 44300	EACH	Elastomeric Bearing with Internal Laminates and Load Plate	Abutments					10	10
ITEM 516 44300 - Elastomeric Bearing with Internal Laminates and Load Plate (EACH) =									10

518 21200	CU YD	Porous Backfill with Filter Fabric	Rear Abut.	64.4	2	12.4	1		59
			Fwd Abut.	63.2	2	12.4	1		58
ITEM 518 21200- Porous Backfill with Filter Fabric (CU YD) =									117

518 40000	FT	6" - Perforated Corrugated Plastic Pipe (707.33 Type SP)	Rear Abut.	64.4				1	64
			Fwd Abut.	63.2				1	63
ITEM 518 40000 - 6" Perforated Corrugated Plastic Pipe (FT) =									128

518 40012	FT	6" Non-Perforated Plastic Pipe (707.33 Type S)	Rear Abut.	12.5				1	12.5
			Fwd Abut.	11.5				1	11.5
ITEM 518 - 6" Non-Perforated Corrugated Plastic Pipe (FT) =									24

				Area from Microstation (sf)			
601 20000	SQ YD	Crushed Aggregate Slope Protection	Rear Abut.		8800		978
			Fwd Abut.		3820		424
ITEM 601 20000 - Crushed Aggregate Slope Protection (SY)							1402

				Area from Microstation			
601 32204	CU YD	Rock Channel Protection, Type C with Filter Fabric	Pier 1	NIC			
			Pier 2	900.0	2.5		83
ITEM 601- Rock Channel Protection, Type C with Filter Fabric (CU YD)							83

606 10210	SF	Noise Barrier (Reflective) over 10' to 14' Height	On bridge	423.6		12.0	5083
			At transition	41.3		12.0	495
ITEM 606 - Noise Barrier (Reflective) over 10' to 14' Height (SF) =							5578

898 10201	CU YD	Superstructure- Deck	Deck	400.8	48.4	0.73	1	524
			Haunch	400.8	3	0.28	5	61
			overhang	400.8	2.2	0.17	2	11
				Area				
		Pier Diaph.	47.1		3.00	12	63	
		Abutment Diaph.	399.4	3.8		2	112	
Item 898 10201 - QC/QA Concrete Superstructure Deck , As Per Plan(CU YD) =							772	

898 10709	SQ YD	Superstructure- Approach Slab	30	48.42		2	323
Item 898 10709 - QC/QA Concrete Superstructure Approach Slab, As Per Plan (T=17") (SQ YD) =							323

				Area			
898 11000	CU YD	Superstructure- Parapet (Type 42")	461.3	4.1		1	70
Item 898 11000 - QC/QA Concrete Superstructure (Parapet) (CU YD)							70

				Area			
898 11001	Cu. Y	Superstructure- Parapet (Type 57")	460.6	4.6		1	78
Item 898 11001- QC/QA Concrete Superstructure (Parapet) (C.Y.) =							78

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898 20100	CU YD	Substructure - (Pier Above Footing)	Cap	4.75	383		3	202
					Length			
			Cap Haunch 1	4.75	12.9	0.3	3	2
			Cap Haunch 2	4.75	11.0	0.6	3	4
			Cap Haunch 3	4.75	13.2	0.9	3	6
			Cap Haunch 4	4.75	4.1	0.8	3	2
			Seismic Pedestal	4.75	2.0	0.7	3	0.7
			Seismic Pedestal	4.75	2.0	1.4	3	1.5
					Area			
			Pier 1 Column		81.2	51.6	1	155
			Pier 2 Column		81.2	49.9	1	150
Pier 3 Column		81.2	47.8	1	144			
ITEM 898 20100 - QC/QA Concrete Substructure - (Pier above Footing) (CU YD)							667	

			Rear Abut. Seat	51.9	3.8	3.0	1	22
					Area			
			Rear Abut. Wingwall		109.9	2.5	1	10
			Fwd Abut. Seat	50.7	3.8	3.0	1	21
				Area				
			Fwd Abut. Wingwall		109.8	2.5	1	10
ITEM 898 20150 - SQC/QA Concrete Substructure - (Abutment) (CU YD) =							63	

898 20300	CU YD	Substructure (Footings)	Pier Footings	23	15.0	4.0	3	153
			Rear Abut. Ftng	64.4	6.0	3.0	1	43
			Fwd Abut. Ftng	64.4	6.0	3.0	1	43
ITEM 898 20300 - QC/QA Concrete Substructure - (Footings) (CU YD) =							239	



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Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
503 21301	LS	Unclassified Excavation	Abutments					LS
ITEM 503 21301 Unclassified Excavation As per Plan (LS) =								LS
Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
503 22200	CY	Unclassified Excavation	Pier 1	23	15	0.80	3	10
			Pier 2	23	15	2.70	1	34
			Pier 3	23	15	1.90	1	24
ITEM 503 22200 Unclassified Excavation Including Rock and/or Shale								69
505 11100	LS	Pile Driving Equip. Mobilization	Left Bridge					LS
ITEM 505 11100 Pile Driving Equip. Mobilization (LS) =								LS
507 00200	FT	Furnished HP 12x53 - Bearing Piles	Rear Abut.	35			16	560
			Fwd Abut.	60			16	960
ITEM 507 00200 - Furnished HP 12x53 (FT) =								1520
507 00250	FT	Driven HP 12x53 - Bearing Piles	Fwd Abut.	55			16	880
			Rear Abut.	30			16	480
ITEM 507 00250 - Driven HP 12x53 (FT) =								1360
507 92200	FT	Prebored Holes	Fwd Abut.	55			16	880
ITEM 507 92200 - Prebored Holes (FT) =								480
								1360
507 933010	EACH	Steel Points or Shoes, As Per Plan	Rear Abut.				16	16
			Fwd Abut.				16	16
ITEM 507 93301 - Steel Points or Shoes As Per Plan (EACH) =								32
509 10000	LB	Epoxy Coated Reinforcing Steel	Right Bridge	From Reinforcing Steel List				
			Abutment					16640
			Piers					177427
			Superstructure					202387
							General	56296
ITEM 509 10000- Epoxy Coated Reinforcing Steel (LB) =								452750

Handwritten notes:
 1.3
 38
 70



Project **Portsmouth- Phase 1 Stage 3**

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Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total		
512 10100	SY	Sealing of Concrete Surfaces (Epoxy Urethane)	Rear Abut. Face	51.95		8	1	46		
			Fwd Abut. Face	50.72		8	1	45		
			Rear Wingw top	13.51	2.5		1	4		
			Fwd wingw.top	13.51	2.5		1	4		
					Area					
			Rear Wingw Face		94.5		1	11		
			Fwd wingw.face		91.8		1	10		
			Total for Abut.						119	
			Pier 1 - Cap Top	49	4.75		1	26		
			Pier 1 - Cap side	19.98	4.75		2	21		
					Area					
			Pier 1 - Cap Face		412.96		2	92		
			Pier 1 - Column face		494.74		2	110		
			Pier 1 - Column side		241.18		2	54		
			Pier 2 - Cap Top	49	4.75			26		
			Pier 2 - Cap side	19.98	4.75		2	21		
					Area					
			Pier 2 - Cap Face		412.62		2	92		
			Pier 2 - Column face		659.46		2	147		
			Pier 2 - Column side		321.48		2	71		
			Pier 3 - Cap Top	49	4.75		1	26		
			Pier 3 - Cap side	19.98	4.75		2	21		
					Area					
			Pier 3 - Cap Face		412.96		2	92		
			Pier 3 - Column face		608.71		2	135		
			Pier 3 - Column side		296.74		2	66		
			Total for Piers						999	
			Exterior Parapet 1	401.4167			8.58	1	383	
			Interior Parapet 2	460.58			6.02	1	308	
			Deck & Beam	400.77			<u>11.73</u>	1	<u>522</u>	
			Total for Superstructure				13.08		1213	
			ITEM 512 10100 - Sealing of Concrete Surfaces (Epoxy-Urethane) (SQ YD)=							

1029
127
58
12
RAW
2668



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Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
513 21000	EACH	Trimming of Beam End					20	20
ITEM 513 21000 - Trimming of Beam End (EACH) =								
515 15040	EACH	Draped Strand Prestressed Concrete I-Beams	Left Bridge				20	20
ITEM 515 15040- Draped Strand Prestressed Concrete Bridge I Beams Level 3, Type 4 Mod (66") (EACH) =								
515 20000	EACH	Conc. Inter. Diaphragms	Left Bridge				48	48
ITEM 515 20000 - Intermediate Diaphragms (EACH) =								
					Area			
516 13600	SQ FT	1" Preformed Expansion Joint Filler	Interior Parapet		4.6		2	9
			Exterior Parapet		4.1		2	8
ITEM 516 13600 - 1" Preformed Expansion Joint Filler (SQ FT) =								
516 13900	SQ FT	2" Preformed Expansion Joint filler	Rear Abutment Ext.	2.68		8.00		21
			Rear Abutment Int.	3.92		10.10		40
			Rear Abut. Ftng Int.	6.28		3.00		19
			Fwd Abutment Int.	3.92		10.50		41
			Fwd Abut. Ftng Int.	6.28		3.00		19
			Fwd Abutment Ext.	2.68		8.40		22
			At Abutment					163
			Btw interior Barriers	397.10		4.75		1886
			Int. Deck (use 10.75")	397.10		0.90		356
			At Superstructure					2242
			ITEM 516 13900 - 2" Preformed Expansion Joint Filler (SQ FT) =					
516 14021	FT	Semi-Integral Abutment Expansion Joint Seal	Rear Abut.	52.11				52
			Fwd Abut.	50.89				51
ITEM 516 14021 - Semi-Integral Abutment Expansion Joint Material, As Per Plan (FT) =								
516 44200	EACH	Elastomeric Bearing with Internal Laminates and Load Plate	Piers				30	30
ITEM 516 44200 - Elastomeric Bearing with Internal Laminates and Load Plate (EACH) =								



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Item	Unit	Description	Location	Length	Width	Depth	Quantity	Sub-Total
516 44300	EACH	Elastomeric Bearing with Internal Laminates and Load Plate	Abutments				10	10
ITEM 516 44300 - Elastomeric Bearing with Internal Laminates and Load Plate (EACH) =								10
518 21200	CU YD	Pourous Backfill with Filter Fabric	Rear Abut.	64.4	2	12.6	1	60
			Fwd Abut.	63.2	2	13.0	1	61
ITEM 518 21200- Pourous Backfill with Filter Fabric (CU YD) =								121
518 40000	FT	6" - Perforated Corrugated Plastic Pipe (707.33 Type SP)	Rear Abut.	64.4			1	64
			Fwd Abut.	63.2			1	63
ITEM 518 40000 - 6" Perforated Corrugated Plastic Pipe (FT) =								128
518 40012	FT	6" Non-Perforated Plastic Pipe (707.33 Type S)	Rear Abut.	14.5			1	15
			Fwd Abut.	15			1	15
ITEM 518 - 6" Non-Perforated Corrugated Plastic Pipe (FT) =								30
Area from Microstation (sf)								
601 20000	SQ YD	Crushed Aggregate Slope Protection	Rear Abut.		7935			882
			Fwd Abut.		8200			911
ITEM 601 20000 - Crushed Aggregate Slope Protection (SY) =								1793
Area from Microstation								
601 32204	CU YD	Rock Channel Protection, Type C with Filter Fabric	Pier 1	NIC				
			Pier 2	1550.0	2.5			144
ITEM 601- Rock Channel Protection, Type C with Filter Fabric (C.Y) =								144
898 10201	CU YD	Superstructure- Deck	Deck	400.8	48.4	0.73	1	524
			Haunch	400.8	3	0.28	5	61
			overhang	400.8	2.2	0.17	2	11
Area								
			Pier Diaph.	47.1		3.00	12	63
			Abutment Diaph.	399.4	3.8		2	112
Item 898 10201 - QC/QA Concrete Superstructure Deck, As Per Plan (C U YD) =								772
898 10709	SQ YD	Superstructure- approach Slab		30	48.42		2	323
Item 898 10709 - QC/QA Concrete Superstructure Approach Slab(T=17"), As Per Plan (SQ YD) =								323



Project **Portsmouth- Phase 1 Stage 3**

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Item	Unit	Desription	Location	Length	Width	Depth	Quantity	Sub-Total	
					Area				
898 11000	Cu. Y	Superstructure- Parapet (Type 42")		401.4	4.1 <i>4.3</i>		1	61	
Item 898 11000 - QC/QA Concrete Superstructure (Parapet) (CU YD)								61	
					Area				
898 11001	Cu. Y	Superstructure- Parapet (Type 57")		460.6	4.6		1	78	
Item 898 11001- QC/QA Concrete Superstructure (Parapet) (C.Y.) =								78	
					Area				
898 20100	CU YD	Substructure - (Pier Above Footing)	Cap	4.75			3	202	
						Length			
			Cap Haunch 1	4.75	12.9	0.3	3	2	
			Cap Haunch 2	4.75	11.0	0.6	3	4	
			Cap Haunch 3	4.75	13.2	0.9	3	6	
			Cap Haunch 4	4.75	4.1	0.8	3	2	
			Seismic Pedestal	4.75	2.0	0.7	3	1	
			Seismic Pedestal	4.75	2.0	1.4	3	1	
						Area			
			Pier 1 Column			81.2	52.1	1	157
			Pier 2 Column			81.2	50.5	1	152
			Pier 3 Column			81.2	48.5	1	146
ITEM 898 20100 - QC/QA Concrete Substructure - (Pier above Footing) (CU YD)								672	
898 20150	CU YD	Substructure - (Abutments)	Rear Abut. Seat	51.9	3.8	3.0	1	22	
			Rear Abut. Wingwall			110.6	2.5	1	10
			Fwd Abut. Seat	50.7	3.8	3.0	1	21	
			Fwd Abut. Wingwall			115.6	2.5	1	11
ITEM 898 20150 - SQC/QA Concrete Substructure - (Abutment) (CU YD) =								64	
898 20300	CU YD	Substructure (Footng)	Pier Footngs	23	15.0	4.0	3	153	
			Rear Abut. Ftng	64.4	6.0	3.0	1	43	
			Fwd Abut. Ftng	64.4	6.0	3.0	1	43	
ITEM 898 20300 - QC/QA Concrete Substructure - (Footng) (CU YD) =								239	

ITEM 512 SEALING OF CONC. (EPOXY-URETHANE)

$5'-6" - 9" + 1'-0\frac{9}{16}" + 2" + 2.82" + 6" = 8'-2.38"$
BEAM HT RIVET BM 3 THK. ELAS. H POST STE R BEAR

FWD
ABUT

$8'-2.38" \times 50'-10\frac{5}{8}" = 417.17 \text{ ft}^2 \times \frac{1 \text{ yd}^2}{9 \text{ ft}^2} \approx 46.3 \text{ sy} \checkmark$
8.1983' 50.885'

REAR
ABUT

$8'-2.38" \times 52'-13\frac{1}{8}" = 427.25 \text{ ft}^2 \times \frac{1 \text{ yd}^2}{9 \text{ ft}^2} \approx 47.5 \text{ sy} \checkmark$
SEE ABOVE

WINGWALL

$10' - 2'-6" + 2'-6" + 0'-6" = 10.5'$
AUG HT BRD COVER TOP MIN TO PROF G.L.
 $\frac{10.5' \times 12'-4"}{9} \approx 14$ checks w ENERGY

TOTAL = 48 + 46 + 14 + 14 = 122 sy (close to energy, 119 sy)
ABUT. Rear Fwd r.r r.f. WING WING

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ITEM 512 SEALING CONT.

