



**US Army Corps  
of Engineers** ®  
Huntington District



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**MAJOR REHABILITATION REPORT:  
BASELINE COST ESTIMATE FOR RECOMMENDED PLAN**

**BOLIVAR DAM  
SANDY CREEK OF THE TUSCARAWAS RIVER, OHIO**

**PREPARED BY: COST ENGINEERING SECTION, USACE, HUNTINGTON DISTRICT**

**AUGUST 2008**

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## **1 INTRODUCTION**

The Bolivar Dam Major Rehabilitation project is proposed to be implemented by the Huntington District. This report describes in detail fully-funded project costs and schedule execution for all appropriate feature accounts.

## **2 PROJECT DESCRIPTION**

Bolivar Dam is located on Sandy Creek of the Tuscarawas River, 183.4 miles above the mouth of the Muskingum River, located in Stark and Tuscarawas Counties of Ohio. The Dam has an impervious core with a cut-off trench and is flanked by pervious zones. The embankment has a maximum height of 87 feet, a crest length of 6300 feet, and a crest width of 25 feet. Constructed primarily for flood control, the maximum flood control pool level of elevation 962.00 feet would encompass 6500 surface acres.

## **3 METHODOLOGY**

### **3.1 COST METHODOLOGY**

#### **3.1.1 General**

The feasibility cost estimate has been prepared to an equivalent FY08 price level. The preparation of this cost estimate is in accordance with guidelines and policies included in “ER 1110-1-1300 - Cost Engineering Policy and General Requirements, (26 March 1993)” and “ER 1110-2-1302 - Civil Works Cost Engineering, (31 March 1994)”. The estimate was completed using the latest guidance from OCE concerning implementation of the Civil Works Breakdown Structure (CWBS) and Chart of Accounts.

The estimate was prepared using the MCACES 2nd Generation MII Version 2.3 cost estimating software developed by Project Time and Cost, Atlanta, Georgia. The MII estimating software was used to develop the estimate by developing a construction sequence for each item of work and applying detailed line items and crews to perform the work. Crews were developed that correspond to the work being performed. Material prices were obtained through telephone solicitations with vendors, Internet suppliers, MII Cost Book, recent similar projects, and R.S. Means Cost data references.

#### **3.1.2 Direct Costs**

Direct costs are based on anticipated equipment, labor, and materials necessary to construct the project as scoped. Local material quotes were obtained for most of the material items. Direct costs were calculated independent of the contractor assigned to perform the tasks. Following formulation of the direct cost, a determination was made as to whether the work would be performed by the prime contractor or a subcontractor.

*3.1.2.1 Labor-Wage Determination*

Current Tuscarawas County, Ohio, Davis-Bacon wage rates (General Decision Number: OH080002 04/04/2008 OH2) as provided by the Department of Labor, were used for all craft labor. The total labor rate was developed using the base wage, fringe benefits, FICA, FUTA, and Workman's Compensation rates for each craft. The base wage rate and fringe were entered into MII and applied accordingly. Additional labor burdens are computed by MII based on the state, which in this case is Ohio.

*3.1.2.2 Equipment Rates*

The 2007 Equipment database, based on EP 1110-1-8, Construction Equipment Ownership and Operation Expense Schedule, Region II, was used and adjusted for current fuel costs.

*3.1.2.3 Overtime*

The estimator assumed that the contractor would work various overtime shifts dependent on the season and type of work being performed.

*3.1.2.4 Vendor Quotes*

Vendor quotes have been acquired and documented for the material prices associated with significant features of work.

*3.1.2.5 Sales Tax*

Ohio sales tax was included at a rate of 7% on material.

*3.1.2.6 Crews*

Project specific crews have been developed for use in estimating the direct costs of construction for those items not estimated using quotes or historical cost information. Crew members consist of selected complements of labor classifications and equipment pieces assembled to perform specific tasks. Productivity has been assigned to each crew reflective of the expected output per unit of measure for the specific activities listed in the cost estimate.

*3.1.2.7 Quantities*

The quantity takeoffs were developed and provided by the Project Development Team (PDT) members. Other associated sub-quantities were developed by the estimator.

### 3.1.3 Indirect Costs

#### 3.1.3.1 Construction Contractor Field Strategy

The contractor field strategy assumed that one prime contractor would perform most of the work associated with the concrete cutoff wall, impervious blanket, and downstream seepage blanket. Estimator assumed that this prime contractor would subcontract out various earthwork items, clearing and grubbing, seeding, paving, mechanical/electrical work, radial grouting, and work associated with the relief wells and instrumentation. A separate prime contractor was assumed to construct the RE office and subcontract out the fencing and paving construction.

**Table 1.** Contractor Markups

<b>Contractor</b>	<b>Items of Work</b>
<b>Prime Contractor</b>	Concrete cutoff wall, impervious blanket, downstream seepage blanket
<i>Clearing/seeding subcontractor</i>	<i>All work associated with seeding and clearing/grubbing</i>
<i>Paving subcontractor</i>	<i>Demolition/construction of paved roadway</i>
<i>Mechanical/electrical subcontractor</i>	<i>Gate work and hoisting equipment</i>
<i>Radial grouting subcontractor</i>	<i>Radial grouting</i>
<i>Relief well/instrumentation subcontractor</i>	<i>Relief wells and instrumentation</i>
<i>Drilling subcontractor</i>	<i>Radial grouting</i>
<b>Building Contractor</b>	Construction of RE office
<i>Fencing subcontractor</i>	<i>Installation of fence/swing gate</i>
<i>Paving subcontractor</i>	<i>Pavement of parking lot</i>

#### 3.1.3.2 Prime Contractor

##### 3.1.3.2.1 Field Office Overhead (FOOH)

The indirect costs for Field Office Overhead (FOOH) are included as a percentage of the direct costs. For this project, 15% has been used for FOOH on both the prime and subcontracted work. This value represents the anticipated prime contractor field overhead costs for such items as project supervision, contractor quality control, contractor field office supplies, personal protective equipment, field engineering, and other incidental field overhead costs.

*3.1.3.2.2 Home Office Overhead (HOOH)*

For Home Office Overhead (HOOH) expense, the cost estimate includes an allowance applied as percentage of direct cost plus field overhead. HOOH includes items such as office rental/ownership costs, utilities, office equipment ownership/maintenance, office staff (managers, accountants, clerical, etc.), insurance, and miscellaneous. In reality, the range of home office overhead can be quite broad and depends largely on the contractor's annual volume of work and the type of work that is generally performed by the contractor. In this case, a value of 6% has been used for HOOH on both the prime and subcontracted work.

*3.1.3.2.3 Profit*

Profit has been calculated using the profit weighted guidelines as described in ER 1110-2-1302 (31 March 1994).

*3.1.3.2.4 Bond*

Bond was included as a running percentage of 1% (own work and subcontracted work).

*3.1.3.2.5 B&O Tax*

B&O tax was not included.

*3.1.3.3 Subcontractors*

*3.1.3.3.1 Field Office Overhead (FOOH)*

All subcontractor overhead costs are set to 15% (own work and subcontracted work) of direct cost to account for such items as project supervision, contractor quality control, contractor field office supplies, personal protective equipment, field engineering, and other incidental field overhead costs. The exception is where the subcontractor has provided a quoted price including overhead. In that case, no additional markups have been included for subcontractor's overhead.

### 3.1.3.3.2 Home Office Overhead (HOOH)

The cost estimate includes an allowance applied as percentage of direct cost plus field overhead for HOOH. HOOH includes such items as office rental/ownership costs, utilities, office equipment ownership/maintenance, office staff (managers, accountants, clerical, etc.), insurance, and miscellaneous. In reality, the range of HOOH can be quite broad and depends largely on the contractor's annual volume of work and the type of work that is generally performed by the contractor. In this case, a value of 6% was assumed for the subcontractor (own work and subcontracted work).

### 3.1.3.3.3 Profit

Profit has been included as a percentage. In this case, a value of 10% was assumed for the subcontractor (own work and subcontracted work).

### 3.1.3.3.4 Bond

Bond was included as a running percentage of 1% (own work and subcontracted work).

### 3.1.3.3.5 B&O Tax

B&O tax was not included.

## 3.1.4 Escalation

Escalation has not been included in the MII cost estimate. It is included in the Fully Funded Cost Estimate in Appendix G. The fully funded table distributes the base level cost estimate across the appropriate years according to the schedule. The yearly totals are inflated by OMB cost factors as shown in Table 2, which vary by feature account. These inflated yearly totals are summed to yield a total fully funded project cost.

**Table 2.** OMB Factors

OMB	PRIOR	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Class I	1.000	1.000	1.072	1.115	1.159	1.205	1.252	1.302	1.354
Class II	1.000	1.000	1.050	1.073	1.095	1.117	1.139	1.162	1.185

### 3.1.5 Contingency

A Cost and Schedule Risk Analysis (CSRA) was performed on this project to identify the 80% confidence level project cost and contingencies. A summary of these contingencies by feature account can be found in Table 3 below. Additional information concerning the risk analysis can be found in Appendix G.

The CSRA identified the following factors as major impacts for both the cost and schedule:

- **Funding** – The current fully-funded cost requires approximately \$39M for FY12, \$53M for FY13, and \$59M for FY 14. If funding is capped and the project schedule is pushed out, costs will increase due to the longer construction schedule, escalation, and additional E&D & S&A.
- **Contract Acquisition** – Currently only a handful of contractors are capable of performing this type of construction in the United States. If the project is not competitively bid, or if there are not many bidders, project costs will increase due to a non-competitive market.
- **Scope Growth** – The current cost estimate is based on the current known conditions and quantities. Further engineering analysis may result in additional scope and increase costs.

**Table 3.** Base Year Contingencies

Feature Account	% Contingency
01 Lands & Damages	12.8%
04 Dams	32.4%
18 Cultural Resource Preservation	161.1%
19 Buildings, Grounds, & Utilities	24.1%
22 Feasibility Studies	0.0%
30 Planning, Engineering, & Design	41.6%
31 Supervision & Administration	36.4%
<b>Total Project Contingency</b>	<b>33.0%</b>

## **4 PROJECT FEATURE ACCOUNTS**

### **4.1 (01) LANDS AND DAMAGES**

The land and damages feature account includes costs for both permanent and temporary acquisitions. The Government owns all the land and no acquisitions are anticipated for this project. Only administrative costs have been included in this account for investigations.

### **4.2 (04) DAMS**

This cost account includes the construction of the Bolivar DSA measures, which includes the following:

- Impervious blanket,
- Partial cutoff wall along the upstream toe,
- Abutment cutoff wall,
- Downstream seepage blanket,
- Rehabilitation of relief wells,
- Instrumentation, and
- Mechanical/electrical upgrades.

### **4.3 (18) CULTURAL RESOURCES**

This cost account includes costs for archaeological investigations.

### **4.4 (19) BUILDINGS, GROUNDS, AND UTILITIES**

This cost account includes the construction of the resident engineer's building that would be required as part of the implementation of this project.

### **4.5 (22) FEASIBILITY STUDIES**

This cost account includes all costs expended for the purpose of preparing the feasibility report.

### **4.6 (30) PLANNING, ENGINEERING, AND DESIGN**

The work covered under this account includes project management, project planning, preliminary design, final design, geotechnical and HTRW investigations, hydraulic modeling, preparation of plans, preparation of specifications, engineering during construction, contract advertisement, opening of bids, and contract award. The cost for this account was estimated by the PDT and is included for each major project feature.

**4.7 (31) SUPERVISION AND ADMINISTRATION**

The work covered under this account includes contract supervision, contract administration, construction administration, technical management activities, and District office supervision and administration costs. The cost for this account has been estimated based on a historical factor of 7.5% of the total construction cost accounts.

## 5 COST ESTIMATE REPORTS

### 5.1 MII COST ESTIMATE REPORTS

Total project cost prior to fully-funding is \$138,437,000 at FY08 price level. The total fully-funded project cost is \$165,006,000. Table 4 below summarizes these costs broken out by feature account.

**Table 4.** Non-Fully Funded & Fully Funded Project Costs

<b>Feature Account</b>	<b>Non-Fully Funded</b>	<b>Fully Funded</b>
<b>01</b> Lands & Damages	\$101,000	\$105,000
<b>04</b> Dams	\$113,025,000	\$129,095,000
<b>18</b> Cultural Resource Preservation	\$261,000	\$286,000
<b>19</b> Buildings, Grounds, & Utilities	\$382,000	\$419,000
<b>22</b> Feasibility Studies	\$1,782,000	\$1,782,000
<b>30</b> Planning, Engineering, & Design	\$14,108,000	\$16,612,000
<b>31</b> Supervision & Administration	\$8,777,000	\$11,042,000
* Escalation Contingency		\$5,665,000
<b>Total Project Cost Summary</b>	<b>\$138,436,000</b>	<b>\$165,006,000</b>

#### 5.1.1 Direct Cost

Direct costs are defined as bare costs that are marked up for productivity adjustments, overtime, taxes, and/or other miscellaneous adjustments.

#### 5.1.2 Cost to Prime

Cost to prime is defined as direct costs with markups applied for PTI and any allowances such as small tools for the subcontractor work. The subcontractor markup for job office overhead (JOOH), home office overhead (HOOH), profit, bond, and excise tax and/or any miscellaneous adjustment is also included. This is in effect the cost to the performing contractor.

### **5.1.3 Project Cost**

The project cost takes the cost to owner and then adds any escalation, contingencies, SIOH (supervision, inspection, and overhead), and/or any miscellaneous owner costs. It should be noted that escalation factors are applied in the fully funded spreadsheet calculations and not using escalation functions in the MII cost estimating software.

**TAB A**  
**MII REPORT**

Estimated by CELRH-EC-TC

Designed by U.S. Army Corps of Engineers

Prepared by Dustin Sawyers

Preparation Date 8/29/2008

Effective Date of Pricing 10/1/2007

Estimated Construction Time Days

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MII Independent Government Estimate

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MII Independent Government Estimate

Designed by  
U.S. Army Corps of Engineers

Estimated by  
CELRH-EC-TC

Prepared by  
Dustin Sawyers

Design Document  
Document Date 8/29/2008  
District Huntington District  
Contact Dustin L. Sawyers @ (304) 399-5133  
Budget Year 2008  
UOM System Original

**Direct Costs**

LaborCost  
EQCost  
MatlCost  
SubBidCost  
Allowance

**Timeline/Currency**

Preparation Date 8/29/2008  
Escalation Date 8/29/2008  
Eff. Pricing Date 10/1/2007  
Estimated Duration 0 Day(s)  
Currency US dollars  
Exchange Rate 1.000000

**Costbook CB04aEB: MII English Cost Book 2004b Final**

**Labor LB04NatFD: Bolivar Dam Labor Rates**  
**Note: Davis-Bacon General Decision Number: OH030002 12/01/2006 OH2**

**Labor Rates**

LaborCost1  
LaborCost2  
LaborCost3  
LaborCost4

**Equipment EP07R02: MII Equipment Region 2r 2007**

**Note: Fuel prices updated on August 17, 2008 from <http://www.fuelgaugereport.com/sbsavg.asp> for the state of Ohio. Electricity rates updated from [http://www.eia.doe.gov/cneaf/electricity/st\\_profiles/](http://www.eia.doe.gov/cneaf/electricity/st_profiles/)**

**02 MIDEAST**

Sales Tax 7.00  
Working Hours per Year 1,450  
Labor Adjustment Factor 1.07  
Cost of Money 5.25  
Cost of Money Discount 25.00  
Tire Recap Cost Factor 1.50  
Tire Recap Wear Factor 1.80  
Tire Repair Factor 0.15  
Equipment Cost Factor 1.00  
Standby Depreciation Factor 0.50

**Fuel**

Electricity 0.092  
Gas 3.684  
Diesel Off-Road 4.088  
Diesel On-Road 4.368

**Shipping Rates**

Over 0 CWT 7.31  
Over 240 CWT 7.32  
Over 300 CWT 6.32  
Over 400 CWT 5.97  
Over 500 CWT 3.56  
Over 700 CWT 3.56  
Over 800 CWT 4.88

**Date** **Author** **Note**

MII Independent Government Estimate

**Direct Cost Markups**

Productivity Overtime 6-12s	Days/Week	Category Productivity Overtime	Hours/Shift	Shifts/Day	Method Productivity Overtime		
					1st Shift	2nd Shift	3rd Shift
Standard	5.00		8.00	1.00	8.00	0.00	0.00
Actual	6.00		8.00	1.00	12.00	0.00	0.00
Day		OT Factor		Working		OT Percent	FCCM Percent
Monday		1.50		Yes		22.22	(44.44)
Tuesday		1.50		Yes			
Wednesday		1.50		Yes			
Thursday		1.50		Yes			
Friday		1.50		Yes			
Saturday		1.50		Yes			
Sunday		2.00		No			
Overtime 2-shifts		Overtime			Overtime		
Standard	5.00		8.00	2.00	1st Shift	2nd Shift	3rd Shift
Actual	6.00		8.00	2.00	8.00	8.00	0.00
					12.00	10.00	0.00
Day		OT Factor		Working		OT Percent	FCCM Percent
Monday		1.50		Yes		19.70	(69.70)
Tuesday		1.50		Yes			
Wednesday		1.50		Yes			
Thursday		1.50		Yes			
Friday		1.50		Yes			
Saturday		1.50		Yes			
Sunday		2.00		No			

