

Post Street Bridge Superstructure Alternatives, Spokane, WA

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PROJECT NUMBER: 657351
REVISION NO.: 2

This memorandum serves to compare the costs for three superstructure alternatives for the Post Street Bridge in the City of Spokane Washington. Average bid tab costs for most items were used. The cost for the superstructure structural steel was developed using Labor, Equipment & Materials to ensure that the differences between the types was captured.

Overall Costs

The estimate is classified as a Class 4 estimate, based on the preliminary layout and on estimator judgment, as defined by the Association for the Advancement of Cost Engineering International (AACE).

The following is a summary breakdown of the costs including 25% contingency with an accuracy range per the AACE standard guidelines for a Class 3 Estimate of -10% to +30%. See Appendix C for additional details.

See Appendix "A" for the bid item breakdown and Appendix "B" for a detailed estimate.

Plate Girder Superstructure Option:

Low Range	ROUNDED ESTIMATE	High Range
-15%	Total \$ 13,000,000	+30%
\$ 11,050,000		\$ 16,690,000

Open-Web Girder Superstructure Option:

Low Range	ROUNDED ESTIMATE	High Range
-15%	Total \$ 14,600,000	+30%
\$ 12,400,000		\$ 19,000,000

Slant Leg Superstructure Option:

Low Range	ROUNDED ESTIMATE	High Range
-15%	Total \$ 11,500,000	+30%
\$ 9,800,000		\$ 14,950,000

The costs are in 2015 dollars.

Markups/Allowances

The cost estimate includes the following allowances within the estimated costs:

- Contractor's Profit on Labor, Materials & Equipment @ 15%
- Contractor's Indirect/Overhead @ 10%
- Sales Tax @ 8.70%
- Drainage Allowance @ \$50,000
- Temporary Erosion and Sediment Control Allowance @ \$100,000
- Signing and Striping Allowance @ \$50,000
- Mobilization @ 10% of total
- Traffic Control Allowance @ \$100,000
- Launching Truss/Nose Allowance @ \$500,000
- Stage Construction Factor @ 15%
- Contingency @ 25%

Market Conditions

The current market conditions are drastically affecting the construction market, across the country. This is based upon recent bids and comparisons with Engineer's Estimates. Bids can be very erratic. Despite the estimator's best practices and adjustments, bids are being driven by current market conditions.

Estimate Methodology

This estimate is a historical & cost-based estimate. The estimator developed a detailed cost estimate with project specific labor, equipment, permanent materials on the structural steel bid items. For most items, known standard historical bid-based unit costs were used.

Historical bid-based estimate methods

Historical bid-based methods are commonly used to develop Engineer's Estimates, and are appropriate when design definition has advanced to the point where quantification of units of work is possible. These methods apply historical unit costs to counts or measures of work items to determine a total cost

for the item or project. The unit cost data used is typically received in bid documents from prior projects and should be modified or adjusted to reflect current prices (inflated to current time) and project specific conditions such as geographic location, quantity of item needed, and the scheduled timing of project. Techniques such as historical bid pricing, historical percentage, and cost based estimating are also used to determine unit prices.

Cost-based estimate methods

Cost-based estimate methods do not rely on historical bid data, but rather are based on determining, for an item or set of items, the contractor's cost for labor, equipment, materials and specialty subcontractor effort (if appropriate) needed to complete the work. This sometimes called a "bottoms up estimate". A reasonable amount for contractor overhead and profit is then added. This method is preferable on unique projects or where geographical influences, market factors and volatility of material prices can cause the use of historical bid-based methods to be unreliable. Also, since contractors generally utilize a cost-based estimating approach to prepare bids, this method can provide more accurate and defensible costs to support the decision for contract award/rejection and to support any future price negotiations with the contractor after contract award.

Quantities

Quantities were developed by the Engineer.

Cost Resources

The following is a list of the various cost resources used in the development of the cost estimate:

- Estimator Judgment
- WsDOT Unit Price Data
- CH2M Hill Historical Data
- R.S. Means

Labor

Labor unit prices reflect a burdened rate including: workers compensation, FICA, unemployment taxes, fringe benefits. Davis-Bacon Act-General Decision Number: WA20140101 08/21/2015 WA101.

Materials

Material prices were developed using standard HeavyBid library rates for materials using national averages for current market pricing.

Subcontractors

The scope of work to be subcontracted is chosen based on what is typical for a bridge project.

Equipment

Equipment rates utilized are 80% of Blue Book as published by www.equipmentwatch.com.

Major Assumptions

The estimate is based on the assumption the work will be done on a competitive bid basis and the contractor will have a reasonable amount of time to complete the work working 5-eight hour days per week.

This estimate should be evaluated for market changes after 90 days of the issue date. It is assumed that most of the fabricated materials will be shipped from the continental USA:

- Construction costs only
- Contractor will have access and control of construction site during construction
- Owner will coordinate with contractor and provide adequate notification when needing to perform operations within the construction area
- Contractor will accommodate owner access in the construction area in event of emergency
- Utility Companies (power & telephone) will perform their own relocation and improvements, unless otherwise noted
- Dewatering, when necessary, can be accomplished using portable pumps. No well-point systems were assumed necessary
- Site access for the contractor and contractor staging areas are adequate for the contractors needs
- Estimate is based on bid-build delivery, with a single prime contract for the entire scope of work
- Additional assumptions can be found in the detailed estimate in Appendix B

Excluded Costs

The cost estimate excludes the following costs:

- Right of Way acquisition expense
- Material Adjustment allowances above and beyond what is included at the time of the cost estimate
- Environmental Mitigation & Permits
- Inspection Costs
- Delays due to factors beyond control of the contractor
- Scope of work beyond what has been provided

- Non-construction soft costs for design, services during construction, land, legal and owner administration costs
- Third party utility relocations and installations including: water, drainage, sanitary sewer, electrical and franchise utilities
- Escalation, estimated in current 2015

Reference Documents

- PostStreetElev-001.pdf
- PostStreetElev-002.pdf
- PostStreetElev-003.pdf
- PostSTreetPP - Roundabout-Layout1.pdf
- Post Str TSL quantities cost (12-8-15).xlsx
- Post St Bridge Civil Items 12-14-15.xlsx
- Post St Bridge Demolition Estimate Report Rev. 0, July 22, 2015.pdf
- Post St Bridge New Sewer Piping Estimate Report Rev 0 July 22 2015.pdf

Estimate Validity

This estimate was prepared in December 2015 and is based on project layout details provided at that time. As with all estimates it represents a snapshot in time of what is known about the project and expected to occur. The commodities and energy markets are also extremely active at this point in time. Changes in either will have dramatic affects to this estimate. Therefore, this estimate should be viewed in that light and if more than 90 days have passed, or there have been significant changes in the commodity markets, this estimate should be updated and re-evaluated.

Disclaimer

The opinions of cost (estimates) shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation and implementation from the information available at the time the opinion was prepared. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. The recent increases or decreases in material pricing may have a significant impact which is not predictable and careful review or consideration must be used in evaluation of material prices. As a result, the final project costs will vary from the opinions of cost presented herein. Because of these factors, project feasibility, benefit/cost ratios, risks, and funding needs must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding. The estimate is based on material, equipment, and labor pricing as of December 2015.

Appendix A – Bid Item Breakdown

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BID TOTALS

<u>Biditem</u>	<u>Description</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Bid Total</u>
PLATE GIRDER OPTION					
100	Remove Asphalt Conc. Pavement	4,450.000	SY	3.00	13,350.00
200	Removing Traffic Island	190.000	SY	18.00	3,420.00
300	Removing Cement Conc. Sidewalk	850.000	SY	14.00	11,900.00
400	Removing Cement Conc. Curb	4,000.000	LF	8.00	32,000.00
500	Roadway Excavation Incl. Haul	3,000.000	CY	33.00	99,000.00
600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	4,150.000	SY	4.30	17,845.00
700	Roundabout Splitter Island Nosing Curb	3.000	EA	915.00	2,745.00
800	Roundabout Cement Concrete Curb and Gutter	315.000	LF	23.00	7,245.00
900	Cement Conc. Traffic Curb and Gutter	1,500.000	LF	25.00	37,500.00
1000	Cement Conc. Traffic Curb	300.000	LF	22.00	6,600.00
1100	Cement Conc. Sidewalk	1,000.000	SY	39.00	39,000.00
1200	Cement conc. Driveway Entrance	135.000	SY	93.00	12,555.00
1300	Cement concrete Curb Ramp	9.000	EA	1,200.00	10,800.00
1400	Drainage	1.000	LS	50,000.00	50,000.00
1500	Temporary Erosion and Sediment Control	1.000	LS	100,000.00	100,000.00
1600	Signing and Striping	1.000	LS	50,000.00	50,000.00
1700	Bridge Removal	1.000	LS	1,041,532.00	1,041,532.00
1800	Excavation	1,550.000	CY	100.00	155,000.00
1900	Backfill	1,128.000	CY	43.00	48,504.00
2000	Reinforcing Steel, Plain	96,700.000	LBS	0.90	87,030.00
2100	Reinforcing Steel, Epoxy Coated	146,800.000	LBS	1.50	220,200.00
2200	Substructure	462.000	CY	500.00	231,000.00
2300	Reinforced Slab	252.000	CY	700.00	176,400.00
2400	Main Deck Slab	419.000	CY	800.00	335,200.00
2500	Steel Superstructure	1,548,000.000	LBS	2.63	4,071,240.00
2600	Strip Seal Expansion Joint	102.000	LF	375.00	38,250.00
2700	Bearings	10.000	EA	1,500.00	15,000.00
2800	Barrier Railings, Metal	694.000	LF	150.00	104,100.00
2900	Sewer Pipe	430.000	LF	2,879.30	1,238,099.00
3000	Mobilization	1.000	LS	930,000.00	930,000.00
3100	Traffic Control	1.000	LS	100,000.00	100,000.00
3200	Stage Construction Factor 15%	1.000	LS	1,395,000.00	1,395,000.00
3300	Contingency 25%	1.000	LS	2,325,000.00	2,325,000.00

PLATE GIRDER OPTION

\$13,005,515.00

BID TOTALS

<u>Biditem</u>	<u>Description</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Bid Total</u>
OPEN-WEB GIRDER OPTION					
10100	Remove Asphalt Conc. Pavement	4,450.000	SY	3.00	13,350.00
10200	Removing Traffic Island	190.000	SY	18.00	3,420.00
10300	Removing Cement Conc. Sidewalk	850.000	SY	14.00	11,900.00
10400	Removing Cement Conc. Curb	4,000.000	LF	8.00	32,000.00
10500	Roadway Excavation Incl. Haul	3,000.000	CY	33.00	99,000.00
10600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	4,150.000	SY	4.30	17,845.00
10700	Roundabout Splitter Island Nosing Curb	3.000	EA	915.00	2,745.00
10800	Roundabout Cement Concrete Curb and Gutter	315.000	LF	23.00	7,245.00
10900	Cement Conc. Traffic Curb and Gutter	1,500.000	LF	25.00	37,500.00
11000	Cement Conc. Traffic Curb	300.000	LF	22.00	6,600.00
11100	Cement Conc. Sidewalk	1,000.000	SY	39.00	39,000.00
11200	Cement conc. Driveway Entrance	135.000	SY	93.00	12,555.00
11300	Cement concrete Curb Ramp	9.000	EA	1,200.00	10,800.00
11400	Drainage	1.000	LS	50,000.00	50,000.00
11500	Temporary Erosion and Sediment Control	1.000	LS	100,000.00	100,000.00
11600	Signing and Striping	1.000	LS	50,000.00	50,000.00
11700	Bridge Removal	1.000	LS	1,041,532.00	1,041,532.00
11800	Excavation	1,550.000	CY	100.00	155,000.00
11900	Backfill	1,128.000	CY	43.00	48,504.00
12000	Reinforcing Steel, Plain	96,700.000	LBS	0.90	87,030.00
12100	Reinforcing Steel, Epoxy Coated	146,800.000	LBS	1.50	220,200.00
12200	Substructure	462.000	CY	500.00	231,000.00
12300	Reinforced Slab	252.000	CY	700.00	176,400.00
12400	Main Deck Slab	419.000	CY	800.00	335,200.00
12500	Structural Steel	1,534,000.000	LBS	3.33	5,108,220.00
12600	Strip Seal Expansion Joint	102.000	LF	375.00	38,250.00
12700	Bearings	10.000	EA	1,500.00	15,000.00
12800	Barrier Railings, Metal	694.000	LF	150.00	104,100.00
12900	Sewer Pipe	430.000	LF	2,879.30	1,238,099.00
13000	Mobilization	1.000	LS	1,040,000.00	1,040,000.00
13100	Traffic Control	1.000	LS	100,000.00	100,000.00
13200	Stage Construction Factor 15%	1.000	LS	1,560,000.00	1,560,000.00
13300	Contingency 25%	1.000	LS	2,600,000.00	2,600,000.00

OPEN-WEB GIRDER OPTION

\$14,592,495.00

BID TOTALS

<u>Biditem</u>	<u>Description</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Bid Total</u>
SLANT LEG OPTION					
20100	Remove Asphalt Conc. Pavement	4,450.000	SY	3.00	13,350.00
20200	Removing Traffic Island	190.000	SY	18.00	3,420.00
20300	Removing Cement Conc. Sidewalk	850.000	SY	14.00	11,900.00
20400	Removing Cement Conc. Curb	4,000.000	LF	8.00	32,000.00
20500	Roadway Excavation Incl. Haul	3,000.000	CY	33.00	99,000.00
20600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	4,150.000	SY	4.30	17,845.00
20700	Roundabout Splitter Island Nosing Curb	3.000	EA	915.00	2,745.00
20800	Roundabout Cement Concrete Curb and Gutter	315.000	LF	23.00	7,245.00
20900	Cement Conc. Traffic Curb and Gutter	1,500.000	LF	25.00	37,500.00
21000	Cement Conc. Traffic Curb	300.000	LF	22.00	6,600.00
21100	Cement Conc. Sidewalk	1,000.000	SY	39.00	39,000.00
21200	Cement conc. Driveway Entrance	135.000	SY	93.00	12,555.00
21300	Cement concrete Curb Ramp	9.000	EA	1,200.00	10,800.00
21400	Drainage	1.000	LS	50,000.00	50,000.00
21500	Temporary Erosion and Sediment Control	1.000	LS	100,000.00	100,000.00
21600	Signing and Striping	1.000	LS	50,000.00	50,000.00
21700	Bridge Removal	1.000	LS	1,041,532.00	1,041,532.00
21800	Excavation	1,500.000	CY	100.00	150,000.00
21900	Backfill	854.000	CY	43.00	36,722.00
22000	Reinforcing Steel, Plain	131,000.000	LBS	0.90	117,900.00
22100	Reinforcing Steel, Epoxy Coated	103,800.000	LBS	1.50	155,700.00
22200	Substructure	620.000	CY	500.00	310,000.00
22400	Main Deck Slab	519.000	CY	800.00	415,200.00
22500	Structural Steel	1,020,000.000	LBS	3.10	3,162,000.00
22600	Strip Seal Expansion Joint	102.000	LF	375.00	38,250.00
22700	Bearings	10.000	EA	1,500.00	15,000.00
22800	Barrier Railings, Metal	694.000	LF	150.00	104,100.00
22900	Sewer Pipe	430.000	LF	2,879.30	1,238,099.00
23000	Mobilization	1.000	LS	820,000.00	820,000.00
23100	Traffic Control	1.000	LS	100,000.00	100,000.00
23200	Stage Construction Factor 15%	1.000	LS	1,230,000.00	1,230,000.00
23300	Contingency 25%	1.000	LS	2,050,000.00	2,050,000.00

SLANT LEG OPTION

\$11,478,463.00

Appendix B – Detailed Estimate

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Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
<hr/>									
BID ITEM	= 100	CLIENT# = C-2	Land Item	SCHEDULE: 1	100				
Description =	Remove Asphalt Conc. Pavement		Unit =	SY	Takeoff Quan:	4,450.000	Engr Quan:	4,450.000	
100	Remove Asphalt Conc. Pavement		Quan:	4,450.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WSDOT: 0120-REMOVING ASPHALT CONC PAVEMENT									
4GP	Grading & Paving Sub	1.00	4,450.00 SY	3.000			13,350	13,350	
\$13,350.00				[]			13,350	13,350	
							3.00	3.00	
<hr/>									
BID ITEM	= 200	CLIENT# = C-3	Land Item	SCHEDULE: 1	100				
Description =	Removing Traffic Island		Unit =	SY	Takeoff Quan:	190.000	Engr Quan:	190.000	
200	Removing Traffic Island		Quan:	190.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WSDOT: 0150-REMOVING TRAFFIC ISLAND									
4GP	Grading & Paving Sub	1.00	190.00 SY	18.000			3,420	3,420	
\$3,420.00				[]			3,420	3,420	
							18.00	18.00	
<hr/>									
BID ITEM	= 300	CLIENT# = C-4	Land Item	SCHEDULE: 1	100				
Description =	Removing Cement Conc. Sidewalk		Unit =	SY	Takeoff Quan:	850.000	Engr Quan:	850.000	
300	Removing Cement Conc. Sidewalk		Quan:	850.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	850.00 SY	14.000			11,900	11,900	
\$11,900.00				[]			11,900	11,900	
							14.00	14.00	
<hr/>									
BID ITEM	= 400	CLIENT# = C-5	Land Item	SCHEDULE: 1	100				
Description =	Removing Cement Conc. Curb		Unit =	LF	Takeoff Quan:	4,000.000	Engr Quan:	4,000.000	
400	Removing Cement Conc. Curb		Quan:	4,000.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	4,000.00 LF	8.000			32,000	32,000	
\$32,000.00				[]			32,000	32,000	
							8.00	8.00	
<hr/>									
BID ITEM	= 500	CLIENT# = C-6	Land Item	SCHEDULE: 1	100				
Description =	Roadway Excavation Incl. Haul		Unit =	CY	Takeoff Quan:	3,000.000	Engr Quan:	3,000.000	
500	Roadway Excavation Incl. Haul		Quan:	3,000.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	3,000.00 CY	33.000			99,000	99,000	
\$99,000.00				[]			99,000	99,000	
							33.00	33.00	
<hr/>									

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = 600	CLIENT# = C-7	Land Item	SCHEDULE: 1	100						
Description =	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Unit =	SY	Takeoff Quan:	4,150.000	Engr Quan:	4,150.000			
600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Quan:	4,150.00 SY	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP	
WSDOT: 5767-HMA CL. 12 IN. PG 70-28 convert from Tons \$104.18 * 3"/36"/2.02 = \$4.30										
4GP	Grading & Paving Sub	1.00	4,150.00 SY	4.300				17,845		17,845
\$17,845.00				[]				17,845		17,845
								4.30		4.30
BID ITEM = 700	CLIENT# = C-8	Land Item	SCHEDULE: 1	100						
Description =	Roundabout Splitter Island Nosing Curb	Unit =	EA	Takeoff Quan:	3.000	Engr Quan:	3.000			
700	Roundabout Splitter Island Nosing Curb	Quan:	3.00 EA	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP	
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	3.00 EA	915.000				2,745		2,745
\$2,745.00				[]				2,745		2,745
								915.00		915.00
BID ITEM = 800	CLIENT# = C-9	Land Item	SCHEDULE: 1	100						
Description =	Roundabout Cement Concrete Curb and Gutt	Unit =	LF	Takeoff Quan:	315.000	Engr Quan:	315.000			
800	Roundabout Cement Concrete Curb and Gutt	Quan:	315.00 LF	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP	
WSDOT: 6699-ROUNABOUT CEMENT CONCRETE CURB AND G										
4GP	Grading & Paving Sub	1.00	315.00 LF	23.000				7,245		7,245
\$7,245.00				[]				7,245		7,245
								23.00		23.00
BID ITEM = 900	CLIENT# = C-10	Land Item	SCHEDULE: 1	100						
Description =	Cement Conc. Traffic Curb and Gutter	Unit =	LF	Takeoff Quan:	1,500.000	Engr Quan:	1,500.000			
900	Cement Conc. Traffic Curb and Gutter	Quan:	1,500.00 LF	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP	
WSDOT: 6700-CEMENT CONC TRAFFIC CURB AND GUTTER										
4GP	Grading & Paving Sub	1.00	1,500.00 LF	25.000				37,500		37,500
\$37,500.00				[]				37,500		37,500
								25.00		25.00
BID ITEM = 1000	CLIENT# = C-11	Land Item	SCHEDULE: 1	100						
Description =	Cement Conc. Traffic Curb	Unit =	LF	Takeoff Quan:	300.000	Engr Quan:	300.000			
1000	Cement Conc. Traffic Curb	Quan:	300.00 LF	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP	
WSDOT: 6701-CEMENT CONC. TRAFFIC CURB										
4GP	Grading & Paving Sub	1.00	300.00 LF	22.000				6,600		6,600
\$6,600.00				[]				6,600		6,600
								22.00		22.00

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = 1100	CLIENT# = C-12	Land Item	SCHEDULE: 1	100						
Description =	Cement Conc. Sidewalk	Unit =	SY	Takeoff	Quan:	1,000.000	Engr	Quan:	1,000.000	
1100	Cement Conc. Sidewalk	Quan:	1,000.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP			
WSDOT: 7055-CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	1,000.00 LF	39.000				39,000	39,000	
\$39,000.00				[]				39,000	39,000	
								39.00	39.00	
BID ITEM = 1200	CLIENT# = C-13	Land Item	SCHEDULE: 1	100						
Description =	Cement conc. Driveway Entrance	Unit =	SY	Takeoff	Quan:	135.000	Engr	Quan:	135.000	
1200	Cement conc. Driveway Entrance	Quan:	135.00 SY	Hrs/Shift:	8.00	Cal: 508	WC: CCISP			
WSDOT: 7059-CEMENT CONC DRIVEWAY ENTRANCE										
4GP	Grading & Paving Sub	1.00	135.00 SY	93.000				12,555	12,555	
\$12,555.00				[]				12,555	12,555	
								93.00	93.00	
BID ITEM = 1300	CLIENT# = C-14	Land Item	SCHEDULE: 1	100						
Description =	Cement concrete Curb Ramp	Unit =	EA	Takeoff	Quan:	9.000	Engr	Quan:	9.000	
1300	Cement concrete Curb Ramp	Quan:	9.00 EA	Hrs/Shift:	8.00	Cal: 508	WC: CCISP			
WSDOT: 7058-CEMENT CONC CURB RAMP										
4GP	Grading & Paving Sub	1.00	9.00 EA	1,200.000				10,800	10,800	
\$10,800.00				[]				10,800	10,800	
								1,200.00	1,200.00	
BID ITEM = 1400	CLIENT# = C-16	Land Item	SCHEDULE: 1	100						
Description =	Drainage	Unit =	LS	Takeoff	Quan:	1.000	Engr	Quan:	1.000	
1400	Drainage	Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP			
Plug										
4DRAIN	Drainage Sub	1.00	1.00 LS	50,000.000				50,000	50,000	
\$50,000.00				[]				50,000	50,000	
								50,000.00	50,000.00	
BID ITEM = 1500	CLIENT# = C-18	Land Item	SCHEDULE: 1	100						
Description =	Temporary Erosion and Sediment Control	Unit =	LS	Takeoff	Quan:	1.000	Engr	Quan:	1.000	
1500	Temporary Erosion and Sediment Control	Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP			
Plug										
4DRAIN	Drainage Sub	1.00	1.00 LS	100,000.000				100,000	100,000	
\$100,000.00				[]				100,000	100,000	
								100,000.00	100,000.00	

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Ment	Contract	Total
<hr/>										
BID ITEM = 1600		CLIENT# = C-20	Land Item	SCHEDULE: 1	100					
Description =	Signing and Striping		Unit =	LS	Takeoff Quan:	1.000	Engr Quan:			1.000
1600	Signing and Striping		Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
Plug										
4SIGN	Sign Sub	1.00	1.00 LS	50,000.000				50,000		50,000
\$50,000.00				[]				50,000		50,000
								50,000.00		50,000.00
<hr/>										
BID ITEM = 1700			Land Item	SCHEDULE: 1	100					
Description =	Bridge Removal		Unit =	LS	Takeoff Quan:	1.000	Engr Quan:			1.000
1700	Bridge Removal		Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
Images/Docs Attached										
Pricing by Nick Cavalleri/RDD										
Mobilization & Contingency removed since they are included in the overall total										
4DEMO	Demolition Sub	1.00	1.00 LS	1,414,366.000				1,414,366		1,414,366
9MOB	MOBILIZATION	1.00	-1.00 LS	72,565.000		-72,566				-72,566
9RCON	Contingency	1.00	-1.00 LS	300,269.000		-300,270				-300,270
\$1,041,532.00				[]		-372,835		1,414,366		1,041,532
						-372,833.99		1,414,366.00		1,041,532.00
<hr/>										
====> Item Totals:	1700	- Bridge Removal								
\$1,041,532.00				[]		-372,835		1,414,366		1,041,532
1,041,532.000		1 LS				-372,833.99		1,414,366.00		1,041,532.00
<hr/>										
BID ITEM = 1800			Land Item	SCHEDULE: 1	100					
Description =	Excavation		Unit =	CY	Takeoff Quan:	1,550.000	Engr Quan:			1,550.000
1800	Excavation		Quan:	1,550.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
Low \$100 - High \$220, by Sean Murphy/BOI										
Use low end due to new footings being located above existing footings										
4BRIDGE	Bridge Sub	1.00	1,550.00 CY	100.000				155,000		155,000
\$155,000.00				[]				155,000		155,000
								100.00		100.00
<hr/>										
BID ITEM = 1900			Land Item	SCHEDULE: 1	100					
Description =	Backfill		Unit =	CY	Takeoff Quan:	1,128.000	Engr Quan:			1,128.000
1900	Backfill		Quan:	1,128.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
7011-GRAVEL BACKFILL FOR FOUNDATION CLASS										
Use state Average low bid										
4BRIDGE	Bridge Sub	1.00	1,128.00 CY	43.000				48,504		48,504
\$48,504.00				[]				48,504		48,504
								43.00		43.00
<hr/>										

