



Total Project Cost Estimate and Quantity Summary

Multnomah County | Earthquake Ready
Burnside Bridge Project

Portland, OR

October 30, 2023



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Attachment 1 – EQRB Total Project Cost Summary

EARTHQUAKE READY BURNSIDE BRIDGE COST ESTIMATE WORKSHEET



Alt1: Girder - Bascule - Cable Stayed Bridge Type Configuration

BRIDGE NUMBER(S): 00511, 00511A, 00511B				COUNTY Multnomah	
BRIDGE NAME Burnside Bridge and Approaches		STATE HIGHWAY NUMBER N/A		ROUTE NUMBER N/A	
Mile Post	SCOPE Alt1: Girder - Bascule - Cable Stayed Bridge Type Configuration	REFERENCE NAME/PHONE Steve Drahota / (503) 423-3712			SMD
				Date Entered:	Date Checked:
				8/3/2021	10/2/2022

No.	ITEM	UNIT	QUANTITY	UNIT COST	SUB TOTAL		Section Totals	Notes
	Preparation				Contingency =	15%	\$ 53,172,000	
	Mobilization	8.0% LS	1	\$ 18,990,000	\$ 18,990,000			
	Temp Erosion & Sediment Control	1.0% LS	1	\$ 2,374,000	\$ 2,374,000			
	Temp. Protection and Direction of Traffic	2.0% LS	1	\$ 4,748,000	\$ 4,748,000			
	Removal of Existing Structure and Obstruction	LS	1	\$ 16,500,000	\$ 16,500,000			
	Removal of Existing Buildings	LS	1	\$ 1,250,000	\$ 1,250,000			
	Site Preparation	1.0% LS	1	\$ 2,374,000	\$ 2,374,000			
	Civil/Roadwork				Contingency =	20%	\$ 16,193,000	
	Roadway Surface	LS	1	\$ 1,154,000	\$ 1,154,000			
	Traffic Signals	LS	1	\$ 1,200,000	\$ 1,200,000			
	Illumination	LS	1	\$ 926,000	\$ 926,000			
	Earthwork	LS	1	\$ 1,195,000	\$ 1,195,000			
	Storm Water & Drainage	LS	1	\$ 2,572,000	\$ 2,572,000			
	Erosion Control & Planting	1.00% LS	1	\$ 2,547,000	\$ 2,547,000			
	Pedestrian Connections (East-West Elev Basis)	LS	0	\$ -	\$ -			
	LRT Impacts	LS	1	\$ 2,320,000	\$ 2,320,000			
	Utilities	LS	1	\$ 1,580,000	\$ 1,580,000			
	Bridge Structure				Contingency =	25%	\$ 245,250,000	
	West Approach Conventional	LS	1	\$ 13,933,163	\$ 13,933,163			
	West Approach Long	LS	1	\$ 7,831,088	\$ 7,831,088			
	Main River Movable Span	LS	1	\$ 117,459,658	\$ 117,459,658			
	East Approach Long	LS	1	\$ 49,595,215	\$ 49,595,215			
	East Approach Conventional	LS	1	\$ 3,198,774	\$ 3,198,774			
	Pier Protection	LS	1	\$ 2,000,000	\$ 2,000,000			
	Harbor Wall Reconstruction	LS	0	\$ 1,500,000	\$ -			
	Existing Pier Rip-Rap Removal	LS	1	\$ 2,182,000	\$ 2,182,000			
	Temporary Construction				Contingency =	15%	\$ 31,830,000	
	Temporary Diversion Bridge	LS	0	\$ -	\$ -			
	Staged Construction Premium	LS	0	\$ -	\$ -			
	Temporary Marine Works (work bridges, cofferdams, etc.)	LS	1	\$ 27,678,000	\$ 27,678,000			
	Geotechnical Hazard Mitigation				Contingency =	15%	\$ 22,958,000	
	East Approach Ground Improvement	LS	1	\$ 19,962,963	\$ 19,962,963			
	West Approach Ground Improvement	LS	0	\$ -	\$ -			
	Other Related Items				Contingency =	30%	\$ 153,185,000	
	Aesthetics Premium	2% LS	1	\$ 5,000,000	\$ 5,000,000			
	Willamette River Mitigation (floodway, habitat)	LS	1	\$ 412,500	\$ 412,500			
	Contractor Access Premium (barges, RR, parks, off-site staging)	LS	1	\$ 15,000,000	\$ 15,000,000			
	Facility Impacts (classroom, Esplanade, Sat. Mkt, skatepark)	LS	1	\$ 1,500,000	\$ 1,500,000			
	Sewer pipe relocation (west bank)	LS	0	\$ 10,000,000	\$ -			
	TriMet (temporary catenary, bus bridge)	LS	0	\$ 800,000	\$ -			
	UPRR Protection and Flagging	LS	1	\$ 3,000,000	\$ 3,000,000			
	Gross Receipts Tax (3%)	LS	1	\$ 11,082,090	\$ 11,082,090			
	Contractor Work Zone Security	LS	1	\$ 3,000,000	\$ 3,000,000			
	Tug Assists	LS	1	\$ 800,000	\$ 800,000			
	River Patrol	LS	1	\$ 600,000	\$ 600,000			
	General Conditions (from Owner's Rep Ind Cost Estimate)	LS	1	\$ 77,440,000	\$ 77,440,000			(1)
	Construction Total with Contingency				Weighted Direct Contingency =	24.0%	\$ 522,588,000	
	Subtotal (wo Other Related Items)				\$ 303,570,861	\$ 369,403,000		
	Other Related Items				\$ 117,834,590	\$ 153,185,000		
	Cost Risk Analysis - Additional Contingency				\$ 22,400,000		\$ 22,400,000	
	Market Conditions, Material Fluctuations, Risks, and Uncertainties				Weighted Total Project Contingency =	29.3%		
	Right of Way						\$ 27,781,000	
	Engineering & Project Delivery						\$ 171,748,393	
	NEPA Phase				\$ -			
	PE (Incl. Design, PI, ROW Acquisition, OR, CMGC) + (PE)				\$ 90,000,000			
	County Admin. (Oversight, Permits, etc)				\$ -			
	Construction Engineering (CEI)	15%			\$ 81,748,393			
	Total Project Cost before Inflation (2022 \$)						\$ 744,517,393	(2)
	Const Cumulative Inflation (annual rate)	3.5% years	6.2	23.8%	\$ 143,677,000			(3)
	ROW Cumulative Inflation (annual rate)	5.0% years	4.5	24.6%	\$ 6,821,000			(4)
	Total Project Programmatic Cost (2028 \$)						\$ 895,015,393	

- Notes:
- General Conditions is estimated separately from the Direct Costs and Contingencies included within each item
 - Cost Risk Analysis was performed by an Independent CRA Specialist consistent with FHWA Procedures cited here: https://www.fhwa.dot.gov/majorprojects/cost_estimating/
 - This is the non-escalated subtotal of all Program costs (in 2022 dollars)
 - Equivalent time to mid-point of construction for various work packages (weighted)
 - Assumes ROW is acquired before construction phase of Main Construction Package

Attachment 2 – Structural Quantities and Cost Backup



BURNSIDE BRIDGE SUBSTRUCTURE COST BUILDUP				
Location and Item	Quantity	Unit	Unit Cost	Total
Bent 1	1	LS		2,522,868
Wf Abutment	1	LS		1,500,256
STRUCTURE EXCAVATION	715	CY	\$ 30.00	21,457
STRUCTURAL BACKFILL-LDCF	2212	CY	\$ 100.00	221,229
RETAINING WALL - NW	484	SF	\$ 150.00	72,600
RETAINING WALL - SW CIP	484	SF	\$ 150.00	72,600
RETAINING WALL - SW TIE BACK	2627	SF	\$ 400.00	1,050,800
REINFORCED CONCRETE MOMENT SLAB W/O BRIDGE RAIL	131	SY	\$ 470.00	61,570
Wc End Bent wall (Abutment Wall)	1	LS		202,935
GENERAL STRUCTURAL CONCRETE, CLASS 4000	212	CY	\$ 700.00	148,167
REINFORCEMENT, GRADE 60	47625	LB	\$ 1.15	54,769
REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Wd Shaft	1	LS		745,697
DRILLED SHAFT CONCRETE	187.2	CY	\$ 250.00	46,797
DRILLED SHAFT REINFORCEMENT, GRADE 60	0	LB	\$ 1.40	0
DRILLED SHAFT REINFORCEMENT, GRADE 80	46797	LB	\$ 1.50	70,195
CSL TEST ACCESS TUBES	2145	FT	\$ 9.00	19,305
CSL TEST	11	EA	\$ 3,400.00	37,400
DRILLED SHAFT EXCAVATION, 36 INCH DIAMETER	715	FT	\$ 800.00	572,000
PERMANENT SHAFT CASINGS, 36 INCH DIAMETER	0	FT	\$ 840.00	0
We Shaft Cap	1	LS		73,980
FOUNDATION CONCRETE, CLASS 4000	86.1	CY	\$ 600.00	51,689
REINFORCEMENT, GRADE 60	19383	LB	\$ 1.15	22,291
REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Bent 2	1	LS		758,143
Wc Column	1	LS		74,262
GENERAL STRUCTURAL CONCRETE, CLASS 4000	72	CY	\$ 700.00	50,580
REINFORCEMENT, GRADE 60	20593	LB	\$ 1.15	23,682
REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Wd Shaft	1	LS		683,881
FURNISH DRILLING EQUIPMENT_LAND_MINOR	1	EA	\$ 100,000.00	100,000
DRILLED SHAFT CONCRETE	290	CY	\$ 250.00	72,606
DRILLED SHAFT REINFORCEMENT, GRADE 60	0	LB	\$ 1.40	0
DRILLED SHAFT REINFORCEMENT, GRADE 80	76962	LB	\$ 1.50	115,443
CSL TEST ACCESS TUBES	1248	FT	\$ 9.00	11,232
CSL TEST	3	EA	\$ 3,400.00	10,200
DRILLED SHAFT EXCAVATION, 96 INCH DIAMETER	156	FT	\$ 2,400.00	374,400
PERMANENT SHAFT CASINGS, 96 INCH DIAMETER	0	FT	\$ 1,600.00	0
Wc Strut	1	LS		0
GENERAL STRUCTURAL CONCRETE, CLASS 4000	0	CY	\$ 700.00	0
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Bent 3	1	LS		1,011,977
Wc Column	1	LS		95,667
GENERAL STRUCTURAL CONCRETE, CLASS 4000	93	CY	\$ 700.00	65,159
REINFORCEMENT, GRADE 60	26529	LB	\$ 1.15	30,508
REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Wd Shaft	1	LS		916,310
FURNISH DRILLING EQUIPMENT_LAND_MINOR	1	EA	\$ 100,000.00	100,000
DRILLED SHAFT CONCRETE	515	CY	\$ 250.00	128,718
DRILLED SHAFT REINFORCEMENT, GRADE 60	0	LB	\$ 1.40	0
DRILLED SHAFT REINFORCEMENT, GRADE 80	136441	LB	\$ 1.50	204,662
CSL TEST ACCESS TUBES	1770	FT	\$ 9.00	15,930
CSL TEST	2	EA	\$ 3,400.00	6,800
DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	177	FT	\$ 2,600.00	460,200
PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	0	FT	\$ 2,200.00	0



Wc	Strut	1	LS		0
	GENERAL STRUCTURAL CONCRETE, CLASS 4000	0	CY	\$ 700.00	0
	REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Bent 4		1	LS		1,006,657
Wc	Column	1	LS		99,494
	GENERAL STRUCTURAL CONCRETE, CLASS 4000	97	CY	\$ 700.00	67,765
	REINFORCEMENT, GRADE 60	27590	LB	\$ 1.15	31,729
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Wd	Shaft	1	LS		907,163
	FURNISH DRILLING EQUIPMENT_LAND_MINOR	1	EA	\$ 100,000.00	100,000
	DRILLED SHAFT CONCRETE	509	CY	\$ 250.00	127,264
	DRILLED SHAFT REINFORCEMENT, GRADE 60	0	LB	\$ 1.40	0
	DRILLED SHAFT REINFORCEMENT, GRADE 80	134899	LB	\$ 1.50	202,349
	CSL TEST ACCESS TUBES	1750	FT	\$ 9.00	15,750
	CSL TEST	2	EA	\$ 3,400.00	6,800
	DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	175	FT	\$ 2,600.00	455,000
	PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	0	FT	\$ 2,200.00	0
Wc	Strut	1	LS		0
	GENERAL STRUCTURAL CONCRETE, CLASS 4000	0	CY	\$ 700.00	0
	REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Bent 5		1	LS		1,375,101
Wc	Column	1	LS		58,624
	GENERAL STRUCTURAL CONCRETE, CLASS 4000	64	CY	\$ 700.00	44,960
	REINFORCEMENT, GRADE 60	11882	LB	\$ 1.15	13,665
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Wd	Shaft	1	LS		1,316,477
	FURNISH DRILLING EQUIPMENT_LAND_MINOR	1	EA	\$ 100,000.00	100,000
	DRILLED SHAFT CONCRETE	623	CY	\$ 250.00	155,625
	DRILLED SHAFT REINFORCEMENT, GRADE 60	164963	LB	\$ 1.40	230,948
	DRILLED SHAFT REINFORCEMENT, GRADE 80	164963	LB	\$ 1.50	247,444
	CSL TEST ACCESS TUBES	2140	FT	\$ 9.00	19,260
	CSL TEST	2	EA	\$ 3,400.00	6,800
	DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	214	FT	\$ 2,600.00	556,400
	PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	0	FT	\$ 2,200.00	0
Wc	Strut	1	LS		0
	GENERAL STRUCTURAL CONCRETE, CLASS 4000	0	CY	\$ 700.00	0
	REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
Bent 6&7		1	LS		58,053,545
We	Shaft Cap & Pier	1	LS		34,976,000
	PILE CAP	1	LS	\$ 18,318,000.00	18,318,000
	Substrucutre	1	LS	\$ 8,274,000.00	8,274,000
	BOLLARDS	8	EA	\$ 48,000.00	384,000
	DRILLED SHAFT CONSTRUCTION THRU EXISTING BRIDGE	2	EA	\$ 4,000,000.00	8,000,000
Wd	Shaft	1	LS		23,077,545
	FURNISH DRILLING EQUIPMENT_WATER	2	EA	\$ 1,400,000.00	2,800,000
	DRILLED SHAFT CONCRETE	10777.0	CY	\$ 250.00	2,694,250
	DRILLED SHAFT REINFORCEMENT, GRADE 60	0	LB	\$ 1.40	0
	DRILLED SHAFT REINFORCEMENT, GRADE 80	4310963	LB	\$ 1.50	6,466,445
	CSL TEST ACCESS TUBES	37050	FT	\$ 9.00	333,450
	CSL TEST	26	EA	\$ 3,400.00	88,400
	DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	2340	FT	\$ 2,600.00	6,084,000
	PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	1755	FT	\$ 2,200.00	3,861,000
	O-CELL LOAD TEST	3	EA	\$ 250,000.00	750,000