PIER 1 CAP FACE

$$49 \times (689.15 \text{ ELEV. A} - 678.94 \text{ ELEV. G}) - [2(\frac{1}{2})(15)(5.5)]$$

$$\approx 417.79 \text{ SF}$$

$$417.79 \text{ SF} \times \frac{1 \text{ sy}}{9 \text{ SF}} = 46.4 \text{ sy} \times 2 \text{ Faces} = 93 \text{ sy}$$

checks w/energy

PIER 1 COLUMN FACE

$$51'-7\frac{1}{16}" \times 21.6 = 1115.4 \text{ SF} - [(645 - 627) \times 21.6]$$

"F" ↑ (14.5' + π(2.25))

est. grad top of cover elev. Footing elev.

$$\approx 726.6 \text{ SF}$$

$$726.6 \text{ SF} \times \frac{1 \text{ sy}}{9 \text{ SF}} = 81.0 \text{ sy} \times 2 \text{ Faces} = 162 \text{ sy}$$

PIER 1 SIDE

$$51'-7\frac{1}{16}" \times \pi(2.25) = 365 \text{ SF} - [(645 - 627) \times \pi(2.25)]$$

see above

$$237.8 \text{ SF} \times \frac{1 \text{ sy}}{9 \text{ SF}} \times 2 \text{ Faces} = 53 \text{ sy}$$

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ITEM 512 SEALING CONT.

PIER 2 CAP FACE

$$49' \times (686.89 - 670.58) - 2 \left[\left(\frac{1}{2} \right) (S.S.) (15) \right] -$$

ELEV. A ELEV. G

$$\approx 422.69 \text{ SF}$$

$$422.69 \text{ SF} \times 2 \times \frac{1 \text{ sy}}{9 \text{ SF}} = \underline{94 \text{ sy}} \quad \text{CLOSE TO} \\ \text{FACES} \quad \text{AGENCY} \\ \text{TOOK AUG.}$$

PIER 2 COLUMN FACE

$$49' - 10 \frac{9}{16}'' \times 21.6 = 1077.4 \text{ SF} \quad \text{NO GROUND COVER} \\ \text{"F"} \quad \text{REDUCTION SEE A 15/32} \\ \text{SHT}$$

$$1077.4 \text{ SF} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ SF}} \approx \underline{239 \text{ sy}}$$

PIER 2 COLUMN SIDE

$$49' - 10 \frac{9}{16}'' \times \pi (2.25) = 352.58' \times 2 \times \frac{1 \text{ sy}}{9 \text{ SF}} \approx \underline{78 \text{ sy}}$$

"F" FACES

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-23-13
Subject:	Checked: D.A.T.	Date: 5-23-13
Task: Right Bridge	Page: 4	of: 9
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ITEM 512 SEALING OF CONC. CONT.

PIER 3 CAP FACE

$$49' \times (685.18 - 674.78) - \left[\frac{1}{2} (15') (5.5') (2) \right]$$

ELEV A ELEV G

$$427.1 \text{ SF} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ SF}} = 95 \text{ sy}$$

CLOSE TO ENERGY

PIER 3 COLUMN FACE

$$47' - 9\frac{3}{8}" \times 21.6' = 1032.1 \text{ SF} \times \text{NO GRND COVER}$$

"F"

$$1032.1 \text{ SF} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ SF}} = 229 \text{ sy}$$

PIER 3 COL. SIDE

$$47' - 9\frac{3}{8}" \times \pi (2.25) = 337.7 \text{ SF} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ SF}} = 75 \text{ sy}$$

"F"

$$\text{TOTAL FOR PIERS} = 93 + 161 + 53 + 94 + 239 + 78 + 95 + 229 + 75 = 1117 \text{ sy}$$

ITEM 512 SEALING CONT.

EXT.
PARA.

$$\sqrt{(0'-8")^2 + (3.5')^2} + 10" + 2'-5" + 0'-2" + 1'-1" + 5'-2" + 0'-9" = 8.98' \times 431'-3" = 3872.63 \text{ SF} \checkmark$$

+ 40' x 8.98' = 359.2' ^{TRANS} \checkmark

$$3872.63 \text{ SF} + 359.2 \text{ SF} \times \frac{1 \text{ sy}}{9 \text{ SF}} = \underline{470 \text{ sy}} \checkmark$$

INT. PARA

$$\sqrt{(4'-9")^2 + (10\frac{3}{4}")^2} + 6.25" = 5.35' + 9" = 6.1' \text{ (checks energy)} \checkmark$$

$$460.58' \times 6.02' = 2809.5 \text{ SF} \times \frac{1 \text{ sy}}{9 \text{ SF}} = \underline{308 \text{ sy}}$$

BEAM + DECK

$$0.67 \times 8" + 2.17 \times 2'-2" + 0.67 \times 8" + \sqrt{(9")^2 + (9")^2} + 1.06 \times 3'-4" + 0.35 \times \sqrt{(3")^2 + (3")^2} + \sqrt{(11")^2 + (2")^2} + 0.93 \times 4" + 0.33 \times 2'-8" + 10.75" = 13.08' \checkmark$$

(ONS, 22/32 "8")

$$13.08' \times \frac{1 \text{ sy}}{9 \text{ SF}} \times 400.77' = \underline{582 \text{ sy}} \checkmark$$

Total For Para + Deck = 1360 sy \checkmark

Total Sealing = ~~448~~ + 1360 + 154 = 1514 \checkmark

HDR

Project: Portsmouth Qty Chk	Computed: STV	Date: 5-23-13
Subject:	Checked: D.A.T.	Date: 5-23-13
Task: Left Bridge	Page: 6	of: 9
Job #: 45878	No:	

ITEM 503 UNCLASSIFIED EX. INCL. ROCK/SHALE

$$\text{PIER 1} \quad 23 \times 15 \times \left(\begin{array}{cc} 624.5 & -623.2 \\ \text{ELEV C} & \text{ELEV 0} \end{array} \right) \times \frac{1 \text{ cy}}{27 \text{ ft}^3} = 16.6 \text{ cy} \checkmark$$

$\approx 17 \text{ cy} \checkmark$

$$\text{PIER 2} \quad 23 \times 15 \times \left(\begin{array}{cc} 625.7 & -622.7 \\ \text{C} & \text{0} \end{array} \right) \times \frac{1 \text{ cy}}{27 \text{ ft}^3} = 38.3 \text{ cy} \checkmark$$

$$\text{PIER 3} \quad 23 \times 15 \times \left(\begin{array}{cc} 624.9 & -623.0 \\ \text{C} & \text{0} \end{array} \right) \times \frac{1 \text{ cy}}{27 \text{ ft}^3} = 24.3 \text{ cy} \checkmark$$

$$\text{Total} = 16.6 \checkmark + 38.3 \checkmark + 24.3 \checkmark = 79 \text{ cy} \checkmark$$



PIER 1 COL. FACE

$$52'-17/16'' \times 21.6' = 1125.8 \text{ sf} - ((645 - 627.3) \times 19') \\ \text{"F"} \quad \uparrow \quad \text{est grad T/FTG} \\ (14.5 + \pi(2.25)) = 653.97 \text{ sf cover} = 789.5 \text{ sf} \checkmark$$

$$789.5 \text{ sf} \times 2 \text{ faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{175 \text{ sy}} \checkmark$$

PIER 1 COL. SIDE

$$52'-17/16'' \times \pi(2.25) = 368.4 \text{ sf} - ((645 - 627.3) \times \pi(2.25)) \\ = 1243.3 \text{ sf} \checkmark$$

$$1243.3 \text{ sf} \times 2 \text{ faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{54 \text{ sy}} \checkmark$$

PIER 2 COL. FACE

$$50'-53/4'' \times 21.6' = 1090.4 \text{ sf} \text{ * NO GRND COVER} \\ \text{"F"}$$

$$1090.4 \text{ sf} \times 2 \text{ faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{242 \text{ sy}} \checkmark$$

PIER 2 COL. SIDE

$$50'-53/4'' \times \pi(2.25) = 356.8 \text{ sf} \text{ * NO GRND COVER} \\ \text{"F"}$$

$$356.8 \text{ sf} \times 2 \text{ faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{79 \text{ sy}} \checkmark$$

Project: PORTSMOUTH ONTY CHK	Computed: STW	Date: 5-23-13
Subject:	Checked: D.A.T.	Date: 5-23-13
Task: LEFT BRIDGE	Page: 8	of: 9
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PIER 3 COL. FACE

$$48'-5\frac{3}{4}" \times 21.6 = 1047.2 \text{ sf} \quad \checkmark \quad * \text{ NO GRND COVER}$$

" F "

$$1047.2 \text{ sf} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{233 \text{ sy}} \quad \checkmark$$

PIER 3 COL. SIDE

$$48'-5\frac{3}{4}" \times \pi(2.25) = 342.7 \text{ sf} \quad \checkmark \quad * \text{ NO GRND COVER}$$

" F "

$$342.7 \text{ sf} \times 2 \text{ Faces} \times \frac{1 \text{ sy}}{9 \text{ sf}} = \underline{76 \text{ sy}} \quad \checkmark$$

$$\text{PIER TOTAL} = 175 + 54 + 242 + 79 + 233 + 76 = 859 \quad \checkmark$$

Faces & sides

$$\text{PIER CAPS} = (26 + 21 + 92) \times 3 = 417 \text{ sy} \quad \checkmark$$

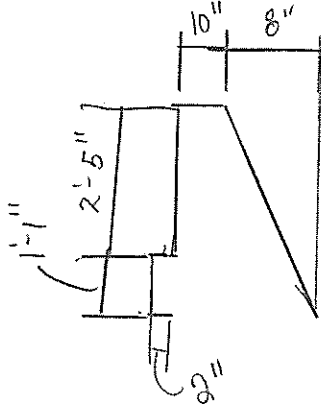
SEE ENEMY'S
CALC

$$\text{Total For PIERS} = 417 + 859 = \boxed{1276 \text{ sy}} \quad \checkmark$$

HDR

Project: Portsmouth Qty Chk Computed: STW Date: 5-23-13
Subject: Checked: D.A.T. Date: 5-23-13
Task: Left Bridge Page: 9 of: 9
Job #: 45878 No:

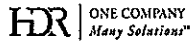
ITEM 898 conc. Superstructure Parapet
42" PARAPET



$$\text{AREA} = (3.5')(4.5') - \frac{1}{2} \left(\frac{8}{12} \right) (3.5')$$
$$= 4.1' + \left(\frac{2}{12} \right) (1.083) = 4.3' \checkmark$$

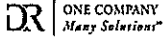
$$4.3 \text{ ft}^2 \times 401.4 \text{ ft} = 1726 \text{ ft}^3 \times \frac{1 \text{ cy}}{27 \text{ ft}^3} = \boxed{64 \text{ cy}} \checkmark$$





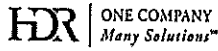
BAR MARK	BAR SIZE	UNIT WEIGHT	QUANTITY	LENGTH	ROUNDED LENGTH W/ DEDUCTION	ROUNDED LENGTH (FEET AND INCHES)	TOAL LENGTH	DEDUCTION	WEIGHT	TYPE	DESCRIPTION
S401	4	0.668	845	29.6	29.58	29 ft 7 in	24998		16699	STR.	LONG. TOP
S402	4	0.668	65	17.9	17.92	17 ft 11 in	1165		778	STR.	LONG. TOP ENDS
S403	4	0.668	65	33.6	33.58	33 ft 7 in	2183		1458	STR.	LONG. TOP ENDS
S404	4	0.668	576	25.08	25.08	25 ft 1 in	14448		9651	STR.	LONG NEG. MOMENT REGION
S501	5	1.043	985	30.0	30.00	30 ft 0 in	29550		30821	STR.	TRANSV. TOP
S502	5	1.043	994	21.1	21.08	21 ft 1 in	20957		21858	STR.	TRANSV. TOP
				4.6	4.58	4 ft 7 in					
S503	5	1.043	21	TO	TO		337		351	STR.	TOP TRANSV. SER.
				27.5	27.50	27 ft 6 in					
				2.0	2.00	2 ft 0 in					
S504	5	1.043	17	TO	TO		188		196	STR.	TOP TRANSV. SER.
				20.1	20.08	20 ft 1 in					
				2.0	2.00	2 ft 0 in					
S505	5	1.043	27	TO	TO		430		448	STR.	TOP TRANSV. SER.
				29.8	29.83	29 ft 10 in					
				4.1	4.08	4 ft 1 in					
S506	5	1.043	14	TO	TO		159		165	STR.	TOP TRANSV. SER.
				18.6	18.58	18 ft 7 in					
				2.0	2.00	2 ft 0 in					
S507	5	1.043	44	TO	TO		592		618	STR	BOT. TRANSV 2 SER. 20
				24.95	24.92	24 ft 11 in					
				3.7	3.67	3 ft 8 in					
S508	5	1.043	36	TO	TO		481		502	STR	BOT. TRANSV 2 SER. 17
				23.08	23.08	23 ft 1 in					
S509	5	1.043	8	25.6	25.58	25 ft 7 in	205		213	STR	BOT. TRANSV 2 SER. 17
S510	5	1.043	1980	25.6	25.58	25 ft 7 in	50655		52833	STR	BOT. TRANSV
S511	5	1.043	1980	7.9	7.67	7 ft 8 in	15180	0.26	15833	16	Edge of Deck
S601	6	1.502	845	30.8	30.83	30 ft 10 in	26054		39133	STR.	LONG. BOT
S602	6	1.502	65	19.1	19.08	19 ft 1 in	1240		1863	STR.	LONG. BOT ENDS
S603	6	1.502	65	34.8	34.83	34 ft 10 in	2264		3401	STR.	LONG. BOT ENDS
			SUB-TOTAL						196822		