Supervision/Foreman LaborCost	TaxAdj	Running % on Selected Costs
Show up time LaborCost	MiscDirect	Running % on Selected Costs
Small Tools LaborCost	TaxAdj	Running % on Selected Costs
Sales Tax MatlCost	TaxAdj	Running % on Selected Costs

**Contractor Markups**

JOOH HOOH Prime's Profit Guideline Risk Difficulty Size Period Invest (Contractor's) Assist (Assistance by) SubContracting Total	Category JOOH HOOH Profit	Value	Method Running % Running % Profit Weighted Guidelines	
			Weight	Percentage
		0.120	20	2.40
		0.120	15	1.80
		0.030	15	0.45
		0.120	15	1.80
		0.120	5	0.60
		0.120	5	0.60
		0.030	25	0.75
			100	8.40

Sub's Profit	Allowance	Running %
B&O Tax	Allowance	Running %
Bond	Bond	Running %
Weather Delays	Allowance	Running %
Contract Mods/Claims	Allowance	Running %

MII Independent Government Estimate

**Owner Markups**  
Contingency

**Category**  
Contingency

**Method**  
Running %

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
<b>Direct Costs</b>				<b>58,310.33</b>	<b>12,549,619</b>	<b>18,340,613</b>	<b>16,890,068</b>	<b>9,696,743</b>	<b>76,407,145</b>
				58,310.33	12,549,618.74	18,340,613.25	16,890,067.51	9,696,743.00	58,137,042.50
<b>Construction Costs</b>	<b>1.00</b>	<b>EA</b>		<b>58,310.33</b>	<b>12,549,619</b>	<b>18,340,613</b>	<b>16,890,068</b>	<b>9,696,743</b>	<b>58,137,043</b>
				58,270.33	12,542,182.15	18,338,077.79	16,871,209.83	9,444,743.00	57,756,212.77
<b>04 Dams</b>	<b>1.00</b>			<b>58,270.33</b>	<b>12,542,182</b>	<b>18,338,078</b>	<b>16,871,210</b>	<b>9,444,743</b>	<b>57,756,213</b>
				0.00	0.00	0.00	0.00	800,000.00	800,000.00
<b>1 Mobilization/Demobilization</b>	<b>1.00</b>			<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>800,000</b>	<b>800,000</b>
USR Mob/demob	1.00	LS		0.00	0	0	0	800,000	800,000
(Note: Allow \$800k based upon recent budgetary quote received from Inquip Associates for mob/demob at Mohawk Dam for same type of work.)									
				0.01	3.64	4.89	25.06	0.00	33.98
<b>2 Impervious Blanket</b>	<b>128,000.00</b>	<b>CY</b>		<b>1,788.42</b>	<b>465,837</b>	<b>626,351</b>	<b>3,207,439</b>	<b>0</b>	<b>4,349,626</b>
				0.01	2.80	3.80	24.86	0.00	31.84
<b>2.1 Impervious Material Fill</b>	<b>128,000.00</b>	<b>ECY</b>		<b>1,254.40</b>	<b>357,785</b>	<b>485,926</b>	<b>3,181,536</b>	<b>0</b>	<b>4,075,247</b>
				0.01	1.90	2.58	0.00	0.00	4.48
USR Placement of impervious fill (Note: Assume 1.47 LCY/ECY.)	188,160.00	LCY	CREW-37	1,254.40	357,785	485,926	0	0	843,711
				0.00	0.00	0.00	11.50	0.00	11.50
USR Impervious fill, material only	276,595.20	TON		0.00	0	0	3,181,536	0	3,181,536
(Note: Assume 1.4 TON/LCY (CAT Handbook Ed.31, page 28-4 for natural bed clay), 1.47 LCY/ECY, and 5% waste. Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$10.75/TON.)									
USR Testing	1.00	LS		0.00	0	0	0	0	50,000
(Note: Allow \$50k.)									
				0.01	1.26	1.59	0.00	0.00	2.85
<b>2.2 1' Stripping</b>	<b>33,200.00</b>	<b>BCY</b>		<b>221.33</b>	<b>41,872</b>	<b>52,850</b>	<b>0</b>	<b>0</b>	<b>94,722</b>
				0.01	1.26	1.59	0.00	0.00	2.85
USR Strip topsoil & stockpile on site (Note: Assumed material would be stripped and stockpiled nearby (no hauling required).)	33,200.00	BCY	CREW-38	221.33	41,872	52,850	0	0	94,722
				0.01	1.61	2.24	0.00	0.00	3.85
<b>2.3 1' Topsoil</b>	<b>33,200.00</b>	<b>ECY</b>		<b>221.33</b>	<b>53,476</b>	<b>74,222</b>	<b>0</b>	<b>0</b>	<b>127,698</b>
				0.01	1.61	2.24	0.00	0.00	3.85
USR Spread & compact topsoil from stockpile (Note: Assumed stripped material would be placed over blanket.)	33,200.00	BCY	CREW-36	221.33	53,476	74,222	0	0	127,698
				4.35	604.95	635.84	1,233.44	0.00	2,474.23
<b>2.4 Seeding</b>	<b>21.00</b>	<b>ACR</b>		<b>91.35</b>	<b>12,704</b>	<b>13,353</b>	<b>25,902</b>	<b>0</b>	<b>51,959</b>
				4.35	604.95	635.84	1,233.44	0.00	2,474.23
USR Seeding (Note: Referenced 2008 RS Means Heavy Construction, page 282, 32 92 19.14 0200.)	21.00	ACR	CREW-33	91.35	12,704	13,353	25,902	0	51,959
				0.09	18.38	27.40	12.09	6.70	65.38
<b>3 Partial Cutoff Wall</b>	<b>620,400.00</b>	<b>SF</b>		<b>53,843.00</b>	<b>11,402,191</b>	<b>17,001,905</b>	<b>7,498,412</b>	<b>4,158,980</b>	<b>40,561,488</b>
(Note: 141' Deep (135' deep + 5' impervious fill + 1' above impervious fill) x 4400 LF = 620,400 SF)									
				0.09	18.38	27.40	12.09	6.70	65.38
<b>3.1 Upstream Toe Cutoff Wall</b>	<b>620,400.00</b>	<b>SF</b>		<b>53,843.00</b>	<b>11,402,191</b>	<b>17,001,905</b>	<b>7,498,412</b>	<b>4,158,980</b>	<b>40,561,488</b>
				0.51	101.58	213.11	27.61	58.93	401.22

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
<b>3.2 Excavation for 3' Wide Cutoff Wall, Earth</b>	<b>68,500.00</b>	<b>BCY</b>		<b>35,115.00</b>	<b>6,958,219</b>	<b>14,598,001</b>	<b>1,891,024</b>	<b>4,036,500</b>	<b>27,483,745</b>
				0.01	1.26	1.71	0.00	0.00	2.98
<b>Guidewall Excavation</b>	<b>620,400.00</b>	<b>SF</b>		<b>7,023.00</b>	<b>782,849</b>	<b>1,063,651</b>	<b>0</b>	<b>0</b>	<b>1,846,500</b>
				1.00	111.47	151.45	0.00	0.00	262.92
USR Excavation of guidewall (Note: Hydromill excavation duration is 14,046 HR (see folder below) with two 12-HR shifts. Assumming excavation of guidewall takes place only during one 12-HR shift results in a duration of 7023 HR.)	7,023.00	HR	CREW-17	7,023.00	782,849	1,063,651	0	0	1,846,500
				0.02	3.60	0.46	0.00	5.88	9.94
<b>Hydromill Excavation</b>	<b>620,400.00</b>	<b>SF</b>		<b>14,046.00</b>	<b>2,236,267</b>	<b>288,441</b>	<b>0</b>	<b>3,645,000</b>	<b>6,169,707</b>
				8.00	1,273.68	188.56	0.00	0.00	1,462.24
USR Setup time (Note: Referencing Mississinewa Final Report dated June 13, 2007, allow 10' panels with 1' of the secondary panels notching into the primary panels on each side. This results in 28' of wall for 3 panels; 4400 LF / 28' = 157 sections of 3 panels. 157 sections x 3 panels/section equals 471 panels.)	471.00	EA	CREW-22	3,768.00	599,904	88,812	0	0	688,716
				0.01	2.17	0.32	0.00	0.00	2.50
USR Soil excavation w/ hydromill (Note: Referencing Mississinewa Final Report dated June 13, 2007, soil Excavation productivity is 73.52 SF/HR.)	620,400.00	SF	CREW-22	8,469.62	1,348,450	199,629	0	0	1,548,079
				0.00	0.34	0.00	0.00	0.00	0.34
USR Maintenance and repairs (Note: Referencing Mississinewa Final Report dated June 13, 2007, maintenance and repairs is 2,788 HR. Assume ¾ of time was due to rock and ¼ time was for soil since rock is more difficult to excavate. 2,788 HR x 25% = 697 HR; 330,806 SF of Mississinewa overburden/ 697 HR maintenance & repairs in overburden = 474 SF/HR for maintenance & repairs.)	620,400.00	SF	CREW-23	1,308.86	208,384	0	0	0	208,384
				0.00	0.13	0.00	0.00	0.00	0.13
USR Standby (Note: Referencing Mississinewa Final Report dated June 13, 2007, standby time is 1,065 HR. Assume ¾ of time was due to rock and ¼ time was for soil since rock is more difficult to excavate. 1,065 HR x 25% = 266 HR; 330,806 SF of Mississinewa overburden/ 266 HR standby in overburden = 1,242 SF/HR for standby.)	620,400.00	SF	CREW-23	499.52	79,528	0	0	0	79,528
				0.00	0.00	0.00	0.00	135,000.00	135,000.00
USR Bauer BC32 hydromill with cutter and operator, rental per month (Note: Rental rate is \$135,000/MO. Assume 4.333 WK/MO x 6 DAY/WK x 10 HR/DAY = 260 HR/MO per shift; 14,046 HR / (260 HR/MO x 2 shifts) = 27 MO.)	27.00	MO		0.00	0	0	0	3,645,000	3,645,000
				0.00	0.00	0.00	2.51	0.00	2.51
<b>Bentonite Slurry</b>	<b>620,400.00</b>	<b>SF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>1,557,077</b>	<b>0</b>	<b>1,557,077</b>
(Note: Referencing Wolf Creek Dam, the slurry mix weighs 70 LB/CF and takes approximately 22.6 LB of bentonite per CF of slurry. There is 22.6 LB/CF = 610.2 LB of bentonite per CY. Assume bentonite can be recycled three times, therefore 610.2/3 = 203.4 lbs of bentonite required per CY of excavation.)									
				0.00	0.00	0.00	10.06	0.00	10.06
USR Bentonite, material only	154,809.85	CWT		0.00	0	0	1,557,077	0	1,557,077
(Note: Referenced Wolf Creek estimate received in January 2007 for \$8.40/CWT. Allow \$10/CWT due to inflation. No quotes were obtained in time for completion of the baseline cost estimate.)									
				0.00	0.00	0.00	0.00	5.72	5.72
<b>Desanding Plant</b>	<b>68,500.00</b>	<b>SF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>391,500</b>	<b>391,500</b>
(Note: Treatment plant consists of two BE 250 and one GS 500 complete with fitting material. Total capacity is 132,000 gallon per hour. Installed power 190 HP. Voltage, Option 1 is 3 phase, 220V/60 Hz and Option 2 is 3 phase, 380V/50Hz. Weight is 14,500 kg. Rental rate is \$14,500/MO. Consumption is 75 gallons per hour.)									
				0.00	0.00	0.00	0.00	14,500.00	14,500.00
USR Desanding plant, rental per month (Note: Rental rate is \$14,500/MO. Assume 4.333 WK/MO x 6 DAY/WK x 10 HR/DAY = 260 HR/MO per shift; 14,046 HR / (260 HR/MO x 2 shifts) = 27 MO.)	27.00	MO		0.00	0	0	0	391,500	391,500
				0.21	43.95	193.37	0.97	0.00	238.29
<b>Support Crew</b>	<b>68,500.00</b>	<b>SF</b>		<b>14,046.00</b>	<b>3,010,271</b>	<b>13,245,910</b>	<b>66,447</b>	<b>0</b>	<b>16,322,628</b>
				1.00	214.32	1,074.90	0.00	0.00	1,289.21
USR Support crew (Note: This crew will support the desanding plant and pumping of material during the excavation operation. Hydromill excavation duration is 14,046 HR with 12,237 HR operating and 1,809 HR on standby for maintenance, repairs, and standby time.)	12,237.00	HR	CREW-20	12,237.00	2,622,575	13,153,537	0	0	15,776,112
				1.00	214.32	51.06	0.00	0.00	265.38
USR Support crew (equipment on standby) (Note: This crew will support the desanding plant and pumping of material during the excavation operation. Hydromill excavation duration is 14,046 HR with 12,237 HR operating and 1,809 HR on standby for maintenance, repairs, and standby time.)	1,809.00	HR	CREW-21	1,809.00	387,696	92,372	0	0	480,068

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR 6" perforated pipe, material only	9,000.00	LF		0.00	0.00	0.00	7.38	0.00	7.38
				0.00	0	0	66,447	0	66,447
(Note: Estimator assumed one line would be used for bringing in the bentonite slurry and another line would be used for removing the excavated material (pump is included in support crew). Referenced 2008 RS Means Heavy Construction, page 316, 33 46 16.35 0060 for material cost. Total length of wall is 4400 LF x 2 lines = 8800 LF; use 9,000 LF. Setup and moving of pipe will be performed by the support crew as needed. This quantity was assumed to cover costs for broken/damaged lines that may occur during construction.)									
<b>Repairs/Down-Time to Hydromill</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>267,500</b>	<b>0</b>	<b>267,500</b>
USR Material allowance for repairs	1.00	LS		0.00	0	0	267,500	0	267,500
(Note: Upon discussions with Bob Bowles, Nashville District, repairs to the hydromill teeth can occur often during project construction and be costly (\$250,000 for Mississinewa). Allow \$250,000 for repairs.)									
<b>Geologist</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>928,832</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>928,832</b>
USR Geologist	14,046.00	HR		0.00	66.13	0.00	0.00	0.00	66.13
				0.00	928,832	0	0	0	928,832
(Note: Due to the complexity of the excavation process, estimator assumed a geologist would be on-site full-time for monitoring. Hourly rate used from Contract W91237-07-D-0011, Bid Item #7, as obtained from EC-GG.)									
				0.10	44.61	16.00	81.27	0.00	141.88
<b>3.3 Concrete for 3' Wide Cutoff Wall</b>	<b>69,000.00</b>	<b>CY</b>		<b>7,023.00</b>	<b>3,078,101</b>	<b>1,104,182</b>	<b>5,607,388</b>	<b>0</b>	<b>9,789,672</b>
USR Concrete, material only	80,499.99	CY		0.00	0.00	0.00	69.66	0.00	69.66
				0.00	0	0	5,607,388	0	5,607,388
(Note: Assume 5% waste and 11.11% for extra material when the secondary panels are notched into the primary panels.)									
USR Tremie placement	7,023.00	HR	CREW-39	1.00	438.29	157.22	0.00	0.00	595.51
				7,023.00	3,078,101	1,104,182	0	0	4,182,284
(Note: Hydromill excavation duration is 14,046 HR with two 12-HR shifts. Assumming excavation of guidewall takes place only during one 12-HR shift results in a duration of 7,023 HR.)									
				0.14	16.62	15.81	0.00	0.00	32.43
<b>3.4 Excavation Spoil (Swell Factor = 1.2)</b>	<b>82,200.00</b>	<b>LCY</b>		<b>11,705.00</b>	<b>1,365,871</b>	<b>1,299,721</b>	<b>0</b>	<b>0</b>	<b>2,665,592</b>
(Note: Currently, 73.25 SF/HR x 3 FT wide x 24 HR/DAY results in 196 CY of material being excavated per day. These crews are assumed to work only 10 hours per day and not be on-site during the 2nd shift of work. The duration for the cutoff wall is 14,046 HR working 24-hour shifts or 7,023 HR for a 12-hour shift. Converting this to 10-hour shift results in 5,852.5 hours (7,023/12 * 10). Loading will be performed by the FE loader with the hydromill support crew. Hauling crew • Dump truck w/ driver Spreading & compaction crew at spoil area (½ working/ ½ standby) • Dozer w/ operator • Roller w/ operator • Water truck w/ driver • Oiler (assist with loading/hauling and spreading/compaction))									
USR Haul cuttings to spoil area	5,852.50	HR	CREW-18	1.00	43.61	65.50	0.00	0.00	109.11
				5,852.50	255,251	383,327	0	0	638,578
(Note: Loading is being performed by FE loader on hydromill support crew. Excavated material will be transported to the spoil area (remains of old quarry) located below the downstream right abutment.)									
USR Spread and compact cuttings at spoil area	5,852.50	HR	CREW-35	1.00	189.77	156.58	0.00	0.00	346.35
				5,852.50	1,110,620	916,394	0	0	2,027,014
				0.00	0.00	0.00	0.00	135.19	135.19
<b>3.5 Verification Drilling</b>	<b>906.00</b>	<b>LF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>122,480</b>	<b>122,480</b>
USR Mob and Demob (Confined Space)	1.00	EA		0.00	0.00	0.00	0.00	2,300.00	2,300.00
				0.00	0	0	0	2,300	2,300
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #36, as obtained from EC-GG.)									
USR 4" Core Drilling, 4" wireline	910.00	LF		0.00	0.00	0.00	0.00	95.00	95.00
				0.00	0	0	0	86,450	86,450
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #26, as obtained from EC-GG.)									
USR Hydraulic Pressure Testing	182.00	EA		0.00	0.00	0.00	0.00	140.00	140.00
				0.00	0	0	0	25,480	25,480
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #28, as obtained from EC-GG. Cost includes pressure testing, grout, and placement of grout.)									
USR Inspector	10.00	DAY		0.00	0.00	0.00	0.00	825.00	825.00
				0.00	0	0	0	8,250	8,250
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #9, as obtained from EC-GG. Each hole is about 50' in depth, therefore 906.4/50 = 19 holes. Assuming two holes can be completed in a 10-HR day, this equates to 19 holes / 2 holes per day = say 10 days.)									
<b>* Test Section</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>500,000</b>