Bent 8		1	LS		13,494,975
We COLUMN		1	LS		6,956,435
GENERAL STRUCTURAL CONCRETE, CLASS 800C STRUCTURAL STEEL - TIE BOX POST-TENSIONING TIE-DOWN REINFORCEMENT, GRADE 60 REINFORCEMENT, GRADE 80	2586	CY	\$	1,550.00	4,008,300
	162288	LB	\$	4.00	649,152
	24881	LB	\$	10.00	248,810
	1922	LB	\$	30.00	57,660
	1732620	LB	\$	1.15	1,992,513
	0	LB	\$	1.25	0
We Shaft Cap		1	LS		2,893,333
GENERAL STRUCTURAL CONCRETE, CLASS 400C REINFORCEMENT, GRADE 60 REINFORCEMENT, GRADE 80	3111	CY	\$	700.00	2,177,778
	622222	LB	\$	1.15	715,556
	0	LB	\$	1.25	0
We Shaft		1	LS		3,645,207
FURNISH DRILLING EQUIPMENT_LAND_MAJOR DRILLED SHAFT CONCRETE DRILLED SHAFT REINFORCEMENT, GRADE 60 DRILLED SHAFT REINFORCEMENT, GRADE 80 CSL TEST ACCESS TUBES CSL TEST DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	1	EA	\$	150,000.00	150,000
	2356.2	CY	\$	250.00	589,049
	0	LB	\$	1.40	0
	471239	LB	\$	1.50	706,858
	8100	FT	\$	9.00	72,900
	6	EA	\$	3,400.00	20,400
	810	FT	\$	2,600.00	2,106,000
	0	FT	\$	2,200.00	0
Bent 9		1	LS		896,683
Wc Column		1	LS		0
GENERAL STRUCTURAL CONCRETE, CLASS 400C REINFORCEMENT, GRADE 60 REINFORCEMENT, GRADE 80	0	CY	\$	700.00	0
	0	LB	\$	1.15	0
	0	LB	\$	1.25	0
Wd Shaft		1	LS		896,683
FURNISH DRILLING EQUIPMENT_LAND_MINOR DRILLED SHAFT CONCRETE DRILLED SHAFT REINFORCEMENT, GRADE 60 DRILLED SHAFT REINFORCEMENT, GRADE 80 CSL TEST ACCESS TUBES CSL TEST DRILLED SHAFT EXCAVATION, 96 INCH DIAMETER PERMANENT SHAFT CASINGS, 96 INCH DIAMETER	1	EA	\$	100,000.00	100,000
	417	CY	\$	250.00	104,250
	0	LB	\$	1.40	0
	83403	LB	\$	1.50	125,105
	1792	FT	\$	9.00	16,128
	4	EA	\$	3,400.00	13,600
	224	FT	\$	2,400.00	537,600
	0	FT	\$	1,600.00	0
Bent 10		1	LS		1,912,925
Wf Abutment		1	LS		765,229
STRUCTURE EXCAVATION GRANULAR STRUCTURE BACKFILL NE RETAINING WALL SE RETAINING WALL REINFORCED CONCRETE MOMENT SLAB W/O BRIDGE RAIL	315	CY	\$	30.00	9,456
	57	CY	\$	55.00	3,152
	236	SF	\$	150.00	35,400
	2679	SF	\$	250.00	669,750
	101	SY	\$	470.00	47,470
Wc End Bent wall (Abutment Wall)		1	LS		676,938
GENERAL STRUCTURAL CONCRETE, CLASS 400C REINFORCEMENT, GRADE 60 REINFORCEMENT, GRADE 80	215.1	CY	\$	700.00	150,535
	48386	LB	\$	1.15	55,644
	0	LB	\$	1.25	0
Wd Shaft		1	LS		470,758
DRILLED SHAFT CONCRETE DRILLED SHAFT REINFORCEMENT, GRADE 60 DRILLED SHAFT REINFORCEMENT, GRADE 80 CSL TEST ACCESS TUBES CSL TEST DRILLED SHAFT EXCAVATION, 36 INCH DIAMETER PERMANENT SHAFT CASINGS, 36 INCH DIAMETER	180.1	CY	\$	250.00	45,029
	0	LB	\$	1.40	0
	47731	LB	\$	1.50	71,597
	1548	FT	\$	9.00	13,932
	9	EA	\$	3,400.00	30,600
	387	FT	\$	800.00	309,600
	0	FT	\$	840.00	0
				TOTAL	81,032,873



BURNSIDE BRIDGE SUPERSTRUCTURE COST BUILDUP				
Location and Item	Quantity	Unit		Total
Span 1	1	LS		391,845
Wa Prestressed slab	1	LS		391,845
PRESTRESSED 30" VOIDED SLAB	1500	LF	\$ 250.00	375,000
EXPANSION JOINT - ASPHALT PLUG SEAL	112.300	FT	\$ 150.00	16,845
Wb Cap beams and diaphragms	1	LS		0
GENERAL STRUCTURAL CONCRETE, CLASS 400C	0	CY	\$ 700.00	0
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
Span 2	1	LS		1,461,218
Wa Girder	1	LS		1,291,445
STEEL PLATE GIRDER WITH HAUNCH	441980.000	LB	\$ 2.75	1,215,445
EXPANSION JOINT - STRIP SEAL, SINGLE	82.000	FT	\$ 500.00	41,000
STEEL GIRDER BEARING DEVICE	7	EA	\$ 5,000.00	35,000
Wb Bent 2 Cap beams and diaphragms	1	LS		169,773
GENERAL STRUCTURAL CONCRETE, CLASS 400C	190	CY	\$ 700.00	133,306
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
REINFORCEMENT, GRADE 80	29173	LB	\$ 1.25	36,467
Span 3	1	LS		1,714,883
Wa Girder	1	LS		1,406,444
STEEL PLATE GIRDER WITH HAUNCH	511434.000	LB	\$ 2.75	1,406,444
Wb Bent 3 Cap beams and diaphragms	1	LS		308,440
GENERAL STRUCTURAL CONCRETE, CLASS 400C	314	CY	\$ 700.00	220,033
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
REINFORCEMENT, GRADE 80	70725	LB	\$ 1.25	88,406
Span 4	1	LS		1,663,752
Wa Girder	1	LS		1,315,082
STEEL PLATE GIRDER WITH HAUNCH	435666.000	LB	\$ 2.75	1,198,082
STEEL GIRDER BEARING DEVICE	7	EA	\$ 5,000.00	35,000
EXPANSION JOINT - STRIP SEAL, DOUBLE	82.000	FT	\$ 1,000.00	82,000
Wb Bent 4 Cap beams and diaphragms	1	LS		348,671
GENERAL STRUCTURAL CONCRETE, CLASS 400C	355	CY	\$ 700.00	248,733
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
REINFORCEMENT, GRADE 80	79950	LB	\$ 1.25	99,938
Span 5	1	LS		5,762,040
Wa Steel Plate Girders	1	LS		5,476,252
STEEL PLATE GIRDER	2,146,101	LB	\$ 2.50	5,365,252
EXPANSION JOINT - STRIP SEAL, SINGLE	82.000	FT	\$ 500.00	41,000
STEEL GIRDER BEARING DEVICE	14	EA	\$ 5,000.00	70,000
Wb Bent 5 Cap beams and diaphragms	1	LS		285,788
GENERAL STRUCTURAL CONCRETE, CLASS 400C	317	CY	\$ 700.00	222,159
REINFORCEMENT, GRADE 60	2894	LB	\$ 1.15	3,329
REINFORCEMENT, GRADE 80	48240	LB	\$ 1.25	60,300
Span 6	1	LS		59,003,410
Wa BASCULE	1	LS		59,003,410
BASCULE	1	LS	\$ 59,003,409.79	59,003,410
Span 7 & 8 Cable Stay	1	LS		29,564,741
Wa Steel Cable Stay	1	LS		29,564,741
STEEL CABLE STAY	4,112,291	LB	\$ 3.25	13,364,946
EXPANSION JOINT - MODULAR CABLE STAY	190.000	FT	\$ 3,000.00	570,000
HORIZONTAL BEARING DEVICE	4	EA	\$ 25,000.00	100,000
VERTICAL BEARING DEVICE	6	EA	\$ 25,000.00	150,000
MAINTENANCE TRAVELLER	1	LS	\$ 1,000,000.00	1,000,000
STRUCTURAL STEEL - STAY CABLE	958,653	LB	\$ 15.00	14,379,795



Wb	Cap beams and diaphragms	1	LS		0
Span 8		1	LS		0
Wa	Girders	1	LS		0
Wb	Cap beams and diaphragms	1	LS		0
Span 9		1	LS		356,200
Wa	Prestressed box beam	1	LS		356,200
	PRESTRESSED 33" BOX BEAM	1360	LF	\$ 250.00	340,000
	EXPANSION JOINT - ASPHALT PLUG SEAL	108.000	FT	\$ 150.00	16,200
Wb	Cap beams and diaphragms	1	LS		0
	GENERAL STRUCTURAL CONCRETE, CLASS 400C	0	CY	\$ 700.00	0
	REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
	REINFORCEMENT, GRADE 80	0	LB	\$ 1.25	0
TOTAL					99,918,089



BURNSIDE BRIDGE SLAB AND BARRIER COST BUILDUP				
Location and Item	Quantity	Unit		Total
Span 1	1	LS		382,827
Wg Approach slabs	1	LS		122,618
REINFORCED CONCRETE BRIDGE END PANELS	378	SY	\$ 324.00	122,618
Wh Deck slabs	1	LS		260,208
DECK CONCRETE, CLASS HPC 4500	209	CY	\$ 900.00	188,103
REINFORCEMENT, GRADE 60	62701	LB	\$ 1.15	72,106
Span 2	1	LS		695,644
Wh Deck slabs	1	LS		695,644
DECK CONCRETE, CLASS HPC 4500	559	CY	\$ 900.00	502,875
REINFORCEMENT, GRADE 60	167625	LB	\$ 1.15	192,769
Span 3	1	LS		603,352
Wh Deck slabs	1	LS		603,352
DECK CONCRETE, CLASS HPC 4500	485	CY	\$ 900.00	436,158
REINFORCEMENT, GRADE 60	145386	LB	\$ 1.15	167,194
Span 4	1	LS		513,966
Wh Deck slabs	1	LS		513,966
DECK CONCRETE, CLASS HPC 4500	413	CY	\$ 900.00	371,542
REINFORCEMENT, GRADE 60	123847	LB	\$ 1.15	142,424
Span 5	1	LS		1,087,523
Wh Deck slabs	1	LS		1,087,523
DECK CONCRETE, CLASS HPC 4500	874	CY	\$ 900.00	786,161
REINFORCEMENT, GRADE 60	262054	LB	\$ 1.15	301,362
Span 6	1	LS		0
Wh Deck slabs	1	LS		0
	0			
	0			
Span 7	1	LS		4,199,612
Wh Deck slabs	1	LS		4,199,612
PRECAST DECK PANEL	87950	SF	\$ 38.00	3,342,099
DECK OVERLAY	87950	SF	\$ 9.75	857,512
Span x ----- DO NOT USED	1	LS		0
Wh Deck slabs	1	LS		0
Span 8	1	LS		0
Wh Deck slabs	1	LS		0
DECK CONCRETE, CLASS HPC 4500	0	CY	\$ 900.00	0
REINFORCEMENT, GRADE 60	0	LB	\$ 1.15	0
Span 9	1	LS		400,767
Wh Deck slabs	1	LS		278,149
DECK CONCRETE, CLASS HPC 4500	223	CY	\$ 900.00	201,071
REINFORCEMENT, GRADE 60	67024	LB	\$ 1.15	77,077
Wg Approach slabs	1	LS		122,618
REINFORCED CONCRETE BRIDGE END PANELS	378	SY	\$ 324.00	122,618
Span 1-8	1	LS		3,183,246
Wi Traffic Barriers		LS		3,183,246
COMBINATION RAIL	2574	FT	\$ 251.19	646,563
PEDESTRIAN RAIL	6594	FT	\$ 252.19	1,662,941
VEHICLE RAIL	2010	FT	\$ 136.19	273,742
ORNAMENTAL FENCE	1200	FT	\$ 500.00	600,000
TOTAL				11,066,937



BURNSIDE BRIDGE MISCELLANEOUS COST BUILDUP				
Location and Item	Quantity	Unit		Total
Existing bridge removal	1	LS		16,500,000
Wj Existing bridge removal	1	LS		16,500,000
EXISTING BRIDGE REMOVAL	220000	SF	\$ 75.00	16,500,000
Existing building removal	1	LS		1,250,000
Wj Existing building removal	1	LS		1,250,000
EXISTING BUILDING REMOVAL	1	LS	\$ 1,250,000.00	1,250,000
Temporary bridge construction	1	LS		
Wk Temporary bridge construction	1	LS		
TEMP BRIDGE MOVABLE		EA	\$ 1.00	
BIKE/PED TEMPORARY BRIDGE		EA	\$ 1.00	
Staging construction	1	LS		0
Wl Staging construction	1	LS		0
STAGING CONST. PREMIUM		LF	\$ 2,000.00	0

Notes:

- a Furnish Drilling Equipment assumes \$100,000 for each approach (conventional and long) plus additional cost provided by Kevin.
LS items in Kevins estimate were split at 1/5 for each approach (1/10 conventional and 1/10 long) and (3/5) for the main span
Area is rounded to the nearest thousand square feet with an additional
- b 10% added to account for changing roadway widths

