South Florida Water Management District
Central Everglades Planning Project
Post Authorization Change Report, Feasibility Study and
DRAFT Environmental Impact Statement
Dated March 2018

ADDENDUM
May 2018

The following corrections, clarifications and augmentations are made to the Central Everglades Planning Project Post Authorization Change Report, Feasibility Study and Draft Environmental Impact Statement prepared by the South Florida Water Management District and submitted to the ASA(CW) in March 2018 for policy review under the authority of Section 203. This Addendum has been prepared by the SFWMD in response to the review performed by the ASA(CW) Project Planning and Review Office and Office of Water Project Review.

Abstract

The text in the last sentence is updated to “The estimated first cost of the currently authorized CEPP plan (2018 price level) is $2,031,000,000. The estimated first cost of CEPP, as modified by the PACR TSP, would be $3,335,000,000.”

Main Report, EXECUTIVE SUMMARY, PURPOSE AND NEED

Page ES-2. The following text is added after the second paragraph “The original CEPP PIR partially addressed the established CERP goals (1) to deliver treated new water to the natural system and (2) reduce damaging discharges to the Northern Estuaries (St. Lucie and Caloosahatchee). A larger reservoir and STA configuration was considered during the CEPP PIR planning process. However, at that time “the deep reservoir storage was not brought forward (for detailed analysis) due to unacceptable cost levels associated with the large increase in both storage and treatment capacity required to provide greater delivery of water to the Everglades” (CEPP PIR, Section 3.4, page 3-39). The rationale for rejecting a deep storage reservoir option for the first storage increment in the CEPP PIR focused almost entirely on the total cost associated with the delivery of additional water to the Everglades that would be necessary to fully achieve the CERP goal. At the time the CEPP PIR was prepared this premise was appropriate. Since that time, there have been several concurrent years of well above average rainfall in both the wet and dry seasons that resulted in increasing Lake Okeechobee releases to the estuaries. These events highlighted the need to expedite authorization and implementation of an additional increment of storage under CEPP, along with other CERP projects that would focus on reducing these damaging discharges.

In screening out the deep storage reservoir cost effective measure as cost prohibitive, the CEPP PIR developed the first increment of restoration to obtain early benefits and emphasized flows to the central Everglades when considering the collateral ecological benefits that would be expected from further reduction in damaging regulatory releases to the St. Lucie and Caloosahatchee estuaries that would occur with a deeper storage reservoir with greater capacity and operational flexibility than a shallow FEB. CEPP acknowledged there would be a need for future investments. The CEPP PACR expedited the EAA Reservoir Project on the Integrated Delivery Schedule by proposing a cost effective plan now to achieve these goals earlier.

The authorized CEPP plan with the A-2 FEB storage component would deliver about “two thirds of the overall water that CERP envisioned providing to the natural system” (CEPP PIR, Section 3.2.1.6, page 3-13) and would provide for only moderate reductions in damaging regulatory releases from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries. Since the completion of the CEPP PIR in December 2014, the CEPP study area has experienced exceptional wet years, resulting in substantially increased regulatory releases from Lake Okeechobee over extended periods of time, substantial adverse effects on the estuaries, and heightened public interest in potential solutions that would further decrease these damaging regulatory releases. The PACR reevaluated the authorized CEPP plan to determine if appropriate modifications and system-wide operations could be made to further address

these concerns for damaging releases to the estuaries while also taking steps to meet the established CERP goal for delivery of new water to the Everglades ecosystem.

The CEPP PIR (Section 6.9.9, page 6-84) was also very clear to establish that future increments of CERP planning to include additional storage in the EAA could be expected to fully achieve CERP goals:

> The A-2 FEB does not preclude future increments of CERP planning for additional storage in the EAA … For example, the A-2 FEB could be converted to an STA or deeper reservoir and STA that works in conjunction with the State's existing STA system to accommodate any future upstream storage to further increase water deliveries to the WCAs … CEPP is not seeking the deauthorization of the CERP EAA Reservoir Phase – I, recognizing that improvements will need to be considered in future increments of CERP that provide additional storage for capturing water currently being sent to tide from Lake Okeechobee… Future CERP increments that provide this additional storage will increase water made available in the regional system.

The CEPP PIR (Section 6.9.1) references the National Academy of Sciences (National Resource Council 2007) recommendation on the implementation of CERP through an incremental adaptive restoration (IAR) process. This section discusses how CEPP adopted that recommendation and formulated a solution for an increment of overall restoration of the south Florida ecosystem and is not meeting all targets of CERP leaving problems and opportunities that remain. Although the CEPP provides a significant increase in freshwater needed for the restoration of the central Everglades, additional actions are needed to achieve the restoration envisioned in CERP. The actions include further reducing harmful discharges of freshwater from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries and improve estuary habitat for oysters and SAV."

Main Report, EXECUTIVE SUMMARY, ALTERNATIVE PLANS AND THE TENTATIVELY SELECTED PLAN

Page ES-5. The text in the first paragraph is revised to "The CEPP PACR study evaluates alternatives and identifies a tentatively selected plan (TSP) for the final increments of two components of the CERP:

- Everglades Agricultural Storage Reservoirs (Component G)
- Flow to Northwest and Central WCA 3A (Component II)"

Main Report, EXECUTIVE SUMMARY, BENEFITS OF THE TENTATIVELY SELECTED PLAN

Page ES-7. The text is the first sentence is replaced with "The TSP and the SFWMD's tentatively recommended plan (Figure ES-3), a 240,000 ac-ft reservoir with multi-purpose operational flexibility, 6,500-acre STA, and conveyance improvements, would beneficially affect more than 1.5 million acres in St. Lucie and Caloosahatchee Estuaries, WCA 3A, WCA 3B, ENP, and Florida Bay."

Main Report, EXECUTIVE SUMMARY, BENEFITS OF THE TENTATIVELY SELECTED PLAN
Page ES-9. The following text is added at the end of the first paragraph “These additional flows are delivered with a timing shift that favor dry season flows in addition to CEPP when downstream infrastructure has adequate capacity to convey the flow. The TSP builds upon the CEPP and achieves the final increments of the required storage in the Everglades Agricultural Area (Component G) and freshwater flows to Northwest and Central WCA3A (Component II), providing the remaining one-third of the restoration flow goal identified in CERP and in CEPP.

Main Report, EXECUTIVE SUMMARY, COST ESTIMATE AND IMPLEMENTATION PLAN
Page ES-11. The text in the first paragraph is replaced with the following “The cost to implement the CEPP PACR presented in Table ES-1 includes the project features for future CEPP PPA North, PPA South and PACR TSP New Water, including recreation features. The costs for CEPP PPA North and PPA South features have been updated to 2018 price levels, for comparison with the CEPP PACR costs. The net increase in cost for the A-2 Reservoir, A-2 STA, and additional conveyance improvements over the authorized CEPP is $1,304,000,000. The first cost of the authorized CEPP, as modified by the PACR TSP, defined as the capital investment costs (2018 price level), is $3,335,000,000 including construction, non-construction items, and contingency (Table ES-1).

Main Report, Executive Summary, COST ESTIMATE AND IMPLEMENTATION PLAN
Page ES-12. Table ES-1 is being replaced with the following in the executive summary.

Table ES-1. Estimate of First Costs for Authorized CEPP Plan and CEPP, as modified by the TSP [1,2]

Construction and Operation, Testing, and Monitoring Phase Items	CEPP (FWO) Costs (2014 Price Level)	CEPP (FWO) Costs (2018 Price Level)	PACR EAA Costs (2018 Price Level)	CEPP (FWO) Costs Not Included in PACR (subtract)	CEPP PACR TSP Costs (2018 Price Level)
Ecosystem Restoration Costs					
03 Reservoirs			$1,314,643,000		$1,314,643,000
06 Fish and Wildlife (monitoring and adaptive management)	$106,000,000	$114,000,000	$0		$114,000,000
08 Roads, Railroads and Bridges			$17,320,000		$17,320,000
09 Channels & Canals	$370,000,000	$402,000,000	$120,501,000	($181,268,000)	$341,233,000
11 Levees	$399,000,000	$425,000,000	$109,240,000	($192,608,000)	$341,632,000
13 Pumping Plant	$133,000,000	$139,000,000	$139,922,000	($38,003,000)	$240,919,000
15 Floodway Control and Diversion	$342,000,000	$368,000,000	$93,401,000	($126,134,000)	$335,267,000
18 Cultural Resources Preservation	$26,000,000	$27,000,000	$0		$27,000,000
32 HTRW Investigations	$1,000,000	$1,000,000	$0		$1,000,000
Construction Features Sub-Total	**$1,377,000,000**	**$1,476,000,000**	**$1,795,027,000**	**($538,013,000)**	**$2,733,014,000**
Preconstruction Engineering and Design (PED), Engineering During Construction (EDC) and Planning	$345,000,000	$366,000,000	$134,712,000	($148,354,000)	$352,358,000
Construction Management (S&A)	$135,000,000	$143,000,000	$87,563,000	($56,643,000)	$173,920,000
Lands & Damages	$37,000,000	$39,000,000	$27,000,000		$66,000,000
Total Ecosystem Restoration Costs	**$1,894,000,000**	**$2,024,000,000**	**$2,044,000,000**	**($743,010,000)**	**$3,325,000,000**
Recreation Costs					
14 Recreation Facilities	$6,000,000	$7,000,000	$3,000,000		$10,000,000
Total First Cost	**$1,900,000,000**	**$2,031,000,000**	**$2,047,000,000**	**($743,000,000)**	**$3,335,000,000**

[1] Construction costs in this table include contingencies.

[2] Costs are rounded to the nearest $1,000,000.

NOTE: Contingencies are not included for PED and CM costs for EAA PACR

Main Report, EXECUTIVE SUMMARY
Page ES-14. The text in the last sentence states "The USACE and the SFWMD will incorporate the CEPP PPA North and South features and the CEPP PACR and other CERP projects awaiting authorization into the south Florida ecosystem restoration programs integrated delivery schedule." The text is changes to "The USACE and the SFWMD will incorporate the CEPP PPA North and South features and the CEPP PACR, contingent upon ASA(CW) concurrence and subsequent congressional authorization, and other CERP projects awaiting authorization into the south Florida ecosystem restoration programs integrated delivery schedule."

Main Report, Section 1.4 SCOPE OF STUDY
Page 1-13. The text in the fourth paragraph is revised to "The scope of the CEPP PACR focuses on the final increments of two specific components of the CERP (the assigned letter refers to its CERP designation):

- Everglades Agricultural Storage Reservoirs (Component G)
- Flow to Northwest and Central WCA 3A (Component II)"

Main Report, Section 1.7.2 Constraints
Page 1-19. The text in the second paragraph is changed to says "In accordance with the Savings Clause provisions of the CERP authorization in WRDA 2000 (Sections 601(h)(4) and (5)) and applicable State and Federal standards, the following constraints were applied to CEPP PACR planning, which were included in CEPP planning and implementation:

- Avoid reduction in the existing level of service for flood protection caused by Plan implementation
- Provide replacement sources of water of comparable quantity and quality for existing legal users that could experience water supply reductions caused by Plan implementation
- Meet applicable State water quality standards
- No effect on Tribal Compact"

Main Report, Section 3.2.1.1 Screening of Storage, Treatment, and Conveyance Improvement Management Measures
Page 3-7. The following text is added at the end of the referenced section "The following management measures for storage and treatment were eliminated during the screening process:

Higher Lake Levels: Raising water levels within Lake Okeechobee to reduce damaging discharges to the Northern Estuaries would require substantial modifications to the Herbert Hoover Dike (HHD). The U.S. Army Corps of Engineers is currently conducting a project to strengthen and secure the existing dike. However, persistent higher water levels within Lake Okeechobee could cause significant impacts to the littoral zone. The lake's natural resources are dependent on the littoral zone since it provides

nursery areas, spawning areas, foraging areas, and roosting areas required for the completion of aquatic fauna and higher trophic level (e.g., water bird) life cycles. The frequency and duration of inundation of the lake littoral zone would increase with higher lake levels which would result in the loss of beneficial littoral zone plant communities in favor of introduced exotics (e.g., torpedo grass) as well as impacts to wading birds and other water-dependent wildlife. As such, this measure was eliminated from further consideration.

Dredging of Lake Okeechobee for Storage: This measure consists of dredging sediment from Lake Okeechobee and depositing it in an approved spoil site. Dredging of the lake would allow for increased water storage capacity, decreasing the need for discharges to the Northern Estuaries and improving the timing and distribution of water deliveries to the Everglades. Although this measure is feasible from an engineering perspective, the costs to dredge such a massive waterbody would be excessive. Additionally, disposal of the spoil material would require a massive containment area located near the lake for return water, creating environmental concerns with such a large discharge of fill material required. There may also be concerns regarding relocations and community displacement if such a large site were required to be constructed adjacent to the lake. As such, this measure was eliminated from further consideration.

Ecoreservoir: An Ecoreservoir could be utilized for water storage, however, it is predominantly designed and maintained to encourage habitat utilization and recreational opportunities. The secondary function of water storage limits the primary uses, which forces a trade-off for onsite habitat benefits, and leads to significantly increased costs per unit volume of water stored. Water levels are maintained at 4 feet or less to encourage the growth of vegetation. Embankment side slopes are shallow (12:1) and vegetated to promote wildlife use, making land requirements more extensive and increasing the risk of levee failure by including vegetation on the levee embankment and protection system. Construction and maintenance costs can be as much as three times higher than an above-ground reservoir with the same storage volume and as such is an inefficient means to store and deliver large quantities of water. Operational flexibility is limited and hydraulic capabilities are inadequate. Due to the factors mentioned above, ecoreservoir was eliminated from further consideration.

Flow Equalization Basin (FEB): An FEB is a shallow above-ground impoundment that would provide the temporary storage of water with some limited water quality improvement. Levee design would be similar to that of a 4-foot deep above-ground storage reservoir, however, operations would be optimized for storage and peak flow attenuation. The FEB would receive Lake Okeechobee releases and stormwater runoff and would have target water depths of 1-3 feet to sustain the growth of wetland vegetation, thereby limiting deep water events and dryout conditions. An FEB, in addition to providing water storage, would also help control the rate of water flow from Lake Okeechobee to the Everglades Stormwater Treatment Areas (STAs) by minimizing hydraulic surges and providing more stable flows. Additionally, some nutrient reduction will occur within the FEB, however, unlike an STA, design and operations is not optimized for nutrient uptake. An FEB would likely be compatible with future CERP projects, enabling conversion to a deep reservoir or STA with limited infrastructure modifications. During CEPP, FEBs were extensively evaluated, however FEBs were eliminated from further consideration in this PACR due to limited capacity and additional storage needs that fail to meet the goals and objectives of the PACR.

Dry/Wet Flow Way: A Flow Way is an above-ground impoundment that would be operated like a flowing wetland system. Maximum water depths would be no higher than 4 feet with minimal engineering or alteration of the land surface. Vegetation would be allowed to naturally recruit and would also be unmanaged except for exotic vegetation control/removal. Similar to an ecoreservoir, operational flexibility is limited and hydraulic capabilities are inadequate. With costs similar to that of an ecoreservoir and extremely limited storage and treatment capabilities, A Flow Way is an inefficient means to meet the project objectives. Due to the factors mentioned above, a Flow Way was eliminated from further consideration.

Localized Aquifer Storage and Recovery (ASR): ASR is the storage of available water deep within the aquifer, and the recovery of that water for use when there are system demands. Preliminary results from the ASR Pilot Study indicated that ASR may be feasible in regard to toxicology, groundwater migration, etc. However, ASR may need to be used in combination with other water storage and water quality improvement management measures as it may not be sufficient to meet the project objectives as a stand-alone measure. While opportunities to incorporate ASR technology in other CERP projects is being explored, ASR was not considered for this increment of CERP and was therefore eliminated from further consideration.

Chemical Precipitation: Chemical Precipitation using ferric chloride, aluminum or other salts of iron can be utilized for phosphorus removal from water. Although the amount of land required for chemical precipitation is substantially less than STAs, there are some drawbacks to using this process to improve water quality. The chemicals required for chemical precipitation are expensive and due to the large volumes of water to be treated, the process would not be cost-effective. Additionally, excessive sludge and waste products would require disposal, adding to the substantial costs and creating an environmental issue with sludge disposal. In addition, there are concerns that the water discharged to the Everglades after undergoing chemical precipitation may not be compatible with the Everglades and may result in other adverse environmental impacts. As such, due to excessive costs and environmental concerns, Chemical Precipitation was eliminated from further consideration.

Dredging of Lake Okeechobee near Primary Canal Intakes: This measure would involve dredging sediment from Lake Okeechobee in the areas just north of the confluence of the EAA canals and Lake Okeechobee. The removal of the sediment should decrease the amount of residual nutrients that would be suspended in the water before flowing to the Everglades. Although it is likely that this measure would have some success in nutrient removal, it would likely be on an extremely small scale, and substantial treatment would still be required before water could flow to the Everglades. Due to the relative inefficiency of this measure, it was eliminated from further consideration.

Hybrid Wetland Treatment Technology (HWTT): HWTT systems employ chemical treatment systems for phosphorus removal and utilize wetland vegetation to the maximum extent possible to minimize chemical amendment use. Chemical coagulants are added, either continuously or intermittently, to the front end of the treatment system, which contains one or more deep zones to capture the resulting floc material. A fundamental concept of the HWTT technology is that the floc resulting from coagulant additional generally remains active and has the capability of additional phosphorus sorption. Both active and passive reuse of floc material is practiced in this technology. Passive re-use refers to the accumulation of viable flocs on plant roots and stems that are situated near the front-end and mid-regions of the systems. Active re-use refers to the mechanical re-suspension of settled floc. HWTT systems in use north of Lake Okeechobee have shown promising results with total

phosphorus concentration reductions ranging from 70 to 95 percent. Although HWTT has been shown to be cost effective for smaller watersheds and aquatic systems, there remains a high level of technological and cost uncertainty in applying HWTT to large volume treatment efforts. While there may be opportunities to incorporate HWTT in other CERP projects, HWTT was not considered for this increment of CERP and was therefore eliminated from further consideration.

Main Report, Section 3.2.1.2 Locations of Storage, Treatment, and Conveyance Improvement Management Measures

Page 3-7. The following text is added after the first paragraph "As described below, selection of a suitable location for the new storage and treatment measures included consideration of the following: 1) direction from Congress in relation to the WRDA-2000 to maximize use of the lands acquired through the Talisman purchase and exchange for the EAA Reservoir Storage Project; 2) the lack of private lands of the size needed that were in proximity to existing State-owned infrastructure; 3) avoidance of substantial Project cost increases due to additional land acquisition costs and/or the need for major additional supporting infrastructure; 4) minimizing the impacts on Prime and Unique Farmland; 5) minimizing socio-economic impacts; and 6) other Environmental Justice concerns.

These aforementioned considerations were addressed in the CEPP PACR using 16 criteria in its siting analysis on locating storage and treatment features. The criteria are grouped into the four general categories of (1) existing infrastructure, (2) socio-political and environmental, (3) hydrology, and (4) construction and operations efficiency. Only one of the criteria addressed eminent domain authority. The siting analysis resulted in a unique ability to optimize project construction and operations to reduce the need for additional conveyance, capital construction and land acquisition costs.

Main Report, Section 3.5.5 Alternative C360C

Page 3-22. The following text is added to the last paragraph "The operational flexibility used in C360C is implemented by dividing the reservoir into two operational zones. These zones are the bottom one-third of the storage volume and the upper two-thirds of the storage volume. The bottom one-third of the reservoir storage volume only releases water to the environment (downstream Everglades). When the reservoir is in the upper two-thirds of the storage volume, releases are made from the reservoir to both the environment (downstream Everglades) and to maintain canal elevations in the Miami and North New River basins of the Everglades Agricultural Area."

Main Report, Section 4.2.1.1 Overview of the Planning Level Cost Estimating Tool

Page 4-10. The following text is added after the last paragraph of the section "The ROM costs were prepared by SFWMD contractors experienced with design and construction of similar infrastructure in the south Florida environment. The contractor estimates were reviewed by the SFWMD's cost engineer. The ROM cost estimates for the final array of alternatives was included in the ATR document. The Job Specific Quality Plan for the CEPP PACR provided in Annex E was developed in a manner as consistent as possible with the DQC standards defined in ER 1165-2-214 and other pertinent USACE guidance. Senior experienced SFWMD and contractor team members participated in quality checks, representing all pertinent disciplines including cost engineering.

Due to time constraints, ROM costs were developed for each alternative prior to the selection of the TSP. Given the similarities in the features for this project for each alternative, relative ROM cost were developed understanding that a change in a unit cost for one item on one alternative would be equally

reflected in the other alternatives. On a relative basis, costs of the alternatives from low to high remained the same, therefore the selected TSP was based on the most cost effective alternative presented. The ROM (unit) costs were reviewed by independent parties, including the SFWMD Cost engineer and other members of the team not involved in quantity take offs or MCASES cost estimating.

The TSP cost was evaluated separately and in detail, including complete quantity take offs, refinements to features and prepared using the Corps' MII MCASES estimating software. The TSP cost is the cost that should be used for the advertised Section 902 Limit."

Main Report, Section 4.1.1 Effectiveness

Page 4-5. The following text is added after Table 4-1 "The numbers in Table 4.1 indicate the difference in the Rescaled Performance Measure Score across the hydrologic zones in the Everglades and Northern Estuaries. These numbers also represent the total range of the difference in Performance Measure (PM) scores across all zones compared to the FWO. For the Slough Vegetation PM the objective is to provide additional freshwater flows to the Everglades to restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades System. Ridge and slough is the most common habitat in the central Everglades. The slough vegetation PM provides a measure of the suitability of hydrologic conditions for two key species of slough vegetation. Hydrologic conditions that support a more natural habitat mosaic generally improve for all the alternatives. A value of -2 to 3 means that there was a hydrologic zone for Alts R240A and R240B that was 2 scores less than the FWO and a hydrologic zone for Alts R240A and R240B that was 3 scores more than the FWO.

For the Soil Oxidation PM the objective is to provide additional freshwater flows to the central Everglades to improve sheetflow patterns and surface water depths/durations in the Everglades in order to reduce soil subsidence, frequency of damaging peat fires, decline of tree islands, and salt water intrusion. For the Soil Oxidation PM, a difference between the FWO and the three alternatives (R240, R360 and C360) showed that there was no hydrologic unit that was negatively affected by the CEPP PACR. The worst-case scenario was a zero value which meant that the PACR had the same level of protection as CEPP. The fact that regions of the Everglades were as high as 4 scores greater in soil protection than CEPP is important because the Everglades is a peat-based "corrugated" system that has been flattening out. Hundreds of years of peat can be destroyed in one peat fire. Restoration of the ridge and slough pattern is strongly linked to the soil oxidation PM. The greater the PM the more protective and restorative the plan and a small increase in the Soil Oxidation scores can have a big impact. Detailed information on the PMs for the FWO and alternatives are presented in Appendix G.

Reducing the frequency and magnitude of the high-volume discharges to the Northern Estuaries improves salinity conditions thereby improving the quality of oyster and SAV habitat. The St. Lucie Estuary oyster monitoring program has determined that flows more than 2,000 cfs for longer than 42 days causes wide-spread adult oyster mortality. The monitoring program for the Caloosahatchee Estuary has determined that flows more than 2,800 cfs for longer than 60 days causes wide-spread adult oyster mortality. If flows can be maintained below these adult oyster mortality thresholds reproduction and recruitment rates can be maintained at a sustainable level in the Northern Estuaries. The CEPP PACR alternatives provided a 55% reduction in high flow events (>2,000 cfs) lasting more than 42 consecutive days in the St. Lucie Estuary. This is calculated from the FWO project condition where there are 9 events that exceed this threshold of 42 consecutive days. The alternatives also

provided a 40% reduction in high flow events (>2,800 cfs) lasting more than 60 consecutive days in the Caloosahatchee Estuary. This is calculated from the FWO project condition where there are 10 events that exceed this threshold of 60 consecutive days. The ability to meet these thresholds is paramount to Northern Estuary resiliency, health, reproduction and recruitment, and the ability for them to recover from high volume damaging discharge events."

Main Report, Section 4.1.1 Effectiveness

Page 4-5. The text in the first paragraph states "The CEPP plan was the first incremental step in increasing average annual flows to the central Everglades. This first increment of the CEPP provided approximately 210,000 ac-ft of flow on an average annual basis to the central Everglades, which is approximately two-thirds of the CERP performance goal."

The text is changed to "The CEPP plan was the first incremental step of restoration in providing hydroperiod and water depth improvements by increasing average annual flows to the central Everglades, and resumption of some sheetflow with proper timing, continuity and distribution during the onset of the dry season. This first increment of the CEPP provided approximately 210,000 ac-ft of flow on an average annual basis to the central Everglades, which is approximately two-thirds of the CERP performance goal. The CEPP also acknowledges that additional flow would provide greater benefits to WCA3A and ENP."

Main Report, Section 4.1.1 Effectiveness

Page 4-7. The following text is added after Figure 4-5 "The CEPP PACR alternatives provide the additional flow needed as identified in the CEPP and CERP extending the improved hydroperiod and depth performance into the latter portion of the dry season while maintaining the integrity of the other performance metrics described in Table 4-4 for the Greater Everglades (WCA3A and ENP). The traditional use of the habitat unit calculations conducted in the CEPP and CEPP PACR make it difficult to capture the true project benefits associated with the timing shift of water deliveries and the additional flow volume introduced into the central Everglades by the CEPP PACR. Habitat Units are discussed in Section 4.2.

In this case, the performance measures are not sensitive enough to detect the true benefits of redistribution and additional flow provided by the alternatives over the large aerial extent of the Everglades indicator regions. However, modeling results when compiled by mean monthly simulated flow showing these improvements are captured in Figure 6-6. The increase in freshwater flow to the Everglades that the CEPP PACR alternatives provide is effective in meeting the CERP goal (see Figure 4-1 through 4-5)."

Main Report, Section 4.2.3.1 Cost Effectiveness Incremental Cost Analysis -Total System-Wide Outputs

Page 4-20. The following figure is added as Figure 4-10 and subsequent figures are renumbered.

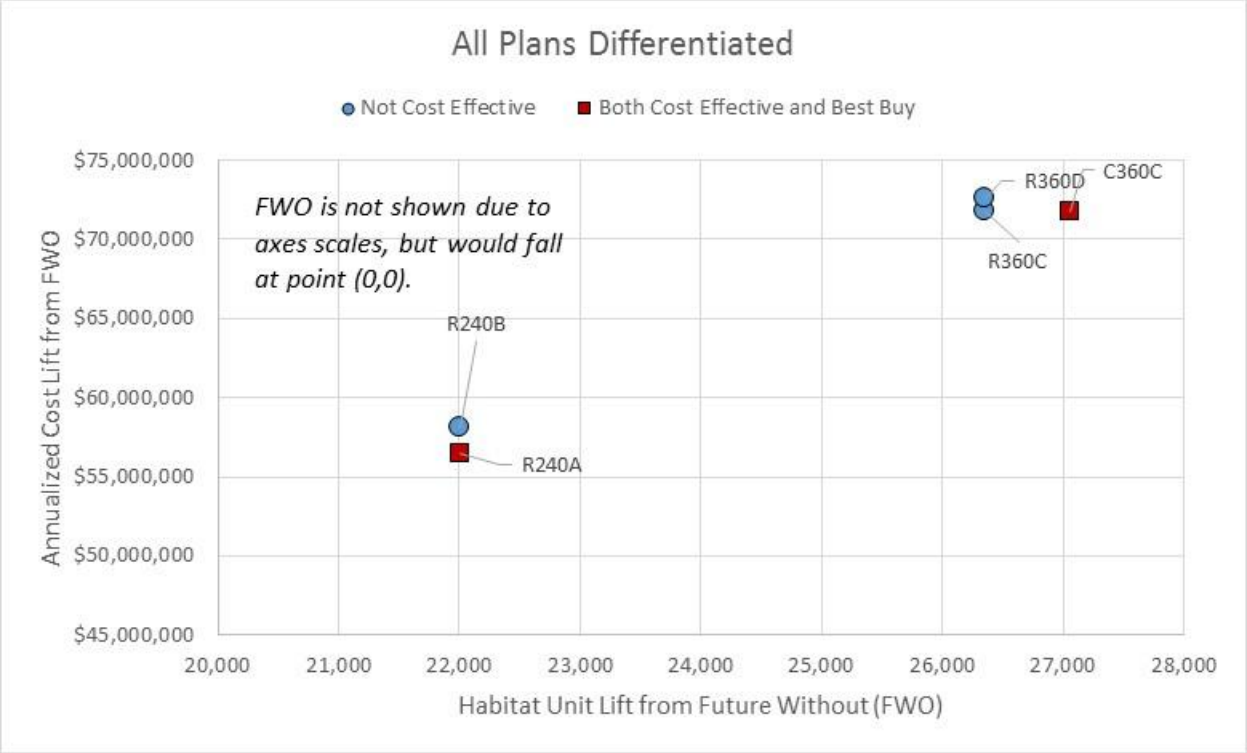

Figure 4-10: Results of the Cost Effectiveness Incremental Cost Analysis for the Array of Alternatives

Main Report, Section 4.6 IDENTIFICATION OF THE TENTATIVELY SELECTED PLAN (OR TENTATIVE NATIONAL ECOSYSTEM RESTORATION PLAN)

Page 4-26. The text in the second sentence of the fifth paragraph says "The most cost-effective alternative (R240A) was refined and modeled further to optimize its performance based on the operational protocols included in the C360C alternative to become C240A, or the TSP." The text is changed to "The most cost-effective alternative (R240A) was refined and modeled further to optimize its performance based on the operational protocols included in the C360C alternative (as described in **Section 3.5.5**) to become C240A, or the TSP"

Main Report, Section 4.6.1 Operational Refinements of the Array and Identification of the TSP (Tentative NER Plan)

Page 4-27. The following text is added to the middle of the paragraph after the fifth sentence "The advantage of the multi-use facility centers around a beneficial seasonal timing shift that allows water levels in the lower regulation bands of Lake Okeechobee to be maintained slightly higher in Alternative C240A by maintaining canal levels with water from the reservoir when excess capacity is available. This water "saved" in Lake Okeechobee provides greater opportunity for dry season flow to the Everglades. It is important to note that releases from the reservoir to maintain canal levels are discontinued when the reservoir falls below the one-third volume and where the remaining volume is dedicated to environmental delivery consistent with CERP Yellow Book assumptions. From a Northern Estuary perspective, the C240A operations is also advantageous since it creates available storage for wet conditions and allows some potential estuary releases to be diverted to the reservoir, thereby reducing the counts of damaging events."

Main Report, Section 4.6.1 Operational Refinements of the Array and Identification of the TSP (Tentative NER Plan)

Page 4-27. The following figure is added as Figure 4-12.

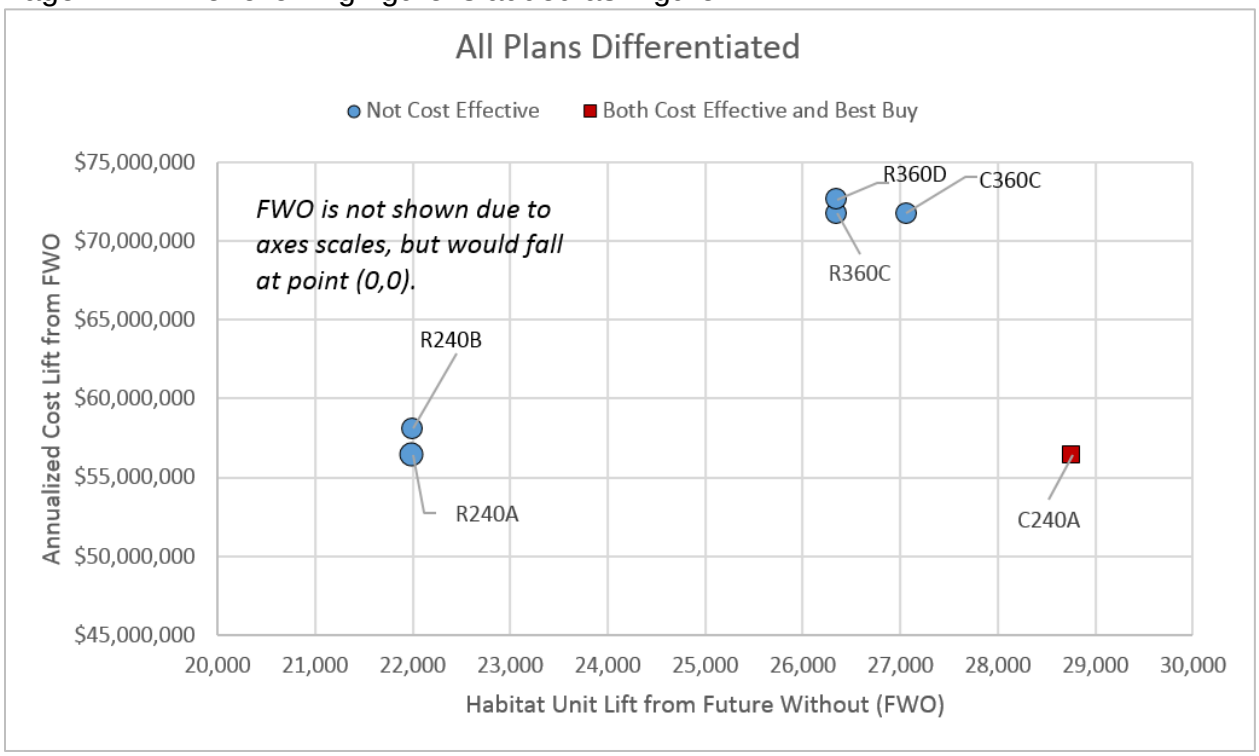

Figure 4-12: Results of the Cost Effectiveness Incremental Cost Analysis for the Array of Alternatives and the Tentatively Selected Plan

Main Report, Section 4.6.2 Identifying the Tentatively Selected Plan
Page 4-29. The following text is added before the last sentence "The Alternative C240A is the TSP and the SFWMD's tentatively recommended plan."