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Test section allowance	1.00	LS		0.00	0	0	0	0	500,000
(Note: Allow \$500k. Test section will become part of permanent wall therefore labor/equipment/materials are included in folders above. This allowance is for the testing/waiting/approval by and for the contractor's work. Assume 1-month additional time required on project schedule.)									
				0.00	0.85	0.50	2.08	34.79	38.43
<b>4 Abutment Cutoff Wall</b>	<b>48,000.00</b>	<b>SF</b>		<b>191.33</b>	<b>41,007</b>	<b>24,176</b>	<b>99,619</b>	<b>1,670,020</b>	<b>1,844,822</b>
				8.00	3,820.83	4,391.03	0.00	-1,000.00	7,211.86
<b>4.1 Clearing/Grubbing</b>	<b>0.50</b>	<b>ACR</b>		<b>4.00</b>	<b>1,910</b>	<b>2,196</b>	<b>0</b>	<b>-500</b>	<b>3,606</b>
USR Clearing & Grubbing	0.50	ACR	CREW-08	4.00	3,820.83 1,910	4,391.03 2,196	0.00 0	0.00 0	8,211.86 4,106
USR Tree allowance	0.50	ACR		0.00	0.00	0.00	0.00	-1,000.00	-1,000.00
				0.00	0	0	0	-500	-500
(Note: Allow \$1,000/ACR for the cost of trees reimbursable to the Government.)									
				0.00	0.00	0.00	0.00	30.00	30.00
<b>4.2 Abutment Cutoff Wall</b>	<b>48,000.00</b>	<b>SF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,440,000</b>	<b>1,440,000</b>
USR Construction of cement/bentonite slurry wall	48,000.00	SF		0.00	0.00	0.00	0.00	30.00	30.00
				0.00	0	0	0	1,440,000	1,440,000
(Note: No details are available at this stage as to what the cement/bentonite mixture is, only that it will not be a full concrete cutoff wall. Cost referenced from drilling data received from Jim Rose on April 22, 2008 for similar contract currently being performed in Jacksonville District. Cost is \$27.40/SF which includes excavation into earth/rock, cement/bentonite material and placement, and spoil of material. Use \$30/SF.)									
				20.00	2,781.38	2,923.39	1,233.44	0.00	6,938.22
<b>4.7 Seeding</b>	<b>0.50</b>	<b>ACR</b>		<b>10.00</b>	<b>1,391</b>	<b>1,462</b>	<b>617</b>	<b>0</b>	<b>3,469</b>
USR Seeding	0.50	ACR	CREW-33	10.00	2,781.38 1,391	2,923.39 1,462	1,233.44 617	0.00 0	6,938.22 3,469
(Note: Referenced 2008 RS Means Heavy Construction, page 282, 32 92 19.14 0200.)									
				0.13	22.58	4.81	16.74	0.00	44.14
<b>4.8 Remove and Replace Culvert, 12" CMP</b>	<b>40.00</b>	<b>LF</b>		<b>5.00</b>	<b>903</b>	<b>192</b>	<b>670</b>	<b>0</b>	<b>1,765</b>
USR Trench excavation with backhoe	6.00	BCY	CREW-41	0.08 0.50	7.95 48	2.87 17	0.00 0	0.00 0	10.82 65
USR Demo 12" CMP pipe	40.00	LF	CREW-24	0.03 1.00	5.61 225	0.86 34	0.00 0	0.00 0	6.47 259
USR Bank run sand, material only	2.20	TON		0.00	0.00	0.00	9.63	0.00	9.63
				0.00	0	0	21	0	21
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR Place & compact sand	1.50	ECY	CREW-32	0.33 0.50	46.32 69	13.29 20	0.00 0	0.00 0	59.61 89
USR 12" BCCMP pipe	40.00	LF	CREW-24	0.05 2.00	11.23 449	1.72 69	16.21 648	0.00 0	29.16 1,166
(Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2080.)									
USR Backfill & compaction	4.10	LCY	CREW-40	0.12 0.50	22.13 91	4.74 19	0.00 0	0.00 0	26.87 110
USR Haul material to spoil, 12 CY truck, 2 mile round trip	3.20	LCY	CREW-19	0.16 0.50	6.81 22	10.23 33	0.00 0	0.00 0	17.05 55
				10.00	1,510.53	240.21	5,382.10	0.00	7,132.84
<b>4.9 Remove and Replace Flag Pole</b>	<b>1.00</b>	<b>EA</b>		<b>10.00</b>	<b>1,511</b>	<b>240</b>	<b>5,382</b>	<b>0</b>	<b>7,133</b>
				2.00	277.31	68.63	0.00	0.00	345.94

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Demo flagpole	1.00	EA	CREW-13	2.00	277	69	0	0	346
USR Flagpole foundation, 40' to 50' high, includes excavation & concrete (Note: Referenced 2008 RS Means Building Construction, page 334, 10 75 16.10 7600.)	1.00	EA	CREW-02	3.00	539.95	0.00	1,021.85	0.00	1,561.80
				3.00	540	0	1,022	0	1,562
USR Flagpoles, steel, direct imbedded installation, 50' high (Note: Referenced 2008 RS Means Building Construction, page 334, 10 75 16.10 4800.)	1.00	EA	CREW-13	5.00	693.27	171.58	4,360.25	0.00	5,225.10
				5.00	693	172	4,360	0	5,225
				0.00	0.00	0.00	0.00	0.00	10,000.00
<b>4.10 Remove and Replace Monument</b>	<b>1.00</b>			<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,000</b>
USR Remove and replace monuments	1.00	LS		0.00	0	0	0	0	10,000
(Note: Allow \$10k.)									
				0.10	13.41	3.49	46.55	0.00	63.44
<b>4.11 Remove and Replace Chain Link Fence</b>	<b>100.00</b>	<b>LF</b>		<b>10.00</b>	<b>1,341</b>	<b>349</b>	<b>4,655</b>	<b>0</b>	<b>6,344</b>
USR Remove existing fence, includes hauling	100.00	LF	CREW-34	5.00	6.92	1.72	0.00	0.00	8.64
				5.00	692	172	0	0	864
USR Chain link fence, industrial, aluminized steel, in concrete, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation (Note: Referenced 2008 RS Means Heavy Construction, page 269, 32 31 13.20 0900.)	100.00	LF	CREW-12	5.00	6.48	1.77	46.55	0.00	54.80
				5.00	648	177	4,655	0	5,480
				6.00	1,171.76	102.95	3,278.48	0.00	4,553.19
<b>4.12 Remove and Replace Light Pole</b>	<b>1.00</b>	<b>EA</b>		<b>6.00</b>	<b>1,172</b>	<b>103</b>	<b>3,278</b>	<b>0</b>	<b>4,553</b>
USR Demo lightpole	1.00	EA	CREW-25	2.00	421.21	68.63	0.00	0.00	489.84
				2.00	421	69	0	0	490
USR Light pole, aluminum, 40' high w/ 1 bracket arm (Note: Referenced 2008 RS Means Heavy Construction, page 197, 25 56 13.10 3600/3800.)	1.00	EA	CREW-25	1.00	210.61	34.32	2,256.63	0.00	2,501.55
				1.00	211	34	2,257	0	2,502
USR Lightpole foundation, 40' to 50' high, includes excavation & concrete (Note: Referenced 2008 RS Means Building Construction, page 334, 10 75 16.10 7600.)	1.00	EA	CREW-02	3.00	539.95	0.00	1,021.85	0.00	1,561.80
				3.00	540	0	1,022	0	1,562
				0.02	7.60	5.61	10.97	0.00	24.18
<b>4.15 Demolish Roadway</b>	<b>1,720.00</b>	<b>SY</b>		<b>40.00</b>	<b>13,076</b>	<b>9,651</b>	<b>18,864</b>	<b>0</b>	<b>41,591</b>
USR Demo bituminous pavement, 4" to 6" thick (includes loading and hauling) (Note: Referenced 2008 RS Means Heavy Construction, page 23, 02 41 13.17 5050. Allow 40 hours.)	1,720.00	SY	CREW-06	40.00	7.60	5.61	0.00	0.00	13.21
				40.00	13,076	9,651	0	0	22,727
USR Disposal fees	567.60	TON		0.00	0.00	0.00	33.23	0.00	33.23
				0.00	0	0	18,864	0	18,864
(Note: Quote on 4/8/08 from Countywide Recycling and Disposal Facility for Construction & Demolition material (C&D) material is \$30/TON with an additional \$1.06/TON for EPA fees. Assume 6" thick asphalt and 110 LB/SY per inch thickness.)									
				0.03	7.82	5.08	37.66	5.00	55.57
<b>4.16 Roadway Replacement</b>	<b>1,720.00</b>	<b>SY</b>		<b>57.00</b>	<b>13,453</b>	<b>8,743</b>	<b>64,780</b>	<b>8,600</b>	<b>95,575</b>
				0.01	0.88	0.63	0.00	0.00	1.51
<b>4.16.1 Prepare &amp; Roll Subbase</b>	<b>1,720.00</b>	<b>SY</b>		<b>10.00</b>	<b>1,505</b>	<b>1,089</b>	<b>0</b>	<b>0</b>	<b>2,595</b>
USR Prepare and roll sub-base (Note: Allow 10 HR.)	1,720.00	SY	CREW-31	10.00	0.01	0.88	0.63	0.00	1.51
				10.00	1,505	1,089	0	0	2,595
				0.01	0.77	0.20	3.31	0.00	4.28
<b>4.16.2 Filter Fabric</b>	<b>1,720.00</b>	<b>SY</b>		<b>10.00</b>	<b>1,320</b>	<b>347</b>	<b>5,701</b>	<b>0</b>	<b>7,368</b>

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Filter fabric installation (Note: Allow 10 HR.)	1,720.00	SY	CREW-01	10.00	1,320	347	0	0	1,667
USR Filter fabric, Mirafi HP 665, material only	1,806.00	SY		0.00	0	0	5,701	0	5,701
(Note: Quote referenced from recent project at Minersville, OH. Quote on 12/14/2006 by Glenn Dupilka of JMD Company @ (412) 833-7100 for \$2.95/SY. Assume 5% overlap.)									
<b>4.16.3 8" Aggregate Class I</b>	<b>382.22</b>	<b>ECY</b>		<b>10.00</b>	<b>2,482</b>	<b>3,364</b>	<b>11,714</b>	<b>0</b>	<b>17,561</b>
USR 8" aggregate, Class I, material only	653.60	TON		0.00	0	0	11,714	0	11,714
(Note: Assume 1.5 TON/LCY and 1.14 LCY/ECY. Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$16.75/TON.)									
USR Placement of aggregate (Note: Allow 10 HR.)	382.22	CY	CREW-04	10.00	2,482	3,364	0	0	5,846
<b>4.16.4 2-1/2" Intermediate Course</b>	<b>119.44</b>	<b>CY</b>		<b>5.00</b>	<b>2,820</b>	<b>1,618</b>	<b>13,292</b>	<b>0</b>	<b>17,730</b>
USR Asphaltic concrete pavement, 2-1/2" intermediate course (Note: Cost referenced from 2008 RS Means Heavy Construction, page 261, 32 12 16.13 0812. Assume 2 TON/CY. Allow 5 HR.)	238.89	TON	CREW-07	5.00	2,820	1,618	13,292	0	17,730
<b>4.16.5 2-1/2" Top Course</b>	<b>119.44</b>	<b>CY</b>		<b>5.00</b>	<b>2,820</b>	<b>1,618</b>	<b>14,059</b>	<b>0</b>	<b>18,497</b>
USR Asphaltic concrete pavement, 2-1/2" top course (Note: Cost referenced from 2008 RS Means Heavy Construction, page 261, 32 12 16.13 0853. Assume 2 TON/CY. Allow 5 HR.)	238.89	TON	CREW-07	5.00	2,820	1,618	14,059	0	18,497
<b>4.16.6 Tack Coat</b>	<b>1,720.00</b>	<b>SY</b>		<b>5.00</b>	<b>489</b>	<b>242</b>	<b>1,215</b>	<b>0</b>	<b>1,945</b>
USR Tack coat, 0.10 gal per SY (Note: Cost referenced from 2008 RS Means Heavy Construction, page 254, 32 01 13.62 3270.)	1,720.00	SY	CREW-05	5.00	489	242	1,215	0	1,945
<b>4.16.7 Prime Coat</b>	<b>1,720.00</b>	<b>SY</b>		<b>2.00</b>	<b>195</b>	<b>97</b>	<b>1,638</b>	<b>0</b>	<b>1,930</b>
USR Prime coat, 4 oz per SY (Note: Cost referenced from 2008 RS Means Heavy Construction, page 254, 32 01 13.62 3120.)	1,720.00	SY	CREW-05	2.00	195	97	1,638	0	1,930
<b>4.16.8 Guardrail (remove and replace)</b>	<b>860.00</b>	<b>LF</b>		<b>10.00</b>	<b>1,821</b>	<b>368</b>	<b>17,162</b>	<b>8,600</b>	<b>27,951</b>
USR Remove Guardrail	860.00	LF		0.00	0	0	0	8,600	8,600
USR Install guardrail (Note: Referenced 2008 RS Means Heavy Construction, page 340, 34 71 13.26 0012. Allow 10 HR.)	860.00	LF	CREW-16	10.00	1,821	368	17,162	0	19,351
<b>4.17 Storm Drain, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>2.50</b>	<b>312</b>	<b>89</b>	<b>37</b>	<b>0</b>	<b>438</b>
				0.13	15.60	4.47	1.86	0.00	21.92
				0.17	16.20	5.73	0.00	0.00	21.93