Total Reinforcing for Superstructure = Deck + Diaph.	201050
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BAR MARK	BAR SIZE	UNIT WEIGHT	QUANTITY	LENGTH	ROUNDED LENGTH W/ DEDUCTION	ROUNDED LENGTH (FEET AND INCHES)	TOAL LENGTH	DEDUCTION	WEIGHT	TYPE	DESCRIPTION
S401	4	0.668	845	29.6	29.58	29 ft 7 in	24998		16699	STR.	LONG. TOP
S402	4	0.668	65	17.9	17.92	17 ft 11 in	1165		778	STR.	LONG. TOP ENDS
S403	4	0.668	65	33.6	33.58	33 ft 7 in	2183		1458	STR.	LONG. TOP ENDS
S404	4	0.668	576	25.08	25.08	25 ft 1 in	14448		9651	STR.	LONG NEG. MOMENT REGION
S501	5	1.043	985	30.0	30.00	30 ft 0 in	29550		30821	STR.	TRANSV. TOP
S502	5	1.043	994	21.1	21.08	21 ft 1 in	20957		21858	STR.	TRANSV. TOP
S503	5	1.043	21	TO	TO	4 ft 7 in	337		351	STR.	TOP TRANSV. SER.
				27.5	27.50	27 ft 6 in					
				2.0	2.00	2 ft 0 in					
S504	5	1.043	17	TO	TO	2 ft 0 in	188		196	STR.	TOP TRANSV. SER.
				20.1	20.08	20 ft 1 in					
				2.0	2.00	2 ft 0 in					
S505	5	1.043	27	TO	TO	29 ft 10 in	430		448	STR.	TOP TRANSV. SER.
				29.8	29.83	29 ft 10 in					
				4.1	4.08	4 ft 1 in					
S506	5	1.043	14	TO	TO	18 ft 7 in	159		165	STR.	TOP. TRANSV. SER.
				18.6	18.58	18 ft 7 in					
				2.0	2.00	2 ft 0 in					
S507	5	1.043	44	TO	TO	24 ft 11 in	592		618	STR	BOT. TRANSV 2 SER. 20
				24.95	24.92	24 ft 11 in					
				3.7	3.67	3 ft 8 in					
S508	5	1.043	36	TO	TO	23 ft 1 in	481		502	STR	BOT. TRANSV 2 SER. 17
				23.08	23.08	23 ft 1 in					
S509	5	1.043	8	25.6	25.58	25 ft 7 in	205		213	STR	BOT. TRANSV 2 SER. 17
S510	5	1.043	1980	25.6	25.58	25 ft 7 in	50655		52833	STR	BOT. TRANSV
S511	5	1.043	1980	7.9	7.67	7 ft 8 in	15180	0.26	15833	16	Edge of Deck
S601	6	1.502	845	30.8	30.83	30 ft 10 in	26054		39133	STR.	LONG. BOT
S602	6	1.502	65	19.1	19.08	19 ft 1 in	1240		1863	STR.	LONG. BOT ENDS
S603	6	1.502	65	34.8	34.83	34 ft 10 in	2264		3401	STR.	LONG. BOT ENDS
SUB-TOTAL									196822		

Total Reinforcing for Superstructure = Deck + Diaph.	201050
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Project **Portsmouth- Phase 1 - Stage 3** Comput EJM Date: **10/1/10**
 Subjec **Reinforcing List** Checke DAT Date: **5/22/13**
 Task: **Pier Diaphragms (Right Bridge)** Page: **1** of: **1**
 Job #: **00000045878 212** No: **3 of 38**

C:\Users\jwebster\Documents\SCI-823Reinforcing Est.xlsx

<u>BAR MARK</u>	<u>BAR SIZE</u>	<u>UNIT WEIGHT</u>	<u>NUMBER</u>	<u>LENGTH</u>	<u>DEDUCTION</u>	<u>LENGTH - DEDUCTION</u>	<u>ROUNDED LENGTH</u>	<u>ROUNDED LENGTH (FT. - IN.)</u>	<u>TOTAL LENGTH</u>	<u>WEIGHT</u>	<u>TYPE</u>	<u>NOTE</u>
D401	4	0.668	15	12.25		12.25	12.25	12 ft 3 in	184	123	6	Vert. Bent Bars
D402	4	0.668	15	5.00	0.21	4.79	4.83	4 ft 10 in	72	48	3	Bottom Bent Bars
D404	4	0.668	15	16.00	0.21	15.79	15.83	15 ft 10 in	237	159	STR	Top Horiz.
D601	6	1.502	72	9.58		9.58	9.58	9 ft 7 in	690	1036	STR	Horiz E.F.
D802	8	2.67	96	11.21	0.08	11.13	11.17	11 ft 2 in	1072	2862	13	Side bent bars
<u>Sub - Total</u>									<u>4228</u>			

C:\Users\jwobster\Documents\SC1432Rein\NUMBER OF BARS

BAR MARK	BAR SIZE	UNIT WEIGHT	PIER 1	PIER 2	PIER 3	TOTAL	LENGTH	DEDUCTION	LENGTH - DEDUCTION	ROUNDED TOTAL LENGTH	ROUNDED LENGTH (FT & IN)	TOTAL LENGTH	WEIGHT	TYPE	DESCRIPTION
P501	5	1.043	12	12	12	36	25.54		25.54	25.50	25 ft 6 in	918	957	STR	Pier Cap Horiz. Each Face
							12.60		12.60	12.58	12 ft 7 in				
P502	5	1.043	20	20	20	60	TO					1082	1129	STR	Pier Cap Horiz. E.F. (12 Ser. of 5)
							23.52		23.52	23.50	23 ft 6 in				
P503	5	1.043	4	4	4	12	23.19	0.06	23.13	23.08	23 ft 1 in	277	289	20	Pier Cap Horiz. Each Face (Bot.)
P504	5	1.043	8	8	8	24	15.81		15.81	15.83	15 ft 10 in	380	396	STR	Pier Cap Horiz. Each Face (Side Bot.)
P505	5	1.043	15	15	15	45	24.83	0.25	24.58	24.58	24 ft 7 in	1106	1154	2	Pier Footing Top Long.
P506	5	1.043	23	23	23	69	16.83	0.25	16.58	16.58	16 ft 7 in	1144	1193	2	Pier Footing Top Transv.
P507	5	1.043	104	102	98	304	11.09		11.09	11.08	11 ft 1 in	3369	3514	24	Pier Col. Horiz. (Face)
P508	5	1.043	104	102	98	304	14.50		14.50	14.50	14 ft 6 in	4408	4598	STR	Pier Col. Horiz. (Middle)
P509	5	1.043	468	459	441	1368	5.17		5.17	5.17	5 ft 2 in	7068	7372	17	Pier Column Ties
P510	5.000	1.043	9	9	9	27	8.83	0.25	8.58	8.58	8 ft 7 in	232	242	2	Pier Cap end bent Bars lapped w/
P601	6	1.502	38	38	38	114	20.00	0.33	19.67	19.67	19 ft 8 in	2242	3367	2	Center Cap Bent (Top)
P602	6	1.502	38	38	38	114	10.42	0.33	10.08	10.08	10 ft 1 in	1149	1727	2	Center Cap Bent (Bot.)
							10.58		10.25	10.25	10 ft 3 in				
P603	6	1.502	50	50	50	150	TO	0.33				2200	3304	2	Right Cap Bent (Top) Ser.
							19.42		19.08	19.08	19 ft 1 in				
							11.58		11.25	11.25	11 ft 3 in				
P604	6	1.502	50	50	50	150	TO	0.33				1688	2535	2	Right Cap Bent (Bot.) Ser.
							11.58		11.25	11.25	11 ft 3 in				
							11.75		11.42	11.42	11 ft 5 in				
P605	6	1.502	50	50	50	150	TO	0.33				2362	3548	2	Left Cap Bent (Top) Ser.
							20.41		20.08	20.08	20 ft 1 in				
							11.58		11.25	11.25	11 ft 3 in				
P606	6	1.502	50	50	50	150	TO	0.33				1688	2535	2	Left Cap Bent (Bot.) Ser.
							11.58		11.25	11.25	11 ft 3 in				
P607	6	1.502	6	6	6	18	15.67	0.83	14.83	14.83	14 ft 10 in	267	401	3	Seismic Pedestal (2 per Pier)
P608	6	1.502	4	4	4	12	4.25	0.17	4.08	4.08	4 ft 1 in	49	74	1	Seismic Pedestal (2 per Pier)
							15.17		14.33	14.33	14 ft 4 in				
P609	6	1.502	10	10	10	30	TO	0.83				452	680	3	Closed Stirrup at end of Pier Cap
							16.67		15.83	15.83	15 ft 10 in				
							16.63		15.79	15.83	15 ft 10 in				
P610	6	1.502	10			10	TO	0.83				165	248	3	Closed Stirrup at end of Pier Cap
							18.08		17.25	17.25	17 ft 3 in				

							16.83		16.00	16.00	16 ft 0 in				
P611	6	1.502		10		10	TO	0.83				168	252	3	Closed Stirrup at end of Pier Cap
							18.33		17.50	17.50	17 ft 6 in				
							17.00		16.17	16.17	16 ft 2 in				
P612	6	1.502			10	10	TO	0.83				169	254	3	Closed Stirrup at end of Pier Cap
							18.50		17.67	17.67	17 ft 8 in				
P901	9	3.4	4	4	4	12	4.42		4.42	4.42	4 ft 5 in	53	180	STR	Seismic Pedestal (2 per Pier)
P902	9	3.4	26	26	26	78	4.25	0.29	3.96	4.00	4 ft 0 in	312	1061	1	Seismic Pedestal (2 per Pier)
												0			
P1001	10	4.303	52	52	52	156	27.67	0.33	27.33	27.33	27 ft 4 in	4264	18348	STR	Cap Top Horiz.
P1002	10	4.303	17	17	17	51	28.33	0.67	27.67	27.67	27 ft 8 in	1411	6072	2	Bot. Fing Long.
P1003	10	4.303	43	43	43	129	20.33	0.67	19.67	19.67	19 ft 8 in	2537	10917	2	Bot. Fing Transv.
P1004	10	4.303	94	94	94	282	15.58	0.33	15.25	15.25	15 ft 3 in	4301	18505	1	Fing. Dowels
P1005	10	4.303	94	94	94	282	29.75		29.75	29.75	29 ft 9 in	8390	36100	STR	Column Bot.Vert.
P1006	10	4.303	94			94	29.64		29.64	29.67	29 ft 8 in	2789	12000	STR	Column Top Vert. (Pier 1)
P1007	10	4.303		94		94	27.88		27.88	27.92	27 ft 11 in	2624	11292	STR	Column Top Vert. (Pier 2)
P1008	10	4.303			94	94	25.78		25.78	25.75	25 ft 9 in	2421	10415	STR	Column Top Vert. (Pier 3)

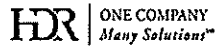
SUBTOTAL

164658



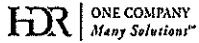
Project: Portsmouth Phase 1 - Stage 3 Computed: EJM Date: 10/1/10
 Subject: Reinforcing List Checked: DAT Date: 5/22/2013
 Task: Pier Reinf. Loft Bridge Page: 1 of 2
 Job #: 0000045878 212 No: 6 of 38

BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER OF BARS			TOTAL	LENGTH	DEDUCTION	LENGTH - DEDUCTION	ROUNDED TOTAL LENGTH	ROUNDED LENGTH (FT & IN)	TOTAL LENGTH	WEIGHT	TYPE	NOTE
			PIER 1	PIER 2	PIER 3										
P501	5	1.043	12	12	12	36	25.54		25.54	25.50	25 ft 6 in	918	957	STR	Pier Cap Horiz. Each Face
							12.60		12.60	12.58	12 ft 7 in				
P502	5	1.043	20	20	20	60	TO					1082	1129	STR	Pier Cap Horiz. Each Face (12 Ser. Of 5)
							23.52		23.52	23.50	23 ft 6 in				
P503	5	1.043	4	4	4	12	24.80	0.06	24.73	24.75	24 ft 9 in	297	310	20	Pier Cap Horiz. Each Face (Bot.)
P504	5	1.043	8	8	8	24	15.81		15.81	15.83	15 ft 10 in	380	396	STR	Pier Cap Horiz. Each Face (Side Bot.)
P505	5	1.043	15	15	15	45	24.83	0.25	24.58	24.58	24 ft 7 in	1106	1154	2	Pier Footing Top Long.
P506	5	1.043	23	23	23	69	16.83	0.25	16.58	16.58	16 ft 7 in	1144	1193	2	Pier Footing Top Transv.
P507	5	1.043	106	104	100	310	11.09		11.09	11.08	11 ft 1 in	3436	3584	24	Pier Col. Horiz. (Face)
P508	5	1.043	106	104	100	310	14.50		14.50	14.50	14 ft 6 in	4495	4688	STR	Pier Col. Horiz. (Middle)
P509	5	1.043	477	468	450	1395	5.17		5.17	5.17	5 ft 2 in	7207	7517	17	Pier Column Ties
P510	5	1.043	9	9	9	27	8.83	0.25	8.58	8.58	8 ft 7 in	232	242	2	Pier Cap end bent bars lapped with P501
P601	6	1.502	38	38	38	114	20.00	0.33	19.67	19.67	19 ft 8 in	2242	3367	2	Center Cap Bent (Top)
P602	6	1.502	38	38	38	114	10.42	0.33	10.08	10.08	10 ft 1 in	1149	1727	2	Center Cap Bent (Bot.)
							10.58		10.25	10.25	10 ft 3 in				
P603	6	1.502	50	50	50	150	TO	0.333333333				2200	3304	2	Right Cap Bent (Top) Ser.
							19.42		19.08	19.08	19 ft 1 in				
							11.58		11.25	11.25	11 ft 3 in				
P604	6	1.502	50	50	50	150	TO	0.33				1688	2535	2	Right Cap Bent (Bot.) Ser.
							11.58		11.25	11.25	11 ft 3 in				
							11.92		11.58	11.58	11 ft 7 in				
P605	6	1.502	50	50	50	150	TO	0.33				2387	3586	2	Left Cap Bent (Top) Ser.
							20.58		20.25	20.25	20 ft 3 in				
							11.58		11.25	11.25	11 ft 3 in				
P606	6	1.502	50	50	50	150	TO	0.33				1688	2535	2	Left Cap Bent (Bot.) Ser.
							11.58		11.25	11.25	11 ft 3 in				
P607	6	1.502	6	6	6	18	15.67	0.83	14.84	14.83	14 ft 10 in	267	401	3	Seismic Pedestal (2 per Pier)
P608	6	1.502	4	4	4	12	4.25	0.17	4.08	4.08	4 ft 1 in	49	74	1	Seismic Pedestal (2 per Pier)
							15.17		14.33	14.33	14 ft 4 in				
P609	6	1.502	10	10	10	30	TO	0.83				452	680	3	Closed Stirrup at end of Pier Cap
							16.67		15.83	15.83	15 ft 10 in				
							16.00		15.17	15.17	15 ft 2 in				
P613	6	1.502	10			10	TO	0.83				159	238	3	Closed Stirrup at end of Pier Cap
							17.42		16.58	16.58	16 ft 7 in				



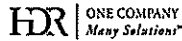
C:\Users\lawbest\Documents\SCI-823Reinforcing list.xlsx

<u>BAR</u>	<u>BAR</u>	<u>UNIT</u>				<u>LENGTH -</u>	<u>ROUNDED</u>	<u>ROUNDED</u>	<u>TOTAL</u>				<u>NOTE</u>
<u>MARK</u>	<u>SIZE</u>	<u>WEIGHT</u>	<u>NUMBER</u>	<u>LENGTH</u>	<u>DEDUCTION</u>	<u>DEDUCTION</u>	<u>(FT.)</u>	<u>LENGTH (FT. -</u>	<u>IN.)</u>	<u>LENGTH</u>	<u>WEIGHT</u>	<u>TYPE</u>	
D401	4	0.668	15	12.25		12.25	12.25	12 ft 3	in	183.75	123	6	Vert. Bent Bars
D402	4	0.668	15	5.00	0.21	4.79	4.83	4 ft 10	in	72.50	48	3	Bottom Bent Bars
D404	4	0.668	15	16.00	0.21	15.79	15.83	15 ft 10	in	237.50	159	STR	Top Horiz.
D601	6	1.502	72	9.58		9.58	9.58	9 ft 7	in	690.00	1036	STR	Horiz E.F.
D802	8	2.67	96	11.21	0.08	11.13	11.17	11 ft 2	in	1072.00	2862	13	Side bent bars
<u>Sub - Total</u>											<u>4228</u>		



BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER PER BRIDGE	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. AND IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
A501	5	1.043	24	32.88		32.88	32.92	32 ft 11 in	790	824	STR	Ftng Long Side and Top	
A502	5	1.043	124	16.92	0.65	16.27	16.33	16 ft 4 in	2025	2112	3	Ftng Stirrup	
A503	5	1.043	100	18.42	0.65	17.77	17.75	17 ft 9 in	1775	1851	3	Ftng & Abut Stem Stirrup	
A504	5	1.043	14	18.52	0.25	18.27	18.25	18 ft 3 in	256	267	2	Ftng & WW U bars	
A505	5	1.043	16	26.77		26.77	26.75	26 ft 9 in	428	446	STR	Long Abut. E.F.	
A506	5	1.043	12	15.90		15.90	15.92	15 ft 11 in	191	199	STR	Long. WingWall E.F (Lower)	
A507	5	1.043	8	11.83		11.83	11.83	11 ft 10 in	95	99	STR	Long. WingWall E.F (Middle)	
A508	5	1.043	4	10.25		10.25	10.25	10 ft 3 in	41	43	STR	Long. WingWall E.F (Middle)	
A509	5	1.043	4	7.25		7.25	7.25	7 ft 3 in	29	30	STR	Long. WingWall E.F (Upper)	
A510	5	1.043	4	4.25		4.25	4.25	4 ft 3 in	17	18	STR	Long. WingWall E.F (Upper)	
A511	5	1.043	4	13.18	0.03	13.15	13.17	13 ft 2 in	53	55	19	Top Bent Wingwall	
				8.42		8.17	8.17	8 ft 2 in					
A512	5	1.043	14	to	0.25				181	189	2	Series Top Wingwall U	
				18.00		17.75	17.75	17 ft 9 in					
A513	5	1.043	144	12.25	0.25	12.00	12.00	12 ft 0 in	1728	1802	2	Top & Bot. U Backwall	
A514	5	1.043	72	8.25	0.25	8.00	8.00	8 ft 0 in	576	601	2	Upper Top U Backwall	
A601	6	1.502	24	10.17		10.17	10.17	10 ft 2 in	244	366	STR	Rods btw beams	
A801	8	2.67	16	34.13		34.13	34.17	34 ft 2 in	547	1460	STR	Ftng Long. Bot	
A802	8	2.67	16	31.10		31.10	31.08	31 ft 1 in	497	1327	STR	Long Top Abut Seat	
A803	8	2.67	48	30.85		30.85	30.83	30 ft 10 in	1480	3952	STR	Long. Backwall	
D801	8	2.67	66	4.71	0.42	4.29	4.33	4 ft 4 in	286	764	18		
Sub - Total Left Bridge										16405			

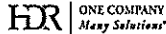
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER PER BRIDGE	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. AND IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
A501	5	1.043	24	32.88		32.88	32.92	32 ft 11 in	790	824	STR	Ftng Long Side and Top	
A502	5	1.043	124	16.92	0.65	16.27	16.33	16 ft 4 in	2025	2112	3	Ftng Stirrup	
A503	5	1.043	100	18.42	0.65	17.77	17.75	17 ft 9 in	1775	1851	3	Ftng & Abut Stem Stirrup	
A504	5	1.043	14	18.52	0.25	18.27	18.25	18 ft 3 in	256	267	2	Ftng & WW U bars	
A505	5	1.043	16	26.77		26.77	26.75	26 ft 9 in	428	446	STR	Long Abut. E.F.	
A506	5	1.043	12	15.90		15.90	15.92	15 ft 11 in	191	199	STR	Long. WingWall E.F (Lower)	
A507	5	1.043	8	11.83		11.83	11.83	11 ft 10 in	95	99	STR	Long. WingWall E.F (Middle)	
A508	5	1.043	4	10.25		10.25	10.25	10 ft 3 in	41	43	STR	Long. WingWall E.F (Middle)	
A509	5	1.043	4	7.25		7.25	7.25	7 ft 3 in	29	30	STR	Long. WingWall E.F (Upper)	
A510	5	1.043	4	4.25		4.25	4.25	4 ft 3 in	17	18	STR	Long. WingWall E.F (Upper)	
A511	5	1.043	4	13.18	0.03	13.15	13.17	13 ft 2 in	53	55	19	Top Bent Wingwall	
				8.42		8.17	8.17	8 ft 2 in					
A512	5	1.043	14	to	0.25				181	189	2	Series Top Wingwall	
				18.00		17.75	17.75	17 ft 9 in					
A513	5	1.043	144	12.25	0.25	12.00	12.00	12 ft 0 in	1728	1802	2	Top & Bot. U Backwall	
A514	5	1.043	72	8.25	0.25	8.00	8.00	8 ft 0 in	576	601	2	Upper Top U Backwall	
A601	6	1.502	24	10.17		10.17	10.17	10 ft 2 in	244	366	STR	Bckwll N.F. Bars Lapped wit	
A801	8	2.67	16	34.13		34.13	34.17	34 ft 2 in	547	1460	STR	Ftng Long. Bot	
A802	8	2.67	16	31.10		31.10	31.08	31 ft 1 in	497	1327	STR	Long Top Abut Seat	
A803	8	2.67	48	30.85		30.85	30.83	30 ft 10 in	1480	3952	STR	Long. Backwall	
D801	8	2.67	66	4.71	0.42	4.29	4.33	4 ft 4 in	286	764	18		
Sub - Total Right Bridge										16405			



Project portsmouth- Phase 1 - Stage 3 Comput EJM Date: 10/1/10
 Subject Reinforcing List Checked: DAT Date: 5/22/2013
 Task: All Approach Slabs - 4 Total Page: 1 of: 1
 Job #: 0000045878 212 No: 10 of 38

SEE ODOT STD DWG. AA-1-81													
Left Rear													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. - IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
AS501	5	1.043	40	27.0472		27.05	27.00	27 ft 0 in	1080.00	1126	STR	Top Transv. @ 1'-6"	
AS501	5	1.043	90	27.0472		27.05	27.00	27 ft 0 in	2430.00	2534	STR	Bottom Transv. @ 8 1/2"	
AS502	5	1.043	32	29.5000		29.50	29.50	29 ft 6 in	942.43	983	STR	Top Long. @ 1'-6"	
AS1001	10	4.303	89	30.9167	0.6458	30.27	30.25	30 ft 3 in	2692.25	11585	16	Bottom Long. @ 6 1/2"	
Sub - Total										16228			
Left Forward													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. - IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
AS501	5	1.043	40	27.0		27.05	27.00	27 ft 0 in	1080.00	1126	STR	Top Transv. @ 1'-6"	
AS501	5	1.043	90	27.0		27.05	27.00	27 ft 0 in	2430.00	2534	STR	Bottom Transv. @ 8 1/2"	
AS502	5	1.043	32	29.50		29.50	29.50	29 ft 6 in	942.43	983	STR	Top Long. @ 1'-6"	
AS1001	10	4.303	89	30.92	0.6458	30.27	30.25	30 ft 3 in	2692.25	11585	16	Bottom Long. @ 6 1/2"	
Sub - Total										16228			
LEFT BRIDGE TOTAL										32456			

Right Rear													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. - IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
AS501	5	1.043	40	27.0		27.05	27.00	27 ft 0 in	1080.00	1126	STR	Top Transv. @ 1'-6"	
AS501	5	1.043	90	27.0		27.05	27.00	27 ft 0 in	2430.00	2534	STR	Bottom Transv. @ 8 1/2"	
AS502	5	1.043	32	29.50		29.50	29.50	29 ft 6 in	942.43	983	STR	Top Long. @ 1'-6"	
AS1001	10	4.303	89	30.92	0.6458	30.27	30.25	30 ft 3 in	2692.25	11585	16	Bottom Long. @ 6 1/2"	
Sub - Total										16228			
Right Forward													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH (FT. - IN.)	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
AS501	5	1.043	40	27.0		27.05	27.00	27 ft 0 in	1080.00	1126	STR	Top Transv. @ 1'-6"	
AS501	5	1.043	90	27.0		27.05	27.00	27 ft 0 in	2430.00	2534	STR	Bottom Transv. @ 8 1/2"	
AS502	5	1.043	32	29.50		29.50	29.50	29 ft 6 in	942.43	983	STR	Top Long. @ 1'-6"	
AS1001	10	4.303	89	30.92	0.6458	30.27	30.25	30 ft 3 in	2692.25	11585	16	Bottom Long. @ 6 1/2"	
Sub - Total										16228			
RIGHT BRIDGE TOTAL										32456			



Interior Left Bridge													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
R501	5	1.043	16	29.6		29.58	29.58	29 ft 7 in	473.33	494	STR	Horizontal E.F. (end)	
R502	5	1.043	128	28.4		28.42	28.42	28 ft 5 in	3637.33	3794	STR	Horizontal E.F. (middle)	
R601	6	1.502	461	6.33	0.17	6.17	6.17	6 ft 2 in	2842.83	4270	1	Vert. F.F.	
R602	6	1.502	461	6.33	0.03	6.30	6.33	6 ft 4 in	2919.67	4385	11	Vert. N.F.	
			Sub - Total							12943			
Exterior Left Bridge													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
R503	5	1.043	90	29.00		29.00	29.00	29 ft 0 in	2610.00	2722	STR	Horiz. E.F. (middle)	
R504	5	1.043	379	8.00	0.14	7.86	7.83	7 ft 10 in	2968.83	3096	23	Vert. Stirrup	
R505	5	1.043	16	10.00		10.00	10.00	10 ft 0 in	160.00	167	STR	Horiz. E.F. (transition)	Standard Bars
R506	5	1.043	8	5.60	0.17	5.43	5.42	5 ft 5 in	43.33	45	25	Horiz. N.F. (end)	
R507	5	1.043	8	5.50		5.50	5.50	5 ft 6 in	44.00	46	STR	Horiz. F.F. (end)	
R603	6	1.502	15	29.67		29.67	29.67	29 ft 8 in	445.00	668	STR	Horiz. Top	
R604	6	1.502	379	2.83	0.17	2.67	2.67	2 ft 8 in	1010.67	1518	1	Vert. Bent into Slab F.F. (middle)	
R605	6	1.502	379	3.86	0.20	3.66	3.67	3 ft 8 in	1389.67	2087	Bent	Vert. Bent into Slab N.F. (middle)	
			Sub - Total			4.25	4.25	4 ft 3 in					
R606	6	1.502	4 ser. of 11	From 4.417' to 5.167'	0.17				203.50	306	1	Series of 11 bars -Vert. Bent into Slab E.F. (Transition)	
R607	6	1.502	20	4.42	0.17	5.00	5.00	5 ft 0 in	85.00	128	1	Vert. Bent into Slab E.F. (end)	
			Sub - Total			4.25	4.25	4 ft 3 in		10784			
LEFT BRIDGE TOTAL										23726			