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Ment	Contract	Total
<hr/>										
BID ITEM = 2000										
Description =	Reinforcing Steel, Plain									
			Land Item	SCHEDULE: 1	100					
			Unit =	LBS	Takeoff Quan:	96,700.000		Engr Quan:	96,700.000	
2000	Reinforcing Steel, Plain			Quan:	96,700.00 LBS	Hrs/Shft:	8.00	Cal:	508	WC: CCISP
WashDOT: 4149-ST REINF BAR FOR BRIDGE										
4BRIDGE	Bridge Sub	1.00	96,700.00 LBS	0.900				87,030	87,030	
\$87,030.00				[]				87,030	87,030	
								0.90	0.90	
<hr/>										
BID ITEM = 2100										
Description =	Reinforcing Steel, Epoxy Coated									
			Land Item	SCHEDULE: 1	100					
			Unit =	LBS	Takeoff Quan:	146,800.000		Engr Quan:	146,800.000	
2100	Reinforcing Steel, Epoxy Coated			Quan:	146,800.00 LBS	Hrs/Shft:	8.00	Cal:	508	WC: CCISP
Low \$1.25 - High \$1.75, by Sean Murphy/BOI										
Use Ave										
4BRIDGE	Bridge Sub	1.00	146,800.00 LBS	1.500				220,200	220,200	
\$220,200.00				[]				220,200	220,200	
								1.50	1.50	
<hr/>										
BID ITEM = 2200										
Description =	Substructure									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	462.000		Engr Quan:	462.000	
2200	Substructure			Quan:	462.00 CY	Hrs/Shft:	8.00	Cal:	508	WC: CCISP
WasDOT: 4322-CONC CLASS 4000 FOR BRIDGE										
4BRIDGE	Bridge Sub	1.00	462.00 CY	500.000				231,000	231,000	
\$231,000.00				[]				231,000	231,000	
								500.00	500.00	
<hr/>										
BID ITEM = 2300										
Description =	Reinforced Slab									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	252.000		Engr Quan:	252.000	
2300	Reinforced Slab Approach Spans			Quan:	252.00 CY	Hrs/Shft:	8.00	Cal:	508	WC: CCISP
Low \$700 - High \$800, by Sean Murphy/BOI										
Use low end due to thickness of concrete										
4BRIDGE	Bridge Sub	1.00	252.00 CY	700.000				176,400	176,400	
\$176,400.00				[]				176,400	176,400	
								700.00	700.00	
<hr/>										
BID ITEM = 2400										
Description =	Main Deck Slab									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	419.000		Engr Quan:	419.000	
2400	Main Deck Slab			Quan:	419.00 CY	Hrs/Shft:	8.00	Cal:	508	WC: CCISP
Low \$700 - High \$800, by Sean Murphy/BOI										
Use High end due to thickness of concrete										
4BRIDGE	Bridge Sub	1.00	419.00 CY	800.000				335,200	335,200	
\$335,200.00				[]				335,200	335,200	

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 2400									
Description =	Main Deck Slab								
			Land Item	SCHEDULE: 1	100				
			Unit =	CY	Takeoff	Quan:	419.000	Engr Quan:	419.000
								800.00	800.00

BID ITEM = 2500									
Description =	Steel Superstructure								
			Land Item	SCHEDULE: 1	100				
			Unit =	LBS	Takeoff	Quan:	1,548,000.000	Engr Quan:	1,548,000.000

381020 Prep for Plate Girder Erection **Quan: 2.00 EA Hrs/Shift: 8.00 Cal: 508 WC: CCISP**

Set up crane mats for beam to be erected

<u>GIRDR4</u>	Prep Girder Erection		16.00	CH	Prod:	32.0000 MU	Lab Pcs:	4.00	Eqp Pcs:	3.00
31MATCM	Crane Mats@108.7%	1.00	12.00	EA	2,400.000		31,306			31,306
31MATCMS	Salvage Crane M@108.7%	1.00	12.00	EA	-1,800.000		-23,480			-23,480
8FORK06	Forklift Cat TL1255 12	1.00	16.00	HR	59.949			959		959
8TRKGS10	Flatbed Truck 15K 200H	1.00	16.00	HR	26.191			419		419
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	16.00	HR	18.570			297		297
LA01	Laborer-Foreman	1.00	16.00	MH	23.380	572				572
LA04	Laborer-Power Tool	2.00	32.00	MH	19.380	989				989
OP12	Op Boom Tk <10T	1.00	16.00	MH	26.480	726				726
\$11,788.54	32.0000 MH/EA		64.00	MH	[708.96]	2,287	7,826	1,675		11,789
0.1250 Units/Hr	0.0313 Unit/MH		2.0000	Shifts		1,143.41	3,913.20	837.67		5,894.27

381035 I-Girder Erect-Self perf **Quan: 1,548,000.00 LB Hrs/Shift: 8.00 Cal: 508 WC: CCISP**

<u>GIRDR1</u>	Steel Girder Erection		320.00	CH	Prod:	0.0023 MU	Lab Pcs:	11.00	Eqp Pcs:	11.00
2SS02	Steel Beams Pla@108.7%	1.00	1,548,000.00	LB	1.250		2,103,345			2,103,345
8CRANEC200	Crane Manitowoc 777 20	1.00	320.00	HR	217.011			69,444		69,444
8CRANEC350	Crane Manitowoc 4600 3	1.00	320.00	HR	370.362			118,516		118,516
8GLP04	Light Plant, 4 Lights	4.00	1,280.00	HR	7.455			9,542		9,542
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	640.00	HR	29.173			20,295		20,295
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	320.00	HR	18.570			5,942		5,942
8WELD300	Welder 300 AMP	2.00	640.00	HR	5.121			3,277		3,277
IW01	Ironworker Foreman	1.00	320.00	MH	37.760	21,940				21,940
IW02	Ironworker Journeyman	6.00	1,920.00	MH	32.760	120,104				120,104
OP05	Op Crane >100T	2.00	640.00	MH	29.860	31,635				31,635
OP07	Op Oiler >100T plus	2.00	640.00	MH	27.250	29,628				29,628
\$2,533,669.33	0.0022 MH/LB		3,520.00	MH	[0.072]	203,307	2,103,345	227,017		2,533,669
4,837.5000 Units/Hr	439.7731 Unit/MH		40.0000	Shifts		0.13	1.36	0.15		1.64

381080 Bolt-up Steel **Quan: 1,548,000.00 LBS Hrs/Shift: 8.00 Cal: 508 WC: CCISP**

3 beams/shift
54 beams/3

<u>IRON5</u>	Foreman + 4 Ironworker		240.00	CH	Prod:	1,290.0000 UM	Lab Pcs:	5.00	Eqp Pcs:	5.00
8COMPR04	Compressor 185 CFM 80H	1.00	240.00	HR	17.411			4,179		4,179
8GEN005	Generator 5 KW	1.00	240.00	HR	5.108			1,226		1,226
8MLIFT080	Manlift Grove T80 80'	1.00	240.00	HR	42.605			10,225		10,225
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	240.00	HR	18.570			4,457		4,457
8WELD300	Welder 300 AMP	1.00	240.00	HR	5.121			1,229		1,229
IW01	Ironworker Foreman	1.00	240.00	MH	37.760	16,455				16,455
IW02	Ironworker Journeyman	4.00	960.00	MH	32.760	60,052				60,052
\$97,822.82	0.0007 MH/LBS		1,200.00	MH	[0.026]	76,507		21,316		97,823
6,450.0000 Units/Hr	1,290.0063 Unit/MH		* 30.0000	Shifts		0.05		0.01		0.06

381110 Safety Lines-Steel Beams **Quan: 1,680.00 LF Hrs/Shift: 8.00 Cal: 508 WC: CCISP**

Appendix B-Detailed Estimate

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 2500									
Description =	Steel Superstructure			Land Item Unit =	SCHEDULE: 1 100				
				LBS	Takeoff Quan: 1,548,000.000		Engr Quan: 1,548,000.000		
<u>IRON4</u>	Foreman + 3 Ironworker		32.00 CH	Prod:	0.0762 MU	Lab Pcs:	4.00	Eqp Pcs:	4.00
31MATCABLE	Safety Line Cab@108.7%	1.10	1,848.00 LF	1.000		2,009			2,009
31MATPOST	Safety Line Pos@108.7%	1.00	35.00 EA	25.000		951			951
8COMPR04	Compressor 185 CFM 80H	1.00	32.00 HR	17.411			557		557
8GEN005	Generator 5 KW	1.00	32.00 HR	5.108			163		163
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	32.00 HR	18.570			594		594
8WELD300	Welder 300 AMP	1.00	32.00 HR	5.121			164		164
IW01	Ironworker Foreman	1.00	32.00 MH	37.760	2,194				2,194
IW02	Ironworker Journeyman	3.00	96.00 MH	32.760	6,005				6,005
\$12,637.82	0.0761 MH/LF		128.00 MH	[2.591]	8,199	2,960	1,479		12,638
52.5000 Units/Hr	13.1250 Unit/MH		4.0000 Shifts		4.88	1.76	0.88		7.52
381125	Paint Steel Touch up			Quan:	1,548,000.00 LB	Hrs/Shft:	8.00	Cal:	508 WC: CCISP
4SPAINT	Paint Struc Steel Sub	1.00	1,548,000.00 LB	0.050			77,400		77,400
\$77,400.00				[]			77,400		77,400
							0.05		0.05
381150	Install Temp X-Bracing			Quan:	30.00 EA	Hrs/Shft:	8.00	Cal:	508 WC: CCISP
Install every 50'									
5 spaces x 6 points = 30 each									
<u>IRON4</u>	Foreman + 3 Ironworker		40.00 CH	Prod:	5.3333 MU	Lab Pcs:	4.00	Eqp Pcs:	4.00
31MATMISC	Misc Material@108.7%	1.00	30.00 EA	150.000		4,892			4,892
8COMPR04	Compressor 185 CFM 80H	1.00	40.00 HR	17.411			696		696
8GEN005	Generator 5 KW	1.00	40.00 HR	5.108			204		204
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	40.00 HR	18.570			743		743
8WELD300	Welder 300 AMP	1.00	40.00 HR	5.121			205		205
IW01	Ironworker Foreman	1.00	40.00 MH	37.760	2,743				2,743
IW02	Ironworker Journeyman	3.00	120.00 MH	32.760	7,507				7,507
\$16,988.93	5.3333 MH/EA		160.00 MH	[181.387]	10,249	4,892	1,848		16,989
0.7500 Units/Hr	0.1875 Unit/MH		5.0000 Shifts		341.63	163.05	61.61		566.30
392000	Beam launcher			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal:	508 WC: CCISP
Fabricated Launching Nose for two cross-braced Girders including Labor, Equipment and Materials									
4BRIDGE	Bridge Sub	1.00	1.00 LS	500,000.000			500,000		500,000
\$500,000.00				[]			500,000		500,000
							500,000.00		500,000.00
905000	Mob Equipment			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal:	508 WC: CCISP
1 on each side of river									
777-8 truckloads									
4600-18 truckloads, allow 8 hours each load x 2 ways = 48 flatbeds x 8 hrs = 384 hrs, 4 lowboys x 8 hrs = 32 hrs									
Crane build crane 1 day each (ave)									
Crane teardown 1-1/2 days									
Forklift.....2 each - small move									
Manlifts (2).....2 each - small move									
<u>GIRDR5</u>	Crane Mob		28.00 CH	Prod:	3.5000 S	Lab Pcs:	12.00	Eqp Pcs:	12.00
5MS	Small Move@108.7%	1.00	6.00 EA	250.000		1,631			1,631
5TRKFB	Trucking - Flat Bed	1.00	384.00 HR	100.000		38,400			38,400
5TRKLB50	Trucking - Low Bed 50T	1.00	32.00 HR	125.000		4,000			4,000
8CRANEC200	Crane Manitowoc 777 20	1.00	28.00 HR	217.011			6,076		6,076
8CRANEC350	Crane Manitowoc 4600 3	1.00	28.00 HR	370.362			10,370		10,370
8CRANETK120	Crane Grove GMK4090 12	1.00	28.00 HR	226.647			6,346		6,346
8GLP04	Light Plant, 4 Lights	4.00	112.00 HR	7.455			835		835
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	56.00 HR	29.173			1,776		1,776
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	28.00 HR	18.570			520		520

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
<hr/>										
BID ITEM = 2500				Land Item	SCHEDULE: 1 100					
Description =	Steel Superstructure		Unit =	LBS	Takeoff Quan:	1,548,000.000		Engr Quan:	1,548,000.000	
8WELD300	Welder 300 AMP	2.00	56.00 HR	5.121				287		287
IW01	Ironworker Foreman	1.00	28.00 MH	37.760	1,920					1,920
IW02	Ironworker Journeyman	6.00	168.00 MH	32.760	10,509					10,509
OP05	Op Crane >100T	3.00	84.00 MH	29.860	4,152					4,152
OP07	Op Oiler >100T plus	2.00	56.00 MH	27.250	2,592					2,592
\$89,413.89	336.0000 MH/LS		336.00 MH	[10595.2]	19,173		44,031	26,210		89,414
0.0357 Units/Hr	0.0030 Unit/MH		3.5000 Shifts	*	19,173.42		44,030.50	26,209.97		89,413.89
<hr/>										
=====>	Item Totals: 2500 - Steel Superstructure									
\$3,339,721.33	0.0034 MH/LBS		5,408.00 MH	[0.112]	319,723	2,103,345	59,708	279,545	577,400	3,339,721
2.157	1548000 LBS				0.21	1.36	0.04	0.18	0.37	2.16
<hr/>										
BID ITEM = 2600				Land Item	SCHEDULE: 1 100					
Description =	Strip Seal Expansion Joint		Unit =	LF	Takeoff Quan:	102.000		Engr Quan:	102.000	
384000	Expan Device-Modular			Quan:	102.00 LF	Hrs/Shft: 8.00	Cal: 508	WC: CCISP		
Low \$250 - High \$500, by Sean Murphy/BOI										
Use ave										
4JSEAL	Joint Saw & Seal Sub	1.00	102.00 LF	375.000				38,250		38,250
\$38,250.00				[]				38,250		38,250
								375.00		375.00
<hr/>										
BID ITEM = 2700				Land Item	SCHEDULE: 1 100					
Description =	Bearings		Unit =	EA	Takeoff Quan:	10.000		Engr Quan:	10.000	
2700	Bearings			Quan:	10.00 EA	Hrs/Shft: 8.00	Cal: 508	WC: CCISP		
WSDOT:4307-FABRIC PAD BEARING - SUPERSTR										
Statewide Ave										
4BRIDGE	Bridge Sub	1.00	10.00 EA	1,500.000				15,000		15,000
\$15,000.00				[]				15,000		15,000
								1,500.00		1,500.00
<hr/>										
BID ITEM = 2800				Land Item	SCHEDULE: 1 100					
Description =	Barrier Railings, Metal		Unit =	LF	Takeoff Quan:	694.000		Engr Quan:	694.000	
2800	Barrier Railings, Metal			Quan:	694.00 LF	Hrs/Shft: 8.00	Cal: 508	WC: CCISP		
Low \$125 - High \$180, by Sean Murphy/BOI										
Use ave										
4BRIDGE	Bridge Sub	1.00	694.00 LF	150.000				104,100		104,100
\$104,100.00				[]				104,100		104,100
								150.00		150.00
<hr/>										
BID ITEM = 2900				Land Item	SCHEDULE: 1 100					
Description =	Sewer Pipe		Unit =	LF	Takeoff Quan:	430.000		Engr Quan:	430.000	
2900	Sewer Pipe			Quan:	430.00 LF	Hrs/Shft: 8.00	Cal: 508	WC: CCISP		

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
<hr/>									
BID ITEM = 2900				Land Item	SCHEDULE: 1	100			
Description =	Sewer Pipe		Unit =	LF	Takeoff	Quan:	430.000	Engr Quan:	430.000
Images/Docs Attached									
Pricing by Nick Cavalleri/RDD									
Mobilization, Contingency & Traffic Control removed since they are included in the overall total									
4SEWER	Sewer Line Sub	1.00	1.00 LS	1,661,486.000				1,661,486	1,661,486
4TRAFF	Traffic Control Sub	1.00	-1.00 LS	26,392.000				-26,393	-26,393
9MOB	MOBILIZATION	1.00	-1.00 LS	44,261.000			-44,262		-44,262
9RCCON	Contingency	1.00	-1.00 LS	352,732.000			-352,733		-352,733
\$1,238,101.00				[]			-396,994	1,635,094	1,238,101
							-923.23	3,802.54	2,879.30
<hr/>									
=====> Item Totals:	2900	- Sewer Pipe							
\$1,238,101.00				[]			-396,994	1,635,094	1,238,101
2,879.305		430 LF					-923.23	3,802.54	2,879.30
<hr/>									
BID ITEM = 3000				Land Item	SCHEDULE: 1	100			
Description =	Mobilization		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3000	Mobilization			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
4BRIDGE	Bridge Sub	0.10	0.10 LS	9,300,000.000				930,000	930,000
\$930,000.00				[]				930,000	930,000
								930,000.00	930,000.00
<hr/>									
BID ITEM = 3100				Land Item	SCHEDULE: 1	100			
Description =	Traffic Control		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3100	Traffic Control			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
Plug									
4GP	Grading & Paving Sub	1.00	1.00 LS	100,000.000				100,000	100,000
\$100,000.00				[]				100,000	100,000
								100,000.00	100,000.00
<hr/>									
BID ITEM = 3200				Land Item	SCHEDULE: 1	100			
Description =	Stage Construction Factor 15%		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3200	Stage Construction Factor 15%			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
4BRIDGE	Bridge Sub	0.15	0.15 LS	9,300,000.000				1,395,000	1,395,000
\$1,395,000.00				[]				1,395,000	1,395,000
								1,395,000.00	1,395,000.00
<hr/>									
BID ITEM = 3300				Land Item	SCHEDULE: 1	100			
Description =	Contingency 25%		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3300	Contingency 25%			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
4BRIDGE	Bridge Sub	0.25	0.25 LS	9,300,000.000				2,325,000	2,325,000
\$2,325,000.00				[]				2,325,000	2,325,000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = 3300			Land Item	SCHEDULE: 1	100					
Description =	Contingency 25%		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
								2,325,000.00	2,325,000.00	
BID ITEM = 10100	CLIENT# = C-2		Land Item	SCHEDULE: 1	100					
Description =	Remove Asphalt Conc. Pavement		Unit =	SY	Takeoff Quan:		4,450.000	Engr Quan:		4,450.000
100	Remove Asphalt Conc. Pavement		Quan:	4,450.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 0120-REMOVING ASPHALT CONC PAVEMENT										
4GP	Grading & Paving Sub	1.00	4,450.00 SY	3.000				13,350	13,350	
\$13,350.00				[]				13,350	13,350	
								3.00	3.00	
BID ITEM = 10200	CLIENT# = C-3		Land Item	SCHEDULE: 1	100					
Description =	Removing Traffic Island		Unit =	SY	Takeoff Quan:		190.000	Engr Quan:		190.000
200	Removing Traffic Island		Quan:	190.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 0150-REMOVING TRAFFIC ISLAND										
4GP	Grading & Paving Sub	1.00	190.00 SY	18.000				3,420	3,420	
\$3,420.00				[]				3,420	3,420	
								18.00	18.00	
BID ITEM = 10300	CLIENT# = C-4		Land Item	SCHEDULE: 1	100					
Description =	Removing Cement Conc. Sidewalk		Unit =	SY	Takeoff Quan:		850.000	Engr Quan:		850.000
300	Removing Cement Conc. Sidewalk		Quan:	850.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	850.00 SY	14.000				11,900	11,900	
\$11,900.00				[]				11,900	11,900	
								14.00	14.00	
BID ITEM = 10400	CLIENT# = C-5		Land Item	SCHEDULE: 1	100					
Description =	Removing Cement Conc. Curb		Unit =	LF	Takeoff Quan:		4,000.000	Engr Quan:		4,000.000
400	Removing Cement Conc. Curb		Quan:	4,000.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	4,000.00 LF	8.000				32,000	32,000	
\$32,000.00				[]				32,000	32,000	
								8.00	8.00	
BID ITEM = 10500	CLIENT# = C-6		Land Item	SCHEDULE: 1	100					
Description =	Roadway Excavation Incl. Haul		Unit =	CY	Takeoff Quan:		3,000.000	Engr Quan:		3,000.000
500	Roadway Excavation Incl. Haul		Quan:	3,000.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 10500	CLIENT# = C-6	Land Item	SCHEDULE: 1	100					
Description =	Roadway Excavation Incl. Haul	Unit =	CY	Takeoff Quan:	3,000.000	Engr Quan:	3,000.000		
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	3,000.00 CY	33.000			99,000	99,000	
\$99,000.00				[]			99,000	99,000	
							33.00	33.00	
BID ITEM = 10600	CLIENT# = C-7	Land Item	SCHEDULE: 1	100					
Description =	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Unit =	SY	Takeoff Quan:	4,150.000	Engr Quan:	4,150.000		
600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Quan:	4,150.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 5767-HMA CL. 12 IN. PG 70-28									
convert from Tons \$104.18 * 3"/36"/2.02 = \$4.30									
4GP	Grading & Paving Sub	1.00	4,150.00 SY	4.300			17,845	17,845	
\$17,845.00				[]			17,845	17,845	
							4.30	4.30	
BID ITEM = 10700	CLIENT# = C-8	Land Item	SCHEDULE: 1	100					
Description =	Roundabout Splitter Island Nosing Curb	Unit =	EA	Takeoff Quan:	3.000	Engr Quan:	3.000		
700	Roundabout Splitter Island Nosing Curb	Quan:	3.00 EA	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	3.00 EA	915.000			2,745	2,745	
\$2,745.00				[]			2,745	2,745	
							915.00	915.00	
BID ITEM = 10800	CLIENT# = C-9	Land Item	SCHEDULE: 1	100					
Description =	Roundabout Cement Concrete Curb and Gutt	Unit =	LF	Takeoff Quan:	315.000	Engr Quan:	315.000		
800	Roundabout Cement Concrete Curb and Gutt	Quan:	315.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 6699-ROUNDABOUT CEMENT CONCRETE CURB AND G									
4GP	Grading & Paving Sub	1.00	315.00 LF	23.000			7,245	7,245	
\$7,245.00				[]			7,245	7,245	
							23.00	23.00	
BID ITEM = 10900	CLIENT# = C-10	Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Traffic Curb and Gutter	Unit =	LF	Takeoff Quan:	1,500.000	Engr Quan:	1,500.000		
900	Cement Conc. Traffic Curb and Gutter	Quan:	1,500.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
WSDOT: 6700-CEMENT CONC TRAFFIC CURB AND GUTTER									
4GP	Grading & Paving Sub	1.00	1,500.00 LF	25.000			37,500	37,500	
\$37,500.00				[]			37,500	37,500	
							25.00	25.00	

Appendix B-Detailed Estimate

Activity	Desc	Quantity	Unit	Unit	Labor	Perm	Constr	Equip	Sub-	Total
Resource		Pcs		Cost		Material	Matl/Exp	Ment	Contract	
BID ITEM = 11000	CLIENT# = C-11		Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Traffic Curb		Unit =	LF	Takeoff	Quan:	300.000	Engr	Quan:	300.000
1000	Cement Conc. Traffic Curb		Quan:	300.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 6701-CEMENT CONC. TRAFFIC CURB										
4GP	Grading & Paving Sub	1.00	300.00 LF	22.000					6,600	6,600
\$6,600.00				[]					6,600	6,600
									22.00	22.00
BID ITEM = 11100	CLIENT# = C-12		Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Sidewalk		Unit =	SY	Takeoff	Quan:	1,000.000	Engr	Quan:	1,000.000
1100	Cement Conc. Sidewalk		Quan:	1,000.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7055-CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	1,000.00 LF	39.000					39,000	39,000
\$39,000.00				[]					39,000	39,000
									39.00	39.00
BID ITEM = 11200	CLIENT# = C-13		Land Item	SCHEDULE: 1	100					
Description =	Cement conc. Driveway Entrance		Unit =	SY	Takeoff	Quan:	135.000	Engr	Quan:	135.000
1200	Cement conc. Driveway Entrance		Quan:	135.00 SY	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7059-CEMENT CONC DRIVEWAY ENTRANCE										
4GP	Grading & Paving Sub	1.00	135.00 SY	93.000					12,555	12,555
\$12,555.00				[]					12,555	12,555
									93.00	93.00
BID ITEM = 11300	CLIENT# = C-14		Land Item	SCHEDULE: 1	100					
Description =	Cement concrete Curb Ramp		Unit =	EA	Takeoff	Quan:	9.000	Engr	Quan:	9.000
1300	Cement concrete Curb Ramp		Quan:	9.00 EA	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7058-CEMENT CONC CURB RAMP										
4GP	Grading & Paving Sub	1.00	9.00 EA	1,200.000					10,800	10,800
\$10,800.00				[]					10,800	10,800
									1,200.00	1,200.00
BID ITEM = 11400	CLIENT# = C-16		Land Item	SCHEDULE: 1	100					
Description =	Drainage		Unit =	LS	Takeoff	Quan:	1.000	Engr	Quan:	1.000
1400	Drainage		Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
Plug										
4DRAIN	Drainage Sub	1.00	1.00 LS	50,000.000					50,000	50,000
\$50,000.00				[]					50,000	50,000
									50,000.00	50,000.00