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	49	17	0	0	66
				0.50	70.76	19.93	0.00	0.00	90.69
USR Place & compact sand	1.00	ECY	CREW-32	0.50	71	20	0	0	91
				0.00	0.00	0.00	9.63	0.00	9.63
USR Bank run sand, material only	1.10	TON		0.00	0	0	11	0	11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 4" SDR 35 PVC Pipe	20.00	LF	CREW-30	0.03	3.90	0.00	1.33	0.00	5.23
				0.50	78	0	27	0	105
(Note: Referenced 2008 RS Means Heavy Construction, page 308, 33 31 13.25 2000.)									
USR Backfill & compaction	3.00	LCY	CREW-40	0.17	30.81	6.48	0.00	0.00	37.28
				0.50	92	19	0	0	112
USR Haul material to spoil, 12 CY truck, 2 mile round trip	1.00	LCY	CREW-19	0.50	22.17	32.75	0.00	0.00	54.92
				0.50	22	33	0	0	55
				0.45	57.94	16.03	3.71	0.00	77.68
<b>4.18 Temporary Relocate/ Replace Sewer Line, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>9.00</b>	<b>1,159</b>	<b>321</b>	<b>74</b>	<b>0</b>	<b>1,554</b>
				0.10	13.75	3.55	0.00	0.00	17.30
<b>Remove Existing Sewer Line, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>2.00</b>	<b>275</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>346</b>
				0.17	15.80	5.73	0.00	0.00	21.53
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
USR Demo and remove existing pipe	20.00	LF	CREW-34	1.00	137	34	0	0	172
USR Backfill & compaction	4.00	LCY	CREW-40	0.13	22.52	4.86	0.00	0.00	27.38
				0.50	90	19	0	0	110
				0.13	15.22	4.47	1.86	0.00	21.54
<b>Install Temporary Sewer Line, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>2.50</b>	<b>304</b>	<b>89</b>	<b>37</b>	<b>0</b>	<b>431</b>
				0.17	15.80	5.73	0.00	0.00	21.53
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
USR Place & compact sand	1.00	ECY	CREW-32	0.50	68.98	19.93	0.00	0.00	88.91
				0.50	69	20	0	0	89
USR Bank run sand, material only	1.10	TON		0.00	0.00	0.00	9.63	0.00	9.63
				0.00	0	0	11	0	11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 4" SDR 35 PVC Pipe	20.00	LF	CREW-30	0.03	3.81	0.00	1.33	0.00	5.14
				0.50	76	0	27	0	103
(Note: Referenced 2008 RS Means Heavy Construction, page 308, 33 31 13.25 2000.)									
USR Backfill & compaction	3.00	LCY	CREW-40	0.17	30.03	6.48	0.00	0.00	36.51
				0.50	90	19	0	0	110
USR Haul material to spoil, 12 CY truck, 2 mile round trip	1.00	LCY	CREW-19	0.50	21.66	32.75	0.00	0.00	54.41
				0.50	22	33	0	0	54
				0.10	13.75	3.55	0.00	0.00	17.30
<b>Remove Temporary Sewer Line, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>2.00</b>	<b>275</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>346</b>
				0.17	15.80	5.73	0.00	0.00	21.53
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
USR Demo and remove existing pipe	20.00	LF	CREW-34	1.00	137	34	0	0	172

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Backfill & compaction	4.00	LCY	CREW-40	0.13 0.50	22.52 90	4.86 19	0.00 0	0.00 0	27.38 110
<b>Install Permanent Sewer Line, 4" PVC</b>	<b>20.00</b>	<b>LF</b>		<b>2.50</b>	<b>304</b>	<b>89</b>	<b>37</b>	<b>0</b>	<b>431</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Place & compact sand	1.00	ECY	CREW-32	0.50 0.50	68.98 69	19.93 20	0.00 0	0.00 0	88.91 89
USR Bank run sand, material only	1.10	TON		0.00 0.00	0.00 0	0.00 0	9.63 11	0.00 0	9.63 11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 4" SDR 35 PVC Pipe (Note: Referenced 2008 RS Means Heavy Construction, page 308, 33 31 13.25 2000.)	20.00	LF	CREW-30	0.03 0.50	3.81 76	0.00 0	1.33 27	0.00 0	5.14 103
USR Backfill & compaction	3.00	LCY	CREW-40	0.17 0.50	30.03 90	6.48 19	0.00 0	0.00 0	36.51 110
USR Haul material to spoil, 12 CY truck, 2 mile round trip	1.00	LCY	CREW-19	0.50 0.50	21.66 22	32.75 33	0.00 0	0.00 0	54.41 54
<b>4.19 Temporary Relocate/ Replace Water Line, 1" PE</b>	<b>20.00</b>	<b>LF</b>		<b>9.00</b>	<b>1,159</b>	<b>321</b>	<b>40</b>	<b>0</b>	<b>1,519</b>
<b>Remove Existing Water Line, 1" PE</b>	<b>20.00</b>	<b>LF</b>		<b>2.00</b>	<b>275</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>346</b>
USR Trench excavation with backhoe, expose pipe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Demo and remove existing pipe	20.00	LF	CREW-34	0.05 1.00	6.87 137	1.72 34	0.00 0	0.00 0	8.59 172
USR Backfill & compaction	4.00	LCY	CREW-40	0.13 0.50	22.52 90	4.86 19	0.00 0	0.00 0	27.38 110
<b>Install Temporary Water Line, 1" PE</b>	<b>20.00</b>	<b>LF</b>		<b>2.50</b>	<b>304</b>	<b>89</b>	<b>20</b>	<b>0</b>	<b>414</b>
USR Trench excavation with backhoe, expose pipe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Place & compact sand	1.00	ECY	CREW-32	0.50 0.50	68.98 69	19.93 20	0.00 0	0.00 0	88.91 89
USR Bank run sand, material only	1.10	TON		0.00 0.00	0.00 0	0.00 0	9.63 11	0.00 0	9.63 11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 1" polyethylene pipe, C901, 160 PSI (Note: Referenced 2008 RS Means Heavy Construction, page 298, 33 11 13.25 2100.)	20.00	LF	CREW-30	0.03 0.50	3.81 76	0.00 0	0.47 9	0.00 0	4.29 86
USR Haul material to spoil, 12 CY truck, 2 mile round trip	1.00	LCY	CREW-19	0.50 0.50	21.66 22	32.75 33	0.00 0	0.00 0	54.41 54
USR Backfill & compaction	3.00	LCY	CREW-40	0.17 0.50	30.03 90	6.48 19	0.00 0	0.00 0	36.51 110
				0.10	13.75	3.55	0.00	0.00	17.30

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
<b>Remove Temporary Water Line, 1" PE</b>	<b>20.00</b>	<b>LF</b>		<b>2.00</b>	<b>275</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>346</b>
USR Trench excavation with backhoe, expose pipe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Demo and remove existing pipe	20.00	LF	CREW-34	0.05 1.00	6.87 137	1.72 34	0.00 0	0.00 0	8.59 172
USR Backfill & compaction	4.00	LCY	CREW-40	0.13 0.50	22.52 90	4.86 19	0.00 0	0.00 0	27.38 110
				0.13	15.22	4.47	1.00	0.00	20.69
<b>Install Permanent Water Line, 1" PE</b>	<b>20.00</b>	<b>LF</b>		<b>2.50</b>	<b>304</b>	<b>89</b>	<b>20</b>	<b>0</b>	<b>414</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Place & compact sand	1.00	ECY	CREW-32	0.50 0.50	68.98 69	19.93 20	0.00 0	0.00 0	88.91 89
USR Bank run sand, material only	1.10	TON		0.00 0.00	0.00 0	0.00 0	9.63 11	0.00 0	9.63 11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 1" polyethylene pipe, C901, 160 PSI	20.00	LF	CREW-30	0.03 0.50	3.81 76	0.00 0	0.47 9	0.00 0	4.29 86
(Note: Referenced 2008 RS Means Heavy Construction, page 298, 33 11 13.25 2100.)									
USR Backfill & compaction	3.00	LCY	CREW-40	0.17 0.50	30.03 90	6.48 19	0.00 0	0.00 0	36.51 110
USR Haul material to spoil, 12 CY truck, 2 mile round trip	1.00	LCY	CREW-19	0.50 0.50	21.66 22	32.75 33	0.00 0	0.00 0	54.41 54
				0.68	85.28	12.76	18.05	0.00	116.09
<b>4.20 Temporary Relocate/ Replace UG Electric to Office</b>	<b>20.00</b>	<b>LF</b>		<b>13.50</b>	<b>1,706</b>	<b>255</b>	<b>361</b>	<b>0</b>	<b>2,322</b>
				0.15	19.46	3.55	0.00	0.00	23.01
<b>Remove Existing UG Electric to Office</b>	<b>20.00</b>	<b>LF</b>		<b>3.00</b>	<b>389</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>460</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Backfill & compaction	4.00	LCY	CREW-40	0.13 0.50	22.52 90	4.86 19	0.00 0	0.00 0	27.38 110
USR Demo and remove existing pipe	20.00	LF	CREW-34	0.05 1.00	6.87 137	1.72 34	0.00 0	0.00 0	8.59 172
USR Removal current connections	1.00	HR	CREW-09	1.00 1.00	114.27 114	0.00 0	0.00 0	0.00 0	114.27 114
(Note: Allow 1 hour.)									
				0.18	21.75	2.83	2.86	0.00	27.43
<b>Install Temporary UG Electric to Office</b>	<b>20.00</b>	<b>LF</b>		<b>3.50</b>	<b>435</b>	<b>57</b>	<b>57</b>	<b>0</b>	<b>549</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Place & compact sand	1.00	ECY	CREW-32	0.50 0.50	68.98 69	19.93 20	0.00 0	0.00 0	88.91 89
USR Bank run sand, material only	1.10	TON		0.00 0.00	0.00 0	0.00 0	9.63 11	0.00 0	9.63 11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR 2" PVC Conduit, 2 @ 2" diameter (Note: Referenced 2008 RS Means Heavy Construction, page 329, 33 71 19.17 4600.)	20.00	LF	CREW-09	0.03 0.67	3.81 76	0.00 0	1.84 37	0.00 0	5.65 113
USR Underground cable, #6, type USE (Note: Referenced 2006 MII English Cost Book, Source Tag 161208200120.)	20.00	LF	CREW-09	0.02 0.33	1.90 38	0.00 0	0.49 10	0.00 0	2.39 48
USR Backfill & compaction	3.00	LCY	CREW-40	0.17 0.50	30.03 90	6.48 19	0.00 0	0.00 0	36.51 110
USR Testing (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00 1.00	114.27 114	0.00 0	0.00 0	0.00 0	114.27 114
<b>Remove Temporary UG Electric to Office</b>	<b>20.00</b>	<b>LF</b>			<b>389</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>460</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Backfill & compaction	4.00	LCY	CREW-40	0.13 0.50	22.52 90	4.86 19	0.00 0	0.00 0	27.38 110
USR Demo and remove existing pipe	20.00	LF	CREW-34	0.05 1.00	6.87 137	1.72 34	0.00 0	0.00 0	8.59 172
USR Removal current connections (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00 1.00	114.27 114	0.00 0	0.00 0	0.00 0	114.27 114
<b>Install Permanent UG Electric to Office</b>	<b>20.00</b>	<b>LF</b>			<b>492</b>	<b>57</b>	<b>304</b>	<b>0</b>	<b>853</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.17 0.50	15.80 47	5.73 17	0.00 0	0.00 0	21.53 65
USR Place & compact sand	1.00	ECY	CREW-32	0.50 0.50	68.98 69	19.93 20	0.00 0	0.00 0	88.91 89
USR Bank run sand, material only (Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)	1.10	TON		0.00 0.00	0.00 0	0.00 0	9.63 11	0.00 0	9.63 11
USR 2" RGS Conduit, 2 @ 2" diameter (Note: Referenced 2008 RS Means Heavy Construction, page 329, 33 71 19.17 6200.)	20.00	LF	CREW-09	0.05 1.00	5.71 114	0.00 0	14.18 284	0.00 0	19.89 398
USR Backfill & compaction	3.00	LCY	CREW-40	0.17 0.50	30.03 90	6.48 19	0.00 0	0.00 0	36.51 110
USR Underground cable, #6, type USE (Note: Referenced 2006 MII English Cost Book, Source Tag 161208200120.)	20.00	LF	CREW-09	0.03 0.50	2.86 57	0.00 0	0.49 10	0.00 0	3.34 67
USR Testing (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00 1.00	114.27 114	0.00 0	0.00 0	0.00 0	114.27 114
<b>4.21 Temporary Relocate/ Replace UG Telephone to Intake</b>	<b>20.00</b>	<b>LF</b>			<b>1,915</b>	<b>255</b>	<b>862</b>	<b>0</b>	<b>3,032</b>
<b>Remove Existing UG Telephone to Intake</b>	<b>20.00</b>	<b>LF</b>			<b>389</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>460</b>
				0.77 0.15	95.76 19.46	12.76 3.55	43.08 0.00	0.00 0.00	151.59 23.01
				0.17	15.80	5.73	0.00	0.00	21.53

MII Independent Government Estimate

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
				0.13	22.52	4.86	0.00	0.00	27.38
USR Backfill & compaction	4.00	LCY	CREW-40	0.50	90	19	0	0	110
				0.05	6.87	1.72	0.00	0.00	8.59
USR Demo and remove existing pipe	20.00	LF	CREW-34	1.00	137	34	0	0	172
				1.00	114.27	0.00	0.00	0.00	114.27
USR Removal current connections (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00	114	0	0	0	114
				0.23	27.46	2.83	15.37	0.00	45.66
<b>Install Temporary UG Telephone to Intake</b>	<b>20.00</b>	<b>LF</b>		<b>4.50</b>	<b>549</b>	<b>57</b>	<b>307</b>	<b>0</b>	<b>913</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
				0.17	15.80	5.73	0.00	0.00	21.53
USR Place & compact sand	1.00	ECY	CREW-32	0.50	69	20	0	0	89
				0.00	0.00	0.00	9.63	0.00	9.63
USR Bank run sand, material only	1.10	TON		0.00	0	0	11	0	11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR Telephone cable, #22 AWG, 51 pair (Note: Referenced 2006 MII English Cost Book, Source Tag 167107601240.)	20.00	LF	CREW-09	0.33	38	0	85	0	123
				0.03	3.81	0.00	7.30	0.00	11.11
USR Telephone cable, #22 AWG, 100 pair (Note: Referenced 2006 MII English Cost Book, Source Tag 167107601280.)	20.00	LF	CREW-09	0.67	76	0	146	0	222
				0.03	3.81	0.00	1.84	0.00	5.65
USR 2" PVC Conduit, 2 @ 2" diameter (Note: Referenced 2008 RS Means Heavy Construction, page 329, 33 71 19.17 4600.)	20.00	LF	CREW-09	0.67	76	0	37	0	113
				0.02	1.90	0.00	1.44	0.00	3.35
USR Fiber optics cable, 50 microns, 12 fiber (Note: Referenced 2008 RS Means Heavy Construction, page 204, 27 13 23.13 1080.)	20.00	LF	CREW-09	0.33	38	0	29	0	67
				1.00	114.27	0.00	0.00	0.00	114.27
USR Testing (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00	114	0	0	0	114
				0.17	30.03	6.48	0.00	0.00	36.51
USR Backfill & compaction	3.00	LCY	CREW-40	0.50	90	19	0	0	110
				0.15	19.46	3.55	0.00	0.00	23.01
<b>Remove Temporary UG Telephone to Intake</b>	<b>20.00</b>	<b>LF</b>		<b>3.00</b>	<b>389</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>460</b>
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
				0.13	22.52	4.86	0.00	0.00	27.38
USR Backfill & compaction	4.00	LCY	CREW-40	0.50	90	19	0	0	110
				0.05	6.87	1.72	0.00	0.00	8.59
USR Demo and remove existing pipe	20.00	LF	CREW-34	1.00	137	34	0	0	172
				1.00	114.27	0.00	0.00	0.00	114.27
USR Removal current connections (Note: Allow 1 hour.)	1.00	HR	CREW-09	1.00	114	0	0	0	114
				0.24	29.37	2.83	27.71	0.00	59.90
<b>Install Permanent UG Telephone to Intake</b>	<b>20.00</b>	<b>LF</b>		<b>4.83</b>	<b>587</b>	<b>57</b>	<b>554</b>	<b>0</b>	<b>1,198</b>
				0.17	15.80	5.73	0.00	0.00	21.53