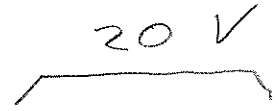
Interior Right Bridge													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
R501	5	1.043	16	29.6		29.58	29.58	29 ft 7 in	473.33	494	STR	Horizontal E.F. (end)	
R502	5	1.043	128	28.4		28.42	28.42	28 ft 5 in	3637.33	3794	STR	Horizontal E.F. (middle)	
R601	6	1.502	461	6.33	0.17	6.17	6.17	6 ft 2 in	2842.83	4270	1	Vert. F.F.	
R602	6	1.502	461	6.33	0.03	6.30	6.33	6 ft 4 in	2919.67	4385	11	Vert. N.F.	
			Sub - Total							12943			
Exterior Right													
BAR MARK	BAR SIZE	UNIT WEIGHT	NUMBER	LENGTH	DEDUCTIONS	LENGTH - DEDUCTIONS	ROUNDED LENGTH (FT.)	ROUNDED LENGTH	TOTAL LENGTH	WEIGHT	TYPE	NOTE	
R503	5	1.043	96	29.0		29.00	29.00	29 ft 0 in	2784.00	2904	STR	Horiz. E.F.	
R504	5	1.043	461	8.0	0.1	7.86	7.83	7 ft 10 in	3611.17	3766	23	Vert. Stirrup	
R505	5	1.043	12	29.7		29.67	29.67	29 ft 8 in	356.00	371	STR	Horiz. E.F.	
R603	6	1.502	18	29.67		29.67	29.67	29 ft 8 in	534.00	802	STR	Horiz. Top	
R604	6	1.502	461	2.83	0.17	2.67	2.67	2 ft 8 in	1229.33	1846	1	Vert. Bent into Slab F.F.	
R605	6	1.502	461	3.86	0.20	3.66	3.67	3 ft 8 in	1690.33	2539	Bent	Vert. Bent into Slab N.F.	
R606	6	1.502	2	29.67		29.67	29.67	29 ft 8 in	59.33	89	STR	Horiz Top	
			Sub - Total							12317			
RIGHT BRIDGE TOTAL										25260			

HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-1-13
Subject: Piers Rehab Right	Checked: D.A.T.	Date: 5-19-13
Task: Deductions Bridge	Page: 1	of: 7
Job #: 45878	No: 12 of 38	

P503 ✓

$\frac{A}{10\frac{1}{2}''}$ ✓
 $\frac{B}{2'-3''}$ ✓
 $\frac{C}{18'-4\frac{1}{4}''}$ ✓
 $\frac{D}{2'-3''}$ ✓
 $\frac{E}{10\frac{1}{2}''}$ ✓



$$L = 2\sqrt{(10\frac{1}{2})^2 + (2'-3'')^2} + 18'-4\frac{1}{4}'' - 2\left(\frac{3\frac{1}{8}''}{45^\circ \text{ Deduc}}\right) = 23.057 = 23'-1'' \checkmark$$

P505

$\frac{A}{1'-3''}$
 $\frac{B}{22'-4''}$
 $\frac{C}{1'-3''}$
 $\frac{D}{2}$ ✓

$$L = (1'-3'') \times 2 + 22'-4'' - 2\left(\frac{1\frac{1}{2}''}{90^\circ \text{ Deduc}}\right) = 24.583' = 24'-7'' \checkmark$$

P506 ✓

$\frac{A}{1'-3''}$ ✓
 $\frac{B}{14'-4''}$ ✓
 $\frac{C}{1'-3''}$ ✓
 $\frac{D}{2}$ ✓

$$L = 2 \times 1'-3'' + 14'-4'' - 2\left(\frac{1\frac{1}{2}''}{90^\circ \text{ Deduc}}\right) = 16'-7'' \checkmark$$

P507

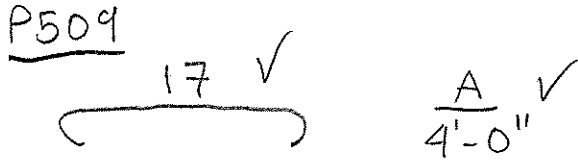
$\frac{A}{24}$ ✓
 $\frac{B}{3'-10\frac{1}{2}''}$ ✓
 $\frac{C}{2'-6''}$ ✓
 $\frac{D}{1'-11\frac{1}{4}''}$ ✓



$$L = 2(2'-6'') + \pi(1'-11\frac{1}{4}'') = 11.086 = 11'-1'' \checkmark$$

HDR

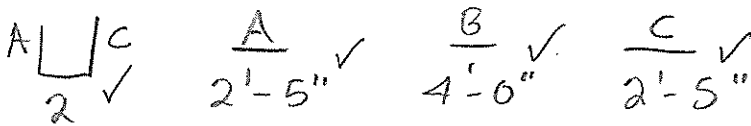
Project: Portsmouth Qty Chk	Computed: STW	Date: 5-1-13
Subject: PIERS REBAR RIGHT	Checked: D.A.T.	Date: 5-19-13
Task: Deductions Bridge	Page: 2	of: 7
Job #: 45878	No: 13 of 38	



$$L = 4'-0" + 2(7") = 5'-2" \checkmark$$

180° ADD

P510 ✓



$$L = 2(2'-5") + 4'-0" - 2(1\frac{1}{2}") = 8.583 = 8'-7" \checkmark$$

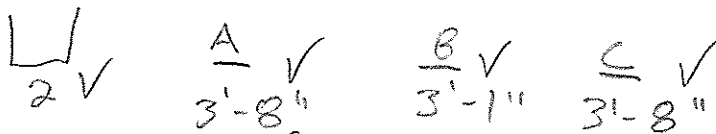
P601 ✓



$$L = 2(8'-5\frac{1}{2}") + 3'-1" - 2(2") = 19.625 \approx 19'-8" \checkmark$$

90° DEDUCT

P602 ✓



$$L = 2(3'-8") + 3'-1" - 2(2") = 10.083 = 10'-1" \checkmark$$



HDR

Project: Portsmouth Qty Chv	Computed: STW	Date: 5-1-13
Subject: PIERS REBAR RIGHT	Checked: D.A.T	Date: 5-19-13
Task: Deductions Bridge	Page: 3	of: 7
Job #: 45878	No: 14	of 38

P603 ✓



$$\begin{array}{r} \frac{A}{3'-9''} \checkmark \\ +0 \\ 8'-2'' \end{array}$$

$$\frac{B}{3'-1''} \checkmark$$

$$\begin{array}{r} \frac{C}{3'-9''} \checkmark \\ +0 \\ 2'-2'' \end{array}$$

$$L_1 = 2(3'-9'') + 3'-1'' = 10'-7'' - 4'' \checkmark \text{ deduc} = 10'-3'' \checkmark$$

$$L_2 = 2(8'-2'') + 3'-1'' = 19'-5'' - 4'' \checkmark \text{ deduc} = 19'-1'' \checkmark$$

P604 ✓ * SEE BACK FOR DATA



$$\frac{A}{4'-3''} \checkmark$$

$$\frac{B}{3'-1''} \checkmark$$

$$\frac{C}{4'-3''} \checkmark$$

$$L = 2(4'-3'') + 3'-1'' = 11'-7'' - 4'' \checkmark \text{ deduc} = 11'-3'' \checkmark$$

P605 ✓



$$\begin{array}{r} \frac{A}{4'-3'' + 4''} \\ +0 \\ 8'-8'' \end{array}$$

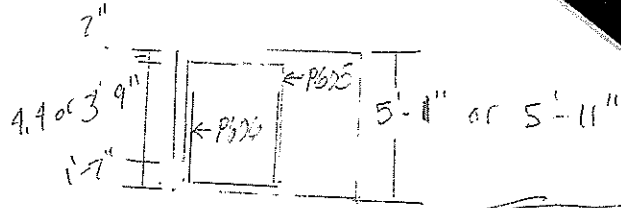
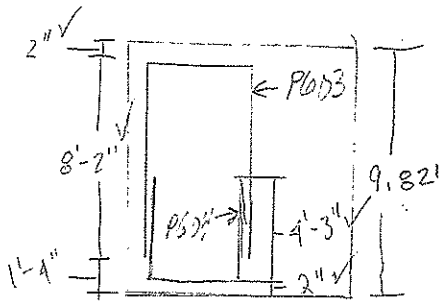
$$\frac{B}{3'-1''}$$

$$\begin{array}{r} \frac{C}{4'-3'' + 4''} \\ +0 \\ 8'-8'' \end{array}$$

$$L_1 = 2(4'-3'' + 4'') + 3'-1'' = 11'-7'' - 4'' \checkmark \text{ deduc} = 11'-3'' + 5''$$

$$L_2 = 2(8'-8'') + 3'-1'' = 20'-5'' - 4'' \checkmark \text{ deduc} = 20'-1'' \checkmark$$





CHK'd
BY DAT 5-19-13
PAGE 4 OF 7

HT FOR 003 X 004

PIER	HT	HT
PIER 1	9.79' ✓	9.8' ✓
PIER 2	9.82' ✓	9.82' ✓
PIER 3	9.84' ✓	9.85' ✓
Avg	9.87' ✓	

HT FOR 003 X 004

PIER 1	4.71 pier
PIER 2	4.82 pier
PIER 3	4.9 pier
Avg	4.81 pier

P603 ✓ leg length top stirrup ✓

$$9.82' - 4" \text{ CLR} - 1'-4" \text{ (bottom U will lap)} = 8'-2" \checkmark$$

$$9.82' - \frac{5.5}{15}(24 \times 0.5) = 5.42 - 4'-3" + 2'-11" \text{ LAP} = 4'-1" - 4" \text{ CLR} = 3'-9" \checkmark$$

P604 ✓ leg length bottom stirrup

$$9.82' - 4" \text{ CLR} - 8'-2" + 2'-11" = 4'-3" \checkmark$$

P605 ✓ leg length top stirrup ✓

$$10.31' - 4" \text{ CLR} - 1'-4" = 8'-8" \checkmark$$

P606 ✓ leg length bottom stirrup

$$10.31' - 4" \text{ CLR} - 8'-8" - 2'-11" = 4'-3" \checkmark$$

$$10.42' - \frac{5.5}{15}(24 \times 0.5) = 5.91' - 4'-3" + 2'-11" - 4" \text{ CLR} = 4'-3" 4" \checkmark$$

HDR


Project: Portsmouth Qty Chk	Computed: STW	Date: 5-1-13
Subject: PIER REBARS RIGHT	Checked: J.A.T.	Date: 5-19-13
Task: Deductions Bridge	Page: 5	of: 7
Job #: 45878	No: 16	of 38

P606 ✓

$\frac{A}{4'-3''} \checkmark$ $\frac{B}{3'-1''} \checkmark$ $\frac{C}{4'-3''} \checkmark$ $\frac{D}{2} \checkmark$

$$L = 2(4'-3'') + 3'-1'' = 11'-7'' - \underset{\text{deduc}}{4''} = 11'-3'' \checkmark$$

P607 ✓ TYPE 3



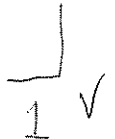
$\frac{A}{4'-5''} \checkmark$ $\frac{B}{2'-9''} \checkmark$

$$L = 2(4'-5'') + 2(2'-9'') + 2(8'') - 3(2'') - 2(2'') = 14.83'$$

15.67'

14'-10'' ✓

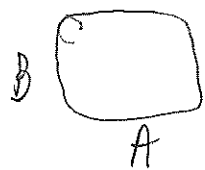
P608 ✓



$\frac{A}{1'-6''} \checkmark$ $\frac{B}{2'-9''} \checkmark$

$$L = 1'-6'' + 2'-9'' = 2'' \checkmark - \underset{\text{deduc}}{2''} = 4'-1'' \checkmark$$

P609 ✓



$\frac{A}{3'-10''} \checkmark$ $\frac{B}{3'-1''} \checkmark$
 $\frac{A}{4'-7''} \checkmark$

$$L_1 = 2(3'-10'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 14.33'$$

15.17'

$$L_2 = 2(4'-7'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 15.83'$$

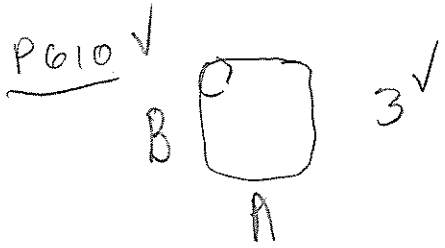
16.67'

14'-4'' ✓
15'-10'' ✓



HDR

Project: Portsmouth Qty Ck Computed: STW Date: 5-1-13
 Subject: PIER REBARS RIGHT Checked: D.A.T. Date: 5-19-13
 Task: Deductions Bridge Page: 6 of: 7
 Job #: 45878 No: 17 of 38



$$\begin{array}{r} \underline{A} \\ 4'-6\frac{3}{4}'' \checkmark \\ + \\ \underline{B} \\ 3'-1'' \checkmark \end{array}$$

$$5'-3\frac{1}{2}'' \checkmark$$

16.63'

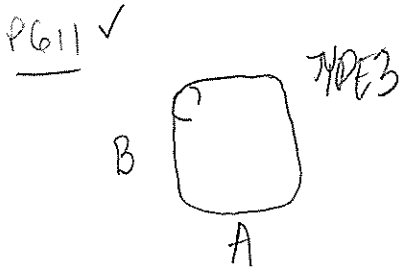
$$L_1 = 2(4'-6\frac{3}{4}'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 15.8' \checkmark$$

15'-10"

$$L_2 = 2(5'-3\frac{1}{2}'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 17.2' \checkmark$$

18.08'