Appendix B-Detailed Estimate

Activity	Desc	Quantity	Unit	Unit	Cost	Labor	Material	Constr	Equip	Sub-	Total
Resource		Pcs						Matl/Exp	Ment	Contract	
BID ITEM = 11500	CLIENT# = C-18			Land Item	SCHEDULE: 1	100					
Description =	Temporary Erosion and Sediment Control			Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
1500	Temporary Erosion and Sediment Control			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
Plug											
4DRAIN	Drainage Sub	1.00	1.00 LS		100,000.000					100,000	100,000
\$100,000.00					[]					100,000	100,000
										100,000.00	100,000.00
BID ITEM = 11600	CLIENT# = C-20			Land Item	SCHEDULE: 1	100					
Description =	Signing and Striping			Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
1600	Signing and Striping			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
1% of Items											
4SIGN	Sign Sub	1.00	1.00 LS		50,000.000					50,000	50,000
\$50,000.00					[]					50,000	50,000
										50,000.00	50,000.00
BID ITEM = 11700				Land Item	SCHEDULE: 1	100					
Description =	Bridge Removal			Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
1700	Bridge Removal			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
Images/Docs Attached											
Pricing by Nick Cavalleri/RDD											
Mobilization & Contingency removed since they are included in the overall total											
4DEMO	Demolition Sub	1.00	1.00 LS		1,414,366.000					1,414,366	1,414,366
9MOB	MOBILIZATION	1.00	-1.00 LS		72,565.000			-72,566			-72,566
9RCCON	Contingency	1.00	-1.00 LS		300,269.000			-300,270			-300,270
\$1,041,532.00					[]			-372,835		1,414,366	1,041,532
								-372,833.99		1,414,366.00	1,041,532.00
====>	Item Totals:	11700	- Bridge Removal								
\$1,041,532.00					[]			-372,835		1,414,366	1,041,532
1,041,532.000		1 LS						-372,833.99		1,414,366.00	1,041,532.00
BID ITEM = 11800				Land Item	SCHEDULE: 1	100					
Description =	Excavation			Unit =	CY	Takeoff Quan:		1,550.000	Engr Quan:		1,550.000
1800	Excavation			Quan:	1,550.00 CY	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
Low \$100 - High \$220, by Sean Murphy/BOI											
Use low end due to new footings being located above existing footings											
4BRIDGE	Bridge Sub	1.00	1,550.00 CY		100.000					155,000	155,000
\$155,000.00					[]					155,000	155,000
										100.00	100.00

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Ment	Contract	Total
<hr/>										
BID ITEM	= 11900									
Description =	Backfill									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	1,128.000		Engr Quan:	1,128.000	
1900	Backfill									
			Quan:	1,128.00 CY	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP
7011-GRAVEL BACKFILL FOR FOUNDATION CLASS										
Use state Average low bid										
4BRIDGE	Bridge Sub	1.00	1,128.00 CY	43.000				48,504		48,504
\$48,504.00				[]				48,504		48,504
								43.00		43.00
<hr/>										
BID ITEM	= 12000									
Description =	Reinforcing Steel, Plain									
			Land Item	SCHEDULE: 1	100					
			Unit =	LBS	Takeoff Quan:	96,700.000		Engr Quan:	96,700.000	
2000	Reinforcing Steel, Plain									
			Quan:	96,700.00 LBS	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP
WashDOT: 4149-ST REINF BAR FOR BRIDGE										
4BRIDGE	Bridge Sub	1.00	96,700.00 LBS	0.900				87,030		87,030
\$87,030.00				[]				87,030		87,030
								0.90		0.90
<hr/>										
BID ITEM	= 12100									
Description =	Reinforcing Steel, Epoxy Coated									
			Land Item	SCHEDULE: 1	100					
			Unit =	LBS	Takeoff Quan:	146,800.000		Engr Quan:	146,800.000	
2100	Reinforcing Steel, Epoxy Coated									
			Quan:	146,800.00 LBS	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP
Low \$1.25 - High \$1.75, by Sean Murphy/BOI										
Use Ave										
4BRIDGE	Bridge Sub	1.00	146,800.00 LBS	1.500				220,200		220,200
\$220,200.00				[]				220,200		220,200
								1.50		1.50
<hr/>										
BID ITEM	= 12200									
Description =	Substructure									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	462.000		Engr Quan:	462.000	
2200	Substructure									
			Quan:	462.00 CY	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP
WasDOT: 4322-CONC CLASS 4000 FOR BRIDGE										
4BRIDGE	Bridge Sub	1.00	462.00 CY	500.000				231,000		231,000
\$231,000.00				[]				231,000		231,000
								500.00		500.00
<hr/>										
BID ITEM	= 12300									
Description =	Reinforced Slab									
			Land Item	SCHEDULE: 1	100					
			Unit =	CY	Takeoff Quan:	252.000		Engr Quan:	252.000	
2300	Reinforced Slab Approach Spans									
			Quan:	252.00 CY	Hrs/Shft:	8.00	Cal:	508	WC:	CCISP
Low \$700 - High \$800, by Sean Murphy/BOI										
Use low end due to thickness of concrete										
4BRIDGE	Bridge Sub	1.00	252.00 CY	700.000				176,400		176,400
\$176,400.00				[]				176,400		176,400

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 12300									
Description =	Reinforced Slab			Land Item Unit =	SCHEDULE: 1 CY	100 Takeoff Quan:	252.000	Engr Quan:	252.000
								700.00	700.00

BID ITEM = 12400									
Description =	Main Deck Slab			Land Item Unit =	SCHEDULE: 1 CY	100 Takeoff Quan:	419.000	Engr Quan:	419.000
2400	Main Deck Slab			Quan:	419.00 CY	Hrs/Shift:	8.00	Cal:	508 WC: CCISP
Low \$700 - High \$800, by Sean Murphy/BOI Use High end due to thickness of concrete									
4BRIDGE	Bridge Sub	1.00	419.00 CY		800.000			335,200	335,200
\$335,200.00					[]			335,200	335,200
								800.00	800.00

BID ITEM = 12500									
Description =	Structural Steel			Land Item Unit =	SCHEDULE: 1 LBS	100 Takeoff Quan:	1,534,000.000	Engr Quan:	1,534,000.000
381020	Prep for Plate Girder Erection			Quan:	2.00 EA	Hrs/Shift:	8.00	Cal:	508 WC: CCISP
***** Set up crane mats for beam to be erected									
<u>GIRDR4</u>	Prep Girder Erection		16.00 CH	Prod:	32.0000 MU	Lab Pcs:	4.00	Eqp Pcs:	3.00
31MATCM	Crane Mats@108.7%	1.00	12.00 EA	2,400.000		31,306			31,306
31MATCMS	Salvage Crane M@108.7%	1.00	12.00 EA	-1,800.000		-23,480			-23,480
8FORK06	Forklift Cat TL1255 12	1.00	16.00 HR	59.949			959		959
8TRKGS10	Flatbed Truck 15K 200H	1.00	16.00 HR	26.191			419		419
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	16.00 HR	18.570			297		297
LA01	Laborer-Foreman	1.00	16.00 MH	23.380	572				572
LA04	Laborer-Power Tool	2.00	32.00 MH	19.380	989				989
OP12	Op Boom Tk <10T	1.00	16.00 MH	26.480	726				726
\$11,788.54	32.0000 MH/EA		64.00 MH	[708.96]	2,287	7,826	1,675		11,789
0.1250 Units/Hr	0.0313 Unit/MH	2.0000 Shifts			1,143.41	3,913.20	837.67		5,894.27

381035	I-Girder Erect-Self perf			Quan:	1,534,000.00 LB	Hrs/Shift:	8.00	Cal:	508 WC: CCISP
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<u>GIRDR1</u>	Steel Girder Erection		320.00 CH	Prod:	0.0023 MU	Lab Pcs:	11.00	Eqp Pcs:	11.00
2SS03	Steel Beams Ope@108.7%	1.00	1,534,000.00 LB	1.750		2,918,052			2,918,052
8CRANEC200	Crane Manitowoc 777 20	1.00	320.00 HR	217.011			69,444		69,444
8CRANEC350	Crane Manitowoc 4600 3	1.00	320.00 HR	370.362			118,516		118,516
8GLP04	Light Plant, 4 Lights	4.00	1,280.00 HR	7.455			9,542		9,542
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	640.00 HR	29.173			20,295		20,295
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	320.00 HR	18.570			5,942		5,942
8WELD300	Welder 300 AMP	2.00	640.00 HR	5.121			3,277		3,277
IW01	Ironworker Foreman	1.00	320.00 MH	37.760	21,940				21,940
IW02	Ironworker Journeyman	6.00	1,920.00 MH	32.760	120,104				120,104
OP05	Op Crane >100T	2.00	640.00 MH	29.860	31,635				31,635
OP07	Op Oiler >100T plus	2.00	640.00 MH	27.250	29,628				29,628
\$3,348,375.83	0.0022 MH/LB		3,520.00 MH	[0.073]	203,307	2,918,052	227,017		3,348,376
4,793.7500 Units/Hr	435.7963 Unit/MH	40.0000 Shifts			0.13	1.90	0.15		2.18

381080	Bolt-up Steel			Quan:	1,534,000.00 LBS	Hrs/Shift:	8.00	Cal:	508 WC: CCISP
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3 beams/shift

Appendix B-Detailed Estimate

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 12500									
Description =	Structural Steel		Land Item Unit =	SCHEDULE: 1 100					
54 beams/3				LBS	Takeoff	Quan: 1,534,000.000	Engr Quan: 1,534,000.000		
<u>IRON5</u>	Foreman + 4 Ironworker		320.00 CH	Prod:	958.7500 UM	Lab Pcs:	5.00	Eqp Pcs:	5.00
8COMPR04	Compressor 185 CFM 80H	1.00	320.00 HR	17.411			5,572		5,572
8GEN005	Generator 5 KW	1.00	320.00 HR	5.108			1,635		1,635
8MLIFT080	Manlift Grove T80 80'	1.00	320.00 HR	42.605			13,634		13,634
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	320.00 HR	18.570			5,942		5,942
8WELD300	Welder 300 AMP	1.00	320.00 HR	5.121			1,639		1,639
IW01	Ironworker Foreman	1.00	320.00 MH	37.760	21,940				21,940
IW02	Ironworker Journeyman	4.00	1,280.00 MH	32.760	80,070				80,070
\$130,430.43	0.0010 MH/LBS		1,600.00 MH	[0.035]	102,010		28,421		130,430
4,793.7500 Units/Hr	958.7544 Unit/MH	*	40.0000 Shifts		0.07		0.02		0.09
381110 Safety Lines-Steel Beams									
			Quan: 1,680.00 LF	Hrs/Shft: 8.00	Cal: 508	WC: CCISP			
<u>IRON4</u>	Foreman + 3 Ironworker		32.00 CH	Prod:	0.0762 MU	Lab Pcs:	4.00	Eqp Pcs:	4.00
31MATCABLE	Safety Line Cab@108.7%	1.10	1,847.99 LF	1.000			2,009		2,009
31MATPOST	Safety Line Pos@108.7%	1.00	35.00 EA	25.000			951		951
8COMPR04	Compressor 185 CFM 80H	1.00	32.00 HR	17.411			557		557
8GEN005	Generator 5 KW	1.00	32.00 HR	5.108			163		163
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	32.00 HR	18.570			594		594
8WELD300	Welder 300 AMP	1.00	32.00 HR	5.121			164		164
IW01	Ironworker Foreman	1.00	32.00 MH	37.760	2,194				2,194
IW02	Ironworker Journeyman	3.00	96.00 MH	32.760	6,005				6,005
\$12,637.81	0.0761 MH/LF		128.00 MH	[2,591]	8,199		2,960	1,479	12,638
52.5000 Units/Hr	13.1250 Unit/MH		4.0000 Shifts		4.88		1.76	0.88	7.52
381125 Paint Steel Touch up									
			Quan: 1,534,000.00 LB	Hrs/Shft: 8.00	Cal: 508	WC: CCISP			
4SPAINT	Paint Struc Steel Sub	1.00	1,534,000.00 LB	0.050			76,700		76,700
\$76,700.00				[]			76,700		76,700
							0.05		0.05
381150 Install Temp X-Bracing									
			Quan: 30.00 EA	Hrs/Shft: 8.00	Cal: 508	WC: CCISP			
Install every 50'									
5 spaces x 6 points = 30 each									
<u>IRON4</u>	Foreman + 3 Ironworker		40.00 CH	Prod:	5.3333 MU	Lab Pcs:	4.00	Eqp Pcs:	4.00
31MATMISC	Misc Material@108.7%	1.00	30.00 EA	150.000			4,892		4,892
8COMPR04	Compressor 185 CFM 80H	1.00	40.00 HR	17.411			696		696
8GEN005	Generator 5 KW	1.00	40.00 HR	5.108			204		204
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	40.00 HR	18.570			743		743
8WELD300	Welder 300 AMP	1.00	40.00 HR	5.121			205		205
IW01	Ironworker Foreman	1.00	40.00 MH	37.760	2,743				2,743
IW02	Ironworker Journeyman	3.00	120.00 MH	32.760	7,507				7,507
\$16,988.93	5.3333 MH/EA		160.00 MH	[181.387]	10,249		4,892	1,848	16,989
0.7500 Units/Hr	0.1875 Unit/MH		5.0000 Shifts		341.63		163.05	61.61	566.30
392000 Beam launcher									
			Quan: 1.00 LS	Hrs/Shft: 8.00	Cal: 508	WC: CCISP			
Fabricated Launching Nose for two cross-braced Girders including Labor, Equipment and Materials									
4BRIDGE	Bridge Sub	1.00	1.00 LS	500,000.000			500,000		500,000
\$500,000.00				[]			500,000		500,000
							500,000.00		500,000.00
905000 Mob Equipment									
			Quan: 1.00 LS	Hrs/Shft: 8.00	Cal: 508	WC: CCISP			
1 on each side of river									
777-8 truckloads									
4600-18 truckloads, allow 8 hours each load x 2 ways = 48 flatbeds x 8 hrs = 384 hrs, 4 lowboys x 8 hrs =									

Appendix B-Detailed Estimate

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 12500									
Description =	Structural Steel			Land Item Unit =	SCHEDULE: 1 100 LBS Takeoff Quan: 1,534,000.000		Engr Quan: 1,534,000.000		
32 hrs Crane build crane 1 day each (ave) Crane teardown 1-1/2 days Forklift.....2 each - small move Manlifts (2).....2 each - small move									
<u>GIRDS</u>	Crane Mob		28.00 CH	Prod: 3.5000 S	Lab Pcs: 12.00	Eqp Pcs: 12.00			
5MS	Small Move@108.7%	1.00	6.01 EA	250.000		1,633			1,633
5TRKFB	Trucking - Flat Bed	1.00	384.37 HR	100.000		38,437			38,437
5TRKLB50	Trucking - Low Bed 50T	1.00	32.03 HR	125.000		4,004			4,004
8CRANEC200	Crane Manitowoc 777 20	1.00	28.00 HR	217.011			6,076		6,076
8CRANEC350	Crane Manitowoc 4600 3	1.00	28.00 HR	370.362			10,370		10,370
8CRANETK120	Crane Grove GMK4090 12	1.00	28.00 HR	226.647			6,346		6,346
8GLP04	Light Plant, 4 Lights	4.00	112.00 HR	7.455			835		835
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	56.00 HR	29.173			1,776		1,776
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	28.00 HR	18.570			520		520
8WELD300	Welder 300 AMP	2.00	56.00 HR	5.121			287		287
IW01	Ironworker Foreman	1.00	28.00 MH	37.760	1,920				1,920
IW02	Ironworker Journeyman	6.00	168.00 MH	32.760	10,509				10,509
OP05	Op Crane >100T	3.00	84.00 MH	29.860	4,152				4,152
OP07	Op Oiler >100T plus	2.00	56.00 MH	27.250	2,592				2,592
\$89,457.36	336.0000 MH/LS		336.00 MH	[10595.2]	19,173	44,074	26,210		89,457
0.0357 Units/Hr	0.0030 Unit/MH		3.5000 Shifts	*	19,173.42	44,073.97	26,209.97		89,457.36
====> Item Totals: 12500 - Structural Steel									
\$4,186,378.90	0.0037 MH/LBS		5,808.00 MH	[0.122]	345,226	2,918,052	59,752	286,650	576,700 4,186,379
2.729	1534000 LBS				0.23	1.90	0.04	0.19	0.38 2.73
BID ITEM = 12600									
Description =	Strip Seal Expansion Joint			Land Item Unit =	SCHEDULE: 1 100 LF Takeoff Quan: 102.000		Engr Quan: 102.000		
384000	Expan Device-Modular			Quan:	102.00 LF Hrs/Shft: 8.00 Cal: 508 WC: CCISP				
Low \$250 - High \$500, by Sean Murphy/BOI Use ave									
4JSEAL	Joint Saw & Seal Sub	1.00	102.00 LF	375.000			38,250		38,250
\$38,250.00				[]			38,250		38,250
							375.00		375.00
BID ITEM = 12700									
Description =	Bearings			Land Item Unit =	SCHEDULE: 1 100 EA Takeoff Quan: 10.000		Engr Quan: 10.000		
2700	Bearings			Quan:	10.00 EA Hrs/Shft: 8.00 Cal: 508 WC: CCISP				
WsDOT:4307-FABRIC PAD BEARING - SUPERSTR Statewide Ave									
4BRIDGE	Bridge Sub	1.00	10.00 EA	1,500.000			15,000		15,000
\$15,000.00				[]			15,000		15,000
							1,500.00		1,500.00
BID ITEM = 12800									
Description =	Barrier Railings, Metal			Land Item Unit =	SCHEDULE: 1 100 LF Takeoff Quan: 694.000		Engr Quan: 694.000		

Appendix B-Detailed Estimate

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
<hr/>										
BID ITEM = 12800				Land Item	SCHEDULE: 1	100				
Description =	Barrier Railings, Metal			Unit =	LF	Takeoff	Quan:	694.000	Engr Quan:	694.000
2800	Barrier Railings, Metal			Quan:	694.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Low \$125 - High \$180, by Sean Murphy/BOI										
Use ave										
4BRIDGE	Bridge Sub	1.00	694.00 LF	150.000				104,100	104,100	
\$104,100.00				[]				104,100	104,100	
								150.00	150.00	
<hr/>										
BID ITEM = 12900				Land Item	SCHEDULE: 1	100				
Description =	Sewer Pipe			Unit =	LF	Takeoff	Quan:	430.000	Engr Quan:	430.000
2900	Sewer Pipe			Quan:	430.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Images/Docs Attached										
Pricing by Nick Cavalleri/RDD										
Mobilization, Contingency & Traffic Control removed since they are included in the overall total										
4SEWER	Sewer Line Sub	1.00	1.00 LS	1,661,486.000				1,661,486	1,661,486	
4TRAFF	Traffic Control Sub	1.00	-1.00 LS	26,392.000				-26,393	-26,393	
9MOB	MOBILIZATION	1.00	-1.00 LS	44,261.000				-44,262	-44,262	
9RCCON	Contingency	1.00	-1.00 LS	352,732.000				-352,733	-352,733	
\$1,238,101.00				[]				-396,994	1,635,094	1,238,101
								-923.23	3,802.54	2,879.30
<hr/>										
=====>	Item Totals:	12900	- Sewer Pipe							
\$1,238,101.00				[]				-396,994	1,635,094	1,238,101
2,879.305		430 LF						-923.23	3,802.54	2,879.30
<hr/>										
BID ITEM = 13000				Land Item	SCHEDULE: 1	100				
Description =	Mobilization			Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3000	Mobilization			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
4BRIDGE	Bridge Sub	0.10	0.10 LS	10,400,000.000				1,040,000	1,040,000	
\$1,040,000.00				[]				1,040,000	1,040,000	
								1,040,000.00	1,040,000.00	
<hr/>										
BID ITEM = 13100				Land Item	SCHEDULE: 1	100				
Description =	Traffic Control			Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
3100	Traffic Control			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Plug										
4GP	Grading & Paving Sub	1.00	1.00 LS	100,000.000				100,000	100,000	
\$100,000.00				[]				100,000	100,000	
								100,000.00	100,000.00	
<hr/>										
BID ITEM = 13200				Land Item	SCHEDULE: 1	100				
Description =	Stage Construction Factor 15%			Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
<hr/>									
BID ITEM = 13200				Land Item	SCHEDULE: 1	100			
Description =	Stage Construction Factor 15%			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
3200	Stage Construction Factor 15%			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
4BRIDGE	Bridge Sub	0.15	0.15 LS	10,400,000.000				1,560,000	1,560,000
\$1,560,000.00				[]				1,560,000	1,560,000
								1,560,000.00	1,560,000.00
<hr/>									
BID ITEM = 13300				Land Item	SCHEDULE: 1	100			
Description =	Contingency 25%			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
3300	Contingency 25%			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
4BRIDGE	Bridge Sub	0.25	0.25 LS	10,400,000.000				2,600,000	2,600,000
\$2,600,000.00				[]				2,600,000	2,600,000
								2,600,000.00	2,600,000.00
<hr/>									
BID ITEM = 20100	CLIENT# = C-2			Land Item	SCHEDULE: 1	100			
Description =	Remove Asphalt Conc. Pavement			Unit =	SY	Takeoff Quan:	4,450.000	Engr Quan:	4,450.000
100	Remove Asphalt Conc. Pavement			Quan:	4,450.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
WSDOT: 0120-REMOVING ASPHALT CONC PAVEMENT									
4GP	Grading & Paving Sub	1.00	4,450.00 SY	3.000				13,350	13,350
\$13,350.00				[]				13,350	13,350
								3.00	3.00
<hr/>									
BID ITEM = 20200	CLIENT# = C-3			Land Item	SCHEDULE: 1	100			
Description =	Removing Traffic Island			Unit =	SY	Takeoff Quan:	190.000	Engr Quan:	190.000
200	Removing Traffic Island			Quan:	190.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
WSDOT: 0150-REMOVING TRAFFIC ISLAND									
4GP	Grading & Paving Sub	1.00	190.00 SY	18.000				3,420	3,420
\$3,420.00				[]				3,420	3,420
								18.00	18.00
<hr/>									
BID ITEM = 20300	CLIENT# = C-4			Land Item	SCHEDULE: 1	100			
Description =	Removing Cement Conc. Sidewalk			Unit =	SY	Takeoff Quan:	850.000	Engr Quan:	850.000
300	Removing Cement Conc. Sidewalk			Quan:	850.00 SY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	850.00 SY	14.000				11,900	11,900
\$11,900.00				[]				11,900	11,900
								14.00	14.00
<hr/>									

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 20400	CLIENT# = C-5	Land Item	SCHEDULE: 1	100					
Description =	Removing Cement Conc. Curb	Unit =	LF	Takeoff Quan:	4,000.000	Engr Quan:	4,000.000		
400	Removing Cement Conc. Curb	Quan:	4,000.00 LF	Hrs/Shift:	8.00	Cal:	508	WC:	CCISP
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	4,000.00 LF	8.000			32,000	32,000	
\$32,000.00				[]			32,000	32,000	
							8.00	8.00	
BID ITEM = 20500	CLIENT# = C-6	Land Item	SCHEDULE: 1	100					
Description =	Roadway Excavation Incl. Haul	Unit =	CY	Takeoff Quan:	3,000.000	Engr Quan:	3,000.000		
500	Roadway Excavation Incl. Haul	Quan:	3,000.00 CY	Hrs/Shift:	8.00	Cal:	508	WC:	CCISP
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	3,000.00 CY	33.000			99,000	99,000	
\$99,000.00				[]			99,000	99,000	
							33.00	33.00	
BID ITEM = 20600	CLIENT# = C-7	Land Item	SCHEDULE: 1	100					
Description =	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Unit =	SY	Takeoff Quan:	4,150.000	Engr Quan:	4,150.000		
600	HMA CL. 1/2 IN. PG 70-28, 0.25' Depth	Quan:	4,150.00 SY	Hrs/Shift:	8.00	Cal:	508	WC:	CCISP
WSDOT: 5767-HMA CL. 12 IN. PG 70-28									
convert from Tons \$104.18 * 3"/36"/2.02 = \$4.30									
4GP	Grading & Paving Sub	1.00	4,150.00 SY	4.300			17,845	17,845	
\$17,845.00				[]			17,845	17,845	
							4.30	4.30	
BID ITEM = 20700	CLIENT# = C-8	Land Item	SCHEDULE: 1	100					
Description =	Roundabout Splitter Island Nosing Curb	Unit =	EA	Takeoff Quan:	3.000	Engr Quan:	3.000		
700	Roundabout Splitter Island Nosing Curb	Quan:	3.00 EA	Hrs/Shift:	8.00	Cal:	508	WC:	CCISP
WSDOT: 0100-REMOVING CEMENT CONC SIDEWALK									
4GP	Grading & Paving Sub	1.00	3.00 EA	915.000			2,745	2,745	
\$2,745.00				[]			2,745	2,745	
							915.00	915.00	
BID ITEM = 20800	CLIENT# = C-9	Land Item	SCHEDULE: 1	100					
Description =	Roundabout Cement Concrete Curb and Gutt	Unit =	LF	Takeoff Quan:	315.000	Engr Quan:	315.000		
800	Roundabout Cement Concrete Curb and Gutt	Quan:	315.00 LF	Hrs/Shift:	8.00	Cal:	508	WC:	CCISP
WSDOT: 6699-ROUNABOUT CEMENT CONCRETE CURB AND G									
4GP	Grading & Paving Sub	1.00	315.00 LF	23.000			7,245	7,245	
\$7,245.00				[]			7,245	7,245	
							23.00	23.00	