Attachment 3 – Movable Bridge Superstructure Quantities and Cost Backup

Structural - Bascule Movable Span and Piers						
Location and Item		Quantity	Unit	Unit Cost	Total	
		1	LS		\$ 59,003,409.79	
Deck		1	LS		\$ 2,564,023.88	
	DB-Steel Grating	353,338	LBS	\$ 6.00	\$ 2,120,028.00	
	DB-Deck Concrete	323	CY	\$ 900.00	\$ 290,845.52	
	DB-Deck Reinforcement	133,174	LBS	\$ 1.15	\$ 153,150.37	
Superstructure					\$ 21,580,268.10	
	DB-Structural Steel (FCM)	2,160,407	LBS	\$ 6.00	\$ 12,962,444.49	
	DB-Structural Steel	1,645,461	LBS	\$ 2.50	\$ 4,113,652.05	
	DB-Steel Ballast	1,150,663		\$ 2.00	\$ 2,301,325.21	
	DB-Counterweight Concrete	1,550		\$ 700.00	\$ 1,084,745.98	
	DB-Counterweight Reinforcement	170,460		\$ 1.15	\$ 196,029.09	
	DB-Counterweight Balance Blocks (Cast Iron)	122,429	LBS	\$ 2.50	\$ 306,071.29	
	DB-Expansion Joints	246	LF	\$ 2,000.00	\$ 492,000.00	
	DB-Bearings	8	EA	\$ 15,500.00	\$ 124,000.00	
	Pier Span Superstructure				\$ 2,855,533.83	
	DB-Deck Concrete	648	CY	\$ 900.00	\$ 583,111.11	
	DB-Deck Reinforcement	132,820	LBS	\$ 1.15	\$ 152,742.72	
	DB-Structural Steel	847,872	LBS	\$ 2.50	\$ 2,119,680.00	
Machinery					\$ 19,495,000.00	
	DB-Tail Locks	8	EA	\$ 250,000.00	\$ 2,000,000.00	
	DB-Toe Span Locks	8	EA	\$ 400,000.00	\$ 3,200,000.00	
	DB-Centering Device	4	EA	\$ 100,000.00	\$ 400,000.00	
	DB-Seismic Guide	4	EA	\$ 150,000.00	\$ 600,000.00	
	Operating Machinery	DB-Pinion Shafts	8	EA	\$ 50,000.00	\$ 400,000.00
		DB-Pinion Bearings	16	EA	\$ 10,000.00	\$ 160,000.00
		DB-Secondary Reducers	8	EA	\$ 500,000.00	\$ 4,000,000.00
		DB-Machinery Brakes	8	EA	\$ 20,000.00	\$ 160,000.00
		DB-Primary Reducers	4	EA	\$ 450,000.00	\$ 1,800,000.00
DB-Motors		8	EA	\$ 40,000.00	\$ 320,000.00	
DB-Motor Brakes		8	EA	\$ 15,000.00	\$ 120,000.00	
DB-Shafts & Couplings		4	EA	\$ 15,000.00	\$ 60,000.00	
Trunnion Assembly						
	DB-Trunnion Shaft & Hub	8	EA	\$ 250,000.00	\$ 2,000,000.00	
	DB-Trunnion Bearings	16	EA	\$ 50,000.00	\$ 800,000.00	
	DB-Trunnion Towers	8	EA	\$ 350,000.00	\$ 2,800,000.00	
Machinery Supports						
	DB-Machinery Supports	4	EA	\$ 150,000.00	\$ 600,000.00	
Balance and Load Testing	DB-Balance and Load Testing	1	LS	\$ 75,000.00	\$ 75,000.00	
Electrical & Control Systems					\$ 6,644,364.90	
Electrical Machinery	DB-100 hp Buy America main motor	8	EA	\$ 65,000.00	\$ 520,000.00	
	DB-10" By America brake	8	EA	\$20,000.00	\$ 160,000.00	
	DB-17" By America brake	8	EA	\$34,000.00	\$ 272,000.00	
	DB-Buy America tail lock motor	4	EA	\$7,500.00	\$ 30,000.00	
Power Distribution (400 amp service)	DB-Power Distribution (400 amp service)	2	EA	\$150,000.00	\$ 300,000.00	
Automatic Transfer Switch (ATS)						
	DB-Automatic Transfer Switch (ATS)	2	EA	\$25,000.00	\$ 50,000.00	
Control System						
	DB-PLC and control console	1	EA	\$200,000.00	\$ 200,000.00	
	DB-125 hp VFD	8	EA	\$40,000.00	\$ 320,000.00	
	DB-instrumentation	4	EA	\$12,000.00	\$ 48,000.00	
Motor Control Center (near side)						
	DB-sections	5	EA	\$2,000.00	\$ 10,000.00	
	DB-main breaker 400 amp	1	EA	\$5,000.00	\$ 5,000.00	
	DB-feeder breaker	3	EA	\$3,500.00	\$ 10,500.00	
	DB-size 1 fvr	10	EA	\$3,000.00	\$ 30,000.00	
	DB-size 1 fvnr	8	EA	\$2,000.00	\$ 16,000.00	
	DB-misc	1	EA	\$20,000.00	\$ 20,000.00	
Motor Control Center (far side)						
	DB-sections	5	EA	\$2,000.00	\$ 10,000.00	
	DB-main breaker 400 amp	1	EA	\$5,000.00	\$ 5,000.00	
	DB-feeder breaker	3	EA	\$3,500.00	\$ 10,500.00	
	DB-size 1 fvr	6	EA	\$3,000.00	\$ 18,000.00	
	DB-size 1 fvnr	8	EA	\$2,000.00	\$ 16,000.00	
	DB-misc	1	EA	\$20,000.00	\$ 20,000.00	

Control System Vendor OH&P (21%)	DB-Control System Vendor OH&P (21%)	1	LS	\$155,190.00	\$ 155,190.00
House Heating, Lighting and Receptacles	DB-House Heating, Lighting and Receptacles	2	EA	\$100,000.00	\$ 200,000.00
Conduit and Raceway and conductor	DB-Conduit and Raceway and conductor	2	EA	\$250,000.00	\$ 500,000.00
Generator (400 kW Diesel genset)	DB-Generator (400 kW Diesel genset)	2	EA	\$400,000.00	\$ 800,000.00
Navigation Lights	DB-midspan	8	EA	\$4,000.00	\$ 32,000.00
	DB-pier protection	8	EA	\$1,500.00	\$ 12,000.00
Traffic Control Equipment	DB-Gongs/Bells/Signals	8	EA	\$1,000.00	\$ 8,000.00
	DB-Barrier Gates	4	EA	\$60,000.00	\$ 240,000.00
	DB-Warning/Traffic Gates	8	EA	\$40,000.00	\$ 320,000.00
CCTV	DB-cameras	12	EA	\$3,500.00	\$ 42,000.00
	DB-camera controller	1	EA	\$15,000.00	\$ 15,000.00
	DB-misc(CTV)	1	EA	\$10,000.00	\$ 10,000.00
House/Span Communication Intercom	DB-master station	1	EA	\$2,500.00	\$ 2,500.00
	DB-remote station	8	EA	\$1,500.00	\$ 12,000.00
Navigation Communication Radio	DB-Navigation Communication Radio	1	EA	\$5,000.00	\$ 5,000.00
Sump Pumps	DB-Sump Pumps	4	EA	\$6,500.00	\$ 26,000.00
Labor	DB-Labor	1	LS	\$1,040,000.00	\$ 1,040,000.00
Electrical Contractor OH&P (21%)	DB-Electrical Contractor OH&P (21%)	1	LS	\$1,153,674.90	\$ 1,153,674.90
Electrical & Control Systems					\$ 500,000.00
	DB-Control House	1	LS	\$500,000.00	\$ 500,000.00
Contingency for Miscellaneous Items Not Directly Quantified					\$ 5,364,219.07
	DB-Misc. Items Contingency	1	LS	\$5,364,219.07	\$ 5,364,219.07

Total	\$ 59,003,409.79
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Attachment 4 – Movable Bridge Substructure Quantities and Cost Backup

Structural - Movable Substructure Span and Piers				
Location and Item	Quantity	Unit	Unit Cost	Total
Bent 5 and Bent 6	1	LS		\$ 26,592,000
Longitudinal Tie	1	LS		\$ 326,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 5000	251	CY	\$ 800.00	\$ 200,750.08
REINFORCEMENT, GRADE 60_COMPLEX	100,375	LB	\$ 1.25	\$ 125,468.80
Cross Tie - Trunnion Side	1	LS		\$ 856,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 5000	658	CY	\$ 800.00	\$ 526,593.52
REINFORCEMENT, GRADE 60_COMPLEX	263,297	LB	\$ 1.25	\$ 329,120.95
Cross Tie - Approach Side	1	LS		\$ 863,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 5000	664	CY	\$ 800.00	\$ 530,900.48
REINFORCEMENT, GRADE 60_COMPLEX	265,450	LB	\$ 1.25	\$ 331,812.80
Trunnion Side Wall	1	LS		\$ 1,905,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 6000	1,016	CY	\$ 1,500.00	\$ 1,523,830.90
REINFORCEMENT, GRADE 60_COMPLEX	304,766	LB	\$ 1.25	\$ 380,957.73
Approach Side Wall	1	LS		\$ 2,911,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 6000	1,553	CY	\$ 1,500.00	\$ 2,329,052.71
REINFORCEMENT, GRADE 60_COMPLEX	465,811	LB	\$ 1.25	\$ 582,263.18
Fascia Wall	1	LS		\$ 1,359,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 4000	1,430	CY	\$ 700.00	\$ 1,001,349.42
REINFORCEMENT, GRADE 60_COMPLEX	286,100	LB	\$ 1.25	\$ 357,624.79
Trunnion Pedestal	1	LS		\$ 54,000.00
GENERAL STRUCTURAL CONCRETE, CLASS 4000	57	CY	\$ 700.00	\$ 39,822.22
REINFORCEMENT, GRADE 60_COMPLEX	11,378	LB	\$ 1.25	\$ 14,222.22
Post-Tensioning	1	LS		\$ -
POST-TENSIONING	-	LB	\$ 10.00	\$ -
Pile Cap	1	LS		\$ 18,318,000
FOUNDATION CONCRETE, CLASS 4000	14,862	CY	\$ 600.00	\$ 8,917,333
REINFORCEMENT, GRADE 60	8,174,222	LB	\$ 1.15	\$ 9,400,356
PILE CAP				\$ 18,318,000
Substructure				\$ 8,274,000
Total Replace				\$ 26,592,000

Notes:

1. Reinf Ratio and Unit Cost are entered as place holders and need to be updated with detailed design
2. Concrete and Reinforcement are separated for each subcomponent to allow for changes to reinforcement grade, Reinf. Ratio etc.
3. By inspection, Bent 5 and Bent 6 have the same volume, therefore subcomponents are combined in cost breakdown above

Entered by: **Eric Rau**

Date: **10/3/2021**

DECK-JUMP SPAN
Longitudinal Tie
Cross Tie - Trunnion Side
Cross Tie - Approach Side
Trunnion Side Wall
Approach Side Wall
Fascia Wall
Trunnion Pedestal

PILE CAP

SUBSTRUCTURE VOLUME-SUMMARY				
Volume ft ³	Volume (x 2 bent) ft ³	Volume CY	Reinf. Ratio lb/CY	Reinf. Weight lb
0	0	0	300.00	0
3,388	6,775	251	400.00	100,375
8,886	17,773	658	400.00	263,297
8,959	17,918	664	400.00	265,450
13,714	27,429	1,016	300.00	304,766
20,961	41,923	1,553	300.00	465,811
19,312	38,623	1,430	200.00	286,100
768	1,536	57	200.00	11,378
			200.00	-
200,640	401,280	14,862	550.00	8,174,222

Attachment 5 – Civil / Roadway Quantities and Cost Backup

Civil/Roadwork				
Location and Item	Quantity	Unit	Unit Cost	Total
Approaches				
Roadway Surface	1	LS		\$ 1,154,000.00
West Approach				
ACP - 10" Full Depth	2440	SY	\$ 67.50	\$ 164,700.00
Agg Base - 12"	2440	SY	\$ 44.55	\$ 108,702.00
ACP - 6" Grind/Inlay	550	SY	\$ 60.50	\$ 33,275.00
West Under Bridge				
ACP - 4" Full Depth	5700	SY	\$ 27.00	\$ 153,900.00
Agg Base - 8"	5700	SY	\$ 29.70	\$ 169,290.00
ACP - 6" Grind/Inlay	0	SY	\$ 60.50	\$ -
East Approach				
ACP - 10" Full Depth	2130	SY	\$ 67.50	\$ 143,775.00
Agg Base - 12"	2130	SY	\$ 44.55	\$ 94,891.50
ACP - 6" Grind/Inlay	0	SY	\$ 60.50	\$ -
East Under Bridge				
ACP - 4" Full Depth	4540	SY	\$ 27.00	\$ 122,580.00
Agg Base - 8"	4540	SY	\$ 29.70	\$ 134,838.00
ACP - 6" Grind/Inlay	460	SY	\$ 60.50	\$ 27,830.00
Earthwork	1	LS		\$ 1,195,000.00
West Approach				
Roadway Removal	1360	CY	\$ 65.00	\$ 88,400.00
Contaminated Material Haul	1836	TON	\$ 100.00	\$ 183,600.00
West Under Bridge				
Pavement Removal	1900	CY	\$ 65.00	\$ 123,500.00
Contaminated Material Haul	2565	TON	\$ 100.00	\$ 256,500.00
East Approach				
Roadway Removal	1190	CY	\$ 65.00	\$ 77,350.00
Contaminated Material Haul	1607	TON	\$ 100.00	\$ 160,700.00
East Under Bridge				
Pavement Removal	1520	CY	\$ 65.00	\$ 98,800.00
Contaminated Material Haul	2052	TON	\$ 100.00	\$ 205,200.00
Traffic Signals	1	LS		\$ 1,200,000.00
West Approach				
Signal Replacement	1	EACH	\$ 400,000.00	\$ 400,000.00
East Approach				
Signal Replacement	2	EACH	\$ 400,000.00	\$ 800,000.00
Main Span				
Drainage	1	LS		\$ 2,572,000.00
12" Pipe	5300	FT	\$ 150.00	\$ 795,000.00
Catch Basin	22	EACH	\$ 3,500.00	\$ 77,000.00
Water Quality Vaults	1	LS	\$ 1,700,000.00	\$ 1,700,000.00
Water Quality Vaults (Full Temp BR)	0	LS	\$ -	\$ -
Illumination	1	LS		\$ 926,000.00
Pole Foundations	36	EACH	\$ 5,000.00	\$ 180,000.00
Luminaires, Lamps and Ballasts	36	EACH	\$ 1,000.00	\$ 36,000.00
Switching, Conduit and Wiring	5300	FT	\$ 100.00	\$ 530,000.00
Lighting Poles and Arms	36	EACH	\$ 5,000.00	\$ 180,000.00
LRT Impacts				
LRT System Restoration	1	LS		\$ 2,320,000.00
Platform Restoration	1	LS	\$ 2,000,000.00	\$ 2,000,000.00
Overhead System Repair	1	LS	\$ 320,000.00	\$ 320,000.00

Total	\$	9,367,000.00
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Temporary Construction/Other Related Items				
Location and Item	Quantity	Unit	Unit Cost	Total
LRT Impacts				
LRT Temporary Maintenance	1	LS		\$ 800,000.00
Temporary Overhead System	1	LS	\$ 240,000.00	\$ 240,000.00
LRT Bus Bridge	28	DAY	\$ 20,000.00	\$ 560,000.00
UPRR Impacts				
UPRR Protection and Flagging	1	LS		\$ 3,000,000.00
UPRR Protection	1	LS	\$ 2,000,000.00	\$ 2,000,000.00
UPRR Flagging	1	LS	\$ 1,000,000.00	\$ 1,000,000.00

Total	\$ 3,800,000.00
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Attachment 6 – Ground Improvement Quantities and Cost Backup

GEOTECHNICAL HAZARD MITIGATION				
Location and Item	Quantity	Unit	Unit Cost	Total
West Cellular Soil-Cement (CSC) G-I	1	LS		\$ -
West Riverbank	0	CY	\$ 650.00	\$ -
		Ls		\$ -
East Cellular Soil-Cement (CSC) G-I	1	LS		\$ 19,962,963
East Riverbank	0	CY	\$ 500.00	\$ -
Existing Bent 22	0	CY	\$ 500.00	\$ -
East of UPRR	39926	CY	\$ 500.00	\$ 19,962,963
Existing Bent 26	0	CY	\$ 500.00	\$ -

Total \$ 19,962,963

QTY Update (7/16/21)

For the GI Zone east of UPRR on the LS alternatives, assume a 110' x 100' zone that extends full depth. Per email from Per dated 5/15/2020
S&W GI Discussion: [RE EQRB - Ground Improvement updates.msg](#)

OLD links: Email from S&W about LS Alternative [RE EQRB NEPA Ground Improvement for Long Span Alternative.msg](#)
Figure [GI Figure Revised-LongSpan Alt.pdf](#)

NEW UNIT PRICE INFORMATION:

(per discussion with S&W, who discussed with former Chief Engineer of Hayward Baker, now at Malcolm).

Total Volume =	57037	CY	
Percentage of total Volume =	0.70		unit cost is for portion of total volume improved (not full vol)
Ground Improvement Volume =	39926	CY	
Improvement Cost =	400	\$/CY	
Disposal Cost =	100	\$/CY	
Total Cost =	500	\$/CY	

S&W also mentioned that Jet Grouting may be cheaper (~\$200/CY) if existing foundations and timber piles are removed near Bent 8 (Cable Stay Tower).