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Trench excavation with backhoe	3.00	BCY	CREW-41	0.50	47	17	0	0	65
				0.50	68.98	19.93	0.00	0.00	88.91
USR Place & compact sand	1.00	ECY	CREW-32	0.50	69	20	0	0	89
				0.00	0.00	0.00	9.63	0.00	9.63
USR Bank run sand, material only	1.10	TON		0.00	0	0	11	0	11
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR Telephone cable, #22 AWG, 51 pair	20.00	LF	CREW-09	0.02	1.90	0.00	4.25	0.00	6.16
(Note: Referenced 2006 MII English Cost Book, Source Tag 167107601240.)				0.33	38	0	85	0	123
USR Telephone cable, #22 AWG, 100 pair	20.00	LF	CREW-09	0.03	3.81	0.00	7.30	0.00	11.11
(Note: Referenced 2006 MII English Cost Book, Source Tag 167107601280.)				0.67	76	0	146	0	222
USR Fiber optics cable, 50 microns, 12 fiber	20.00	LF	CREW-09	0.02	1.90	0.00	1.44	0.00	3.35
(Note: Referenced 2008 RS Means Heavy Construction, page 204, 27 13 23.13 1080.)				0.33	38	0	29	0	67
USR 2" RGS Conduit, 2 @ 2" diameter	20.00	LF	CREW-09	0.05	5.71	0.00	14.18	0.00	19.89
(Note: Referenced 2008 RS Means Heavy Construction, page 329, 33 71 19.17 6200.)				1.00	114	0	284	0	398
USR Backfill & compaction	3.00	LCY	CREW-40	0.17	30.03	6.48	0.00	0.00	36.51
				0.50	90	19	0	0	110
USR Testing	1.00	HR	CREW-09	1.00	114.27	0.00	0.00	0.00	114.27
(Note: Allow 1 hour.)				1.00	114	0	0	0	114
				0.00	0.00	0.00	0.00	154.11	154.11
<b>4.22 Radial Grouting in Tunnels</b>	<b>1,440.00</b>	<b>LF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>221,920</b>	<b>221,920</b>
USR Mob and Demob (Confined Space)	1.00	EA		0.00	0.00	0.00	0.00	25,000.00	25,000.00
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #44, as obtained from EC-GG.)				0.00	0	0	0	25,000	25,000
USR 2.125" Confined Core Drilling, Rock	1,440.00	LF		0.00	0.00	0.00	0.00	95.00	95.00
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #39, as obtained from EC-GG.)				0.00	0	0	0	136,800	136,800
USR Inspector	24.00	DAY		0.00	0.00	0.00	0.00	825.00	825.00
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #9, as obtained from EC-GG. Assuming two holes can be completed in a 10-HR day, this equates to 48 holes / 2 holes per day = 24 days.)				0.00	0	0	0	19,800	19,800
USR Hydraulic Pressure Testing	288.00	EA		0.00	0.00	0.00	0.00	140.00	140.00
(Note: Referenced from drilling contract W91237-07-D-0011, Bid Item #28, as obtained from EC-GG. Cost includes pressure testing, grout, and placement of grout.)				0.00	0	0	0	40,320	40,320
				0.01	2.93	3.63	14.65	-0.08	21.12
<b>5 Downstream Seepage Blanket</b>	<b>186,000.00</b>	<b>CY</b>		<b>1,907.57</b>	<b>544,309</b>	<b>675,239</b>	<b>2,724,713</b>	<b>-15,532</b>	<b>3,928,730</b>
				8.00	3,820.83	4,391.03	0.00	-1,000.00	7,211.86
<b>5.1 Clearing</b>	<b>22.00</b>	<b>ACR</b>		<b>176.00</b>	<b>84,058</b>	<b>96,603</b>	<b>0</b>	<b>-22,000</b>	<b>158,661</b>
USR Clearing & Grubbing	22.00	ACR	CREW-08	8.00	3,820.83	4,391.03	0.00	0.00	8,211.86
				176.00	84,058	96,603	0	0	180,661
USR Tree allowance	22.00	ACR		0.00	0.00	0.00	0.00	-1,000.00	-1,000.00
(Note: Allow \$1,000/ACR for the cost of trees reimbursable to the Government.)				0.00	0	0	0	-22,000	-22,000

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
				0.01	2.17	2.94	13.83	0.00	18.94
<b>5.2 Seepage Blanket Fill</b>	<b>186,000.00</b>	<b>ECY</b>		<b>1,413.60</b>	<b>403,192</b>	<b>547,597</b>	<b>2,572,851</b>	<b>0</b>	<b>3,523,640</b>
(Note: Assumed material would be purchased from a supplier. A borrow area is currently available on-site, but it is unknown at this time whether the material would be suitable for construction of the blanket.)									
USR Sand, material only	267,170.40	TON		0.00	0.00	0.00	9.63	0.00	9.63
				0.00	0	0	2,572,851	0	2,572,851
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON. Assume 1.2 TON/LCY, 1.14 LCY/ECY, and 5% waste.)									
USR Spread and compact sand	212,040.00	LCY	CREW-37	0.01	1.90	2.58	0.00	0.00	4.48
				1,413.60	403,192	547,597	0	0	950,789
				4.35	604.95	635.84	1,233.44	0.00	2,474.23
<b>5.3 Seeding</b>	<b>22.00</b>	<b>ACR</b>		<b>95.70</b>	<b>13,309</b>	<b>13,988</b>	<b>27,136</b>	<b>0</b>	<b>54,433</b>
USR Seeding	22.00	ACR	CREW-33	4.35	604.95	635.84	1,233.44	0.00	2,474.23
				95.70	13,309	13,988	27,136	0	54,433
(Note: Referenced 2008 RS Means Heavy Construction, page 282, 32 92 19.14 0200.)									
<b>5.4 16' x 6' deep x 4' Junction Box w/Cover</b>	<b>2.00</b>	<b>EA</b>		<b>13.00</b>	<b>2,777</b>	<b>904</b>	<b>10,700</b>	<b>0</b>	<b>14,381</b>
USR Junction Box, Precast Concrete 16'x8'x6'	2.00	EA	CREW-03	6.50	1,388.69	452.04	5,350.00	0.00	7,190.73
				4.00	1,064.00	291.08	5,350.00	0.00	6,705.08
				8.00	2,128	582	10,700	0	13,410
USR Excavating, structural, 1-1/2 C.Y. bucket, hydraulic backhoe	45.00	BCY	CREW-10	0.07	6.36	5.43	0.00	0.00	11.79
				3.00	286	244	0	0	531
USR Backfill & compaction	58.00	LCY	CREW-40	0.03	6.26	1.34	0.00	0.00	7.60
				2.00	363	78	0	0	441
				0.21	43.48	15.93	119.43	7.11	185.96
<b>5.5 54" BCCMP Outlet</b>	<b>500.00</b>	<b>LF</b>		<b>104.40</b>	<b>21,742</b>	<b>7,963</b>	<b>59,717</b>	<b>3,557</b>	<b>92,980</b>
USR Excavating, 1-1/2 C.Y. bucket, hydraulic backhoe	800.00	BCY	CREW-10	0.03	2.39	2.04	0.00	0.00	4.42
				20.00	1,909	1,628	0	0	3,537
USR Place & compact sand	60.00	ECY	CREW-32	0.08	11.58	3.32	0.00	0.00	14.90
				5.00	695	199	0	0	894
USR Bank run sand, material only	90.00	TON		0.00	0.00	0.00	9.63	0.00	9.63
				0.00	0	0	867	0	867
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 54" BCCMP pipe	500.00	LF	CREW-03	0.12	31.92	8.73	117.70	0.00	158.35
				60.00	15,960	4,366	58,850	0	79,176
(Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2220 for 60" pipe.)									
USR Load and haul material to spoil, 12 CY truck, 2 mile round trip (2 dumps)	410.00	LCY	CREW-26	0.02	2.79	3.26	0.00	0.00	6.05
				8.20	1,145	1,335	0	0	2,480
USR Backfill & compaction	560.00	LCY	CREW-40	0.02	3.63	0.78	0.00	0.00	4.41
				11.20	2,033	435	0	0	2,468
USR Trench box, rent per day, 10' x 20'	11.00	EA		0.00	0.00	0.00	0.00	323.40	323.40
				0.00	0	0	0	3,557	3,557
(Note: Referenced 2008 RS Means Heavy Construction, page 245, 31 52 16.10 4600. Used 10.5 days for excavation, placement of sand, pipe placement, backfill, and compaction.)									
				0.19	38.79	14.15	92.50	6.93	152.36
<b>5.6 Extend 48" BCCMP</b>	<b>280.00</b>	<b>LF</b>		<b>52.00</b>	<b>10,860</b>	<b>3,961</b>	<b>25,899</b>	<b>1,940</b>	<b>42,661</b>
USR Excavating, 1-1/2 C.Y. bucket, hydraulic backhoe	375.00	BCY	CREW-10	0.03	2.55	2.17	0.00	0.00	4.72
				10.00	955	814	0	0	1,769

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Place & compact sand	32.00	ECY	CREW-32	0.06 2.00	8.69 278	2.49 80	0.00 0	0.00 0	11.18 358
USR Bank run sand, material only	45.00	TON		0.00	0.00 0	0.00 0	9.63 433	0.00 0	9.63 433
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 48" BCCMP pipe (Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2200 for 48" pipe.)	280.00	LF	CREW-03	0.11 30.00	28.50 7,980	7.80 2,183	90.95 25,466	0.00 0	127.25 35,629
USR Trench box, rent per day, 10' x 20'	6.00	EA		0.00 0.00	0.00 0	0.00 0	0.00 0	323.40 1,940	323.40 1,940
(Note: Referenced 2008 RS Means Heavy Construction, page 245, 31 52 16.10 4600. Used 5.2 days for excavation, placement of sand, pipe placement, backfill, and compaction.)									
USR Load and haul material to spoil, 12 CY truck, 2 mile round trip (2 dumps)	185.00	LCY	CREW-26	0.02 4.00	3.02 559	3.52 651	0.00 0	0.00 0	6.54 1,210
USR Backfill & compaction	275.00	LCY	CREW-40	0.02 6.00	3.96 1,089	0.85 233	0.00 0	0.00 0	4.81 1,322
				0.17	32.97	11.84	61.25	7.46	113.53
<b>5.7 Extend 36" BCCMP</b>	<b>130.00</b>	<b>LF</b>		<b>22.04</b>	<b>4,287</b>	<b>1,539</b>	<b>7,963</b>	<b>970</b>	<b>14,759</b>
USR Excavating, 1-1/2 C.Y. bucket, hydraulic backhoe	125.00	BCY	CREW-10	0.04 5.00	3.82 477	3.26 407	0.00 0	0.00 0	7.07 884
USR Place & compact sand	12.00	ECY	CREW-32	0.17 2.00	23.16 278	6.64 80	0.00 0	0.00 0	29.81 358
USR Bank run sand, material only	18.00	TON		0.00 0.00	0.00 0	0.00 0	9.63 173	0.00 0	9.63 173
(Note: Quote on 3/12/2008 by Keith B. Kimble of Kimble Clay & Limestone @ (330) 343-1226 for \$9.00/TON.)									
USR 36" BCCMP pipe (Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2180 for 36" pipe.)	130.00	LF	CREW-03	0.08 10.00	20.46 2,660	5.60 728	59.92 7,790	0.00 0	85.98 11,177
USR Trench box, rent per day, 10' x 20'	3.00	EA		0.00 0.00	0.00 0	0.00 0	0.00 0	323.40 970	323.40 970
(Note: Referenced 2008 RS Means Heavy Construction, page 245, 31 52 16.10 4600. Used 2.2 days for excavation, placement of sand, pipe placement, backfill, and compaction.)									
USR Load and haul material to spoil, 12 CY truck, 2 mile round trip (2 dumps)	52.00	LCY	CREW-26	0.02 1.04	2.79 145	3.26 169	0.00 0	0.00 0	6.05 315
USR Backfill & compaction	100.00	LCY	CREW-40	0.04 4.00	7.26 726	1.55 155	0.00 0	0.00 0	8.81 881
				3.83	679.36	257.99	1,471.25	0.00	2,408.59
<b>5.8 Flared End Section for 54" Pipe</b>	<b>2.00</b>	<b>EA</b>		<b>7.67</b>	<b>1,359</b>	<b>516</b>	<b>2,943</b>	<b>0</b>	<b>4,817</b>
USR Flared end section for 54" pipe (Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2292 for 60" end section.)	2.00	EA	CREW-03	1.33 2.67	354.67 709	97.03 194	1,471.25 2,943	0.00 0	1,922.94 3,846
USR Excavating, structural, 1-1/2 C.Y. bucket, hydraulic backhoe	45.00	BCY	CREW-10	0.07 3.00	6.36 286	5.43 244	0.00 0	0.00 0	11.79 531
USR Backfill & compaction	58.00	LCY	CREW-40	0.03 2.00	6.26 363	1.34 78	0.00 0	0.00 0	7.60 441
				5.00	733.87	355.84	1,070.00	0.00	2,159.71
<b>5.9 Flared End Section for 48" Pipe</b>	<b>1.00</b>	<b>EA</b>		<b>5.00</b>	<b>734</b>	<b>356</b>	<b>1,070</b>	<b>0</b>	<b>2,160</b>

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Excavating, structural, 1-1/2 C.Y. bucket, hydraulic backhoe	40.00	BCY	CREW-10	0.08 3.00	7.16 286	6.11 244	0.00 0	0.00 0	13.26 531
USR Backfill & compaction	50.00	LCY	CREW-40	0.02 1.00	3.63 182	0.78 39	0.00 0	0.00 0	4.41 220
USR Flared end section for 48" pipe (Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2290.)	1.00	EA	CREW-03	1.00 1.00	266.00 266	72.77 73	1,070.00 1,070	0.00 0	1,408.77 1,409
<b>5.10 Flared End Section for 36" Pipe</b>	<b>1.00</b>	<b>EA</b>		<b>4.00</b>	<b>638.42</b>	<b>274.43</b>	<b>518.95</b>	<b>0.00</b>	<b>1,431.80</b>
USR Excavating, structural, 1-1/2 C.Y. bucket, hydraulic backhoe	30.00	BCY	CREW-10	0.07 2.00	6.36 191	5.43 163	0.00 0	0.00 0	11.79 354
USR Backfill & compaction	40.00	LCY	CREW-40	0.03 1.00	4.54 182	0.97 39	0.00 0	0.00 0	5.51 220
USR Flared end section for 36" pipe (Note: Referenced 2008 RS Means Heavy Construction, page 310, 33 41 13.40 2285.)	1.00	EA	CREW-03	1.00 1.00	266.00 266	72.77 73	518.95 519	0.00 0	857.72 858
<b>5.11 Stone Lined Outlet, 6" Topsize Stone</b>	<b>250.00</b>	<b>ECY</b>		<b>14.17</b>	<b>1,352</b>	<b>1,538</b>	<b>15,916</b>	<b>0</b>	<b>18,806</b>
USR Placement of 6" stone (Note: Assume 1.7 TON/CY.)	425.00	TON	CREW-27	0.03 14.17	3.18 1,352	3.62 1,538	16.05 6,821	0.00 0	22.85 9,711
USR 6" stone, material only (Note: Allow \$20/TON due to time constraints for obtaining a quote and 1.7 TON/CY.)	425.00	TON		0.00 0.00	0.00 0	0.00 0	21.40 9,095	0.00 0	21.40 9,095
<b>6 Rehab Relief Wells</b>	<b>1.00</b>			<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>350,000</b>	<b>350,000</b>
USR Rehabilitation of relief wells (Note: No details were provided/available and an allowance of \$350k was suggested by EC-GS.)	1.00	LS		0.00	0	0	0	350,000	350,000
<b>7 Instrumentation</b>	<b>1.00</b>			<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,226,510</b>	<b>1,226,510</b>
USR Instrumentation (Note: Cost obtained from EC-GS.)	1.00	LS		0.00	0	0	0	1,226,510	1,226,510
<b>8 Mechanical/Electrical Upgrade</b>	<b>1.00</b>			<b>240.00</b>	<b>49,938.88</b>	<b>0</b>	<b>3,328,770.00</b>	<b>953,015.00</b>	<b>4,331,723.88</b>
<b>8.1 Gates</b>	<b>1.00</b>			<b>240.00</b>	<b>49,938.88</b>	<b>0</b>	<b>3,328,770.00</b>	<b>390,000.00</b>	<b>3,768,708.88</b>
USR Gates, 7' x 15' roller, 6 EA (Note: Quote on 5/1/2008 by Greg Willey @ (641) 774-2191 of Johnson Machine Works for \$17/LB.)	183,000.00	LB		0.00 0.00	0.00 0	0.00 0	18.19 3,328,770	0.00 0	18.19 3,328,770
USR Gate removal/installation (Note: There are 6 gates, each 7' x 15' in size. Upon discussions with Operations Division, allow two days to unhook machinery and remove an existing gate, one day to install a new gates, and two days to hook-up the machinery and testing; therefore, allow one week to remove/install 1 gate. A crane will not be needed because there is an existing crane inside the building which will be used to lift/remove/install the gates.)	240.00	HR	CREW-14	1.00 240.00	208.08 49,939	0.00 0	0.00 0	0.00 0	208.08 49,939
				0.00	0.00	0.00	0.00	12.00	12.00