Appendix B-Detailed Estimate

Activity	Desc	Quantity	Unit	Unit	Labor	Perm	Constr	Equip	Sub-	Total
Resource		Pcs		Cost		Material	Matl/Exp	Ment	Contract	
BID ITEM = 20900	CLIENT# = C-10		Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Traffic Curb and Gutter		Unit =	LF	Takeoff	Quan:	1,500.000	Engr	Quan:	1,500.000
900	Cement Conc. Traffic Curb and Gutter		Quan:	1,500.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 6700-CEMENT CONC TRAFFIC CURB AND GUTTER										
4GP	Grading & Paving Sub	1.00	1,500.00 LF	25.000				37,500		37,500
\$37,500.00				[]				37,500		37,500
								25.00		25.00
BID ITEM = 21000	CLIENT# = C-11		Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Traffic Curb		Unit =	LF	Takeoff	Quan:	300.000	Engr	Quan:	300.000
1000	Cement Conc. Traffic Curb		Quan:	300.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 6701-CEMENT CONC. TRAFFIC CURB										
4GP	Grading & Paving Sub	1.00	300.00 LF	22.000				6,600		6,600
\$6,600.00				[]				6,600		6,600
								22.00		22.00
BID ITEM = 21100	CLIENT# = C-12		Land Item	SCHEDULE: 1	100					
Description =	Cement Conc. Sidewalk		Unit =	SY	Takeoff	Quan:	1,000.000	Engr	Quan:	1,000.000
1100	Cement Conc. Sidewalk		Quan:	1,000.00 LF	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7055-CEMENT CONC SIDEWALK										
4GP	Grading & Paving Sub	1.00	1,000.00 LF	39.000				39,000		39,000
\$39,000.00				[]				39,000		39,000
								39.00		39.00
BID ITEM = 21200	CLIENT# = C-13		Land Item	SCHEDULE: 1	100					
Description =	Cement conc. Driveway Entrance		Unit =	SY	Takeoff	Quan:	135.000	Engr	Quan:	135.000
1200	Cement conc. Driveway Entrance		Quan:	135.00 SY	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7059-CEMENT CONC DRIVEWAY ENTRANCE										
4GP	Grading & Paving Sub	1.00	135.00 SY	93.000				12,555		12,555
\$12,555.00				[]				12,555		12,555
								93.00		93.00
BID ITEM = 21300	CLIENT# = C-14		Land Item	SCHEDULE: 1	100					
Description =	Cement concrete Curb Ramp		Unit =	EA	Takeoff	Quan:	9.000	Engr	Quan:	9.000
1300	Cement concrete Curb Ramp		Quan:	9.00 EA	Hrs/Shift:	8.00	Cal: 508	WC: CCISP		
WSDOT: 7058-CEMENT CONC CURB RAMP										
4GP	Grading & Paving Sub	1.00	9.00 EA	1,200.000				10,800		10,800
\$10,800.00				[]				10,800		10,800
								1,200.00		1,200.00

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 21400		CLIENT# = C-16	Land Item	SCHEDULE: 1	100				
Description =	Drainage		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
1400	Drainage		Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Plug									
4DRAIN	Drainage Sub	1.00	1.00 LS	50,000.000				50,000	50,000
\$50,000.00				[]				50,000	50,000
								50,000.00	50,000.00
BID ITEM = 21500		CLIENT# = C-18	Land Item	SCHEDULE: 1	100				
Description =	Temporary Erosion and Sediment Control		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
1500	Temporary Erosion and Sediment Control		Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Plug									
4DRAIN	Drainage Sub	1.00	1.00 LS	100,000.000				100,000	100,000
\$100,000.00				[]				100,000	100,000
								100,000.00	100,000.00
BID ITEM = 21600		CLIENT# = C-20	Land Item	SCHEDULE: 1	100				
Description =	Signing and Striping		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
1600	Signing and Striping		Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
1% of Items									
4SIGN	Sign Sub	1.00	1.00 LS	50,000.000				50,000	50,000
\$50,000.00				[]				50,000	50,000
								50,000.00	50,000.00
BID ITEM = 21700			Land Item	SCHEDULE: 1	100				
Description =	Bridge Removal		Unit =	LS	Takeoff	Quan:	1.000	Engr Quan:	1.000
1700	Bridge Removal		Quan:	1.00 LS	Hrs/Shift:	8.00	Cal: 508	WC: CCISP	
Images/Docs Attached									
Pricing by Nick Cavalleri/RDD									
Mobilization & Contingency removed since they are included in the overall total									
4DEMO	Demolition Sub	1.00	1.00 LS	1,414,366.000				1,414,366	1,414,366
9MOB	MOBILIZATION	1.00	-1.00 LS	72,565.000		-72,566			-72,566
9RCCON	Contingency	1.00	-1.00 LS	300,269.000		-300,270			-300,270
\$1,041,532.00				[]		-372,835		1,414,366	1,041,532
						-372,833.99		1,414,366.00	1,041,532.00
=====>	Item Totals:	21700	- Bridge Removal						
\$1,041,532.00				[]		-372,835		1,414,366	1,041,532
1,041,532.000		1 LS				-372,833.99		1,414,366.00	1,041,532.00
BID ITEM = 21800			Land Item	SCHEDULE: 1	100				
Description =	Excavation		Unit =	CY	Takeoff	Quan:	1,500.000	Engr Quan:	1,500.000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
<hr/>									
BID ITEM = 21800			Land Item	SCHEDULE: 1	100				
Description =	Excavation		Unit =	CY	Takeoff Quan:	1,500.000	Engr Quan:		1,500.000
1800	Excavation		Quan:	1,500.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Low \$100 - High \$220, by Sean Murphy/BOI Use low end due to new footings being located above existing footings									
4BRIDGE	Bridge Sub	1.00	1,500.00 CY	100.000			150,000		150,000
\$150,000.00				[]			150,000		150,000
							100.00		100.00
<hr/>									
BID ITEM = 21900			Land Item	SCHEDULE: 1	100				
Description =	Backfill		Unit =	CY	Takeoff Quan:	854.000	Engr Quan:		854.000
1900	Backfill		Quan:	854.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
7011-GRAVEL BACKFILL FOR FOUNDATION CLASS Use state Average low bid									
4BRIDGE	Bridge Sub	1.00	854.00 CY	43.000			36,722		36,722
\$36,722.00				[]			36,722		36,722
							43.00		43.00
<hr/>									
BID ITEM = 22000			Land Item	SCHEDULE: 1	100				
Description =	Reinforcing Steel, Plain		Unit =	LBS	Takeoff Quan:	131,000.000	Engr Quan:		131,000.000
2000	Reinforcing Steel, Plain		Quan:	131,000.00 LBS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WashDOT: 4149-ST REINF BAR FOR BRIDGE Use Ave									
4BRIDGE	Bridge Sub	1.00	131,000.00 LBS	0.900			117,900		117,900
\$117,900.00				[]			117,900		117,900
							0.90		0.90
<hr/>									
BID ITEM = 22100			Land Item	SCHEDULE: 1	100				
Description =	Reinforcing Steel, Epoxy Coated		Unit =	LBS	Takeoff Quan:	103,800.000	Engr Quan:		103,800.000
2100	Reinforcing Steel, Epoxy Coated		Quan:	103,800.00 LBS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Low \$1.25 - High \$1.75, by Sean Murphy/BOI Use Ave									
4BRIDGE	Bridge Sub	1.00	103,800.00 LBS	1.500			155,700		155,700
\$155,700.00				[]			155,700		155,700
							1.50		1.50
<hr/>									
BID ITEM = 22200			Land Item	SCHEDULE: 1	100				
Description =	Substructure		Unit =	CY	Takeoff Quan:	620.000	Engr Quan:		620.000
2200	Substructure		Quan:	620.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WasDOT: 4322-CONC CLASS 4000 FOR BRIDGE									
4BRIDGE	Bridge Sub	1.00	620.00 CY	500.000			310,000		310,000
\$310,000.00				[]			310,000		310,000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 22200									
Description =	Substructure		Land Item Unit =	SCHEDULE: 1 CY	100 Takeoff Quan:	620.000	Engr Quan:		620.000
							500.00		500.00
BID ITEM = 22400									
Description =	Main Deck Slab		Land Item Unit =	SCHEDULE: 1 CY	100 Takeoff Quan:	519.000	Engr Quan:		519.000
2400	Main Deck Slab		Quan:	519.00 CY	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Low \$700 - High \$800, by Sean Murphy/BOI Use High end due to thickness of concrete									
4BRIDGE	Bridge Sub	1.00	519.00 CY	800.000					415,200
\$415,200.00				[]					415,200
							800.00		800.00
BID ITEM = 22500									
Description =	Structural Steel		Land Item Unit =	SCHEDULE: 1 LBS	100 Takeoff Quan:	1,020,000.000	Engr Quan:	1,020,000.000	
201010	Tieback Anchors		Quan:	10.00 EA	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
WsDOT: 4483-PERMANENT GROUND ANCHOR One per leg per side									
4TIEBACK	Tie-back Sub	1.00	10.00 EA	6,000.000					60,000
\$60,000.00				[]					60,000
							6,000.00		6,000.00
381020	Prep for Plate Girder Erection		Quan:	2.00 EA	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
***** Set up crane mats for beam to be erected									
GIRDR4	Prep Girder Erection	16.00	CH	Prod:	32.0000 MU	Lab Pcs:	4.00	Eqp Pcs:	3.00
31MATCM	Crane Mats@108.7%	1.00	12.00 EA	2,400.000		31,306			31,306
31MATCMS	Salvage Crane M@108.7%	1.00	12.00 EA	-1,800.000		-23,480			-23,480
8FORK06	Forklift Cat TL1255 12	1.00	16.00 HR	59.949			959		959
8TRKGS10	Flatbed Truck 15K 200H	1.00	16.00 HR	26.191			419		419
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	16.00 HR	18.570			297		297
LA01	Laborer-Foreman	1.00	16.00 MH	23.380	572				572
LA04	Laborer-Power Tool	2.00	32.00 MH	19.380	989				989
OP12	Op Boom Tk <10T	1.00	16.00 MH	26.480	726				726
\$11,788.54	32.0000 MH/EA		64.00 MH	[708.96]	2,287	7,826	1,675		11,789
0.1250 Units/Hr	0.0313 Unit/MH		2.0000 Shifts		1,143.41	3,913.20	837.67		5,894.27
381035	I-Girder Erect-Self perf		Quan:	1,020,000.00 LB	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	

GIRDR1	Steel Girder Erection	208.00	CH	Prod:	0.0022 MU	Lab Pcs:	11.00	Eqp Pcs:	11.00
2SS04	Steel Beams Sla@108.7%	1.00	1,020,000.00 LB	1.350	1,496,799				1,496,799
8CRANEC200	Crane Manitowoc 777 20	1.00	208.00 HR	217.011			45,138		45,138
8CRANEC350	Crane Manitowoc 4600 3	1.00	208.00 HR	370.362			77,035		77,035
8GLP04	Light Plant, 4 Lights	4.00	832.00 HR	7.455			6,203		6,203
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	416.00 HR	29.173			13,192		13,192
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	208.00 HR	18.570			3,863		3,863
8WELD300	Welder 300 AMP	2.00	416.00 HR	5.121			2,130		2,130
IW01	Ironworker Foreman	1.00	208.00 MH	37.760	14,261				14,261
IW02	Ironworker Journeyman	6.00	1,248.00 MH	32.760	78,068				78,068

Appendix B-Detailed Estimate

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 22500									
Description =	Structural Steel			Land Item Unit =	SCHEDULE: 1 100				
					LBS	Takeoff Quan: 1,020,000.000	Engr Quan: 1,020,000.000		
OP05	Op Crane >100T	2.00	416.00 MH	29.860	20,563				20,563
OP07	Op Oiler >100T plus	2.00	416.00 MH	27.250	19,258				19,258
\$1,776,509.72	0.0022 MH/LB	2,288.00 MH		[0.071]	132,150	1,496,799	147,561		1,776,510
4,903.8462	Units/Hr	445.8056 Unit/MH	26.0000 Shifts		0.13	1.47	0.14		1.74
381080 Bolt-up Steel									
					Quan: 1,020,000.00 LBS	Hrs/Shft: 8.00	Cal: 508	WC: CCISP	
3 beams/shift 54 beams/3									
IRON5	Foreman + 4 Ironworker		160.00 CH	Prod: 1,275.0000 UM	Lab Pcs: 5.00	Eqp Pcs: 5.00			
8COMPR04	Compressor 185 CFM 80H	1.00	160.00 HR	17.411		2,786			2,786
8GEN005	Generator 5 KW	1.00	160.00 HR	5.108		817			817
8MLIFT080	Manlift Grove T80 80'	1.00	160.00 HR	42.605		6,817			6,817
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	160.00 HR	18.570		2,971			2,971
8WELD300	Welder 300 AMP	1.00	160.00 HR	5.121		819			819
IW01	Ironworker Foreman	1.00	160.00 MH	37.760	10,970				10,970
IW02	Ironworker Journeyman	4.00	640.00 MH	32.760	40,035				40,035
\$65,215.21	0.0007 MH/LBS	800.00 MH		[0.026]	51,005		14,210		65,215
6,375.0000	Units/Hr	1,275.0061 Unit/MH	* 20.0000 Shifts		0.05		0.01		0.06
381110 Safety Lines-Steel Beams									
					Quan: 2,082.00 LF	Hrs/Shft: 8.00	Cal: 508	WC: CCISP	
IRON4	Foreman + 3 Ironworker		40.00 CH	Prod: 0.0768 MU	Lab Pcs: 4.00	Eqp Pcs: 4.00			
31MATCABLE	Safety Line Cab@108.7%	1.10	2,290.19 LF	1.000		2,489			2,489
31MATPOST	Safety Line Pos@108.7%	1.00	48.00 EA	25.000		1,304			1,304
8COMPR04	Compressor 185 CFM 80H	1.00	40.00 HR	17.411		696			696
8GEN005	Generator 5 KW	1.00	40.00 HR	5.108		204			204
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	40.00 HR	18.570		743			743
8WELD300	Welder 300 AMP	1.00	40.00 HR	5.121		205			205
IW01	Ironworker Foreman	1.00	40.00 MH	37.760	2,743				2,743
IW02	Ironworker Journeyman	3.00	120.00 MH	32.760	7,507				7,507
\$15,891.27	0.0768 MH/LF	160.00 MH		[2.614]	10,249	3,794	1,848		15,891
52.0500	Units/Hr	13.0125 Unit/MH	5.0000 Shifts		4.92	1.82	0.89		7.63
381125 Paint Steel Touch up									
					Quan: 1,020,000.00 LB	Hrs/Shft: 8.00	Cal: 508	WC: CCISP	
4SPAINT	Paint Struc Steel Sub	1.00	1,020,000.00 LB	0.050				51,000	51,000
\$51,000.00				[]				51,000	51,000
								0.05	0.05
381150 Install Temp X-Bracing									
					Quan: 40.00 EA	Hrs/Shft: 8.00	Cal: 508	WC: CCISP	
Install every 50' 5 spaces x 6 points = 30 each									
IRON4	Foreman + 3 Ironworker		48.00 CH	Prod: 4.8000 MU	Lab Pcs: 4.00	Eqp Pcs: 4.00			
31MATMISC	Misc Material@108.7%	1.00	40.00 EA	150.000		6,522			6,522
8COMPR04	Compressor 185 CFM 80H	1.00	48.00 HR	17.411		836			836
8GEN005	Generator 5 KW	1.00	48.00 HR	5.108		245			245
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	48.00 HR	18.570		891			891
8WELD300	Welder 300 AMP	1.00	48.00 HR	5.121		246			246
IW01	Ironworker Foreman	1.00	48.00 MH	37.760	3,291				3,291
IW02	Ironworker Journeyman	3.00	144.00 MH	32.760	9,008				9,008
\$21,038.84	4.8000 MH/EA	192.00 MH		[163.248]	12,299	6,522	2,218		21,039
0.8333	Units/Hr	0.2083 Unit/MH	6.0000 Shifts		307.47	163.05	55.45		525.97
392000 Beam launcher									
					Quan: 1.00 LS	Hrs/Shft: 8.00	Cal: 508	WC: CCISP	
Fabricated Launching Nose for two cross-braced Girders including Labor, Equipment and Materials									
4BRIDGE	Bridge Sub	1.00	1.00 LS	500,000.000				500,000	500,000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Contract	Total
BID ITEM = 22500									
Description =	Structural Steel		Land Item	SCHEDULE: 1 100					
			Unit =	LBS	Takeoff Quan:	1,020,000.000	Engr Quan:	1,020,000.000	
\$500,000.00				[]			500,000	500,000	
							500,000.00	500,000.00	
905000 Mob Equipment									
			Quan:	1.00 LS	Hrs/Shift:	8.00	Cal:	508	WC: CCISP
1 on each side of river 777-8 truckloads 4600-18 truckloads, allow 8 hours each load x 2 ways = 48 flatbeds x 8 hrs = 384 hrs, 4 lowboys x 8 hrs = 32 hrs Crane build crane 1 day each (ave) Crane teardown 1-1/2 days Forklift.....2 each - small move Manlifts (2).....2 each - small move									
<u>GIRDR5</u>	Crane Mob		28.00 CH	Prod:	3.5000 S	Lab Pcs:	12.00	Eqp Pcs:	12.00
5MS	Small Move@108.7%	1.00	6.00 EA	250.000		1,631			1,631
5TRKFB	Trucking - Flat Bed	1.00	384.00 HR	100.000		38,400			38,400
5TRKLB50	Trucking - Low Bed 50T	1.00	32.00 HR	125.000		4,000			4,000
8CRANEC200	Crane Manitowoc 777 20	1.00	28.00 HR	217.011			6,076		6,076
8CRANEC350	Crane Manitowoc 4600 3	1.00	28.00 HR	370.362			10,370		10,370
8CRANETK120	Crane Grove GMK4090 12	1.00	28.00 HR	226.647			6,346		6,346
8GLP04	Light Plant, 4 Lights	4.00	112.00 HR	7.455			835		835
8MLIFT060	Manlift JLG 45' A1 Ren	2.00	56.00 HR	29.173			1,776		1,776
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	28.00 HR	18.570			520		520
8WELD300	Welder 300 AMP	2.00	56.00 HR	5.121			287		287
IW01	Ironworker Foreman	1.00	28.00 MH	37.760	1,920				1,920
IW02	Ironworker Journeyman	6.00	168.00 MH	32.760	10,509				10,509
OP05	Op Crane >100T	3.00	84.00 MH	29.860	4,152				4,152
OP07	Op Oiler >100T plus	2.00	56.00 MH	27.250	2,592				2,592
\$89,413.89	336.0000 MH/LS		336.00 MH	[10595.2]	19,173	44,031	26,210		89,414
0.0357 Units/Hr	0.0030 Unit/MH		3.5000 Shifts *		19,173.42	44,030.50	26,209.97		89,413.89
====> Item Totals: 22500 - Structural Steel									
\$2,590,857.47	0.0037 MH/LBS		3,840.00 MH	[0.121]	227,163	1,496,799	62,173	193,723	611,000 2,590,857
2.540	1020000 LBS				0.22	1.47	0.06	0.19	0.60 2.54

BID ITEM = 22600									
Description =	Strip Seal Expansion Joint		Land Item	SCHEDULE: 1 100					
			Unit =	LF	Takeoff Quan:	102.000	Engr Quan:	102.000	
384000 Expan Device-Modular									
			Quan:	102.00 LF	Hrs/Shift:	8.00	Cal:	508	WC: CCISP
Low \$250 - High \$500, by Sean Murphy/BOI Use ave									
4JSEAL	Joint Saw & Seal Sub	1.00	102.00 LF	375.000			38,250		38,250
\$38,250.00				[]			38,250		38,250
							375.00		375.00

BID ITEM = 22700									
Description =	Bearings		Land Item	SCHEDULE: 1 100					
			Unit =	EA	Takeoff Quan:	10.000	Engr Quan:	10.000	
2700 Bearings									
			Quan:	10.00 EA	Hrs/Shift:	8.00	Cal:	508	WC: CCISP
WsDOT:4307-FABRIC PAD BEARING - SUPERSTR Statewide Ave									
4BRIDGE	Bridge Sub	1.00	10.00 EA	1,500.000			15,000		15,000
\$15,000.00				[]			15,000		15,000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
<hr/>										
BID ITEM = 22700				Land Item	SCHEDULE: 1	100				
Description =	Bearings		Unit =	EA	Takeoff Quan:		10.000	Engr Quan:		10.000
								1,500.00		1,500.00
<hr/>										
BID ITEM = 22800				Land Item	SCHEDULE: 1	100				
Description =	Barrier Railings, Metal		Unit =	LF	Takeoff Quan:		694.000	Engr Quan:		694.000
2800	Barrier Railings, Metal			Quan:	694.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Low \$125 - High \$180, by Sean Murphy/BOI										
Use ave										
4BRIDGE	Bridge Sub	1.00	694.00 LF	150.000				104,100		104,100
\$104,100.00				[]				104,100		104,100
								150.00		150.00
<hr/>										
BID ITEM = 22900				Land Item	SCHEDULE: 1	100				
Description =	Sewer Pipe		Unit =	LF	Takeoff Quan:		430.000	Engr Quan:		430.000
2900	Sewer Pipe			Quan:	430.00 LF	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Images/Docs Attached										
Pricing by Nick Cavalleri/RDD										
Mobilization, Contingency & Traffic Control removed since they are included in the overall total										
4SEWER	Sewer Line Sub	1.00	1.00 LS	1,661,486.000				1,661,486		1,661,486
4TRAFF	Traffic Control Sub	1.00	-1.00 LS	26,392.000				-26,393		-26,393
9MOB	MOBILIZATION	1.00	-1.00 LS	44,261.000				-44,262		-44,262
9RCCON	Contingency	1.00	-1.00 LS	352,732.000				-352,733		-352,733
\$1,238,101.00				[]				-396,994	1,635,094	1,238,101
								-923.23	3,802.54	2,879.30
<hr/>										
=====	Item Totals:	22900	- Sewer Pipe							
\$1,238,101.00				[]				-396,994	1,635,094	1,238,101
2,879.305		430 LF						-923.23	3,802.54	2,879.30
<hr/>										
BID ITEM = 23000				Land Item	SCHEDULE: 1	100				
Description =	Mobilization		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
3000	Mobilization			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
4BRIDGE	Bridge Sub	0.10	0.10 LS	8,200,000.000				820,000		820,000
\$820,000.00				[]				820,000		820,000
								820,000.00		820,000.00
<hr/>										
BID ITEM = 23100				Land Item	SCHEDULE: 1	100				
Description =	Traffic Control		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
3100	Traffic Control			Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP	
Plug										
4DRAIN	Drainage Sub	1.00	1.00 LS	100,000.000				100,000		100,000
\$100,000.00				[]				100,000		100,000

Appendix B-Detailed Estimate

Activity Resource	Desc	Quantity Pcs	Unit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
<hr/>										
BID ITEM = 23100			Land Item	SCHEDULE: 1	100					
Description =	Traffic Control		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
								100,000.00	100,000.00	
<hr/>										
BID ITEM = 23200			Land Item	SCHEDULE: 1	100					
Description =	Stage Construction Factor 15%		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
3200	Stage Construction Factor 15%		Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
4BRIDGE	Bridge Sub	0.15	0.15 LS	8,200,000.000				1,230,000	1,230,000	
\$1,230,000.00				[]				1,230,000	1,230,000	
								1,230,000.00	1,230,000.00	
<hr/>										
BID ITEM = 23300			Land Item	SCHEDULE: 1	100					
Description =	Contingency 25%		Unit =	LS	Takeoff Quan:		1.000	Engr Quan:		1.000
3300	Contingency 25%		Quan:	1.00 LS	Hrs/Shft:	8.00	Cal: 508	WC: CCISP		
4BRIDGE	Bridge Sub	0.25	0.25 LS	8,200,000.000				2,050,000	2,050,000	
\$2,050,000.00				[]				2,050,000	2,050,000	
								2,050,000.00	2,050,000.00	
<hr/>										
\$36,851,976.70	*** Report Totals ***	15,056.00	MH		892,111	6,518,196	-2,127,849	759,918	30,809,600	36,851,977

>>> indicates Non Additive Activity

-----Report Notes:-----

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

Bid Date: 12/14/15 Owner: Engineering Firm:
Estimator-In-Charge: RHU

* on units of MH indicate average labor unit cost was used rather than base rate.