This cost would need to be added in if Jet Grouting was assumed rather than Cellular Soil-Cement Ground Impr.

Note: For type selection 7/16/2021 work, cost is specific to cable stay options (3a) and (4a) with tower constructed as shown. The "long" tied arch options (1a) and (2a) locate the east side bent 8 at east 2nd/Skate park do not require ground improvement but instead rely on permanent isolation casing around drilled shafts.

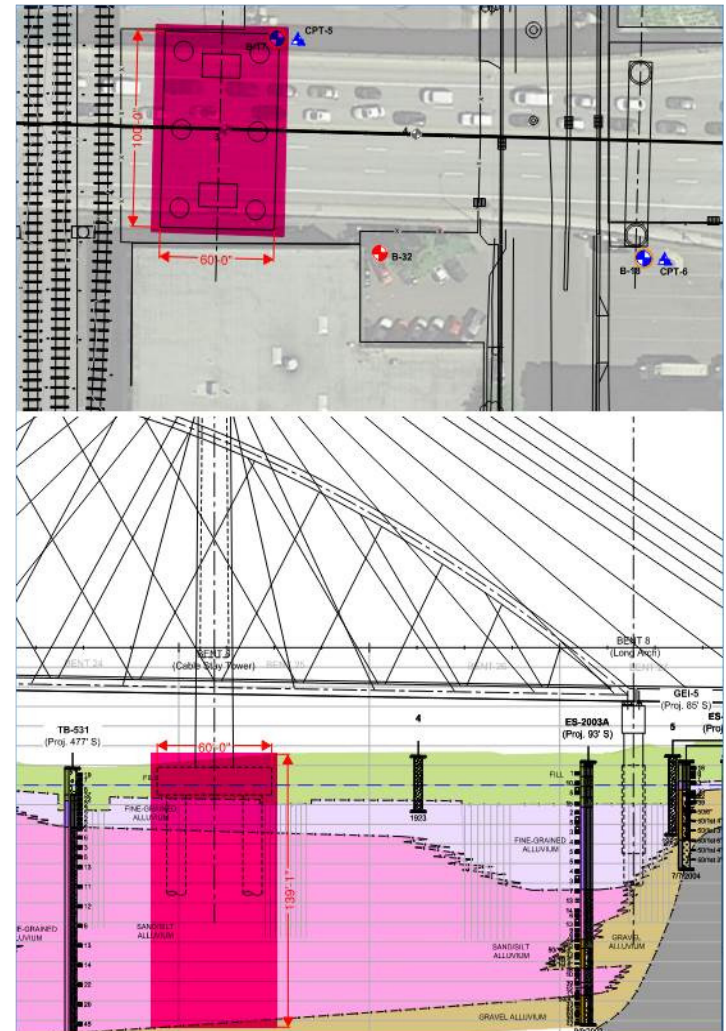
OLD UNIT PRICE INFORMATION:

Option 1 - Hayward Baker

Assumptions/Factors

- 1 Access
- 2 Spoils haul/disposal
- 3 Specified Strength
- 4 QC requirements
- 5 Overlap required

West Cellular Soil-Cement (CSC) G-I	\$	900	CY
East Cellular Soil-Cement (CSC) G-I	\$	600	CY



Option 2 - Malcom

Assumptions/Factors

- 1 Access/headroom
- 2 *Spoils haul/disposal (Assumes 60% Spoils/CY @135pcf)

	Quantity	Unit	Unit Cost	Total
Cellular Soil-Cement (CSC) G-I	39927	CY	\$ 162.12	\$ 6,473,000.00
*Spoils Haul/Disposal	43660	TON	\$ 75.00	\$ 3,275,000.00
Total Price/CY			\$	244
Contingecy for factors not considered		25%		
Unit Price With Contingency			\$	305

Average of the two options

West Cellular Soil-Cement (CSC) G-I	\$	650
East Cellular Soil-Cement (CSC) G-I	\$	500

Attachment 7 – Reimbursable Utilities Quantities and Cost Backup

Reimbursable Utility Relocation Costs

Utility Owner ⁽¹⁾	Cost	Short Steel Tied Arch	Long Steel Tied Arch	Cable-Stay
BES ⁽²⁾	Reimbursable	\$ 340,000	\$ 340,000	\$ 520,000
	Non-Reimbursable	\$ -	\$ -	\$ -
CenturyLink Local	Reimbursable	\$ 300,000	\$ 300,000	\$ 300,000
	Non-Reimbursable	\$ 730,000	\$ 730,000	\$ 730,000
CenturyLink National	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Comcast	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ 70,000	\$ 70,000	\$ 70,000
Zayo	Reimbursable	Unknown	Unknown	Unknown
	Non-Reimbursable			
City of Portland Traffic & Lighting	Reimbursable	\$ 540,000	\$ 540,000	\$ 540,000
	Non-Reimbursable	\$ 390,000	\$ 390,000	\$ 390,000
NW Natural	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ 20,000	\$ 20,000	\$ 20,000
ODOT	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ 40,000	\$ 40,000	\$ -
PGE	Reimbursable	\$ 130,000	\$ 130,000	\$ 130,000
	Non-Reimbursable	\$ 80,000	\$ 80,000	\$ 80,000
Portland Streetcar	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
PP&R	Reimbursable	\$ 40,000	\$ 40,000	\$ 40,000
	Non-Reimbursable	\$ 200,000	\$ 200,000	\$ 200,000
BTS	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
PWB	Reimbursable	\$ 50,000	\$ 50,000	\$ 50,000
	Non-Reimbursable	\$ -	\$ -	\$ -
TriMet	TBD	\$ 630,000	\$ 630,000	\$ 630,000
	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Verizon	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Henkels & McCoy	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Wave Broadband	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Burnside Skatepark	Reimbursable	\$ -	\$ -	\$ -
	Non-Reimbursable	\$ -	\$ -	\$ -
Total	TBD	\$ 630,000	\$ 630,000	\$ 630,000
	Reimbursable	1400000.00	\$1,400,000	\$1,580,000
	Non-Reimbursable	1530000.00	\$1,530,000	\$1,490,000

	Short Steel Tied Arch	Long Steel Tied Arch	Cable-Stay
TBD	\$ 630,000	\$ 630,000	\$ 630,000
Reimbursable	\$ 1,400,000	\$ 1,400,000	\$ 1,580,000
Non-Reimbursable	\$ 1,530,000	\$ 1,530,000	\$ 1,490,000

Attachment 8 – Temporary Marine Works Quantities and Cost Backup

BURNSIDE BRIDGE MARINE CONSTRUCTION COST BUILDUP				
Location and Item	Quantity	Unit	Unit Cost	Total
River spans & Esplanade	1	LS		\$ 27,678,000.00
Temporary Construction	1	LS		\$ 27,678,000.00
East and West Work Bridge	1	LS	\$ 18,829,200.00	\$ 18,830,000.00
Perched Cofferdams	1	Ls	\$ 8,848,000.00	\$ 8,848,000.00
	1	LS		\$ -
	1	LS		\$ -

Total	\$ 27,678,000.00
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By: Brett Schneider

Date: 10/30/2020

West Work Bridge

Figure 40' wide work bridge from bank to pier, then encompassing total pier (for shafts) plus 30' west of pier. Figure 30' fingers north & south of pier

From bank to pier = 140' x 40', pier = (96' + 30') x (204' + 30' + 30')

Total SF => 38864

Use \$150/SF for work bridge cost (includes oscillator piles/frames)

Work Bridge Costs	38864	SF	\$ 150.00	\$ 5,829,600.00
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East Work Bridge

Figure 40' wide work bridge from bank to pier, then encompassing total pier (for shafts) plus 30' west of pier. Figure 30' fingers north & south of pier

From bank to pier = 650' x 30', pier = (96' + 30') x (204' + 30' + 30')

Total SF => 52764

Use \$150/SF for work bridge cost (includes oscillator piles/frames)

Work Bridge Costs	52764	SF	\$ 150.00	\$ 7,914,600.00
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Esplanade/Ped Bridge Work Bridge

Figure 30' wide work bridge extending from "main" east work bridge, then 40' wide fingers to shafts and additional 20' wide for temporary esplanade use

From east work bridge to south end = 550' x 50', fingers = 4 ea x (40' x 40')

Total SF => 33900

Use \$150/SF for work bridge cost (includes oscillator piles/frames)

Work Bridge Costs	33900	SF	\$ 150.00	\$ 5,085,000.00
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TOTAL FOR WORK BRIDGES	125528	SF	\$ 150.00	\$ 18,829,200.00
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Perched Cofferdams

Figure full size of pier plus 4' on either side

Depth of perched footing from EL -24 to EL 26 = 50' high 11/9: MH correction for BOF elevation of -24.0 ft

Total SF => 63200

Use \$140/SF based on sheet/wall area

TOTAL FOR PERCHED COFFERDAMS	63200	SF	\$ 140.00	\$ 8,848,000.00
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Attachment 9 – Dredging and Rip Rap Quantities and Cost Backup

BURNSIDE BRIDGE MARINE CONSTRUCTION COST BUILDUP				
Location and Item	Quantity	Unit	Unit Cost	Total
Dredging	1	LS		\$ 5,184,500.00
Mobilization	1	LS	\$ 50,000.00	\$ 50,000.00
River Dredging	13900	CY	\$ 70.00	\$ 973,000.00
Existing Rip Rap/Buildup Removal	10400	CY	\$ 70.00	\$ 728,000.00
Contaminated Material Haul	32805	TON	\$ 100.00	\$ 3,280,500.00
BACKFILL River Degdging	3395	CY	\$ 45.00	\$ 153,000
			Floodway Dredging	\$ 3,002,500
			Existing Pier Rip-Rap Removal	\$ 2,182,000
			Total	\$ 5,184,500.00

(Covers In/Out)

0.5720 %

0.4280 %

1.35 Assume all material contaminated - 1.35 tons/CY

Assume 1' capping layer, equal to half of the 2' overdredge volume, \$45/cy per Brett 11/18/2020

Ref QTO File: [Volume-Willamette Contour.xlsx](#)

Volumes by: James Schamrell, Daniel Vasquez-Ventura

Date: 10/30/2020

Entered by: Maxwell Higlin

Date: 11/2/2020

Notes:

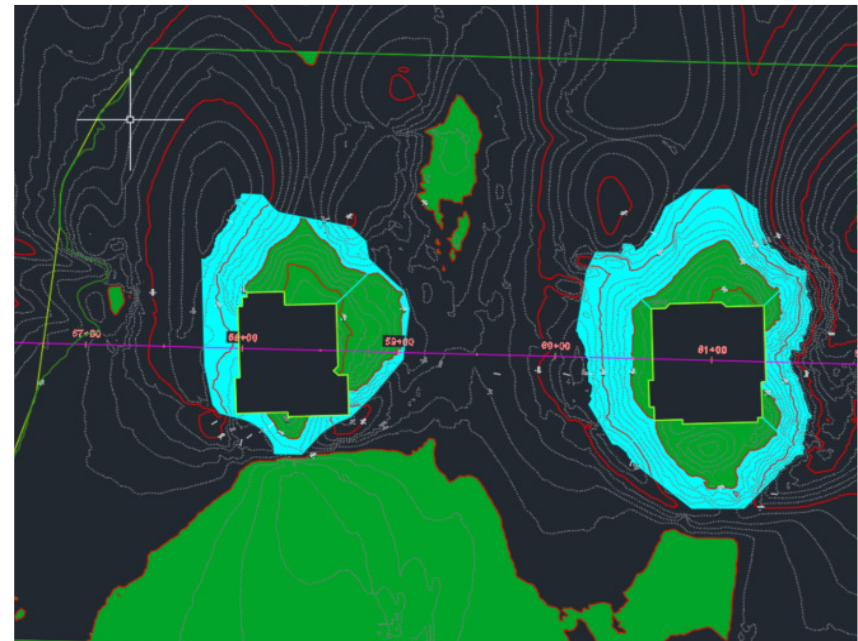
- Below is a screenshot from the quantity estimate and corresponding CAD file, provided by Parametrix. The material to be removed around the existing piers is seperated from the material to be removed north and south of the structure
- Elevations below are in NAV88
- Material North and South of the structure is assumed to be removed to a depth of -40' (AREA IN GREEN)
- Material around the existing piers is assumed to be removed to a depth of -55' (AREA IN CYAN.) plus an additional 5' of embedment (VOLUME IN RED). The embedment volume is calculated at the plan area of the -55' contour line multiplied by 5'.

Name	Volume (cu. Yd.) Above -40'
North Dredging 0-200' from Bridge Centerline	96.13
South Dredging 0-200' from Bridge Centerline	3595.96
South Dredging 200-400' from Bridge Centerline	3382.71

Name	Volume (cu. Yd.) Above -40'				
	N	E	S	W	Total
West Bent	570.55	486.38	22.1	0	1079.03
East Bent	433.8	36.03	282.23	50.95	803.01

Name	Volume (cu. Yd.) Above -55'				
	N	E	S	W	Total
West Bent	2743.43	2124.31	504.91	371.28	5743.93
East Bent	2714.35	785.68	2363.31	1439.05	7302.39

Name	Delta Volume (cu. Yd.) Between -40 and -55				
	N	E	S	W	Total
West Bent	2172.88	1637.93	482.81	371.28	4664.9
East Bent	2280.55	749.65	2081.08	1388.1	6499.38



Name	Boundary Area at -55' (sq. ft.)					Assumed Depth (ft)	Volume (cu. Yd.) per -55' Boundary Area
	N	E	S	W	Total		
West Bent	5167.74	3074.16	1018.21	1897.91	11158.02	5	2066.30
East Bent	6336.29	2509.64	4645.9	4356.54	17848.37	5	3305.25

Baseline Dredge = 7074.8
Overdrege = 6789

TOTAL RIVER CHANEL DREDGING	13863.8	CY	\$	70.00	\$	970,466.00
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(Volume north and south of the structure to elevation -40')

TOTAL RIP RAP/ BUILDUP REMOVAL	18417.87	CY	\$	70.00	\$	1,289,250.90
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(Volume of material to be removed around the existing piers)

West Bent (40,N,W) = 4,928

East Bent (40,N,E) = 5,471

10,400

Attachment 10 – Right-of-Way Quantities and Cost Backup

RIGHT OF WAY				
Location and Item	Quantity	Unit	Unit Cost	Total
Replacement In Kind, Long-Span (Detour)				\$ 27,781,000.00
Replacement In Kind, Long-Span (w/Temp Bridge)				\$ 28,561,000.00
Total	1	LS	\$ 27,781,000.00	\$ 27,781,000.00
***Temporary Bridge	1	LS	\$ 779,190.00	\$ 780,000.00

Deduct for eliminating SideYard Permanent Easement	\$ 7,000,000	82%
Savings for Permanent Easements within existing Bridge Footprint	\$ 1,500,000	18%