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
USR Painting of gates & equipment	32,500.00	SF		0.00	0	0	0	390,000	390,000
(Note: Quote on 5/1/2008 by Greg Willey @ (641) 774-2191 of Johnson Machine Works for \$12/SF.)									
				0.00	0.00	0.00	0.00	563,015.00	563,015.00
<b>8.2 Hoisting Equipment</b>	<b>1.00</b>			<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>563,015</b>	<b>563,015</b>
USR Machinery rehabilitation	1.00	LS		0.00	0	0	0	563,015	563,015
(Note: Costs provided by EC-DE on 4/25/08 for \$563,015 (includes material and installation).)									
				300.00	38,899.52	10,406.31	12,256.85	101,750.00	163,312.67
<b>10 Environmental Protection</b>	<b>1.00</b>			<b>300.00</b>	<b>38,900</b>	<b>10,406</b>	<b>12,257</b>	<b>101,750</b>	<b>163,313</b>
				0.02	2.68	0.72	0.85	0.00	4.25
<b>10.1 Silt Fence</b>	<b>14,500.00</b>	<b>LF</b>		<b>300.00</b>	<b>38,900</b>	<b>10,406</b>	<b>12,257</b>	<b>0</b>	<b>61,563</b>
USR Silt fence, includes posts	14,500.00	LF	CREW-01	300.00	38,900	10,406	12,257	0	61,563
(Note: Referenced 2006 MII English Cost Book, source tag 023707001120.)									
				0.00	0.00	0.00	0.00	50.00	50.00
<b>10.2 Ditch Checks</b>	<b>35.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,750</b>	<b>1,750</b>
USR Ditch checks	35.00	EA		0.00	0	0	0	1,750	1,750
(Note: Referenced 2008 RS Means Heavy Construction, page 234, 31 25 13.10 1250. Allow \$50/EA for material and installation.)									
				0.00	0.00	0.00	0.00	50.00	50.00
<b>Miscellaneous</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100,000</b>	<b>100,000</b>
USR Miscellaneous	1.00	LS		0.00	0	0	0	100,000	100,000
(Note: Allow \$100k for all other environmental protection measures.)									
				0.00	0.00	0.00	0.00	200,000.00	200,000.00
<b>* Miscellaneous</b>	<b>1.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>200,000</b>	<b>200,000</b>
USR Develop staging areas	1.00	LS		0.00	0	0	0	50,000	50,000
(Note: Allow \$50k.)									
USR Haul roads	1.00	LS		0.00	0	0	0	50,000	50,000
(Note: Allow \$50k to develop and maintain some temporary haul roads during construction and reclaim to original condition following construction.)									
USR Develop slurry ponds	1.00	LS		0.00	0	0	0	50,000	50,000
(Note: Referencing Wolf Creek Dam IGE received from Nashville District on January 29, 2007, allow \$50k to develop 6 slurry ponds to be used during construction.)									
USR Reclaim slurry ponds	1.00	LS		0.00	0	0	0	50,000	50,000
(Note: Referencing Wolf Creek Dam IGE received from Nashville District on January 29, 2007, allow \$50k to reclaim the area occupied by the 6 slurry ponds.)									
				0.00	0.00	0.00	0.00	0.00	100,000.00
<b>18 Cultural Resources</b>	<b>1.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100,000</b>
USR Cultural resource preservation	1.00	LS		0.00	0	0	0	0	100,000
(Note: Per Brantley Jackson of CELRH-PM-PD-R on 8/7/08, an allowance of \$100,000 has been made to allow for any investigations that may impact the project.)									
				40.00	7,436.60	2,535.45	18,857.68	252,000.00	280,829.73
<b>19 Buildings, Grounds, &amp; Utilities</b>	<b>1.00</b>			<b>40.00</b>	<b>7,437</b>	<b>2,535</b>	<b>18,858</b>	<b>252,000</b>	<b>280,830</b>
				0.00	0.00	0.00	0.00	225.00	225.00
<b>9.0 Construction Office/Operations Building</b>	<b>1,120.00</b>	<b>SF</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>252,000</b>	<b>252,000</b>
(Note: The facility will be designed as a dual use - initially to be used as the office for construction personnel, then following construction to be turned over to Operations as a replacement for the existing Bolivar Dam Operations facility.)									
USR Construction office	1,120.00	SF		0.00	0	0	0	252,000	252,000

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Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
(Note: Referenced Marlinton Phase 1 DDR cost estimate which is at the October 2007 price level and for a 100' x 39' building. Marlinton estimate for the RE building is \$674,891.17 for the structure, including contractor markups but no contingency. Using CWCCIS (March 31, 2008 version) for the 19 Account and inflating from FY07 (681.88) to FY08 (702.49), this results in an escalation factor of 3.02%. Therefore \$700,000/(100' x 39') = \$180/SF for a 3900 SF building. This building is ¼ the size of the Marlinton building, therefore use 25% cost per SF or \$180 x 1.25 = \$225/SF for this construction office prior to contingencies.)									
<b>9.1 Parking &amp; Access Road Paving</b>	<b>200.00</b>	<b>SY</b>		<b>10.00</b>	<b>2,820</b>	<b>1,459</b>	<b>4,006</b>	<b>0</b>	<b>8,286</b>
USR Asphalt paving for parking lot, 6" stone base, 2" binder course, 1" topping (Note: Referenced 2008 RS Means Heavy Construction, page 261, 32 12 16.14 0020. Allow one day.)	1,800.00	SF	CREW-29	10.00	2,820	1,459	4,006	0	8,286
<b>9.2 Fencing</b>	<b>280.00</b>	<b>LF</b>		<b>20.00</b>	<b>2,733</b>	<b>708</b>	<b>13,033</b>	<b>0</b>	<b>16,473</b>
USR Chain link fence, industrial, aluminized steel, in concrete, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation (Note: Referenced 2008 RS Means Heavy Construction, page 269, 32 31 13.20 0900.)	280.00	LF	CREW-12	20.00	2,733	708	13,033	0	16,473
<b>9.3 16' Gate</b>	<b>1.00</b>	<b>EA</b>		<b>10.00</b>	<b>1,884</b>	<b>368</b>	<b>1,819</b>	<b>0</b>	<b>4,071</b>
USR Double swing gate, incl. posts & hardware, in concrete, 8' high, 20' opening (Note: Referenced 2008 RS Means Heavy Construction, page 270, 32 31 13.20 5090.)	1.00	EA	CREW-16	10.00	1,884	368	1,819	0	4,071
<b>Associated Costs</b>	<b>1.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18,270,102</b>
<b>01 Lands and Damages</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89,868</b>
<b>01.01 Project Planning</b>	<b>1.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89,868</b>
<b>01.01 Pre-Authorization Planning</b>	<b>1.00</b>	<b>EA</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89,868</b>
USR Prior expenditures	1.00	LS		0.00	0	0	0	0	4,368
(Note: Includes everything up to and including FY07 funding spent.)									
USR FY08 labor	1.00	LS		0.00	0	0	0	0	25,000
(Note: Info obtained from PM on data developed by PDT members during budget development meetings.)									
USR FY09 labor	1.00	LS		0.00	0	0	0	0	50,000
(Note: Info obtained from PM on data developed by PDT members during budget development meetings.)									
USR FY10 labor	1.00	LS		0.00	0	0	0	0	10,000
(Note: Info obtained from PM on data developed by PDT members during budget development meetings.)									
USR FY11 - FY15 labor	1.00	LS		0.00	0	0	0	0	500
(Note: Real estate labor expenses during construction. Derived from information gathered from PDT members.)									
<b>22 Feasibility Studies</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,782,424</b>
USR Prior expenditures	1.00	LS		0.00	0	0	0	0	1,782,424
(Note: Includes everything up to and including FY07 funding spent.)									
<b>30 Planning, Engineering and Design</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,963,933</b>
USR FY08 E&D	1.00	LS		0.00	0	0	0	0	975,000
(Note: FY08 expenses - \$25k for RE labor)									
USR FY09 E&D	1.00	LS		0.00	0	0	0	0	970,100
(Note: FY09 budget - \$500k for IRRM - \$50k for RE labor)									
USR FY10 E&D	1.00	LS		0.00	0	0	0	0	1,643,833

Description	Quantity	UOM	CrewTag	Duration	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectCost
(Note: FY10 budget - \$10k for RE labor) USR FY11 - FY15 E&D	1.00	LS		0.00	0	0	0	0	6,375,000
(Note: As collected from PDT members, pro-rated for additional construction year. On average, total was \$1.5M per year. Assume 1/2 year for FY15.)									
<b>31 Construction Management</b>	<b>1.00</b>	<b>LS</b>		<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,433,877</b>
USR Supervision & Administration (S&A)	1.00	LS		0.00	0	0	0	0	6,433,877
(Note: Assume 7.5% of construction costs.)									

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Description	Quantity	UOM	DirectCost	SubCMU	CostToPrime	PrimeCMU	ContractCost
<b>Indirect Costs</b>			<b>76,407,145</b>	<b>2,373,737</b>	<b>78,780,881</b>	<b>25,274,248</b>	<b>104,055,129</b>
<b>Construction Costs</b>	<b>1.00</b>	<b>EA</b>	<b>58,137,043</b>	<b>2,373,737</b>	<b>60,510,779</b>	<b>25,274,248</b>	<b>85,785,027</b>
<b>04 Dams</b>	<b>1.00</b>		<b>57,756,213</b>	<b>2,363,522</b>	<b>60,119,735</b>	<b>25,257,210</b>	<b>85,376,944</b>
1 Mobilization/Demobilization	1.00		800,000	0	800,000	0	800,000
2 Impervious Blanket	128,000.00	CY	4,349,626	18,410	4,368,036	1,906,097	6,274,133
3 Partial Cutoff Wall	620,400.00	SF	40,561,488	43,396	40,604,884	17,718,914	58,323,799
4 Abutment Cutoff Wall	48,000.00	SF	1,844,822	132,875	1,977,697	234,637	2,212,334
5 Downstream Seepage Blanket	186,000.00	CY	3,928,730	75,501	4,004,231	1,747,342	5,751,573
6 Rehab Relief Wells	1.00		350,000	124,008	474,008	206,845	680,853
7 Instrumentation	1.00		1,226,510	434,564	1,661,074	724,849	2,385,923
8 Mechanical/Electrical Upgrade	1.00		4,331,724	1,534,769	5,866,493	2,559,985	8,426,477
10 Environmental Protection	1.00		163,313	0	163,313	71,265	234,578
* Miscellaneous	1.00	EA	200,000	0	200,000	87,275	287,275
18 Cultural Resources	1.00	EA	100,000	0	100,000	0	100,000
19 Buildings, Grounds, & Utilities	1.00		280,830	10,215	291,044	17,038	308,082
9.0 Construction Office/Operations Building	1,120.00	SF	252,000	0	252,000	0	252,000
9.1 Parking & Access Road Paving	200.00	SY	8,286	2,936	11,222	4,897	16,119
9.2 Fencing	280.00	LF	16,473	5,836	22,309	9,735	32,045
9.3 16' Gate	1.00	EA	4,071	1,442	5,513	2,406	7,919
Associated Costs	1.00	EA	18,270,102	0	18,270,102	0	18,270,102
01 Lands and Damages	1.00	LS	89,868	0	89,868	0	89,868
01.01 Project Planning	1.00	EA	89,868	0	89,868	0	89,868
22 Feasibility Studies	1.00	LS	1,782,424	0	1,782,424	0	1,782,424
30 Planning, Engineering and Design	1.00	LS	9,963,933	0	9,963,933	0	9,963,933
31 Construction Management	1.00	LS	6,433,877	0	6,433,877	0	6,433,877

Description	Quantity	UOM	ContractCost	Contingency	ProjectCost
<b>Owner Costs</b>			<b>104,055,129</b>	<b>34,382,226</b>	<b>138,437,354</b>
<b>Construction Costs</b>					
	1.00	EA	85,785,027	27,883,438	113,668,465
<b>04 Dams</b>	1.00		85,376,944	27,648,105	113,025,050
1 Mobilization/Demobilization	1.00		800,000	259,069	1,059,069
2 Impervious Blanket	128,000.00	CY	6,274,133	2,031,788	8,305,921
3 Partial Cutoff Wall	620,400.00	SF	58,323,799	18,887,330	77,211,129
4 Abutment Cutoff Wall	48,000.00	SF	2,212,334	716,433	2,928,767
5 Downstream Seepage Blanket	186,000.00	CY	5,751,573	1,862,565	7,614,138
6 Rehab Relief Wells	1.00		680,853	220,485	901,337
7 Instrumentation	1.00		2,385,923	772,647	3,158,570
8 Mechanical/Electrical Upgrade	1.00		8,426,477	2,728,794	11,155,272
10 Environmental Protection	1.00		234,578	75,965	310,543
* Miscellaneous	1.00	EA	287,275	93,030	380,305
18 Cultural Resources	1.00	EA	100,000	161,084	261,084
19 Buildings, Grounds, & Utilities	1.00		308,082	74,249	382,332
9.0 Construction Office/Operations Building	1,120.00	SF	252,000	60,733	312,733
9.1 Parking & Access Road Paving	200.00	SY	16,119	3,885	20,003
9.2 Fencing	280.00	LF	32,045	7,723	39,767
9.3 16' Gate	1.00	EA	7,919	1,909	9,828
Associated Costs	1.00	EA	18,270,102	6,498,788	24,768,890
01 Lands and Damages	1.00	LS	89,868	11,471	101,339
01.01 Project Planning	1.00	EA	89,868	11,471	101,339
22 Feasibility Studies	1.00	LS	1,782,424	0	1,782,424
30 Planning, Engineering and Design	1.00	LS	9,963,933	4,144,541	14,108,474
31 Construction Management	1.00	LS	6,433,877	2,342,776	8,776,653

Crew Summary	Description	ManHours 222,176.68	EQHours 236,995.42	CrewHours 58,310.33	CrewCost 26,191,834
USR CREW-01 2-laborers, truck driver, truck		3.00	2.00		128.08
USR Truck Driver (Group 2)		930.00	620.00	310.00	39,704
USR Laborer (Group 1)		1.00			
USR Laborer (Group 1)		2.00			
GEN T40Z6960 TRUCK OPTION, FLATBED, 8' (2.4M) x 12' (3.7 M) (ADD 25,000 LB (11,340 KG) GVW TRUCK)			1.00		
GEN T50Z7400 TRUCK, HIGHWAY, 25,000 LB (11,340 KG) GVW, 4X2, 2 AXLE (ADD ACCESSORIES)			1.00		
USR CREW-02 3-carpenters + 1-laborer		4.00	0.00		130.60
USR Laborer (Group 1)		24.00	0.00	6.00	784
USR Carpenter		1.00			
USR Carpenter		3.00			
USR CREW-03 4-laborers, heavy equipment operator, oiler, 25T crane		6.00	1.00		264.25
USR Operating Engineer (Group 5)		676.00	112.67	112.67	29,772
USR Laborer (Group 1)		1.00			
USR Laborer (Group 1)		4.00			
USR Operating Engineer (Group 1)		1.00			
MAP C80TE006 CRANES, HYDRAULIC, TRUCK MTD, ALL TERRAIN, 25 TON, 94' BOOM, 6X4X2			1.00		
USR CREW-04 Aggregate placement crew		5.00	4.00		512.60
USR Laborer (Group 1)		50.00	40.00	10.00	5,126
USR Laborer (Group 1)		1.00			
USR Truck Driver (Group 2)		1.00			
USR Operating Engineer (Group 2)		3.00			
GEN G15Z3080 GRADER, MOTOR, ARTICULATED, 135 HP (101 KW), 12' (3.6 M) BLADE WIDTH			1.00		
GEN R45Z5690 ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 12 TON (10.9 MT), 67" (1.7 M) WIDE, ASPHALT COMPACTOR			1.00		
GEN T15Z6570 TRACTOR, CRAWLER (DOZER), 300-340 HP (224-254 KW), POWERSHIFT, W/UNIVERSAL BLADE			1.00		
GEN T60Z7910 TRUCK, WATER, OFF-HIGHWAY, 5,000 GAL (18,927 L), W/175 HP (130 KW) TRACTOR			1.00		
USR CREW-05 Asphalt coating crew		2.00	2.00		117.94
USR Operating Engineer (Group 2)		14.00	14.00	7.00	826
USR Operating Engineer (Group 2)		1.00			
USR Truck Driver (Group 2)		1.00			
GEN T40Z7055 TRUCK OPTION, WATER TANK, 3,000 GAL (11,356 L) (ADD 45,000 LB (20,412 KG) GVW TRUCK)			1.00		
GEN T50Z7580 TRUCK, HIGHWAY, 45,000 LB (20,412 KG) GVW, 6X4, 3 AXLE (ADD ACCESSORIES)			1.00		
USR CREW-06 Asphalt pavement demolition		7.00	6.00		473.00
USR Laborer (Group 1)		280.00	240.00	40.00	18,920
USR Laborer (Group 1)		3.00			
USR Operating Engineer (Group 2)		2.00			
USR Truck Driver (Group 2)		2.00			
MAP H25KN002 HYDRAULIC EXCAVATOR, ATTACHMENT, CONCRETE BREAKER, 3,000 FT-LB, W/4.75" DIA. POINT (ADD 26,000-36,000 LB HYDRAULIC EXCAVATOR)			1.00		
GEN H25Z3680 HYDRAULIC EXCAVATOR, ATTACHMENT, MATERIAL HANDLING, BUCKET, 36" (914 MM) PAVEMENT REMOVAL (ADD TO 75,000 LB (34,019 KG) HYDRAULIC EXCAVATOR)			1.00		