[] in the Unit Cost Column = Labor Unit Cost Without Labor Burdens

In equipment resources, rent % and EOE % not = 100% are represented as XXX%YYY where XXX=Rent% and YYY=EOE%

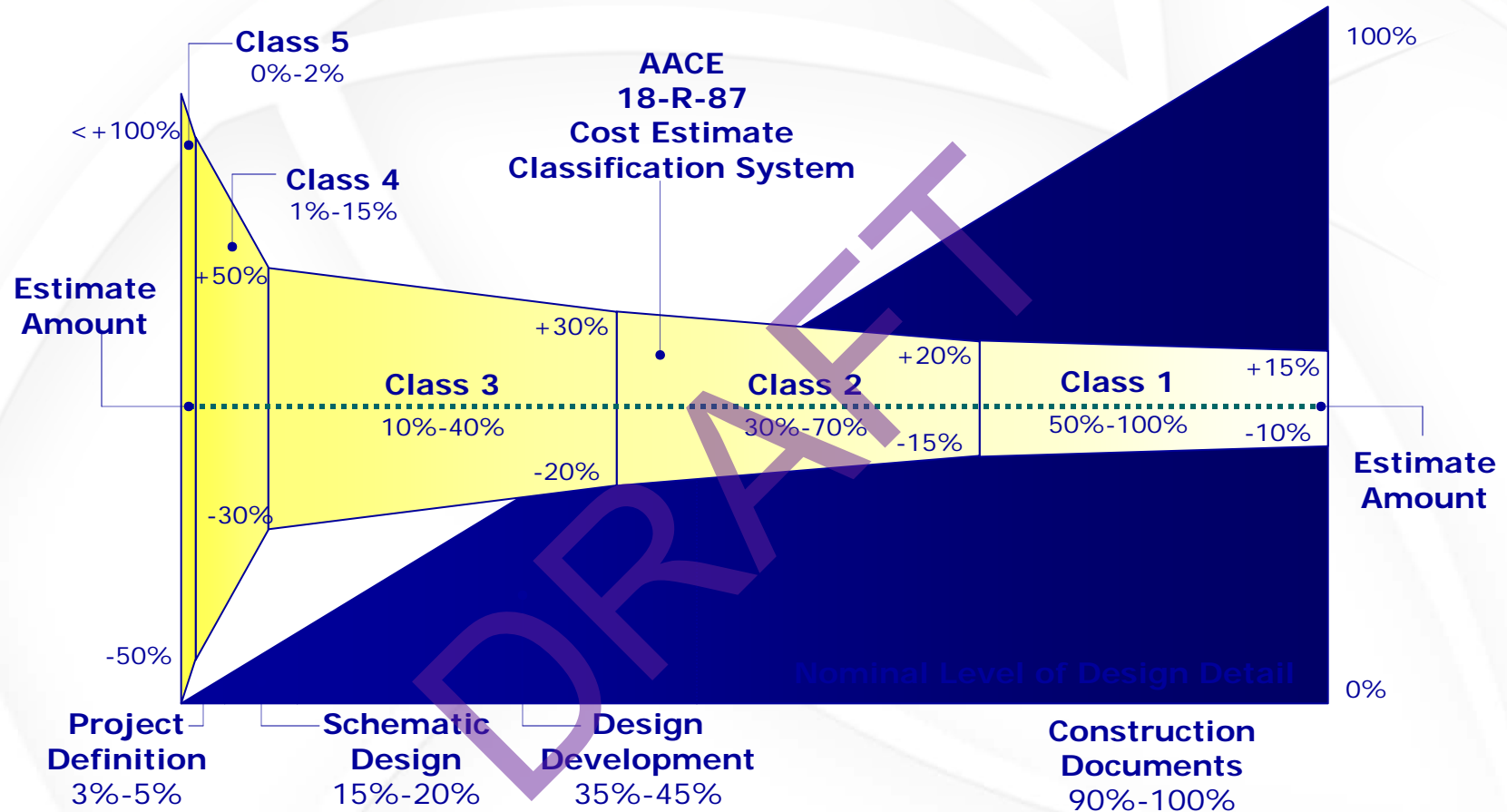
-----Calendar Codes-----

410 4 Nights @ 10 hrs/night
508 5 days @ 8hrs/day (Default Calendar)
 509 5 days @ 9 hrs/day
 510 5 days @ 10hrs/day
 608 6 Days @ 8 hrs/day
 610 6 Days @ 10 hrs/day

Appendix C – AACE Estimate Definitions

DRAFT

AACE – Classification System



Construction Cost Estimate Accuracy Ranges



Estimate Class	Class 5	Class 4	Class 3	Class 2	Class 1
LEVEL OF PROJECT DEFINITION Expressed as a % of complete definition	0% to 2%	1% to 15%	10% to 40%	30% to 70%	50% to 100%
END USAGE Typical Purpose of Estimate	Concept Screening	Study or Feasibility	Budget Authorization, or Control	Control or Bid / Tender	Check Estimate or Bid / Tender
METHODOLOGY Typical estimating method	Capacity Factored, Parametric Models, Judgment, or Analogy	Equipment Factored or Parametric Models	Semi-Detailed Unit Costs with Assembly Level Line Items	Detailed Unit Cost with Forced Detailed Take-Off	Detailed Unit Cost with Detailed Take-Off
EXPECTED ACCURACY RANGE Typical variation in low and high ranges [a]	L: -20% to -50% H: +30% to +100%	L: -15% to -30% H: +20% to +50%	L: -10% to -20% H: +10% to +30%	L: -5% to -15% H: +5% to +20%	L: -3% to -10% H: +3% to +15%
PREPARATION EFFORT Typical degree of effort relative to least cost index of 1 [b]	1	2 to 4	3 to 10	4 to 20	5 to 100
REFINED CLASS DEFINITION	Class 5 estimates are generally prepared based on very limited information, and subsequently have very wide accuracy ranges. As such, some companies and organizations have elected to determine that due to the inherent inaccuracies, such estimates cannot be classified in a conventional and systematic manner. Class 5 estimates, due to the requirements of end use, may be prepared within a very limited amount of time and with very little effort expended - sometimes requiring less than 1 hour to prepare. Often, little more than proposed plant type, location, and capacity are known at the time of estimate preparation.	Class 4 estimates are generally prepared based on very limited information, and subsequently have very wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically, engineering is from 1% to 5% complete, and would comprise at a minimum the following: plant capacity, block schematics, indicated layout, process flow diagrams (PFDs) for main process systems and preliminary engineered process and utility equipment lists. Level of Project Definition Required: 1% to 15% of full project definition.	Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. As such, they typically form the initial control estimate against which all actual costs and resources will be monitored. Typically, engineering is from 10% to 40% complete, and would comprise at a minimum the following: process flow diagrams, utility flow diagrams, preliminary piping and instrument diagrams, utility flow diagrams, preliminary piping and instrument diagrams, plot plan, developed layout drawings, and essentially complete engineering process and utility equipment lists. Level Of Project Definition Required: 10% to 40% of full project definition.	Class 2 estimates are generally prepared to form a detailed control baseline against which all project work is monitored in terms of cost and progress control. For contractors, this class of estimate is often used as the "bid" estimate to establish contract value. Typically, engineering is from 30% to 70% complete, and would comprise at a minimum the following: Process flow diagrams, utility flow diagrams, piping and instrument flow diagrams, heat and material balances, final plot plan, final layout drawings, complete engineered process and utility equipment lists, single line diagrams for electrical, electrical equipment and motor schedules, vendor quotations, detailed project execution plans, resourcing and work force plans, etc.	Class 1 estimates are generally prepared for discrete parts or sections of the total project rather than generating this level of detail for the entire project. The parts of the project estimated at this level of detail will typically be used by subcontractors for bids, or by owners for check estimates. The updated estimate is often referred to as the current control estimate and becomes the new baseline for cost/schedule control of the project. Class 1 estimates may be prepared for parts of the project to comprise a fair price estimate or bid check estimate to compare against a contractor's bid estimate, or to evaluate/dispute claims. Typically, engineering is from 50% to 100% complete, and would comprise virtually all engineering and design documentation of the project, and complete project execution and commissioning plans. Level for Project Definition Required: 50% to 100% of full project definition.
END USAGE DEFINED	Class 5 estimates are prepared for any number of strategic business planning purposes, such as but not limited to market studies, assessment of initial viability, evaluation of alternate schemes, project screening, project location studies, evaluation of resource needs and budgeting, long-range capital planning, etc.	Class 4 estimates are prepared for a number of purposes, such as but not limited to, detailed strategic planning, business development, project screening at more developed stages, alternative scheme analysis, confirmation of economic and/or technical feasibility, and preliminary budget approval or approval to proceed to next stage.	Class 3 estimates are typically prepared to support full project funding requests, and become the first of the project phase "control estimate" against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates. In many owner organizations, a Class 3 estimate may be the last estimate required and could well form the only basis for cost/schedule control.	Class 2 estimates are typically prepared as the detailed control baseline against which all actual costs and resources will now be monitored for variation to the budget, and form a part of the change/variation control program.	Class 1 estimates are typically prepared to form a current control estimate to be used as the final control baseline against which all actual costs and resources will now be monitored for variations to the budget, and form a part of the change/variation control program. They may be used to evaluate bid checking, to support vendor/contractor negotiations, or for claim evaluations and dispute resolution.
ESTIMATING METHODS USED	Class 5 estimates virtually always use stochastic estimating methods such as cost/capacity curves and factors, scale of operations factors, Lang factors, Handy-Whitman factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, and other parametric and modeling techniques.	Class 4 estimates virtually always use stochastic estimating methods such as cost/capacity curves and factors, scale of operations factors, Lang factors, Hand factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, the Miller method, gross unit costs/ratios, and other parametric and modeling techniques.	Class 3 estimates usually involve more deterministic estimating methods that stochastic methods. They usually involve a high degree of unit cost line items, although these may be at an assembly level of detail rather than individual components. Factoring and other stochastic methods may be used to estimate less-significant areas of the project.	Class 2 estimates always involve a high degree of deterministic estimating methods. Class 2 estimates are prepared in great detail, and often involve tens of thousands of unit cost line items. For those areas of the project still undefined, an assumed level of detailed takeoff (forced detail) may be developed to use as line items in the estimate instead of relying on factoring methods.	Class 1 estimates involve the highest degree of deterministic estimating methods, and require a great amount of effort. Class 1 estimates are prepared in great detail, and thus are usually performed on only the most important or critical areas of the project. All items in the estimate are usually unit cost line items based on actual design quantities.
EXPECTED ACCURACY RANGE	Typical accuracy ranges for Class 5 estimates are -20% to 50% on the low side, and +30% to +100% on the high side, depending on the technological complexity of the project, appropriate contingency determination. Ranges could exceed those shown in unusual circumstances.	Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side, and +20% to +50% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances.	Typical accuracy ranges for Class 3 estimates are -10% to 20% on the low side, and +10% to +30% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances.	Typical accuracy ranges for Class 2 estimates are -5% to 15% on the low side, and +5% to +20% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances.	Typical accuracy ranges for Class 1 estimates are -3% to 10% on the low side, and +3% to +15% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances.
EFFORT TO PREPARE (for US\$20MM project):	As little as 1 hour or less to prepare to perhaps more than 200 hours, depending on the project and the estimating methodology used.	Typically, as little as 20 hours or less to perhaps more than 300 hours, depending on the project and the estimating methodology used.	Typically, as little as 150 hours or less to perhaps more than 1500 hours, depending on the project and the estimating methodology used.	Typically, as little as 300 hours or less to perhaps more than 3000 hours, depending on the project and the estimating methodology used. Bid Estimates typically require more effort than estimates used for funding or control purposes	Class 1 estimates require the most effort to create, and as such are generally developed for only selected areas of the project, or for bidding purposes. A complete Class 1 estimate may involve as little as 600 hours or less, to perhaps more than 6,000 hours, depending on the project and the estimating methodology used. Bid estimate typically require more effort than estimates used for funding or control purposes.
ANSI Standard Reference Z94.2-1989 name; Alternate Estimate Names, Terms, Expressions, Synonyms:	Order of Magnitude Estimate; Ratio, ballpark, blue sky, seat-of-pants, ROM, idea study, prospect estimate, concession license estimate, guesstimate, rule-of thumb.	Budget Estimate; Screening, top-down, feasibility, authorization, factored, pre-design, pre-study.	Budget Estimate; Budget, scope, sanction, semi-detailed, authorization, preliminary control, concept study, development, basic engineering phase estimate, target estimate.	Definitive Estimate; Detailed Control, forced detail, execution phase, master control, engineering, bid, tender, change order estimate.	Definitive Estimate; Full detail, release, fall-out, tender, firm price, bottoms-up, final, detailed control, forced detail, execution phase, master control, fair price, definitive, change order estimate.

Estimate Class	Class 5	Class 4	Class 3	Class 2	Class 1
Estimate Input Checklist and Maturity Index	Class 5	Class 4	Class 3	Class 2	Class 1
GENERAL PROJECT DATA					
Project Scope Description	General	Preliminary	Defined	Defined	Defined
Plant Production / Facility Capacity	Assumed	Preliminary	Defined	Defined	Defined
Plant Location	General	Approximate	Specific	Specific	Specific
Soils & Hydrology	None	Preliminary	Defined	Defined	Defined
Integrated Project Plan	None	Preliminary	Defined	Defined	Defined
Project Master Schedule	None	Preliminary	Defined	Defined	Defined
Escalation Strategy	None	Preliminary	Defined	Defined	Defined
Work Breakdown Structure	None	Preliminary	Defined	Defined	Defined
Project Code of Accounts	None	Preliminary	Defined	Defined	Defined
Contracting Strategy	Assumed	Assumed	Preliminary	Defined	Defined
ENGINEERING DELIVERABLES:	Class 5	Class 4	Class 3	Class 2	Class 1
Block Flow Diagrams	Started / Preliminary	Preliminary / Complete	Complete	Complete	Complete
Plot Plans		Started	Preliminary / Complete	Complete	Complete
Process Flow Diagrams (PFDs)		Started / Preliminary	Preliminary / Complete	Complete	Complete
Utility Flow Diagrams (UFDs)		Started / Preliminary	Preliminary / Complete	Complete	Complete
Piping & Instrument Diagrams (P&IDS)		Started	Preliminary / Complete	Complete	Complete
Heat and Material Balances		Started	Preliminary / Complete	Complete	Complete
Process Equipment List		Started / Preliminary	Preliminary / Complete	Complete	Complete
Utility Equipment List		Started / Preliminary	Preliminary / Complete	Complete	Complete
Electrical One Line Drawings		Started / Preliminary	Preliminary / Complete	Complete	Complete
Specifications and Datasheets		Started	Preliminary / Complete	Complete	Complete
General Equipment Arrangement Drawings		Started	Preliminary / Complete	Complete	Complete
Spare Parts Lists			Started / Preliminary	Preliminary	Complete
Architectural Details / Schedules		Started	Preliminary / Complete	Complete	Complete
Structural Details		Started	Preliminary / Complete	Complete	Complete
Mechanical Discipline Drawings			Started	Preliminary	Preliminary / Complete
Electrical Discipline Drawings			Started	Preliminary	Preliminary / Complete
System Discipline Drawings			Started	Preliminary	Preliminary / Complete
Civil/Site Discipline Drawings			Started	Preliminary	Preliminary / Complete
Demolition Details		Started	Preliminary / Complete	Complete	Complete

Appendix D – Additional Estimate Information

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Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 10

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	10W091	008115	3/21/2011	33.00	\$22.65	\$25.00	\$70.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	11Z003	008134	4/11/2011	77.00	\$47.00	\$33.00	\$0.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12Z001	008262	3/5/2012	29.40	\$50.00	\$25.00	\$14.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12Z005	008289	4/9/2012	13.00	\$85.00	\$25.00	\$0.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12Z009	008296	4/16/2012	40.00	\$5.00	\$18.00	\$19.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12Z019	008341	6/18/2012	205.00	\$15.00	\$25.77	\$0.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12W082	008374	9/17/2012	72.00	\$10.00	\$15.00	\$27.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	13Z007	008453	3/25/2013	14.00	\$48.00	\$15.86	\$100.00
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	12Z025	008496	5/28/2013	67.00	\$10.00	\$3.75	\$8.10
0100	S.Y.	REMOVING CEMENT CONC. SIDEWALK	15Z011	008732	3/9/2015	470.00	\$10.22	\$5.00	\$0.00

ER AVERAGE LOW BID is \$16.74

State AVERAGE LOW BID is \$14.45

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 12

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
0110	L.F.	REMOVING CEMENT CONC. CURB	10W091	008115	3/21/2011	450.00	\$3.85	\$12.00	\$0.25
0110	L.F.	REMOVING CEMENT CONC. CURB	11Z003	008134	4/11/2011	85.00	\$13.00	\$10.00	\$0.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z001	008262	3/5/2012	12.00	\$20.00	\$27.00	\$25.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z005	008289	4/9/2012	271.00	\$12.00	\$4.00	\$0.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z011	008294	4/16/2012	130.00	\$10.00	\$4.00	\$24.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z019	008341	6/18/2012	195.00	\$12.00	\$10.00	\$0.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z003	008368	8/16/2012	117.00	\$5.00	\$5.30	\$10.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12W082	008374	9/17/2012	124.00	\$5.00	\$3.00	\$7.50
0110	L.F.	REMOVING CEMENT CONC. CURB	13Z009	008495	6/3/2013	80.00	\$6.60	\$10.00	\$0.00
0110	L.F.	REMOVING CEMENT CONC. CURB	12Z025	008496	5/28/2013	98.00	\$4.00	\$4.25	\$8.10
0110	L.F.	REMOVING CEMENT CONC. CURB	15Z011	008732	3/9/2015	50.00	\$6.98	\$25.00	\$0.00
0110	L.F.	REMOVING CEMENT CONC. CURB	15Z007	008738	3/16/2015	75.00	\$3.25	\$14.00	\$0.00

ER AVERAGE LOW BID is **\$7.52**

State AVERAGE LOW BID is **\$4.69**

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 8

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	11Z006	008195	6/20/2011	4,900.00	\$2.30	\$2.75	\$2.25
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	12Z019	008341	6/18/2012	7.00	\$30.00	\$400.00	\$0.00
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	12W082	008374	9/17/2012	54.00	\$5.00	\$20.00	\$24.00
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	12Z002	008378	9/24/2012	2,370.00	\$1.50	\$3.25	\$3.00
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	13Z009	008495	6/3/2013	90.00	\$11.00	\$15.00	\$0.00
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	12Z025	008496	5/28/2013	403.00	\$3.00	\$3.50	\$8.10
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	13Z010	008507	6/17/2013	610.00	\$2.70	\$5.00	\$3.00
0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	15Z011	008732	3/9/2015	14.00	\$24.91	\$55.00	\$0.00

ER AVERAGE LOW BID is \$2.31

State AVERAGE LOW BID is \$6.10

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 5

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
0150	S.Y.	REMOVING TRAFFIC ISLAND	12Z009	008296	4/16/2012	546.00	\$6.50	\$8.75	\$9.50
0150	S.Y.	REMOVING TRAFFIC ISLAND	12Z019	008341	6/18/2012	116.00	\$20.00	\$22.77	\$0.00
0150	S.Y.	REMOVING TRAFFIC ISLAND	12W082	008374	9/17/2012	60.00	\$15.00	\$20.00	\$38.25
0150	S.Y.	REMOVING TRAFFIC ISLAND	13Z009	008495	6/3/2013	70.00	\$11.00	\$15.00	\$0.00
0150	S.Y.	REMOVING TRAFFIC ISLAND	13Z005	008535	9/23/2013	90.00	\$15.00	\$10.00	\$5.25

ER AVERAGE LOW BID is \$10.08

State AVERAGE LOW BID is \$18.71

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 19

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	11Z006	008195	6/20/2011	68,510.00	\$6.50	\$4.10	\$6.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	11Z015	008214	8/29/2011	370.00	\$8.84	\$24.00	\$22.75
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	11Z009	008241	12/19/2011	270.00	\$35.00	\$20.00	\$16.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z005	008289	4/9/2012	2,445.00	\$11.00	\$20.00	\$0.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z009	008296	4/16/2012	57,400.00	\$9.00	\$7.40	\$7.75
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z019	008341	6/18/2012	121.00	\$80.00	\$31.85	\$0.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z020	008342	6/25/2012	2,500.00	\$17.50	\$10.00	\$14.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z022	008372	9/10/2012	150.00	\$22.00	\$80.00	\$0.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z002	008378	9/24/2012	197,380.00	\$5.00	\$3.00	\$3.90
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z016	008447	3/11/2013	500.00	\$25.00	\$22.00	\$50.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z007	008453	3/25/2013	1,430.00	\$11.00	\$19.00	\$23.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z009	008495	6/3/2013	2,775.00	\$26.95	\$34.00	\$0.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	12Z025	008496	5/28/2013	518,364.10	\$2.95	\$3.10	\$3.54
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z010	008507	6/17/2013	2,227.00	\$8.77	\$7.50	\$10.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z016	008512	7/8/2013	7.60	\$30.00	\$100.00	\$15.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z005	008535	9/23/2013	5,016.00	\$18.00	\$10.00	\$14.70
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	13Z004	008557	11/18/2013	90.00	\$100.00	\$60.00	\$56.02
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	14Z001	008587	2/24/2014	8,245.00	\$15.00	\$16.00	\$8.00
0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	14Z002	008611	4/14/2014	150.00	\$40.00	\$56.50	\$40.00

ER AVERAGE LOW BID is \$4.52

State AVERAGE LOW BID is \$9.55

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: All Regions East Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 10

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NCR									
4149	LB.	ST. REINF. BAR FOR BRIDGE	11B015	008139	5/19/2011	115,200.00	\$0.80	\$0.90	\$1.00
4149	LB.	ST. REINF. BAR FOR BRIDGE	12B007	008310	4/30/2012	17,200.00	\$1.10	\$1.00	\$1.00
NCR AVERAGE LOW BID is \$0.84									
State AVERAGE LOW BID is \$0.95									

SCR									
4149	LB.	ST. REINF. BAR FOR BRIDGE	10Y018	008127	4/4/2011	3,439,741.00	\$0.80	\$0.90	\$1.00
4149	LB.	ST. REINF. BAR FOR BRIDGE	11Y013	008244	1/9/2012	41,800.00	\$1.00	\$1.00	\$0.92
4149	LB.	ST. REINF. BAR FOR BRIDGE	13Y007	008510	7/1/2013	33,200.00	\$0.97	\$0.80	\$1.00
4149	LB.	ST. REINF. BAR FOR BRIDGE	14Y015	008715	2/2/2015	666,074.00	\$1.20	\$1.00	\$1.00
SCR AVERAGE LOW BID is \$0.87									
State AVERAGE LOW BID is \$0.95									

ER									
4149	LB.	ST. REINF. BAR FOR BRIDGE	11Z006	008195	6/20/2011	104,200.00	\$0.60	\$0.84	\$1.00
4149	LB.	ST. REINF. BAR FOR BRIDGE	12Z009	008296	4/16/2012	331,100.00	\$0.75	\$0.75	\$0.76
4149	LB.	ST. REINF. BAR FOR BRIDGE	12Z002	008378	9/24/2012	53,800.00	\$0.85	\$0.92	\$0.80
4149	LB.	ST. REINF. BAR FOR BRIDGE	12Z025	008496	5/28/2013	833,400.00	\$0.78	\$0.80	\$0.61
ER AVERAGE LOW BID is \$0.76									
State AVERAGE LOW BID is \$0.95									

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: State Wide Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 2

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NWR									
4307	EACH	FABRIC PAD BEARING - SUPERSTR.	13A003	008549	10/14/2013	30.00	\$1,550.00	\$800.00	\$1,685.00
NWR AVERAGE LOW BID is		\$1,550.00							
State AVERAGE LOW BID is		\$1,497.06							
SCR									
4307	EACH	FABRIC PAD BEARING - SUPERSTR.	10Y018	008127	4/4/2011	4.00	\$1,100.00	\$1,300.00	\$2,500.00
SCR AVERAGE LOW BID is		\$1,100.00							
State AVERAGE LOW BID is		\$1,497.06							

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: All Regions East Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 10

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NCR									
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	11B015	008139	5/19/2011	458.00	\$800.00	\$540.00	\$850.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	12B007	008310	4/30/2012	124.00	\$850.00	\$550.00	\$1,400.00
NCR AVERAGE LOW BID is \$810.65									
State AVERAGE LOW BID is \$517.37									

SCR									
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	10Y018	008127	4/4/2011	16,285.00	\$425.00	\$352.00	\$500.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	11Y013	008244	1/9/2012	322.00	\$550.00	\$500.00	\$550.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	13Y007	008510	7/1/2013	235.00	\$356.00	\$508.00	\$360.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	14Y015	008715	2/2/2015	4,389.00	\$450.00	\$420.00	\$800.00
SCR AVERAGE LOW BID is \$431.30									
State AVERAGE LOW BID is \$517.37									

ER									
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	11Z006	008195	6/20/2011	752.00	\$125.00	\$318.00	\$400.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	12Z009	008296	4/16/2012	1,810.00	\$350.00	\$800.00	\$515.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	12Z002	008378	9/24/2012	366.00	\$500.00	\$700.00	\$400.00
4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE	12Z025	008496	5/28/2013	5,326.00	\$357.00	\$295.00	\$240.50
ER AVERAGE LOW BID is \$340.67									
State AVERAGE LOW BID is \$517.37									

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 24

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
5767	TON	HMA CL. 1/2 IN. PG 64-28	11Z006	008195	6/20/2011	17,900.00	\$62.00	\$62.90	\$59.50
5767	TON	HMA CL. 1/2 IN. PG 64-28	12Z005	008289	4/9/2012	16,024.00	\$60.00	\$59.75	\$0.00
5767	TON	HMA CL. 1/2 IN. PG 70-28	12Z011	008294	4/16/2012	17,070.00	\$57.30	\$57.00	\$59.10
5767	TON	HMA CL. 1/2 IN. PG 70-28	12Z009	008296	4/16/2012	7,020.00	\$70.00	\$71.00	\$74.10
5767	TON	HMA CL. 1/2 IN. PG 64-28	12Z020	008342	6/25/2012	850.00	\$103.00	\$112.00	\$137.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	12Z002	008378	9/24/2012	12,900.00	\$60.00	\$57.85	\$60.00
5767	TON	HMA CL. 1/2 IN. PG 70-28	13Z001	008421	2/4/2013	24,110.00	\$65.00	\$68.46	\$72.75
5767	TON	HMA CL. 1/2 IN. PG 70-28	13Z008	008446	3/11/2013	11,660.00	\$63.00	\$57.00	\$58.75
5767	TON	HMA CL. 1/2 IN. PG PG 64-28	13Z009	008495	6/3/2013	739.00	\$86.90	\$88.00	\$0.00
5767	TON	HMA CL. 1/2 IN. PG 64-28 FOR SHARED U	13Z009	008495	6/3/2013	31.20	\$126.50	\$130.00	\$0.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	12Z025	008496	5/28/2013	405.10	\$114.00	\$77.00	\$108.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	13Z010	008507	6/17/2013	148.00	\$139.05	\$145.00	\$140.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	13Z016	008512	7/8/2013	9.30	\$720.00	\$675.00	\$700.00
5767	TON	HMA CL. 1/2 IN. PG 70-28	13Z005	008535	9/23/2013	42,504.00	\$54.15	\$57.50	\$68.00
5767	TON	HMA CL. 1/2 IN. PG 70 -28	13Z019	008538	9/30/2013	57,200.00	\$56.00	\$56.00	\$54.43
5767	TON	HMA CL. 1/2 IN. PG 70-28	13Z021	008539	9/30/2013	8,102.00	\$57.50	\$66.98	\$65.00
5767	TON	HMA CL. 1/2 IN. PG 70-28	13Z020	008540	9/30/2013	49,400.00	\$52.00	\$55.00	\$53.00
5767	TON	HMA CL. 1/2 IN. PG 64 - 28	13Z004	008557	11/18/2013	16,600.00	\$54.50	\$56.00	\$50.68
5767	TON	HMA CL. 1/2 IN. PG 70-28	14Z002	008611	4/14/2014	22,950.00	\$58.00	\$56.50	\$58.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	14Z003	008705	12/15/2014	15,525.00	\$53.90	\$60.00	\$74.00
5767	TON	HMA CL. 1/2 IN. PG 64-28	15Z011	008732	3/9/2015	16,470.00	\$48.61	\$60.00	\$0.00
5767	TON	HMA CL. 1/2 IN. PG 70-28	15Z007	008738	3/16/2015	18,530.00	\$61.63	\$75.00	\$0.00
5767	TON	HMA CL. 1/2 IN. PG 64 -28	15Z003	008754	4/6/2015	16,450.00	\$55.00	\$60.50	\$53.85