Main Report, Section 6.1.3 Project Operations
Page 6-7. The text in the last sentence states "The USACE and SFWMD will share in the responsibilities for conducting water management operations during the OTMP." The text is changed to "The USACE and SFWMD will share in the responsibilities for conducting water management operations during the OTMP, contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization of the recommended post-authorization changes to CEPP."

Main Report, 6.2.1 Environmental Benefits
Page 6-11. The following text is added after the second paragraph "The CEPP as authorized by Congress in 2016, redirects undesirable freshwater discharges from the Northern Estuaries by providing an average of approximately 210,000 acre-feet per year of additional clean freshwater flowing into the central portion of the Everglades. The undesirable discharge events that CEPP captures and redirects south are predominately of short duration and moderate or less in volume. The increase in freshwater flow to the Everglades that CEPP provides by redirecting these undesirable events is approximately two-thirds of the additional flow estimated to be provided by the CERP. The undesirable discharges to the Northern Estuaries that CEPP redirects is a step towards achieving the CERP goal of an 80% reduction in estuary flows.

The additional conveyance, storage, and treatment features provided by the CEPP PACR allow for a reduction in damaging discharges that the CEPP did not address. The damaging discharge events that the CEPP PACR captures and redirects south are of much longer duration and higher in volume than those managed in CEPP. The CEPP PACR is effective in approaching the CERP goal of an 80% reduction in estuary flows and achieving the CERP goal in sending water to the central Everglades. The CERP Plan is designed to enlarge the supply of freshwater by storing water that is currently discharged to tide and redirecting it south to the Everglades. The EAA storage feature is the an important component of CERP that can deliver dry season flows to the Everglades system. After the benefits claimed in the CEPP, remaining CERP system-wide goals must address more extreme conditions. Projects like the CEPP PACR must deal with larger magnitude events that present a significant design challenge and usually cost more per incremental lift. Another challenge is a reduced sensitivity in performance measures (e.g. capture 10 big events rather than 30 smaller events, so the improved "event count" is not as dramatic mathematically but of significance within the ecosystem)."

Main Report, 6.2.1 Environmental Benefits
Page 6-13. The following text is added after Table 6-3 "The CEPP is identified as the first increment of restoration by providing hydroperiod and water depth improvements in the central Everglades, and resumption of some sheetflow with proper timing, continuity and distribution during the onset of the dry season. The CEPP also acknowledges that additional flow would provide greater benefits to WCA3A and ENP. The CEPP PACR provides the additional flow needed as identified in the CEPP and CERP extending the improved hydroperiod and depth performance into the latter portion of the dry season while maintaining the integrity of the other performance metrics described in Table 4-4 for the Greater Everglades (WCA3A and ENP). The traditional use of the habitat unit calculations conducted in the CEPP and CEPP PACR make it difficult to capture the value and underestimates the true project

benefits associated with the timing shift of water deliveries and the additional flow volume introduced into the central Everglades by the CEPP PACR. The increase in freshwater flow to the Everglades that the CEPP PACR provides is effective in meeting the CERP goal (see Figure 4-10).

One of the more significant benefits to ENP of the CEPP PACR not captured by Habitat Units is the increase hydraulic head in Shark River Slough (SRS) compared to sea level. Coastal wetlands are prone to peat collapse and loss with rising sea levels. The increased volumes of water delivered to SRS during the dry season will maintain the same water depths as the CEPP but will do it for a longer period of time, which will make a critical difference in the intrusion of saltwater up into the freshwater marshes of ENP. A recent study by Dessu et at. (2018) looked at this head difference and concluded: "*Results indicate that fresh-to-marine head difference (FMHD) was the single most important factor affecting marine-to-freshwater hydrologic connectivity and transport of salinity upstream from the Gulf of Mexico."* The CEPP-PACR maybe the most significant increment to CERP for dealing with the degradation associated with accelerated sea level rise.

There are two other features of the CEPP PACR not captured by HU in WCA-3A and 3B that are significant: 1) Increased flexibility to incrementally restore tree islands to WCA-3B, and 2) to deliver critical sediment entrainment velocities to the ridge & slough habitats. The sloughs from WCA-3B are gone and for this critical habitat to be restored water depths will need to increase. However, if depths are too high, for too long a period, then tree islands in 3B will suffer. The CEPP PACR provides the flexibility to work with climate forecasts to slowly improve the hydrology in 3B, allowing the tree islands to build peat while increasing the productivity and biodiversity of the entire region. The CEPP PACR will also help maintain microtopography throughout WCA-3A and ENP because the additional volumes of water will allow velocities to occasionally reach 2.3 cm/sec, which will resuspend floc. The lack of flow has caused the entire Everglades to either get relatively deep (e.g., WCA-1) or to flatten out and loose its distinctive slough patterning (e.g., WCA-3A-North). The occasional redistribution of floc and slough bottom sediments will reduce the flattening of the system, provide resilience against droughts and increase the restoration of wading bird populations.

Main Report, 6.2.1 Environmental Benefits

Page 6-16. The following text is added after the first paragraph "The CEPP reduces the moderately high estuary discharge events while the additional storage afforded by the CEPP PACR TSP can manage the extremely high and longer duration lake inflows by diverting larger flows to the south, to additional storage and treatment areas therefore further reducing those most damaging high and extended releases to the estuaries. As the project implementation gets closer to reaching the CERP restoration goals holding and diverting those larger damaging discharges becomes more expensive, but the ecological significance of doing just that cannot be understated. Reducing the duration and return frequency of these damaging discharges alone allow more time for the estuaries to recover and establish resiliency. The traditional use of the habitat unit calculations conducted in the CEPP and CEPP PACR make this difficult to capture and underestimate the true project benefits associated with the establishment of ecosystem resiliency. The capacity for the estuaries to withstand and recover from these continued perturbations in volume and duration of high flow damaging events is being tested over and over. The estuaries are currently showing signs of vulnerability to state change. The reproductive capability of the oysters is extremely stressed, in spring of 2018 following hurricane Irma oyster monitoring showed the lowest number of oyster spat in the entire period of record of the RECOVER monitoring program (14 years). Although it is not anticipated that the CEPP PACR TSP would capture

events such as Hurricane Irma in 2017, the proposed plan is expected to improve the ability of the Northern Estuaries to recover or bounce back such that it is better positioned to withstand massive events like that experienced in 2016 and 2017."

Main Report, Section 6.2.1 Environmental Benefits

Page 6-16. The following text is added before the last sentence at the end of the last paragraph "These additional flows are delivered with a timing shift that favor dry season flows in addition to CEPP when downstream infrastructure has adequate capacity to convey the flow (**Figure 6-6**). The TSP builds upon the CEPP and achieves the final increments of the required storage in the Everglades Agricultural Area (Component G) and freshwater flows to Northwest and Central WCA3A (Component II), providing the remaining one-third of the restoration flow goal identified in CERP and in CEPP.

Main Report, Section 6.3.3 Cumulative Impacts

Page 6-24. The following text is added after the first paragraph "The CERP identifies storage north, south, east and west of Lake Okeechobee that work together to achieve beneficial ecological effects. These complete storage components are critical to the overall success of the CERP and other CERP components. The combination of these storage features with other CERP components provide synergy in achieving Everglades restoration. The authorized CEPP is composed of increments of project components that were identified in the CERP, reducing the risks and uncertainties associated with project planning and implementation. The term "increment" is used to underscore that CEPP formulated portions (scales) of individual components of the CERP. It was envisioned that later studies would investigate additional scales of components of the CERP to expand upon this initial "increment" to achieve the level of restoration envisioned for the CERP. This approach is consistent with the recommendations of the National Research Council to utilize Incremental Adaptive Restoration to achieve timely, meaningful benefits of the CERP and to lessen the continuing decline of the Everglades ecosystem. The CEPP PACR expands upon the initial "increment" of CEPP and achieves the level of restoration envisioned for the CERP (See Section 1.4 and Section 4.6)."

Main Report, Section 6.4 COST ESTIMATES OF RESTORATION ELEMENTS

Page 6-34. The text in the second paragraph is updated to the following "Table 6-9 includes a breakdown of the estimated costs of the ecosystem elements for the authorized CEPP compared with estimated costs for the authorized CEPP, as modified by the PACR TSP. The cost of the authorized CEPP plan (escalated to 2018 price level) is $2,031,000,000. The total cost of the authorized CEPP plus the modifications resulting from the PACR TSP (at 2018 price level) is $3,335,000,000. The net increase in cost resulting from the PACR TSP is $1,304,000,000.

Main Report, Section 6.4 COST ESTIMATES OF RESTORATION ELEMENTS

Page 6-34. The last sentence is updated to the following "Based on preliminary engineering and design of the TSP, the average annual cost of ecosystem restoration features is $149,447,000 (Table 6-10)."

Main Report, Section 6.4 COST ESTIMATES OF RESTORATION ELEMENTS

Page 6-35. Table 6-9 IS replaced with the following table.

Table 6-9. Ecosystem Restoration Cost Estimates [1, 2, 3, 4, 5]

Construction Phase Items	CEPP (FWO) Costs (2014 Price Level)	Escalation %	CEPP (FWO) Costs (2018 Price Level)	CEPP (FWO) Not Included in PACR	CEPP PACR TSP Costs (2018 Price Level)
03 Reservoirs					$1,314,643,000
06 Fish and Wildlife (monitoring & adaptive management)	$106,000,000	7.71%	$114,000,000		$114,000,000
08 Roads, Railroads and Bridges					$17,320,000
09 Channels & Canals	$370,000,000	8.63%	$402,000,000	($181,268,000)	$341,233,000
11 Levees	$399,000,000	6.41%	$425,000,000	($192,608,000)	$341,632,000
13 Pumping Plant	$133,000,000	4.43%	$139,000,000	($38,003,000)	$240,919,000
15 Floodway Control and Diversion	$342,000,000	7.71%	$368,000,000	($126,134,000)	$335,267,000
18 Cultural Resources Preservation	$26,000,000	4.43%	$27,000,000		$27,000,000
32 HTRW Investigations	$1,000,000	5.96%	$1,000,000		$1,000,000
Construction Features Sub-Total	**$1,377,000,000**	**-**	**$1,476,000,000**	**($538,013,000)**	**$2,733,014,000**
Preconstruction Engineering and Design (PED), Engineering During Construction (EDC) and Planning	**$345,000,000**	**-**	**$366,000,000**	**($148,354,000)**	**$352,358,000**
Construction Management (S&A)	**$135,000,000**	**5.96%**	**$143,000,000**	**($56,643,000)**	**$173,920,000**
Lands & Damages	**$37,000,000**	**5.96%**	**$39,000,000**		**$66,000,000**
Total First Cost	**$1,894,000,000**	**-**	**$2,024,000,000**	**($743,000,000)**	**$3,325,000,000**

1 Construction costs in this table include contingencies

2 Recreation costs are not included in the ecosystem restoration cost estimates (see **Section 6.5**)

3 Cost as authorized by Congress per ER 1105-2-100, Appendix G, Section G-16.a.(9). Note that this cost is the same as "project cost last submitted to Congress" as required by the regulation. No updated costs have been submitted to Congress since CEPP was authorized in December 2016 (per information provided by USACE, Jacksonville District).

4 Cost updated to current price levels per ER 1105-2-100, Appendix G, Section G-16.a.(9)

5 Cost of project being recommended (PACR TSP) per ER 1105-2-100, Appendix G, Section G-16.a.(9)

***** No Recreation in this table**

Main Report, Section 6.4 COST ESTIMATES OF RESTORATION ELEMENTS
Page 6-36. Table 6-10 will be replaced with the following.

Table 6-10. Ecosystem Restoration Investment and Average Annual Costs

Investment	CEPP (FWO) Costs (2014 Price Level)	CEPP (FWO) Costs (2018 Price Level)	CEPP PACR TSP Costs (2018 Price Level)
Total First Cost	**$1,894,000,000**	**$2,024,000,000**	**$3,325,000,000**
Interest During Construction: Construction	$96,000,000	$135,239,000	$222,038,000
Interest During Construction: Real Estate	$4,000,000	$2,657,000	$4,497,000
Total Investment Cost	**$1,994,000,000**	**$2,161,896,000**	**$3,551,535,000**
Average Annual Costs			
Interest and Amortization of Initial Investment	**$85,000,000**	**$90,066,000**	**$131,552,000**
OMRR&R Sub Total	**$11,250,000**	**$11,920,000**	**$13,743,000**
New Project Features	$4,150,000	$4,397,000	$4,760,000
State Facilities	$4,000,000	$4,238,000	$5,629,000
Invasive Species	$3,100,000	$3,285,000	$3,354,000
Monitoring Sub-Total	**$3,880,000**	**$4,179,000**	**$4,179,000**
Water Quality	$710,000	$765,000	$765,000
Hydrometerological	$195,000	$210,000	$210,000
Ecological Sub-Total	$2,145,000	$2,310,000	$2,310,000
Biological Opinion	*$1,885,000*	$2,030,000	$2,030,000
General Ecological Monitoring[1]	*$260,000*	$280,000	$280,000
Adaptive Management[1]	$690,000	$743,000	$743,000
Invasive Species[1]	$140,000	$151,000	$151,000
Total Average Annual Costs [2]	**$100,000,000**	**$106,165,000**	**$149,474,000**

1 Costs reflect 10-year annual monitoring costs from Tables 6-9 and 6-10 amortized over the period of analysis

2 Total rounded to the nearest $1,000,000

Main Report, Section 6.4.4 Monitoring and Adaptive Management
Page 6-42. The text in the fifth sentence of the second paragraph states "Upon completing ESA Section 7 consultation for each PPA, USACE will undertake the agreed-to avoidance and minimization measures implementing the terms and conditions (TCs)." The text is changed to "Upon completing ESA Section 7 consultation for each PPA, and contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization of the recommended post-authorization changes to CEPP, USACE will undertake the agreed-to avoidance and minimization measures implementing the terms and conditions (TCs)."

Main Report, Section 6.6 COST SHARING
Page 6-46. Table 6-19 is replaced with the following

Table 6-19. Cost Share for the TSP for Proposed Modification to the Authorized CEPP Plan (2018 Price Level)

Item	Federal Cost	Non-Federal Cost	Total[1]
Ecosystem Restoration (ER)			
Restoration Construction	$1,368,507,000	$1,364,507,000	$2,733,014,000
PED[1]	$176,179,000	$176,179,000	$352,358,000
Construction Management	$86,960,000	$86,960,000	$173,920,000
LER&R	$34,000,000	$32,000,000	$66,000,000
ER Subtotal	**$1,665,646,000**	**$1,659,646,000**	**$3,325,292,000**
Recreation (NED)			
Recreation Subtotal	$5,000,000	$5,000,000	**$10,000,000**
Total Project First Cost[2]	**$1,670,646,000**	**$1,664,646,000**	**$3,335,292,000**
Average Annual Costs			
OMRR&R - CEPP Features	$2,380,000	$2,380,000	$4,760,000
OMRR&R - State Facilities	$2,814,500	$2,814,500	$5,629,000
OMRR&R - Invasive Species	$1,677,000	$1,677,000	$3,354,000
OMRR&R - Monitoring (cost per year over 10- year cycle)	$1,448,500	$1,448,500	$2,897,000
OMRR&R - Monitoring (annual cost)	$1,669,500	$1,669,500	$3,339,000
OMRR&R - Recreation		$68,000	$68,000

Main Report, Section 6.7.1.1 Dependencies and Requirements
Page 6-52. The text in the last sentence of the first paragraph “The USACE and the SFWMD will undertake integration of the authorized CEPP features, proposed CEPP modifications presented in this CEPP PACR, and the other CERP projects awaiting authorization.” The text is changed to “The USACE and the SFWMD will undertake integration of the authorized CEPP features, proposed CEPP modifications presented in this CEPP PACR, contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization, and the other CERP projects awaiting authorization.”

Main Report, Section 6.7.1.2 Multiple Project Partnership Agreements
Page 6-52. The text in the third sentence of the last paragraph states “The USACE and the SFWMD will undertake updated project assurances and Savings Clause analyses for

the selected TSP to be included in the New Water Project Partnership Agreement." The text is changed to "The USACE and the SFWMD will undertake updated project assurances and Savings Clause analyses for the selected TSP, contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization of the recommended post-authorization changes to CEPP, to be included in the New Water Project Partnership Agreement."

Main Report, Section 6.7.2 Implementation Scenario

Page 6-55. The text in the third sentence of the second paragraph states "The USACE and the SFWMD will undertake updated project assurances and Savings Clause analyses, if necessary, for the implementation phases that are selected to be included in a Project Partnership Agreement or amendment thereto prior to entering into the PPA or PPA amendment." The text is changed to "The USACE and the SFWMD will undertake updated project assurances and Savings Clause analyses, if necessary and contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization, for the implementation phases that are selected to be included in a Project Partnership Agreement or amendment thereto prior to entering into the PPA or PPA amendment."

Main Report, Section 6.7.3 Preconstruction Engineering and Design

Page 6-55. The text in Section 6.7.3 is replaced with "Appendix A represents a limited level of design, but includes documentation of all engineering assumptions and conceptual designs. PED for CEPP features, as modified by the TSP, could begin after Congressional authorization contingent upon ASA(CW) concurrence with the report and upon SFWMD's concurrence consistent with the implementation phases. Either the USACE or SFWMD would prepare an Engineering Design Report updating the conceptual design and prepare initial, intermediate and final plans and specifications for each phase of construction. All work would be coordinated and reviewed between the USACE and the SFWMD, and approved by the USACE and SFWMD prior to construction, to ensure that the work meets USACE standards and regulations and incorporates SFWMD design guidance, as applicable. PED would include site-specific surveys and geotechnical investigations. During the design phase, detailed analyses, subsurface and site investigations would be conducted to prepare construction documents. During PED, project assurances, Savings Clause analysis and operating manuals would be updated consistent with the implementation phases, if necessary. After completion of 60% final plans and specifications for a given project feature, the lead construction agency (USACE or SFWMD) would prepare and submit a CERPRA permit application (Florida Statutes 373.1502) to the FDEP. The FDEP would review the application material to determine if reasonable assurance that the feature will be consistent with State water quality standards in compliance with rules in effect at the time of application. See Section 6.1 for a list of plan features to be constructed. See Appendix A and Annex C-2 of Appendix A for limited design details and conceptual design plates."

Main Report, Section 6.9 PROJECT ASSURANCES AND SAVINGS CLAUSE SUMMARY

Page 6-61. The following text is added after the last paragraph "The SFWMD also reviewed the eight-step procedures for implementation of E.O. 11988 as prescribed in Section of ER 1165-2-26 relative to the modifications to the authorized CEPP plan proposed in the CEPP PACR. The following additional information is provided:

1. *Determine if the proposed action is in the base flood plain.* – Yes, the proposed A-2 reservoir and STA is located in the base flood plain (Zone AE based on FEMA maps, October 2017, https://maps.co.palm-beach.fl.us/cwgis/?app=floodzones). https://maps.co.palm-beach.fl.us/cwgis/?app=floodzones).

2. *If the action is in the base flood plain, identify and evaluate practicable alternatives to the action or to location of the action in the base flood plain.* – Since the development and authorization of the Comprehensive Everglades Restoration Plan (CERP) in 1999, reservoir storage in the EAA (Component G) has been an integral part of the plan for restoration of the Everglades ecosystem. For the authorized CEPP plan, the A-2 FEB was determined to be a necessary element of the restoration project. The change to an A-2 reservoir and STA to provide more storage and treatment for restoration purposes, in virtually the same location as the A-2 FEB, supports the conclusion that practicable alternatives to locating the storage and treatment facilities in the flood plain have been considered.

3*. If the action must be in the flood plain, advise the general public in the affected area and obtain their views and comments.* – The SFWMD conducted extensive public scoping and outreach efforts during the development of the CEPP PACR. Various configurations for A-2 reservoir storage and STAs in the same general area of the authorized A-2 FEB were considered and presented to the public. See Section 7.1 of the main report and Appendix C.3 for details on public involvement efforts.

4. *Identify beneficial and adverse impacts due to the action and any expected losses of natural and beneficial flood plain values. Where actions proposed to be located outside the base flood plain will affect the base flood plain, impacts resulting from these actions should also be identified.* – The proposed modifications to CEPP addressed in the PACR will further support restoration of the Everglades ecosystem while reducing undesirable discharges to the Northern estuaries. The land where the proposed A-2 reservoir and STA would be constructed is agricultural land that has limited natural and beneficial flood plain values. Thus, the proposed changes to the authorized CEPP plan are expected to have little overall effect on natural flood plain values.

5. *If the action is likely to induce development in the base flood plain, determine if a practicable non-flood plain alternative for the development exists.* – The project modifications proposed in the CEPP PACR would be for ecosystem restoration purposes and is not expected to induce development in the base flood plain.

6. *As part of the planning process under the Principles and Guidelines, determine viable methods to minimize any adverse impacts of the action including any likely induced development for which there is no practicable alternative and methods to restore and preserve the natural and beneficial flood plain values. This should include reevaluation of the "no action" alternative.* – The “no action” alternative would involve construction of the A-2 FEB, as currently authorized in the CEPP plan. The impacts on the flood plain under the “no action” alternative would be similar to those resulting from construction of the A-2 reservoir and STA. No induced development in the flood plain would be expected as a result of the project modifications proposed in the CEPP PACR.

7*. If the final determination is made that no practicable alternative exists to locating the action in the flood plain, advise the general public in the affected area of the findings.* – The public has been advised of the proposed modifications addressed in the CEPP PACR. Agencies and the public are fully aware that some form of water storage and treatment in the EAA is necessary to achieve the expected Everglades restoration benefits.

8. *Recommend the plan most responsive to the planning objectives established by the study and consistent with the requirements of the Executive Order.* – The proposed modifications to the authorized CEPP plan to provide additional storage and treatment in the EAA (a) is the only practicable alternative to achieve the restoration objective; (b) would not increase flood risks; (c) would not increase the impacts of floods on human safety, health, and welfare; and (d) would restore and preserve the natural and beneficial values of the base flood plain downstream of the proposed A-2 reservoir and STA.

Main Report, Section 6.11.1 Sea Level Change

Page 6-68. The text in the second sentence of the last paragraph states “The SFWMD and the USACE will update the 2014 SLR assessment to reflect the proposed operating scenario for the TSP during preconstruction engineering and design (PED) to ensure the reduction in flow to the Northern Estuaries when combined with SLR would not reduce the benefits from the CEPP to less than beneficial.” The text is changed to “The SFWMD and the USACE will update the 2014 SLR assessment to reflect the proposed operating scenario for the TSP, contingent upon ASA(CW) concurrence with the report and subsequent congressional authorization, during preconstruction engineering and design (PED) to ensure the reduction in flow to the Northern Estuaries when combined with SLR would not reduce the benefits from the CEPP to less than beneficial.”

Main Report, Section 8.1 RECOMMENDED MODIFICATIONS TO PROVISIONS IN THE CHIEF OF ENGINEERS REPORT FOR THE CENTRAL EVERGLADES PLANNING PROJECT

Page 8-1. Section 8.1 and subsections are replaced with the following (CEPP Chief's Report Language Recommendations Table included for reference as Addendum Attachment 1):

"**Section 8.1 CONSIDERATION OF THE CHIEF OF ENGINEERS REPORT BY THE SECRETARY OF THE ARMY IN THE REPORT TO CONGRESS ON MODIFICATIONS TO CEPP UNDER THE CEPP PACR**

During preparation of the CEPP PACR, the SFWMD reviewed the report of the Chief of Engineers on CEPP, dated December 23, 2014, to ensure pertinent provisions and conditions were considered and accounted for in development of the proposed post authorization change.

Most of the provisions and conditions in the Chief of Engineers report continue to apply to the overall CEPP plan regardless of implementation of SFWMD's Tentatively Recommended Plan in the CEPP PACR.

For the Secretary's consideration, below is a list of those provisions in the CEPP Chief of Engineers Report that would need to be updated in the Secretary's Report to Congress to address implementation of CEPP as modified by the PACR. The list contains SFWMD's recommendation on each provision from the Chief's Report. A Table is attached at the end of this section that compares in redline format the original Chief's Report language to the recommended changes and provides a rationale for the changes.

8.1.1 Chief of Engineers Report, Paragraph 3.

Paragraph 3 addresses the project goals and benefits. The SFWMD recommends that paragraph 3 be updated in the Secretary's Report to read as follows:

> 3. The CEPP PACR recommends a project that contributes significantly to the ecological goals and objectives of CERP: (1) increasing the spatial extent of natural areas; (2) improving habitat function and quality; and (3) improving native plant and animal abundance and diversity. The historical Everglades ecosystem was previously defined by a mosaic of uplands, freshwater marsh, deep water sloughs, and estuarine habitats that supported a diverse community of fish and wildlife. Today nearly all aspects of South Florida's flora and fauna have been affected by development, altered hydrology, nutrient input, and spread of non-native species that have resulted directly or indirectly from a century of water management for human needs. The CEPP PACR confirms information in the CERP and provides a conceptual plan that evaluated the costs and benefits

associated with construction and operation of the Central Everglades components of the CERP. The CEPP PACR will help restore the central portion of the Everglades ecosystem towards a state more similar to the historic conditions. The project will improve habitat function and quality, native plant and animal abundance, and species composition and diversity by advancing towards the CERP goal in reducing damaging discharges to the northern estuaries and by delivering the CERP Goal of approximately 370,000 average annual acre feet of additional water to the Everglades.

8.1.2 Chief of Engineers Report, Paragraph 4.

Paragraph 4 identifies project features. No changes to Paragraph 4, or subparagraphs 4.b., 4.c., 4.d., and 4.e. are recommended. The SFWMD recommends that paragraph 4.a. be updated in the Secretary's Report to read as follows:

> a. The A-2 Reservoir includes a 10,500-acre reservoir and 6,500-acre STA with associated distribution, inlet, and outlet structures. The project also includes 1,000 cfs of additional conveyance capacity in the Miami Canal within the EAA and 200 cfs of additional conveyance capacity in the North New River Canal within the EAA. These features will work in conjunction with the existing 60,000 ac-ft A-1 FEB, STA-2, and STA-3/4 to deliver new water south.

8.1.3 Chief of Engineers Report, Paragraph 5.

Paragraph 5 addresses project cost-share. The SFWMD recommends that paragraph 5 be updated in the Secretary's Report to read as follows:

> 5. The total project first cost of the CEPP features, as modified by the CEPP PACR, based upon 2018 price levels, is estimated to be $3,335,000,000 rounded to the nearest $100 million. This includes an estimated cost of $1,288,000,000 for the CEPP features that remain part of the project and an estimated cost of $2,047,000,000 for the CEPP PACR features. The project first cost for the ecosystem restoration features is estimated to be $3,325,000,000 and for recreation is estimated to be $10,000,000. In accordance with the cost-sharing requirements of Section 601 (e) of WRDA 2000, construction costs for ecosystem restoration are shared 50-50 between the government and non-federal sponsor. Construction costs associated with recreation features are also cost-shared 50-50 in accordance with Section 103 of WRDA 1986, as amended. Additionally, the government is responsible for 100% of cultural resources data recovery costs, up to 1% of total project costs. Therefore, in consideration of estimated costs for cultural resources data recovery, the federal cost of the CEPP features, as modified by the CEPP PACR, would be$1,670,646,000 and the non-federal cost would be $1,664,646,000. The estimated lands, easements, right-of-way, and relocation (LERRs) costs for the tentatively selected plan are $66,000,000, of which

approximately $34,000,000 are creditable to the government and approximately $32,000,000 are creditable to the non-federal sponsor. Federal funds contributed by Department of Interior (DOI) pursuant to Section 390 of the Federal Agriculture Improvement and Reform Act of 1996 (Public Law 104- 127, 110 Stat. 1022) are credited to the federal share of the project cost pursuant to Section 601 (e)(3) of WRDA 2000. DOI contributed approximately $34,000,000 toward the purchase of the lands associated with the A-2 Reservoir and A-2 STA.

8.1.4 Chief of Engineers Report, Paragraph 7.

Paragraph 7 addresses the estimated project costs annualized over the 50-year period of economic evaluation. The SFWMD recommends that paragraph 7 be updated in the Secretary's Report to read as follows:

> 7. Based on 2018 price levels, a 50-year period of economic evaluation and a 2.75 percent discount rate, the equivalent annual cost for ecosystem restoration features of the proposed CEPP project as modified by the CEPP PACR is estimated at $149,474,000, which includes OMRR&R, interest during construction and amortization. The estimated annual costs for restoration OMRR&R are $13,743,000, of which $4,760,000 is attributed to new CEPP infrastructure; $5,629,000 to flowing water through existing state and C&SF infrastructure; and $3,354,000 to invasive species management. Post construction monitoring will occur during 10-year cycles for invasive species and performance-based ecological monitoring ($2,897,000 annually for up to 10 years). Permit-related monitoring and monitoring that informs project operations will also be conducted ($3,339,000 annually) and this monitoring will be assessed periodically and revised as needed. The OMRR&R costs for recreation features are estimated at $68,000 and are a 100% non-federal responsibility.

8.1.5 Chief of Engineers Report, Paragraph 9.

Paragraph 9 addresses the use of state of Florida facilities constructed and operated pursuant to state permits. No changes to the first paragraph of Paragraph 9, or subparagraphs a. and d. are recommended.

The SFWMD recommends that subparagraphs b., c. and e. be updated in the Secretary's Report to read as follows:

> b. The state facilities and C&SF features will use excess capacity to process "new water" provided by CEPP features, as modified by the PACR, which has been estimated to comprise approximately (1) 27.3% of the total water volume that could flow through these facilities associated with the use of STA 3/4 and STA-2, and (2) an additional 21.3% of the total water volume (for a total of 48.6%) that could flow through these facilities associated with the use of the new A-2 STA. OMRR&R

costs are assumed to be linear with flow volumes and thus the additional increase in OMRR&R costs due to the increased flow volumes will be 27.3% and 48.6%, respectively, of the total OMRR&R costs for use of facilities associated with flow through STA 3/4 and STA-2 and with flow through the new A-2 STA. Consistent with the general CERP authorization for cost sharing OMRR&R (WRDA 2000 Section 601 (e)(4)), CEPP, as modified by the PACR, should be authorized to contribute 27.3% and 48.6%, respectively of the OMRR&R costs of the aforementioned state facilities and C&SF features to the extent that OMRR&R activities are directly related to their use for treating "new water". The federal pro-rated share for OMRR&R for the facilities used by CEPP, as modified by the PACR, is therefore (1) 50% of 27.3%, or 13.65% of the total OMRR&R costs for those facilities associated with the use of STA 3/4 and STA-2, and (2) 50% of 48.6%, or 24.3% of the total OMRR&R costs for those facilities associated with the use of the new A-2 STA.

c. The project authorization should include specific statutory language allowing the government to provide 50% cost share for 27.3% of the yearly OMRR&R costs of state facilities and listed C&SF features with appropriations made available for OMRR&R activities for CEPP, as modified by the PACR, associated with the use of STA 3/4 and STA 2. The project authorization should include specific statutory language allowing the government to provide 50% cost share for 48.6% of the yearly OMRR&R costs of state facilities and listed C&SF features with appropriations made available for CERP OMRR&R activities associated with the use of the new A-2 STA. The term "OMRR&R costs" is defined the same as the term "project OMRR&R costs" in Article I.E. of the Master Agreement between the Department of the Army and the non-federal sponsor dated 13 August 2009. Following the same procedures set forth in Section 6.6.2 of the 2014 CEPP PIR, approval by USACE Headquarters and the Assistant Secretary of the Army (Civil Works) is required prior to commencing replacement and rehabilitation actions for the state facilities listed previously that CEPP, as modified by the PACR, is dependent on. This is a condition of the federal cost share.

e. Due to the simplified assumptions used for determining cost-share of the OMRR&R, an adaptive management construct will be developed that prescribes processes and procedures for determining a more accurate allocation of costs once more detailed information is available regarding the impact of CEPP, as modified by the PACR, on the OMRR&R of existing state facilities and C&SF features. After CEPP, as modified by the PACR, has operated for an appropriate period, an analysis based on monitoring data will be undertaken to evaluate project performance and verify that the project successfully delivers an annual average of approximately 370,000 acre-feet of new water for the natural system as described in the CEPP PACR.

(1) If the monitoring data and analysis show that CEPP produces less than the anticipated 370,000 acre-feet per year on average, then the Federal project is not fully realizing the projected benefits and the state facilities and C&SF features are not being burdened as projected. In such a case, the analysis will be used to inform changes in operations to achieve the quantity, timing or distribution of water as described in this PIR/EIS, or recommend changes to the amount of water to be reserved or allocated to the natural system.

(2) If the monitoring data and analysis show that CEPP actually processes significantly more or less than the anticipated 370,000 acre-feet per year of "new water" on average, then the analysis may be used to adjust the calculation of OMRR&R cost share upward or downward to reflect the actual average annual use of excess capacity by the federal project. This will be accomplished through consultation with the state and USACE Headquarters and is necessary after operations have begun to capture the true federal interest and cost share responsibility.