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Description	ManHours	EQHours	CrewHours	CrewCost
MAP L40CA024 LOADER, FRONT END, WHEEL, 3.50 CY BUCKET, ARTICULATED, 4X4			1.00	
MAP L50JC001 LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4			1.00	
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4			2.00	
USR CREW-07 Asphalt paving crew	12.00	4.00		721.66
USR Operating Engineer (Group 2)	120.00	40.00	10.00	7,217
	4.00			
USR Laborer (Group 1)	8.00			
GEN A30Z0640 ASPHALT PAVER, 10.0' (3.1 M) WIDE, SELF PROPELLED, W/19' (5.8 M) SCREED EXTENSION, WHEEL			1.00	
GEN R30Z5645 ROLLER, STATIC, SELF-PROPELLED, PNEUMATIC, 14 TON (12.7 MT), 68" (1.7 M) WIDE			1.00	
GEN R45Z5690 ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 12 TON (10.9 MT), 67" (1.7 M) WIDE, ASPHALT COMPACTOR			2.00	
USR CREW-08 Clearing and grubbing crew	11.00	10.00		894.80
USR Laborer (Group 1)	1,980.00	1,800.00	180.00	161,063
	3.00			
USR Truck Driver (Group 2)	2.00			
USR Operating Engineer (Group 2)	2.00			
USR Operating Engineer (Group 3)	2.00			
USR Operating Engineer (Group 5)	1.00			
USR Laborer (Group 1)	1.00			
GEN B20Z1000 BRUSH CHIPPER, 22" (559 MM) DIA LOG DISC TYPE CUTTER, TRAILER MOUNTED			1.00	
EP C05OL003 CHAIN SAW, 16"-36" BAR			2.00	
EP H25LU025 HYDRAULIC EXCAVATOR, ATTACHMENT, MATERIAL HANDLING, GRAPPLE, 3.50CY, 4-TINE/ 5-TINE (ADD 45,000 LB HYDRAULIC EXCAVATOR)			1.00	
GEN H25Z3185 HYDRAULIC EXCAVATOR, CRAWLER, 55,000 LB (24,948 KG), 1.50 CY (1.2 M3) BUCKET, 23.3' (7.1 M) MAX DIGGING DEPTH			1.00	
GEN L10Z3860 LAND CLEARING EQUIPMENT, V-TREE CUTTER (ADD 251-300 HP (187-224 KW) D8 DOZER)			1.00	
MAP L50JC001 LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4			1.00	
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)			1.00	
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4			2.00	
USR CREW-09 Electrician crew	2.00	0.00		84.64
USR Electrician	29.67	0.00	14.83	1,255
	2.00			
USR CREW-10 Excavation crew (1-1/2 CY hydraulic excavator)	2.00	1.00		150.11
USR Laborer (Group 1)	92.00	46.00	46.00	6,905
	1.00			
USR Operating Engineer (Group 2)	1.00			
EP H25CA025 HYDRAULIC EXCAVATOR, CRAWLER, 60,700 LBS, 1.75 CY BUCKET, 23.25' MAX DIGGING DEPTH			1.00	
USR CREW-12 Fence installation crew	3.00	2.00		128.78
USR Laborer (Group 1)	75.00	50.00	25.00	3,219
	2.00			
USR Truck Driver (Group 2)	1.00			

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Description	ManHours	EQHours	CrewHours	CrewCost
GEN L15Z4050 POST HOLE DRILL, UP TO 8" (203 MM) DIA, 30" (762 MM) DEEP, ONE MAN OPERATION		1.00		
GEN T50Z7400 TRUCK, HIGHWAY, 25,000 LB (11,340 KG) GVW, 4X2, 2 AXLE (ADD ACCESSORIES)		1.00		
USR CREW-13 Flagpole demolition crew	3.00	1.00		133.96
USR Laborer (Group 1)	21.00	7.00	7.00	938
	2.00			
USR Operating Engineer (Group 1)	1.00			
MAP C75GV021 CRANES, HYDRAULIC, SELF-PROPELLED, YARD, 10 TON, 30' BOOM, 4X4, NON-ROTATING OPERATOR'S CAB		1.00		
USR CREW-14 Gate installation crew	4.00	0.00		155.32
USR Ironworker	960.00	0.00	240.00	37,277
	4.00			
USR CREW-16 Guardrail crew	4.00	2.00		165.87
USR Laborer (Group 1)	80.00	40.00	20.00	3,317
	2.00			
USR Truck Driver (Group 2)	1.00			
USR Operating Engineer (Group 4)	1.00			
GEN T50Z7400 TRUCK, HIGHWAY, 25,000 LB (11,340 KG) GVW, 4X2, 2 AXLE (ADD ACCESSORIES)		1.00		
GEN XMEZ9120 POST DRIVER, 8" (203 MM) MAX DIA POST, 30,000 LB (13,608 KG) IMPACT (ADD 20,000-35,000 LB (9,072-15,876 KG) GVW TRUCK)		1.00		
USR CREW-17 Guidewall excavation crew	2.00	2.00		233.83
USR Operating Engineer (Group 1)	14,046.00	14,046.00	7,023.00	1,642,172
	1.00			
USR Laborer (Group 1)	1.00			
EP B25HB015 BUCKET, CLAMSHELL, 6.0 CY, HEAVY DUTY/DIGGING		0.50		
EP B25HB015 BUCKET, CLAMSHELL, 6.0 CY, HEAVY DUTY/DIGGING		0.50		
MAP C85LB023 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, DRAGLINE/CLAMSHELL, 250 TON, 120' BOOM (ADD BUCKET)		0.50		
MAP C85LB023 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, DRAGLINE/CLAMSHELL, 250 TON, 120' BOOM (ADD BUCKET)		0.50		
USR CREW-18 Hauling crew (drill cuttings)	1.00	1.00		97.25
USR Truck Driver (Group 2)	5,852.50	5,852.50	5,852.50	569,144
	1.00			
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4		1.00		
USR CREW-19 Hauling to spoil (1 truck, 2-mile round trip)	1.00	1.00		97.25
USR Truck Driver (Group 2)	3.00	3.00	3.00	292
	1.00			
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4		1.00		
USR CREW-20 Hydromill support crew	4.00	10.00		1,223.91
USR Operating Engineer (Group 3)	48,948.00	122,370.00	12,237.00	14,976,983
	1.00			
USR Operating Engineer (Group 2)	1.00			
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 5)	1.00			

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Description	ManHours	EQHours	CrewHours	CrewCost
USR OPERATING EXPENSES FOR DESANDING PLANT			1.00	
EP C40MU004 CONCRETE MIXERS, MIXER, CONCRETE, 9 CF, TRAILER MTD			1.00	
EP G10CA018 GENERATOR SET, SKID MTD, 1000 EKW, 480 VOLT, 60 HZ PGS PRIME			4.00	
MAP L35CA014 LOADER, FRONT END, CRAWLER, 3.20 CY BUCKET			1.00	
MAP P50WC004 PUMP, WATER, CENTRIFUGAL, TRASH, ENGINE DRIVE, 6" DIA, 1,300 GPM @ 100' HEAD ,TRAILER MTD (ADD HOSES)			2.00	
EP W30SO003 WATER TANK, PORTABLE, TRAILER MTD, SELF ELEVATING, 12,000 GAL, 10" PIPE			1.00	
USR CREW-21 Hydromill support crew (standby)	4.00	10.00		200.07
USR Operating Engineer (Group 2)	7,236.00	18,090.00	1,809.00	361,933
USR Operating Engineer (Group 3)	1.00			
USR Operating Engineer (Group 5)	1.00			
USR Laborer (Group 1)	1.00			
USR OPERATING EXPENSES FOR DESANDING PLANT			1.00	
EP C40MU004 CONCRETE MIXERS, MIXER, CONCRETE, 9 CF, TRAILER MTD			1.00	
EP G10CA018 GENERATOR SET, SKID MTD, 1000 EKW, 480 VOLT, 60 HZ PGS PRIME			4.00	
MAP L35CA014 LOADER, FRONT END, CRAWLER, 3.20 CY BUCKET			1.00	
MAP P50WC004 PUMP, WATER, CENTRIFUGAL, TRASH, ENGINE DRIVE, 6" DIA, 1,300 GPM @ 100' HEAD ,TRAILER MTD (ADD HOSES)			2.00	
EP W30SO003 WATER TANK, PORTABLE, TRAILER MTD, SELF ELEVATING, 12,000 GAL, 10" PIPE			1.00	
USR CREW-22 Hydromilling crew	3.00	1.00		123.21
USR Operating Engineer (Group 1)	36,712.87	12,237.62	12,237.62	1,507,798
USR Laborer (Group 1)	1.00			
USR Laborer (Group 1)	2.00			
USR OPERATING EXPENSES FOR HYDROMILL			1.00	
USR CREW-23 Hydromilling crew (standby)	3.00	1.00		99.64
USR Laborer (Group 1)	5,425.13	1,808.38	1,808.38	180,187
USR Operating Engineer (Group 1)	2.00			
USR Operating Engineer (Group 1)	1.00			
USR OPERATING EXPENSES FOR HYDROMILL			1.00	
USR CREW-24 Large pipe demolition crew	5.00	1.00		195.55
USR Operating Engineer (Group 2)	15.00	3.00	3.00	587
USR Laborer (Group 1)	1.00			
USR Laborer (Group 1)	4.00			
EP L50CS006 LOADER / BACKHOE, WHEEL, 1.30 CY FRONT END BUCKET, 24" DIP, 6.4 CF, 18' DIGGING DEPTH, 4X4, EXTENDAHOE			1.00	
USR CREW-25 Lightpole demolition crew	4.00	1.00		187.78
USR Laborer (Group 1)	12.00	3.00	3.00	563
USR Electrician	1.00			
USR Electrician	2.00			
USR Operating Engineer (Group 1)	1.00			

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Description	ManHours	EQHours	CrewHours	CrewCost
MAP C75GV021 CRANES, HYDRAULIC, SELF-PROPELLED, YARD, 10 TON, 30' BOOM, 4X4, NON-ROTATING OPERATOR'S CAB		1.00		
	3.00	3.00		264.15
USR CREW-26 Loading/hauling to spoil (2 trucks, 2-mile round trip)	39.72	39.72	13.24	3,497
USR Truck Driver (Group 2)	2.00			
USR Operating Engineer (Group 2)	1.00			
MAP L40CA019 LOADER, FRONT END, WHEEL, 1.70 CY BUCKET, ARTICULATED, 4X4		1.00		
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4		2.00		
	2.00	1.00		177.25
USR CREW-27 Outlet stone placement crew	28.33	14.17	14.17	2,511
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 2)	1.00			
EP H25KC025 HYD EXCAV, CRWLR, 102,200 LBS 1.25CY BKT,25'DD,65.0'L-REACH BM		1.00		
	6.00	2.00		344.99
USR CREW-29 Parking lot paving crew	60.00	20.00	10.00	3,450
USR Laborer (Group 1)	4.00			
USR Operating Engineer (Group 2)	2.00			
MAP A30BG003 ASPHALT FINISHER, 10' WIDE SCREED, WHEEL, W/19' 6" SCREED EXTENSION, 215 CF HOPPER		1.00		
MAP R45BO004 ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 2.9 TON, 47.2" WIDE, 2X1, ASPHALT COMPACTOR		1.00		
	3.00	0.00		111.74
USR CREW-30 Plumbing crew	7.50	0.00	2.50	279
USR Plumber	2.00			
USR Laborer (Group 1)	1.00			
	3.00	2.00		215.53
USR CREW-31 Prepare and roll sub-base crew	30.00	20.00	10.00	2,155
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 2)	2.00			
GEN G15Z3080 GRADER, MOTOR, ARTICULATED, 135 HP (101 KW), 12' (3.6 M) BLADE WIDTH		1.00		
GEN R50Z5810 ROLLER, VIBRATORY, SELF-PROPELLED, SINGLE DRUM, SMOOTH, 12 TON (10.9 MT), 84" (2.1 M) WIDE, SOIL COMPACTOR		1.00		
	3.00	2.00		139.72
USR CREW-32 Sand bedding placement crew	42.00	28.00	14.00	1,956
USR Laborer (Group 2)	2.00			
USR Operating Engineer (Group 2)	1.00			
GEN C10Z1400 COMPACTOR, VIBROPLATE, 21" (534 MM) WIDE x 24" (610 MM) PLATE		1.00		
EP L50CS006 LOADER / BACKHOE, WHEEL, 1.30 CY FRONT END BUCKET, 24" DIP, 6.4 CF, 18' DIGGING DEPTH, 4X4, EXTENDAHOE		1.00		
	3.00	2.00		246.62
USR CREW-33 Seeding	591.15	394.10	197.05	48,596
USR Truck Driver (Group 2)	1.00			
USR Operating Engineer (Group 2)	1.00			
USR Laborer (Group 1)	1.00			

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Description	ManHours	EQHours	CrewHours	CrewCost
MAP L15FG001 LANDSCAPING EQUIPMENT, 3,000 GAL, HYDROSEEDER, TRUCK MTD (INCLUDES 56,000 GVW TRUCK)		1.00		
GEN T50Z7580 TRUCK, HIGHWAY, 45,000 LB (20,412 KG) GVW, 6X4, 3 AXLE (ADD ACCESSORIES)		1.00		
USR CREW-34 Small pipe demolition crew	3.00	1.00		133.91
USR Operating Engineer (Group 2)	39.00	13.00	13.00	1,741
	1.00			
USR Laborer (Group 1)	2.00			
EP L50CS006 LOADER / BACKHOE, WHEEL, 1.30 CY FRONT END BUCKET, 24" DIP, 6.4 CF, 18' DIGGING DEPTH, 4X4, EXTENDAHOE		1.00		
USR CREW-35 Spreading and compaction crew (drill cuttings)	4.00	4.00		294.29
USR Operating Engineer (Group 2)	23,410.00	23,410.00	5,852.50	1,722,342
	2.00			
USR Truck Driver (Group 2)	1.00			
USR Operating Engineer (Group 5)	1.00			
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)		0.50		
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)		0.50		
MAP T50XX027 TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)		0.50		
MAP T50XX027 TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)		0.50		
EP R30CA003 ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE		0.50		
EP R30CA003 ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE		0.50		
EP T40RS001 TRUCK OPTIONS, WATER TANK, 2,000 GAL (ADD 28,000 GVW TRUCK)		0.50		
EP T40RS001 TRUCK OPTIONS, WATER TANK, 2,000 GAL (ADD 28,000 GVW TRUCK)		0.50		
USR CREW-36 Spreading/compaction crew	5.00	3.00		510.00
USR Operating Engineer (Group 2)	1,106.67	664.00	221.33	112,880
	3.00			
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 5)	1.00			
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)		2.00		
EP R30CA003 ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE		1.00		
USR CREW-37 Spreading/compaction crew (spoil area)	6.00	5.00		593.79
USR Laborer (Group 1)	16,008.00	13,340.00	2,668.00	1,584,225
	1.00			
USR Truck Driver (Group 2)	1.00			
USR Operating Engineer (Group 2)	3.00			
USR Operating Engineer (Group 5)	1.00			
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)		2.00		
MAP T50XX027 TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)		1.00		
EP R30CA003 ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE		1.00		
EP T40RS001 TRUCK OPTIONS, WATER TANK, 2,000 GAL (ADD 28,000 GVW TRUCK)		1.00		
	4.00	2.00		375.56

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Description	ManHours	EQHours	CrewHours	CrewCost
USR CREW-38 Strip and stockpile topsoil crew	885.33	442.67	221.33	83,124
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 2)	2.00			
USR Operating Engineer (Group 5)	1.00			
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)		2.00		
	8.00	3.00		436.00
USR CREW-39 Tremie concrete crew	56,184.00	21,069.00	7,023.00	3,062,043
USR Operating Engineer (Group 1)	1.00			
USR Laborer (Group 1)	2.00			
USR Cement Mason	4.00			
USR Operating Engineer (Group 2)	1.00			
MAP C85MA004 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, 100 TON, 210' BOOM, LIFTING		1.00		
GEN L50Z4650 LOADER/BACKHOE, WHEEL, 1.25 CY (0.9 M3) FRONT END BUCKET, 12.0' (3.7 M) DEPTH OF HOE, 24" (0.61 M) DIPPER, 7.0 CF (0.2 M3), 4X2		1.00		
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5 HP (5.6 KW) GENERATOR		1.00		
	4.00	3.00		169.19
USR CREW-40 Trench backfill & compaction crew	144.80	108.60	36.20	6,125
USR Laborer (Group 1)	3.00			
USR Operating Engineer (Group 2)	1.00			
GEN C10Z1380 COMPACTOR, VIBROPLATE, 18" (457 MM) WIDE x 21.5" (546 MM) PLATE		2.00		
MAP L40CA019 LOADER, FRONT END, WHEEL, 1.70 CY BUCKET, ARTICULATED, 4X4		1.00		
	2.00	1.00		103.09
USR CREW-41 Trench excavation with backhoe	18.00	9.00	9.00	928
USR Laborer (Group 1)	1.00			
USR Operating Engineer (Group 2)	1.00			
EP L50CS006 LOADER / BACKHOE, WHEEL, 1.30 CY FRONT END BUCKET, 24" DIP, 6.4 CF, 18' DIGGING DEPTH, 4X4, EXTENDAHOE		1.00		