17'-3"



$$\begin{array}{r} \underline{A} \\ 4'-8'' \checkmark \\ + \\ \underline{B} \\ 3'-1'' \checkmark \end{array}$$

$$5'-4\frac{3}{4}'' \checkmark$$

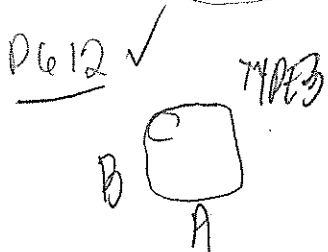
$$L_1 = 2(4'-8'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 16.00' \checkmark$$

16.83'

$$L_2 = 2(5'-4\frac{3}{4}'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 17.25' \checkmark$$

18.08'

17'-6"



$$\begin{array}{r} \underline{A} \\ 4'-9'' \checkmark \\ + \\ \underline{B} \\ 3'-1'' \checkmark \end{array}$$

$$5'-6'' \checkmark$$

$$L_1 = 2(4'-9'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 16.17' \checkmark$$

17

16'-2"

$$L_2 = 2(5'-6'' \checkmark) + 2(3'-1'' \checkmark) + 2(8'' \checkmark) - 3(2'' \checkmark) - 2(2'' \checkmark) = 17.67' \checkmark$$

18.5'

17'-8"



HDR

Project: Portsmouth City CLK	Computed: STW	Date: 5-1-13
Subject: PIER REPAIRS RIGHT	Checked: D.A.T	Date: 5-19-13
Task: Deductions Bridge	Page: 7	of: 7
Job #: 45878	No: 18	of 38

P902 ✓

└ 1 ✓

A ✓ B ✓
1'-6" 2'-9"

$$L = 1'-6" + 2'-9" - 3\frac{1}{2}" = 4'-0\frac{1}{2}" = 4'-0" ✓$$

P1001 ✓

└ 1 ✓

A ✓ B ✓
3'-4" 24'-4"

$$L = 24'-4" + 3'-4" = 27'-8" - 4" = 27'-4" ✓$$

P1002 ✓

A C 2 ✓
B

A ✓ B ✓ C ✓
2'-11" 22'-6" 2'-11"

$$L = 2(2'-11") + 22'-6" - 8" = 27.67' = 27'-8" ✓$$

P1003 ✓

A C 2 ✓
B

A ✓ B ✓ C ✓
2'-11" 14'-6" 2'-11"

$$L = 2(2'-11") + 14'-6" - 8" = 19'-8" ✓$$

P1004 ✓

└ 1 ✓

A ✓ B ✓
1'-6" 14'-1"

$$L = (1'-6") + 14'-1" - 4" = 15'-3" ✓$$

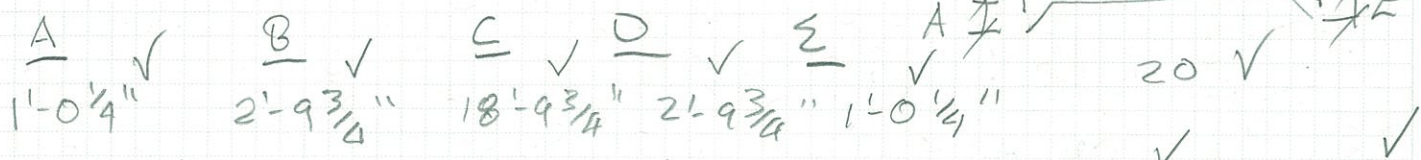


309.

HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-1-13
Subject: Rebar Piers Left Bridge	Checked: D.A.J.	Date: 5-19-13
Task: Deductions	Page: 4	of: 4
Job #: 45878	No: 19	of 38

P503 ✓ TYPE 20



$$L = 2\sqrt{\left(\frac{1'-0\frac{1}{4}''}{1.02083}\right)^2 + \left(\frac{2'-9\frac{3}{4}''}{2.8125}\right)^2} + 18'-9\frac{3}{4}'' - 2\left(\frac{3}{8}''\right) = 24'-9''$$

P505

see right bridge ✓

P506

see right bridge ✓

P510

L 2 ✓

$$L = (2'-5'') \times 2 + 4'-0'' = 8'-10'' - 2(1\frac{1}{2}'') = 8'-7''$$

P507

see right bridge ✓

P509

see right bridge ✓

P601

AVG. "C" ELEVATION RIGHT BRIDGE = 686.88

AVG. "C" ELEVATION LEFT BRIDGE = 687.49

687.49 - 686.88 = 0.61 ≈ 7" TO LEGS ~~ADJING 7" NOT NEEDED~~

$$8'-5\frac{1}{2}'' + 7'' = 9'-0\frac{1}{2}'' \text{ OK} \rightarrow \text{ELEV. C-G AVG} = \underline{10.13}$$

P602

see right bridge ✓

- vs. 10.08 P1
- 10.13 P2
- 10.18 P3



HDR

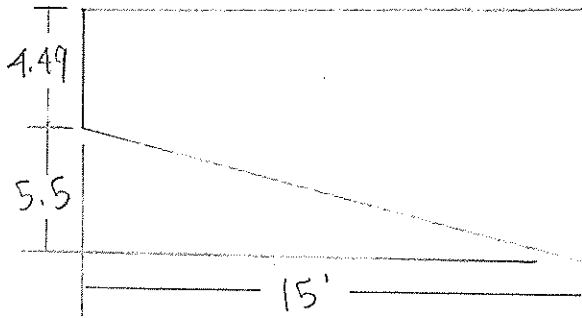
Project: Portsmouth Qty Ck Computed: STW Date: 5-1-13
 Subject: Piers Rebar Left Checked: D.A.T. Date: 5-19-13
 Task: Deductions Bridge Page: 2 of 4
 Job #: 45878 No: 20 of 38

P603 - SEE RIGHT BRIDGE ✓

P604 - SEE RIGHT BRIDGE ✓

P605 & P606 CALCS

VARIES
 HT.
 1 4.39
 2 4.49
 3 4.58
 AVG. = 4.49



P605 leg length
 10.44
 OK 10.44 9.99 - 4" CLR - 1' - 4" = 8' - 4" 9"
 $\frac{A}{B} \frac{9''}{3'-1''} \frac{C}{8'-4''}$
 $\frac{9''}{3'-1''} = \frac{C}{8'-4''}$
 $C = \frac{9'' \times 8'-4''}{3'-1''} = 24 \times 0.5 = 12$
 $12 + 2'-11'' = 3'-11''$
 $3'-11'' + 4'-5'' = 8'-4''$
 $8'-4'' + 3'-1'' = 11'-5''$
 $11'-5'' - 2(2'') = 10'-7''$
 $10'-7'' + 1'-11'' = 11'-7''$
P605 $L_1 = 2(3'-11'') + 3'-1'' = 10'-11'' - 2(2'') = 10'-7''$
 $L_2 = 2(8'-4'') + 3'-1'' = 19'-9'' - 2(2'') = 19'-5''$
 $19'-5'' - 1' = 18'-5''$
 $18'-5'' + 2'-3'' = 20'-3''$

P606 leg length

$9.99'' - 4'' \text{ CLR} - 8'-4'' + 2'-11'' = 4'-3''$
 1'

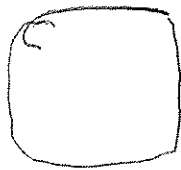
P606 ✓

$L = 2(4'-3'') + 3'-1'' = 11'-7'' - 2(2'') = 11'-3''$ ✓

P607 ✓ - P609 ✓ - SEE RIGHT BRIDGE ✓



P613 ✓



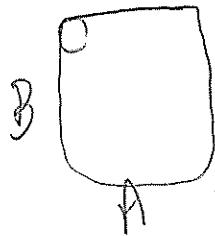
$\frac{A}{4'-3'' \checkmark}$ $\frac{B}{3'-1'' \checkmark}$
 TO
 $4'-11\frac{1}{2}'' \checkmark$

$$L_1 = 2(4'-3'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 15'-2'' \checkmark$$

$$L_2 = 2(4'-11\frac{1}{2}'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 16'-7'' \checkmark$$

17'-5''

P614 ✓



$\frac{A}{4'-4'' \checkmark}$ $\frac{B}{3'-1'' \checkmark}$
 TO
 $5'-1'' \checkmark$

$$L_1 = 2(4'-4'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 15'-4'' \checkmark$$

$$L_2 = 2(5'-1'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 16'-10'' \checkmark$$

17'-8''

P615 ✓



$\frac{A}{4'-5'' \checkmark}$ $\frac{B}{3'-1'' \checkmark}$
 TO
 $5'-2'' \checkmark$

$$L_1 = 2(4'-5'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 15'-6'' \checkmark$$

$$L_2 = 2(5'-2'') + 2(3'-1'') + 2(8'') - 3(2'') - 2(2'') = 16'-10'' \checkmark$$

17'-0''

OK → 2''

HDR

Project:	Portsmouth Qty Chk	Computed:	STW	Date:	5-1-13
Subject:	PIER REPAIRS LIST	Checked:	D.A.T	Date:	5-19-13
Task:	Deductions Bridge	Page:	4	of:	5
Job #:	45878	No:	22	of	38

P902 - SEE RIGHT B. ✓

P1001 - SEE RIGHT B. ✓

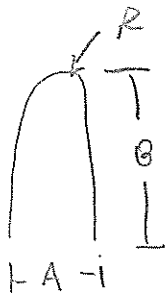
P1002 - P1005 SEE RIGHT E. ✓



AS1001 ✓

$$L = 29'-6'' + 17'' = 30'-11'' \quad \overset{A}{29'-6''} \\ - 7\frac{3}{4}'' \\ \hline 30'-3'' \checkmark$$

D401

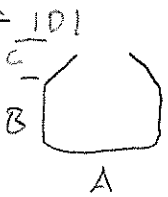


24 ✓

$$\overset{A}{0'-5\frac{1}{2}''} \quad \overset{B}{5'-10''} \quad \overset{R}{0'-2\frac{1}{4}''} \checkmark$$

$$L = 2(5'-10'') + \pi(0'-2\frac{1}{4}'') = 12'-3'' \checkmark$$

D402



12A ✓

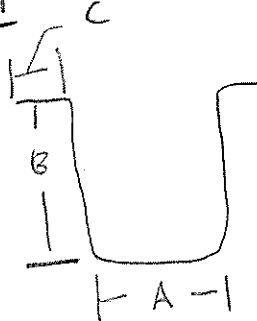
$$\overset{A}{1'-11\frac{1}{2}''} \quad \overset{B}{0'-6\frac{1}{4}''} \quad \overset{C}{0'-8\frac{1}{2}''} \quad \overset{D}{0'-8\frac{1}{2}''} \checkmark$$

$$L = 1'-11\frac{1}{2}'' + 2(0'-0\frac{1}{4}'') + 2\sqrt{(0'-8\frac{1}{2}'')^2 + (0'-8\frac{1}{2}'')^2} = 4'-19'' \quad \checkmark \\ \uparrow \text{OK} \\ - 2(1'') \checkmark \\ - 2(\frac{1}{4}'') \checkmark \\ = 4'-0'' \\ 4'-10'' \text{ OK}$$

HDR

Project: Portsmouth Qty Ck	Computed: STW	Date: 5-1-13
Subject: App. Slab / Dia	Checked: D.A.T.	Date: 5-18-13
Task: Deductions	Page: 2	of: 2
Job #: 45878	No: 24	of 38

D404



6[✓]

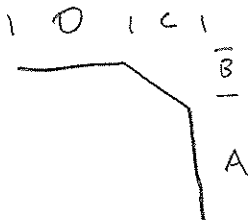
$\frac{A}{2'-8''}$ [✓]

$\frac{B}{6'-0''}$ [✓]

$\frac{C}{0'-8''}$ [✓]

$$L = 2'-8'' + 2(6'-0'') + 2(0'-8'') - 2(1'') - 2(0.25'')$$
$$= 16'-0'' - 4'' - 2.5'' = 15'-8''$$
$$10''$$

D801



$\frac{A}{3'-3\frac{3}{4}''}$ [✓]

$\frac{B}{0'-8''}$ [✓]

$\frac{C}{0'-8''}$ [✓]

$\frac{D}{6'-11\frac{1}{2}''}$ [✓]

$$L = 3'-3\frac{3}{4}'' + \sqrt{(0'-8'')^2 + (0'-8'')^2} + 6'-11\frac{1}{2}''$$
$$- 2(\frac{1}{2}'')$$

$$= 11'-3'' - 1'' = 11'-2''$$



Project:	Portsmouth Qty Chk	Computed:	STW	Date:	5-7-13
Subject:	Deck Rebar	Checked:	D.A.T.	Date:	5-19-13
Task:	R+L Bridge	Page:	1	of:	1
Job #:	45878	No:	25	of	38

S511 Right and Left Decks TYPE 16

$$\begin{array}{r} 7'-4" \text{ "A"} + 7" \checkmark - 3\frac{1}{8}" \checkmark = 7'-8" \checkmark \\ \text{BEND} \quad \text{BEND} \\ \text{ADD} \quad \text{DEDUCT} \end{array}$$

$\underbrace{\hspace{10em}}$
7'-11"

ABUTMENTS F+R L/R

A512 ✓

1 SR OF = 6 SPA ✓
7

$17'-9'' - 8'-2'' = 9'-7'' / 6 \approx 1'-7\frac{1}{4}''$ ✓

PARAPETS LEFT BRIDGE

R606 ✓

$5'-0'' - 4'-3'' = 9'' / 10 \text{ SPA} \approx 1''$ ✓

PIERS LEFT BRIDGE

P502 ✓

$23'-6'' - 12'-7'' = 10'-11'' / 4 \text{ SPA} = 2'-8\frac{3}{4}''$ ✓

P603 ✓

$19'-1'' - 10'-3'' = 8'-10'' / 24 \text{ SPA} \approx 4\frac{1}{2}''$ ✓

P605 ✓

$20'-3'' - 11'-7'' = 8'-8'' / 24 \text{ SPA} \approx 4\frac{1}{4}''$ ✓

WHAT ABOUT P604?

P609 ✓

$15'-10'' - 14'-4'' = 1'-6'' / 4 \text{ SPA} = 4\frac{1}{2}''$ ✓

WHAT ABOUT P606?