8.1.6 Chief of Engineers Report, Paragraph 10.

Paragraph 10 addresses non-CEPP projects, sequencing of CEPP implementation, and the three PPAs for CEPP implementation. The SFWMD recommends that paragraph 10 be updated in the Secretary's Report to read as follows:

10. A number of non-CEPP projects must be in place before implementing most CEPP features and certain non-CEPP projects must be integrated into the sequencing of CEPP implementation to avoid unintended adverse consequences. All features of the State Restoration Strategies must be completed and meet state water quality standards prior to operating most CEPP project features. Implementation of CEPP will occur over many years, and the project be constructed in three phases that are considered separable elements with inter-related project features grouped to provide incremental hydrologic and ecological benefits. The three implementation phases are based upon developing three Project Partnership Agreements (PPAs) and are identified as PPA North, PPA South, and PPA New Water. The CEPP PACR features are grouped into three separate PPAs based upon the spatial distribution of the features and the locations within the CEPP study area. The features included in each are identified in the CEPP project, as modified by the CEPP PACR. These groupings include a PPA to cover project features in northern WCA 3A (PPA North), a PPA to cover project features in southern WCA 3A, 3B and ENP (PPA South), and a PPA to cover the new water storage A-2 Reservoir, A-2 STA treatment, improved conveyance on the NNR and Miami Canal and seepage management features (PPA New Water). Implementation of the CEPP PACR will occur over many years and include many actions by the USACE and SFWMD. These actions may include executing PPAs in parallel and construction of the CEPP PACR features in parallel to advance completion of

project components as funding becomes available and as quickly as possible to achieve ecosystem benefits. The phased implementation approach incorporates an adaptive implementation process and recommendations of the National Research Council, maximizing the opportunity to realize incremental restoration benefits by initially building features that utilize existing water in the system that meets state water quality standards. Individual PPAs, or amendments to existing PPAs, will be executed prior to construction of each implementation phase. The project dependencies include:

a. A-1 FEB and State Restoration Strategies: Required prior to operation of northern WCA-3A distribution features (L-4 degrade, new pump station, S-8 Modifications, L-5 and L-6 improvements, Miami Canal Backfilling) to ensure adequate water quality treatment of inflows;

b. 8.5 Square Mile Area (SMA) and Existing S-356: Construction of the C-358 seepage collector canal and structure S-357N within the 8.5 SMA must be completed to allow full utilization of the 8.5 SMA features to provide seepage mitigation for increasing flows into Northeast Shark River Slough (NESRS); operation of the existing S-356 pump station (500 cfs) is required prior to significantly increasing flows to NESRS, to provide seepage management;

c. C-111 South Dade: Extension of the detention area levees to connect with 8.5 SMA is required prior to significantly increasing flows to NESRS to enable operation of the S-357 pump station to provide seepage management to 8.5 SMA;

d. Modified Water Deliveries (MWD) to ENP 1-Mile Bridge and Road Raising: The MWD project will be complete and operational prior to implementation of WCA-3B inflow structures along the L-67 A&C levees, apart from S-152 that is already constructed and in testing phase, to ensure adequate road protection to allow for increased stages in L-29 canal;

e. Broward County Water Preserve Area (BCWPA) C-11 Impoundment: Required implementation of additional WCA-3B inflow structures along the L-67 A&C levees, apart from S-152 that is already constructed and in testing phase, to ensure adequate water quality of inflows to WCA 3B and NESRS;

f. Tamiami Trail Next Steps Bridging and Road Raising: Required prior to increasing capacities of S-356 and implementation of WCA-3B inflow structures along the L-67A levee, gaps in L-67C levee, apart from S-152 that is already constructed and in testing phase, and Blue Shanty flowway (L -67C removal, L-29 levee removal);

g. Indian River Lagoon (IRL) South C-44 Reservoir and Connection to C-23 Canal: Required prior to re-directing the maximum amount of water from Lake

Okeechobee south to the A-2 Reservoir to meet environmental performance, to avoid reduction in low flows to the St. Lucie Estuary and low Lake Okeechobee water levels that affect the Lake Okeechobee Service Area (LOSA).

h. Modification to the Lake Okeechobee Regulation Schedule (LORS) is anticipated prior to full utilization of the A-2 Reservoir, A-2 STA and improved canal conveyance in order to achieve the complete ecological benefits envisioned for the northern Estuaries and through redirecting the full 370,000 acre-feet per year on average south to be provided by CEPP, as modified by the PACR, and to avoid low lake levels that would affect the LOSA.

8.1.7 Chief of Engineers Report, Paragraph 11.

Paragraph 11 addresses efficiency of the ecosystem restoration plan. No changes to paragraph 11 and 11.b. are recommended.

The SFWMD recommends paragraph 11.a. be updated in the Secretary's Report to read as follows:

a. The recommended plan benefits more than 1.5 million acres in the Caloosahatchee and St. Lucie Estuaries, WCA-3A, WCA-3B, ENP, and Florida Bay. The benefits to approximately 994,000 acres in WCA-3A, WCA-3B and ENP are derived by increasing the quantity of freshwater inflow to the natural system by 76% and improving sheetflow through the system. This will improve the depths, duration, and movement of water that will help to restore and sustain the ridge and slough landscape. Reducing high volume freshwater discharges from Lake Okeechobee to the Caloosahatchee and St. Lucie Estuaries by 55% and 40% (respectively), improves approximately 86,000 acres in these estuaries by reducing turbidity, sedimentation, and moderating unnatural fluctuations in salinity that are extremely detrimental to estuarine communities. The increase in the quantity and improved timing of freshwater to the Everglades will bring the benefits as described above, and then when the water reaches Florida Bay at the southern end of the system it will reduce the intensity, frequency, and duration of hypersaline events in the Bay across approximately 476,000 acres. An average salinity decrease of 0.5 parts per thousand will help to re-establish a persistent and resilient estuarine zone that extends further into the bay.

8.1.8 Chief of Engineers Report, Paragraph 15.

Paragraph 15 addresses management of residual risks and uncertainties associated with project implementation. The SFWMD recommends that paragraph 15 be updated in the Secretary's Report to read as follows:

15. Due to the risks and uncertainties associated with CEPP PACR, the long implementation time, and dependencies on other CERP and non-CERP projects, many risk management measures have been developed to ensure future coordination with USACE Headquarters and, as needed, the Office of the Assistant Secretary of the Army (Civil Works). Additional project information and decision documentation reports, if needed, will be developed to support each of the three PPAs by providing more detailed information and documenting significantly changed conditions if they exist. Significant changes in project scope or cost from the CEPP PACR may warrant a Limited Reevaluation Report (LRR) or General Reevaluation Report (GRR) in lieu of other supporting project information and decision documentation.

a. Jacksonville District will provide an annual status report to South Atlantic Division and USACE Headquarters and will conduct a briefing that addresses overall project progress and key uncertainties and/or decisions required as implementation progresses. It will include an update on implementation of CEPP PACR features and those non-CEPP projects on which the CEPP PACR is dependent.

b. Jacksonville District will coordinate with South Atlantic Division and USACE Headquarters to develop an adaptive management strategy regarding cost share of OMRR&R of State facilities and C&SF features (see paragraph 9.) e).

c. Jacksonville District will provide to the South Atlantic Division and USACE Headquarters: draft biological opinions pursuant to ESA for review and approval; notification of development of additional NEPA documents; and Jacksonville District will coordinate during planning, engineering and design phase the definition of activities at state facilities as either repair, replacement or rehabilitation actions.

d. If applicable, Jacksonville District will coordinate and obtain approval from USACE Headquarters: for the government to cost share OMRR&R of additional state facilities and C&SF features not identified in the CEPP PACR; for the government to cost share replacement and rehabilitation actions at state facilities; for any changes to the three CEPP PACR implementation phases; to determine appropriate course of action should state water quality compliance not be met after construction and operation of CEPP PACR; and, to use less than a fee estate, including any permits or other instruments obtained for real estate interests other than the provision of fee property for the project, except for the temporary construction easements and the borrow easements, which are approved.

8.1.9 Chief of Engineers Report, Paragraph 16.

Paragraph 16 addresses review of the CEPP Project Implementation Report. No changes are recommended to paragraph 16.a, 16.b.(1) and 16.c. The SFWMD recommends that paragraphs 16.b.(2) and 16.b.(3) be updated in the Secretary's Report to read as follows:

> b. (2) The PACR indicates that completion of the A-1 FEB through the State of Florida's Restoration Strategies project is required prior to operation of the CEPP northern WCA-3A distribution features to ensure adequate water quality treatment of inflows. Additionally, the full benefits of the CEPP PACR PPA New Water phase are dependent on some features in PPA North and PPA South phases. The CEPP PACR features are grouped into three separate PPAs based upon the spatial distribution of the features and the locations within the CEPP study area. Implementation of the CEPP PACR will occur over many years and include many actions by the USACE and SFWMD. These actions may include executing PPAs in parallel and construction of the CEPP PACR features in parallel to advance completion of project components as funding becomes available and as quickly as possible to achieve ecosystem benefits.
>
> b. (3) The CEPP PACR recognizes risks and uncertainties and prior to implementation of each phase of the project, additional detailed information pertaining to that phase will be developed. This additional detailed information will be utilized and updated as appropriate as revisions are made to Water Control Plans and Project Operating Manuals for each phase. The USACE will ensure that all legal requirements are met for each phase and compliance will be maintained throughout the entirety of CEPP implementation."

Main Report, Section 8.2 COST SHARING OF NEW WATER QUALITY TREATMENT FEATURE

Page 8-9. The original text in Section 8.2 is deleted and replaced with the following "Section 528(e)(2) of WRDA 1996 (P.L. 104-303) provides that the non-Federal share of the costs of features for water quality improvement shall be 100% unless the Secretary of the Army determines that a project feature to improve water quality is essential to Everglades restoration, in which case the non-Federal cost share for the feature shall be 50%, provided the feature is not part of the Everglades Construction Project of the State of Florida.

Section 601 of WRDA 2000 (P.L.106–541) approved the 1999 C&SF Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (Yellow Book) as the framework for modifications and operational changes to the Central and Southern Florida Project. Section 601 also elaborates on features of the Yellow Book that may be required for the protection and improvement of the water quality of the South Florida ecosystem. The relevant provisions are underlined for emphasis.

(b) COMPREHENSIVE EVERGLADES RESTORATION PLAN.—

(1) APPROVAL.—

(A) IN GENERAL.—Except as modified by this section, the Plan is approved as a framework for modifications and operational changes to the Central and Southern Florida Project that are needed to restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, and the improvement of the environment of the South Florida ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized.

(2) SPECIFIC AUTHORIZATIONS.—

(A) IN GENERAL.

(i) PROJECTS.—The Secretary shall carry out the projects included in the Plan in accordance with subparagraphs (B), (C), (D), and (E).

(ii) CONSIDERATIONS.—In carrying out activities described in the Plan, the Secretary shall—

(I) take into account the protection of water quality by considering applicable State water quality standards; and

(II) include such features as the Secretary determines are necessary to ensure that all ground water and surface water discharges from any project feature authorized by this subsection will meet all applicable water quality standards and applicable water quality permitting requirements.

Subsequent to the passage of WRDA 1996, the USACE adopted policy guidance for implementing Section 528(e)(2) of WRDA 1996 (Water Quality Policy for South Florida Ecosystem Restoration, 7 Nov 1997, CECW-AG by the Director of Civil Works).

This 1997 policy guidance states that in order to qualify for Federal cost sharing on a CERP water quality improvement project, the project must be designated as a (1) water reclamation project or a (2) water reuse project. Water reclamation is defined as diverting water that was formerly discharged to tide or disposed of in some other way and pumped back into the C&SF Project system to increase the volume of water available for Everglades restoration. Water reuse is defined as modifying the use of water from its present function (e.g., flood control) in a current location to a preferred function (e.g., hydrologic restoration) in a preferred location. This 1997 policy guidance was utilized in the Yellow Book to recommend 22 water quality improvement components in the Yellow Book (See Table 9-4 on page 9-64) that were subsequently determined by the Secretary to be essential to Everglades restoration and eligible for Federal cost-share (See page 9-63).

Current Army/USACE policy governing water quality improvements for CERP projects is contained in a Memorandum from the ASA-CW to the Director of Civil Works, USACE, dated 30 Nov 2007. This memo includes the following policy determination:

> "It is expressly against Federal policy to recommend for implementation projects or features that would result in treating or otherwise abating pollution problems caused by other parties where those parties have, or are likely to have a legal responsibility for remediation or other compliance responsibility…
>
> However, for CERP projects where inflows do not currently meet water quality standards the Corps will evaluate the benefits of any water quality features in Project Implementation Reports (PIRs) and if the benefits are determined to be essential to Everglades restoration, then the Corps may recommend to Congress in a PIR that it be given specific statutory authority to build and cost share the subject water quality features to both help achieve water quality requirements and provide additional restoration benefits critical to the successful implementation of CERP. The cost of operating and maintaining (O&M) such features would be allocated so that the costs of bringing the inflowing water into compliance with pre-project water quality requirements would be born 100% by the Non-Federal Sponsor.

As explained in a contemporary policy memorandum by the Director of Civil Works, USACE, dated 25 May 2007, a determination that a particular water quality feature is deemed "essential to the CERP restoration effort… must be based on some finding other than the project is part of CERP and generally will aid the restoration effort."

The A-2 STA is a water reclamation feature based on the definition provided in the 1997 policy guidance and used in the Yellow Book. The A-2 reservoir and A-2 STA will capture, store and treat water that would otherwise be discharged to the Atlantic Ocean through the C-44 Canal or the Gulf of Mexico through the C-43 Canal in accordance with the Lake Okeechobee regulation schedule. This redirected water requires water quality improvement treatment prior to being used for ecosystem restoration in Water Conservation Area 3, Everglades National Park and Florida Bay. The redirected water will be stored in the EAA A-2 Reservoir, then treated in the A-2 STA before being released as "new water" to the central Everglades for ecosystem restoration.

It is noted that the original EAA Reservoir component was not identified in Table 9-4 of the Yellow Book as an essential water quality improvement feature because at that time, the Yellow Book had not identified a specific water quality improvement feature for the EAA Reservoir component. However, the 1997 Policy Guidance and Yellow Book rationale for Federal cost share of water quality features applies to the A-2 STA in the CEPP PACR TSP because an STA is required to improve the quality of water that would otherwise be discharged to tide, but will instead be redirected and reclaimed for restoration of essential flows to WCA-3 and Everglades National Park and Florida Bay.

As discussed in Section 4.1.1 of this PACR, analyses conducted during the Restudy and subsequent analyses by RECOVER during the development of the CEPP PIR and during the development of this CEPP PACR have established a CERP goal of 300,000 acre-feet (on an average annual basis) of "new water" needed to restore the natural flows and hydroperiods to the central Everglades.

An examination of the environmental benefits of the CEPP PACR TSP, including the STA, as discussed in detail in Section 6, reveals that the "new water" provided by the TSP is critically important to the health of Everglades and therefore "essential" to Everglades restoration. Section 6 concludes that the additional "new water" provided by the TSP is essential to restore:

> "…water depth, duration and distribution in WCA 3A, WCA 3B, and ENP and will serve to recreate a landscape characteristic of a pre-drained system that will support a healthy mosaic of plant and animal life. The restored hydrology of the Everglades ecosystem will more closely resemble a naturally occurring rainfall-driven system with wet and dry cycles essential to flora and fauna propagation. Improved water depths and sheet-flowing distribution will begin to re-establish the unique ridge, slough and tree island micro-topography that once provided sustenance to the vast diversity of species inhabiting the Everglades.

The original CEPP PIR approved by the Secretary and authorized by Congress already determined that the first increment (210,000 acre-feet on an average annual basis) of additional flows that will be delivered by the CEPP are essential to Everglades restoration (CEPP PIR, p. 8-11). While not specifically stated, the CEPP PIR also implicitly determined that water quality treatment was essential to ensure that the "new water" was compatible with the needs of the Everglades ecosystem by approving the State's request for cost-share on the OMRR&R costs for water quality treatment provided by State facilities. Rather than recommending a new water quality improvement feature (i.e. STA), the CEPP PIR recommended a more cost-effective plan that utilized existing State facilities and provided for Federal cost-share on the OMRR&R costs associated with additional usage of these State facilities (CEPP PIR, p. 8-11).

For the purpose of analyzing Federal participation in the cost-share of the water quality feature (i.e., A-2 STA) in the CEPP PACR, the future without project (FWO) condition was developed based on the assumption that the non-Federal interests will meet the requirements of the Clean Water Act and State water quality standards for existing flows (both runoff and additional water redirected from Lake Okeechobee flows). The FWO condition assumes BMPs and all reasonable water quality improvement measures within the EAA will be in place to ensure that the waters being received by the C&SF Project system are of sufficient quality to meet published water quality standards.

Further, consistent with the rationale used by the CEPP PIR to determine that the "new water" flows to the central Everglades and associated water quality treatment are

essential for Everglades restoration, it follows that the new A-2 STA recommended in the CEPP PACR TSP is also essential to ensure that the additional redirected "new water" will protect and restore the central Everglades and meet applicable water quality standards. Without such treatment, the "essential" new flow cannot occur. The proposed water quality improvement feature, the A-2 STA, recommended as part of the CEPP PACR TSP is not part of the Everglades Construction Project and is therefore not excluded from federal cost share. Accordingly, the new A-2 STA water quality treatment feature in the TSP is recommended for 50% Federal cost share."

Main Report, Section 8.6 REQUEST FOR ASA(CW) REVIEW, APPROVAL, AND TRANSMITTAL TO CONGRESS FOR AUTHORIZATION

Page 8-18. The following text is added after the first sentence "The Alternative C240A is the TSP and the SFWMD's tentatively recommended plan."

Appendix A, Section A.12.2.8.1.17 Emissions Requirements

Page A.12-18. The text in this section is replaced with "All proposed engines (i.e. pump engines and backup power generator engines) that are part of the TSP shall be compliant with the EPA's Tier 4 emissions requirements."

Appendix A, Section A.16.8, FIRE SUPPRESSION SYSTEM

Page A.16-4. This text in this section is replaced with "As with other SFWMD reservoir and STA projects, it is expected that automatic fire sprinklers will not be required for the control buildings associated with the proposed water control structures (i.e. pump station P-1, gated culverts C-1 and C-3 through C-10 as well as gated spillways SW-2, SW-3 and SW-4). Instead, each control building will have an automatic fire detection system with portable fire extinguishers provided in the control and generator rooms in accordance with the codes set forth by the Florida Building Code, Palm Beach County and the National Fire Protection Association. In addition, there will be limitations imposed on the amount of fuel stored at each control building in accordance with Palm Beach County requirements.

During the PED phase, the SFWMD in coordination with Palm Beach County shall review all design assumptions, criteria, and calculations for the fire detection and suppression system for each proposed structure. The SFWMD's insurance underwriter shall also review and approve the fire detection and suppression system for each structure."

Appendix B, Cost Estimates and Risk Analysis

The updated Total Project Cost Summary (Addendum Attachment 2) and the MCACES Cost Summary (Addendum Attachment 3) is replaced in Appendix B, Cost Estimates and Rick Analysis with the Addendum Attachments.

Appendix B, Cost Estimates and Risk Analysis

Page B-11. An error was noted in Appendix B, Table B.2. The following table is replacing the table in the report.

Table B.2 Plan Formulation Cost Estimates

Item Description	FWO	R240A	R240B	R360C	R360D	C360C
Authorized CEPP Construction and Implementation	$ 1,991,659,000	$ 1,991,659,000	$ 1,991,659,000	$ 1,991,659,000	$ 1,991,659,000	$ 1,991,659,000
Alternative Construction & Implementation		$ 1,737,273,387	$ 1,755,727,044	$ 2,108,489,398	$ 2,107,108,102	$ 2,108,489,398
Costs Removed from CEPP (for removal of A-2 FEB)	$ -	($ 399,219,000)	($ 399,219,000)	($ 399,219,000)	($ 399,219,000)	($ 399,219,000)
Total Project Construction & Implementation	$ 1,991,659,000	$ 3,329,713,387	$ 3,348,167,044	$ 3,700,929,398	$ 3,699,548,102	$ 3,700,929,398
Construction Duration (Mo.)	60	60	60	60	60	60
Interest During Construction	$ 138,987,700	$ 232,363,700	$ 233,651,500	$ 258,269,000	$ 258,172,600	$ 258,269,000
Project Lands and Damages	$ 38,825,000	$ 38,825,000	$ 38,825,000	$ 38,825,000	$ 38,825,000	$ 38,825,000
Total Construction, IDC and Lands & Damages	$ 2,169,471,700	$ 3,600,902,087	$ 3,620,643,544	$ 3,998,023,398	$ 3,996,545,702	$ 3,998,023,398
Average Annual Cost	$ 80,359,200	$ 133,380,700	$ 134,112,000	$ 148,090,500	$ 148,035,700	$ 148,090,500
STA Annual O&M Cost	$ -	$ 1,932,000	$ 2,940,000	$ 2,175,000	$ 2,644,000	$ 2,175,000
RESERVOIR Annual O&M Cost	$ -	$ 2,829,000	$ 2,754,000	$ 3,193,000	$ 3,665,000	$ 3,193,000
CEPP O&M	$ 6,781,000	$ 6,781,000	$ 6,781,000	$ 6,781,000	$ 6,781,000	$ 6,781,000
CEPP O&M Removed from Alternatives	$ -	$ 1,359,221	$ 1,359,221	$ 1,359,221	$ 1,359,221	$ 1,359,221
Average Annual O&M Cost	$ 6,781,000	$ 10,182,779	$ 11,115,779	$ 10,789,779	$ 11,730,779	$ 10,789,779
Total Average Annual Costs	**$ 87,140,200**	**$ 143,563,479**	**$ 145,227,779**	**$ 158,880,279**	**$ 159,766,479**	**$ 158,880,279**

*Annual costs are based on a 50-year period of analysis. Costs do not include costs of recreation features.

*Costs are planning level costs and do not coincide exactly with the detailed costs of the Tentatively Selected Plan presented in other sections of the report.

*Computation of the detailed estimate for the Tentatively Selected Plan is based on additional engineering and design.

*Contingency used in planning level costs was 20% due to the high level of uncertainty in the design of alternatives.

Appendix C, Environmental and Cultural Resources
Appendix C.3, Pertinent Correspondence. The scoping comments provided on November 21, 2017, by the US Environmental Protection Agency (EPA) are included in the document. Addendum Attachment 4.

Annex E, Technical Reviews
Page i. The following text is added as an introduction to Annex E "Introduction: This Annex includes the scope and level of internal review and peer review for a Post Authorization Change Report (PACR), prepared as an Integrated Feasibility Study and Draft Environmental Impact Statement (FS/DEIS), for the Central Everglades Planning Project (CEPP), Florida, which was authorized by section 1401(4) of the Water Infrastructure Investments for the Nation (WINN) Act of 2016 as prepared by the South Florida Water Management District (SFWMD) under the authority of section 203 of the Water Resources Development Act (WRDA) of 1986, as amended. Section 203 of WRDA 1986, as amended, grants authority to non-federal interests to conduct feasibility level studies for water resources projects for submittal to the Secretary of the Army for review, approval, and forwarding to Congress for authorization. The content of this Annex includes a description of reviews completed by the SFWMD in preparation of the CEPP PACR. The intent of this Review Plan was to follow Engineering Circular (EC) 1165-2-214 as closely as possible.

In accordance with ER 1165-2-209, the non-Federal interests must certify the quality and technical accuracy of the feasibility study and the construction cost estimate for the project. This has been done by documenting the quality control, quality assurance, and technical reviews that were conducted for all information presented in the CEPP PACR. In addition, the study underwent the requirements for independent peer review (IEPR) and an agency technical review (ATR). Annex E provides the following documents to support the certification of the study:

1. CEPP PACR Review Plan
2. Quality Control Plan
3. Independent External Pier Review Report by Battelle Memorial Institute
4. Legis Consultancy Cost Review
5. Cost Estimating and Quantity Takeoff Quality Management (Addendum Attachment 5)

All decision documents developed in support of the CEPP PACR were subject to quality control reviews by the SFWMD, their contractors, other agencies, and independent reviewers. Senior, experienced SFWMD employees and their contractors participated in quality checks throughout the development of the CEPP PACR, representing all pertinent disciplines including: plan formulation, economics, environmental compliance, engineering design, coastal hydraulics and hydrology, geotechnical engineering, cost engineering and real estate. Following an initial draft, external reviewers from other

agencies participated in several quality control reviews. These efforts are described in the main body of the Review Plan and detailed in several attachments to the Review Plan. The attachments include the Contractor's Quality Control Plan, comments received and the responses to the SFWMD Agency Technical Review, the final report of an Independent External Peer Review performed by Battelle, and a final summary report of a Cost Review performed by Legis Consultancy."

Annex E, Technical Reviews

Attachment 6. The Legis Consultancy Cost Review report "ATR Level Draft Summary Report" is replaced with the "ATR-Level Final Summary Report" and included as Addendum Attachment 6.

Addendum Attachment 1

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
3	The CEPP PACR~~The final PIR and integrated Environmental Impact Statement (EIS), developed pursuant to the National Environmental Policy Act (NEPA),~~ recommends a project that contributes significantly to the ecological goals and objectives of CERP: (1) increasing the spatial extent of natural areas; (2) improving habitat function and quality; and (3) improving native plant and animal abundance and diversity. ~~In addition, it contributes to the economic values and social well being of the project area by providing recreational opportunities and 17 million gallons of water per day of water supply for residents of the Lower East Coast of Florida.~~ The historical Everglades ecosystem was previously defined by a mosaic of uplands, freshwater marsh, deep water sloughs, and estuarine habitats that supported a diverse community of fish and wildlife. Today nearly all aspects of South Florida's flora and fauna have been affected by development, altered hydrology, nutrient input and spread of non-native species that have resulted directly or indirectly from a century of water management for human needs. The CEPP PACR ~~The PIR/EIS~~ confirms information in the CERP and provides a conceptual plan that evaluated the costs and benefits associated with construction and operation of the Central Everglades components of the CERP. The CEPP PACR ~~CEPP~~ will help restore the central portion of the Everglades ecosystem towards a state more similar to the historic conditions. The project will improve habitat function and quality and improve native plant and animal abundance and species composition and diversity by advancing towards the CERP goal in reducing damaging discharges to the northern estuaries and by delivering the CERP Goal of approximately 370,000 ~~by delivering approximately 210,000~~ average annual acre-feet of additional water to the Everglades.	General updates to reflect recommended modifications to authorized CEPP plan as presented in CEPP PACR
4.a	The A-2 Reservoir includes a 10,500-acre reservoir and 6,500-acre STA with ~~The EAA includes a 14,000 acre A-2 flow equalization basin (FEB) and~~ associated distribution, inlet, and outlet structures. . The project also includes 1,000 cfs of additional conveyance capacity in the Miami Canal within the EAA and 200 cfs of additional conveyance capacity in the North New River Canal within the EAA. These features will work in conjunction with the existing 60,000 ac-ft ~~Operation of the A-2 FEB would be integrated with the future operation of the State of Florida's Restoration Strategies features, including the~~ A-1 FEB, ~~and the state's existing Stormwater Treatment Area (~~STA~~)~~ -2 and STA-3/4 ~~facilities,~~ to deliver new water south.	Clarifies the scope of CEPP in the EAA, as modified, by the recommended plan in the CEPP PACR (change from A-2 FEB to A-2 Reservoir, STA, and conveyance improvements).

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
5	The total project first cost of the CEPP features, as modified by the CEPP PACR, based upon 2018 price levels, ~~recommended plan, based upon October 2014 price levels,~~ is estimated to be $3,335~~174~~,000,000 ~~$1,951,000,000~~ rounded to the nearest $100 million. . This includes an estimated cost of $1,288,000,000 for the CEPP features that remain part of the project and an estimated cost of $2,047~~1,883~~,000,000 for the CEPP PACR features. The project first cost for the ecosystem restoration features is estimated to be be $3,325~~164~~,000,000 ~~$1,944,000,000~~ and for recreation is estimated to be ~~$6,600,000~~$10,000,000. In accordance with the cost-sharing requirements of Section 601 (e) of WRDA 2000, construction costs for ecosystem restoration are shared 50-50 between the government and non-federal sponsor. Construction costs associated with recreation features are also cost-shared 50-50 in accordance with Section 103 of WRDA 1986, as amended. Additionally, the government is responsible for 100% of cultural resources data recovery costs, up to 1 % of total project costs ~~(see paragraph 18.s)~~. Therefore, in consideration of estimated costs for cultural resources data recovery, the federal cost of the CEPP features, as modified by the CEPP PACR, would be $1, 670,646~~587,915~~,000 and the non-federal cost would be $1,~~586,085~~664,646,000~~of the recommended plan would be $976,375,000 and the non-federal cost would be $974,625,000~~. The estimated lands, easements, right-of-way, and relocation (LERRs) costs for the tentatively selected plan are $66~~1~~,000,000~~recommended plan are $37,000,000~~, of which approximately $34,000,000 ~~$31,000,000~~ is creditable to the government and approximately $32~~27~~,000,000 ~~$6,000,000~~ are creditable to the non-federal sponsor. Federal funds contributed by Department of Interior (DOI) pursuant to Section 390 of the Federal Agriculture Improvement and Reform Act of 1996 (Public Law 104- 127, 110 Stat. 1022) are credited to the federal share of the project cost pursuant to Section 601 (e)(3) of WRDA 2000. DOI contributed approximately $34,000,000 ~~$30,300,000~~ toward the purchase of the lands associated with the A-2 Reservoir and A-2 STA~~A-2 FEB and FEB Discharge Canal~~.	Updates first cost information for proposed modifications to CEPP compared to costs for authorized CEPP plan.
7	Based on 2018~~October 2014~~ price levels, a 50-year period of economic evaluation and a ~~3.375~~2.75 percent discount rate, the equivalent annual cost for ecosystem restoration features of the proposed CEPP project as modified by the CEPP PACR is estimated at $14~~39,104~~,474,000~~of the proposed project is estimated at $102,600,000~~, which includes OMRR&R, interest during construction and amortization. The estimated annual costs for restoration OMRR&R are $13,743,000~~$11,250,000~~, of which $4,760,000 ~~$4,150,000~~ is attributed to new CEPP infrastructure; $5,629,000 ~~$4,000,000~~ to flowing water through existing state and C&SF infrastructure; and $3,354,000 ~~$3, 100,000~~ to invasive species management. Post construction monitoring will occur during 10-year cycles for invasive species and performance-based ecological monitoring $2,897,000 ~~($151,000 ($2,700,000~~ annually for up to 10 years). Permit-related monitoring and monitoring that informs project operations will also be conducted ($~~2,897,000~~ 3,339,000~~($2,800,000~~ annually) and this monitoring will be assessed periodically and revised as needed. The OMRR&R costs for recreation features are estimated at $68,000 ~~$65,000~~ and are a 100% non-federal responsibility.	Update provisions related to average annual project costs including OMRR&R, to include CEPP modifications reflected in CEPP PACR

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
9.b	The ~~aforementioned~~ state facilities and C&SF features will use excess capacity to process "new water" provided by CEPP features, as modified by the PACR,, which has been estimated to comprise approximately (1) 27.3% of the total water volume that could flow through these facilities associated with the use of STA 3/4 and STA-2, and (2) an additional 21.3% of the total water volume (for a total of 48.6%) ~~19% of the total water volume~~ that could flow through these facilities associated with the use of the new A-2 STA. ~~The reporting officers have assumed that~~ OMRR&R costs are assumed to be linear with flow volumes and thus the additional increase in OMRR&R costs due to the increased flow volumes will be 27.3% and 48.6%, respectively,~~19%~~ of the total OMRR&R costs for use of facilities associated with flow through STA 3/4 and STA-2 and with flow through the new A-2 STA. Consistent with the general CERP authorization for cost sharing OMRR&R (WRDA 2000 Section 601 (e)(4)), CEPP, as modified by the PACR, should be authorized~~the reporting officers recommend authorization of CEPP~~ to contribute 27.3% and 48.6%, respectively ~~19%~~ of the OMRR&R costs of the aforementioned state facilities and C&SF features to the extent that OMRR&R activities are directly related to their use for treating "new water". The federal pro-rated share for OMRR&R for the ~~aforementioned~~ facilities used by CEPP, as modified by the PACR, ~~CEPP~~ is therefore (1) 50% of 27.3%, or 13.65% of the total OMRR&R costs for those facilities associated with the use of STA 3/4 and STA-2, and (2) 50% of 48.6%, or 24.3% of the total OMRR&R costs for those facilities associated with the use of the new A-2 STA.~~50% of the 19%, or 9.5% of the total OMRR&R costs. The 19% CEPP cost share will apply to the state facilities and C&SF features listed previously to the extent that OMRR&R activities are directly related to their use for treating "new water".~~	Update provisions related to cost sharing of OMRR&R costs for use of state facilities to reflect proposed CEPP modifications presented in CEPP PACR
9.c.	The ~~reporting officers recommend that~~ project authorization should include specific statutory language allowing the government to provide 50% cost share for 27.3% ~~cost share 19%~~ of the yearly OMRR&R costs of state facilities and listed C&SF features with appropriations made available for ~~CERP~~ OMRR&R activities for CEPP, as modified by the PACR, associated with the use of STA 3/4 and STA 2. The project authorization should include specific statutory language allowing the government to provide 50% cost share for 48.6% of the yearly OMRR&R costs of state facilities and listed C&SF features with appropriations made available for CERP OMRR&R activities associated with the use of the new A-2 STA. The term "OMRR&R costs" is defined the same as the term "project OMRR&R costs" in Article I.E. of the Master Agreement between the Department of the Army and the non-federal sponsor dated 13 August 2009. Following the same procedures set forth in Section 6.6.2 of the 2014 CEPP PIR, approval by USACE Headquarters and the Assistant Secretary of the Army (Civil Works) is required prior to commencing replacement and rehabilitation actions for the state facilities listed previously that CEPP, as modified by the PACR, is dependent on. This is a condition of the federal cost share.~~As a condition of the federal cost share, prior to commencing replacement and rehabilitation actions for the state facilities listed previously that CEPP is dependent on, approval by USAGE Headquarters and the Assistant Secretary of the Army (Civil Works) is required as set forth in Section 6.6.2 of the PIR.~~	Updates authorization language to allow for government cost share of OMRR&R in state and C&SF facilities.