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
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5767	TON	HMA CL. 1/2 IN. PG 64-28	15Z002	008757	4/13/2015	650.00	\$105.00	\$110.89	\$0.00
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ER AVERAGE LOW BID is \$57.26

State AVERAGE LOW BID is \$69.84

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: State Wide Contracts awarded from 12/14/1991 thru 12/14/2015

Total records found: 4

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NCR									
6698	EACH	ROUNDBOUT SPLITTER ISLAND NOSING CUR	14B008	008575	1/13/2014	4.00	\$500.00	\$350.00	\$1,400.00
NCR AVERAGE LOW BID is \$500.00									
State AVERAGE LOW BID is \$536.11									
OR									
6698	EACH	ROUNDBOUT SPLITTER ISLAND NOSING CUR	12C529	008472	4/15/2013	9.00	\$154.00	\$1,800.00	\$600.00
OR AVERAGE LOW BID is \$154.00									
State AVERAGE LOW BID is \$536.11									
SWR									
6698	EACH	ROUNDBOUT SPLITTER ISLAND NOSING CUR	14X300	008664	8/18/2014	2.00	\$400.00	\$375.00	\$393.75
SWR AVERAGE LOW BID is \$400.00									
State AVERAGE LOW BID is \$536.11									
SCR									
6698	EACH	ROUNDBOUT SPLITTER ISLAND NOSING CUR	15Y004	008812	10/5/2015	4.00	\$1,500.00	\$2,000.00	\$1,510.38
SCR AVERAGE LOW BID is \$1,500.00									
State AVERAGE LOW BID is \$536.11									
New Search									



Bid Item Unit Price Tabulation Standard Items

Region: State Wide Contracts awarded from 12/14/1991 thru 12/14/2015

Total records found: 5

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NCR									
6699	L.F.	ROUNDBOUT CEMENT CONCRETE CURB AND G	14B008	008575	1/13/2014	2,413.00	\$25.00	\$37.00	\$20.00
NCR AVERAGE LOW BID is \$25.00									
State AVERAGE LOW BID is \$18.41									
OR									
6699	L.F.	ROUNDBOUT CEMENT CONCRETE CURB AND G	12C529	008472	4/15/2013	3,097.00	\$14.50	\$16.00	\$25.00
OR AVERAGE LOW BID is \$14.50									
State AVERAGE LOW BID is \$18.41									
SWR									
6699	L.F.	ROUNDBOUT CEMENT CONCRETE CURB AND G	14X300	008664	8/18/2014	685.00	\$16.50	\$21.00	\$17.00
6699	L.F.	ROUNDBOUT CEMENT CONCRETE CURB AND G	15X308	008759	4/13/2015	339.00	\$54.00	\$0.00	\$0.00
SWR AVERAGE LOW BID is \$28.91									
State AVERAGE LOW BID is \$18.41									
SCR									
6699	L.F.	ROUNDBOUT CEMENT CONCRETE CURB AND G	15Y004	008812	10/5/2015	2,270.00	\$12.00	\$18.00	\$16.48
SCR AVERAGE LOW BID is \$12.00									
State AVERAGE LOW BID is \$18.41									
New Search									



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 8

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	12Z005	008289	4/9/2012	50.00	\$25.00	\$24.00	\$0.00
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	12Z009	008296	4/16/2012	3,755.00	\$11.00	\$10.00	\$10.25
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	12Z019	008341	6/18/2012	47.00	\$28.00	\$31.50	\$0.00
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	13Z009	008495	6/3/2013	258.00	\$16.59	\$27.00	\$0.00
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	12Z025	008496	5/28/2013	140.00	\$34.75	\$22.00	\$21.50
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	13Z005	008535	9/23/2013	1,445.00	\$24.00	\$25.00	\$25.20
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	15Z011	008732	3/9/2015	943.00	\$26.26	\$25.00	\$0.00
6700	L.F.	CEMENT CONC. TRAFFIC CURB AND GUTTER	15Z007	008738	3/16/2015	36.00	\$22.00	\$24.00	\$0.00

ER AVERAGE LOW BID is \$16.97

State AVERAGE LOW BID is \$17.34

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 12

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
6701	L.F.	CEMENT CONC. TRAFFIC CURB	10W091	008115	3/21/2011	435.00	\$22.05	\$25.00	\$22.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	11Z003	008134	4/11/2011	130.00	\$20.00	\$20.00	\$0.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	12Z001	008262	3/5/2012	16.00	\$40.00	\$42.00	\$40.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	12Z005	008289	4/9/2012	211.00	\$23.00	\$21.00	\$0.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	12Z011	008294	4/16/2012	140.00	\$18.00	\$17.00	\$30.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	12Z009	008296	4/16/2012	170.00	\$23.00	\$22.00	\$15.75
6701	L.F.	CEMENT CONC. TRAFFIC CURB	12Z019	008341	6/18/2012	91.00	\$25.00	\$28.77	\$0.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	13Z001	008421	2/4/2013	2,470.00	\$24.00	\$23.10	\$24.50
6701	L.F.	CEMENT CONC. TRAFFIC CURB	13Z007	008453	3/25/2013	1,286.00	\$21.00	\$16.10	\$25.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	13Z009	008495	6/3/2013	76.00	\$22.44	\$30.00	\$0.00
6701	L.F.	CEMENT CONC. TRAFFIC CURB	13Z005	008535	9/23/2013	152.00	\$25.00	\$25.00	\$26.25
6701	L.F.	CEMENT CONC. TRAFFIC CURB	15Z012	008785	6/8/2015	24.00	\$60.00	\$100.00	\$0.00

ER AVERAGE LOW BID is \$23.00

State AVERAGE LOW BID is \$19.38

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: State Wide Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 8

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NWR									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	10A014	008101	2/22/2011	75.00	\$27.00	\$45.00	\$48.00
NWR AVERAGE LOW BID is \$27.00									
State AVERAGE LOW BID is \$42.63									
NCR									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	13B002	008385	10/29/2012	100.00	\$75.00	\$55.00	\$50.00
NCR AVERAGE LOW BID is \$75.00									
State AVERAGE LOW BID is \$42.63									
OR									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	13C507	008670	9/22/2014	62.00	\$38.00	\$45.00	\$60.00
OR AVERAGE LOW BID is \$38.00									
State AVERAGE LOW BID is \$42.63									
SWR									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	12X304	008272	3/19/2012	83.00	\$36.00	\$35.00	\$35.00
SWR AVERAGE LOW BID is \$36.00									
State AVERAGE LOW BID is \$42.63									
SCR									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	10Y018	008127	4/4/2011	713.00	\$35.00	\$30.00	\$31.00
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	14Y012	008726	3/2/2014	63.00	\$109.00	\$65.00	\$0.00
ER									
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	12Z020	008342	6/25/2012	25.00	\$75.00	\$60.00	\$75.00
7011	C.Y.	GRAVEL BACKFILL FOR FOUNDATION CLASS	13Z010	008507	6/17/2013	36.00	\$21.00	\$50.00	\$50.00
ER AVERAGE LOW BID is \$43.13									
Standard Item Number									
Unit of Measure									
Item Description									
Job Number									
Contract Number									
AD Date									
Planned Quantity									
Low Bid									
Second Bid									
Third Bid									
SCR AVERAGE LOW BID is \$41.01									
State AVERAGE LOW BID is \$42.63									

State AVERAGE LOW BID is \$42.63

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Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2010 thru 12/14/2015

Total records found: 16

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
7055	S.Y.	CEMENT CONC. SIDEWALK	10W091	008115	3/21/2011	5.00	\$111.00	\$80.00	\$130.00
7055	S.Y.	CEMENT CONC. SIDEWALK	11Z003	008134	4/11/2011	50.00	\$33.00	\$30.00	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z001	008262	3/5/2012	30.40	\$100.00	\$105.00	\$100.00
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z005	008289	4/9/2012	16.00	\$100.00	\$99.00	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z009	008296	4/16/2012	1,750.00	\$23.00	\$23.00	\$33.04
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z019	008341	6/18/2012	79.00	\$43.00	\$55.25	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	12W082	008374	9/17/2012	96.00	\$17.00	\$75.00	\$91.75
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z002	008378	9/24/2012	815.00	\$38.00	\$35.65	\$23.00
7055	S.Y.	CEMENT CONC. SIDEWALK	13Z007	008453	3/25/2013	505.00	\$52.00	\$45.00	\$62.00
7055	S.Y.	CEMENT CONC. SIDEWALK	13Z009	008495	6/3/2013	126.00	\$35.35	\$60.00	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	12Z025	008496	5/28/2013	100.00	\$46.00	\$35.00	\$35.00
7055	S.Y.	CEMENT CONC. SIDEWALK	13Z005	008535	9/23/2013	470.00	\$40.00	\$50.00	\$42.00
7055	S.Y.	CEMENT CONC. SIDEWALK	15Z001	008728	3/2/2015	118.70	\$215.00	\$147.43	\$115.00
7055	S.Y.	CEMENT CONC. SIDEWALK	15Z011	008732	3/9/2015	234.00	\$62.04	\$46.00	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	15Z007	008738	3/16/2015	2.00	\$27.00	\$100.00	\$0.00
7055	S.Y.	CEMENT CONC. SIDEWALK	15Z012	008785	6/8/2015	50.00	\$125.00	\$220.00	\$0.00

ER AVERAGE LOW BID is \$41.27

State AVERAGE LOW BID is \$42.10

[New Search](#)



Bid Item Unit Price Tabulation Standard Items

Region: Eastern Contracts awarded from 12/14/2011 thru 12/14/2015

Total records found: 21

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
7058	EACH	CEMENT CONC. CURB RAMP TYPE SPECIAL A	12Z001	008262	3/5/2012	1.00	\$3,000.00	\$2,100.00	\$2,000.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE SPECIAL B	12Z001	008262	3/5/2012	1.00	\$3,000.00	\$2,100.00	\$2,000.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PERPENDIC	12Z005	008289	4/9/2012	3.00	\$1,500.00	\$700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE SINGLE DI	12Z005	008289	4/9/2012	5.00	\$1,500.00	\$700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE SINGLE DI	12Z005	008289	4/9/2012	1.00	\$1,500.00	\$700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL	12Z005	008289	4/9/2012	3.00	\$1,500.00	\$700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE 1	12Z009	008296	4/16/2012	1.00	\$655.00	\$650.00	\$1,045.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE 2	12Z009	008296	4/16/2012	15.00	\$530.00	\$525.00	\$1,463.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE 3	12Z009	008296	4/16/2012	2.00	\$655.00	\$650.00	\$1,358.50
7058	EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL	12Z019	008341	6/18/2012	9.00	\$1,500.00	\$1,100.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PERPENDIC	12Z019	008341	6/18/2012	1.00	\$1,200.00	\$1,100.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PERPENDIC	12W082	008374	9/17/2012	4.00	\$1,500.00	\$1,100.00	\$1,700.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL	12Z002	008378	9/24/2012	1.00	\$1,800.00	\$2,150.00	\$1,100.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PERPENDIC	12Z002	008378	9/24/2012	2.00	\$1,800.00	\$2,150.00	\$900.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE SINGLE DI	12Z002	008378	9/24/2012	1.00	\$1,800.00	\$2,150.00	\$900.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE COMBINATI	13Z009	008495	6/3/2013	1.00	\$1,381.44	\$1,500.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PERPENDIC	13Z009	008495	6/3/2013	3.00	\$1,570.42	\$2,000.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE SINGLE DI	13Z009	008495	6/3/2013	4.00	\$882.57	\$1,700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL	15Z007	008738	3/16/2015	2.00	\$950.00	\$1,800.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE PARALLEL	15Z007	008738	3/16/2015	2.00	\$850.00	\$1,700.00	\$0.00
7058	EACH	CEMENT CONC. CURB RAMP TYPE CUSTOM SD	15Z007	008738	3/16/2015	3.00	\$850.00	\$1,700.00	\$0.00

ER AVERAGE LOW BID is \$1,193.66

State AVERAGE LOW BID is \$1,856.43

	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
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Standard Item Number									
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Bid Item Unit Price Tabulation Standard Items

Region: State Wide Contracts awarded from 12/14/2011 thru 12/14/2015

Total records found: 37

[New Search](#)

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
NWR									
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12A014	008381	10/1/2012	640.00	\$32.40	\$54.00	\$45.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12A014	008381	10/1/2012	96.00	\$32.40	\$54.00	\$45.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	12A018	008418	1/22/2013	121.00	\$58.00	\$58.00	\$50.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	13A012	008625	4/28/2014	20.00	\$159.00	\$92.00	\$80.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	15A006	008767	4/27/2015	66.00	\$72.00	\$115.00	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	15A010	008782	6/1/2015	416.00	\$89.00	\$0.00	\$0.00
NWR AVERAGE LOW BID is \$55.79									
State AVERAGE LOW BID is \$56.38									

NCR									
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12B007	008310	4/30/2012	1,088.00	\$50.00	\$40.00	\$37.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	12B007	008310	4/30/2012	547.00	\$50.00	\$40.00	\$37.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12B007	008310	4/30/2012	283.00	\$50.00	\$40.00	\$37.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	12B007	008310	4/30/2012	280.00	\$50.00	\$40.00	\$37.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12B013	008353	7/2/2012	83.40	\$100.00	\$0.00	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	12B013	008353	7/2/2012	28.80	\$100.00	\$0.00	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	13B006	008415	1/14/2013	1,083.00	\$60.00	\$43.00	\$45.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	14B002	008530	8/19/2013	35.00	\$100.00	\$108.12	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	14B006	008567	12/9/2013	174.40	\$65.00	\$105.00	\$0.00
NCR AVERAGE LOW BID is \$55.78									
State AVERAGE LOW BID is \$56.38									

OR									
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12C509	008463	4/8/2013	7.00	\$115.74	\$54.15	\$145.00

7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	12C501	008607	3/31/2014	46.00	\$78.00	\$82.00	\$98.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 3	12C501	008607	3/31/2014	31.00	\$78.00	\$82.00	\$98.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE A	14C501	008737	3/16/2015	24.00	\$100.00	\$0.00	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	13C501	008760	4/13/2015	1,085.00	\$70.00	\$45.00	\$47.30
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	13C501	008760	4/13/2015	1,375.00	\$70.00	\$45.00	\$47.30

OR AVERAGE LOW BID is \$70.64

State AVERAGE LOW BID is \$56.38

SWR

7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	11X314	008246	1/9/2012	195.00	\$47.00	\$42.81	\$80.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	11X314	008246	1/9/2012	119.50	\$47.00	\$43.54	\$69.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	11X314	008246	1/9/2012	116.00	\$58.00	\$56.67	\$54.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	11X315	008311	4/30/2012	40.00	\$52.00	\$65.00	\$60.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	11X315	008311	4/30/2012	53.00	\$52.00	\$65.00	\$60.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 4	11X315	008311	4/30/2012	88.00	\$50.00	\$65.00	\$60.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	13X300	008473	4/15/2013	761.00	\$58.35	\$50.00	\$59.86
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 2	13X314	008573	1/13/2014	2,190.00	\$45.53	\$38.00	\$44.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	14X300	008664	8/18/2014	100.00	\$62.00	\$64.00	\$56.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 4	14X300	008664	8/18/2014	21.00	\$70.00	\$64.00	\$55.00

SWR AVERAGE LOW BID is \$49.55

State AVERAGE LOW BID is \$56.38

SCR

7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	15Y004	008812	10/5/2015	100.00	\$64.00	\$57.00	\$47.11
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SCR AVERAGE LOW BID is \$64.00

State AVERAGE LOW BID is \$56.38

ER

7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE C	12Z009	008296	4/16/2012	525.00	\$34.00	\$32.50	\$34.50
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	13Z007	008453	3/25/2013	357.00	\$60.00	\$51.60	\$68.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE C	12Z025	008496	5/28/2013	31.00	\$70.00	\$38.00	\$40.00

Standard Item Number	Unit of Measure	Item Description	Job Number	Contract Number	AD Date	Planned Quantity	Low Bid	Second Bid	Third Bid
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 1	15Z011	008732	3/9/2015	461.00	\$57.09	\$72.00	\$0.00
7059	S.Y.	CEMENT CONC. DRIVEWAY ENTRANCE TYPE 4	15Z011	008732	3/9/2015	20.00	\$77.12	\$90.00	\$0.00

ER AVERAGE LOW BID is \$49.71

State AVERAGE LOW BID is \$56.38

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DRAFT

Post Street Bridge Type, Size and Location Study

Bridge Life Cycle Cost Analysis Summary

PREPARED FOR: Mr. Brandon Blankenagel, P.E.
City of Spokane

COPY TO: Mark Brower / CH2M
File

PREPARED BY: John Hinman / CH2M

DATE: September 28, 2015

PROJECT NUMBER: 657351

All bridges require inspection and maintenance. Different bridge types require different types and levels of inspection and maintenance. This Technical Memorandum summarizes the inspection and maintenance required for the structure types under consideration for replacement of the Post Street Bridge.

Bridge types considered in this memorandum include:

- Steel Plate Girder
- Steel Open Web Girder
- Steel Slant Leg Girder

Each alternative considers a 75-year design life for the structure. The life of a bridge may be greater than 75 years, depending on environmental conditions, maintenance, and actions taken to rehabilitate the bridge near the end of the design life. The present value of work beyond 75 years is a small fraction of the actual cost, however, and is generally unlikely to affect the outcome of the type selection.

Basis of Comparison

Those maintenance items that differ significantly between structure types are identified, and the time and the cost of maintenance work is estimated. The present value of future maintenance expenditures is computed so that it can be added to the estimated construction cost. The cost of the different structure alternatives can then be compared based on life cycle costs.

All future maintenance costs are estimated in current (2015) dollars. That is, the costs are estimated based on unit prices as if the work was done today. The present worth is calculated based on a real discount rate, which does not include the effect of inflation. An alternative to this procedure is to inflate the costs to identify the actual future costs; when converted to a present worth, however, the discount rate has to include the same anticipated inflation. The result of the two methods is the same present worth.

The real discount rate used in this evaluation is the 30-year rate published in the Federal Office of Management and Budget (OMB) Circular A-94, updated in December of 2015. That rate is 1.4 percent.

Costs developed for this life cycle cost comparison are approximate. Costs are expected to be Class 5, as described in ASTM E2516. Class 5 estimates are based on very preliminary levels of project

development, and are intended for use in screening and feasibility studies. Actual costs can be expected to range from 30% less to 50% more than Class 5 estimates.

Inspection

All highway bridges are required by Federal law to be inspected on a regular basis. Ordinary bridges must be inspected biennially; certain higher-risk bridges require more frequent inspections and more in-depth inspection.

None of the bridges currently under consideration require unusual levels or types of inspection. The level of effort required for inspection of different bridges may vary, but the differences in cost of inspection are not great enough to affect the structure type selection.

Maintenance

Routine Cleaning and Maintenance

All bridges benefit from routine cleaning of decks and deck drains, maintenance of rails and lighting, and cleaning of expansion joint seals. Joint seals are subject to wear and tear, and require periodic replacement.

Bridge bearings should be cleaned periodically to remove soil and biological debris from bearing seats.

Steel bridges are susceptible to build-up of biological debris at connections and bracing members. Removal of debris at infrequent intervals helps to preserve coatings and minimize corrosion.

Routine cleaning and maintenance is similar for each bridge type. Bridges with higher levels of detail, such as the open web steel girder, will require somewhat greater effort in cleaning connections, but the difference is not expected to significantly affect the present worth of the maintenance program.

Routine cleaning and maintenance is not included in the present worth computation.

Bridge Deck

Bridge decks are subject to wear from tires and spalling from corrosion of metal reinforcement. Corrosion is induced by chloride penetration into the concrete, and by carbonation of concrete.

In areas where salt is used, bridge decks cannot be depended on to last the design life of the bridge. The City currently uses alternatives to salt for de-icing in downtown Spokane, though, so the bridge deck for any alternative may last 75 years with suitable preventive maintenance.

The bridge deck wearing surface should be removed by milling and a high-performance concrete overlay installed approximately 30 years after construction of the bridge. That overlay can be expected to be replaced approximately 50 years after initial bridge construction.

The deck treatment is expected to be the same for all bridge types. The current cost of a bridge deck overlay is approximately \$25 per square foot, assuming a high performance concrete overlay. The present worth of overlays at years 30 and 50 is approximately \$495,000.

Joints and Bearings

Maintenance is expected to include periodic replacement of bridge joints. This is likely to be similar for each bridge type, as the number of joints and the movement capacity of the joints will be very similar for each alternative.

Elastomeric bearing pads are like to be used for each bridge type. These pads are expected to last the service life of the bridge. The probability that the bridge bearings will require replacement during the bridge service life is similar for each bridge type, as is the approximate cost of the bearing replacement.

Joint and bearing maintenance is not included in the present worth computation, as the costs will be relatively small and the differences between structures will be comparatively small.

Painting

Steel bridges in the Post Street Bridge location will require painting for corrosion protection with consideration of seasonal wetting of the steel girders by spray from the nearby falls. Corrosion protection is expected to be a three-coat paint system consisting of a zinc-rich primer, an epoxy intermediate coat, and a polyurethane top coat.

Environmental conditions at the Post Street Bridge site suggest that the initial coating will last 25 to 30 years before maintenance painting is required. Maintenance painting consists of spot cleaning and priming of areas of corrosion, followed by complete top-coating of the structural steel.

Maintenance painting may be required on an 8 to 10 year cycle after the first 25 to 30 years. After two maintenance coatings the paint will be completely removed and a new three-coat paint system applied.

The cost of the maintenance coating and the complete re-coating is a function of the area of steel to be coated, and of the level of detail of the steel. Broad un-interrupted surfaces require less effort to prepare and to paint than do edges, corners, connections, and other details.

For purposes of preparing a present worth, maintenance painting is assumed to cost \$3 per square foot of structural steel for plate girder bridges. All structural steel is included in this cost, not just a percentage that may exhibit paint failure. Complete re-coat is assumed to cost \$10 per square foot for plate girder bridges. The open web girder bridge alternative has more corners and edges, so increase the unit price of both maintenance painting and re-coating by 10%.

The present worth of the costs of painting a plate girder bridge, an open web girder bridge, and a steel slant leg bridge are shown in Table 1.

	First Maintenance		Second Maintenance		Full Recoat		Total
	Age	Present Worth	Age	Present Worth	Age	Present Worth	Present Worth
Plate Girder	30	\$ 116,000	38	\$ 104,000	46	\$ 309,000	\$ 529,000
Open Web Girder	30	\$ 106,000	38	\$ 95,000	46	\$ 284,000	\$ 485,000
Slant Leg	30	\$ 101,000	38	\$ 90,000	46	\$ 269,000	\$ 460,000

Table 1 – Cost of maintaining paint on different bridge types

Conclusion

Two work items are expected to account for the majority of the cost of the maintenance required over the life of the proposed bridge. These are deck overlays, and painting of structural steel. Other maintenance is required, but has less effect on the total cost of maintaining the bridge.

The present worth of the maintenance can be added to the construction cost to compare the costs of the alternatives over the life of the bridge.

The present worth of the cost of future deck overlays is approximately \$240,000 regardless of the structure type selected. The cost of maintaining paint varies by structure type.

Plate Girder Bridge:

Deck Overlays:	\$495,000
<u>Painting:</u>	<u>\$529,000</u>
Total:	\$1,024,000

Open Web Girder Bridge:

Deck Overlays:	\$495,000
<u>Painting:</u>	<u>\$485,000</u>
Total:	\$980,000

Steel Slant Leg Bridge:

Deck Overlays:	\$495,000
<u>Painting:</u>	<u>\$460,000</u>
Total:	\$955,000

The total difference in maintenance costs between the three steel structures is relatively small, and is not likely to have a significant influence on the structure type selection. Structure type selection may be based on construction costs and non-economic considerations.

MEMO

TITLE Concept Study for Post Street Temporary Sewer
Pipeline Bypass Bridge Study

DATE 15 July 2015

TO CH2M

COPY

FROM COWI

PROJECT NO

ADDRESS COWI Marine North America
220 West Mercer St.
Suite W100
Seattle, WA 98119

TEL Tel. 206-588-2735

FAX Fax 206-588-2739

WWW cowi-na.com

PAGE 1/4

1 Introduction

The purpose of this study is to identify concept-level alternative solutions to temporarily and independently support the existing 54" Sewer Pipe that is currently attached to the Post St. Bridge during replacement of the main bridge. The Post St. Bridge spans over the Spokane River and the temporary bridge is expected to span approximately 250 feet while the new bridge is in construction. The new bridge is expected to take up to two years to complete. The existing sewer pipeline will be re-routed on the temporary bridge for the two-year duration, later removed, and the pipe re-routed to the new bridge. Three preliminary temporary pipe bridge alternatives were developed as described below. Typical sections of the alternatives are provided in Appendix A.

2 Alternatives Considered

Three temporary bridge alternatives were developed based on feasibility and construction considerations.

Alternative 1: Acrow Temporary Bridge. An Acrow bridge is a pre-designed and pre-fabricated modular steel bridge supplied by the Acrow Corporation of America. It is commonly used for temporary detour bridges. Two options were considered with this type of bridge; a single span (Alternative 1A: 320') and a 3-Span configuration (Alternative 1B: 45'-250'-45'). This bridge can be rented from Acrow for the required duration. A typical Acrow bridge consists of steel trusses with floor beam supports. The sewer pipeline would be attached to the floor beams. An access walkway could be provided between trusses and supported at the floor beams. The bridge is shipped to the site in sections which are assembled and erected by the construction contractor. All substructure, pipe attachments, and walkway would be the responsibility of the contractor. The substructure is assumed to consist of two temporary pile bents located within the river near the banks (Alternative 1B) and a simple CIP concrete spread footing at the abutments with rock anchors for hold-down devices.