P613 ✓

$16'-7'' - 15'-2'' = 1'-5'' / 4 \text{ SPA} = 4\frac{1}{4}''$ ✓



HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-20-13
Subject: Increments L/R Bridge	Checked: D.A.T.	Date: 5-20-13
Task: Increment calcs	Page: 2	of: 3
Job #: 45878	No: 27 of 38	

PIERS LEFT BRIDGE CONT. ✓

P614 ✓

$$16'-10'' - 15'-4'' = 1'-6'' / 4 \text{ SPA} = 4\frac{1}{2}'' \checkmark$$

P615 ✓

$$17'-0'' - 15'-6'' = 1'-6'' / 4 \text{ SPA} = 4\frac{1}{2}'' \checkmark$$

DECK LEFT BRIDGE ✓

S503 ✓

$$27'-6'' - 4'-7'' = 22'-11'' / 20 \text{ SPA} = 1'-1\frac{3}{4}'' \checkmark$$

S504 ✓

$$20'-1'' - 2'-0'' = 18'-1'' / 16 \text{ SPA} = 1'-1\frac{1}{2}'' \checkmark$$

S505 ✓

$$29'-10'' - 2'-0'' = 27'-10'' / 26 \text{ SPA} = 1'-1'' \checkmark$$

S506 ✓

$$18'-7'' - 4'-1'' = 14'-6'' / 13 \text{ SPA} = 1'-1\frac{1}{2}'' \checkmark$$

S507 ✓

$$24'-11'' - 2'-0'' = 22'-11'' / 21 \text{ SPA} = 1'-1'' \checkmark$$

S508 ✓

$$23'-1'' - 3'-8'' = 19'-5'' / 17 \text{ SPA} = 1'-1\frac{3}{4}'' \checkmark$$



HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-20-13
Subject: Increments L/R Bridge	Checked: D.A.T.	Date: 5-20-13
Task: Increment Calcs	Page: 3	of: 3
Job #: 45878	No: 28	of 38

PIERS RIGHT BRIDGE

P502 - SEE LEFT BRIDGE ✓

P603 - SEE LEFT BRIDGE ✓

P605 - ✓

$$20'-1'' - 11'-5'' = 8'-8'' / 24 \text{ SPA} = 4\frac{1}{4}'' \checkmark$$

P609 ✓ - SEE LEFT BRIDGE ✓

P610 ✓

$$17'-3'' - 15'-10'' = 1'-5'' / 4 \text{ SPA} = 4\frac{1}{4}'' \checkmark$$

P611 ✓

$$17'-6'' - 16'-0'' = 1'-6'' / 4 \text{ SPA} = 4\frac{1}{2}'' \checkmark$$

P612 ✓

$$17'-8'' - 16'-2'' = 1'-6'' / 4 \text{ SPA} = 4\frac{1}{2}'' \checkmark$$

DECK RIGHT BRIDGE

SEE LEFT BRIDGE FOR ALL ✓



A502 ✓



A 5'-6" ✓ B 2'-6" ✓

$$L = (5'-6") \times 2 + (2'-6") \times 2 + 2(5\frac{1}{2} ") = 16.92'$$

$$- 3(1\frac{1}{2} ") - 2(1\frac{5}{8} ") = 16.27 \approx 16'-4" ✓$$

A503 ✓



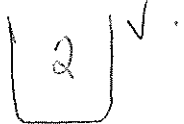
A 3'-3" ✓ B 5'-6" ✓

$$L = (5'-6") \times 2 + (3'-3") \times 2 + 2(5\frac{1}{2} ") = 18.4167'$$

$$- 3(1\frac{1}{2} ") - 2(1\frac{5}{8} ") = 17.77'$$

$$\approx 17'-9" ✓$$

A504 ✓



A 8'-2" ✓ B 2'-2" ✓ C 8'-2 1/4" ✓

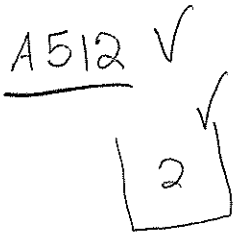
$$L = 8'-2" + 8'-2\frac{1}{4}" + 2'-2" = 18'-6\frac{1}{4}" - 2(1\frac{1}{2} ")$$

$$= 18'-3\frac{1}{4}" - 3" ✓$$

A511 ✓

A 18' ✓ B 9'-9 3/4" ✓ C 4'-11" ✓

$$L = 2'-2\frac{1}{2}" + \sqrt{(4'-11")^2 + (9'-9\frac{3}{4}")^2} = 13.18' - \frac{3}{8}" = 13'-2" ✓$$



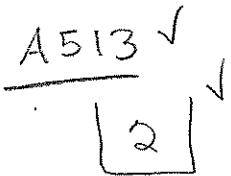
$\frac{A}{3'-1\frac{1}{2}'' \checkmark}$
 $+0$
 $7'-11'' \checkmark$

$\frac{B}{2'-2'' \checkmark}$

$\frac{C}{3'-1\frac{1}{2}'' \checkmark}$
 $+0$
 $7'-11'' \checkmark$

$$L_1 = 2(3'-1\frac{1}{2}'') + 2'-2'' = 8'-5'' - 2(1\frac{1}{2}'') \checkmark = 8'-2'' \checkmark$$

$$L_2 = 2(7'-11'') + 2'-2'' = 18'-0'' - 2(1\frac{1}{2}'') \checkmark = 17'-9'' \checkmark$$

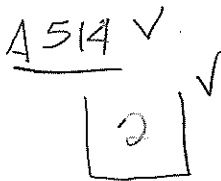


$\frac{A}{4'-6'' \checkmark}$

$\frac{B}{3'-3'' \checkmark}$

$\frac{C}{4'-6'' \checkmark}$

$$L = 2(4'-6'') + 3'-3'' = 12'-3'' - 2(1\frac{1}{2}'') \checkmark = 12'-0'' \checkmark$$

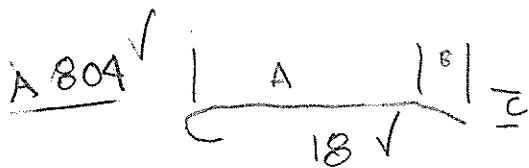


$\frac{A}{2'-8'' \checkmark}$

$\frac{B}{2'-11'' \checkmark}$

$\frac{C}{2'-8'' \checkmark}$

$$L = 2(2'-8'') + 2'-11'' = 8'-25'' - 2(1\frac{1}{2}'') \checkmark = 8'-0'' \checkmark$$



$\frac{A}{2'-4\frac{1}{2}'' \checkmark}$

$\frac{B}{1'-0'' \checkmark}$

$\frac{C}{1'-0'' \checkmark}$

$$L = 2'-4\frac{1}{2}'' + \sqrt{(1'-0'')^2 + (1'-0'')^2} = 3.789' + 11'' = 4.706' - 5'' \checkmark$$

$$= 4.289'$$

$$= 4'-4'' \checkmark$$

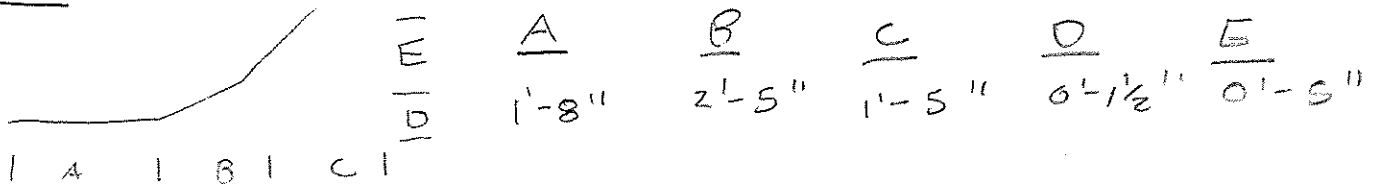


HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-2-13
Subject: Parapets Left bridge	Checked: D.A.T.	Date: 5-18-13
Task: Deductions	Page: 1	of: 2
Job #: 45878	No: 31	of 38

R504 see right bridge ✓

R506



$$L = 1'-8" + \frac{2.42}{\sqrt{(2'-5")^2 + (0'-1\frac{1}{2}")^2}} + \frac{1.477}{\sqrt{(1'-5")^2 + (0'-5")^2}} = 5'-7" - \frac{1}{8} - \frac{3}{8} = 5'-5"$$

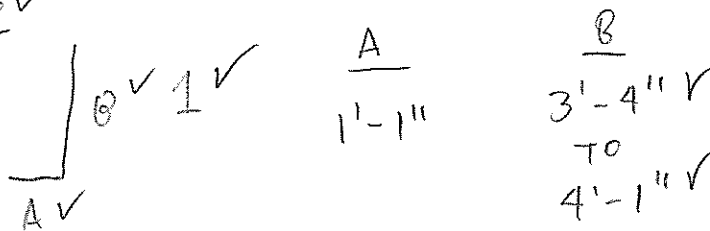
R601 see right bridge ✓

R602 see right bridge ✓

R604 see right bridge ✓

R605 see right bridge ✓

R606 ✓



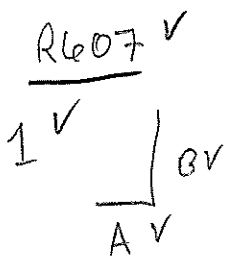
$$L_1 = 1'-1" + 3'-4" - 2" = 4'-5" - 2" = 4'-3" ✓$$

$$L_2 = 1'-1" + 4'-1" - 2" = 5'-2" - 2" = 5'-0" ✓$$



HDR

Project: Portsmouth Qty Chk	Computed: STW	Date: 5-2-13
Subject: Parapets Left Bridge	Checked: D.A.T.	Date: 5-18-13
Task: Deductions	Page: 2	of: 2
Job #: 45878	No: 32	of 38



A
1'-1" ✓

B
3'-4" ✓

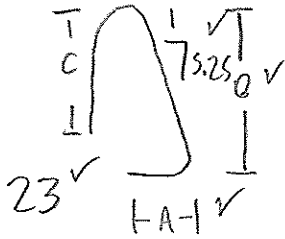
$$L = 1'-1" + 3'-4" - 2" = 4'-5" - 2" = 4'-3" ✓$$



HDR

Project: Portsmouth Qty Chk	Computed: STU	Date: 5-2-13
Subject: Parapets Right Bridge	Checked: D.A.J.	Date: 5-18-13
Task: Deductions	Page: /	of: 2
Job #: 45878	No: 33	of 38

R504 ✓



$$\frac{A}{1'-1''} \checkmark$$

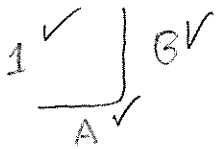
$$\frac{B}{3'-2''} \checkmark$$

$$\frac{C}{3'-0''} \checkmark$$

$$\frac{R}{0'-2\frac{3}{4}''} \checkmark$$

$$L = 1'-1'' + \sqrt{(3'-2'')^2 + \left(\frac{1}{5.25}(3'-2'')\right)^2} + \pi \left(2\frac{3}{4}''\right) + 3'-0'' - 1\frac{1}{8}'' = 7'-10'' \checkmark$$

R601 ✓

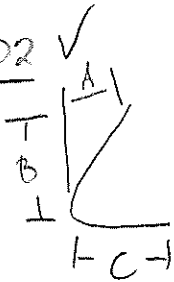


$$\frac{A}{1'-1''} \checkmark$$

$$\frac{B}{5'-3''} \checkmark$$

$$L = 1'-1'' + 5'-3'' - 2'' = 6'-4'' - 2'' = 6'-2'' \checkmark$$

R602 ✓



$$\frac{A}{1'-0''}$$

$$\frac{B}{5'-3''}$$

$$\frac{C}{1'-0''}$$

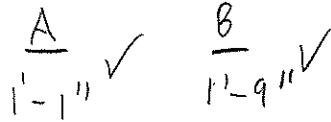
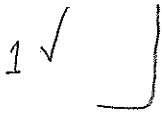
$$L = \sqrt{(1'-0'')^2 + (5'-3'')^2} + 1'-0'' - \frac{3}{8}'' = 6.34' - \frac{3}{8}'' = 6'-4''$$



HDR

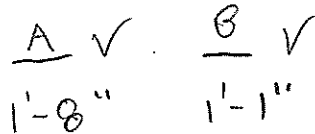
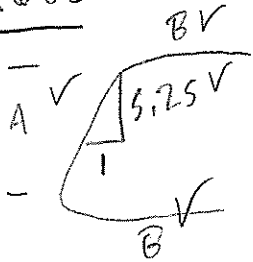
Project: Portsmouth Qty Chk	Computed: STW	Date: 5-2-13
Subject: Parapets Right Bridge	Checked: D.A.T.	Date: 5-18-13
Task: Deductions	Page: 2	of: 2
Job #: 45878	No: 34	of 38

R604 ✓



$$L = 1'-1'' + 1'-9'' - 2'' = 2'-10'' - 2'' = 2'-8''$$

R605 ✓



$$L = 2(1'-1'') + \sqrt{(1'-8'')^2 + \left(\frac{1}{5.25}(1'-8'')\right)^2} - 2'' - \frac{3}{8}'' = 3'-10'' - 2\frac{3}{8}'' = 3'-8''$$