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
9.e	Due to the simplified assumptions used for determining cost-share of the OMRR&R, an adaptive management construct will be developed that prescribes processes and procedures for determining a more accurate allocation of costs once more detailed information is available regarding the impact of CEPP, as modified by the PACR, on the OMRR&R of existing state facilities and C&SF features. ~~The reporting officers recommend that a~~After CEPP, as modified by the PACR, has operated for an appropriate period~~ of time~~, an analysis based on monitoring data will be undertaken to evaluate project performance and verify that the project~~CEPP~~ successfully delivers an annual average of approximately 370,000~~210,000~~ acre-feet of new water for the natural system as described in the CEPP PACR~~PIR/EIS~~. (1) If the monitoring data and analysis show that CEPP actually produces less than the anticipated 370,000~~210,000~~ acre-feet per year on average, then the federal project is not fully realizing the projected benefits and the state facilities and C&SF features are not being burdened as projected. In such a case, the analysis will be used to inform changes in operations in order to achieve the quantity, timing or distribution of water as described in this PIR/EIS, or recommend changes to the amount of water to be reserved or allocated to the natural system. (2) If the monitoring data and analysis show CEPP actually processes significantly more or less than the anticipated 370,000~~210,000~~ acre-feet per year of "new water" on average then the analysis may be used to adjust the calculation of OMRR&R cost share upward or downward to reflect the actual average annual use of excess capacity by the federal project. This will be accomplished through consultation with the state and USACE Headquarters and is necessary after operations have begun to capture the true federal interest and cost share responsibility.	Updates cost share assumptions based upon operations and the revised average annual acre-feet of new water as proposed in the CEPP PACR.
10	A number of non-CEPP projects must be in place before implementing most~~any~~ CEPP features and certain non-CEPP projects must be integrated into the sequencing of CEPP implementation to avoid unintended adverse consequences. All features of the State Restoration Strategies must be completed and meet state water quality standards prior to operating~~initiating construction of~~ most CEPP project features. Implementation of CEPP will occur over many years, and the project~~reporting officers recommend that the project~~ be constructed in three phases that are considered separable elements with inter-related project features grouped to provide incremental hydrologic and ecological benefits. The three implementation phases are based upon developing three Project Partnership Agreements (PPAs) and are identified as PPA North, PPA South, and PPA New Water. The CEPP PACR features are grouped into three separate PPAs based upon the spatial distribution of the features and the locations within the CEPP study area. ~~The features included in each are identified in the PIR/EIS.~~ The features included in each are identified in the CEPP project, as modified by the CEPP PACR. These groupings include a PPA to cover project features in northern WCA 3A (PPA North), a PPA to cover project features in southern WCA 3A, 3B and ENP (PPA South), and a PPA to cover the new water storage A-2 Reservoir, A-2 STA treatment, improved conveyance on the NNR and Miami Canal and seepage management features (PPA New Water). Implementation of the CEPP PACR will occur over many years and include many actions by the USACE and SFWMD. These actions may include executing PPAs in parallel and construction of the CEPP PACR features in parallel to advance completion of project components as funding becomes available and as quickly as possible to achieve ecosystem benefits. The phased implementation approach incorporates an adaptive implementation process and recommendations of the National Research Council, maximizing the opportunity to realize incremental restoration benefits by initially building features that utilize existing water in the system that meets state water quality standards. Individual PPAs, or amendments to existing PPAs, will be executed prior to construction of each implementation phase. The project dependencies include:	Updates implementation sequencing and PPA groupings as proposed in the CEPP PACR.

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
10.a	A-1 FEB and State Restoration Strategies: Required prior to operation~~implementation~~ of northern WCA-3A distribution features (L-4 degrade, new pump station, S-8 Modifications, L-5 and L-6 improvements, Miami Canal Backfilling) to ensure adequate water quality treatment of inflows;	Updates language to clarify that A-1 FEB and Restoration Strategies must be in place prior to operation of certain CEPP facilities
10.b	8.5 Square Mile Area (SMA) and Existing S-356: Construction of the C-358 seepage collector canal and structure S-357N within the 8.5 SMA must be completed to allow full utilization of the 8.5 SMA features to provide seepage mitigation for increasing flows into Northeast Shark River Slough (NESRS); operation of the existing S-356 pump station (500 cfs) is required prior to significantly increasing flows to NESRS, to provide seepage management;	--No change.
10.c	C-111 South Dade: Extension of the detention area levees to connect with 8.5 SMA is required prior to significantly increasing flows to NESRS to enable operation of the S-357 pump station to provide seepage management to 8.5 SMA;	–No change.
10.d	Modified Water Deliveries (MWD) to ENP 1-Mile Bridge and Road Raising: The MWD project will be complete and operational prior to implementation of WCA-3B inflow structures along the L-67 A&C levees, apart from S-152 that is already constructed and in testing phase, ~~or increasing flows through existing S-333 to NESRS~~ to ensure adequate road protection to allow for increased stages in L-29 canal;	Updates to include the S-152 feature.
10.e	Broward County Water Preserve Area (BCWPA) C-11 Impoundment: Required prior to increasing flow through S-333 or implementation of WCA-3B inflow structures along the L-67 A&C levees, apart from S-152 that is already constructed and in testing phase, to ensure adequate water quality of inflows to WCA-3B and NESRS;	Updates to include the S-152 feature.
10.f	Tamiami Trail Next Steps Bridging and Road Raising: Required prior to increasing capacities of ~~S-333 and~~ S-356 and implementation of WCA-3B inflow structures along the L-67A levee, gaps in L-67C levee, apart from S-152 that is already constructed and in testing phase, and Blue Shanty flowway (L-67C removal, L-29 levee removal);	Updates to include the S-152 feature.
10.g	Indian River Lagoon (IRL) South C-44 Reservoir and Connection to C-23 Canal: Required prior to re-directing the maximum amount of water from Lake Okeechobee south to the A-2 Reservoir~~FEB~~ to meet environmental performance, to avoid reduction in low flows to the St. Lucie Estuary and low Lake Okeechobee water levels that affect the Lake Okeechobee Service Area (LOSA); and	Updates to include A-2 Reservoir feature.
10.h	Modification to the Lake Okeechobee Regulation Schedule (LORS) is anticipated prior to full utilization of the A-2 Reservoir, A-2 STA and improved canal conveyance~~FEB~~ in order to achieve the complete ecological benefits envisioned for the Northern Estuaries and through redirecting the full 370,000~~210,000~~ acre-feet per year on average south to be provided by CEPP, as modified by the PACR, and to avoid low lake levels that would affect the LOSA.	Updates to include A-2 Reservoir feature and benefits provided by the CEPP PACR.

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
11.a	The recommended plan benefits more than 1.5 million acres in the Caloosahatchee and St. Lucie Estuaries, WCA-3A, WCA-3B, ENP, and Florida Bay. The benefits to approximately 994,000 acres in WCA-3A, WCA-3B and ENP are derived by increasing the quantity of freshwater inflow to the natural system by 76~~22~~% and improving sheetflow through the system. This will improve the depths, duration, and movement of water that will help to restore and sustain the ridge and slough landscape. Reducing high volume freshwater discharges from Lake Okeechobee to the Caloosahatchee and St. Lucie Estuaries by 55~~14~~% and 40~~34~~% (respectively), improves approximately 86,000 acres in these estuaries by reducing turbidity, sedimentation, and moderating unnatural fluctuations in salinity that are extremely detrimental to estuarine communities. The increase in the quantity and improved timing of freshwater to the Everglades will bring the benefits as described above, ~~A 28% increase in the quantity of freshwater sent to ENP will bring the benefits to the Everglades as described above,~~ and then when the water reaches Florida Bay at the southern end of the system it will reduce the intensity, frequency, and duration of hypersaline events in the Bay across approximately 476,000 acres. An average salinity decrease of 0.5~~1.5~~ parts per thousand will help to re-establish a persistent and resilient estuarine zone that extends further into the bay.	Updates to include benefits provided by the CEPP PACR.
15	Due to the high risks and uncertainties associated with CEPP PACR, the long implementation time, and the significant dependencies on other CERP and non-CERP projects, many~~a number of~~ risk management measures have been developed to ensure future coordination with USACE Headquarters and, as needed, the Office of the Assistant Secretary of the Army (Civil Works). Additional project information and decision documentation reports, if needed, will be developed to support each of the three PPAs by providing more detailed information and documenting significantly changed conditions if they exist. Significant changes in project scope or cost from the CEPP PACR may warrant a Limited Reevaluation Report (LRR) or General Reevaluation Report (GRR) in lieu of other supporting project information and decision documentation.~~Limited Revaluation Reports (LRRs) are planned to support each of the three PPAs by providing more detailed information and documenting changed conditions. Significant changes from the PIR/EIS may warrant a General Reevaluation Report. The LRR for the final PPA (new water) will be processed through the Office of the Assistant Secretary of the Army (Civil Works).~~	Updates opportunity to provide greater risk management.
15.a	Jacksonville District will provide an annual status report to South Atlantic Division and USACE Headquarters and will conduct a briefing that addresses overall project progress and key uncertainties and/or decisions required as implementation progresses. It will include an update on implementation of CEPP PACR features and those non-CEPP projects on which CEPP PACR is dependent.	Updates language to say 'CEPP PACR'.
15.b	Jacksonville District will coordinate with South Atlantic Division and USACE Headquarters to develop an adaptive management strategy regarding cost share of OMRR&R of state facilities and C&SF features (see paragraph 9.e).~~; and will provide an analysis of operations at state facilities and C&SF features in providing needed capacity for CEPP flows after CEPP is implemented.~~	Removed duplication of text at the end of the statement that is repeated elsewhere in the Chief's report.
15.c	Jacksonville District will provide to the South Atlantic Division and USACE Headquarters: draft biological opinions pursuant to ESA for review and approval; notification of development of additional NEPA documents; and, Jacksonville District will coordinate during planning, engineering and design phase the definition of activities at state facilities as either repair, replacement or rehabilitation actions;	–No change.

CEPP Chief's Report Paragraph #	CEPP PACR Section 203 Report Addendum Attachment 1: CEPP Chief's Report Language Recommendations (proposed revisions/updates presented in Section 8.1 of CEPP PACR are shown below in "track changes")	Reason/Rationale for Proposed Revision
15.d	If applicable, Jacksonville District will coordinate and obtain approval from USACE Headquarters: for the government to cost share OMRR&R of additional state facilities and C&SF features not identified in the ~~PIR/EIS~~CEPP PACR; for the government to cost share replacement and rehabilitation actions at state facilities; for any changes to the three CEPP PACR implementation phases; to determine appropriate course of action should state water quality compliance not be met after construction and operation of CEPP PACR; and, to use less than a fee estate, including any permits or other instruments obtained for real estate interests other than the provision of fee property for the project, except for the temporary construction easements and the borrow easements, which are approved.	Updates language to 'CEPP PACR'.
16.b(2)	(2) The PACR indicates that completion of the A-1 FEB through the State of Florida's Restoration Strategies project is required prior to operation of the CEPP northern WCA-3A distribution features to ensure adequate water quality treatment of inflows. Additionally, the full benefits of the CEPP PACR PPA New Water phase are dependent on some features in PPA North and PPA South phases. The CEPP PACR features are grouped into three separate PPAs based upon the spatial distribution of the features and the locations within the CEPP study area. Implementation of the CEPP PACR will occur over many years and include many actions by the USACE and SFWMD. These actions may include executing PPAs in parallel and construction of the CEPP PACR features in parallel to advance completion of project components as funding becomes available and as quickly as possible to achieve ecosystem benefits.~~The USEPA provided significant comments regarding assurances that flows to the Everglades meet applicable water quality standards and concerns with the later phase implementation of the A-2 FEB which provides a substantial portion of the hydrological benefits of CEPP. The PIR/EIS indicates that completion of the A-1 FEB through the State of Florida's Restoration Strategies project is required prior to implementation of the CEPP northern WCA-3A distribution features to ensure adequate water quality treatment of inflows. Additionally, the benefits of PPA New Water phase (which includes the A-2 FEB) are dependent on features in PPA North and PPA South phases. An agreement for the PPA New Water phase may be executed after agreements for both PPA North and PPA South phases are complete. Construction may be in parallel.~~	Updates implementation sequencing and PPA groupings.
16.b(3)	(3) The CEPP PACR recognizes risks and uncertainties and prior to implementation of each phase of the project, additional detailed information pertaining to that phase will be developed. This additional detailed information will be utilized and updated as appropriate as revisions are made to Water Control Plans and Project Operating Manuals for each phase. The USACE will ensure that all legal requirements are met for each phase and compliance will be maintained throughout the entirety of CEPP implementation.~~The State of Florida provided comments from agencies that were conflicting in their support of the recommended plan. Significant comments were received from FDEP and FDACS. While FDEP expressed staunch support for expediting the CEPP project to achieve the system-wide ecological benefits, they were concerned with the discussion in paragraph 14 of the proposed report of the Chief of Engineers. This section is included in this Report to reiterate the process negotiated and agreed to by the non-federal sponsor and the Assistant Secretary of the Army (Civil Works) that will be used to address water quality issues during CEPP implementation.~~	Updates opportunities to buy down risk prior to implementation of each phase.

Addendum Attachment 2

Addendum Attachment 2

****** TOTAL PROJECT COST SUMMARY ******

PROJECT: **Central Everglades Planning Project PAC Report**
PROJECT NO: 0
LOCATION: Central and Southern Florida

DISTRICT: Jacksonville District
POC: CHIEF, COST ENGINEERING, xxx

PREPARED: **3/12/2018**

This Estimate reflects the scope and schedule in report; Central Everglades Planning Project PAC Report

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)			
						Program Year (Budget EC): 2019 Effective Price Level Date: 1 OCT 18									
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	**TOTAL ($K)**	Spent Thru: **1-Oct-17** ($K)	**TOTAL FIRST COST** ($K)	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*		*K*	*L*	*M*	*N*	*O*
03	RESERVOIRS	$981,077	$333,566	34.0%	$1,314,643	2.1%	$1,001,213	$340,413	$1,341,626	$0	$1,341,626	12.6%	$1,127,528	$383,360	$1,510,888
06	FISH & WILDLIFE FACILITIES	$79,167	$34,833	44.0%	$114,000	0.0%	$79,167	$34,833	$114,000	$0	$114,000	29.4%	$102,411	$45,061	$147,472
08	ROADS, RAILROADS & BRIDGES	$12,926	$4,395	34.0%	$17,320	2.1%	$13,191	$4,485	$17,676	$0	$17,676	12.6%	$14,855	$5,051	$19,906
09	CHANNELS & CANALS	$243,212	$98,021	40.3%	$341,233	2.1%	$248,201	$100,031	$348,232	$0	$348,232	23.4%	$305,709	$124,177	$429,886
11	LEVEES & FLOODWALLS	$242,906	$98,726	40.6%	$341,632	2.1%	$247,891	$100,753	$348,644	$0	$348,644	24.0%	$306,741	$125,597	$432,338
13	PUMPING PLANT	$174,556	$66,363	38.0%	$240,919	2.1%	$178,137	$67,724	$245,861	$0	$245,861	19.6%	$212,597	$81,542	$294,140
14	RECREATION FACILITIES	$7,548	$2,566	34.0%	$10,115	2.1%	$7,703	$2,619	$10,322	$0	$10,322	12.6%	$8,675	$2,950	$11,625
15	FLOODWAY CONTROL & DIVERSION STRU	$237,664	$97,602	41.1%	$335,267	2.1%	$242,542	$99,605	$342,148	$0	$342,148	24.7%	$301,845	$124,801	$426,646
18	CULTURAL RESOURCE PRESERVATION	$18,750	$8,250	44.0%	$27,000	2.1%	$19,135	$8,419	$27,554	$0	$27,554	29.4%	$24,753	$10,891	$35,644
	CONSTRUCTION ESTIMATE TOTALS:	$1,997,806	$744,323	37.3%	$2,742,128	2.0%	$2,037,180	$758,883	$2,796,063	$0	$2,796,063	18.3%	$2,405,114	$903,429	$3,308,543
01	LANDS AND DAMAGES	$53,961	$11,917	22.1%	$65,878	2.1%	$55,069	$12,161	$67,230	$0	$67,230	2.2%	$56,455	$12,284	$68,739
30	PLANNING, ENGINEERING & DESIGN	$285,855	$66,503	23.3%	$352,358	3.9%	$296,877	$69,067	$365,944	$0	$365,944	13.8%	$336,506	$80,105	$416,612
31	CONSTRUCTION MANAGEMENT	$147,533	$26,387	17.9%	$173,920	3.9%	$153,222	$27,404	$180,626	$0	$180,626	50.7%	$224,461	$47,668	$272,129
	PROJECT COST TOTALS:	$2,485,156	$849,129	34.2%	$3,334,285		$2,542,347	$867,515	**$3,409,862**	$0	**$3,409,862**	19.2%	$3,022,536	$1,043,487	$4,066,023

ESTIMATED TOTAL PROJECT COST: **$4,066,023**

_____ **CHIEF, COST ENGINEERING, xxx**

_____ **PROJECT MANAGER, xxx**

_____ **CHIEF, REAL ESTATE, xxx**

_____ **CHIEF, PLANNING, xxx**

_____ **CHIEF, ENGINEERING, xxx**

_____ **CHIEF, OPERATIONS, xxx**

_____ **CHIEF, CONSTRUCTION, xxx**

_____ **CHIEF, CONTRACTING,xxx**

_____ **CHIEF, PM-PB, xxxx**

_____ **CHIEF, DPM, xxx**

****** TOTAL PROJECT COST SUMMARY ******

ITEMS FROM ORIGINAL CEPP AUTHROIZED PROJECT (MINUS FEB)

****** CONTRACT COST SUMMARY ******

PROJECT: Central Everglades Planning Project PAC Report
LOCATION: Central and Southern Florida
This Estimate reflects the scope and schedule in report; Central Everglades Planning Project PAC Report

DISTRICT: Jacksonville District
POC: CHIEF, COST ENGINEERING, xxx

PREPARED: 3/12/2018

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared:			12-Mar-18	Program Year (Budget EC):			2019					
		Effective Price Level:			1-Oct-17	Effective Price Level Date:			1 OCT 18					
				RISK BASED										
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	TOTAL ($K)	Mid-Point Date	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*P*	*L*	*M*	*N*	*O*
	REMAINING CEPP COSTS													
03	RESERVOIRS	$0	$0	44.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
06	FISH & WILDLIFE FACILITIES	$79,167	$34,833	44.0%	$114,000	0.0%	$79,167	$34,833	$114,000	2032Q1	29.4%	$102,411	$45,061	$147,472
08	ROADS, RAILROADS & BRIDGES	$0	$0	44.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
09	CHANNELS & CANALS	$153,286	$67,446	44.0%	$220,732	2.1%	$156,431	$68,829	$225,260	2032Q1	29.4%	$202,361	$89,039	$291,399
11	LEVEES & FLOODWALLS	$161,383	$71,009	44.0%	$232,392	2.1%	$164,696	$72,466	$237,162	2032Q1	29.4%	$213,050	$93,742	$306,792
13	PUMPING PLANT	$70,137	$30,860	44.0%	$100,997	2.1%	$71,576	$31,493	$103,069	2032Q1	29.4%	$92,591	$40,740	$133,331
14	RECREATION FACILITIES	$0	$0	44.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
15	FLOODWAY CONTROL & DIVERSION STRU	$167,963	$73,904	44.0%	$241,866	2.1%	$171,410	$75,420	$246,830	2032Q1	29.4%	$221,738	$97,565	$319,302
18	CULTURAL RESOURCE PRESERVATION	$18,750	$8,250	44.0%	$27,000	2.1%	$19,135	$8,419	$27,554	2032Q1	29.4%	$24,753	$10,891	$35,644
	CONSTRUCTION ESTIMATE TOTALS:	$650,685	$286,302	44.0%	**$936,987**		$662,413	$291,462	$953,875			$856,903	$377,037	$1,233,940
01	LANDS AND DAMAGES	$27,083	$11,917	44.0%	$39,000	2.1%	$27,639	$12,161	$39,800	2019Q3	1.0%	$27,917	$12,284	$40,201
30	PLANNING, ENGINEERING & DESIGN													
2.0%	Project Management	$13,014	$5,726	44.0%	$18,740	3.9%	$13,515	$5,947	$19,462	2019Q3	2.1%	$13,793	$6,069	$19,862
2.0%	Planning & Environmental Compliance	$13,014	$5,726	44.0%	$18,740	3.9%	$13,515	$5,947	$19,462	2019Q3	2.1%	$13,793	$6,069	$19,862
9.0%	Engineering & Design	$58,562	$25,767	44.0%	$84,329	3.9%	$60,820	$26,761	$87,580	2019Q3	2.1%	$62,069	$27,311	$89,380
2.0%	Reviews, ATRs, IEPRs, VE	$13,014	$5,726	44.0%	$18,740	3.9%	$13,515	$5,947	$19,462	2019Q3	2.1%	$13,793	$6,069	$19,862
2.0%	Life Cycle Updates (cost, schedule, risks)	$13,014	$5,726	44.0%	$18,740	3.9%	$13,515	$5,947	$19,462	2019Q3	2.1%	$13,793	$6,069	$19,862
1.0%	Contracting & Reprographics	$6,507	$2,863	44.0%	$9,370	3.9%	$6,758	$2,973	$9,731	2019Q3	2.1%	$6,897	$3,035	$9,931
2.5%	Engineering During Construction	$16,267	$7,158	44.0%	$23,425	3.9%	$16,894	$7,434	$24,328	2032Q1	73.9%	$29,387	$12,930	$42,317
2.0%	Planning During Construction	$13,014	$5,726	44.0%	$18,740	3.9%	$13,515	$5,947	$19,462	2032Q1	73.9%	$23,509	$10,344	$33,854
0.0%	Adaptive Management & Monitoring	$0	$0	44.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.7%	Project Operations	$4,739	$2,085	44.0%	$6,824	3.9%	$4,922	$2,166	$7,087	2019Q3	2.1%	$5,023	$2,210	$7,233
31	CONSTRUCTION MANAGEMENT													
7.2%	Construction Management	$46,957	$20,661	44.0%	$67,618	3.9%	$48,767	$21,458	$70,225	2032Q1	73.9%	$84,828	$37,324	$122,152
1.0%	Project Operation:	$6,507	$2,863	44.0%	$9,370	3.9%	$6,758	$2,973	$9,731	2032Q1	73.9%	$11,755	$5,172	$16,927
1.0%	Project Management	$6,507	$2,863	44.0%	$9,370	3.9%	$6,758	$2,973	$9,731	2032Q1	73.9%	$11,755	$5,172	$16,927
	CONTRACT COST TOTALS:	$888,882	$391,108		$1,279,991		$909,305	$400,094	**$1,309,400**			$1,175,215	$517,095	**$1,692,310**

****** TOTAL PROJECT COST SUMMARY ******

NEW STORAGE RESERVOIR PROJECT COSTS

****** CONTRACT COST SUMMARY ******

PROJECT: Central Everglades Planning Project PAC Report
LOCATION: Central and Southern Florida
This Estimate reflects the scope and schedule in report; Central Everglades Planning Project PAC Report

DISTRICT: Jacksonville District
POC: CHIEF, COST ENGINEERING, xxx

PREPARED: 3/12/2018

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared:			12-Mar-18	Program Year (Budget EC):			2019					
		Effective Price Level:			1-Oct-17	Effective Price Level Date:			1 OCT 18					
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	TOTAL ($K)	Mid-Point Date	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*P*	*L*	*M*	*N*	*O*
	EAA STORAGE RESERVOIR													
03	RESERVOIRS	$981,077	$333,566	34.0%	$1,314,643	2.1%	$1,001,213	$340,413	$1,341,626	2025Q1	12.6%	$1,127,528	$383,360	$1,510,888
06	FISH & WILDLIFE FACILITIES	$0	$0	34.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
08	ROADS, RAILROADS & BRIDGES	$12,926	$4,395	34.0%	$17,320	2.1%	$13,191	$4,485	$17,676	2025Q1	12.6%	$14,855	$5,051	$19,906
09	CHANNELS & CANALS	$89,926	$30,575	34.0%	$120,501	2.1%	$91,770	$31,202	$122,972	2025Q1	12.6%	$103,348	$35,138	$138,487
11	LEVEES & FLOODWALLS	$81,523	$27,718	34.0%	$109,240	2.1%	$83,196	$28,287	$111,482	2025Q1	12.6%	$93,691	$31,855	$125,546
13	PUMPING PLANT	$104,419	$35,503	34.0%	$139,922	2.1%	$106,561	$36,231	$142,792	2025Q1	12.6%	$120,006	$40,802	$160,808
14	RECREATION FACILITIES	$7,548	$2,566	34.0%	$10,115	2.1%	$7,703	$2,619	$10,322	2025Q1	12.6%	$8,675	$2,950	$11,625
15	FLOODWAY CONTROL & DIVERSION STRU	$69,702	$23,699	34.0%	$93,401	2.1%	$71,133	$24,185	$95,318	2025Q1	12.6%	$80,107	$27,236	$107,344
18	CULTURAL RESOURCE PRESERVATION	$0	$0	34.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
	CONSTRUCTION ESTIMATE TOTALS:	$1,347,120	$458,021	34.0%	**$1,805,141**		$1,374,767	$467,421	$1,842,188			$1,548,212	$526,392	$2,074,604
01	LANDS AND DAMAGES	$26,878	$0	0.0%	$26,878	2.1%	$27,430	$0	$27,430	2021Q1	4.0%	$28,538	$0	$28,538
30	PLANNING, ENGINEERING & DESIGN													
1.0%	Project Management	$13,471	$0	0.0%	$13,471	3.9%	$13,991	$0	$13,991	2021Q1	8.5%	$15,176	$0	$15,176
1.0%	Planning & Environmental Compliance	$13,471	$0	0.0%	$13,471	3.9%	$13,991	$0	$13,991	2021Q1	8.5%	$15,176	$0	$15,176
5.0%	Engineering & Design	$67,356	$0	0.0%	$67,356	3.9%	$69,953	$0	$69,953	2021Q1	8.5%	$75,880	$0	$75,880
0.5%	Reviews, ATRs, IEPRs, VE	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2021Q1	8.5%	$7,588	$0	$7,588
0.5%	Life Cycle Updates (cost, schedule, risks)	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2021Q1	8.5%	$7,588	$0	$7,588
0.5%	Contracting & Reprographics	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2021Q1	8.5%	$7,588	$0	$7,588
0.5%	Engineering During Construction	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2025Q1	27.7%	$8,933	$0	$8,933
0.5%	Planning During Construction	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2025Q1	27.7%	$8,933	$0	$8,933
0.0%	Adaptive Management & Monitoring	$0	$0	0.0%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.5%	Project Operations	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2021Q1	8.5%	$7,588	$0	$7,588
31	CONSTRUCTION MANAGEMENT													
5.0%	Construction Management	$67,356	$0	0.0%	$67,356	3.9%	$69,953	$0	$69,953	2025Q1	27.7%	$89,326	$0	$89,326
0.5%	Project Operation:	$6,736	$0	0.0%	$6,736	3.9%	$6,995	$0	$6,995	2025Q1	27.7%	$8,933	$0	$8,933
1.0%	Project Management	$13,471	$0	0.0%	$13,471	3.9%	$13,991	$0	$13,991	2025Q1	27.7%	$17,865	$0	$17,865
	CONTRACT COST TOTALS:	$1,596,273	$458,021		$2,054,294		$1,633,042	$467,421	**$2,100,463**			$1,847,321	$526,392	**$2,373,713**

Addendum Attachment 3

The EAA A-2 storage project proposes 240,000 ac-ft above-ground reservoir and a 6,500-acre STA, located on the A-2 parcel and A-2 Expansion area, that will work in conjunction with the existing 60,000 ac-ft A-1 FEB, STA-2, and STA-3/4 to meet State water quality standards. The proposed A-2 East Reservoir is 10,500 acres and designed to have a normal full storage water depth of approximately 23 feet.