The Acrow bridge can be launched from one end or erected from the existing bridge/roadway. Additional study is needed to evaluate the erection methods and check the ability of the existing bridge/deck to be strengthened for

supporting cranes for truss placement. Work access for pile installation within the river channel will need to be reviewed further.

Alternative 2: HSS Pipe Truss Bridge. This type of bridge is commonly used in the pipeline industry because of the efficient use of hollow structural steel tubes. The truss is made of sections that are field spliced. All elements within a truss section are of welded construction. The truss configuration consists of a 250-foot main span and approximately 45-foot cantilever approach spans. Due to the truss top and bottom laterals, the pipe cannot be easily placed inside the truss. The hydraulic clearance below the sewer pipe does not allow the required truss depth to be placed below the sewer pipe. Therefore, the truss would need to be placed above the sewer pipe. This will allow the pipe to be hung from the bottom laterals of the truss.

The bridge can be erected from the existing Post St. Bridge but will require a temporary work platform to connect the field splices. The substructure is assumed to consist of pipe pile bents with steel bent caps. Piles will be installed within the river near the banks and therefore work access for pile installation will need to be reviewed further. This alternative will require only two pile bents. However, a tie-down (rock anchors) would be required at the cantilever ends during installation.

Alternative 3: Thru Plate Girder Bridge. A thru plate girder option was also considered. This option is expected to be less efficient than the Pipe Truss but the sewer pipe can be supported between the girders and still provide adequate room for walkway. The girders would consist of welded steel plate sections. Field splices are needed for transportation and erection. This alternative will require two pile bents in the river, and spread footings for hold-down bearings at the abutments. The sewer pipe would be hidden from view providing some nominal aesthetic value.

The substructure for this alternative consist of two pile bents in the water near the river banks and two abutments on top of the banks. The abutments may require rock anchors if they are built on a sloping rock surface, or nominal rock excavation will be required to prepare the abutment foundations. Work access for pile installation within the river channel will need to be reviewed further.

3 Design Criteria and Assumptions

The following design criteria and assumptions were used for this evaluation:

Span between in-water piers:	250 feet
Total Span:	Approximately 340 feet
Service Duration:	2 years
Vertical deflection allowance:	Approx. 6 inches max for fluid DL in sewer pipe.
Vertical Hydraulic clearance:	3 feet over 100 year flood elevation (Elev. 1833.2)
Pipe thrust loads:	None considered
Pipe temperature loading:	None considered

Seismic considerations: None considered
 Pipe stress design: By pipe engineer

Design Loads

Pipe DL: 150 plf *
 Fluid DL: 992 plf
 Utilities: 20 plf
 Walkway: 100 plf
 Snow Load: 40 plf

* Pipe wall thickness and weight need to be verified in the next design stage

4 Concept-Level Cost Estimates

The following order-of-magnitude cost estimates were developed to assist with screening the alternatives. These costs should be considered concept-level and are not complete construction cost estimates.

Alternative 1A Cost Estimate: Acrow Bridge- Single Span (320')

	CONTRACT ITEMS	UNIT	QTY	PRICE	AMOUNT	COMMENTS
1	FURNISH ACROW BRIDGE -1 YR	LS	1	\$594,000	\$594,000	Steel Truss Bridge, Acrow quote+10%
2	LEASE AFTER 1 YEAR	MONTHLY	12	\$30,250	\$363,000	Acrow quote+10%
3	ABUTMENTS	EA	2	\$50,000	\$100,000	Some excavation required
4	CRANE PAD WORK ACCESS	LS	1	\$100,000	\$100,000	Crane Pad installation
5	ERECT ACROW BRIDGE	LS	1	\$125,000	\$125,000	Allowance, Erected or launched
6	REMOVE ACROW BRIDGE	LS	1	\$125,000	\$125,000	Allowance
7	MOBILIZATION-10%	LS	1	\$140,700	\$140,700	

TOTAL COST: \$1,547,700

Alternative 1B Cost Estimate: Acrow Bridge- 3 Span (45'-250'-45')

	CONTRACT ITEMS	UNIT	QTY	PRICE	AMOUNT	COMMENTS
1	FURNISH ACROW BRIDGE -1 YR	LS	1	\$546,700	\$546,700	Steel Truss Bridge, Acrow quote+10%
2	LEASE AFTER 1 YEAR	MONTHLY	12	\$26,180	\$314,160	Acrow quote+10%
3	FURNISH STEEL FOR PILE BENTS	LB	40000	\$1.50	\$60,000	2-Bents, 2-Piles per Bent
4	INSTALL BENTS INCL ROCK SOCKET	EA	4	\$40,000	\$160,000	Pile Bents
5	CRANE PAD WORK ACCESS	LS	1	\$100,000	\$100,000	Crane Pad installation
6	IN-WATER WORK ACCESS	LS	1	\$50,000	\$50,000	Access to Bent for installation
7	ABUTMENTS	EA	2	\$30,000	\$60,000	Some excavation required
8	ERECT ACROW BRIDGE	LS	1	\$125,000	\$125,000	Allowance. Existing bridge should be evaluated
9	REMOVE ACROW BRIDGE	LS	1	\$125,000	\$125,000	Allowance. New bridge should be evaluated
10	MOBILIZATION-10%	LS	1	\$154,086	\$154,086	

TOTAL COST: \$1,694,946

Alternative 2 Cost Estimate: HSS Truss Bridge

	CONTRACT ITEMS	UNIT	QTY	PRICE	AMOUNT	COMMENTS
1	FURNISH STRUCTURAL STEEL	LB	262000	\$3.50	\$917,000	A500 Grade B unpainted
2	FURNISH STEEL FOR PILE BENTS	LB	40000	\$1.50	\$60,000	
3	INSTALL BENTS INCL ROCK SOCKET	EA	4	\$40,000	\$160,000	Pile Bents
4	CRANE PAD WORK ACCESS	LS	1	\$100,000	\$100,000	Crane Pad installation
5	IN-WATERWORK ACCESS	LS	1	\$50,000	\$50,000	Access to Bent for installation
6	ABUTMENTS	LS	2	\$30,000	\$60,000	Some excavation required
7	REMOVE BRIDGE	LS	1	\$120,000	\$120,000	Allowance. New bridge should be evaluated
8	MOBILIZATION-10%	LS	1	\$146,700	\$146,700	
9	STEEL SALVAGE VALUE	LS	1	-\$114,625	-\$114,625	25% of Furnish price (Furnish Price=\$1.75/LB)

TOTAL COST: \$1,499,075

Alternative 3: Thru Plate Girder

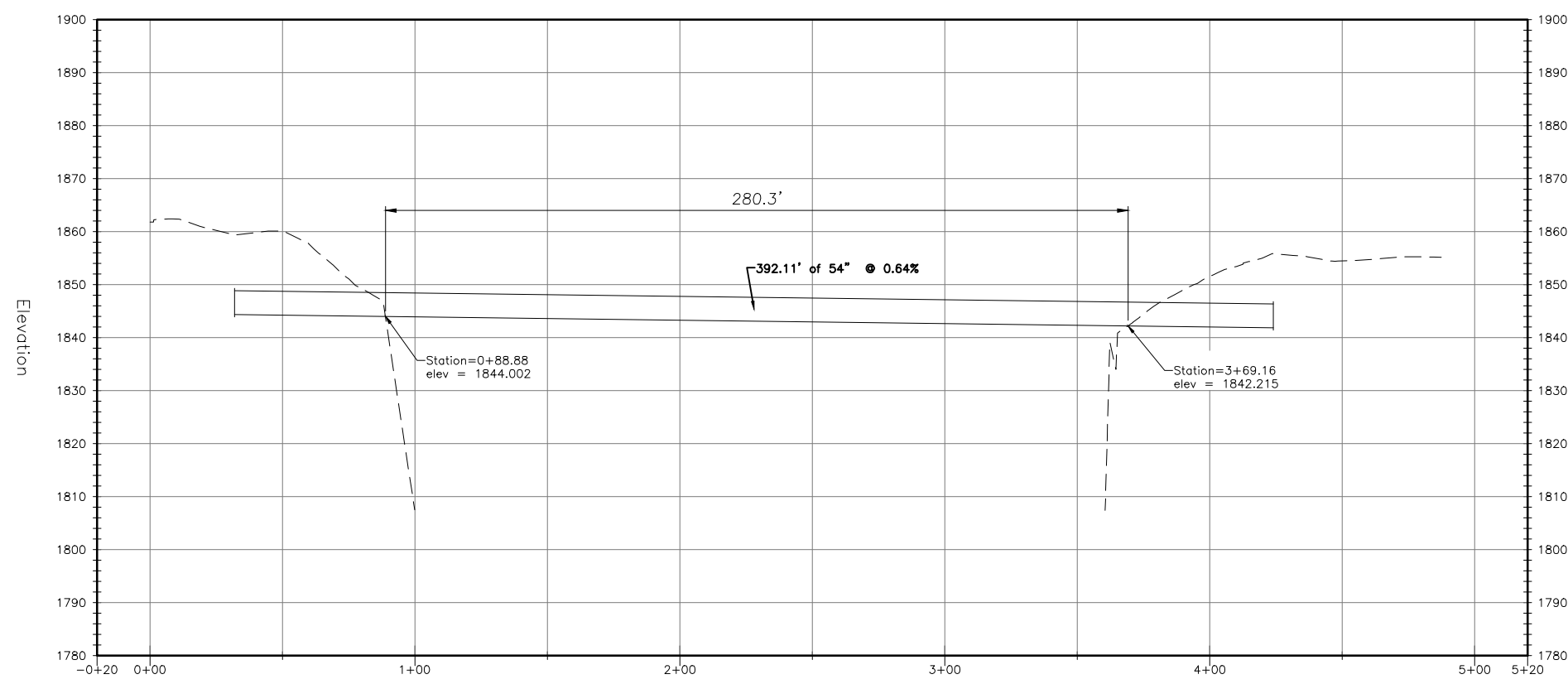
	CONTRACT ITEMS	UNIT	QTY	PRICE	AMOUNT	COMMENTS
1	FURNISH STRUCTURAL STEEL	LB	596000	\$2.00	\$1,192,000	A709 50 Ksi
2	FURNISH STEEL FOR PILE BENTS	LB	52000	1.50	\$78,000	
3	INSTALL BENTS INCL ROCK SOCKET	EA	4	\$40,000	\$160,000	Pile Bents
4	CRANE PAD WORK ACCESS	LS	1	\$100,000	\$100,000	Crane Pad installation
5	IN-WATER WORK ACCESS	LS	1	\$50,000	\$50,000	Access to Bent for installation
6	ABUTMENTS	EA	2	\$30,000	\$60,000	Some excavation required
7	REMOVE BRIDGE	LS	1	\$120,000	\$120,000	
8	MOBILIZATION-10%	LS	1	\$176,000	\$176,000	
9	STEEL SALVAGE VALUE	LS	1	-\$149,000	-\$149,000	25% of Furnish Price (Furnish Price = \$1/LB)

TOTAL COST: \$1,787,000

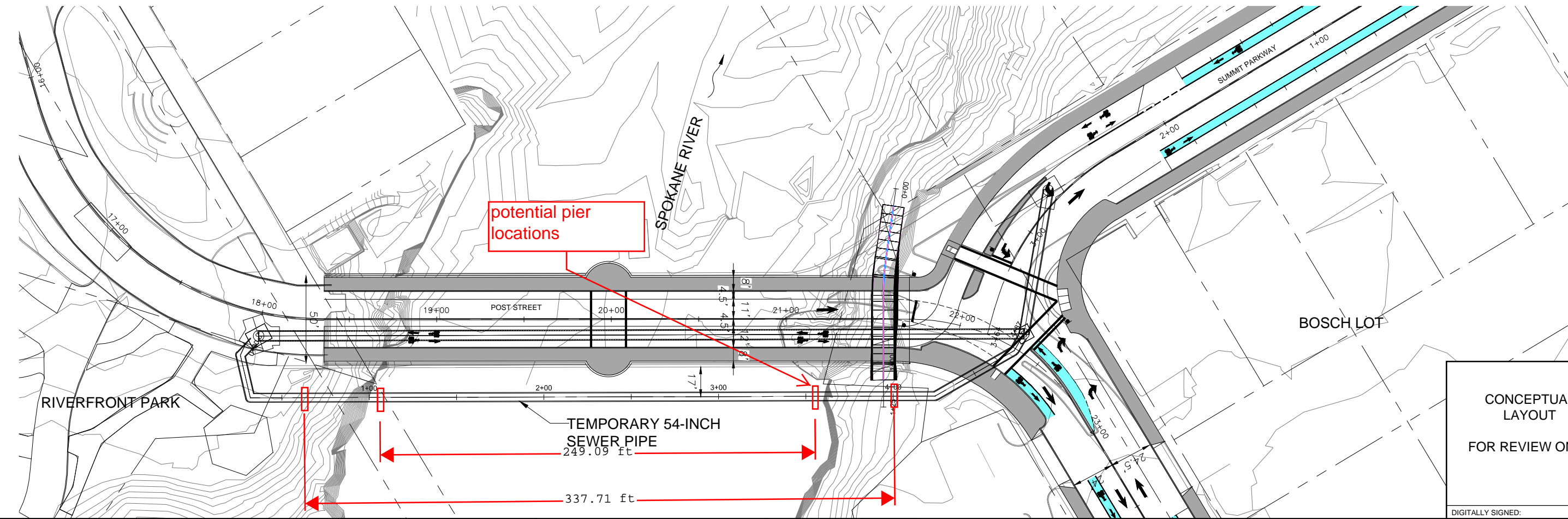
5 Conclusions and Recommendations

Based on the concept-level study summarized herein, we recommend that all the alternatives be explored further for implementation. Additional constructability review is needed for construction including:

- Siting and rock excavation for abutments
- Location of temporary piers within the river channel and access for construction
- Superstructure erection and disassembly methods and equipment placement including impacts to new bridge
- 1 span vs 3-span configurations



SEWER PIPE LOADS	
1/4" STEEL PIPE	150 LB/FT
FULL PIPE	992 LB/FT
ELECTRICAL	20 LB/FT
(1000 MCM ALUMINUM - 3 CABLES & 3 4" SCH 80 CONDUIT)	



CONCEPTUAL LAYOUT
FOR REVIEW ONLY

DIGITALLY SIGNED:

TYPE OF IMPROVEMENT: STREET

CITY PURCHASING NUMBER

DRAWING NUMBER

DATE: Jun 29, 2015 - 10:01am by: pkrych

FILE NAME:

BY

REVISIONS

DATE

LOCATION BRASS CAP ??? N50002.85 E20081.44 (WGS 84)
NOTE: FOR CONVERSION TO HISTORICAL CITY DATUM ADD 13.13'

ELEVATION 1734.56 @ CAP #CP#

CRIM NO. 43N, 44W
NAVD 88

CITY DATUM

HORIZONTAL

VERTICAL

SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

CURRENT DESIGN STANDARDS
CCS - ADOPTED 295

DRAWN

DESIGNED

CHECKED

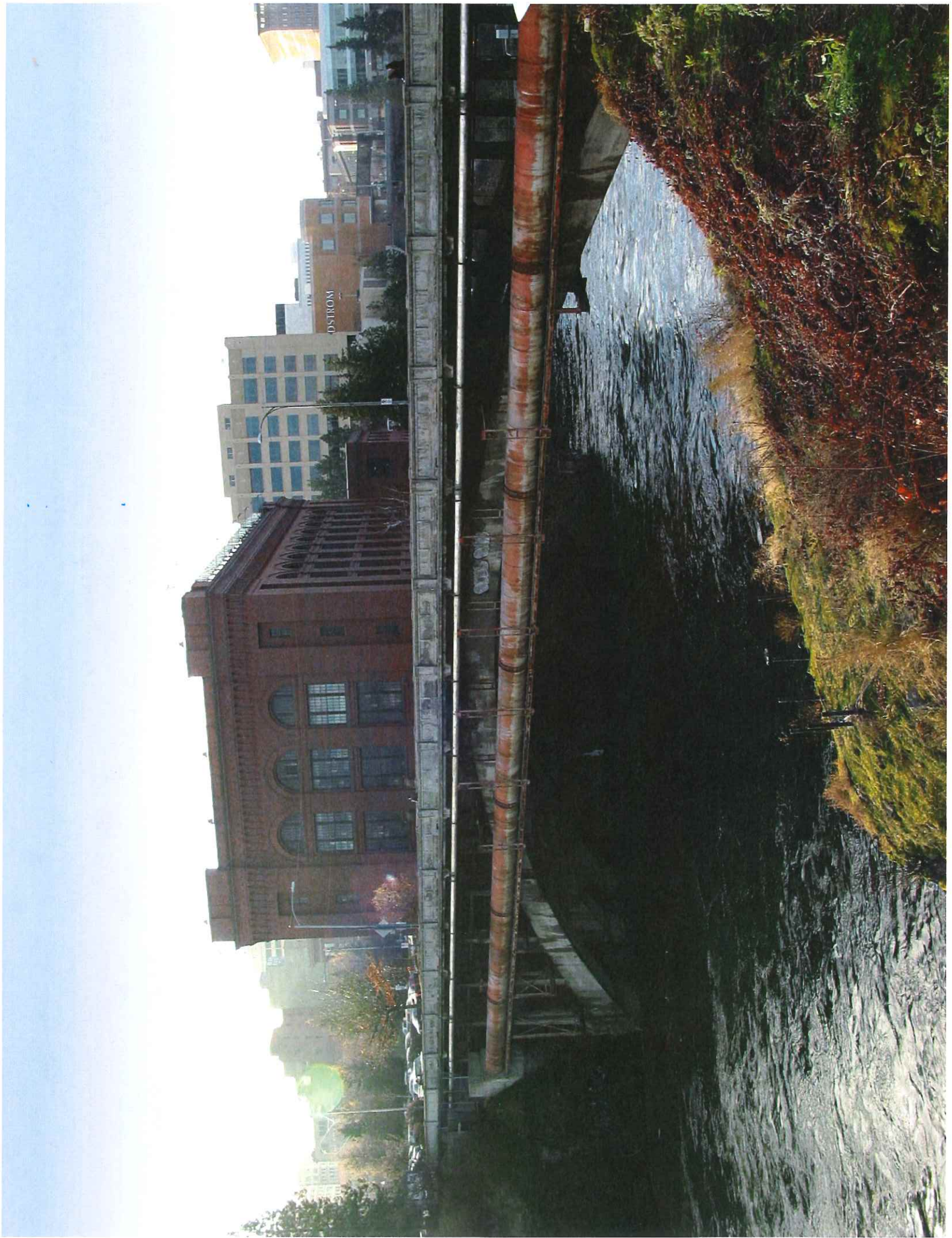
APPROVED

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6300

PROJECT TITLE: POST STREET BRIDGE TS&L STUDY

SHEET TITLE:

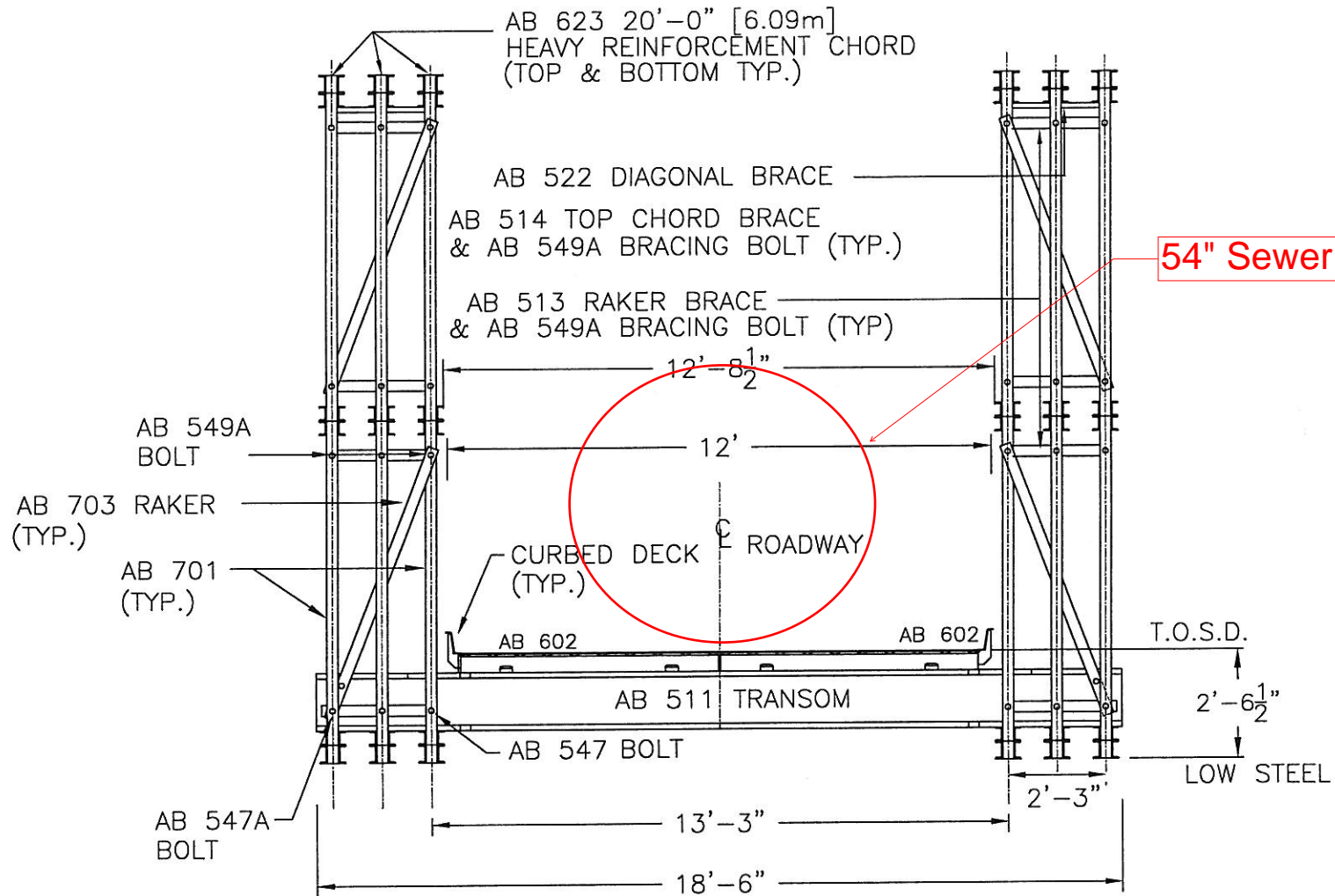
LINCOLN STREET



APPENDIX A

ALTERNATIVE 1

ACROW STEEL TRUSS



Approximate Steel Weight: 450,000 LBS

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		APPR.	SEAL
		BY	
		DESCRIPTION	
		REV.	DATE

ACROW

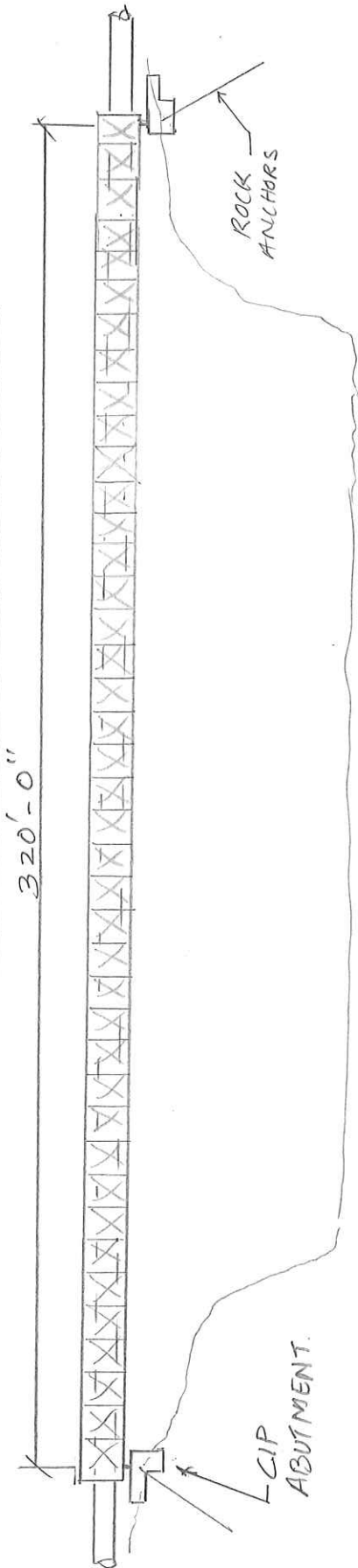
CORPORATION OF AMERICA
P.O. BOX 812, CARLSTADT, N.J. 07072-0812

ACROW 700XS BRIDGE
CROSS SECTION OF
SCW ROADWAY BRIDGE

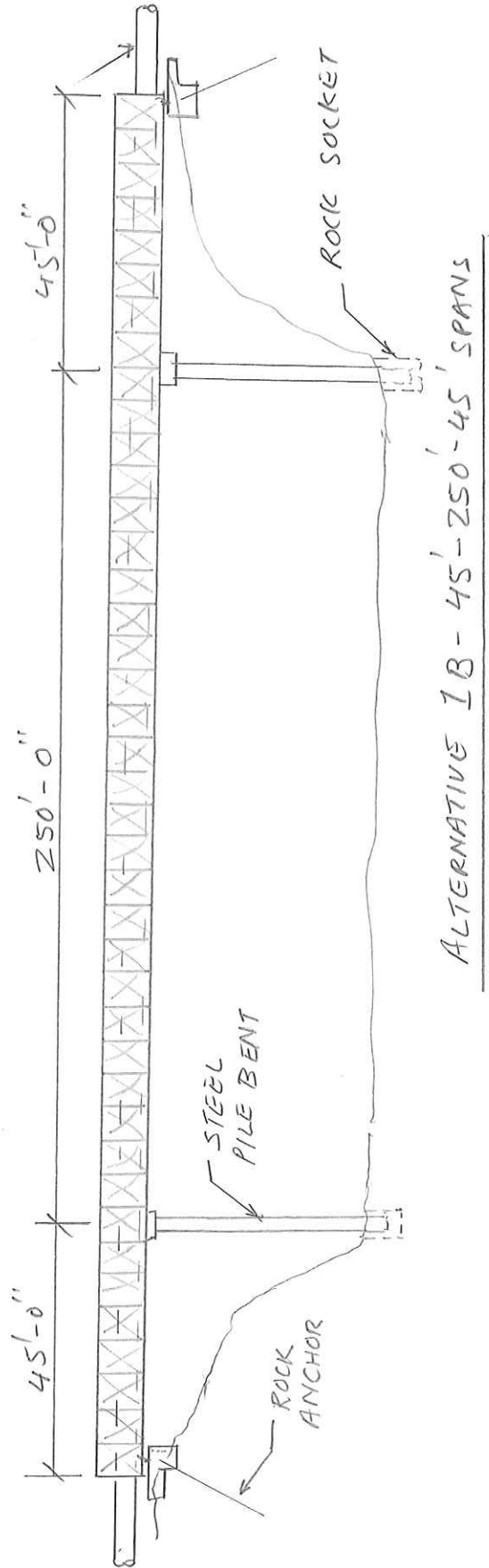
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CHECKED BY	MJ	SCALE:	N.T.S.	
APPROVED BY	MH			