MARK	NUMBER				LENGTH	WEIGHT	TYPE	DIMENSIONS					
	PIER 1	PIER 2	PIER 3	TOTAL				A	B	C	D	E	R	INC
PIERS													
P501	12	12	12	36	25'-6"	957	STR	.	.	.	.	.
.	4 SR	4 SR	4 SR	12 SR	12'-7"	.	.	.	.	.	.	.
P502	OF	OF	OF	OF	TO	1129	STR	.	.	.	.	2'-8 3/4"
.	5	5	5	5	23'-6"	.	.	.	.	.	.	.
P503	4	4	4	12	23'-1"	289	20	10 1/2"	2'-3"	18'-4 1/4"	2'-3"	10 1/2"	
P504	8	8	8	24	15'-10"	396	STR	.	.	.	.	.
P505	15	15	15	45	24'-7"	1154	2	1'-3"	22'-4"	1'-3"	.	.	
P506	23	23	23	69	16'-7"	1193	2	1'-3"	14'-4"	1'-3"	.	.	
P507	104	102	98	304	11'-1"	3514	24	3'-10 1/2"	2'-6"	.	.	1'-11 1/4"	
P508	104	102	98	304	14'-6"	4598	STR	.	.	.	.	.
P509	468	459	441	1368	5'-2"	7372	17	4'-0"	.	.	.	.
P510	9	9	9	27	8'-7"	242	2	2'-5"	4'-0"	2'-5"	.	.	
P601	38	38	38	114	19'-8"	3367	2	8'-5 1/2"	3'-1"	8'-5 1/2"	.	.	
P602	38	38	38	114	10'-1"	1727	2	3'-8"	3'-1"	3'-8"	.	.	
.	2 SR	2 SR	2 SR	6 SR	10'-3"	.	.	3'-9"	.	3'-9"	.	.	
P603	OF	OF	OF	OF	TO	3304	2	TO	3'-1"	TO	.	0'-4 1/2"	
.	25	25	25	25	19'-1"	.	.	8'-2"	.	8'-2"	.	.	
P604	50	50	50	150	11'-3"	2535	2	4'-3"	3'-1"	4'-3"	.	.	
.	
.	2 SR	2 SR	2 SR	6 SR	11'-5"	.	.	4'-4"	.	4'-4"	.	.	
P605	OF	OF	OF	OF	TO	3548	2	TO	3'-1"	TO	.	0'-4 1/4"	
.	25	25	25	25	20'-1"	.	.	8'-8"	.	8'-8"	.	.	
P606	50	50	50	150	11'-3"	2535	2	4'-3"	3'-1"	4'-3"	.	.	
.	
P607	6	6	6	18	14'-10"	401	3	4'-5"	2'-9"	.	.	.	
P608	4	4	4	12	4'-1"	74	1	1'-6"	2'-9"	.	.	.	
P609	2 SR	2 SR	2 SR	6 SR	14'-4"	.	.	3'-10"	.	.	.	.
.	OF	OF	OF	OF	TO	680	3	TO	3'-1"	.	.	0'-4 1/2"	
.	5	5	5	5	15'-10"	.	.	4'-7"	.	.	.	.
P610	2 SR	.	.	2 SR	15'-10"	.	.	4'-6 3/4"	.	.	.	.
.	OF	.	.	OF	TO	248	3	TO	3'-1"	.	.	0'-4 1/4"	
.	5	.	.	5	17'-3"	.	.	5'-3 1/2"	.	.	.	.
P611	.	2 SR	.	2 SR	16'-0"	.	.	4'-8"	.	.	.	0'-4 1/2"	
.	OF	.	OF	TO	17'-6"	252	3	TO	3'-1"	.	.	.	
.	5	.	5	5	17'-6"	.	.	5'-4 3/4"	.	.	.	.
P612	.	.	2 SR	2 SR	16'-2"	.	.	4'-9"	.	.	.	0'-4 1/2"	
.	.	OF	OF	TO	17'-8"	254	3	TO	3'-1"	.	.	.	
.	.	5	5	5	17'-8"	.	.	5'-6"	.	.	.	.
P901	4	4	4	12	4'-5"	180	STR	.	.	.	.	.
P902	26	26	26	78	4'-0"	1061	1	1'-6"	2'-9"	.	.	.	
P1001	52	52	52	156	27'-4"	18348	1	3'-4"	24'-4"	.	.	.	
P1002	15	15	15	45	27'-8"	6072	2	2'-11"	22'-6"	2'-11"	.	.	
P1003	43	43	43	129	19'-8"	10917	2	2'-11"	14'-6"	2'-11"	.	.	
P1004	94	94	94	282	15'-3"	18505	1	1'-6"	14'-1"	.	.	.	
P1005	94	94	94	282	29'-9"	36100	STR	.	.	.	.	.
P1006	94	.	.	94	29'-8"	12000	STR	.	.	.	.	.
P1007	.	94	.	94	27'-11"	11292	STR	.	.	.	.	.
P1008	.	.	94	94	25'-9"	10415	STR	.	.	.	.	.
.	
SUB-TOTAL						164658							

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R	INC
DECK											
S401	845		29'-7"	16699	STR	.	.	.	.	.	.
S402	65		17'-11"	778	STR	.	.	.	.	.	.
S403	65		33'-7"	1458	STR	.	.	.	.	.	.
S404	576		25'-1"	9651	STR	.	.	.	.	.	.
S501	985		30'-0"	30821	STR	.	.	.	.	.	.
S502	994		21'-1"	21858	STR	.	.	.	.	.	.
.	1 SR		4'-7"	.	.	.	.	.	.	.	.
S503	OF		TO	351	STR	.	.	.	.	.	1'-1 3/4"
.	21		27'-6"	.	.	.	.	.	.	.	.
.	1 SR		2'-0"	.	.	.	.	.	.	.	.
S504	OF		TO	196	STR	.	.	.	.	.	1'-1 1/2"
.	17		20'-1"	.	.	.	.	.	.	.	.
.	1 SR		2'-0"	.	.	.	.	.	.	.	.
S505	OF		TO	448	STR	.	.	.	.	.	1'-1"
.	27		29'-10"	.	.	.	.	.	.	.	.
.	1 SR		4'-1"	.	.	.	.	.	.	.	.
S506	OF		TO	165	STR	.	.	.	.	.	1'-1 1/2"
.	14		18'-7"	.	.	.	.	.	.	.	.
.	2 SR		2'-0"	.	.	.	.	.	.	.	.
S507	OF		TO	618	STR	.	.	.	.	.	1'-1"
.	22		24'-11"	.	.	.	.	.	.	.	.
.	2 SR		3'-8"	.	.	.	.	.	.	.	.
S508	OF		TO	502	STR	.	.	.	.	.	1'-1 3/4"
.	18		23'-1"	.	.	.	.	.	.	.	.
S509	8		25'-7"	213	STR	.	.	.	.	.	.
S510	1980		25'-7"	52833	STR	.	.	.	.	.	.
S511	1980		7'-8"	15833	16	7'-4"	.	.	.	.	.
S601	845		30'-10"	39133	STR	.	.	.	.	.	.
S602	65		19'-1"	1863	STR	.	.	.	.	.	.
S603	65		34'-10"	3401	STR	.	.	.	.	.	.
SUB-TOTAL				196822							

NOTE:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STR" IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.

DESIGN AGENCY: HDR
 HDR ENGINEERING, INC.
 997 CLEVELAND ROAD SUITE 200
 CINCINNATI, OHIO 45242
 513-964-7500

DATE: 06/24/11
 REVIEWED: JMY
 STRUCTURE FILE NUMBER: 7306482

DRAWN: JSW
 CHECKED: DAT

REINFORCING STEEL LIST - RIGHT BRIDGE
 BRIDGE NO. SCI-823-0917 R
 S.R. 823 OVER PORTSMOUTH-MINFORD (S.R. 139)

SCI-823-0917
 PID No. 19415

29 / 32
 39 / 44

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	FWD	REAR	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS												
A501	12	12	24	32'-11"	824	STR	.	.	.	.	.	.
A502	62	62	124	16'-4"	2112	3	5'-6"	2'-6"	.	.	.	.
A503	50	50	100	17'-9"	1851	3	3'-3"	5'-6"	.	.	.	.
A504	7	7	14	18'-3"	267	2	8'-2"	2'-2"	8'-2 1/4"	.	.	.
A505	8	8	16	26'-9"	446	STR	.	.	.	.	.	.
A506	6	6	12	15'-11"	199	STR	.	.	.	.	.	.
A507	4	4	8	11'-10"	99	STR	.	.	.	.	.	.
A508	2	2	4	10'-3"	43	STR	.	.	.	.	.	.
A509	2	2	4	7'-3"	30	STR	.	.	.	.	.	.
A510	2	2	4	4'-3"	18	STR	.	.	.	.	.	.
A511	2	2	4	13'-2"	55	19	2'-2 1/2"	9'-9 3/4"	4'-11"	.	.	.
A512	1 SR OF	1 SR OF	2 SR OF	8'-2" TO	189	2	3'-1 1/2" TO	2'-2" TO	3'-1 1/2" TO	.	.	1'-7 1/4"
A513	72	72	144	12'-0"	1802	2	4'-6"	3'-3"	4'-6"	.	.	.
A514	36	36	72	8'-0"	601	2	2'-8"	2'-11"	2'-8"	.	.	.
A601	12	12	24	10'-2"	366	STR	.	.	.	.	.	.
A801	8	8	16	34'-2"	1460	STR	.	.	.	.	.	.
A802	8	8	16	31'-1"	1327	STR	.	.	.	.	.	.
A803	24	24	48	30'-10"	3952	STR	.	.	.	.	.	.
D801	33	33	66	4'-4"	764	18	2'-4 1/2"	1'-0"	1'-0"	.	.	.
SUB-TOTAL					16405							

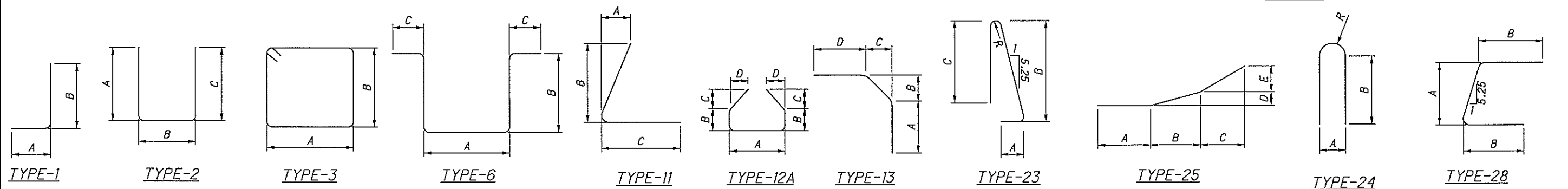
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	FWD	REAR	TOTAL				A	B	C	D	E	R	INC
APPROACH SLABS												
AS501	130	130	260	27'-0"	7320	STR	.	.	.	.	.	.
AS502	32	32	64	29'-6"	1966	STR	.	.	.	.	.	.
AS1001	89	89	178	30'-3"	23170	16	29'-6"	.	.	.	.	.
SUB-TOTAL					32456							

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL	A	B				C	D	E	R	INC	
PARAPETS												
R501	16	29'-7"	494	STR	.	.	.	.	.	.	.	.
R502	128	28'-5"	3794	STR	.	.	.	.	.	.	.	.
R503	96	29'-0"	2904	STR	.	.	.	.	.	.	.	.
R504	461	7'-10"	3766	23	1'-1"	3'-2"	3'-0"	.	.	.	0'-2 3/4"	.
R505	12	29'-8"	371	STR	.	.	.	.	.	.	.	.
R601	461	6'-2"	4270	1	1'-1"	5'-3"	.	.	.	.	.	.
R602	461	6'-4"	4385	H	1'-0"	5'-3"	1'-1"	.	.	.	.	.
R603	18	29'-8"	802	STR	.	.	.	.	.	.	.	.
R604	461	2'-8"	1846	1	1'-1"	1'-9"	.	.	.	.	.	.
R605	461	3'-8"	2539	28	1'-8"	1'-1"	.	.	.	.	.	.
R606	2	29'-8"	89	STR	.	.	.	.	.	.	.	.
SUB-TOTAL					25260							

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL	A	B				C	D	E	R	INC	
PIER DIAPHRAGMS												
D401	15	12'-3"	123	24	0'-5 1/2"	5'-10"	.	.	.	.	0'-2 1/4"	.
D402	15	4'-10"	48	12A	1'-11 1/2"	0'-6 1/4"	0'-8 1/2"	0'-8 1/2"	.	.	.	.
D403	.	NOT-USED	.	.	.	.	.	.	.	.	.	.
D404	15	15'-10"	159	6	2'-8"	6'-0"	0'-8"	.	.	.	.	.
D601	72	9'-7"	1036	STR	.	.	.	.	.	.	.	.
D802	96	11'-2"	2862	13	3'-3 3/4"	0'-8"	0'-8"	6'-11 1/2"	.	.	.	.
SUB-TOTAL					4228							

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STR" IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. SEE SHEET 29/32 FOR BENDING DIAGRAMS.

Page 36 of 38



P:\b\1601_D\15122\2\15122\051\EMISION D\15122\2013\MODELSHEET
 :000000004587823_091\ARL02.dgn

DESIGN AGENCY: HDR
 HDR ENGINEERING, INC.
 8987 CANTER ROAD SUITE 200
 CINCINNATI, OHIO 45242
 513-984-7500

REINFORCING STEEL LIST - RIGHT BRIDGE
 BRIDGE NO. SCI-823-0917 R
 S.R. 823 OVER PORTSMOUTH-MINFORD (S.R. 139)

DATE: 06/24/11
 REVIEWED: JIMY
 DRAWN: JWSW
 CHECKED: EJM/JWSW
 STRUCTURE FILE NUMBER: T306482

SCI-823-0917
 PID No. 19415

30 / 32
 40 / 44



ONE COMPANY
Many Solutions®

Project: Portsmouth Bypass-SCI-823-601 Computed: JMD Date: 9/24/2010
 Subject: Stage 3-Phase 10 Quantities Checked: LBD Date: 4/29/2013
 Task: Paving, Earthwork, & Seeding Calculations Page: 1 of: 1
 Job #: 00000000045878 No:



ITEM 670 - Slope Erosion Protection

(areas from Cadd \Rightarrow Approach Fill Cone less Item 601 crushed aggregate slope protection)

• Rear Abutment

• Right Side - $Area_{SEP} = 8,721.1 sf \left(\frac{sy}{9sf}\right)$

✓ $Area_{SEP} = 969.0 sy$

• Left Side - $Area_{SEP} = (5,207.1 sf + 1,913.8 sf) \left(\frac{sy}{9sf}\right)$

✓ $Area_{SEP} = 791.2 sy$

• Forward Abutment

• Right Side - $Area_{SEP} = 12,432.2 sf \left(\frac{sy}{9sf}\right)$

✓ $Area_{SEP} = 1,381.4 sy$

• Left Side - $Area_{SEP} = 10,295.4 sf \left(\frac{sy}{9sf}\right)$

✓ $Area_{SEP} = 1,143.9 sy$