Estimated by	Tetra Tech, Inc.
Designed by	Tetra Tech, Inc.
Prepared by	Tetra Tech, Inc
Preparation Date	5/17/2018
Effective Date of Pricing	5/17/2018
Estimated Construction Time	2,555 Days

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Description	Quantity	UOM	ProjectCost	CostOverride
Project Cost Summary Report			**1,347,120,393**	
			1,347,120,393.33	
Everglades Agricultural Area Storage Reservoir Project	**1.00**	**EA**	**1,347,120,393**	
			52,360,468.37	
01 CONTRACT 1 - Miami Canal Conveyance Improvements	**1.00**	**EA**	**52,360,468**	
			52,360,468.37	
01 09 09 - Channels & Canals	**1.00**	**EA**	**52,360,468**	
			52,360,468.37	
01 09 01 MC: Miami Canal Improvements	**1.00**	**EA**	**52,360,468**	
01 09 01 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**551,542**	
01 09 01 00 01 Mobilization	**1.00**	**LS**	**177,726**	
01 09 01 00 02 Demobilization	**1.00**	**LS**	**119,086**	
			254,730.23	
01 09 01 00 03 Staging and Site Access	**1.00**	**EA**	**254,730**	
			94,567.67	
01 09 01 00 03 01 Primary Staging Area	**1.00**	**EA**	**94,568**	
			8,868.13	
01 09 01 00 03 02 Secondary Staging Area	**4.00**	**EA**	**35,473**	
			10,137.40	
01 09 01 00 03 03 Access Road	**12.30**	**MI**	**124,690**	
			91,085.54	
01 09 01 01 Temporary Plugs	**2.00**	**EA**	**182,171**	
			9.35	
01 09 01 01 01 Excavate and Stockpile Plug Fill Material	**4,000.00**	**CY**	**37,391**	
			14.81	
01 09 01 01 02 Place, Compact and Grade Berm	**4,000.00**	**CY**	**59,255**	
			21.38	
01 09 01 01 03 Remove Plug Fill	**4,000.00**	**CY**	**85,525**	
01 09 01 02 Dewatering and Bypass Pumping	**1.00**	**LS**	**4,260,326**	
			2,151.91	
01 09 01 03 Clearing and Grubbing	**149.00**	**ACR**	**320,635**	
			25.86	

Description	Quantity	UOM	ProjectCost	CostOverride
01 09 01 04 Earthwork - Berm Buildup	**1,788,503.00**	**CY**	**46,255,709**	
			3.61	
01 09 01 04 01 Remove and Place Muck	**432,733.00**	**CY**	**1,561,360**	
			17.62	
01 09 01 04 02 Blast and Excavate Caprock	**1,788,503.00**	**CY**	**31,513,727**	
			7.37	
01 09 01 04 03 Place Random Fill, Core, Filter and Limerock	**1,788,503.00**	**CY**	**13,180,622**	
			4,817.60	
01 09 01 05 Bank Restoration	**164.00**	**ACR**	**790,086**	
			26,945,252.32	
02 CONTRACT 2 - North New River Conveyance Improvements	**1.00**	**EA**	**26,945,252**	
			26,945,252.32	
02 09 09 - Channels & Canals	**1.00**	**EA**	**26,945,252**	
			26,945,252.32	
02 09 01 NNRC: North New River Canal Improvements	**1.00**	**EA**	**26,945,252**	
02 09 01 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**569,137**	
02 09 01 00 01 Mobilization	**1.00**	**LS**	**186,813**	
02 09 01 00 02 Demobilization	**1.00**	**LS**	**125,175**	
			257,148.55	
02 09 01 00 03 Staging and Site Access	**1.00**	**EA**	**257,149**	
			99,403.07	
02 09 01 00 03 01 Primary Staging Area	**1.00**	**EA**	**99,403**	
			9,321.57	
02 09 01 00 03 02 Secondary Staging Area	**4.00**	**EA**	**37,286**	
			10,660.11	
02 09 01 00 03 03 Access Road	**11.30**	**MI**	**120,459**	
			95,742.90	
02 09 01 01 Temporary Plugs	**2.00**	**EA**	**191,486**	
			9.83	
02 09 01 01 01 Excavate and Stockpile Plug Fill Material	**4,000.00**	**CY**	**39,303**	
			15.57	
02 09 01 01 02 Place, Compact and Grade Berm	**4,000.00**	**CY**	**62,285**	

Description	Quantity	UOM	ProjectCost	CostOverride
			22.47	
02 09 01 01 03 Remove Plug Fill	**4,000.00**	**CY**	**89,898**	
02 09 01 02 Dewatering	**1.00**	**LS**	**1,049,770**	
			2,261.94	
02 09 01 03 Clearing and Grubbing	**136.00**	**ACR**	**307,624**	
			26.86	
02 09 01 04 Earthwork - Berm Buildup	**898,659.00**	**CY**	**24,138,542**	
			3.79	
02 09 01 04 01 Remove and Place Muck	**140,521.00**	**CY**	**532,943**	
			18.52	
02 09 01 04 02 Blast and Excavate Caprock	**898,659.00**	**CY**	**16,644,171**	
			7.75	
02 09 01 04 03 Place Random Fill, Core, Filter and Limerock	**898,659.00**	**CY**	**6,961,428**	
			5,063.93	
02 09 01 05 Bank Restoration	**136.00**	**ACR**	**688,694**	
			164,654,848.01	
03 CONTRACT 3 - Slurry Walls	**1.00**	**EA**	**164,654,848**	
			164,654,848.01	
03 03 03 - Reservoirs	**1.00**	**EA**	**164,654,848**	
			54,900,133.42	
03 03 01 F (L): Cut-Off Wall	**1.00**	**EA**	**54,900,133**	
			1,763.80	
03 03 01 01 Cut-Off Wall	**31,126.00**	**LF**	**54,900,133**	
			46,462,267.82	
03 03 02 J-1 (L): Cut-Off Wall	**1.00**	**EA**	**46,462,268**	
			1,763.81	
03 03 01 02 Cut-Off Wall	**26,342.00**	**LF**	**46,462,268**	
			36,172,288.83	
03 03 03 K (L): Cut-Off Wall	**1.00**	**EA**	**36,172,289**	
			1,763.81	
03 03 01 03 Cut-Off Wall	**20,508.00**	**LF**	**36,172,289**	
			27,120,157.93	

Description	Quantity	UOM	ProjectCost	CostOverride
03 03 04 L (L): Cut-Off Wall	**1.00**	**EA**	**27,120,158**	
			1,763.80	
03 03 01 04 Cut-Off Wall	**15,376.00**	**LF**	**27,120,158**	
			44,789,307.47	
04 CONTRACT 4 - Culverts	**1.00**	**EA**	**44,789,307**	
			44,789,307.47	
04 15 15 - Floodway Control/Diversion Structures	**1.00**	**EA**	**44,789,307**	
			44,789,307.47	
04 15 01 Water Control Structures	**1.00**	**EA**	**44,789,307**	
04 15 01 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**437,146**	
04 15 01 00 01 Mobilization	**1.00**	**LS**	**236,383**	
04 15 01 00 02 Demobilization	**1.00**	**LS**	**146,320**	
			54,444.04	
04 15 01 00 03 Staging and Site Access	**1.00**	**EA**	**54,444**	
			9,074.01	
04 15 01 00 03 01 Staging Area	**6.00**	**EA**	**54,444**	
			1,032,388.97	
04 15 01 01 Structure SW-1: 13.5 FT Wide Overflow Spillway	**1.00**	**EA**	**1,032,389**	
			0.71	
04 15 01 01 02 Silt Fence	**2,705.00**	**LF**	**1,921**	
			13.39	
04 15 01 01 03 Backfill	**3,605.00**	**CY**	**48,278**	
			426.11	
04 15 01 01 04 Concrete	**2,305.00**	**CY**	**982,190**	
			5,719,162.47	
04 15 01 02 Culvert C-1: 385 LF, 4-Gated, 12'W x 12'H Box Culvert	**1.00**	**EA**	**5,719,162**	
			1,895,416.72	
04 15 01 02 01 Sheetpile Dewatering	**1.00**	**EA**	**1,895,417**	
			8.95	
04 15 01 02 02 Culvert Excavation	**34,110.00**	**CY**	**305,239**	
			3.69	
04 15 01 02 02 01 Remove and Place Muck	**5,171.00**	**CY**	**19,103**	

Description	Quantity	UOM	ProjectCost	CostOverride
			13.87	
04 15 01 02 02 02 Blast and Excavate Caprock	**18,404.00**	**CY**	**255,191**	
			2.94	
04 15 01 02 02 03 Excavate Ft. Thompson	**10,535.00**	**CY**	**30,945**	
			2,531,732.08	
04 15 01 02 03 Concrete Culvert	**1.00**	**EA**	**2,531,732**	
			218.96	
04 15 01 02 03 01 Foundation	**1,854.00**	**CY**	**405,948**	
			390.30	
04 15 01 02 03 02 Culvert Walls	**1,255.00**	**CY**	**489,824**	
			267.80	
04 15 01 02 03 03 Top Slab	**2,472.00**	**CY**	**661,995**	
			339.71	
04 15 01 02 03 04 Miscellaneous Concrete	**470.00**	**CY**	**159,663**	
			2,132.80	
04 15 01 02 03 05 Reinforcing Steel	**381.80**	**TON**	**814,302**	
			44.29	
04 15 01 02 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			91,877.34	
04 15 01 02 05 Miscellaneous Metals	**1.00**	**EA**	**91,877**	
			75,622.53	
04 15 01 02 06 Gates	**3.00**	**EA**	**226,868**	
			61.91	
04 15 01 02 07 Riprap	**4,660.00**	**CY**	**288,494**	
			15,223.59	
04 15 01 02 08 Boat Barrier	**2.00**	**EA**	**30,447**	
			59,292.40	
04 15 01 02 09 SWPPP	**1.00**	**EA**	**59,292**	
			77,186.61	
04 15 01 02 10 Control Building	**1.00**	**EA**	**77,187**	
			6,248,358.74	
04 15 01 03 Culvert C-2: 642 LF, Un-Gated, 15'W x 6'H Box Culvert	**1.00**	**EA**	**6,248,359**	

Description	Quantity	UOM	ProjectCost	CostOverride
			2,598,778.05	
04 15 01 03 01 Sheetpile Dewatering	**1.00**	**EA**	**2,598,778**	
			7.33	
04 15 01 03 02 Culvert Excavation	**103,655.00**	**CY**	**760,256**	
			3.69	
04 15 01 03 02 01 Remove and Place Muck	**10,256.00**	**CY**	**37,889**	
			13.87	
04 15 01 03 02 02 Blast and Excavate Caprock	**37,220.00**	**CY**	**516,094**	
			3.67	
04 15 01 03 02 03 Excavate Ft. Thompson	**56,179.00**	**CY**	**206,273**	
			2,658,514.49	
04 15 01 03 03 Concrete Culvert	**1.00**	**EA**	**2,658,514**	
			219.89	
04 15 01 03 03 01 Foundation	**2,544.00**	**CY**	**559,401**	
			395.72	
04 15 01 03 03 02 Culvert Walls	**761.00**	**CY**	**301,143**	
			312.20	
04 15 01 03 03 03 Top Slab	**1,698.00**	**CY**	**530,111**	
			340.11	
04 15 01 03 03 04 Miscellaneous Concrete	**265.00**	**CY**	**90,128**	
			2,132.80	
04 15 01 03 03 05 Reinforcing Steel	**552.20**	**TON**	**1,177,731**	
			82,139.47	
04 15 01 03 04 Miscellaneous Metals	**1.00**	**EA**	**82,139**	
			66.42	
04 15 01 03 05 Riprap	**75.60**	**CY**	**5,021**	
			13,243.58	
04 15 01 03 06 Boat Barrier	**1.00**	**EA**	**13,244**	
			59,292.40	
04 15 01 03 07 SWPPP	**1.00**	**EA**	**59,292**	
			71,113.25	
04 15 01 03 08 Control Building	**1.00**	**EA**	**71,113**	

Description	Quantity	UOM	ProjectCost	CostOverride
			3,654,041.75	
04 15 01 04 Culvert C-3: 370 LF, 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**3,654,042**	
			1,600,911.56	
04 15 01 04 01 Sheetpile Dewatering	**1.00**	**EA**	**1,600,912**	
			7.13	
04 15 01 04 02 Culvert Excavation	**34,110.00**	**CY**	**243,358**	
			3.69	
04 15 01 04 02 01 Remove and Place Muck	**4,212.00**	**CY**	**15,560**	
			13.87	
04 15 01 04 02 02 Blast and Excavate Caprock	**14,654.00**	**CY**	**203,194**	
			3.67	
04 15 01 04 02 03 Excavate Ft. Thompson	**6,701.00**	**CY**	**24,603**	
			1,064,892.27	
04 15 01 04 03 Concrete Culvert	**1.00**	**EA**	**1,064,892**	
			219.38	
04 15 01 04 03 01 Foundation	**809.00**	**CY**	**177,478**	
			395.57	
04 15 01 04 03 02 Culvert Walls	**512.00**	**CY**	**202,533**	
			316.45	
04 15 01 04 03 03 Top Slab	**540.00**	**CY**	**170,884**	
			339.41	
04 15 01 04 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 04 03 05 Reinforcing Steel	**207.10**	**TON**	**441,702**	
			44.29	
04 15 01 04 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			58,210.72	
04 15 01 04 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 04 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 04 07 Riprap	**3,765.00**	**CY**	**233,179**	

Description	Quantity	UOM	ProjectCost	CostOverride
			12,629.81	
04 15 01 04 08 Boat Barrier	**2.00**	**EA**	**25,260**	
			59,292.40	
04 15 01 04 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 04 10 Control Building	**1.00**	**EA**	**104,863**	
			3,654,041.75	
04 15 01 05 Culvert C-4: 370 LF, 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**3,654,042**	
			1,600,911.56	
04 15 01 05 01 Sheetpile Dewatering	**1.00**	**EA**	**1,600,912**	
			7.13	
04 15 01 05 02 Culvert Excavation	**34,110.00**	**CY**	**243,358**	
			3.69	
04 15 01 05 02 01 Remove and Place Muck	**4,212.00**	**CY**	**15,560**	
			13.87	
04 15 01 05 02 02 Blast and Excavate Caprock	**14,654.00**	**CY**	**203,194**	
			3.67	
04 15 01 05 02 03 Excavate Ft. Thompson	**6,701.00**	**CY**	**24,603**	
			1,064,892.27	
04 15 01 05 03 Concrete Culvert	**1.00**	**EA**	**1,064,892**	
			219.38	
04 15 01 05 03 01 Foundation	**809.00**	**CY**	**177,478**	
			395.57	
04 15 01 05 03 02 Culvert Walls	**512.00**	**CY**	**202,533**	
			316.45	
04 15 01 05 03 03 Top Slab	**540.00**	**CY**	**170,884**	
			339.41	
04 15 01 05 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 05 03 05 Reinforcing Steel	**207.10**	**TON**	**441,702**	
			44.29	
04 15 01 05 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	

Description	Quantity	UOM	ProjectCost	CostOverride
			58,210.72	
04 15 01 05 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 05 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 05 07 Riprap	**3,765.00**	**CY**	**233,179**	
			12,629.81	
04 15 01 05 08 Boat Barrier	**2.00**	**EA**	**25,260**	
			59,292.40	
04 15 01 05 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 05 10 Control Building	**1.00**	**EA**	**104,863**	
			2,682,204.48	
04 15 01 06 Culvert C-5: 208 LF 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**2,682,204**	
			1,150,189.62	
04 15 01 06 01 Sheetpile Dewatering	**1.00**	**EA**	**1,150,190**	
			9.52	
04 15 01 06 02 Culvert Excavation	**14,373.00**	**CY**	**136,811**	
			3.69	
04 15 01 06 02 01 Remove and Place Muck	**2,368.00**	**CY**	**8,749**	
			13.87	
04 15 01 06 02 02 Blast and Excavate Caprock	**8,238.00**	**CY**	**114,230**	
			3.67	
04 15 01 06 02 03 Excavate Ft. Thompson	**3,767.00**	**CY**	**13,832**	
			650,323.75	
04 15 01 06 03 Concrete Culvert	**1.00**	**EA**	**650,324**	
			226.16	
04 15 01 06 03 01 Foundation	**455.00**	**CY**	**102,902**	
			399.98	
04 15 01 06 03 02 Culvert Walls	**288.00**	**CY**	**115,193**	
			316.48	
04 15 01 06 03 03 Top Slab	**303.00**	**CY**	**95,894**	

Description	Quantity	UOM	ProjectCost	CostOverride
			339.41	
04 15 01 06 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 06 03 05 Reinforcing Steel	**123.80**	**TON**	**264,040**	
			44.29	
04 15 01 06 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			58,210.72	
04 15 01 06 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 06 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 06 07 Riprap	**3,765.00**	**CY**	**233,179**	
			12,629.81	
04 15 01 06 08 Boat Barrier	**2.00**	**EA**	**25,260**	
			59,292.40	
04 15 01 06 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 06 10 Control Building	**1.00**	**EA**	**104,863**	
			2,682,204.48	
04 15 01 07 Culvert C-6: 208 LF, 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**2,682,204**	
			1,150,189.62	
04 15 01 07 01 Sheetpile Dewatering	**1.00**	**EA**	**1,150,190**	
			9.52	
04 15 01 07 02 Culvert Excavation	**14,373.00**	**CY**	**136,811**	
			3.69	
04 15 01 07 02 01 Remove and Place Muck	**2,368.00**	**CY**	**8,749**	
			13.87	
04 15 01 07 02 02 Blast and Excavate Caprock	**8,238.00**	**CY**	**114,230**	
			3.67	
04 15 01 07 02 03 Excavate Ft. Thompson	**3,767.00**	**CY**	**13,832**	
			650,323.75	
04 15 01 07 03 Concrete Culvert	**1.00**	**EA**	**650,324**	

Description	Quantity	UOM	ProjectCost	CostOverride
			226.16	
04 15 01 07 03 01 Foundation	**455.00**	**CY**	**102,902**	
			399.98	
04 15 01 07 03 02 Culvert Walls	**288.00**	**CY**	**115,193**	
			316.48	
04 15 01 07 03 03 Top Slab	**303.00**	**CY**	**95,894**	
			339.41	
04 15 01 07 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 07 03 05 Reinforcing Steel	**123.80**	**TON**	**264,040**	
			44.29	
04 15 01 07 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			58,210.72	
04 15 01 07 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 07 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 07 07 Riprap	**3,765.00**	**CY**	**233,179**	
			12,629.81	
04 15 01 07 08 Boat Barrier	**2.00**	**EA**	**25,260**	
			59,292.40	
04 15 01 07 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 07 10 Control Building	**1.00**	**EA**	**104,863**	
			2,682,204.48	
04 15 01 08 Culvert C-7: 208 LF, 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**2,682,204**	
			1,150,189.62	
04 15 01 08 01 Sheetpile Dewatering	**1.00**	**EA**	**1,150,190**	
			9.52	
04 15 01 08 02 Culvert Excavation	**14,373.00**	**CY**	**136,811**	
			3.69	
04 15 01 08 02 01 Remove and Place Muck	**2,368.00**	**CY**	**8,749**	

Description	Quantity	UOM	ProjectCost	CostOverride
			13.87	
04 15 01 08 02 02 Blast and Excavate Caprock	**8,238.00**	**CY**	**114,230**	
			3.67	
04 15 01 08 02 03 Excavate Ft. Thompson	**3,767.00**	**CY**	**13,832**	
			650,323.75	
04 15 01 08 03 Concrete Culvert	**1.00**	**EA**	**650,324**	
			226.16	
04 15 01 08 03 01 Foundation	**455.00**	**CY**	**102,902**	
			399.98	
04 15 01 08 03 02 Culvert Walls	**288.00**	**CY**	**115,193**	
			316.48	
04 15 01 08 03 03 Top Slab	**303.00**	**CY**	**95,894**	
			339.41	
04 15 01 08 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 08 03 05 Reinforcing Steel	**123.80**	**TON**	**264,040**	
			44.29	
04 15 01 08 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			58,210.72	
04 15 01 08 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 08 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 08 07 Riprap	**3,765.00**	**CY**	**233,179**	
			12,629.81	
04 15 01 08 08 Boat Barrier	**2.00**	**EA**	**25,260**	
			59,292.40	
04 15 01 08 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 08 10 Control Building	**1.00**	**EA**	**104,863**	
			2,682,204.48	
04 15 01 09 Culvert C-8: 208 LF, 2-Gated, 7'W x 7'H Box Culvert	**1.00**	**EA**	**2,682,204**	

Description	Quantity	UOM	ProjectCost	CostOverride
			1,150,189.62	
04 15 01 09 01 Sheetpile Dewatering	**1.00**	**EA**	**1,150,190**	
			9.52	
04 15 01 09 02 Culvert Excavation	**14,373.00**	**CY**	**136,811**	
			3.69	
04 15 01 09 02 01 Remove and Place Muck	**2,368.00**	**CY**	**8,749**	
			13.87	
04 15 01 09 02 02 Blast and Excavate Caprock	**8,238.00**	**CY**	**114,230**	
			3.67	
04 15 01 09 02 03 Excavate Ft. Thompson	**3,767.00**	**CY**	**13,832**	
			650,323.75	
04 15 01 09 03 Concrete Culvert	**1.00**	**EA**	**650,324**	
			226.16	
04 15 01 09 03 01 Foundation	**455.00**	**CY**	**102,902**	
			399.98	
04 15 01 09 03 02 Culvert Walls	**288.00**	**CY**	**115,193**	
			316.48	
04 15 01 09 03 03 Top Slab	**303.00**	**CY**	**95,894**	
			339.41	
04 15 01 09 03 04 Miscellaneous Concrete	**213.00**	**CY**	**72,294**	
			2,132.80	
04 15 01 09 03 05 Reinforcing Steel	**123.80**	**TON**	**264,040**	
			44.29	
04 15 01 09 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			58,210.72	
04 15 01 09 05 Miscellaneous Metals	**1.00**	**EA**	**58,211**	
			25,732.66	
04 15 01 09 06 Gates	**2.00**	**EA**	**51,465**	
			61.93	
04 15 01 09 07 Riprap	**3,765.00**	**CY**	**233,179**	
			12,629.81	
04 15 01 09 08 Boat Barrier	**2.00**	**EA**	**25,260**	

Description	Quantity	UOM	ProjectCost	CostOverride
			59,292.40	
04 15 01 09 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 09 10 Control Building	**1.00**	**EA**	**104,863**	
			6,985,698.68	
04 15 01 10 Culvert C-9: 374LF, 4-Gated, 16'W x 12'H Box Culvert	**1.00**	**EA**	**6,985,699**	
			1,941,926.29	
04 15 01 10 01 Sheetpile Dewatering	**1.00**	**EA**	**1,941,926**	
			9.14	
04 15 01 10 02 Culvert Excavation	**39,505.00**	**CY**	**360,963**	
			3.69	
04 15 01 10 02 01 Remove and Place Muck	**5,846.00**	**CY**	**21,597**	
			13.87	
04 15 01 10 02 02 Blast and Excavate Caprock	**21,166.00**	**CY**	**293,490**	
			3.67	
04 15 01 10 02 03 Excavate Ft. Thompson	**12,494.00**	**CY**	**45,876**	
			3,685,033.84	
04 15 01 10 03 Concrete Culvert	**1.00**	**EA**	**3,685,034**	
			216.57	
04 15 01 10 03 01 Foundation	**3,034.00**	**CY**	**657,085**	
			387.86	
04 15 01 10 03 02 Culvert Walls	**1,551.00**	**CY**	**601,578**	
			310.35	
04 15 01 10 03 03 Top Slab	**2,022.00**	**CY**	**627,530**	
			339.84	
04 15 01 10 03 04 Miscellaneous Concrete	**666.00**	**CY**	**226,330**	
			2,132.80	
04 15 01 10 03 05 Reinforcing Steel	**737.30**	**TON**	**1,572,512**	
			44.29	
04 15 01 10 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			134,644.67	
04 15 01 10 05 Miscellaneous Metals	**1.00**	**EA**	**134,645**	

Description	Quantity	UOM	ProjectCost	CostOverride
			25,732.66	
04 15 01 10 06 Gates	**4.00**	**EA**	**102,931**	
			61.89	
04 15 01 10 07 Riprap	**5,780.00**	**CY**	**357,749**	
			25,686.36	
04 15 01 10 08 Boat Barrier	**1.00**	**EA**	**25,686**	
			59,292.40	
04 15 01 10 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 10 10 Control Building	**1.00**	**EA**	**104,863**	
			5,069,010.38	
04 15 01 11 Culvert C-10: 320 LF, 3-Gated, 14'W x 12 H Box Culvert	**1.00**	**EA**	**5,069,010**	
			1,646,030.28	
04 15 01 11 01 Sheetpile Dewatering	**1.00**	**EA**	**1,646,030**	
			9.17	
04 15 01 11 02 Culvert Excavation	**29,454.00**	**CY**	**269,992**	
			3.69	
04 15 01 11 02 01 Remove and Place Muck	**4,441.00**	**CY**	**16,406**	
			13.87	
04 15 01 11 02 02 Blast and Excavate Caprock	**15,866.00**	**CY**	**219,997**	
			3.67	
04 15 01 11 02 03 Excavate Ft. Thompson	**9,148.00**	**CY**	**33,589**	
			2,270,000.82	
04 15 01 11 03 Concrete Culvert	**1.00**	**EA**	**2,270,001**	
			214.64	
04 15 01 11 03 01 Foundation	**1,754.00**	**CY**	**376,479**	
			391.60	
04 15 01 11 03 02 Culvert Walls	**1,043.00**	**CY**	**408,442**	
			309.29	
04 15 01 11 03 03 Top Slab	**1,170.00**	**CY**	**361,866**	
			339.71	
04 15 01 11 03 04 Miscellaneous Concrete	**500.00**	**CY**	**169,854**	

Description	Quantity	UOM	ProjectCost	CostOverride
			2,132.80	
04 15 01 11 03 05 Reinforcing Steel	**447.00**	**TON**	**953,360**	
			44.29	
04 15 01 11 04 Sheetpile Endwalls	**4,800.00**	**SF**	**212,609**	
			100,850.62	
04 15 01 11 05 Miscellaneous Metals	**1.00**	**EA**	**100,851**	
			25,732.66	
04 15 01 11 06 Gates	**3.00**	**EA**	**77,198**	
			61.91	
04 15 01 11 07 Riprap	**4,886.00**	**CY**	**302,487**	
			25,686.36	
04 15 01 11 08 Boat Barrier	**1.00**	**EA**	**25,686**	
			59,292.40	
04 15 01 11 09 SWPPP	**1.00**	**EA**	**59,292**	
			104,863.50	
04 15 01 11 10 Control Building	**1.00**	**EA**	**104,863**	
			1,260,640.44	
04 15 01 12 Culvert C-11: 225 LF, 72" CAP w/ Endwalls	**1.00**	**EA**	**1,260,640**	
			948,890.58	
04 15 01 12 01 Sheetpile Dewatering	**1.00**	**EA**	**948,891**	
			9.69	
04 15 01 12 02 Culvert Excavation	**6,329.00**	**CY**	**61,320**	
			3.69	
04 15 01 12 02 01 Remove and Place Muck	**1,267.00**	**CY**	**4,680**	
			13.87	
04 15 01 12 02 02 Blast and Excavate Caprock	**3,733.00**	**CY**	**51,761**	
			3.67	
04 15 01 12 02 03 Excavate Ft. Thompson	**1,329.00**	**CY**	**4,879**	
			49,371.47	
04 15 01 12 03 Culvert Components	**1.00**	**EA**	**49,371**	
			508.02	
04 15 01 12 04 Inlet and Outlet Works	**57.70**	**CY**	**29,313**	

Description	Quantity	UOM	ProjectCost	CostOverride
			62.03	
04 15 01 12 05 Riprap	**1,813.00**	**CY**	**112,453**	
			59,292.40	
04 15 01 12 06 SWPPP	**1.00**	**EA**	**59,292**	
			916,113,152.20	
05 CONTRACT 5 - A-2 Reservoir and A-2 STA Embankments, Canals and Control Structures (C1-C11 + S1)	**1.00**	**EA**	**916,113,152**	
			816,422,183.87	
05 03 03 - Reservoirs	**1.00**	**EA**	**816,422,184**	
05 03 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**2,507,259**	
05 03 00 01 Mobilization	**1.00**	**LS**	**551,629**	
05 03 00 02 Demobilization	**1.00**	**LS**	**383,143**	
			1,572,487.20	
05 03 00 03 Staging and Site Access	**1.00**	**EA**	**1,572,487**	
			527,045.95	
05 03 00 03 01 Primary Staging Area	**1.00**	**EA**	**527,046**	
			13,968.16	
05 03 00 03 02 Secondary Staging Area	**4.00**	**EA**	**55,873**	
			56,225.49	
05 03 00 03 03 Access Roads	**17.60**	**MI**	**989,569**	
			246,158,603.87	
05 03 01 F (L): Levee Construction	**1.00**	**EA**	**246,158,604**	
			2,169.94	
05 03 01 01 Clearing and Grubbing	**765.00**	**ACR**	**1,660,005**	
			111,320.63	
05 03 01 02 Dewatering	**63.00**	**MO**	**7,013,200**	
			30.94	
05 03 01 03 Earthwork - Berm Buildup	**7,016,142.00**	**CY**	**217,047,688**	
			4.08	
05 03 01 03 01 Remove and Place Muck	**2,226,121.00**	**CY**	**9,072,171**	
			19.71	
05 03 01 03 02 Blast and Excavate Caprock	**4,260,985.00**	**CY**	**84,004,004**	
			8.84	

Description	Quantity	UOM	ProjectCost	CostOverride
05 03 01 03 03 Excavate Ft. Thompson	**1,664,877.00**	**CY**	**14,717,297**	
			18.99	
05 03 01 03 04 Process Limerock, Riprap and Bedding Stone	**123,897.00**	**CY**	**2,352,539**	
			11.27	
05 03 01 03 05 Place Random Fill, Sand, Limerock, and Bedding	**7,011,727.00**	**CY**	**78,996,835**	
			8.87	
05 03 01 03 06 Place Riprap and Bedding at Bends	**4,205.00**	**CY**	**37,305**	
			47.56	
05 03 01 03 07 Deliver Filter Sand	**585,993.00**	**CY**	**27,867,536**	
			19,432,112.26	
05 03 01 04 Roller Compacted Concrete and Wave Wall	**1.00**	**EA**	**19,432,112**	
			4,857.96	
05 03 01 05 Bank Restoration	**207.00**	**ACR**	**1,005,599**	
			226,515,532.86	
05 03 02 J-1 (L): Levee Construction	**1.00**	**EA**	**226,515,533**	
			2,169.94	
05 03 02 01 Clearing and Grubbing	**566.00**	**ACR**	**1,228,187**	
			111,257.94	
05 03 02 02 Dewatering	**54.00**	**MO**	**6,007,929**	
			43.22	
05 03 02 03 Earthwork - Berm Buildup	**4,691,770.00**	**CY**	**202,799,885**	
			3.64	
05 03 02 03 01 Remove and Place Muck	**1,836,721.00**	**CY**	**6,682,671**	
			19.71	
05 03 02 03 02 Blast and Excavate Caprock	**4,951,333.00**	**CY**	**97,614,003**	
			9.67	
05 03 02 03 03 Excavate Ft. Thompson	**1,777,496.00**	**CY**	**17,197,194**	
			18.99	
05 03 02 03 04 Process Bedding Stone	**65,639.00**	**CY**	**1,246,350**	
			12.50	
05 03 02 03 05 Place Random Fill, Core, and Filter	**4,642,527.00**	**CY**	**58,042,948**	
			47.56	

Description	Quantity	UOM	ProjectCost	CostOverride
05 03 02 03 06 Deliver Filter Sand	**462,963.00**	**CY**	**22,016,719**	
			16,192,912.33	
05 03 02 04 Roller Compacted Concrete and Wave Wall	**1.00**	**EA**	**16,192,912**	
			4,857.96	
05 03 02 05 Bank Restoration	**59.00**	**ACR**	**286,620**	
			209,135,958.13	
05 03 03 K (L): Levee Construction	**1.00**	**EA**	**209,135,958**	
			2,169.94	
05 03 03 01 Clearing and Grubbing	**579.00**	**ACR**	**1,256,396**	
			110,921.68	
05 03 03 02 Dewatering	**48.00**	**MO**	**5,324,241**	
			39.82	
05 03 03 03 Earthwork - Berm Buildup	**4,691,770.00**	**CY**	**186,817,656**	
			3.64	
05 03 03 03 01 Remove and Place Muck	**1,809,142.00**	**CY**	**6,582,328**	
			19.71	
05 03 03 03 02 Blast and Excavate Caprock	**4,860,680.00**	**CY**	**95,826,809**	
			9.67	
05 03 03 03 03 Excavate Ft. Thompson	**1,689,548.00**	**CY**	**16,346,301**	
			18.99	
05 03 03 03 04 Process Limerock and Bedding Stone	**57,977.00**	**CY**	**1,100,857**	
			11.43	
05 03 03 03 05 Place Random Fill, Core, Filter and Limerock	**4,252,527.00**	**CY**	**48,600,102**	
			47.56	
05 03 03 03 06 Deliver Filter Sand	**386,097.00**	**CY**	**18,361,259**	
			15,300,448.67	
05 03 03 04 Roller Compacted Concrete and Wave Wall	**1.00**	**EA**	**15,300,449**	
			4,857.96	
05 03 03 05 Bank Restoration	**90.00**	**ACR**	**437,217**	
			131,907,930.86	
05 03 04 L (L): Levee Construction	**1.00**	**EA**	**131,907,931**	
			2,169.94	

Description	Quantity	UOM	ProjectCost	CostOverride
05 03 04 01 Clearing and Grubbing	**293.00**	**ACR**	**635,793**	
			113,509.33	
05 03 04 02 Dewatering	**30.00**	**MO**	**3,405,280**	
			42.82	
05 03 04 03 Earthwork - Berm Buildup	**2,713,679.00**	**CY**	**116,200,952**	
			3.64	
05 03 04 03 01 Remove and Place Muck	**752,217.00**	**CY**	**2,736,843**	
			19.71	
05 03 04 03 02 Blast and Excavate Caprock	**2,874,312.00**	**CY**	**56,666,175**	
			9.67	
05 03 04 03 03 Excavate Ft. Thompson	**1,030,885.00**	**CY**	**9,973,764**	
			18.99	
05 03 04 03 04 Process Bedding Stone	**38,911.00**	**CY**	**738,842**	
			11.79	
05 03 04 03 05 Place Random Fill, Core, and Filter	**2,712,798.00**	**CY**	**31,973,009**	
			47.56	
05 03 04 03 06 Deliver Filter Sand	**296,751.00**	**CY**	**14,112,318**	
			11,471,587.33	
05 03 04 04 Roller Compacted Concrete and Wave Wall	**1.00**	**EA**	**11,471,587**	
			4,857.96	
05 03 04 05 Bank Restoration	**40.00**	**ACR**	**194,319**	
			196,898.97	
05 03 05 Environmental Controls	**1.00**	**EA**	**196,899**	
			10,620,027.53	
05 09 09 - Channels & Canals (Conveyance)	**1.00**	**EA**	**10,620,028**	
05 09 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**222,044**	
05 09 00 01 Mobilization	**1.00**	**LS**	**42,493**	
05 09 00 02 Demobilization	**1.00**	**LS**	**33,623**	
			145,927.35	
05 09 00 03 Staging and Site Access	**1.00**	**EA**	**145,927**	
			8,924.27	
05 09 00 03 01 Secondary Staging Area	**2.00**	**EA**	**17,849**	

Description	Quantity	UOM	ProjectCost	CostOverride
			56,174.92	
05 09 00 03 02 Access Roads	**2.28**	**MI**	**128,079**	
			5,532,277.01	
05 09 01 G: Canal Construction	**1.00**	**EA**	**5,532,277**	
			87,679.18	
05 09 01 01 Temporary Plugs	**2.00**	**EA**	**175,358**	
			7.34	
05 09 01 01 01 Excavate and Stockpile Plug Fill Material	**4,000.00**	**CY**	**29,365**	
			14.94	
05 09 01 01 02 Place, Compact and Grade Berm	**4,000.00**	**CY**	**59,752**	
			21.56	
05 09 01 01 03 Remove Plug Fill	**4,000.00**	**CY**	**86,242**	
05 09 01 02 Dewatering	**1.00**	**LS**	**325,331**	
			2,169.94	
05 09 01 03 Clearing and Grubbing	**42.00**	**ACR**	**91,138**	
			16.14	
05 09 01 04 Earthwork - Berm Buildup	**295,211.00**	**CY**	**4,765,563**	
			4.28	
05 09 01 04 01 Remove and Place Muck	**86,070.00**	**CY**	**368,203**	
			17.77	
05 09 01 04 02 Blast and Excavate Caprock	**80,577.00**	**CY**	**1,431,676**	
			7.73	
05 09 01 04 03 Excavate Ft. Thompson	**72,946.00**	**CY**	**563,731**	
			18.99	
05 09 01 04 04 Process Limerock, Riprap and Bedding Stone	**7,785.00**	**CY**	**147,817**	
			7.43	
05 09 01 04 05 Place Random Fill and Limerock	**295,211.00**	**CY**	**2,193,830**	
			14.63	
05 09 01 04 06 Place Riprap and Bedding at Bends	**4,122.00**	**CY**	**60,306**	
			4,857.96	
05 09 01 05 Bank Restoration	**36.00**	**ACR**	**174,887**	
			4,865,706.62	