Updated ROW costs as of 6/12/20

Alternative	Permanent Right of Way & Improvements	Temporary Easements	Damages	Relocation	Personnel & Title Reports	Legal & Contingency (30%)	Total	Check-Sum
Enhanced Retrofit	\$ 33,097,808	\$ 11,385,934	\$ 1,120,000	\$ 1,180,000	\$ 878,000	\$ 13,666,996	\$61,328,739	\$62,107,928
Replacement In-Kind	\$ 33,137,048	\$ 13,579,358	\$ 1,140,000	\$ 1,180,000	\$ 958,500	\$ 14,342,796	\$64,337,702	\$65,116,892
Replacement In-Kind, Long-Span Option	\$ 32,937,518	\$ 13,579,358	\$ 1,140,000	\$ 1,180,000	\$ 958,500	\$ 14,282,937	\$64,078,313	\$64,857,503
Replacement with Couch Extension	\$ 43,811,068	\$ 12,447,000	\$ 1,275,000	\$ 1,180,000	\$ 1,022,001	\$ 17,245,794	\$76,980,863	\$77,760,053
Additional with Temporary Bridge		\$ 479,664	\$ 50,000	\$ 50,000	\$ 26,500	\$ 173,026	\$ 779,190	

Attachment 11 – Unit Cost Backup

UNIT COSTS

SN	ITEMNAMES	UNIT COSTS	UNIT
1	-	-	-
2	-	-	-
3	-	-	-
4	00510-BRIDGE REMOVAL	-	-
5	EXISTING BRIDGE REMOVAL	\$ 75.00	SF
6	EXISTING BUILDING REMOVAL	\$ 1,250,000.00	LS
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
11	00510-STRUCTURE EXCAVATION AND BACKFILL	-	-
12	STRUCTURE EXCAVATION	\$ 30.00	CY
13	GRANULAR STRUCTURE BACKFILL	\$ 55.00	CY
14	STRUCTURAL BACKFILL-LDCF	\$ 100.00	CY
15	-	-	-
16	00512-DRILLED SHAFT	-	-
17	FURNISH DRILLING EQUIPMENT ,LAND ,MINOR	\$ 100,000.00	EA
18	FURNISH DRILLING EQUIPMENT ,LAND ,MAJOR	\$ 150,000.00	EA
19	FURNISH DRILLING EQUIPMENT ,WATER	\$ 1,400,000.00	EA
20	DRILLED SHAFT CONSTRUCTION THRU EXISTING BRIDGE	\$ 4,000,000.00	EA
21	DRILLED SHAFT EXCAVATION, 36 INCH DIAMETER	\$ 800.00	FT
22	DRILLED SHAFT EXCAVATION, 48 INCH DIAMETER	\$ 1,000.00	FT
23	DRILLED SHAFT EXCAVATION, 72 INCH DIAMETER	\$ 1,400.00	FT
24	DRILLED SHAFT EXCAVATION, 84 INCH DIAMETER	\$ 1,800.00	FT
25	DRILLED SHAFT EXCAVATION, 96 INCH DIAMETER	\$ 2,400.00	FT
26	DRILLED SHAFT EXCAVATION, 108 INCH DIAMETER	\$ 2,500.00	FT
27	DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	\$ 2,600.00	FT
28	DRILLED SHAFT EXCAVATION, 132 INCH DIAMETER	\$ 2,500.00	FT
29	DRILLED SHAFT EXCAVATION, 144 INCH DIAMETER	\$ 2,600.00	FT
30	-	-	-
31	PERMANENT SHAFT CASINGS, 36 INCH DIAMETER	\$ 840.00	FT
32	PERMANENT SHAFT CASINGS, 48 INCH DIAMETER	\$ 960.00	FT
33	PERMANENT SHAFT CASINGS, 72 INCH DIAMETER	\$ 1,200.00	FT
34	PERMANENT SHAFT CASINGS, 84 INCH DIAMETER	\$ 1,600.00	FT
35	PERMANENT SHAFT CASINGS, 96 INCH DIAMETER	\$ 1,600.00	FT
36	PERMANENT SHAFT CASINGS, 108 INCH DIAMETER	\$ 1,900.00	FT
37	PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	\$ 2,200.00	FT
38	PERMANENT SHAFT CASINGS, 132 INCH DIAMETER	\$ 2,300.00	FT
39	PERMANENT SHAFT CASINGS, 144 INCH DIAMETER	\$ 2,400.00	FT
40	-	-	-
41	DRILLED SHAFT CONCRETE	\$ 250.00	CY
42	-	-	-
43	DRILLED SHAFT REINFORCEMENT, GRADE 60	\$ 1.40	LB
44	DRILLED SHAFT REINFORCEMENT, GRADE 80	\$ 1.50	LB
45	-	-	-
46	CSL TEST ACCESS TUBES	\$ 9.00	FT
47	CSL TEST	\$ 3,400.00	EA
48	O-CELL LOAD TEST	\$ 250,000.00	EA
49	-	-	-
50	00530-STEEL REINFORCEMENT FOR CONCRETE	-	-
51	REINFORCEMENT, GRADE 60	\$ 1.15	LB
52	REINFORCEMENT, GRADE 80	\$ 1.25	LB
53	-	-	-
54	REINFORCEMENT, GRADE 60, COMPLEX	\$ 1.25	LB
55	REINFORCEMENT, GRADE 80, COMPLEX	\$ 1.35	LB
56	-	-	-
57	REINFORCEMENT, GRADE 60, EPOXY	\$ 1.65	LB
58	REINFORCEMENT, GRADE 80, EPOXY	\$ 1.75	LB
59	-	-	-
60	-	-	-
61	00540-STRUCTURAL CONCRETE	-	-
62	DECK CONCRETE, CLASS HPC 4500	\$ 900.00	CY
63	-	-	-
64	GENERAL STRUCTURAL CONCRETE, CLASS 4000	\$ 700.00	CY
65	GENERAL STRUCTURAL CONCRETE, CLASS 5000	\$ 800.00	CY
66	GENERAL STRUCTURAL CONCRETE, CLASS 5000	\$ 850.00	CY
67	GENERAL STRUCTURAL CONCRETE, CLASS 5500	\$ 1,400.00	CY
68	GENERAL STRUCTURAL CONCRETE, CLASS 6000	\$ 1,500.00	CY
69	GENERAL STRUCTURAL CONCRETE, CLASS 8000	\$ 1,550.00	CY
70	-	-	-
71	FOUNDATION CONCRETE, CLASS 4000	\$ 600.00	CY
72	FOUNDATION CONCRETE, CLASS 5000	\$ 700.00	CY
73	-	-	-
74	SAW CUT TEXTURING	\$ 6.16	SF
75	-	-	-
76	-	-	-
77	00545-REINFORCED CONCRETE BRIDGE END PANELS	-	-
78	REINFORCED CONCRETE BRIDGE END PANELS	\$ 324.00	SY
79	REINFORCED CONCRETE MOMENT SLAB W/O BRIDGE RAIL	\$ 470.00	SY
80	-	-	-
81	-	-	-
82	00550-PRECAST CONCRETE	-	-
83	PRESTRESSED GIRDERS	\$ 350.00	LF
84	PRESTRESSED 26" VOIDED SLAB	\$ 250.00	LF
85	PRESTRESSED 30" VOIDED SLAB	\$ 250.00	LF
86	PRESTRESSED 33" BOX BEAM	\$ 250.00	LF
87	PRESTRESSED 39" BOX BEAM	\$ 350.00	LF
88	CIP PRESTRESSED SLAB	\$ 75.00	SF
89	PRECAST DECK PANEL	\$ 38.00	SF
90	DECK OVERLAY	\$ 9.75	SF
91	-	-	-
92	00555-POST-TENSIONING	-	-
93	POST-TENSIONING	\$ 10.00	LB
94	TIE-DOWN	\$ 30.00	LB
95	-	-	-
96	-	-	-
97	STRUCTURAL STEEL BRIDGES	-	-
98	STEEL PLATE GIRDER	\$ 2.50	LB
99	STEEL PLATE GIRDER WITH HAUNCH	\$ 2.75	LB
100	STEEL PLATE GIRDER DAPPED END	\$ 5,000.00	EA
101	STEEL ARCH	\$ 3.50	LB
102	STEEL CABLE STAY	\$ 3.25	LB
103	STRUCTURAL STEEL - TIE BOX	\$ 4.00	LB

SN	ITEMNAMES	UNIT COSTS	UNIT
1	EXISTING BRIDGE REMOVAL	\$ 75.00	SF
2	EXISTING BUILDING REMOVAL	\$ 1,250,000.00	LS
3	STRUCTURE EXCAVATION	\$ 30.00	CY
4	GRANULAR STRUCTURE BACKFILL	\$ 55.00	CY
5	STRUCTURAL BACKFILL-LDCF	\$ 100.00	CY
6	FURNISH DRILLING EQUIPMENT ,LAND ,MINOR	\$ 100,000.00	EA
7	FURNISH DRILLING EQUIPMENT ,LAND ,MAJOR	\$ 150,000.00	EA
8	FURNISH DRILLING EQUIPMENT ,WATER	\$ 1,400,000.00	EA
9	DRILLED SHAFT CONSTRUCTION THRU EXISTING BRIDGE	\$ 4,000,000.00	EA
10	DRILLED SHAFT EXCAVATION, 36 INCH DIAMETER	\$ 800.00	FT
11	DRILLED SHAFT EXCAVATION, 48 INCH DIAMETER	\$ 1,000.00	FT
12	DRILLED SHAFT EXCAVATION, 72 INCH DIAMETER	\$ 1,400.00	FT
13	DRILLED SHAFT EXCAVATION, 84 INCH DIAMETER	\$ 1,800.00	FT
14	DRILLED SHAFT EXCAVATION, 96 INCH DIAMETER	\$ 2,400.00	FT
15	DRILLED SHAFT EXCAVATION, 108 INCH DIAMETER	\$ 2,500.00	FT
16	DRILLED SHAFT EXCAVATION, 120 INCH DIAMETER	\$ 2,600.00	FT
17	DRILLED SHAFT EXCAVATION, 132 INCH DIAMETER	\$ 2,500.00	FT
18	DRILLED SHAFT EXCAVATION, 144 INCH DIAMETER	\$ 2,600.00	FT
19	PERMANENT SHAFT CASINGS, 36 INCH DIAMETER	\$ 840.00	FT
20	PERMANENT SHAFT CASINGS, 48 INCH DIAMETER	\$ 960.00	FT
21	PERMANENT SHAFT CASINGS, 72 INCH DIAMETER	\$ 1,200.00	FT
22	PERMANENT SHAFT CASINGS, 84 INCH DIAMETER	\$ 1,600.00	FT
23	PERMANENT SHAFT CASINGS, 96 INCH DIAMETER	\$ 1,600.00	FT
24	PERMANENT SHAFT CASINGS, 108 INCH DIAMETER	\$ 1,900.00	FT
25	PERMANENT SHAFT CASINGS, 120 INCH DIAMETER	\$ 2,200.00	FT
26	PERMANENT SHAFT CASINGS, 132 INCH DIAMETER	\$ 2,300.00	FT
27	PERMANENT SHAFT CASINGS, 144 INCH DIAMETER	\$ 2,400.00	FT
28	DRILLED SHAFT CONCRETE	\$ 250.00	CY
29	DRILLED SHAFT REINFORCEMENT, GRADE 60	\$ 1.40	LB
30	DRILLED SHAFT REINFORCEMENT, GRADE 80	\$ 1.50	LB
31	CSL TEST ACCESS TUBES	\$ 9.00	FT
32	CSL TEST	\$ 3,400.00	EA
33	O-CELL LOAD TEST	\$ 250,000.00	EA
34	REINFORCEMENT, GRADE 60	\$ 1.15	LB
35	REINFORCEMENT, GRADE 80	\$ 1.25	LB
36	REINFORCEMENT, GRADE 60, COMPLEX	\$ 1.25	LB
37	REINFORCEMENT, GRADE 80, COMPLEX	\$ 1.35	LB
38	REINFORCEMENT, GRADE 60, EPOXY	\$ 1.65	LB
39	REINFORCEMENT, GRADE 80, EPOXY	\$ 1.75	LB
40	DECK CONCRETE, CLASS HPC 4500	\$ 900.00	CY
41	GENERAL STRUCTURAL CONCRETE, CLASS 4000	\$ 700.00	CY
42	GENERAL STRUCTURAL CONCRETE, CLASS 5000	\$ 800.00	CY
43	GENERAL STRUCTURAL CONCRETE, CLASS 5000	\$ 850.00	CY
44	GENERAL STRUCTURAL CONCRETE, CLASS 5500	\$ 1,400.00	CY
45	GENERAL STRUCTURAL CONCRETE, CLASS 6000	\$ 1,500.00	CY
46	GENERAL STRUCTURAL CONCRETE, CLASS 8000	\$ 1,550.00	CY
47	FOUNDATION CONCRETE, CLASS 4000	\$ 600.00	CY
48	FOUNDATION CONCRETE, CLASS 5000	\$ 700.00	CY
49	SAW CUT TEXTURING	\$ 6.16	SF
50	REINFORCED CONCRETE BRIDGE END PANELS	\$ 324.00	SY
51	REINFORCED CONCRETE MOMENT SLAB W/O BRIDGE RAIL	\$ 470.00	SY
52	PRESTRESSED GIRDERS	\$ 350.00	LF
53	PRESTRESSED 26" VOIDED SLAB	\$ 250.00	LF
54	PRESTRESSED 30" VOIDED SLAB	\$ 250.00	LF
55	PRESTRESSED 33" BOX BEAM	\$ 250.00	LF
56	PRESTRESSED 39" BOX BEAM	\$ 350.00	LF
57	CIP PRESTRESSED SLAB	\$ 75.00	SF
58	PRECAST DECK PANEL	\$ 38.00	SF
59	DECK OVERLAY	\$ 9.75	SF
60	POST-TENSIONING	\$ 10.00	LB
61	TIE-DOWN	\$ 30.00	LB
62	STEEL PLATE GIRDER	\$ 2.50	LB
63	STEEL PLATE GIRDER WITH HAUNCH	\$ 2.75	LB
64	STEEL PLATE GIRDER DAPPED END	\$ 5,000.00	EA
65	STEEL ARCH	\$ 3.50	LB
66	STEEL CABLE STAY	\$ 3.25	LB
67	STRUCTURAL STEEL - TIE BOX	\$ 4.00	LB
68	STRUCTURAL STEEL - STAY CABLE	\$ 15.00	LB
69	STEEL GIRDER BEARING DEVICE	\$ 5,000.00	EA
70	BASE ISOLATION BEARING - SMALL	\$ 137,500.00	EA
71	BASE ISOLATION BEARING - LARGE	\$ 165,000.00	EA
72	HORIZONTAL BEARING DEVICE	\$ 25,000.00	EA
73	VERTICAL BEARING DEVICE	\$ 25,000.00	EA
74	LIVE LOAD BEARING DEVICE	\$ 5,000.00	EA
75	EXPANSION JOINT - ASPHALT PLUG SEAL	\$ 150.00	FT
76	EXPANSION JOINT - STRIP SEAL, SINGLE	\$ 500.00	FT
77	EXPANSION JOINT - STRIP SEAL, DOUBLE	\$ 1,000.00	FT
78	EXPANSION JOINT - MODULAR CABLE STAY	\$ 3,000.00	FT
79	EXPANSION JOINT - MODULAR TIED ARCH	\$ 5,500.00	FT
80	EXPANSION JOINT - FINGER JOINT	\$ 2,000.00	FT
81	COMBINATION RAIL	\$ 251.19	FT
82	PEDESTRIAN RAIL	\$ 252.19	FT
83	VEHICLE RAIL	\$ 136.19	FT
84	PROTECTIVE FENCE - A	\$ 284.75	FT
85	PROTECTIVE FENCE - B	\$ 227.50	FT
86	ORNAMENTAL FENCE	\$ 500.00	FT
87	RETRAINING WALL - NW	\$ 150.00	SF
88	RETRAINING WALL - SW CIP	\$ 150.00	SF
89	RETRAINING WALL - SW TIE BACK	\$ 400.00	SF
90	RETRAINING WALL	\$ 200.00	SF
91	NE RETAINING WALL	\$ 150.00	SF
92	SE RETAINING WALL	\$ 250.00	SF
93	BASCULE-CONTROL HOUSE	\$ 500,000.00	EA
94	BASCULE-LIGHTWEIGHT CONCRETE	\$ 900.00	CY
95	BASCULE-REINFORCEMENT	\$ 2.25	LBS
96	BASCULE-STRUCTURAL STEEL	\$ 6.00	LBS
97	BASCULE-COUNTERWEIGHT CONCRETE	\$ 700.00	CY
98	BASCULE-COUNTERWEIGHT REINFORCEMENT	\$ 1.15	LBS
99	BASCULE-COUNTERWEIGHT LEAD	\$ 5.00	LBS
100	BASCULE-EXPANSION JOINTS	\$ 2,000.00	LF
101	BASCULE-BEARINGS	\$ 15,500.00	EA
102	BASCULE-DECK CONCRETE	\$ 900.00	CY
103	BASCULE-DECK REINFORCEMENT	\$ 1.15	LBS