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Description	ManHours	BaseWage	TaxableFringe	Payroll	WCI	NonTaxFringe	Subsistence	Total	LaborType
<b>Labor Rates</b>	<b>223,451.6772</b>	<b>5,588,850.83</b>	<b>0.00</b>	<b>950,274.58</b>	<b>400,348.36</b>	<b>1,968,270.99</b>	<b>0.00</b>	<b>9,791,675.67</b>	
USR Carpenter	18.0000	22.8800 411.84	0.0000 0.00	54.70	29.48	10.3800 186.84	0.0000 0.00	37.9364 682.86	Journeyman
USR Cement Mason	28,092.0000	25.0000 702,300.00	0.0000 0.00	114,006.19	50,263.61	8.3500 234,568.20	0.0000 0.00	44.7526 1,257,189.06	Journeyman
USR Electrician	35.6667	26.6900 951.94	0.0000 0.00	126.44	59.52	15.6300 557.47	0.0000 0.00	47.7752 1,695.37	Journeyman
USR Ironworker	960.0000	22.7600 21,849.60	0.0000 0.00	2,902.06	1,326.05	16.0700 15,427.20	0.0000 0.00	43.2343 41,504.92	Journeyman
USR Laborer (Group 1)	69,141.6546	24.1200 1,667,696.71	0.0000 0.00	308,119.51	119,663.33	6.7000 463,249.09	0.0000 0.00	35.7499 2,871,871.82	Journeyman
USR Laborer (Group 1)	180.0000	3.6180 651.24	0.0000 0.00	86.50	46.61	6.7000 1,206.00	0.0000 0.00	11.0575 1,990.35	Foreman
USR Laborer (Group 2)	28.0000	24.2900 680.12	0.0000 0.00	90.33	47.23	6.7000 187.60	0.0000 0.00	35.9546 1,005.28	Journeyman
USR Operating Engineer (Group 1)	28,214.6689	27.9400 788,317.85	0.0000 0.00	148,159.52	56,419.91	10.0600 283,839.57	0.0000 0.00	50.7435 1,441,249.90	Journeyman
USR Operating Engineer (Group 2)	43,212.3235	27.8200 1,202,166.84	0.0000 0.00	184,570.03	86,182.69	10.0600 434,715.97	0.0000 0.00	43.5661 2,028,028.60	Journeyman
USR Operating Engineer (Group 3)	14,406.0000	26.7800 385,792.68	0.0000 0.00	69,657.83	27,611.18	10.0600 144,924.36	0.0000 0.00	48.9004 702,087.97	Journeyman
USR Operating Engineer (Group 4)	20.0000	25.6000 512.00	0.0000 0.00	68.00	64.65	10.0600 201.20	0.0000 0.00	41.5974 845.85	Journeyman
USR Operating Engineer (Group 5)	23,301.8333	20.1400 469,298.92	0.0000 0.00	76,182.74	33,587.72	10.0600 234,416.44	0.0000 0.00	34.3164 869,214.46	Journeyman
USR Plumber	5.0000	26.8300 134.15	0.0000 0.00	17.82	9.17	13.6300 68.15	0.0000 0.00	46.6827 229.29	Journeyman
USR Truck Driver (Group 2)	15,836.5302	21.9800 348,086.93	0.0000 0.00	46,232.91	25,037.21	9.7700 154,722.90	0.0000 0.00	36.2425 574,079.94	Journeyman

Equipment Rates	Description	ConditionType	EQHours	Total
			<b>236,995.4223</b>	<b>18,340,488.40</b>
EP B25HB015	BUCKET, CLAMSHELL, 6.0 CY, HEAVY DUTY/DIGGING	Average	3,511.5000	15,1435 53,176.36
EP B25HB015	BUCKET, CLAMSHELL, 6.0 CY, HEAVY DUTY/DIGGING	Standby	3,511.5000	4,3934 15,427.30
EP C05OL003	CHAIN SAW, 16"-36" BAR	Average	360.0000	3,0661 1,103.81
EP C40MU004	CONCRETE MIXERS, MIXER, CONCRETE, 9 CF, TRAILER MTD	Average	12,237.0000	3,4131 41,765.73
EP C40MU004	CONCRETE MIXERS, MIXER, CONCRETE, 9 CF, TRAILER MTD	Standby	1,809.0000	0,2969 537.11
EP G10CA018	GENERATOR SET, SKID MTD, 1000 EKW, 480 VOLT, 60 HZ PGS PRIME	Average	48,948.0000	234,7709 11,491,567.32
EP G10CA018	GENERATOR SET, SKID MTD, 1000 EKW, 480 VOLT, 60 HZ PGS PRIME	Standby	7,236.0000	8,8977 64,383.55
EP H25CA025	HYDRAULIC EXCAVATOR, CRAWLER, 60,700 LBS, 1.75 CY BUCKET, 23.25' MAX DIGGING DEPTH	Average	46.0000	81,4055 3,744.65
EP H25KC025	HYD EXCAV, CRWLR, 102,200 LBS 1.25CY BKT,25'DD,65.0'L-REACH BM	Average	14.1667	108,5481 1,537.77
EP H25LU025	HYDRAULIC EXCAVATOR, ATTACHMENT, MATERIAL HANDLING, GRAPPLE, 3.50CY, 4-TINE/ 5-TINE (ADD 45,000 LB HYDRAULIC EXCAVATOR)	Average	180.0000	6,6167 1,191.01
EP L50CS006	LOADER / BACKHOE, WHEEL, 1.30 CY FRONT END BUCKET, 24" DIP, 6.4 CF, 18' DIGGING DEPTH, 4X4, EXTENDAHOE	Average	39.0000	34,3881 1,341.14
EP R30CA003	ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE	Average	5,815.5833	96,5592 561,548.18
EP R30CA003	ROLLER, STATIC, SELF-PROPELLED, LANDFILL/SOIL COMPACTOR, SHEEPSFOOT, 4X4, 23 TON, 56" DIA, 14.25' WIDTH PER 2-PASS, W/BLADE	Standby	2,926.2500	17,4264 50,993.93
EP T40RS001	TRUCK OPTIONS, WATER TANK, 2,000 GAL (ADD 28,000 GVW TRUCK)	Average	5,594.2500	5,3204 29,763.80
EP T40RS001	TRUCK OPTIONS, WATER TANK, 2,000 GAL (ADD 28,000 GVW TRUCK)	Standby	2,926.2500	1,7404 5,092.83
EP W30SO003	WATER TANK, PORTABLE, TRAILER MTD, SELF ELEVATING, 12,000 GAL, 10" PIPE	Average	12,237.0000	10,2576 125,522.09
EP W30SO003	WATER TANK, PORTABLE, TRAILER MTD, SELF ELEVATING, 12,000 GAL, 10" PIPE	Standby	1,809.0000	2,2684 4,103.53
GEN A30Z0640	ASPHALT PAVER, 10.0' (3.1 M) WIDE, SELF PROPELLED, W/19' (5.8 M) SCREED EXTENSION, WHEEL	Average	10.0000	125,2043 1,252.04
GEN B20Z1000	BRUSH CHIPPER, 22" (559 MM) DIA LOG DISC TYPE CUTTER, TRAILER MOUNTED	Average	180.0000	186,5598 33,580.77
GEN C10Z1380	COMPACTOR, VIBROPLATE, 18" (457 MM) WIDE x 21.5" (546 MM) PLATE	Average	72.4000	3,5424 256.47
GEN C10Z1400	COMPACTOR, VIBROPLATE, 21" (534 MM) WIDE x 24" (610 MM) PLATE	Average	14.0000	5,4716 76.60
GEN G15Z3080	GRADER, MOTOR, ARTICULATED, 135 HP (101 KW), 12' (3.6 M) BLADE WIDTH	Average	20.0000	48,3772 967.54
GEN H25Z3185	HYDRAULIC EXCAVATOR, CRAWLER, 55,000 LB (24,948 KG), 1.50 CY (1.2 M3) BUCKET, 23.3' (7.1 M) MAX DIGGING DEPTH	Average	180.0000	67,0927 12,076.69

MII Independent Government Estimate

Description	ConditionType	EQHours	Total
GEN H25Z3680 HYDRAULIC EXCAVATOR, ATTACHMENT, MATERIAL HANDLING, BUCKET, 36" (914 MM) PAVEMENT REMOVAL (ADD TO 75,000 LB (34,019 KG) HYDRAULIC EXCAVATOR)	Average	40.0000	2.0709 82.84
GEN L10Z3860 LAND CLEARING EQUIPMENT, V-TREE CUTTER (ADD 251-300 HP (187-224 KW) D8 DOZER)	Average	180.0000	9.7684 1,758.32
GEN L15Z4050 POST HOLE DRILL, UP TO 8" (203 MM) DIA, 30" (762 MM) DEEP, ONE MAN OPERATION	Average	25.0000	1.3531 33.83
GEN L50Z4650 LOADER/BACKHOE, WHEEL, 1.25 CY (0.9 M3) FRONT END BUCKET, 12.0' (3.7 M) DEPTH OF HOE, 24" (0.61 M) DIPPER, 7.0 CF (0.2 M3), 4X2	Average	7,023.0000	27.1057 190,363.02
GEN R30Z5645 ROLLER, STATIC, SELF-PROPELLED, PNEUMATIC, 14 TON (12.7 MT), 68" (1.7 M) WIDE	Average	10.0000	29.7517 297.52
GEN R45Z5690 ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 12 TON (10.9 MT), 67" (1.7 M) WIDE, ASPHALT COMPACTOR	Average	30.0000	84.3139 2,529.42
GEN R50Z5810 ROLLER, VIBRATORY, SELF-PROPELLED, SINGLE DRUM, SMOOTH, 12 TON (10.9 MT), 84" (2.1 M) WIDE, SOIL COMPACTOR	Average	10.0000	60.5703 605.70
GEN T15Z6570 TRACTOR, CRAWLER (DOZER), 300-340 HP (224-254 KW), POWERSHIFT, W/UNIVERSAL BLADE	Average	10.0000	139.1990 1,391.99
GEN T40Z6960 TRUCK OPTION, FLATBED, 8' (2.4M) x 12' (3.7 M) (ADD 25,000 LB (11,340 KG) GVW TRUCK)	Average	310.0000	0.6538 202.67
GEN T40Z7055 TRUCK OPTION, WATER TANK, 3,000 GAL (11,356 L) (ADD 45,000 LB (20,412 KG) GVW TRUCK)	Average	7.0000	5.4857 38.40
GEN T50Z7400 TRUCK, HIGHWAY, 25,000 LB (11,340 KG) GVW, 4X2, 2 AXLE (ADD ACCESSORIES)	Average	355.0000	34.0339 12,082.04
GEN T50Z7580 TRUCK, HIGHWAY, 45,000 LB (20,412 KG) GVW, 6X4, 3 AXLE (ADD ACCESSORIES)	Average	204.0500	42.8229 8,738.02
GEN T50Z7710 DUMP TRUCK, HIGHWAY, 16 - 20 CY (12.2 - 15.3 M3) DUMP BODY, 75,000 LBS (34,000 KG) GVW, 2 AXLE, 6X4	Average	6,321.9800	65.4980 414,077.19
GEN T60Z7910 TRUCK, WATER, OFF-HIGHWAY, 5,000 GAL (18,927 L), W/175 HP (130 KW) TRACTOR	Average	10.0000	64.5032 645.03
GEN XMEZ9120 POST DRIVER, 8" (203 MM) MAX DIA POST, 30,000 LB (13,608 KG) IMPACT (ADD 20,000-35,000 LB (9,072-15,876 KG) GVW TRUCK)	Average	20.0000	2.7900 55.80
GEN XMEZ9520 CONCRETE VIBRATOR, 2.5" (63.5 MM) DIA, W/7.5 HP (5.6 KW) GENERATOR	Average	7,023.0000	4.1422 29,090.84
MAP A30BG003 ASPHALT FINISHER, 10' WIDE SCREED, WHEEL, W/19' 6" SCREED EXTENSION, 215 CF HOPPER	Average	10.0000	125.2043 1,252.04
MAP C75GV021 CRANES, HYDRAULIC, SELF-PROPELLED, YARD, 10 TON, 30' BOOM, 4X4, NON-ROTATING OPERATOR'S CAB	Average	10.0000	34.3162 343.16
MAP C80TE006 CRANES, HYDRAULIC, TRUCK MTD, ALL TERRAIN, 25 TON, 94' BOOM, 6X4X2	Average	112.6667	72.7689 8,198.62
MAP C85LB023 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, DRAGLINE/CLAMSHELL, 250 TON, 120' BOOM (ADD BUCKET)	Average	3,511.5000	234.9385 824,986.50
MAP C85LB023 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, DRAGLINE/CLAMSHELL, 250 TON, 120' BOOM (ADD BUCKET)	Standby	3,511.5000	48.4297 170,060.75
MAP C85MA004 CRANES, MECHANICAL, LATTICE BOOM, CRAWLER, 100 TON, 210' BOOM, LIFTING	Average	7,023.0000	125.9581 884,603.59
MAP H25KN002 HYDRAULIC EXCAVATOR, ATTACHMENT, CONCRETE BREAKER, 3,000 FT-LB, W/4.75" DIA. POINT (ADD 26,000-36,000 LB HYDRAULIC EXCAVATOR)	Average	40.0000	14.9462 597.85
MAP L15FG001 LANDSCAPING EQUIPMENT, 3,000 GAL, HYDROSEEDER, TRUCK MTD (INCLUDES 56,000 GVW TRUCK)	Average	197.0500	103.3468 20,364.49

MII Independent Government Estimate

Description	ConditionType	EQHours	Total
MAP L35CA014 LOADER, FRONT END, CRAWLER, 3.20 CY BUCKET	Average	12,237.0000	76.8736 940,702.05
MAP L35CA014 LOADER, FRONT END, CRAWLER, 3.20 CY BUCKET	Standby	1,809.0000	11.0608 20,009.01
MAP L40CA019 LOADER, FRONT END, WHEEL, 1.70 CY BUCKET, ARTICULATED, 4X4	Average	49.4400	31.7695 1,570.69
MAP L40CA024 LOADER, FRONT END, WHEEL, 3.50 CY BUCKET, ARTICULATED, 4X4	Average	40.0000	70.9447 2,837.79
MAP L50JC001 LOADER / BACKHOE, WHEEL, 0.80 CY FRONT END BUCKET, 24" DIP, 4.3 CF, 12' DIGGING DEPTH, 4X4	Average	220.0000	22.3221 4,910.85
MAP P50WC004 PUMP, WATER, CENTRIFUGAL, TRASH, ENGINE DRIVE, 6" DIA, 1,300 GPM @ 100' HEAD ,TRAILER MTD (ADD HOSES)	Average	24,474.0000	10.8505 265,554.14
MAP P50WC004 PUMP, WATER, CENTRIFUGAL, TRASH, ENGINE DRIVE, 6" DIA, 1,300 GPM @ 100' HEAD ,TRAILER MTD (ADD HOSES)	Standby	3,618.0000	0.9229 3,338.94
MAP R45BO004 ROLLER, VIBRATORY, SELF-PROPELLED, DOUBLE DRUM, SMOOTH, 2.9 TON, 47.2" WIDE, 2X1, ASPHALT COMPACTOR	Average	10.0000	20.7429 207.43
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)	Average	9,327.5833	119.3906 1,113,625.43
MAP T15CA014 TRACTOR, CRAWLER (DOZER), 240 HP, LOW GROUND PRESSURE, W/7.70 CY STRAIGHT BLADE (ADD ATTACHMENTS)	Standby	2,926.2500	20.9015 61,162.95
MAP T50XX027 TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)	Average	5,594.2500	46.7166 261,344.51
MAP T50XX027 TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)	Standby	2,926.2500	5.1082 14,947.88
USR OPERATING EXPENSES FOR DESANDING PLANT	Average	12,237.0000	23.5700 288,426.09
USR OPERATING EXPENSES FOR DESANDING PLANT	Standby	1,809.0000	0.0000 0.00
USR OPERATING EXPENSES FOR HYDROMILL	Average	12,237.6246	23.5700 288,440.81
USR OPERATING EXPENSES FOR HYDROMILL	Standby	1,808.3777	0.0000 0.00