Description	Quantity	UOM	ProjectCost	CostOverride
05 09 02 H: Canal Construction	**1.00**	**EA**	**4,865,707**	
			91,281.89	
05 09 02 01 Temporary Plugs	**2.00**	**EA**	**182,564**	
			7.34	
05 09 02 01 01 Excavate and Stockpile Plug Fill Material	**4,000.00**	**CY**	**29,365**	
			14.94	
05 09 02 01 02 Place, Compact and Grade Berm	**4,000.00**	**CY**	**59,752**	
			23.36	
05 09 02 01 03 Remove Plug Fill	**4,000.00**	**CY**	**93,447**	
05 09 02 02 Dewatering	**1.00**	**LS**	**433,775**	
			2,169.94	
05 09 02 03 Clearing and Grubbing	**43.00**	**ACR**	**93,307**	
			29.79	
05 09 02 04 Earthwork - Berm Buildup	**136,752.00**	**CY**	**4,073,475**	
			3.64	
05 09 02 04 01 Remove and Place Muck	**98,546.00**	**CY**	**358,546**	
			17.77	
05 09 02 04 02 Blast and Excavate Caprock	**121,592.00**	**CY**	**2,160,424**	
			7.73	
05 09 02 04 03 Excavate Ft. Thompson	**65,479.00**	**CY**	**506,028**	
			18.99	
05 09 02 04 04 Process Limerock	**1,697.00**	**CY**	**32,219**	
			7.43	
05 09 02 04 05 Place Random Fill and Limerock	**136,752.00**	**CY**	**1,016,258**	
			4,857.96	
05 09 02 05 Bank Restoration	**17.00**	**ACR**	**82,585**	
			449.81	
05 11 11 - Levees & Floodwalls (STA)	**181,238.00**	**EA**	**81,522,573**	
05 11 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**1,064,685**	
05 11 00 01 Mobilization	**1.00**	**LS**	**57,276**	
05 11 00 02 Demobilization	**1.00**	**LS**	**33,623**	
			973,785.74	

Description	Quantity	UOM	ProjectCost	CostOverride
05 11 00 03 Staging and Site Access	**1.00**	**EA**	**973,786**	
			8,936.38	
05 11 00 03 01 Secondary Staging Area	**6.00**	**EA**	**53,618**	
			56,210.60	
05 11 00 03 02 Access Roads	**16.37**	**MI**	**920,167**	
			6,704,696.92	
05 11 01 A: Levee Construction	**1.00**	**EA**	**6,704,697**	
			2,169.94	
05 11 01 01 Clearing and Grubbing	**33.00**	**ACR**	**71,608**	
			29.72	
05 11 01 02 Earthwork - Berm Buildup	**219,430.00**	**CY**	**6,521,356**	
			3.64	
05 11 01 02 01 Remove and Place Muck	**18,553.00**	**CY**	**67,503**	
			19.71	
05 11 01 02 02 Blast and Excavate Caprock	**219,430.00**	**CY**	**4,325,999**	
			18.99	
05 11 01 02 03 Process Limerock Base	**3,557.00**	**CY**	**67,536**	
			9.39	
05 11 01 02 04 Place Random Fill and Limerock Base	**219,430.00**	**CY**	**2,060,317**	
			4,857.96	
05 11 01 03 Bank Restoration	**23.00**	**ACR**	**111,733**	
			1,009,054.87	
05 11 02 B-1: Levee Construction	**1.00**	**EA**	**1,009,055**	
			2,169.94	
05 11 02 01 Clearing and Grubbing	**31.00**	**ACR**	**67,268**	
			3.64	
05 11 02 02 Earthwork - Berm Buildup	**224,133.00**	**CY**	**815,480**	
			3.64	
05 11 02 02 01 Remove and Place Muck	**224,133.00**	**CY**	**815,480**	
			4,857.96	
05 11 02 03 Bank Restoration	**26.00**	**ACR**	**126,307**	
			24,645,988.04	

Description	Quantity	UOM	ProjectCost	CostOverride
05 11 03 C: Levee Construction	**1.00**	**EA**	**24,645,988**	
			2,169.94	
05 11 03 01 Clearing and Grubbing	**155.00**	**ACR**	**336,341**	
05 11 03 02 Dewatering	**1.00**	**LS**	**2,602,649**	
			30.57	
05 11 03 03 Earthwork - Berm Buildup	**698,148.00**	**CY**	**21,342,651**	
			3.93	
05 11 03 03 01 Remove and Place Muck	**299,418.00**	**CY**	**1,176,438**	
			19.71	
05 11 03 03 02 Blast and Excavate Caprock	**662,332.00**	**CY**	**13,057,671**	
			8.84	
05 11 03 03 03 Blast and Excavate Ft. Thompson	**107,288.00**	**CY**	**948,412**	
			18.99	
05 11 03 03 04 Process Limerock Base	**4,558.00**	**CY**	**86,554**	
			9.39	
05 11 03 03 05 Place Random Fill and Limerock Base	**646,855.00**	**CY**	**6,073,575**	
			4,857.96	
05 11 03 04 Bank Restoration	**75.00**	**ACR**	**364,347**	
			32,944,340.96	
05 11 04 E: Levee Construction	**1.00**	**EA**	**32,944,341**	
			2,169.94	
05 11 04 01 Clearing and Grubbing	**256.00**	**ACR**	**555,505**	
05 11 04 02 Dewatering	**1.00**	**LS**	**3,903,973**	
			32.04	
05 11 04 03 Earthwork - Berm Buildup	**873,299.00**	**CY**	**27,979,635**	
			3.64	
05 11 04 03 01 Remove and Place Muck	**588,883.00**	**CY**	**2,142,575**	
			19.71	
05 11 04 03 02 Blast and Excavate Caprock	**710,693.00**	**CY**	**14,011,092**	
			8.84	
05 11 04 03 03 Blast and Excavate Ft. Thompson	**382,721.00**	**CY**	**3,383,203**	
			18.99	

Description	Quantity	UOM	ProjectCost	CostOverride
05 11 04 03 04 Process Limerock, Riprap and Bedding Stone	**12,325.00**	**CY**	**234,022**	
			9.40	
05 11 04 03 05 Place Random Fill, Limerock, Riprap and Bedding	**873,299.00**	**CY**	**8,208,742**	
			4,857.96	
05 11 04 04 Bank Restoration	**104.00**	**ACR**	**505,228**	
			2,781,516.05	
05 11 05 N: Levee Construction	**1.00**	**EA**	**2,781,516**	
			2,169.94	
05 11 05 01 Clearing and Grubbing	**20.00**	**ACR**	**43,399**	
05 11 05 02 Dewatering	**1.00**	**LS**	**325,331**	
			47.13	
05 11 05 03 Earthwork - Berm Buildup	**50,370.00**	**CY**	**2,373,922**	
			4.28	
05 11 05 03 01 Remove and Place Muck	**55,347.00**	**CY**	**236,771**	
			19.71	
05 11 05 03 02 Blast and Excavate Caprock	**81,370.00**	**CY**	**1,604,181**	
			8.84	
05 11 05 03 03 Blast and Excavate Ft. Thompson	**13,181.00**	**CY**	**116,517**	
			9.39	
05 11 05 03 04 Place Random Fill	**44,354.00**	**CY**	**416,453**	
			4,857.96	
05 11 05 04 Bank Restoration	**8.00**	**ACR**	**38,864**	
			12,372,291.36	
05 11 06 N-1: Levee Construction	**1.00**	**EA**	**12,372,291**	
			2,169.94	
05 11 06 01 Clearing and Grubbing	**89.00**	**ACR**	**193,125**	
05 11 06 02 Dewatering	**1.00**	**LS**	**1,301,324**	
			36.18	
05 11 06 03 Earthwork - Berm Buildup	**294,199.00**	**CY**	**10,644,660**	
			4.28	
05 11 06 01 Remove and Place Muck	**199,008.00**	**CY**	**851,346**	
			19.71	

Description	Quantity	UOM	ProjectCost	CostOverride
05 11 06 02 Blast and Excavate Caprock	**330,445.00**	**CY**	**6,514,619**	
			8.84	
05 11 06 03 Blast and Excavate Ft. Thompson	**53,527.00**	**CY**	**473,173**	
			18.98	
05 11 06 04 Process Limerock Base	**2,274.00**	**CY**	**43,171**	
			9.39	
05 11 06 05 Place Random Fill and Limerock Base	**294,199.00**	**CY**	**2,762,351**	
			4,857.96	
05 11 06 04 Bank Restoration	**48.00**	**ACR**	**233,182**	
05 14 14 - Recreational Facilities	**1.00**	**LS**	**7,548,367**	
05 14 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**79,819**	
05 14 00 01 Mobilization	**1.00**	**LS**	**51,736**	
05 14 00 02 Demobilization	**1.00**	**LS**	**28,083**	
			3,295,681.48	
05 14 01 Site A	**1.00**	**EA**	**3,295,681**	
			2,849.09	
05 14 01 01 Vehicle / Pedestrian Gate	**3.00**	**EA**	**8,547**	
			8,711.84	
05 14 01 02 Signs	**2.00**	**EA**	**17,424**	
			1,930.51	
05 14 01 03 Picnic Tables	**4.00**	**EA**	**7,722**	
			758.21	
05 14 01 04 Bike Rack	**1.00**	**EA**	**758**	
			51,785.08	
05 14 01 05 Group Shelter	**1.00**	**EA**	**51,785**	
			59,109.60	
05 14 01 06 Vault Toilet	**1.00**	**EA**	**59,110**	
			76.14	
05 14 01 07 Improved Vehicle Access Road	**11,880.00**	**LF**	**904,578**	
			35,401.90	
05 14 01 08 Improved Parking Area	**1.00**	**EA**	**35,402**	
			15,522.91	

Description	Quantity	UOM	ProjectCost	CostOverride
05 14 01 10 Guard Rails and Fences	**1.00**	**EA**	**15,523**	
			73,674.88	
05 14 01 11 ADA Fishing Platform	**1.00**	**EA**	**73,675**	
			2,121,157.74	
05 14 01 12 Boat Ramp	**1.00**	**EA**	**2,121,158**	
			47,302.78	
05 14 02 Site B	**1.00**	**EA**	**47,303**	
			5,807.89	
05 14 02 01 Signs	**1.00**	**EA**	**5,808**	
			1,930.51	
05 14 02 02 Picnic Tables	**1.00**	**EA**	**1,931**	
			758.21	
05 14 02 03 Bike Rack	**1.00**	**EA**	**758**	
			29,554.80	
05 14 02 04 Kiosk Shelter	**1.00**	**EA**	**29,555**	
			9,251.37	
05 14 02 05 Improved Parking Area	**1.00**	**EA**	**9,251**	
			342,717.49	
05 14 03 Site C	**1.00**	**EA**	**342,717**	
			11,615.78	
05 14 03 01 Signs	**1.00**	**EA**	**11,616**	
			1,930.51	
05 14 03 02 Picnic Tables	**1.00**	**EA**	**1,931**	
			758.21	
05 14 03 03 Bike Rack	**1.00**	**EA**	**758**	
			37,219.80	
05 14 03 04 Kiosk Shelter	**1.00**	**EA**	**37,220**	
			213,192.64	
05 14 03 05 Improved Parking Area	**1.00**	**EA**	**213,193**	
			59,109.60	
05 14 03 06 Vault Toilet	**1.00**	**EA**	**59,110**	
			23.23	

Description	Quantity	UOM	ProjectCost	CostOverride
05 14 03 07 Post and Board Fence	**200.00**	**LF**	**4,646**	
			2,849.09	
05 14 03 08 Vehicle / Pedestrian Gate	**5.00**	**EA**	**14,245**	
			45,716.41	
05 14 04 Site D	**1.00**	**EA**	**45,716**	
			5,807.89	
05 14 04 01 Signs	**1.00**	**EA**	**5,808**	
			1,930.51	
05 14 04 02 Picnic Tables	**1.00**	**EA**	**1,931**	
			758.21	
05 14 04 03 Bike Rack	**1.00**	**EA**	**758**	
			37,219.80	
05 14 04 04 Kiosk Shelter	**1.00**	**EA**	**37,220**	
			480,414.69	
05 14 05 Site E	**1.00**	**EA**	**480,415**	
			37,219.80	
05 14 05 01 Kiosk Shelter	**3.00**	**EA**	**111,659**	
			141,410.52	
05 14 05 02 Boat Ramp	**2.00**	**EA**	**282,821**	
			37,005.47	
05 14 05 03 Improved Parking Area	**2.00**	**EA**	**74,011**	
			11,923.33	
05 14 05 04 Fill for Earthen Crossing Near S339	**1.00**	**EA**	**11,923**	
			1,128,406.95	
05 14 06 Site F	**1.00**	**EA**	**1,128,407**	
			2,849.09	
05 14 06 01 Vehicle / Pedestrian Gate	**4.00**	**EA**	**11,396**	
			7,743.85	
05 14 06 02 Signs	**3.00**	**EA**	**23,232**	
			1,930.51	
05 14 06 03 Picnic Tables	**12.00**	**EA**	**23,166**	
			758.21	

Description	Quantity	UOM	ProjectCost	CostOverride
05 14 06 04 Bike Rack	**1.00**	**EA**	**758**	
			6,363.47	
05 14 06 05 Kayak Launch	**1.00**	**EA**	**6,363**	
			59,450.08	
05 14 06 06 Group Shelter	**1.00**	**EA**	**59,450**	
			59,109.60	
05 14 06 07 Vault Toilet	**1.00**	**EA**	**59,110**	
			634,476.59	
05 14 06 08 Levee Widening	**1.00**	**EA**	**634,477**	
			67.46	
05 14 06 09 Guard Rail	**200.00**	**LF**	**13,493**	
			141,410.52	
05 14 06 10 Boat Ramp	**2.00**	**EA**	**282,821**	
			14,141.05	
05 14 06 11 Courtesy Dock	**1.00**	**EA**	**14,141**	
			1,502,815.37	
05 14 07 Site G	**1.00**	**EA**	**1,502,815**	
			5,807.89	
05 14 07 01 Signs	**4.00**	**EA**	**23,232**	
			1,930.51	
05 14 07 02 Picnic Tables	**12.00**	**EA**	**23,166**	
			758.21	
05 14 07 03 Bike Rack	**1.00**	**EA**	**758**	
			37,219.80	
05 14 07 04 Kiosk Shelter	**1.00**	**EA**	**37,220**	
			59,109.60	
05 14 07 05 Vault Toilet	**1.00**	**EA**	**59,110**	
			851,666.37	
05 14 07 06 Additional Fill for Parking/Shelter	**1.00**	**EA**	**851,666**	
			70,705.26	
05 14 07 07 Fishing Pier	**1.00**	**EA**	**70,705**	
			141,410.52	

Description	Quantity	UOM	ProjectCost	CostOverride
05 14 07 08 Boat Ramp	**3.00**	**EA**	**424,232**	
			6,363.47	
05 14 07 09 Kayak Launch	**2.00**	**EA**	**12,727**	
			66,108.35	
05 14 08 Site H	**1.00**	**EA**	**66,108**	
			5,807.89	
05 14 08 01 Signs	**1.00**	**EA**	**5,808**	
			1,930.51	
05 14 08 02 Picnic Tables	**1.00**	**EA**	**1,931**	
			758.21	
05 14 08 03 Bike Rack	**1.00**	**EA**	**758**	
			37,219.80	
05 14 08 04 Kiosk Shelter	**1.00**	**EA**	**37,220**	
			7,665.00	
05 14 08 05 Additional Fill for Parking/Shelter	**1.00**	**EA**	**7,665**	
			6,363.47	
05 14 08 06 Kayak Launch	**2.00**	**EA**	**12,727**	
			453,327.31	
05 14 09 Site I	**1.00**	**EA**	**453,327**	
			5,807.89	
05 14 09 01 Signs	**1.00**	**EA**	**5,808**	
			1,930.51	
05 14 09 02 Picnic Tables	**30.00**	**EA**	**57,915**	
			353.53	
05 14 09 03 Fire Rings	**30.00**	**EA**	**10,606**	
			59,109.60	
05 14 09 04 Vault Toilet	**5.00**	**EA**	**295,548**	
			2,549.04	
05 14 09 05 Clearing and Grubbing	**5.00**	**ACR**	**12,745**	
			14,141.05	
05 14 09 06 Courtesy Dock	**5.00**	**EA**	**70,705**	
			106,057.89	

Description	Quantity	UOM	ProjectCost	CostOverride
05 14 10 Site J	**1.00**	**EA**	**106,058**	
			106,057.89	
05 14 10 01 Airboat Crossing	**1.00**	**EA**	**106,058**	
			24,912,677.66	
06 CONTRACT 6 - Gated Spillways Construction (S-2, S-3 and S-4)	**1.00**	**EA**	**24,912,678**	
			24,912,677.66	
06 15 15 - Floodway Control/Diversion Structures	**1.00**	**EA**	**24,912,678**	
			24,912,677.66	
06 15 01 Water Control Structures	**1.00**	**EA**	**24,912,678**	
06 15 01 00 Mobilization, Demobilization and Site Preparation	**1.00**	**LS**	**226,078**	
06 15 01 00 01 Mobilization	**1.00**	**LS**	**114,492**	
06 15 01 00 02 Demobilization	**1.00**	**LS**	**82,905**	
			28,681.03	
06 15 01 00 03 Staging and Site Access	**1.00**	**EA**	**28,681**	
			9,560.34	
06 15 01 00 03 01 Secondary Staging Area	**3.00**	**EA**	**28,681**	
			8,161,547.37	
06 15 01 01 Structure SW-2: Two-Way-Flow 3-Gated Spillway	**1.00**	**EA**	**8,161,547**	
			1,299,888.97	
06 15 01 01 01 Sheetpile Dewatering	**1.00**	**EA**	**1,299,889**	
			7.23	
06 15 01 01 02 Spillway Excavation	**14,875.00**	**CY**	**107,536**	
			3.89	
06 15 01 01 02 01 Remove and Place Muck	**1,162.00**	**CY**	**4,516**	
			14.59	
06 15 01 01 02 02 Blast and Excavate Caprock	**4,667.00**	**CY**	**68,090**	
			3.86	
06 15 01 01 02 03 Excavate Ft. Thompson	**9,042.00**	**CY**	**34,930**	
			534.64	
06 15 01 01 03 Structural Concrete	**1,713.00**	**CY**	**915,834**	
			932,583.08	
06 15 01 01 04 Wingwalls and Cutoff	**1.00**	**EA**	**932,583**	

Description	Quantity	UOM	ProjectCost	CostOverride
			65.55	
06 15 01 01 05 Riprap	**1,117.00**	**CY**	**73,224**	
			1,507,904.75	
06 15 01 01 06 Gates	**3.00**	**EA**	**4,523,714**	
			121,612.41	
06 15 01 01 07 Railings and Ladders	**1.00**	**EA**	**121,612**	
			14,110.63	
06 15 01 01 08 Boat Barrier	**2.00**	**EA**	**28,221**	
			33.18	
06 15 01 01 09 Site Fencing	**1,000.00**	**LF**	**33,175**	
			15,424.38	
06 15 01 01 10 SWPPP	**1.00**	**EA**	**15,424**	
			110,334.29	
06 15 01 01 11 Control Building	**1.00**	**EA**	**110,334**	
			7,807,188.05	
06 15 01 02 Structure SW-3: Two-Way-Flow 3-Gated Spillway	**1.00**	**EA**	**7,807,188**	
			1,248,272.64	
06 15 01 02 01 Sheetpile Dewatering	**1.00**	**EA**	**1,248,273**	
			7.23	
06 15 01 02 02 Spillway Excavation	**14,875.00**	**CY**	**107,536**	
			3.89	
06 15 01 02 02 01 Remove and Place Muck	**1,162.00**	**CY**	**4,516**	
			14.59	
06 15 01 02 02 02 Blast and Excavate Caprock	**4,667.00**	**CY**	**68,090**	
			3.86	
06 15 01 02 02 03 Excavate Ft. Thompson	**9,042.00**	**CY**	**34,930**	
			534.64	
06 15 01 02 03 Structural Concrete	**1,713.00**	**CY**	**915,834**	
			629,840.09	
06 15 01 02 04 Wingwalls and Cutoff	**1.00**	**EA**	**629,840**	
			65.55	
06 15 01 02 05 Riprap	**1,117.00**	**CY**	**73,224**	

Description	Quantity	UOM	ProjectCost	CostOverride
			1,507,904.75	
06 15 01 02 06 Gates	**3.00**	**EA**	**4,523,714**	
			121,612.41	
06 15 01 02 07 Railings and Ladders	**1.00**	**EA**	**121,612**	
			14,110.63	
06 15 01 02 08 Boat Barrier	**2.00**	**EA**	**28,221**	
			33.18	
06 15 01 02 09 Site Fencing	**1,000.00**	**LF**	**33,175**	
			15,424.38	
06 15 01 02 10 SWPPP	**1.00**	**EA**	**15,424**	
			110,334.29	
06 15 01 02 11 Control Building	**1.00**	**EA**	**110,334**	
			8,717,864.02	
06 15 01 03 Structure SW-4: Two-Way-Flow 3-Gated Spillway	**1.00**	**EA**	**8,717,864**	
			1,248,272.64	
06 15 01 03 01 Sheetpile Dewatering	**1.00**	**EA**	**1,248,273**	
			7.23	
06 15 01 03 02 Spillway Excavation	**14,875.00**	**CY**	**107,536**	
			3.89	
06 15 01 03 02 01 Remove and Place Muck	**1,162.00**	**CY**	**4,516**	
			14.59	
06 15 01 03 02 02 Blast and Excavate Caprock	**4,667.00**	**CY**	**68,090**	
			3.86	
06 15 01 03 02 03 Excavate Ft. Thompson	**9,042.00**	**CY**	**34,930**	
			534.66	
06 15 01 03 03 Structural Concrete	**1,760.00**	**CY**	**941,003**	
			949,882.68	
06 15 01 03 04 Wingwalls and Cutoff	**1.00**	**EA**	**949,883**	
			65.55	
06 15 01 03 05 Riprap	**1,117.00**	**CY**	**73,224**	
			1,696,392.85	
06 15 01 03 06 Gates	**3.00**	**EA**	**5,089,179**	

Description	Quantity	UOM	ProjectCost	CostOverride
			121,612.41	
06 15 01 03 07 Railings and Ladders	**1.00**	**EA**	**121,612**	
			14,110.63	
06 15 01 03 08 Boat Barrier	**2.00**	**EA**	**28,221**	
			33.18	
06 15 01 03 09 Site Fencing	**1,000.00**	**LF**	**33,175**	
			15,424.38	
06 15 01 03 10 SWPPP	**1.00**	**EA**	**15,424**	
			110,334.29	
06 15 01 03 11 Control Building	**1.00**	**EA**	**110,334**	
			12,925,563.33	
07 CONTRACT 7 - Bridges	**1.00**	**EA**	**12,925,563**	
			12,925,563.33	
07 08 08 - Roads, Railroads & Bridges	**1.00**	**EA**	**12,925,563**	
			254,274.61	
07 08 00 Mobilization, Demobilization and Site Preparation	**1.00**	**EA**	**254,275**	
07 08 00 01 Mobilization	**1.00**	**LS**	**146,516**	
07 08 00 02 Demobilization	**1.00**	**LS**	**83,494**	
			24,265.01	
07 08 00 03 Staging and Site Access	**1.00**	**EA**	**24,265**	
			12,132.50	
07 08 00 03 01 Staging Area	**2.00**	**EA**	**24,265**	
			2,505,086.30	
07 08 01 B-1: Bridge (2-Lane)	**1.00**	**EA**	**2,505,086**	
			14,296.03	
07 08 01 01 Traffic Control	**1.00**	**EA**	**14,296**	
			6.87	
07 08 01 02 Demolition	**8,800.00**	**SF**	**60,472**	
			276.17	
07 08 01 03 New Bridge	**8,800.00**	**SF**	**2,430,318**	
			5,488,845.03	
07 08 02 B-2: Bridge (4-Lane)	**1.00**	**EA**	**5,488,845**	

Description	Quantity	UOM	ProjectCost	CostOverride
			256,392.23	
07 08 02 01 Traffic Control	**1.00**	**EA**	**256,392**	
			7.83	
07 08 02 02 Temporary Roadway	**81,000.00**	**SF**	**633,929**	
			6.88	
07 08 02 03 Demolition	**13,600.00**	**SF**	**93,574**	
			331.25	
07 08 02 04 New Bridge	**13,600.00**	**SF**	**4,504,949**	
			4,677,357.40	
07 08 03 B-3: Bridge (3-Lane)	**1.00**	**EA**	**4,677,357**	
			256,392.23	
07 08 03 01 Traffic Control	**1.00**	**EA**	**256,392**	
			7.83	
07 08 03 02 Temporary Roadway	**81,000.00**	**SF**	**633,929**	
			6.88	
07 08 03 03 Demolition	**11,200.00**	**SF**	**77,078**	
			331.25	
07 08 03 04 New Bridge	**11,200.00**	**SF**	**3,709,958**	
			104,419,123.96	
08 CONTRACT 8 - Pumping Plants	**1.00**	**EA**	**104,419,124**	
			104,419,123.96	
08 13 13 - Pumping Plants	**1.00**	**EA**	**104,419,124**	
			336,323.05	
08 13 00 Mobilization, Demobilization and Site Preparation	**1.00**	**EA**	**336,323**	
08 13 00 01 Mobilization	**1.00**	**LS**	**177,150**	
08 13 00 02 Demobilization	**1.00**	**LS**	**130,982**	
			28,191.55	
08 13 00 03 Staging and Site Access	**1.00**	**EA**	**28,192**	
			9,397.18	
08 13 00 03 01 Staging Area	**3.00**	**EA**	**28,192**	
			94,086,709.17	
08 13 01 P-1: Pump Station (4,600 CFS)	**1.00**	**EA**	**94,086,709**	

Description	Quantity	UOM	ProjectCost	CostOverride
			94,086,709.17	
08 13 01 01 P-1 Pump Station	**1.00**	**EA**	**94,086,709**	
			8,775,038.11	
08 13 01 01 01 Sheetpile Dewatering	**1.00**	**EA**	**8,775,038**	
			14.92	
08 13 01 01 02 Pump Station Excavation	**54,165.00**	**CY**	**808,296**	
			4.49	
08 13 01 01 02 01 Remove and Place Muck	**4,163.00**	**CY**	**18,691**	
			24.33	
08 13 01 01 02 02 Blast and Excavate Caprock	**15,553.00**	**CY**	**378,348**	
			11.94	
08 13 01 01 02 03 Blast and Excavate Ft. Thompson	**34,449.00**	**CY**	**411,257**	
08 13 01 01 03 Concrete	**1.00**	**LS**	**8,164,404**	
			191.01	
08 13 01 01 03 01 Foundation	**3,256.00**	**CY**	**621,924**	
			1,387.02	
08 13 01 01 03 02 Piers	**3,162.00**	**CY**	**4,385,744**	
			263.33	
08 13 01 01 03 03 Abutment Walls	**1,244.00**	**CY**	**327,581**	
			569.38	
08 13 01 01 03 04 Elevated Beam	**31.00**	**CY**	**17,651**	
			321.90	
08 13 01 01 03 05 Bridge and Control Building Slab	**918.00**	**CY**	**295,508**	
			321.49	
08 13 01 01 03 06 Wing Walls	**88.00**	**CY**	**28,291**	
			291.56	
08 13 01 01 03 07 Control Building	**2,318.00**	**CY**	**675,828**	
			2,073.80	
08 13 01 01 03 08 Reinforcing Steel	**873.70**	**TON**	**1,811,876**	
			14,096,111.72	
08 13 01 01 04 Discharge Piping	**1.00**	**EA**	**14,096,112**	
			61,145,565.66	

Description	Quantity	UOM	ProjectCost	CostOverride
08 13 01 01 05 Pumps	**1.00**	**EA**	**61,145,566**	
			65.89	
08 13 01 01 06 Riprap	**4,171.00**	**CY**	**274,826**	
			14,023.61	
08 13 01 01 07 Boat Barrier	**1.00**	**EA**	**14,024**	
			808,445.11	
08 13 01 01 08 Station and Building Equipment	**1.00**	**EA**	**808,445**	
			4,589,555.21	
08 13 02 G-200: Pump Station Relocation (300 CFS)	**1.00**	**EA**	**4,589,555**	
			4,589,555.21	
08 13 02 01 G-200 Pump Station	**1.00**	**EA**	**4,589,555**	
			1,437,570.58	
08 13 02 01 01 Sheetpile Dewatering	**1.00**	**EA**	**1,437,571**	
			16.19	
08 13 02 01 02 Seepage Pump Station Excavation	**3,052.00**	**CY**	**49,414**	
			3.91	
08 13 02 01 02 01 Remove and Place Muck	**1,388.00**	**CY**	**5,423**	
			24.53	
08 13 02 01 02 02 Blast and Excavate Caprock	**1,664.00**	**CY**	**40,813**	
			10.42	
08 13 02 01 02 03 Backfill	**305.00**	**CY**	**3,177**	
			13.74	
08 13 02 01 03 Inflow and Outflow Canal Excavation	**32,615.00**	**CY**	**448,199**	
			3.91	
08 13 02 01 03 01 Remove and Place Muck	**17,059.00**	**CY**	**66,654**	
			24.53	
08 13 02 01 03 02 Blast and Excavate Caprock	**15,556.00**	**CY**	**381,545**	
			225,404.35	
08 13 02 01 04 Existing Pump Station Deconstruction and Re-Installation	**1.00**	**EA**	**225,404**	
08 13 02 01 05 Concrete	**1.00**	**LS**	**1,082,133**	
			427.21	
08 13 02 01 05 01 Concrete Seal/Uplift Slab	**1,200.00**	**CY**	**512,646**	

Description	Quantity	UOM	ProjectCost	CostOverride
			505.70	
08 13 02 01 05 02 Elevated Floors	**446.00**	**CY**	**225,544**	
			502.82	
08 13 02 01 05 03 Roof Slab	**220.00**	**CY**	**110,621**	
			474.40	
08 13 02 01 05 04 Loading Truck Ramp	**272.00**	**CY**	**129,036**	
			582.90	
08 13 02 01 05 05 Concrete for Gen, Elec. and Office	**55.60**	**CY**	**32,409**	
			1,659.96	
08 13 02 01 05 06 Piers	**43.30**	**CY**	**71,876**	
			67.80	
08 13 02 01 06 Stone Protection	**2,439.00**	**CY**	**165,363**	
			10.97	
08 13 02 01 07 Trash Rack	**1,680.00**	**SF**	**18,429**	
			407,823.24	
08 13 02 01 08 Building Items	**1.00**	**EA**	**407,823**	
			137,034.15	
08 13 02 01 09 Discharge Piping	**1.00**	**EA**	**137,034**	
			33,801.77	
08 13 02 01 10 Miscellaneous Steel Items	**1.00**	**EA**	**33,802**	
			22.63	
08 13 02 01 11 Haul Road	**21,120.00**	**LF**	**477,856**	
			30.30	
08 13 02 01 12 Site Fencing	**2,280.00**	**LF**	**69,092**	
			37,436.56	
08 13 02 01 13 SWPPP	**1.00**	**EA**	**37,437**	
			5,406,536.52	
08 13 03 P-2: Pump Station for Agricultural Systems (300 CFS)	**1.00**	**EA**	**5,406,537**	
			5,406,536.52	
08 13 03 01 P-2 Pump Station	**1.00**	**EA**	**5,406,537**	
			1,437,570.58	
08 13 03 01 01 Sheetpile Dewatering	**1.00**	**EA**	**1,437,571**	

Description	Quantity	UOM	ProjectCost	CostOverride
			16.19	
08 13 03 01 02 Seepage Pump Station Excavation	**3,052.00**	**CY**	**49,414**	
			3.91	
08 13 03 01 02 01 Remove and Place Muck	**1,388.00**	**CY**	**5,423**	
			24.53	
08 13 03 01 02 02 Blast and Excavate Caprock	**1,664.00**	**CY**	**40,813**	
			10.42	
08 13 03 01 02 03 Backfill	**305.00**	**CY**	**3,177**	
			13.74	
08 13 03 01 03 Inflow and Outflow Canal Excavation	**32,615.00**	**CY**	**448,199**	
			3.91	
08 13 03 01 03 01 Remove and Place Muck	**17,059.00**	**CY**	**66,654**	
			24.53	
08 13 03 01 03 02 Blast and Excavate Caprock	**15,556.00**	**CY**	**381,545**	
			1,042,385.66	
08 13 03 01 04 Existing Pump Station Deconstruction and Re-Installation	**1.00**	**EA**	**1,042,386**	
08 13 03 01 05 Concrete	**1.00**	**LS**	**1,082,133**	
			427.21	
08 13 03 01 05 01 Concrete Seal/Uplift Slab	**1,200.00**	**CY**	**512,646**	
			505.70	
08 13 03 01 05 02 Elevated Floors	**446.00**	**CY**	**225,544**	
			502.82	
08 13 03 01 05 03 Roof Slab	**220.00**	**CY**	**110,621**	
			474.40	
08 13 03 01 05 04 Loading Truck Ramp	**272.00**	**CY**	**129,036**	
			582.90	
08 13 03 01 05 05 Concrete for Gen, Elec. and Office	**55.60**	**CY**	**32,409**	
			1,659.96	
08 13 03 01 05 06 Piers	**43.30**	**CY**	**71,876**	
			67.80	
08 13 03 01 06 Stone Protection	**2,439.00**	**CY**	**165,363**	
			10.97	

Description	Quantity	UOM	ProjectCost	CostOverride
08 13 03 01 07 Trash Rack	**1,680.00**	**SF**	**18,429**	
			407,823.24	
08 13 03 01 08 Building Items	**1.00**	**EA**	**407,823**	
			137,034.15	
08 13 03 01 09 Discharge Piping	**1.00**	**EA**	**137,034**	
			33,801.77	
08 13 03 01 10 Miscellaneous Steel Items	**1.00**	**EA**	**33,802**	
			22.63	
08 13 03 01 11 Haul Road	**21,120.00**	**LF**	**477,856**	
			30.30	
08 13 03 01 12 Site Fencing	**2,280.00**	**LF**	**69,092**	
			37,436.56	
08 13 03 01 13 SWPPP	**1.00**	**EA**	**37,437**	

Addendum Attachment 4

Addendum Attachment 4

South Florida Water Management District (SFWMD)
Everglades Agricultural Area (EAA) Storage Reservoir
Environmental Impact Statement (EIS)
US Environmental Protection Agency (EPA)
Scoping Comments
November 21, 2017

The EPA understands the purpose of the proposed project is to make improvements to the Central Everglades Planning Project (CEPP) components related to A1 and A2 Flow Equalization Basins (FEBs), associated Stormwater Treatment Areas (STAs) and canal conveyance systems that will increase the storage capacity to relieve high water elevations within Lake Okeechobee. The reduction of high water elevations within Lake Okeechobee would then lead to fewer negative discharge events to the St. Lucie Estuary and Caloosahatchee Estuary. Additionally, the EPA understands that the SFWMD will present the feasibility study and EIS to the USACE for consideration as a Post Authorization Change Report that once approved by USACE will be presented to Congress for authorization and funding. The EPA also acknowledges that the SFWMD is working under an expedited schedule that has been directed by Florida statute.[1]

The below scoping comments are based on information provided during the EAA Storage Reservoirs Public Meeting held on November 6th.