104	104	STRUCTURAL STEEL - STAY CABLE	\$	15.00	LB
105	105	-	-	-	-
106	106	-	-	-	-
107	107	005852-BRIDGE BEARINGS	-	-	-
108	108	STEEL GIRDER BEARING DEVICE	\$	5,000.00	EA
109	109	-	-	-	-
110	110	BASE ISOLATION BEARING - SMALL	\$	137,500.00	EA
111	111	BASE ISOLATION BEARING - LARGE	\$	165,000.00	EA
112	112	-	-	-	-
113	113	HORIZONTAL BEARING DEVICE	\$	25,000.00	EA
114	114	VERTICAL BEARING DEVICE	\$	25,000.00	EA
115	115	-	-	-	-
116	116	LIVE LOAD BEARING DEVICE	\$	5,000.00	EA
117	117	-	-	-	-
118	118	-	-	-	-
119	119	00585-EXPANSION JOINTS	-	-	-
120	120	EXPANSION JOINT - ASPHALT PLUG SEAL	\$	150.00	FT
121	121	EXPANSION JOINT - STRIP SEAL, SINGLE	\$	500.00	FT
122	122	EXPANSION JOINT - STRIP SEAL, DOUBLE	\$	1,000.00	FT
123	123	EXPANSION JOINT - MODULAR CABLE STAY	\$	3,000.00	FT
124	124	EXPANSION JOINT - MODULAR TIED ARCH	\$	5,500.00	FT
125	125	EXPANSION JOINT - FINGER JOINT	\$	2,000.00	FT
126	126	-	-	-	-
127	127	00587-BRIDGE RAILS	-	-	-
128	128	COMBINATION RAIL	\$	251.19	FT
129	129	PEDESTRIAN RAIL	\$	252.19	FT
130	130	VEHICLE RAIL	\$	136.19	FT
131	131	PROTECTIVE FENCE_ A	\$	284.75	FT
132	132	PROTECTIVE FENCE_ B	\$	227.50	FT
133	133	ORNAMENTAL FENCE	\$	500.00	FT
134	134	-	-	-	-
135	135	00596-RETAINING WALLS	-	-	-
136	136	REATAINING WALL - NW	\$	150.00	SF
137	137	RETAINING WALL - SW CIP	\$	150.00	SF
138	138	RETAINING WALL - SW TIE BACK	\$	400.00	SF
139	139	RETAINING WALL	\$	200.00	SF
140	140	NE RETAINING WALL	\$	150.00	SF
141	141	SE RETAINING WALL	\$	250.00	SF
142	142	-	-	-	-
143	143	-	-	-	-
144	144	00599A BASCULE SUPERSTRUCTURE SPECIFIC	-	-	-
145	145	BASCULE-CONTROL HOUSE	\$	500,000.00	EA
146	146	BASCULE-LIGHTWEIGHT CONCRETE	\$	900.00	CY
147	147	BASCULE-REINFORCEMENT	\$	2.25	LBS
148	148	-	-	-	-
149	149	BASCULE-STRUCTURAL STEEL	\$	6.00	LBS
150	150	BASCULE-COUNTERWEIGHT CONCRETE	\$	700.00	CY
151	151	BASCULE-COUNTERWEIGHT REINFORCEMENT	\$	1.15	LBS
152	152	BASCULE-COUNTERWEIGHT LEAD	\$	5.00	LBS
153	153	BASCULE-EXPANSION JOINTS	\$	2,000.00	LF
154	154	BASCULE-BEARINGS	\$	15,500.00	EA
155	155	-	-	-	-
156	156	BASCULE-DECK CONCRETE	\$	900.00	CY
157	157	BASCULE-DECK REINFORCEMENT	\$	1.15	LBS
158	158	BASCULE-STRUCTURAL STEEL	\$	2.50	LBS
159	159	-	-	-	-
160	160	BASCULE-TAIL LOCKS	\$	250,000.00	EA
161	161	BASCULE-TOE SPAN LOCKS	\$	400,000.00	EA
162	162	BASCULE-CENTERING DEVICE	\$	100,000.00	EA
163	163	BASCULE-SEISMIC GUIDE	\$	150,000.00	EA
164	164	-	-	-	-
165	165	BASCULE-PINION SHAFTS	\$	50,000.00	EA
166	166	BASCULE-PINION BEARINGS	\$	10,000.00	EA
167	167	BASCULE-SECONDARY REDUCERS	\$	500,000.00	EA
168	168	BASCULE-MACHINERY BRAKES	\$	20,000.00	EA
169	169	BASCULE-PRIMARY REDUCERS	\$	450,000.00	EA
170	170	BASCULE-MOTORS	\$	40,000.00	EA
171	171	BASCULE-MOTOR BRAKES	\$	15,000.00	EA
172	172	BASCULE-SHAFTS & COUPLINGS	\$	15,000.00	EA
173	173	-	-	-	-
174	174	BASCULE-TRUNNION SHAFT & HUB	\$	250,000.00	EA
175	175	BASCULE-TRUNNION BEARINGS	\$	50,000.00	EA
176	176	BASCULE-TRUNNION TOWERS	\$	350,000.00	EA
177	177	BASCULE-MACHINERY SUPPORTS	\$	150,000.00	EA
178	178	BASCULE-BALANCE AND LOAD TESTING	\$	75,000.00	LS
179	179	-	-	-	-
180	180	-	-	-	-
181	181	BASCULE-100 HP BUY AMERICA MAIN MOTOR	\$	65,000.00	EA
182	182	BASCULE-10" BY AMERICA BRAKE	\$	20,000.00	EA
183	183	BASCULE-17" BY AMERICA BRAKE	\$	34,000.00	EA
184	184	-	-	-	-
185	185	BASCULE-BUY AMERICA TAIL LOCK MOTOR	\$	7,500.00	EA
186	186	BASCULE-POWER DISTRIBUTION (800AMP SERVICE)	\$	100,000.00	EA
187	187	BASCULE-PLC AND CONTROL CONSOLE	\$	150,000.00	EA
188	188	BASCULE-125 HP VFD	\$	40,000.00	EA
189	189	BASCULE-INSTRUMENTATION	\$	10,000.00	EA
190	190	-	-	-	-
191	191	BASCULE-SECTIONS	\$	2,000.00	EA
192	192	BASCULE-MAIN BREAKER 800 AMP	\$	5,000.00	EA
193	193	BASCULE-FEEDER BREAKER	\$	3,500.00	EA
194	194	BASCULE-SIZE 1 FVR	\$	3,000.00	EA
195	195	BASCULE-SIZE 1 FVNR	\$	2,000.00	EA
196	196	BASCULE-MISC	\$	20,000.00	EA
197	197	BASCULE-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$	100,000.00	EA
198	198	BASCULE-CONDUIT AND RACEWAY AND CONDUCTOR	\$	250,000.00	EA
199	199	BASCULE-GENERATOR (750 KW DIESEL GENSET)	\$	250,000.00	EA
200	200	BASCULE-LABOR	\$	1,170,000.00	LS
201	201	-	-	-	-
202	202	BASCULE-CABLES	\$	1,500,000.00	EA
203	203	BASCULE-INSTALLATION	\$	250,000.00	EA
204	204	-	-	-	-
205	205	BASCULE-BARRIER GATES	\$	45,000.00	EA
206	206	BASCULE-WARNING/TRAFFIC GATES	\$	30,000.00	EA
207	207	-	-	-	-
208	208	-	-	-	-
209	209	00599B LIFT SPECIFIC	-	-	-
210	210	LIFT-CONTROL HOUSE	\$	1,600,000.00	EA

104	104	BASCULE-STRUCTURAL STEEL	\$	2.50	LBS
105	105	BASCULE-TAIL LOCKS	\$	250,000.00	EA
106	106	BASCULE-TOE SPAN LOCKS	\$	400,000.00	EA
107	107	BASCULE-CENTERING DEVICE	\$	100,000.00	EA
108	108	BASCULE-SEISMIC GUIDE	\$	150,000.00	EA
109	109	BASCULE-PINION SHAFTS	\$	50,000.00	EA
110	110	BASCULE-PINION BEARINGS	\$	10,000.00	EA
111	111	BASCULE-SECONDARY REDUCERS	\$	500,000.00	EA
112	112	BASCULE-MACHINERY BRAKES	\$	20,000.00	EA
113	113	BASCULE-PRIMARY REDUCERS	\$	450,000.00	EA
114	114	BASCULE-MOTORS	\$	40,000.00	EA
115	115	BASCULE-MOTOR BRAKES	\$	15,000.00	EA
116	116	BASCULE-SHAFTS & COUPLINGS	\$	15,000.00	EA
117	117	BASCULE-TRUNNION SHAFT & HUB	\$	250,000.00	EA
118	118	BASCULE-TRUNNION BEARINGS	\$	50,000.00	EA
119	119	BASCULE-TRUNNION TOWERS	\$	350,000.00	EA
120	120	BASCULE-MACHINERY SUPPORTS	\$	150,000.00	EA
121	121	BASCULE-BALANCE AND LOAD TESTING	\$	75,000.00	LS
122	122	BASCULE-100 HP BUY AMERICA MAIN MOTOR	\$	65,000.00	EA
123	123	BASCULE-10" BY AMERICA BRAKE	\$	20,000.00	EA
124	124	BASCULE-17" BY AMERICA BRAKE	\$	34,000.00	EA
125	125	BASCULE-BUY AMERICA TAIL LOCK MOTOR	\$	7,500.00	EA
126	126	BASCULE-POWER DISTRIBUTION (800AMP SERVICE)	\$	100,000.00	EA
127	127	BASCULE-PLC AND CONTROL CONSOLE	\$	150,000.00	EA
128	128	BASCULE-125 HP VFD	\$	40,000.00	EA
129	129	BASCULE-INSTRUMENTATION	\$	10,000.00	EA
130	130	BASCULE-SECTIONS	\$	2,000.00	EA
131	131	BASCULE-MAIN BREAKER 800 AMP	\$	5,000.00	EA
132	132	BASCULE-FEEDER BREAKER	\$	3,500.00	EA
133	133	BASCULE-SIZE 1 FVR	\$	3,000.00	EA
134	134	BASCULE-SIZE 1 FVNR	\$	2,000.00	EA
135	135	BASCULE-MISC	\$	20,000.00	EA
136	136	BASCULE-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$	100,000.00	EA
137	137	BASCULE-CONDUIT AND RACEWAY AND CONDUCTOR	\$	250,000.00	EA
138	138	BASCULE-GENERATOR (750 KW DIESEL GENSET)	\$	250,000.00	EA
139	139	BASCULE-LABOR	\$	1,170,000.00	LS
140	140	BASCULE-CABLES	\$	1,500,000.00	EA
141	141	BASCULE-INSTALLATION	\$	250,000.00	EA
142	142	BASCULE-BARRIER GATES	\$	45,000.00	EA
143	143	BASCULE-WARNING/TRAFFIC GATES	\$	30,000.00	EA
144	144	LIFT-CONTROL HOUSE	\$	1,600,000.00	EA
145	145	LIFT-STRUCTURAL STEEL	\$	6.00	LBS
146	146	LIFT-COUNTERWEIGHT STEEL	\$	1.15	LBS
147	147	LIFT-EXPANSION JOINTS	\$	2,000.00	LF
148	148	LIFT-BEARINGS	\$	15,500.00	EA
149	149	LIFT-DECK CONCRETE	\$	900.00	CY
150	150	LIFT-DECK REINFORCEMENT	\$	1.15	LBS
151	151	LIFT-STRUCTURAL STEEL	\$	2.50	LBS
152	152	LIFT-SPAN LOCKS	\$	400,000.00	EA
153	153	LIFT-CENTERING DEVICE	\$	250,000.00	EA
154	154	LIFT-OPERATING DRUM ASSEMBLY	\$	250,000.00	EA
155	155	LIFT-SECONDARY REDUCERS	\$	750,000.00	EA
156	156	LIFT-MACHINERY BRAKES	\$	25,000.00	EA
157	157	LIFT-PRIMARY REDUCERS	\$	350,000.00	EA
158	158	LIFT-MOTORS	\$	75,000.00	EA
159	159	LIFT-MOTOR BRAKES	\$	15,000.00	EA
160	160	LIFT-DEFLECTOR SHEAVE ASSEMBLY	\$	100,000.00	EA
161	161	LIFT-COUNTERWEIGHT ROPE SHEAVE ASSEMBLY	\$	1,500,000.00	EA
162	162	LIFT-SHEAVE BEARINGS	\$	50,000.00	EA
163	163	LIFT-UPHAUL OPERATING ROPES	\$	150,000.00	EA
164	164	LIFT-DOWNSHAUL OPERATING ROPES	\$	150,000.00	EA
165	165	LIFT-COUNTERWEIGHT ROPES	\$	750,000.00	EA
166	166	LIFT-SHAFTS & COUPLINGS	\$	150,000.00	EA
167	167	LIFT-SPAN GUIDES	\$	100,000.00	EA
168	168	LIFT-COUNTERWEIGHT GUIDES	\$	100,000.00	EA
169	169	LIFT-MACHINERY SUPPORTS	\$	150,000.00	EA
170	170	LIFT-BALANCE AND LOAD TESTING	\$	75,000.00	LS
171	171	LIFT-200 HP BUY AMERICA MAIN MOTOR	\$	100,000.00	EA
172	172	LIFT-10" BY AMERICA BRAKE	\$	20,000.00	EA
173	173	LIFT-22" BY AMERICA BRAKE	\$	44,000.00	EA
174	174	LIFT-BUY AMERICA SPAN LOCK MOTOR	\$	7,500.00	EA
175	175	LIFT-POWER DISTRIBUTION (800AMP SERVICE)	\$	100,000.00	EA
176	176	LIFT-PLC AND CONTROL CONSOLE	\$	150,000.00	EA
177	177	LIFT-125 HP VFD	\$	65,000.00	EA
178	178	LIFT-INSTRUMENTATION	\$	10,000.00	EA
179	179	LIFT-SECTIONS	\$	2,000.00	EA
180	180	LIFT-MAIN BREAKER 800 AMP	\$	5,000.00	EA
181	181	LIFT-FEEDER BREAKER	\$	4,500.00	EA
182	182	LIFT-SIZE 1 FVR	\$	3,000.00	EA
183	183	LIFT-SIZE 1 FVNR	\$	2,000.00	EA
184	184	LIFT-MISC	\$	20,000.00	EA
185	185	LIFT-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$	100,000.00	EA
186	186	LIFT-CONDUIT AND RACEWAY AND CONDUCTOR	\$	250,000.00	EA
187	187	LIFT-GENERATOR (750 KW DIESEL GENSET)	\$	250,000.00	EA
188	188	LIFT-LABOR	\$	990,000.00	LS
189	189	LIFT-CABLES	\$	1,500,000.00	EA
190	190	LIFT-INSTALLATION	\$	250,000.00	EA
191	191	LIFT-BARRIER GATES	\$	45,000.00	EA
192	192	LIFT-WARNING/TRAFFIC GATES	\$	30,000.00	EA
193	193	LG-STRUCTURAL STEEL (FCM)	\$	6.00	LBS
194	194	LG-STRUCTURAL STEEL	\$	2.50	LBS
195	195	LG-STEEL BALLAST	\$	2.00	LBS
196	196	LG-COUNTERWEIGHT BALANCE BLOCKS (CAST IRON)	\$	2.50	LBS
197	197	LG-LIGHTWEIGHT DECK CONCRETE	\$	900.00	CY
198	198	LG-DECK REINFORCEMENT	\$	1.15	LBS
199	199	LG-EXPANSION JOINTS	\$	2,000.00	LF
200	200	LG-BEARINGS	\$	15,500.00	EA
201	201	LG-TOWER CONCRETE	\$	1,400.00	CY
202	202	LG-TOWER REINFORCEMENT	\$	1.25	LBS
203	203	LG-FLOOR/CEILING CONCRETE	\$	700.00	CY
204	204	LG-FLOOR/CEILING REINFORCEMENT	\$	1.15	LBS
205	205	LG-WALL CONCRETE	\$	700.00	CY
206	206	LG-WALL REINFORCEMENT	\$	1.15	LBS
207	207	LG-DECK CONCRETE	\$	900.00	CY
208	208	LG-DECK REINFORCEMENT	\$	1.15	LBS
209	209	LG-STRUCTURAL STEEL	\$	2.50	LBS
210	210	LG-SPAN LOCKS	\$	400,000.00	EA