DRAWING NO.	REV.
PROPOSAL	
SHT 1 OF 1	

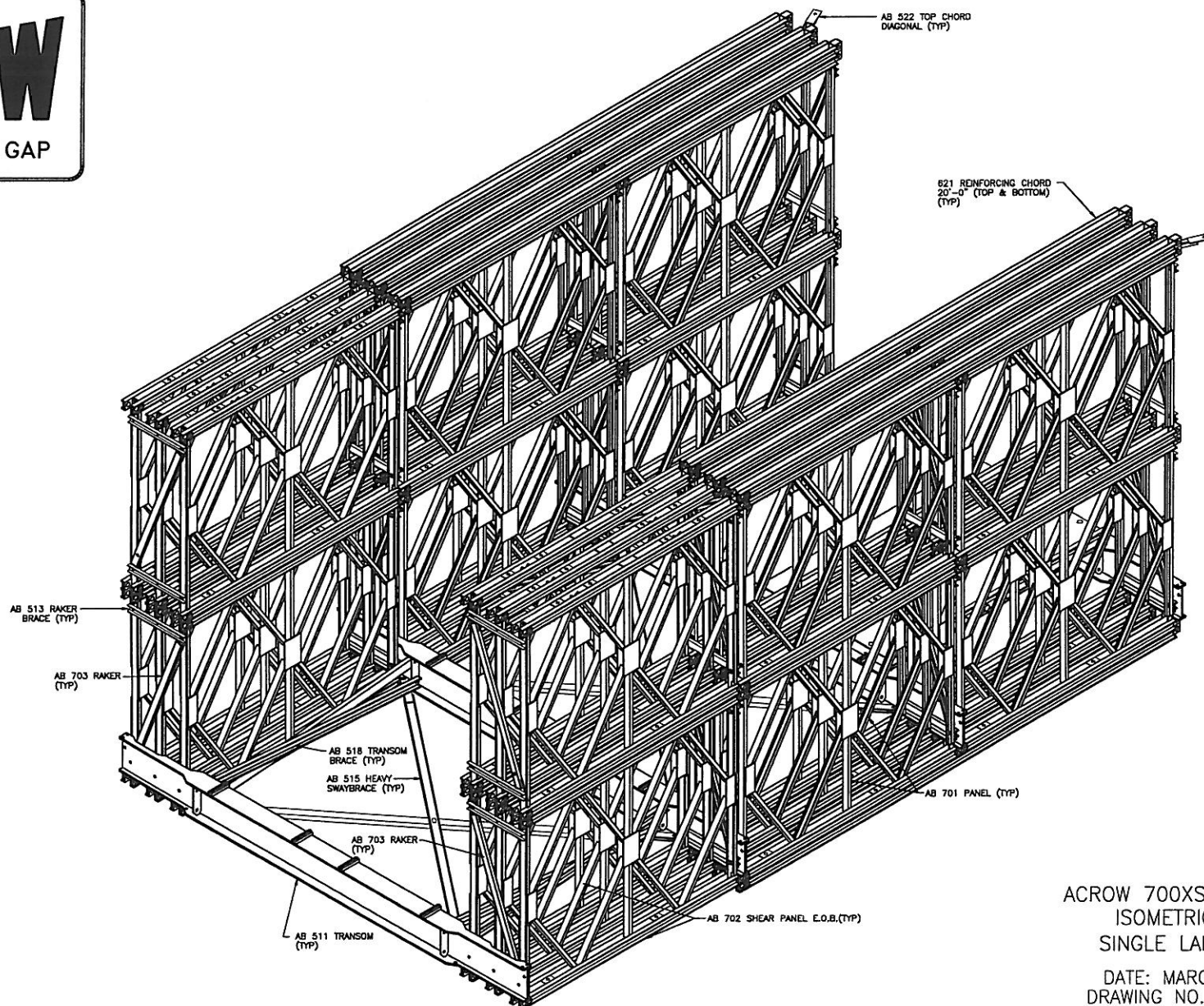
ACROW BRIDGE ALTERNATIVES



ALTERNATIVE 1A - 320' SPAN

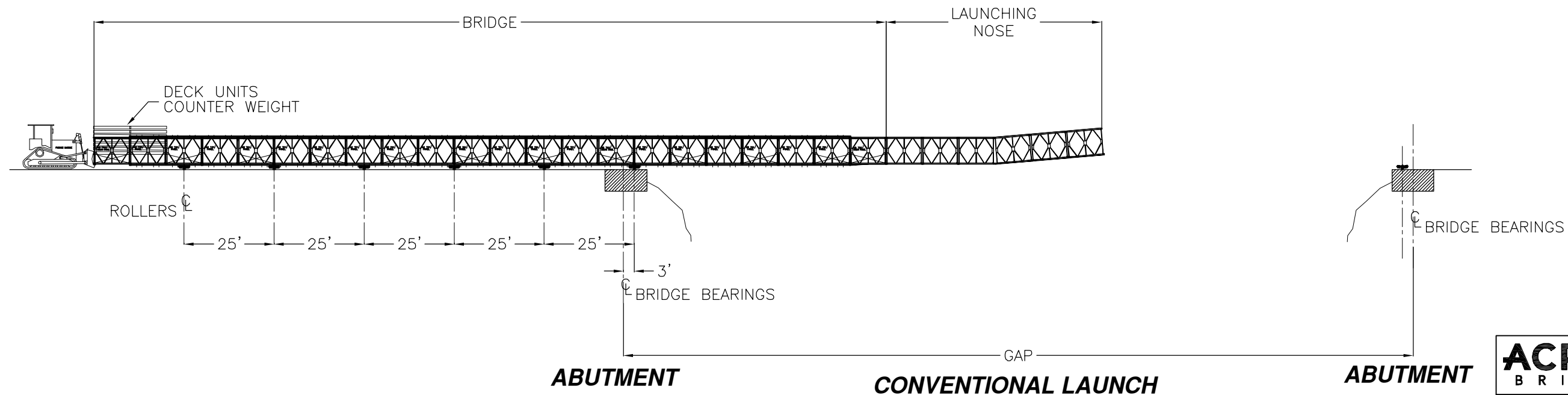
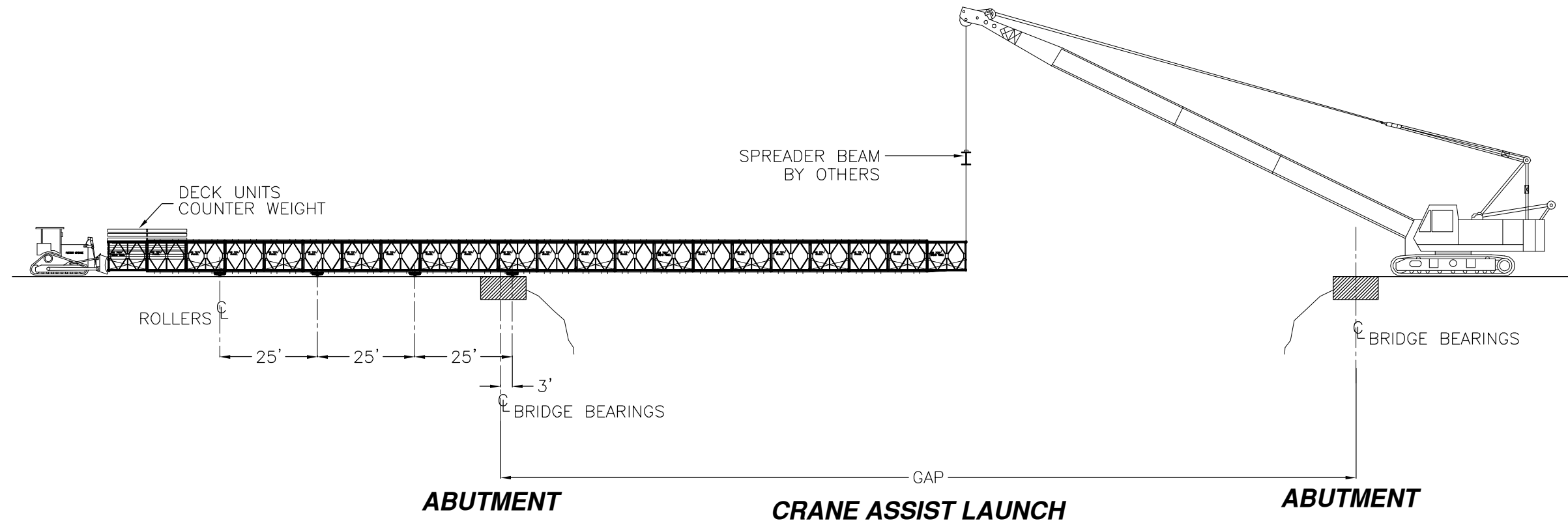


ALTERNATIVE 1B - 45'-250'-45' SPANS



ACROW 700XS PANEL BRIDGE
ISOMETRIC VIEW OF
SINGLE LANE BRIDGE

DATE: MARCH 25 2004
DRAWING NO. PROPOSAL
PAGE 1 OF 1



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ACROW BRIDGE		Building Bridges. Connecting People.	
		Acrow Bridge 181 New Road, Parsippany, NJ 07054	
ACROW 700XS PANEL BRIDGE CRANE ASSIST & CONVENTIONAL LAUNCH FOR INFORMATION PURPOSES ONLY			
DRAWN BY <u> RJ </u> CHECKED BY <u> </u> APPROVED BY <u> </u>	DATE <u> MARCH 20, 2015 </u> SCALE: AS SHOWN	CONTRACT NO.	
		DRAWING NO. PROPOSAL	REV.
		SHT <u> 1 </u> OF <u> 1 </u>	



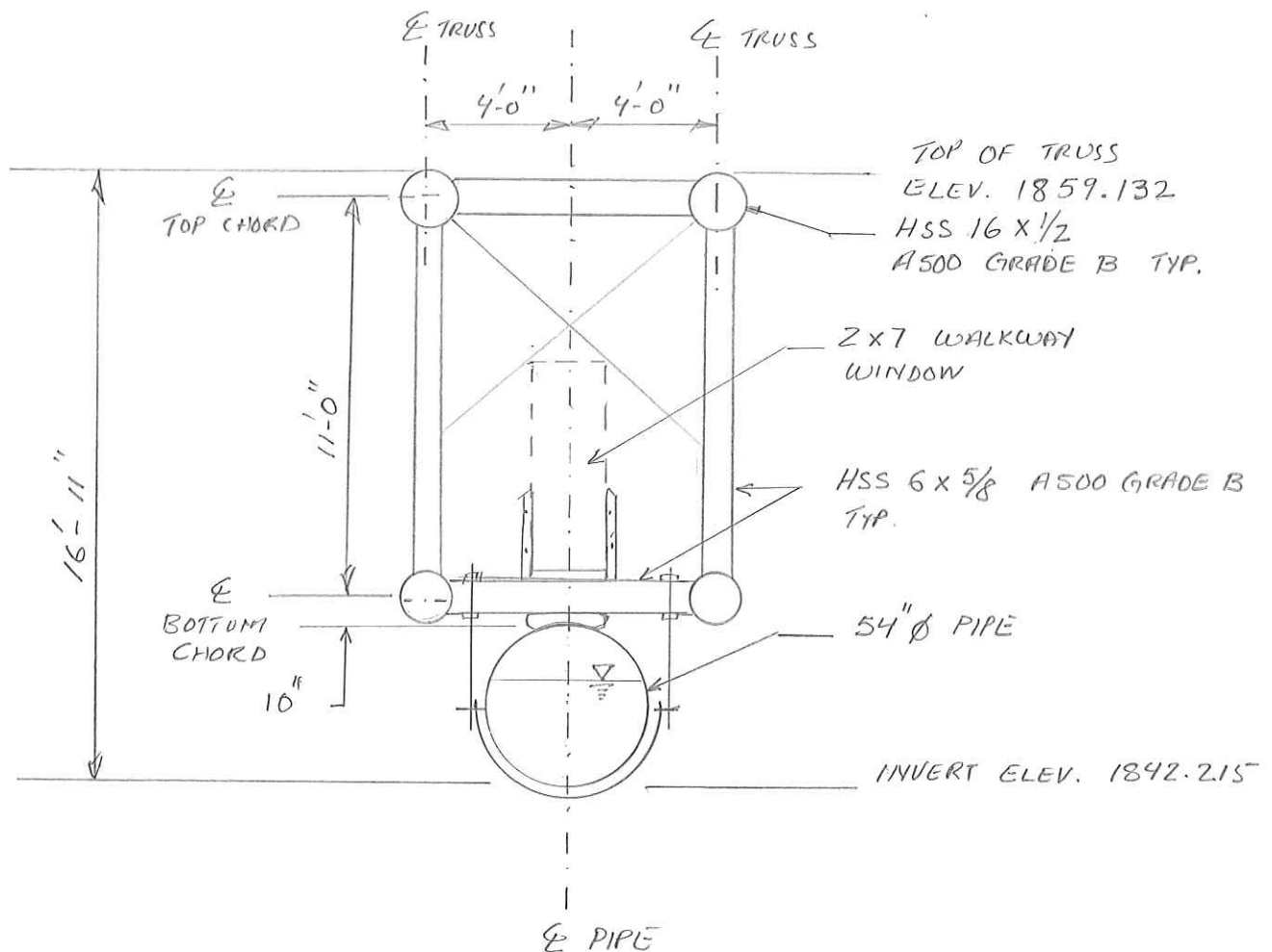
ALTERNATIVE 2

HSS PIPE TRUSS

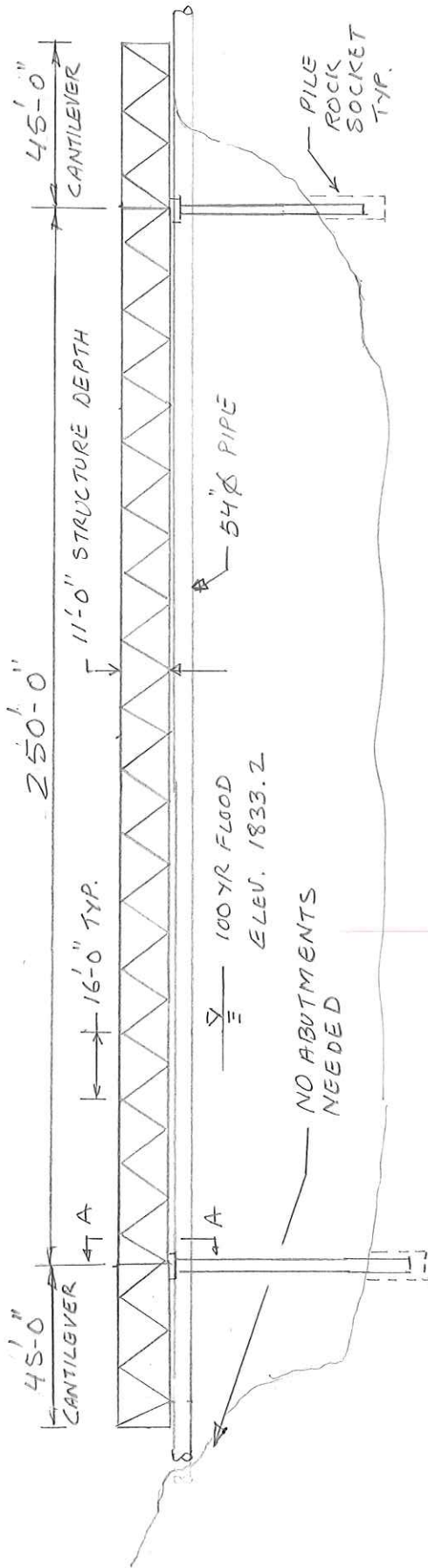
ALTERNATIVE 2 - HSS PIPE TRUSS

SPAN = 250'

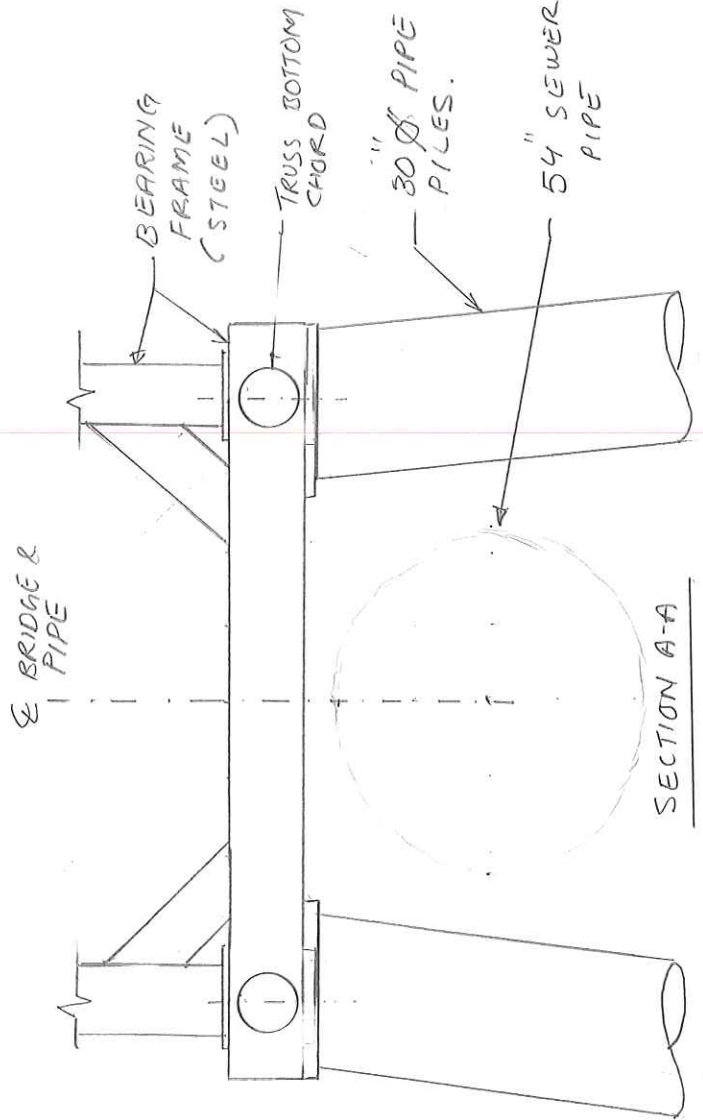
DEFLECTION = 6" MAX (FLUID ONLY)



ALTERNATIVE 2



BRIDGE LAYOUT

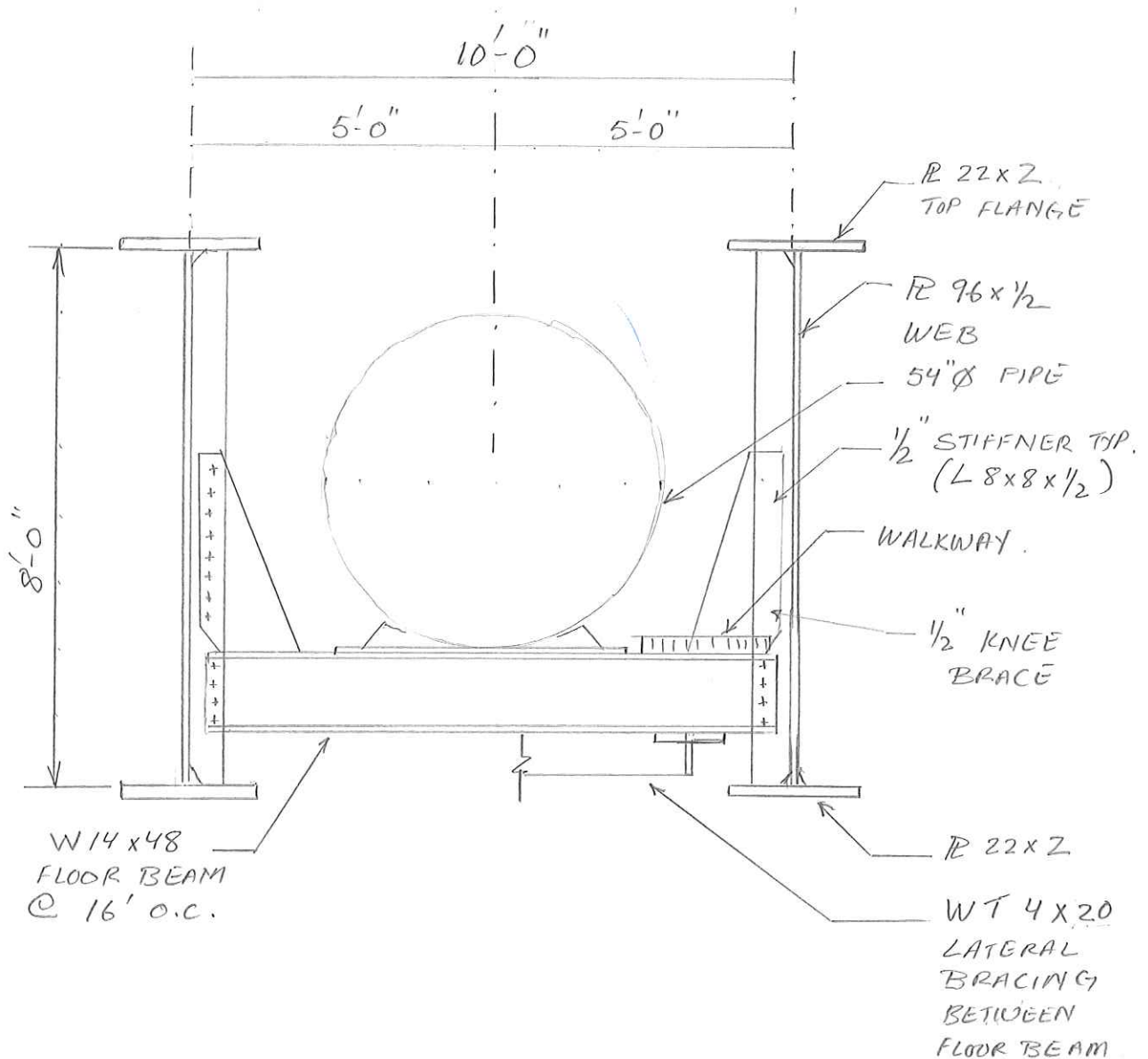


ALTERNATIVE 3
THRU PLATE GIRDER

ALTERNATIVE 3THRU PLATE GIRDER $F_y = 50 \text{ ksi (A709 50W)}$

SPAN = 250'

SUBSTRUCTURE SIMILAR TO ALT 2.

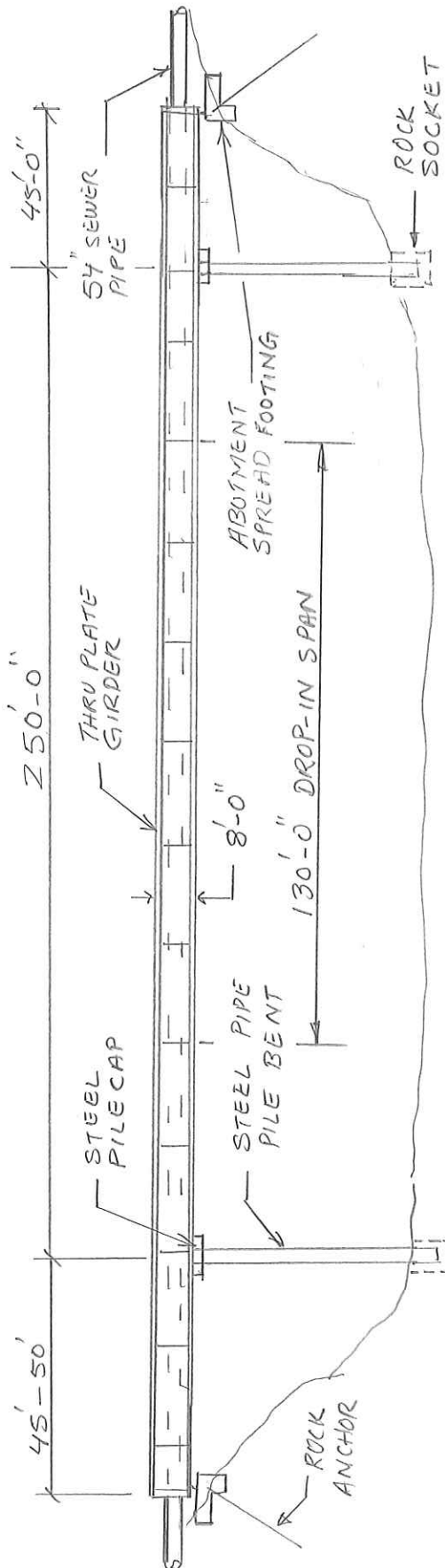


COWI

PROJECT POST ST. TS&L CONT

SUBJECT SEWER PIPE BRIDGE PAGE

CHECKED BY DATE CALCULATIONS BY ASIL DATE 7/8/2015



BRIDGE ELEVATION

ALTERNATIVE - 3
THRU PLATE GIRDER