Water Quality Effluent Based Limit (WQBEL): The EPA recommends the SFWMD carefully consider the Total Phosphorous (TP) Water Quality Effluent Based Limit (WQBEL) compliance when considering various alternatives. The EPA notes that the SFWMD has committed to ensuring compliance with the WQBEL (November 6, 2017 public meeting) and to running appropriate models to evaluate each alternative's compliance with the WQBEL. Also, the EPA is available to provide technical assistance to the SFWMD regarding the WQBEL and other water quality issues related to the project.

A-2 FEB Sequencing: In EPA's comment letters for the Draft[2] and Final[3] EISs for CEPP, we raised concerns regarding the sequencing of the A-2 FEB construction. As noted in our comment letter,

> *A-2 FEB will be constructed in the New Waters Project Partnership Agreement (PPA) (the last phase) and year 19 of overall project construction. As previously noted in our DEIS Comment Letter (November 2, 2013), EPA continues to strongly recommend that USACE consider moving the construction of A-2 FEB forward in the schedule because*

[1] The Water Resources Law of 2017, Laws of Florida, Chapter 2017-10, Senate Bill 10
[2] Mueller, Heinz, letter to Eric Bush, 1 Nov. 2013.
[3] Mueller, Heinz, letter to Eric Bush, 6 Oct. 2014.

most of the hydrological benefits of CEPP (averaging 310,000 acre-ft/year) will be realized upon construction of A-2 FEB.

According to the USACE's Integrated Deliveries Schedule (IDS) (as of December 2016) located on their website[4], the New Waters PPA will begin the planning phase in 2021 and construction will begin in 2025. The EPA acknowledges that the construction of A-2 FEB will be sooner than originally planned; however, the EPA continues to recommend that the sequencing of this project be moved forward to meet not only the goals of CEPP, but the proposed EAA Reservoir Storage project. As a part of the EIS and feasibility study alternative analysis process, the EPA recommends that the SFWMD consider moving the A-2 FEB construction schedule forward in the CEPP sequencing.

Wetlands: The EPA notes that the SFWMD proposes potentially expanding the footprint of the A-1 and A-2 FEBs, STAs and conveyance canals as a part of the project. It is likely that more wetlands will be impacted by these expansions than originally forecast in CEPP. The EPA recommends the SFWMD consider these wetland impacts in its alternatives analysis and environment impacts analysis. The EPA also recommends the SFWMD avoid and minimize wetland impacts when possible and provide adequate mitigation as required by the 2008 Mitigation Rule. The EPA also notes that should the SFWMD not receive Federal funding from the USACE for this project then the SFWMD will be required to obtain a Section 404 Clean Water Act permit from the USACE Regulatory Branch.

Comparative Analysis: The EPA recommends the SFWMD evaluate and document the changes in CEPP versus the EAA Reservoirs Storage project in the EIS. The EPA notes that expanding the A-1 and A-2 FEBs, STAs and associated canal conveyance systems could have a ripple effect on other components of CEPP. The EPA recommends the SFWMD carefully evaluate both the proposed projects intended impacts and potential unintended impacts associated with any changes from the original footprint outlined in CEPP. The EPA recommends that the SFWMD conduct a comparative analysis between the CEPP and the EAA Reservoirs project to include comparing environmental impacts and quantifying costs and benefits.

Tribal Consultation: During the CEPP EIS process, the USACE initiated consultation with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida. The EPA recommends the SFWMD conduct outreach and provide an opportunity for input with both of these tribes during the EAA Reservoirs Storage EIS process. The EPA encourages the USACE to conduct meaningful engagement with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making. The EPA works closely with both Tribes on Everglades matters and is committed to working with state and federal partners with regard to the Tribes' water quality and water management concerns.

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[4] US Army Corps of Engineers, http://www.saj.usace.army.mil/Portals/44/docs/Environmental/IDS/IDS_PLACEMAT_05JAN2017_web.pdf

Addendum Attachment 5

Addendum Attachment 5

COST ESTIMATING AND QUANTITY TAKEOFF QUALITY MANAGEMENT

Method: The quality management plan utilized a system of checks, following the initial setup of design alternatives for the levees, developed by Raymond Sciortino, with cost alternatives developed by Stuart McGahee on MCACESS MII software.

Following the development of the plan alternatives, the quanities were reviewed by Francisco Martinez, utilizing the plan drawings developed in AutoCAD, and cross-checking against the quantities listed on the accompanying spreadsheets. The verified quantities were then utilized by Scott Vose to check/review the cost models developed.

Further in the process, Francisco Martinez began to make changes to the plan alternatives, updating the spreadsheet values, and then allowing for Raymond Sciortino to do the checks on the spreadsheet values.

After an alternative had been chosen, the quantities were used for final cost modeling performed by Scott Vose.

With the structures for the project, Francisco Martinez put together a design summary based on the given scopes for each structure, and formulated a quantity spreadsheet for use in the MCACES MII cost software. The quantities were checked by Stuart McGahee, and then input into MCACES MII by Scott Vose. The quantities spreadsheet went through some reviews, and the final quantities used for cost modeling.

Reviews:

Date Reviewed	Document Author	Content	Reviewer(s)	Result
12/4/2017	Raymond Sciortino	Design Alternatives 240-A, 240-B, 360-C, 360-D	Francisco Martinez	Returned to Raymond for correction
12/4/2017 - 12/6/2017	Stuart McGahee	Cost Estimates for 240-A, 240-B, 360-C, 360-D	Raymond Sciortino, Scott Vose	Returned to Stuart for correction
12/18/2017	Raymond Sciortino	Design Alternatives 240-A1, 240-B1, 360-C1, 360-D1	-	Raymond provided finalized versions
12/19/2017	Francisco Martinez	Design Alternative 240-A1(L) cross-section updates	Raymond Sciortino	Accepted
12/20/2017	Francisco Martinez	Design Alternative 180+60 cross-section updates	Raymond Sciortino	Accepted
12/22/2017	Francisco Martinez	Design Alternative 240-A1(SQ) cross-section updates	Raymond Sciortino	Accepted
12/26/2017	Stuart McGahee	All cost estimate reviews	Raymond Sciortino	Accepted
1/24/2018 - 1/31/2018	Francisco Martinez	Design 240-A1(L) cross-section updates	Raymond Sciortino	Accepted with minor changes made
1/19/2018	Francisco Martinez	Structure Quantity Takeoffs	Stuart McGahee	Temporarily accepted as incomplete
2/2/2018	Francisco Martinez	Structure Quantity Takeoffs	Stuart McGahee	Mostly complete with missing data
2/20/2018	Francisco Martinez	Structure Quantity Takeoffs	Stuart McGahee	Accepted, pending quotes
2/27/2018	Francisco Martinez	Structure Quantity Takeoffs	Stuart McGahee	Accepted, pending summaries and addressing review comments
3/11/2018	Francisco Martinez	Structure Quantity Takeoffs	Stuart McGahee	Accepted
3/8/2018	Scott Vose	MCACESS MII Cost Model	Francisco Martinez	Returned for quantity corrections
3/12/2018	Scott Vose	MCACESS MII Cost Model	Francisco Martinez	Returned for quantity corrections
3/21/2018	Stuart McGahee	MII Cost Model	Jack Ismalon	General review of cost model
4/3/2018	Scott Vose	MII Cost Model	Stuart McGahee	Teleconference of MII revisions and Legis comments
4/4/2018	Stuart McGahee	MII Cost Model	Jack Ismalon	Review of MII file and discussion of productivity estimates
4/5/2018	Scott Vose	MII Cost Model	Stuart McGahee	Teleconference for incorporating Jack and Legis comments
4/6/2018	Francisco Martinez	Appendix Files QTO	Stuart McGahee	Returned for section additions
4/9/2018	Francisco Martinez	Appendix Files QTO	Stuart McGahee	Accepted
4/9/2018	Scott Vose	MII Cost Model Quantities	Francisco Martinez	Accepted with minor revisions to be made

Addendum Attachment 6

Addendum Attachment 6

Everglades Agricultural Area Storage Reservoir Project - Preparation for Agency Technical Review

[ATR-Level Final Summary Report]

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL

11 May 2018

Purchase Order No.: 4500104361
Order Date: 12/22/2017
Purchasing Agent: J. Harris-Fitzroy

sfwmd.gov

LEGIS CONSULTANCY, INC.

Prepared by: _____ 5.11.2018

William Stevenson
Manager Cost Engineering, Legis Consultancy, Inc.

Date

Prepared by: _____ 5.11.2018

Patrick S. Ray, JD, CCP, PMP
Vice President, Legis Consultancy, Inc.

Date

Reviewed by: _____ 5.11.2018

David R. Smart, JD, PMP
President, Legis Consultancy, Inc.

Date

Approved by: _____ 5.11.2018

Michael C. Ray, PE, CCP, PSP, PMP
Managing Principal, Legis Consultancy, Inc.

Date

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Notice

This report is intended solely for the use of the South Florida Water Management District and J-TECH (a joint venture of Tetra Tech, Inc. and Jacobs Engineering Group, Inc.) and is not intended for use by any other person, partnership, corporation or any other entity, in whole or in part, without the express written consent of the South Florida Water Management District or J-TECH. Legis Consultancy, Inc. hereby disclaims any and all responsibility and liability for consequences of any other use or reliance by others on this document or any information contained herein.

1.0 EXECUTIVE SUMMARY

On December 22, 2017, the South Florida Water Management District (SFWMD) engaged Legis Consultancy, Inc. (Legis) to provide comments and technical support on the status of the Everglades Agricultural Area Storage Reservoir Project documentation prepared for the District in advance of the Agency Technical Review (ATR). Draft I (see *Appendix 8.4*) was reported on February 19, 2018, Draft II (see *Appendix 8.5*) was reported by conference March 5, 2018. Draft III (see *Appendix 8.6*), the *ATR-Level Draft Summary Report* was submitted on March 14, 2018. This report constitutes the Final Summary Report (Task 4) which includes a review of all final Post Authorization Change Report (PACR) documentation pertinent to ATR and resolution (or explanation of unresolved issues) of final ATR comments.

Project Background: As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is known as the Everglades Agricultural Area Storage Reservoir Project. New construction for the project is expected to continue until late 2027. The project is broken down into eight contracts: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir Levee Embankment Slurry Walls, 4) Reservoir and A-2 STA Culvert and Spillway, 5) A-2 Reservoir and A-2 STA Embankments and Canals, 6) Gate Spillways Construction, 7) Bridges, and 8) A-2 Reservoir Pump Station.

Legis Team: The Legis team consisted of seven professionals including one principal-in-charge, one project manager, two principal cost engineers, one senior cost engineer, one research assistant, and one technical editor.

Scope of Work: The scope of work includes a kickoff meeting and project technical support, conducted all via telephone. Submittals will include a 1) ATR-Level Review – 1st Draft, 2) ATR-Level Review – 2nd Draft, 3) ATR-Level Draft Summary Report and a 4) Summary Report.

Confidentiality and Document Security: Legis considers all of its work on this assignment to be procurement-sensitive. All Legis personnel have executed non-disclosure agreements that cover the firm's work and documents.

Documents provided by the Client: SFWMD supplied Legis with forty-four documents (narratives, schedules, quantity takeoffs, estimates, etc.) relative to the project.

Approach to the Assignment: Legis developed and documented an eleven-step approach to completing the assignment.

Recommendations:

Quality Management Process

- Include the firm Quality Management Program and how program is applied to this specific project.
- Ensure that QC activities address all areas of project.
- Comment/resolution form should detail specific area of QC activities.

Scoping Documents

- Scoping documents appear adequate and reasonable for a project at this stage of maturity.

Quantity Development

- Reconcile all QTO calculations to the MCACES file. Those that do not result in quantities found in the MII estimate, should be removed. If there is a reason to keep such calculations, clearly label them as not being used in the MII estimate.
- Round off quantities to eliminate decimal fractions where appropriate.
- Scrub the assumptions section to eliminate inconsistencies with the calculations.
- Identify on the QTO exactly what element of the MII estimate the QTO calculation applies to.

MCACES MII Estimate

- Update folder quantities and units of measure.
- Update notes for folders where lower level folders do not match folder structure.
- Contractor Classifications should be reevaluated and updated.
- Review contractor assignments.
- Reassess formulas for consistency.
- Review quantity variations for excavated and blasted rock.
- Reexamine equipment found in crew costs.
- Review crew productivities to match project schedule.
- Update labor rates for consistency.
- Review zero quantity items found in JOOH.
- Reexamine approximately 192 User Items to update notes and vendor quotes.
- Update bridge costs.
- Remove Mobilization costs from JOOH and relocate to Project Work Items.
- Review contractor profit calculations to ensure USACE Profit Weighted Guidelines are satisfied.
- Reexamine JOOH models to eliminate unnecessary items.

Project Schedule

- The project schedule appears adequate and reasonable for a project at this stage of maturity.

Cost and Schedule Risk Analysis

- Provide evidence of PDT involvement in the risk analysis process (meeting minutes, sign-in sheets, etc.).
- Provide market research.

2.0 PROJECT OVERVIEW

A general overview is discussed in this section. Details are provided on 1) the Everglades Agricultural Area Storage Reservoir Project, 2) Legis Consultancy's Team, 3) Legis Consultancy's Scope of Work, and 4) document security issues.

2.1 Project Background

As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District (SFWMD) is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is the known as the Everglades Agricultural Area Storage Reservoir Project.

New construction for the project is expected to continue until late 2027. The project is broken down into eight contracts: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir Levee Embankment Slurry Walls, 4) Reservoir and A-2 STA Culvert and Spillway, 5) A-2 Reservoir and A-2 STA Embankments and Canals, 6) Gate Spillways Construction, 7) Bridges, and 8) A-2 Reservoir Pump Station. Specifically, two areas of the project are expected to be the most costly and of the longest durations to construct. First, a new reservoir will be constructed: the A-2 East Reservoir with a storage capacity of 240,000 ac/ft. Second a new pump station (4,600 CFS) will be constructed and a 300 CFS pump will be relocated to a new pump station.

As the U.S. Army may finance the majority of the Everglades Agricultural Area Storage Reservoir Project, the project cost, schedule and economic risk must be approved by the Assistant Secretary of the Army for Civil Works (Mr. Ryan A. Fisher - Acting) prior to work commencing. SFWMD understands that the cost, schedule and economic risk will undergo a review similar to the current U.S. Army Corps of Engineers (USACE) Agency Technical Review (ATR) process. This ATR process is rigorous and requires adherence to multiple Engineering Regulations (ER), Engineer Manuals (EM), Engineer Circulars (EC), Engineer Technical Letters (ETL), and memorandums of guidance.

2.2 Team Personnel

The Legis Consultancy Team consisted of the following members:

Individual	Role
Michael Ray, PE[1], CCP[2], PSP[3], PMP[4]	Principal-in-Charge; Executive QC
David Smart, JD[5], PMP[4]	Project Manager
Bill Stevenson	Principal Cost Engineer
Patrick Ray, JD[5], CCP[2], PMP[4]	Principal Cost Engineer
Daniel Jamison	Senior Cost Engineer
Michele Huff	Engineering Research Assistant
Melissa Marion-Landais	Technical Editor

[1] PE – Professional Engineer

[2] CCP – Certified Cost Professional (AACEI–Association for the Advancement of Cost Engineering International)

[3] PSP – Planning & Scheduling Professional (AACEI–Association for the Advancement of Cost Engineering International)

[4] PMP – Project Management Professional (PMI–Project Management Institute)

[5] JD – Juris Doctor (Consultant, Non-practicing Attorney)

2.3 Legis Consultancy, Inc. Scope of Work

As contained in the SFWMD Purchase Order (and subsequent modification), Legis Consultancy's Scope of Work is defined as:

Task 1 Kickoff Meeting
Within two weeks of Notice to Proceed (NTP) Legis shall coordinate with the District and lead a project kickoff meeting. At this meeting Legis will identify project team members, review the scope of work, identify any issues or coordination items and review the project schedule.

Task 2 Project Support
Legis will provide technical support via phone directly with the District's planning consultant (J-TECH) as needed prior to submission of the ATR documents. Technical assistance will include preliminary review of work prior to the District's completion of the draft PACR report, such as review and updating of the CEPP Risk Register to fit the CEPP PACR. Legis will not provide analysis, cost estimates or other technical assistance during this task which may compromise the independent nature of their review.

Task 3 ATR Level Review
The submittal package, as described above, will be provided to Legis for their technical review. The ATR will include review of a first draft including the complete scoping documents and complete MII cost estimate. Review comments will be compiled in an excel spreadsheet by Legis and submitted to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent Legis backcheck.
Upon completion of the first draft the District will submit a second draft report which will include the complete P6 schedule and the complete Cost & Schedule Risk Analysis along with an updated report incorporating Legis comments as well as comments that may be incorporated from other District review effort (i.e. an IEPR review). Legis will compile their review comments in an excel spreadsheet and submit to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of second draft comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent backcheck.

Task 4 Legis ATR-Level Summary Report
Upon completion of Task 3 Legis shall provide to the District a report summarizing their efforts on the project. The report shall include a description of the reviews performed, who provided the reviews, and a description of the process that was taken to insure compliance with Corps standards.

Task 5 Legis ATR-Level Draft Summary Report (Added via PO Rev1)
Legis shall provide to the District, no later than March 14, 2018, a report summarizing their efforts to-date on the project. The report shall include a description of the reviews performed, who provided the reviews, and draft comments based on the materials reviewed. This task has been added via revision with the intent to have draft documentation of review comments and summary report for the work performed through March 14, 2018. The report shall include a statement recognizing that, while a substantial portion of the review has been performed, the SFWMD and Legis continue to work through outstanding review issues. The report shall further note that SFWMD anticipates a final summary report (Task 4) which includes review of all final PACR documentation pertinent to the ATR and resolution (or explanation of unresolved issues) of final ATR comments.

Task 6 Resolution of Draft Summary Report Comments (Added via PO Rev1)
Legis shall provide support and coordination to SFWMD staff to adequately address, by resolution or by documenting the status of unresolved issues, comments provided in the draft summary report (Task 5). Legis shall conduct at least one (1) meeting with SFWMD staff to the

discuss the status and resolution summary prior to completion of the final summary report (Task 4).

Note: Revision shall include updating Payment and Deliverable Schedule to include new tasks. Costs for Task 5 and 6 will be submitted by Legis for SFWMD approval. Schedule shall include March 14 for Task 5 deliverable. Task 4 deliverable should be revised to note 7 days from completion of Task 6.

2.4 Legis Consultancy Execution of Scope of Work

See *Section 4.0 Methodology*.

2.5 Document Control & Security

Legis Consultancy treats client and project information as confidential by default. Legis personnel are required to sign a non-disclosure agreement (NDA) with the company as a condition of employment. For most projects, Legis is bound by multiple NDA's which may include the contract vehicle as well as project specific NDA's. Federal contractors are required to comply with NIST 800-171, Protecting Controlled Unclassified Information in Non-federal Information Systems and Organizations. Most Legis project work, particularly for government entities, is treated as Controlled Unclassified Information (CUI) under the procurement sensitive and infrastructure sensitive categories.

Data security is also maintained at the CUI level per NIST 800-171. This level mandates many precautions to guard against unauthorized data access. For example, Legis uses the, "least possible access rule", when determining user permissions to the Legis primary domain controller. This means a user is given access to only what is needed for the project at hand.

3.0 DOCUMENTS REVIEWED

Below are the documents and packages reviewed by Legis Consultancy for the preparation of this report. All were provided by SFWMD in electronic form.

Legis was instructed by SFWMD to ignore document number 10.

SFWMD Support
Legis Project No. 2114

#	FILE NAME	CONTAINS	DATE DELIVERED	FORMAT
1	00_Appendix B_Cost Engineering	Narrative Project Summary	2.8.2018	pdf
2	00_Executive Summary -020618	Narrative Executive Summary	2.8.2018	word
3	01_B.3-MCACES_EAA_Summary_20180201	MII Roll-up	2.8.2018	pdf
4	02_B.4-SCHEDULE (MS Project)_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
5	04_Attachment B-EAA Storage Reservoir Project_CSRA_Report_20180205	Cost Schedule Risk Analysis	2.8.2018	pdf
6	05_Attachment C-Appendix B_Quantities Spreadsheets	Quantity Take Offs	2.8.2018	pdf
7	240-A1(L) Levees N-1	Quantity Take Offs	2.8.2018	pdf
8	A THRU E	Plans	2.8.2018	pdf
9	F(L) THRU N-1	Plans	2.8.2018	pdf
10	~~FULL 240A1(L) Structure-Levee Quantity Appendix_011918~~	~~Plans and Quantity Take Offs~~	~~2.8.2018~~	~~pdf~~
11	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	pdf
12	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	word
13	MCACES_EAA Reservoir_v5		2.8.2018	visual bsc
14	MCACES_EAA Reservoir_v5	MII Native Estimate	2.8.2018	mii
15	ROM Cost per DESIGN_122917_v18_Used for Populating MCACES_011818	Excel Summary of Estimate	2.8.2018	excel
16	SCHEDULE_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
17	DRAFT Schedule_Preliminary_EAA Reservoir_v6	MS Project - Project Schedule	2.12.2018	MS project
18	Appendix_QTO_022718_v2	Quantity Take Offs	3.2.2018	pdf
19	DRAFT Schedule_Preliminary_EAA Reservoir_v7	MS Project - Project Schedule	3.2.2018	MS project
20	DRAFT Schedule_Preliminary_EAA Reservoir_v7	Project Schedule	3.2.2018	pdf
21	EAA Earthwork Production Requirments	Earthworks QTO	3.2.2018	pdf
22	EAA_Storage Res_MCACES Summary_20180301	MII Roll-up	3.2.2018	pdf
23	MCACES_EAA Reservoir_v5	MII Native Estimate	3.2.2018	mii
24	Appendix B_Cost Engineering_03.12.2018	Cost Narrative	3.13.2018	pdf
25	ATT A Schedule_EAA Reservoir_Legis Review #3	Schedule	3.13.2018	pdf
26	ATT B Appendix_QTO_031218_v5	Quantity Take Offs	3.13.2018	pdf
27	CEPP PAC Report_TPCS_20180312	Total Project Cost Summary	3.13.2018	pdf
28	Copy of QM-QC_031218	Quality Control Document	3.13.2018	excel
29	EAA Storage Reservoir Project_CSRA_Report_03.12.2018	Cost Schedule Risk Analysis	3.13.2018	pdf
30	EAA_MCACES Summary_20180312	MII Roll-up	3.13.2018	pdf
31	MCACES_EAA Reservoir_20180312	MII Native Estimate	3.13.2018	mlp
32	Schedule_EAA Reservoir_Legis Review #3	MS Project - Project Schedule	3.13.2018	mpp
33	CEPP PAC Report_TPCS_20180424	Summary Cost Report	4.27.2018	pdf
34	CEPP PAC Report_TPCS_20180424	Summary Cost Report	4.27.2018	excel
35	EAA Storage Reservoir Project_CSRA_20180424	Cost Schedule Risk Analysis	4.27.2018	excel
36	EAA Storage Reservoir Project_CSRA_Report_20180424	Cost Schedule Risk Analysis	4.27.2018	word
37	EAA Storage Reservoir Project_Risk Register_20180424	Risk Register	4.27.2018	pdf
38	EAA_Storage Res_MCACES_20180424	MII Estimate Report	4.27.2018	pdf
39	Legis_Recommendation Comments_with_Tt Responses	Legis Comment Resolution Doc	4.27.2018	excel
40	MCACES_EAA Reservoir_20180424	MII Native Estimate	4.27.2018	mii
41	QM-QC_041818	Quality Control Document	4.27.2018	pdf
42	QTO_20180412	Quantity Take Offs	4.27.2018	pdf
43	SCHEDULE_EAA Reservoir_20180412	MS Project - Project Schedule	4.27.2018	MS Project
44	SCHEDULE_Preliminary_EAA Reservoir_20180412	Project Schedule	4.27.2018	pdf

4.0 METHODOLOGY

The study was conducted in the following manner:

- The Legis Consultancy team leader held an internal kickoff meeting at which the team members were briefed on the assignment.
- All team members then reviewed the documents provided by the client and the USACE ATR requirements.
- The team leader prepared the report outline and distributed to the team members.
- After the documents were reviewed, the team met again at which time the team leader made specific research, analytic and writing assignments based on each team member's area of expertise and experience.
- Each team member then delved deeper into the documentation related to his/her assignment, undertook the appropriate analysis, and prepared an internal draft covering his/her section of the report.
- The team leader assembled the various section drafts for the technical editor to strengthen.
- The assembled draft was reviewed by the project quality control officer.
- The reviewed document was returned to the drafters for adjustments.
- The technical editor reviewed the changed draft.
- The team leader prepared the document for a final principal-in-charge review.
- The project manager shipped the draft document to the client.

5.0 FINDINGS AND RECOMMENDATIONS

5.1 General

Depending on the maturity level of a project, a USACE ATR Team (ATR Team) typically relies on a required set of documents to be provided by the project sponsor to conduct the ATR. Projects can be determined to be at one of three levels of maturity: 1) Alternative Formulation Briefing (AFB) Level – parametric based products, 2) Feasibility Level – detail based products, or 3) Post Authorization /Appropriation – detail based products.

The Everglades Agricultural Area Storage Reservoir Project is at the feasibility level, so an ATR Team would expect to review the following documents:

- Record of Quality Management process
- Quantity Development
- Scoping documents (reports, plans, and investigations) that support quantities quantity development
- Microcomputer Aided Cost Estimating System (MCACES) Estimate(s) in the MCACES electronic software for the recommended plan
- Total project schedule and construction schedule to support escalation calculations
- Risk-based processes used to establish basis of contingencies, a formal risk analyses and risk report for projects greater than the established cost threshold

5.2 Record of Quality Management Process

The Legis Team has been provided with a file titled QM-QC_041818 (document title *COST ESTIMATING AND QUATITY TAKEOFF MANAGEMENT*) for a record of the project quality management process. The document begins with a section titled "method" which provides bullet point details of the quality management processes utilized on the EAA Cost Engineering Project. Following are presentations of twenty-two occurrences when Quality Control activities were conducted. The Quality Management team has done an excellent job making sure to address all parts of the deliverable: 1) design, 2) quantity takeoffs, 3) MII estimate, and 4) appendix files.

While this document appears to meet the Record of Quality Management requirement in summary form, an ATR reviewer might request details related to items noted for revision. Further the ATR reviewer is likely to request J-TECH's Quality Management Program and how it is applied to EAA project for client deliverables. This document should be presented as part of an agency review.

Recommendations – The Legis team presents the following recommendations relative to the Quality Management Process:

- Include the firm's Quality Management Program and how the program is applied to this specific project.
- Comment/resolution form should provide specific details regarding corrections/revisions.

5.3 Scoping Documents

The Legis Team was provided with a project scoping document titled *DRAFT_CEPP PACR_Main Report_02-16-2018*. The main document is 305 pages and has seven annexes and eight appendices. The document contains maps, charts, graphs, pictures, etc. that detail abundant project details. Areas covered include: cost, schedule, risk, real estate, adaptive management, nuisance, wildlife, regulatory, modeling and numerous other project specific items. This document, as well as

00_Appendix B. Cost Engineering and *00_Executive Summary – 020618* appear to provide appropriate project scope details for any future reviewer.

Recommendations – Scoping documents appear adequate and reasonable for a project at this stage of maturity.

5.4 Quantity Development

A successful ATR submittal requires a comprehensive quantity takeoff (QTO) to support the items contained in the MII estimate. Each QTO should briefly describe the item being quantified, provide a set of understandable calculations and identify the units of measure used. Care must be taken to properly convert from one set of units to another set of units when such a conversion is appropriate. (For example, typically measurements of a concrete structure are in feet, the volume is calculated in cubic feet and this quantity is converted into cubic yards. This is a simple concept that far too often is the subject of error because the unit of measure was not properly identified.)

There must be a clear linkage between the QTO result and the MII estimate quantity and note fields. Simple QTO calculations can be undertaken in the MII note field. More complex calculations are best undertaken using a QTO spread sheet.

The Legis team reviewed the QTO files provided by the client and observed the following:

- The QTO calculations were generally clear.
- The assumptions appeared appropriate.
- The units of measure were appropriate.
- It remains that many QTO calculations that were not reflected in the MII estimate and notes.
- The linkage between the QTO documentation and the MII estimate was often difficult to understand without interpretation of the calculations.

The Legis team selected Contract 4, Culvert 5 for analysis. Based on review of the QTO documentation and MCACES, it is not clear how quantities have been determined. The MCACES indicates a total volume of 15,007 cubic yards of excavation, which includes a 25% Factor for Swell, referencing the Engineering Report for quantity development,

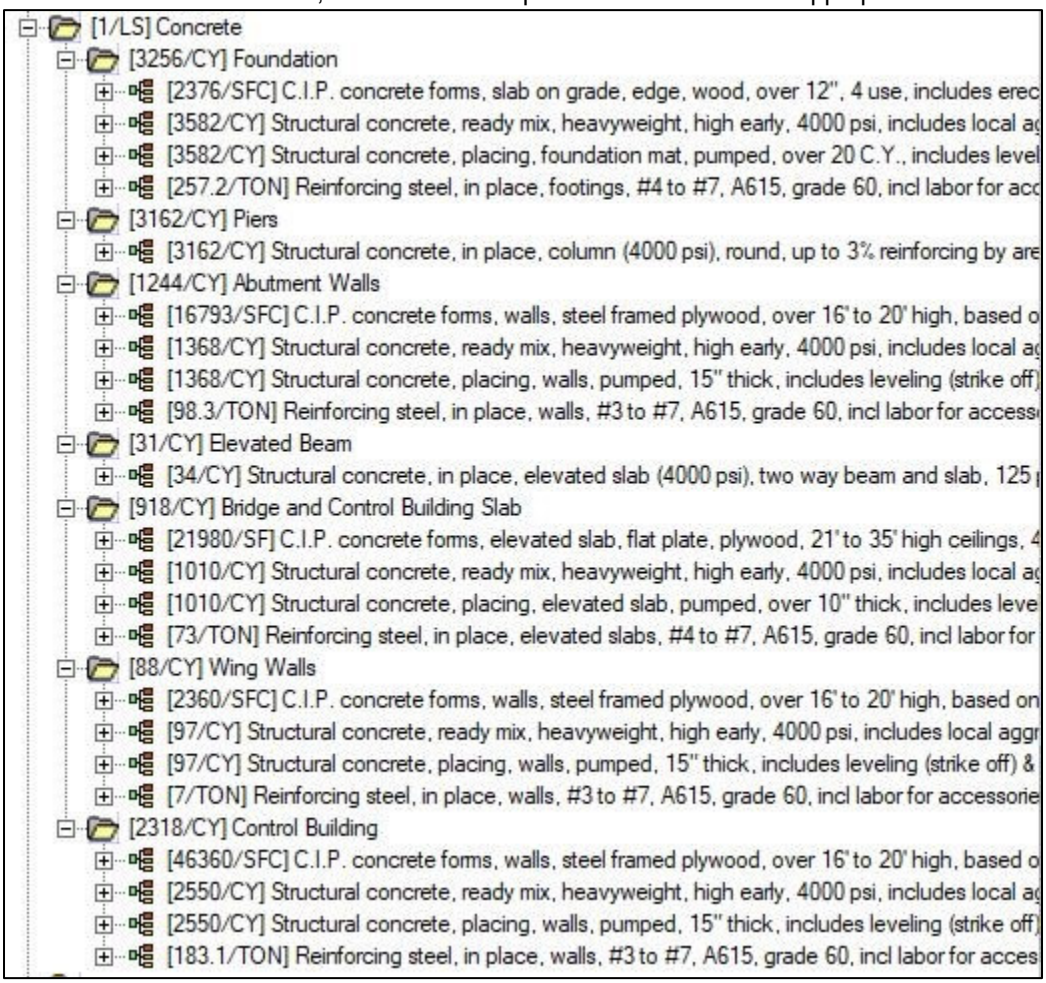
This compares to a Quantity from the QTO package for the same reach, of 17,965 loose cubic yards.

It is recommended that the quantities used in the estimate be reconciled to the supporting quantity takeoff documentation and updated. The final quantity development analysis is based on QTO file, “QTO_20180412.pdf” and MII file, “MCACES_EAA Reservoir_20180424.mlp”.

The Legis team selected five elements for a more detailed analysis. These include P-1 Pumping Station, B-1 Bridge, C-1 Culvert, Levee Section A, and SW-2 Spillway.

Pump Stations: The following items are of concern found in Pump Station P-1. While only Pump Station P-1 was reviewed in detail due to time constraints, these observations, in whole or in part, apply to all pump stations on the project.

- Concrete (Below is the MII estimate; QTOs should match.) Currently, Folder quantity for concrete stands at 1 each, and should be updated based on more appropriate measure.