211	211	LIFT-STRUCTURAL STEEL	\$	6.00	LBS
212	212	LIFT-COUNTERWEIGHT STEEL	\$	1.15	LBS
213	213	LIFT-EXPANSION JOINTS	\$	2,000.00	LF
214	214	LIFT-BEARINGS	\$	15,500.00	EA
215	215	-	-	-	-
216	216	LIFT-DECK CONCRETE	\$	900.00	CY
217	217	LIFT-DECK REINFORCEMENT	\$	1.15	LBS
218	218	LIFT-STRUCTURAL STEEL	\$	2.50	LBS
219	219	-	-	-	-
220	220	LIFT-SPAN LOCKS	\$	400,000.00	EA
221	221	LIFT-CENTERING DEVICE	\$	250,000.00	EA
222	222	-	-	-	-
223	223	LIFT-OPERATING DRUM ASSEMBLY	\$	250,000.00	EA
224	224	LIFT-SECONDARY REDUCERS	\$	750,000.00	EA
225	225	LIFT-MACHINERY BRAKES	\$	25,000.00	EA
226	226	LIFT-PRIMARY REDUCERS	\$	350,000.00	EA
227	227	LIFT-MOTORS	\$	75,000.00	EA
228	228	LIFT-MOTOR BRAKES	\$	15,000.00	EA
229	229	LIFT-DEFLECTOR SHEAVE ASSEMBLY	\$	100,000.00	EA
230	230	LIFT-COUNTERWEIGHT ROPE SHEAVE ASSEMBLY	\$	1,500,000.00	EA
231	231	LIFT-SHEAVE BEARINGS	\$	50,000.00	EA
232	232	LIFT-UPHAUL OPERATING ROPES	\$	150,000.00	EA
233	233	LIFT-DOWNHAUL OPERATING ROPES	\$	150,000.00	EA
234	234	LIFT-COUNTERWEIGHT ROPES	\$	750,000.00	EA
235	235	LIFT-SHAFTS & COUPLINGS	\$	150,000.00	EA
236	236	LIFT-SPAN GUIDES	\$	100,000.00	EA
237	237	LIFT-COUNTERWEIGHT GUIDES	\$	100,000.00	EA
238	238	LIFT-MACHINERY SUPPORTS	\$	150,000.00	EA
239	239	LIFT-BALANCE AND LOAD TESTING	\$	75,000.00	LS
240	240	-	-	-	-
241	241	-	-	-	-
242	242	LIFT-200 HP BUY AMERICA MAIN MOTOR	\$	100,000.00	EA
243	243	LIFT-10" BY AMERICA BRAKE	\$	20,000.00	EA
244	244	LIFT-22" BY AMERICA BRAKE	\$	44,000.00	EA
245	245	-	-	-	-
246	246	LIFT-BUY AMERICA SPAN LOCK MOTOR	\$	7,500.00	EA
247	247	LIFT-POWER DISTRIBUTION (800AMP SERVICE)	\$	100,000.00	EA
248	248	LIFT-PLC AND CONTROL CONSOLE	\$	150,000.00	EA
249	249	LIFT-125 HP VFD	\$	65,000.00	EA
250	250	LIFT-INSTRUMENTATION	\$	10,000.00	EA
251	251	-	-	-	-
252	252	LIFT-SECTIONS	\$	2,000.00	EA
253	253	LIFT-MAIN BREAKER 800 AMP	\$	5,000.00	EA
254	254	LIFT-FEEDER BREAKER	\$	4,500.00	EA
255	255	LIFT-SIZE 1 FVR	\$	3,000.00	EA
256	256	LIFT-SIZE 1 FVNR	\$	2,000.00	EA
257	257	LIFT-MISC	\$	20,000.00	EA
258	258	LIFT-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$	100,000.00	EA
259	259	LIFT-CONDUIT AND RACEWAY AND CONDUCTOR	\$	250,000.00	EA
260	260	LIFT-GENERATOR (750 KW DIESEL GENSET)	\$	250,000.00	EA
261	261	LIFT-LABOR	\$	990,000.00	LS
262	262	-	-	-	-
263	263	LIFT-CABLES	\$	1,500,000.00	EA
264	264	LIFT-INSTALLATION	\$	250,000.00	EA
265	265	-	-	-	-
266	266	LIFT-BARRIER GATES	\$	45,000.00	EA
267	267	LIFT-WARNING/TRAFFIC GATES	\$	30,000.00	EA
268	268	-	-	-	-
269	269	LG-STRUCTURAL STEEL (FCM)	\$	6.00	LBS
270	270	LG-STRUCTURAL STEEL	\$	2.50	LBS
271	271	LG-STEEL BALLAST	\$	2.00	LBS
272	272	LG-COUNTERWEIGHT BALANCE BLOCKS (CAST IRON)	\$	2.50	LBS
273	273	LG-LIGHTWEIGHT DECK CONCRETE	\$	900.00	CY
274	274	LG-DECK REINFORCEMENT	\$	1.15	LBS
275	275	LG-EXPANSION JOINTS	\$	2,000.00	LF
276	276	LG-BEARINGS	\$	15,500.00	EA
277	277	-	-	-	-
278	278	LG-TOWER CONCRETE	\$	1,400.00	CY
279	279	LG-TOWER REINFORCEMENT	\$	1.25	LBS
280	280	LG-FLOOR/CEILING CONCRETE	\$	700.00	CY
281	281	LG-FLOOR/CEILING REINFORCEMENT	\$	1.15	LBS
282	282	LG-WALL CONCRETE	\$	700.00	CY
283	283	LG-WALL REINFORCEMENT	\$	1.15	LBS
284	284	-	-	-	-
285	285	LG-DECK CONCRETE	\$	900.00	CY
286	286	LG-DECK REINFORCEMENT	\$	1.15	LBS
287	287	LG-STRUCTURAL STEEL	\$	2.50	LBS
288	288	-	-	-	-
289	289	LG-SPAN LOCKS	\$	400,000.00	EA
290	290	LG-CENTERING DEVICE	\$	250,000.00	EA
291	291	-	-	-	-
292	292	LG-OPERATING DRUM ASSEMBLY	\$	250,000.00	EA
293	293	LG-SECONDARY REDUCERS	\$	750,000.00	EA
294	294	LG-MACHINERY BRAKES	\$	25,000.00	EA
295	295	LG-PRIMARY REDUCERS	\$	350,000.00	EA
296	296	LG-MOTORS	\$	75,000.00	EA
297	297	LG-MOTOR BRAKES	\$	15,000.00	EA
298	298	LG-DEFLECTOR SHEAVE ASSEMBLY	\$	100,000.00	EA
299	299	LG-COUNTERWEIGHT ROPE SHEAVE ASSEMBLY	\$	1,500,000.00	EA
300	300	LG-SHEAVE BEARINGS	\$	50,000.00	EA
301	301	LG-UPHAUL OPERATING ROPES	\$	150,000.00	EA
302	302	LG-DOWNHAUL OPERATING ROPES	\$	150,000.00	EA
303	303	LG-COUNTERWEIGHT ROPES	\$	750,000.00	EA
304	304	LG-SHAFTS & COUPLINGS	\$	150,000.00	EA
305	305	LG-SPAN GUIDES	\$	100,000.00	EA
306	306	LG-COUNTERWEIGHT GUIDES	\$	100,000.00	EA
307	307	LG-MACHINERY SUPPORTS	\$	150,000.00	EA
308	308	LG-BALANCE AND LOAD TESTING	\$	75,000.00	LS
309	309	-	-	-	-
310	310	-	-	-	-
311	311	LG-200 HP BUY AMERICA MAIN MOTOR	\$	100,000.00	EA
312	312	LG-10" BY AMERICA BRAKE	\$	20,000.00	EA
313	313	LG-22" BY AMERICA BRAKE	\$	44,000.00	EA
314	314	LG-BUY AMERICA TAIL LOCK MOTOR	\$	7,500.00	EA
315	315	LG-POWER DISTRIBUTION (600 AMP SERVICE)	\$	200,000.00	EA
316	316	LG-AUTOMATIC TRANSFER SWITCH (ATS)	\$	35,000.00	EA
317	317	-	-	-	-

211	211	LG-CENTERING DEVICE	\$	250,000.00	EA
212	212	LG-OPERATING DRUM ASSEMBLY	\$	250,000.00	EA
213	213	LG-SECONDARY REDUCERS	\$	750,000.00	EA
214	214	LG-MACHINERY BRAKES	\$	25,000.00	EA
215	215	LG-PRIMARY REDUCERS	\$	350,000.00	EA
216	216	LG-MOTORS	\$	75,000.00	EA
217	217	LG-MOTOR BRAKES	\$	15,000.00	EA
218	218	LG-DEFLECTOR SHEAVE ASSEMBLY	\$	100,000.00	EA
219	219	LG-COUNTERWEIGHT ROPE SHEAVE ASSEMBLY	\$	1,500,000.00	EA
220	220	LG-SHEAVE BEARINGS	\$	50,000.00	EA
221	221	LG-UPHAUL OPERATING ROPES	\$	150,000.00	EA
222	222	LG-DOWNHAUL OPERATING ROPES	\$	150,000.00	EA
223	223	LG-COUNTERWEIGHT ROPES	\$	750,000.00	EA
224	224	LG-SHAFTS & COUPLINGS	\$	150,000.00	EA
225	225	LG-SPAN GUIDES	\$	100,000.00	EA
226	226	LG-COUNTERWEIGHT GUIDES	\$	100,000.00	EA
227	227	LG-MACHINERY SUPPORTS	\$	150,000.00	EA
228	228	LG-BALANCE AND LOAD TESTING	\$	75,000.00	LS
229	229	LG-200 HP BUY AMERICA MAIN MOTOR	\$	100,000.00	EA
230	230	LG-10" BY AMERICA BRAKE	\$	20,000.00	EA
231	231	LG-22" BY AMERICA BRAKE	\$	44,000.00	EA
232	232	LG-BUY AMERICA TAIL LOCK MOTOR	\$	7,500.00	EA
233	233	LG-POWER DISTRIBUTION (600 AMP SERVICE)	\$	200,000.00	EA
234	234	LG-AUTOMATIC TRANSFER SWITCH (ATS)	\$	35,000.00	EA
235	235	LG-PLC AND CONTROL CONSOLE	\$	200,000.00	EA
236	236	LG-125 HP VFD	\$	60,000.00	EA
237	237	LG-INSTRUMENTATION	\$	12,000.00	EA
238	238	LG-SECTIONS	\$	2,000.00	EA
239	239	LG-MAIN BREAKER 600 AMP	\$	7,500.00	EA
240	240	LG-FEEDER BREAKER	\$	5,000.00	EA
241	241	LG-SIZE 1 FVR	\$	3,000.00	EA
242	242	LG-SIZE 1 FVNR	\$	2,000.00	EA
243	243	LG-MISC	\$	20,000.00	EA
244	244	LG-SECTIONS	\$	2,000.00	EA
245	245	LG-MAIN BREAKER 600 AMP	\$	7,500.00	EA
246	246	LG-FEEDER BREAKER	\$	5,000.00	EA
247	247	LG-SIZE 1 FVR	\$	3,000.00	EA
248	248	LG-SIZE 1 FVNR	\$	2,000.00	EA
249	249	LG-MISC	\$	20,000.00	EA
250	250	LG-CONTROL SYSTEM VENDOR OH&P (21%)	\$	132,930.00	LS
251	251	LG-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$	100,000.00	EA
252	252	LG-CONDUIT AND RACEWAY AND CONDUCTOR	\$	175,000.00	EA
253	253	LG-GENERATOR (600 KW DIESEL GENSET)	\$	450,000.00	EA
254	254	LG-SPAN	\$	4,000.00	EA
255	255	LG-PIER PROTECTION	\$	1,500.00	EA
256	256	LG-AERIAL BEACON	\$	5,000.00	EA
257	257	LG-GONGS/BELLS/SIGNALS	\$	1,000.00	EA
258	258	LG-BARRIER GATES	\$	60,000.00	EA
259	259	LG-WARNING/TRAFFIC GATES	\$	40,000.00	EA
260	260	LG-CAMERAS	\$	3,500.00	EA
261	261	LG-CAMERA CONTROLLER	\$	15,000.00	EA
262	262	LG-MISC(CTV)	\$	10,000.00	EA
263	263	LG-MASTER STATION	\$	2,500.00	EA
264	264	LG-REMOTE STATION	\$	1,500.00	EA
265	265	LG-NAVIGATION COMMUNICATION RADIO	\$	5,000.00	EA
266	266	LG-SUMP PUMPS	\$	6,500.00	EA
267	267	LG-LABOR	\$	800,000.00	LS
268	268	LG-ELECTRICAL CONTRACTOR OH&P (21%)	\$	1,032,240.30	LS
269	269	LG-CONTROL HOUSE	\$	1,600,000.00	LS
270	270	LG-MISC. ITEMS CONTINGENCY	\$	7,678,031.33	LS
271	271	DB-STEEL GRATING	\$	6.00	LBS
272	272	DB-DECK CONCRETE	\$	900.00	CY
273	273	DB-DECK REINFORCEMENT	\$	1.15	LBS
274	274	DB-STRUCTURAL STEEL (FCM)	\$	6.00	LBS
275	275	DB-STRUCTURAL STEEL	\$	2.50	LBS
276	276	DB-STEEL BALLAST	\$	2.00	LBS
277	277	DB-COUNTERWEIGHT CONCRETE	\$	700.00	CY
278	278	DB-COUNTERWEIGHT REINFORCEMENT	\$	1.15	LBS
279	279	DB-COUNTERWEIGHT BALANCE BLOCKS (CAST IRON)	\$	2.50	LBS
280	280	DB-EXPANSION JOINTS	\$	2,000.00	LF
281	281	DB-BEARINGS	\$	15,500.00	EA
282	282	DB-DECK CONCRETE	\$	900.00	CY
283	283	DB-DECK REINFORCEMENT	\$	1.15	LBS
284	284	DB-STRUCTURAL STEEL	\$	2.50	LBS
285	285	DB-TAIL LOCKS	\$	250,000.00	EA
286	286	DB-TOE SPAN LOCKS	\$	400,000.00	EA
287	287	DB-CENTERING DEVICE	\$	100,000.00	EA
288	288	DB-SEISMIC GUIDE	\$	150,000.00	EA
289	289	DB-PINION SHAFTS	\$	50,000.00	EA
290	290	DB-PINION BEARINGS	\$	10,000.00	EA
291	291	DB-SECONDARY REDUCERS	\$	500,000.00	EA
292	292	DB-MACHINERY BRAKES	\$	20,000.00	EA
293	293	DB-PRIMARY REDUCERS	\$	450,000.00	EA
294	294	DB-MOTORS	\$	40,000.00	EA
295	295	DB-MOTOR BRAKES	\$	15,000.00	EA
296	296	DB-SHAFTS & COUPLINGS	\$	15,000.00	EA
297	297	DB-TRUNNION SHAFT & HUB	\$	250,000.00	EA
298	298	DB-TRUNNION BEARINGS	\$	50,000.00	EA
299	299	DB-TRUNNION TOWERS	\$	350,000.00	EA
300	300	DB-MACHINERY SUPPORTS	\$	150,000.00	EA
301	301	DB-BALANCE AND LOAD TESTING	\$	75,000.00	LS
302	302	DB-100 HP BUY AMERICA MAIN MOTOR	\$	65,000.00	EA
303	303	DB-10" BY AMERICA BRAKE	\$	20,000.00	EA
304	304	DB-17" BY AMERICA BRAKE	\$	34,000.00	EA
305	305	DB-BUY AMERICA TAIL LOCK MOTOR	\$	7,500.00	EA
306	306	DB-POWER DISTRIBUTION (400 AMP SERVICE)	\$	150,000.00	EA
307	307	DB-AUTOMATIC TRANSFER SWITCH (ATS)	\$	25,000.00	EA
308	308	DB-PLC AND CONTROL CONSOLE	\$	200,000.00	EA
309	309	DB-125 HP VFD	\$	40,000.00	EA
310	310	DB-INSTRUMENTATION	\$	12,000.00	EA
311	311	DB-SECTIONS	\$	2,000.00	EA
312	312	DB-MAIN BREAKER 400 AMP	\$	5,000.00	EA
313	313	DB-FEEDER BREAKER	\$	3,500.00	EA
314	314	DB-SIZE 1 FVR	\$	3,000.00	EA
315	315	DB-SIZE 1 FVNR	\$	2,000.00	EA
316	316	DB-MISC	\$	20,000.00	EA
317	317	DB-CONTROL SYSTEM VENDOR OH&P (21%)	\$	155,190.00	LS

318	318	LG-PLC AND CONTROL CONSOLE	\$ 200,000.00	EA
319	319	LG-125 HP VFD	\$ 60,000.00	EA
320	320	LG-INSTRUMENTATION	\$ 12,000.00	EA
321	321	-	-	-
322	322	LG-SECTIONS	\$ 2,000.00	EA
323	323	LG-MAIN BREAKER 600 AMP	\$ 7,500.00	EA
324	324	LG-FEEDER BREAKER	\$ 5,000.00	EA
325	325	LG-SIZE 1 FVR	\$ 3,000.00	EA
326	326	LG-SIZE 1 FVNR	\$ 2,000.00	EA
327	327	LG-MISC	\$ 20,000.00	EA
328	328	-	-	-
329	329	LG-SECTIONS	\$ 2,000.00	EA
330	330	LG-MAIN BREAKER 600 AMP	\$ 7,500.00	EA
331	331	LG-FEEDER BREAKER	\$ 5,000.00	EA
332	332	LG-SIZE 1 FVR	\$ 3,000.00	EA
333	333	LG-SIZE 1 FVNR	\$ 2,000.00	EA
334	334	LG-MISC	\$ 20,000.00	EA
335	335	LG-CONTROL SYSTEM VENDOR OH&P (21%)	\$ 132,930.00	LS
336	336	LG-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$ 100,000.00	EA
337	337	LG-CONDUIT AND RACEWAY AND CONDUCTOR	\$ 175,000.00	EA
338	338	LG-GENERATOR (600 KW DIESEL GENSET)	\$ 450,000.00	EA
339	339	-	-	-
340	340	LG-SPAN	\$ 4,000.00	EA
341	341	LG-PIER PROTECTION	\$ 1,500.00	EA
342	342	LG-AERIAL BEACON	\$ 5,000.00	EA
343	343	-	-	-
344	344	LG-GONGS/BELLS/SIGNALS	\$ 1,000.00	EA
345	345	LG-BARRIER GATES	\$ 60,000.00	EA
346	346	LG-WARNING/TRAFFIC GATES	\$ 40,000.00	EA
347	347	-	-	-
348	348	LG-CAMERAS	\$ 3,500.00	EA
349	349	LG-CAMERA CONTROLLER	\$ 15,000.00	EA
350	350	LG-MISC(CTV)	\$ 10,000.00	EA
351	351	-	-	-
352	352	LG-MASTER STATION	\$ 2,500.00	EA
353	353	LG-REMOTE STATION	\$ 1,500.00	EA
354	354	LG-NAVIGATION COMMUNICATION RADIO	\$ 5,000.00	EA
355	355	LG-SUMP PUMPS	\$ 6,500.00	EA
356	356	LG-LABOR	\$ 800,000.00	LS
357	357	LG-ELECTRICAL CONTRACTOR OH&P (21%)	\$ 1,032,240.30	LS
358	358	LG-CONTROL HOUSE	\$ 1,600,000.00	LS
359	359	LG-MISC. ITEMS CONTINGENCY	\$ 7,678,031.33	LS
360	360	-	-	-
361	361	DB-STEEL GRATING	\$ 6.00	LBS
362	362	DB-DECK CONCRETE	\$ 900.00	CY
363	363	DB-DECK REINFORCEMENT	\$ 1.15	LBS
364	364	-	-	-
365	365	DB-STRUCTURAL STEEL (FCM)	\$ 6.00	LBS
366	366	DB-STRUCTURAL STEEL	\$ 2.50	LBS
367	367	DB-STEEL BALLAST	\$ 2.00	LBS
368	368	DB-COUNTERWEIGHT CONCRETE	\$ 700.00	CY
369	369	DB-COUNTERWEIGHT REINFORCEMENT	\$ 1.15	LBS
370	370	DB-COUNTERWEIGHT BALANCE BLOCKS (CAST IRON)	\$ 2.50	LBS
371	371	DB-EXPANSION JOINTS	\$ 2,000.00	LF
372	372	DB-BEARINGS	\$ 15,500.00	EA
373	373	-	-	-
374	374	-	-	-
375	375	DB-DECK CONCRETE	\$ 900.00	CY
376	376	DB-DECK REINFORCEMENT	\$ 1.15	LBS
377	377	DB-STRUCTURAL STEEL	\$ 2.50	LBS
378	378	-	-	-
379	379	DB-TAIL LOCKS	\$ 250,000.00	EA
380	380	DB-TOE SPAN LOCKS	\$ 400,000.00	EA
381	381	DB-CENTERING DEVICE	\$ 100,000.00	EA
382	382	DB-SEISMIC GUIDE	\$ 150,000.00	EA
383	383	-	-	-
384	384	DB-PINION SHAFTS	\$ 50,000.00	EA
385	385	DB-PINION BEARINGS	\$ 10,000.00	EA
386	386	DB-SECONDARY REDUCERS	\$ 500,000.00	EA
387	387	DB-MACHINERY BRAKES	\$ 20,000.00	EA
388	388	DB-PRIMARY REDUCERS	\$ 450,000.00	EA
389	389	DB-MOTORS	\$ 40,000.00	EA
390	390	DB-MOTOR BRAKES	\$ 15,000.00	EA
391	391	DB-SHAFTS & COUPLINGS	\$ 15,000.00	EA
392	392	-	-	-
393	393	DB-TRUNNION SHAFT & HUB	\$ 250,000.00	EA
394	394	DB-TRUNNION BEARINGS	\$ 50,000.00	EA
395	395	DB-TRUNNION TOWERS	\$ 350,000.00	EA
396	396	DB-MACHINERY SUPPORTS	\$ 150,000.00	EA
397	397	DB-BALANCE AND LOAD TESTING	\$ 75,000.00	LS
398	398	-	-	-
399	399	-	-	-
400	400	DB-100 HP BUY AMERICA MAIN MOTOR	\$ 65,000.00	EA
401	401	DB-10" BY AMERICA BRAKE	\$ 20,000.00	EA
402	402	DB-17" BY AMERICA BRAKE	\$ 34,000.00	EA
403	403	DB-BUY AMERICA TAIL LOCK MOTOR	\$ 7,500.00	EA
404	404	DB-POWER DISTRIBUTION (400 AMP SERVICE)	\$ 150,000.00	EA
405	405	DB-AUTOMATIC TRANSFER SWITCH (ATS)	\$ 25,000.00	EA
406	406	-	-	-
407	407	DB-PLC AND CONTROL CONSOLE	\$ 200,000.00	EA
408	408	DB-125 HP VFD	\$ 40,000.00	EA
409	409	DB-INSTRUMENTATION	\$ 12,000.00	EA
410	410	-	-	-
411	411	DB-SECTIONS	\$ 2,000.00	EA
412	412	DB-MAIN BREAKER 400 AMP	\$ 5,000.00	EA
413	413	DB-FEEDER BREAKER	\$ 3,500.00	EA
414	414	DB-SIZE 1 FVR	\$ 3,000.00	EA
415	415	DB-SIZE 1 FVNR	\$ 2,000.00	EA
416	416	DB-MISC	\$ 20,000.00	EA
417	417	-	-	-
418	418	-	-	-
419	419	-	-	-
420	420	-	-	-
421	421	-	-	-
422	422	-	-	-
423	423	-	-	-
424	424	DB-CONTROL SYSTEM VENDOR OH&P (21%)	\$ 155,190.00	LS

318	DB-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$ 100,000.00	EA
319	DB-CONDUIT AND RACEWAY AND CONDUCTOR	\$ 250,000.00	EA
320	DB-GENERATOR (400 KW DIESEL GENSET)	\$ 400,000.00	EA
321	DB-MIDSPAN	\$ 4,000.00	EA
322	DB-PIER PROTECTION	\$ 1,500.00	EA
323	DB-GONGS/BELLS/SIGNALS	\$ 1,000.00	EA
324	DB-BARRIER GATES	\$ 60,000.00	EA
325	DB-WARNING/TRAFFIC GATES	\$ 40,000.00	EA
326	DB-CAMERAS	\$ 3,500.00	EA
327	DB-CAMERA CONTROLLER	\$ 15,000.00	EA
328	DB-MISC(CTV)	\$ 10,000.00	EA
329	DB-MASTER STATION	\$ 2,500.00	EA
330	DB-REMOTE STATION	\$ 1,500.00	EA
331	DB-NAVIGATION COMMUNICATION RADIO	\$ 5,000.00	EA
332	DB-SUMP PUMPS	\$ 6,500.00	EA
333	DB-LABOR	\$ 1,040,000.00	LS
334	DB-ELECTRICAL CONTRACTOR OH&P (21%)	\$ 1,153,674.90	LS
335	DB-CONTROL HOUSE	\$ 500,000.00	LS
336	DB-MISC. ITEMS CONTINGENCY	\$ 5,364,219.07	LS
337	TEMP BRIDGE MOVABLE	\$ 1.00	EA
338	BIKE/PED TEMPORARY BRIDGE	\$ 1.00	EA
339	STAGING CONST. PREMIUM	\$ 2,000.00	LF
340	MAINTENANCE TRAVELLER	\$ 1,000,000.00	LS
341	BOLLARDS	\$ 48,000.00	EA

425	425	DB-HOUSE HEATING, LIGHTING AND RECEPTACLES	\$ 100,000.00	EA
426	426	DB-CONDUIT AND RACEWAY AND CONDUCTOR	\$ 250,000.00	EA
427	427	DB-GENERATOR (400 KW DIESEL GENSET)	\$ 400,000.00	EA
428	428	-	-	-
429	429	DB-MIDSPAN	\$ 4,000.00	EA
430	430	DB-PIER PROTECTION	\$ 1,500.00	EA
431	431	-	-	-
432	432	DB-GONGS/BELLS/SIGNALS	\$ 1,000.00	EA
433	433	DB-BARRIER GATES	\$ 60,000.00	EA
434	434	DB-WARNING/TRAFFIC GATES	\$ 40,000.00	EA
435	435	-	-	-
436	436	DB-CAMERAS	\$ 3,500.00	EA
437	437	DB-CAMERA CONTROLLER	\$ 15,000.00	EA
438	438	DB-MISC(CTV)	\$ 10,000.00	EA
439	439	-	-	-
440	440	DB-MASTER STATION	\$ 2,500.00	EA
441	441	DB-REMOTE STATION	\$ 1,500.00	EA
442	442	DB-NAVIGATION COMMUNICATION RADIO	\$ 5,000.00	EA
443	443	DB-SUMP PUMPS	\$ 6,500.00	EA
444	444	DB-LABOR	\$ 1,040,000.00	LS
445	445	DB-ELECTRICAL CONTRACTOR OH&P (21%)	\$ 1,153,674.90	LS
446	446	DB-CONTROL HOUSE	\$ 500,000.00	LS
447	447	DB-MISC. ITEMS CONTINGENCY	\$ 5,364,219.07	LS
448	448	-	-	-
449	449	-	-	-
450	450	-	-	-
451	451	MISCELLANEOUS ITEMS	-	-
452	452	TEMP BRIDGE MOVABLE	\$ 1.00	EA
453	453	BIKE/PED TEMPORARY BRIDGE	\$ 1.00	EA
454	454	STAGING CONST. PREMIUM	\$ 2,000.00	LF
455	455	MAINTENANCE TRAVELLER	\$ 1,000,000.00	LS
456	456	BOLLARDS	\$ 48,000.00	EA
457	457	-	-	-
458	458	-	-	-
459	459	-	-	-
460	460	-	-	-
461	461	-	-	-
462	462	-	-	-
463	463	-	-	-
464	464	-	-	-
465	465	-	-	-
466	466	-	-	-
467	467	-	-	-
468	468	-	-	-
469	469	-	-	-