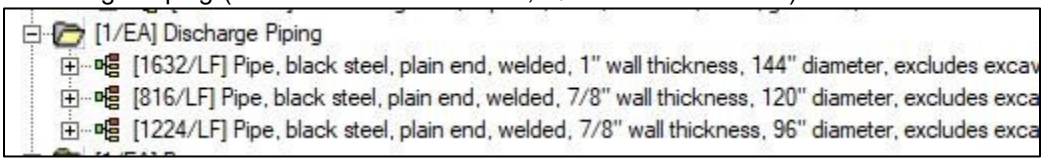


  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - Formwork Quantities have been utilized in MCACES to develop cost.

Excavation:	34,164.6	CY
Concrete:	11,015.5	CY
Steel Rebar:	132.2	CY (?)
Steel Rebar:	873.7	TONS

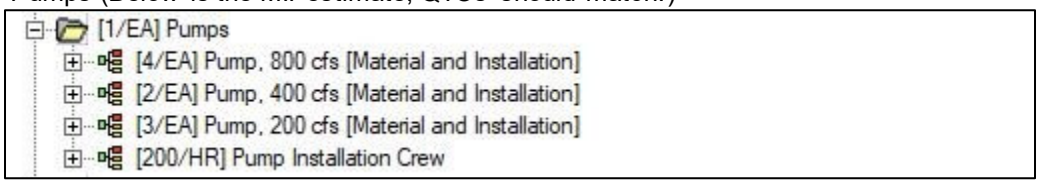
  - Reinforcing steel: QTO indicates 873.7 tn. + 132.2 tn, totaling 1,005.9 tn
  - Reinforcing steel: MII reflects approximately 619 tn reinforcing steel (Some concrete items include reinforcing steel, this should be clarified in QTO.)

- Discharge Piping (Below is the MII estimate; QTOs should match.)



  - QTO indicates 36 each 45 degree bends for 96, 120 and 144 in diameter pipe.
  - QTO indicate that all piping has a wall thickness of 0.75 in.

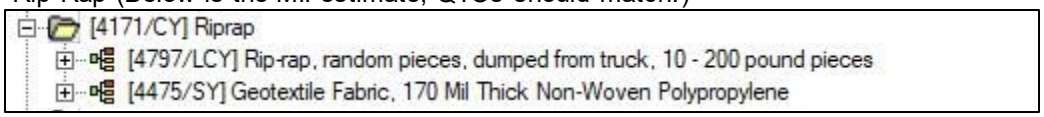
- Pumps (Below is the MII estimate; QTOs should match.)



  - QTO indicates 9 pumps.
  - MII reflects 9 pumps (Material and Installation included) plus 200 hours of installation time. Needs clarification.

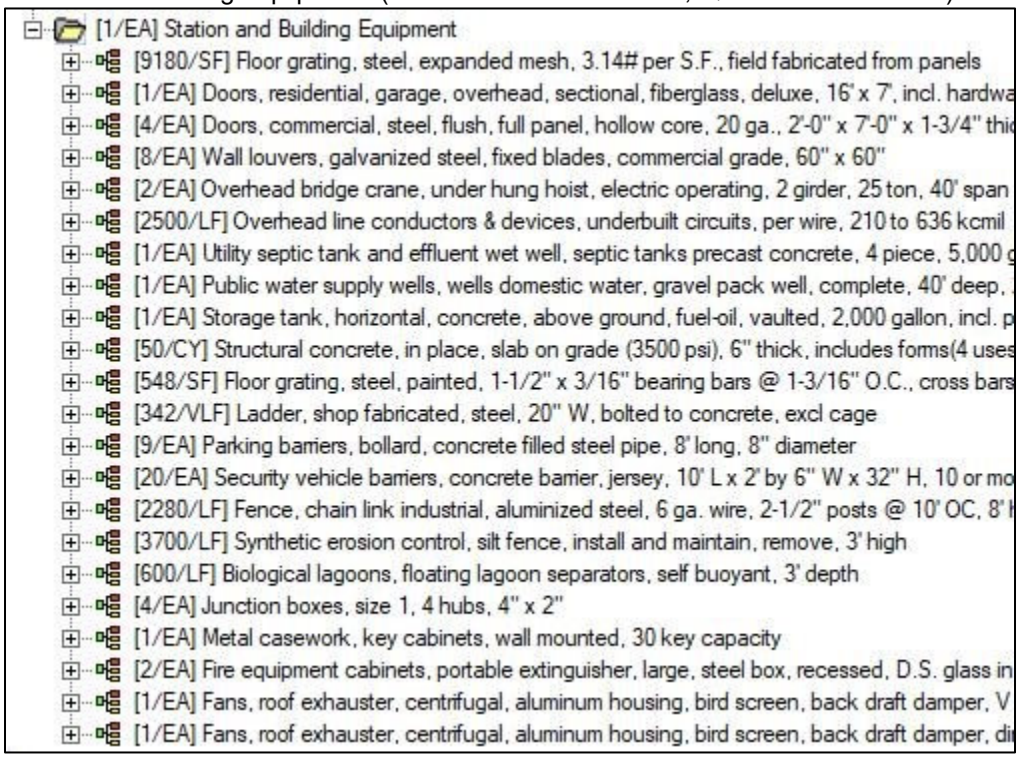
  - QTO assumption section indicates 5 ea 900 cfs pumps.
  - MII reflects 4 ea 800 cfs, 2 ea 400 cfs, and 3 ea 200 cfs pumps.

- Rip Rap (Below is the MII estimate; QTOs should match.)



  - QTO indicates quantity in sf.
  - MII reflects quantity in sy.
  - Convert from sf to sy in QTO.

- Station and Building Equipment (Below is the MII estimate; QTOs should match.)

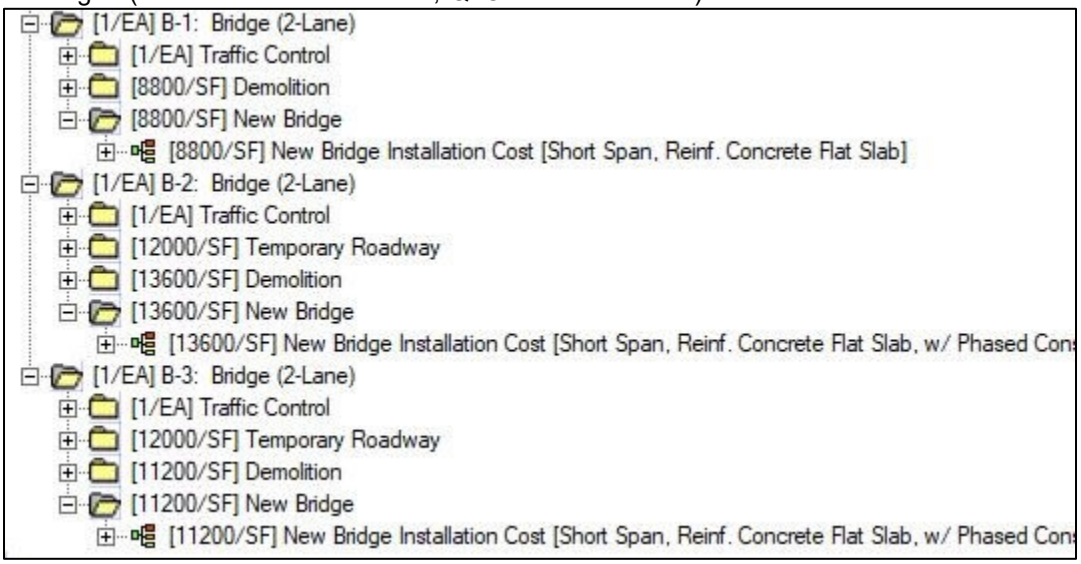


  - QTO indicates 65 cy structural concrete.
  - MII reflects 50 cy structural concrete.

  - QTO indicates 4 doors but no door hardware.
  - MII omits door hardware.

Bridges: The following items of concern are found Bridges B-1, B-2 and B-3.

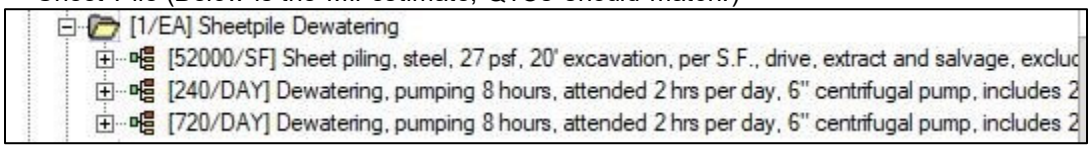
- Bridges (Below is the MII estimate; QTOs should match.)



  - QTO lists 3 bridges, all 200 ft long, with differing numbers of lanes.
  - QTO assumptions section lists all 3 bridges as 2 lane.

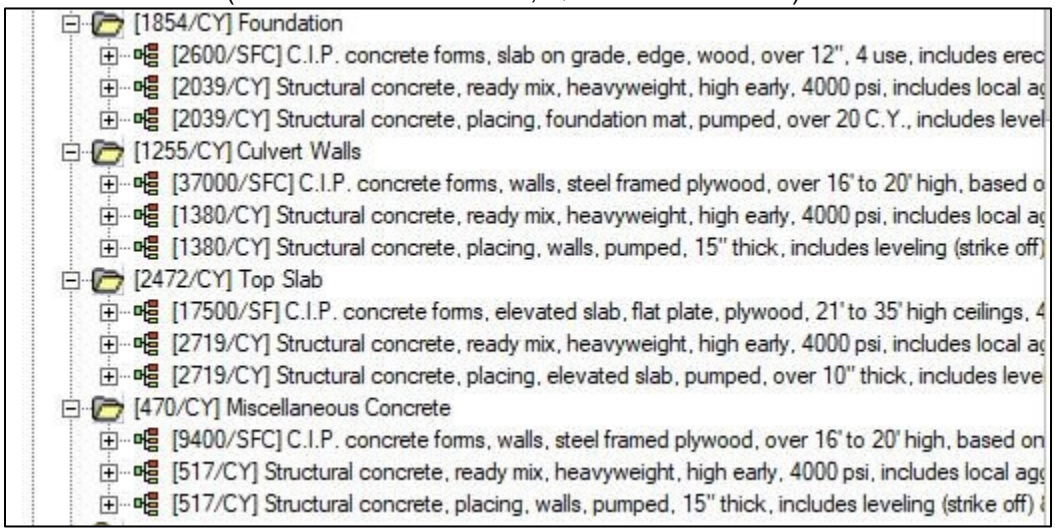
Culverts: The following items are of concern in Culvert C-1. While only Culvert C-1 was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all culverts on the project.

- Sheet Pile (Below is the MII estimate; QTOs should match.)



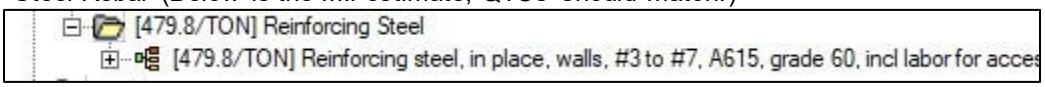
  - QTO indicates 95767 sf.
  - MII reflects 52000 sf.
  - Possible error in QTO calculation.

- Culvert Concrete (Below is the MII estimate; QTOs should match.)



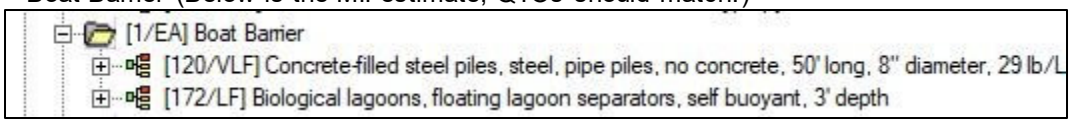
  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - All concrete items: QTO does not contain formwork takeoff.

- Steel Rebar (Below is the MII estimate; QTOs should match.)



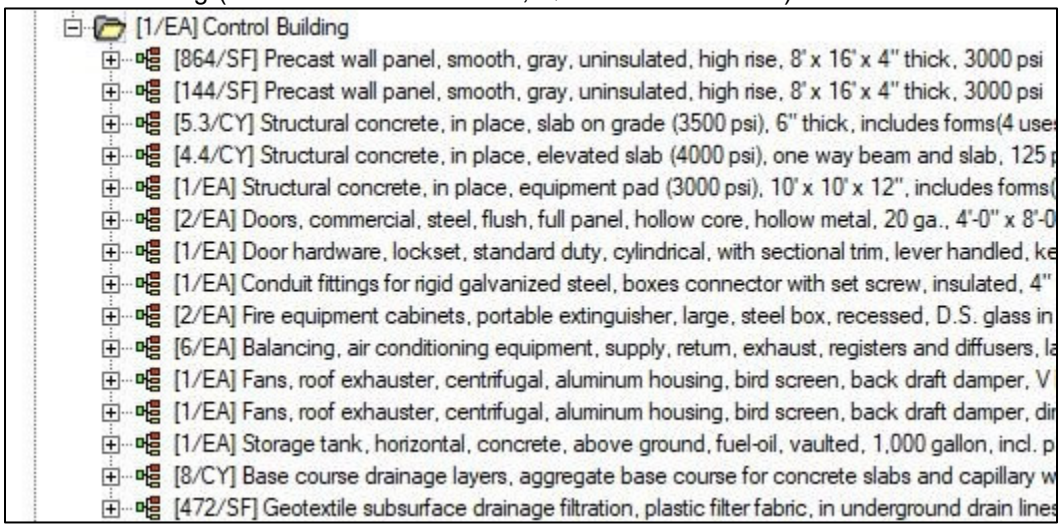
  - QTO indicates 381.8 tn.
  - MII reflects 479.8 tn.
  - QTO notes refer to both 1.2% and 0.8% volume of concrete. Confusing. Recommend omitting one of the notes or clarifying.

- Boat Barrier (Below is the MII estimate; QTOs should match.)



  - QTO indicates 6 ea pile.
  - MII reflects 120 lf piling.
  - QTO unclear, should indicate assumed length of pile and calculation to lf.
  - QTO indicates 344 lf of barrier in summary section of the QTO and 172 lf in the detail section.
  - MII reflects 172 lf of barrier.

- Control Building (Below is the MII estimate; QTOs should match.)



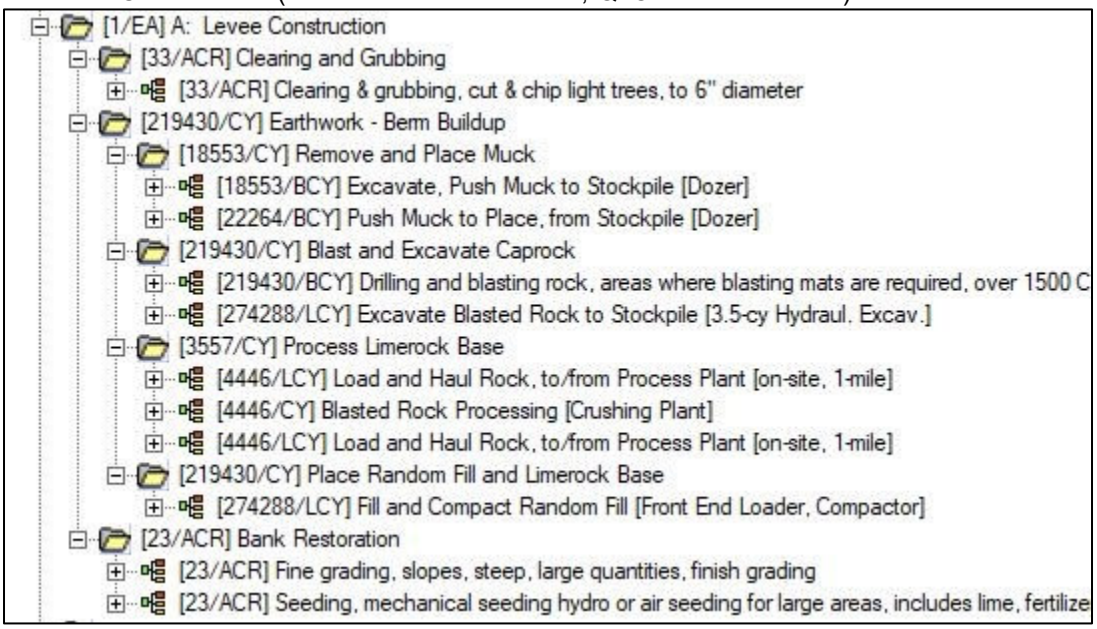
  - QTO indicates 10.7 cy and 1.8 cy of poured-in-place walls.
  - MII reflects 864 sf and 144 sf of precast concrete walls.

  - QTO indicates 2 doors.
  - MII reflects only one set of door hardware.
  - Balance of door hardware (hinges, door stops, etc.) appears missing.

  - QTO indicates 6 hoods.
  - MII omits hoods.

Levees: The following items are of concern in Levee A. While only Levee A was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all levees on the project

- Levee Construction (Below is the MII estimate; QTOs should match.)



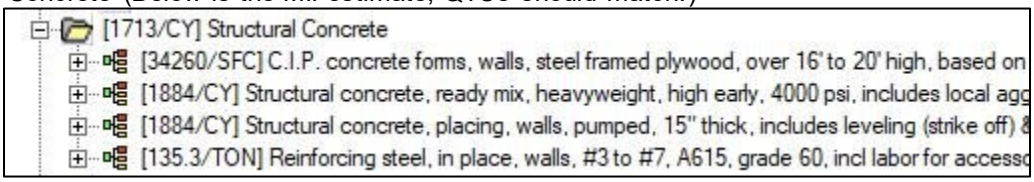
  - QTO indicates random fill as 274288 cy.
  - MII Random Fill folder label reflects 219430 cy.

  - QTO does not specifically identify blasted rock quantity (labeling issue).
  - MII reflects 219430 cy blasted rock.

  - QTO does not identify 219430 cy as a quantity. One must assume it is the sum of 215873 cy and 3557 cy in the table.

Spillways: The following items are of concern in Spillway SW-2. While only Spillway SW-2 was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all Spillways on the project.

- Concrete (Below is the MII estimate; QTOs should match.)



  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - All concrete items: QTO does not contain formwork takeoff.

- Wing Walls and Cutoff is unchanged. (Below is the MII estimate; QTOs should match.)

```
[1/EA] Wingwalls and Cutoff
  [29.6/CY] Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includ
  [2580/SF] Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales
  [5760/LF] Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximu
```

  - QTO indicates Sheet Pile as 9580 sf.
  - MII continues to reflect 2580 sf.

- Boat Barrier (Below is the MII estimate; QTOs should match.)

```
[1/EA] Boat Barrier
  [120/VLF] Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF
  [172/LF] Biological lagoons, floating lagoon separators, self buoyant, 3' depth
```

  - QTO indicates 6 ea pile.
  - MII reflects 240 lf piling.
  - QTO unclear, should indicate assumed length of pile and calculation to lf.

- Control Building (Below is the MII estimate; QTOs should match.)

```
[1/EA] Control Building
  [864/SF] Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi
  [144/SF] Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi
  [5.3/CY] Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 use
  [4.4/CY] Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125
  [1/EA] Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms
  [2/EA] Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-
  [1/EA] Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, k
  [1/EA] Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4"
  [2/EA] Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in
  [6/EA] Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers,
  [1/EA] Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V
  [1/EA] Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, d
  [1/EA] Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl.
  [8/CY] Base course drainage layers, aggregate base course for concrete slabs and capillary
  [472/SF] Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain line
```

  - QTO indicates 10.7 cy and 1.8 cy of poured-in-place walls.
  - MII reflects 864 sf and 144 sf of precast concrete walls.

  - QTO indicates 2 doors.
  - MII reflects only one set of door hardware.
  - Balance of door hardware (hinges, door stops, etc.) appears to be missing.

  - QTO indicates 6 hoods.
  - MII omits hoods.

As a whole, the development of quantity appears to be reasonably well documented in the quantity take off document.

Most of these notes have not been input into MCACES. The transfer of these notes will aid reviewers in understanding items such as swell factors on earthwork. It is noted that the swell factors have been applied to the same work item at different rates, which should be reconsidered.

It is often difficult to relate the QTO components to the MII estimate because of differing terminology and differing locations in the estimate.

Recommendations – For QTO development, the Legis team continues to recommend:

- Remove QTO calculations that do not result in quantities found in the MII estimate. If there is a reason to keep such calculations, clearly label them as not being used in the MII estimate.
- Round off quantities to eliminate decimal fractions where appropriate.
- Scrub the assumptions section to eliminate inconsistencies with the calculations.
- Identify on the QTO exactly what element of the MII estimate the QTO calculation applies to.

5.5 MCACES MII Estimate

Estimate Structure

Estimate has been organized based on the Civil Works Classification System
With the exception of Earthwork related items, folder quantities for other work generally contain Quantities and Unit of Measure equal to 1 EA. It is recommended that Quantities and Unit of Measure be updated based on the work and quantities contained within the folder.

Project Folders

Overall, folder notes are provided to define scope of work in detail which in most cases does match the lower level folders. Some folders, such as Contract 6, Flood Control Diversion, Water Control Structure include scope for work that could not be identified the lower level folders. Folder notes indicate a total of 4 spillway structures, however folders are included for only 3 structures - SW-2, SW-3, and SW-4.

Contracting Plan

Overall, it appears that the Prime Contractor will self-perform the bulk of all work activities with the exception of Dewatering, Concrete, Piling. Pumps, and Recreation.

Subcontracting Plans should be re-evaluated based on the work items contained within each project. In general, it would not be expected that a Heavy Civil Contractor will self-perform items such as Electrical, Building Construction, Gate Fabrication and Installation, among others.

Contractor Classifications for Sub contractors should be re-evaluated and updated or supported with notes, based on the work being performed. Currently, the Dewatering Sub is indicated as Pile Driving.

Total Estimated Project Cost stands at $ 1,303,048,812.83, which is based on 8,022,645 man-hours over a 72 month duration. This equates to a burn rate of 111,425 man-hours per month. Assuming 16 hour workdays, with 8 contracts overlapping for the entire 72 month duration, each contract will require 870 full time persons to compete construction.

Work Items
Estimate contains the following Earthwork Quantities:

Blasted Rock Processing [Crushing Plant]	691,261
Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	41,838,009
Excavate to Stockpile [3.5-cy Hydraul. Excav.]	27,6990
Excavate, Push Muck to Stockpile [Dozer]	10,128,493
Fill and Compact Random Fill [Front End Loader, Compactor]	29,884,978
Load and Haul Rock, to/from Process Plant [on-site, 1-mile]	1,674,906
Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	22,140,776
Material Handling Between Stockpiles [Dozer, Loader]	33,031,894

All Items for Earthwork as included as a USR Cost, representing $370,491,139.50 in Direct Cost, or 35% of the total Direct Cost.

Review of detail for these quantities indicates that several items have incorrect contractor assignments, inconsistent quantity formulas, or contain what appear to be inconsistent quantities.

Contractor Assignment Example:

Contract 8, Dewatering Operation and Maintenance [2 laborers] is assigned to Prime Contractor, yet all other items are assigned to Dewatering Sub.

Inconsistent Formulas:

A more detailed review of the MCACES indicates Calculations of Quantities is inconsistent through work item grouping, such as for Structural Concrete. There are 180 work items for Structural Concrete.

- Q*1.1 is included on 120 line items, which is assumed for waste. Based on these items being Slab on Grade, 10% waste factor appears high.
- It is noted that these items are for placement only and excludes material, however there is no clear indication of how Materials will be captured.
- It should also be confirmed and noted if the Engineering Report considers waste. If so, this would be a duplication of cost.
- Q*1 is included on 19 line items.
- Q81.1 or Q/30*4/27 is applied to 26 lines items, all of which are for Structural Concrete Elevated Slab. Formulas should be consistent for like items.

Quantity Variation:

Contract 5, Blasted Rock Processing [Crushing Plant] contains 621,261 LCY which includes a 25% swell factor.

Contract 5, Excavate Blasted Rock to Stockpile [3.5-cy Hydraulic Excavation] contains 38,388,954 LCY, which includes a 25% swell factor.

Crew Development
Crew Cost for several cost items appears to be lacking necessary equipment to complete the work or does not contain sufficient notes to clearly describe work plan.

Example:

Item 314116101600 - Sheet piling, steel, 27 psf, 20' excavation, per SF, drive, extract and salvage, excludes wales:

Work appears to be marine-based installation of cofferdam for construction. Crew contains no cost for marine-based equipment.

Assuming work will be competed in a dewatered area, it is unclear if the cost of Design for cofferdam considered to be Life Safety has been included.

Item 025413103731 - Biological lagoons, floating lagoon separators, self-buoyant, 3' depth:

Appears to be water-based operations from the work item descriptions, however contain no cost of equipment to work from water.

Project Duration
Duration stated in the MCACES file stands at 2,555 Days, or 7 years, based on 100% productivity and a single 10 hour shift, 6 days per week.

Based on the Crew Hours (2,779,448 Hours) from MII, a total of 277,945 Crew days will be required to complete the project. Based on MII, work is expected to be completed utilizing a single shift, 6 days per week.

Based on the information contained within MII, a minimum of 18 separate crews will be required, working concurrently, 6 days per week, for 7 years to complete construction.

Production Rates
Production Rates appear to be based on the information contained in the Cost Engineering Appendix. Production rate sources are noted in the MII folder and are assumed to be accurate as stated.

Labor Cost
Current Estimate includes 8,323,883 man-hours at an average hourly rate (Bare Cost) of $24.71 which is considered to be reasonable as a whole.

Detailed review by labor class indicates inconsistency, specifically with Laborers, which should be reviewed. Base wage rates range from $7.25 to $33.08 for Laborer, with Fringes being applied inconsistently. See example below.

It is also noted that the majority of Labor rates are based on union labor compared to Davis-Bacon or Open shop labor, which should be supported given the lack of union labor in South Florida.

Labor Classification	Jbase	Abase	Fbase	Tax Fringe	Amount
General Labor, Lowest Paid	$ 7.25	$ 5.44	$ 8.25	$ -	
Semi-Skilled	$ 10.64	$ 7.98	$ 11.64	$ -	$ 14.52
Semi-Skilled, Outside	$ 10.64	$ 7.98	$ 11.64	$ -	$ 1.00
Traffic Control	$ 28.99	$ 15.94	$ 30.99	$ 1.50	
Skilled Worker	$ 35.24	$ 28.19	$ 36.24	$ 9.39	
Skilled, Outside	$ 33.08	$ 24.81	$ 34.08	$ 10.30	

Incorrect Quantities
Review indicates that the estimate continues to carry quantities which are not directly traceable to the QTO Summary or have been input incorrectly such as this example for the SW-2 Spillway:

MCACES DATA				QTO DATA		
WBS	FOLDER NAME	QTY	UOM	FOLDER NAME	QTY	UOM
06 15 01 01 03	Structural Concrete	1713	CY	Structural Concrete	1712.8	CY
06 15 01 01 04	Wingwalls and Cutoff	1	EA	Wing Walls & Cutff	9580	SF

Contractor Assignments
Contractor Assignment have been made for all Project Work Items, however as previously noted, these appear to be inconsistent at times.

Additional review notes that Contractor3 and Contractor 7 have no sub-contractor assignments. Based on estimated contract values of $164 million and $12 million, respectively, this should be carefully considered. It is very unlikely that a single Prime Contractor will self perform 100% on a contract of this value.

USR Cost Items
In general, USR Cost Items appear to be supported through project notes.

A total of 365 line item entries are based on USR created items in the Estimate and represent a total of 50 categories of work. Total Direct cost of all USR items in the estimate stands at $712,957,853.61, or 55% of the total Direct Cost.

Five (5) Items contain no documentation to support cost or quantity.

Nine (9) items contain reference and note to support cost. Of these, all but 1 has been supported with Vendor Quotes.

Thirty (33) items contain reference for quantity development only and point the Engineers Report, which lacks traceability to the estimate.

Two (2) items for Bridges have been included with updated descriptions and are supported by Vendor Quote. Total Direct Cost for these bridges stands at $6,620,200

Mobilization
Estimate includes $1,377,745.01 for Mobilization as a USR Cost Item without additional support.

An additional $492.648.66 in additional Mobilization cost is based on Cost Book Items within the Project Items.

48,471,251.11 (4% markup) for Mobilization which has been applied as a contractor markup and is evenly distributed throughout all project and attached to each individual item, inflating unit cost.

Based on the Order of Markups applied, cost for Small Tools, JOOH, HOOH, Profit, or Bond will not be added to the cost of mobilization. This has the potential to understate cost by 13% overall. Mobilization should be moved from Markups to the Project Cost.

Markups
Order of Markups has been updated and has been arranged based on typical USACE projects.

Prime Contractor Profit
Profit for each of the eight contractors has been developed using the Profit Weighted Guidelines, however at least one variable per contractor has not been evaluated. In general, Profit Markups appear to have been revised based on prior comments

Job Office Model
A total of eight (8) items are contained with 0 quantity for “Fence, chain link industrial, galvanized steel, 6 ga.” and should be removed.

Cost are contained for a UXO (Unexploded Ordinance Safety Officer) for each Contract at 1/3 the of the proposed duration. USACE typically requires this position be staffed full time during construction.

Recommendations – The Legis team presents the following recommendations relative to the MCACES MII Estimate:

- Update folder quantities and units of measure.
- Update notes for folders where lower level folders do not match folder structure.
- Contractor Classifications should be reevaluated and updated.
- Review contractor assignments.
- Reassess formulas for consistency.
- Review quantity variations for excavated and blasted rock.
- Reexamine equipment found in crew costs.
- Review crew productivities to match project schedule.
- Update labor rates for consistency.
- Review zero quantity items found in JOOH.
- Reexamine approximately 192 User Items to update notes and vendor quotes.
- Update bridge costs.
- Move Mobilization costs to project cost.
- Review contractor profit calculations to ensure USACE Profit Weighted Guidelines are satisfied.
- Reexamine JOOH models to eliminate unnecessary items.

5.6 Project Schedule

The current project schedule for Everglades Agricultural Area Storage Reservoir Project is found in one PDF and one native document:

- SCHEDULE_Preliminary_EAA Reservoir_20180412 - PDF
- SCHEDULE_EAA Reservoir_20180412 – MS Project

While there looks to be a slightly different appearance (line verses bar) of the two documents (each appears to be from MS Project Scheduling Software), both present the same substantive durations for the project. Project Start Date is 01.01.2020 and finish date is 12.21.2027 for a total project duration of 2912 calendar days or 95.7 months. The project schedule is broken into nine parts:

- *General – Lands & Damages, Relocations, Planning, Engineering & Design, Construction Management, Fish and Wildlife* (duration "2080 days")
- *CONTRACT 1 – Miami Canal Conveyance Improvements* (duration "780 days")
- *CONTRACT 2 – North New River Conveyance Improvements* (duration "390 days")
- *CONTRACT 3 – A-2 Reservoir Levee Embankment Slurry Walls* (duration "415 days")
- *CONTRACT 4 – A-2 Reservoir and A-2 STA Culvert and Spillway (S-1, C-1 through C-11)* (duration "520 days")
- *CONTRACT 5 – A-2 Reservoir and A-2 STA Embankments and Canals* (duration "1290 days")
- *CONTRACT 6 – Gate Spillways Construction (S-2, S-3 and S-4)* (duration "525 days")
- *CONTRACT 7 – Bridges; U.S. 27 Bridges and L-23 Bridge (B-1, B-2 and B-3)* (duration "800 days")
- *CONTRACT 8 – A-2 Reservoir Pump Station* (duration "1557 days")

In general, the schedule appears adequate for this stage of project maturity. Project logic appears reasonable and sound. Documents and interviews indicate that resource levels are a) Reservoir Dam Crews – two per embankment, a) Canal Crew – two, b) Levee Crews – two, c) Recreation Crews –

two, d) Culvert Crews – three, e) Culvert Crews (Spillways) – three, f) Bridge Crews – one, and g) Pump Station Crews – one. All the crews look reasonable in a vacuum, but a local market labor study should be conducted to support any labor availability (skilled and unskilled) assumptions in a rural area executing approximately $400 M in new construction per year for five years. This analysis should also include a review of material (primarily dirt and concrete) and equipment availability. Additionally, the productivity analysis should be conducted based on SFWMD historical data or similar to determine the appropriateness of durations assigned to large work items. These include: a) planning and engineering, b) reservoir levees, c) channels and canals, d) culverts (multiple cases of concurrent construction), e) spillways, f) bridges, and g) construction of the 4,600 CFS pump station.

It should be noted that with the exception of many horizontal or most vertical projects, scheduling of project activities can vary greatly. Considerations can include resource availability, site accessibility, funding accessibility, payment schedule, owner requirements, and other related influences. It is suggested that a brief narrative accompany the schedule so that the reviewer can determine if any of these are factors and how the schedule relates to the estimate.

Recommendations – The project schedule appears adequate and reasonable for a project at this stage of maturity.

5.7 Cost and Schedule Risk Analysis

ER 1110-2-1150, ER 1110-2-1302, and ETL 1110-2-573 govern the civil works contingency development using risk-based principles. USACE requires the use Oracle Crystal Ball Monte Carlo Simulation software. Established contingency values must be risk based. ATR Guidance requires the inclusion of four critical items in the process:

- Project delivery team active involvement and respective risk potentials.
- All project features of the civil works work breakdown structure.
- Internal and external risk factors.
- Report presentation and reflection in the Total Project Cost Summary (TPCS).

ER 1110-2-1302 requires involvement of the Project Delivery Team (PDT) with the cost. Specifically, the involvement of areas of design, contracting, construction, legal, project management, and construction management are necessary to the development of an appropriate risk register. This participation is reflected in a sign-in sheet or a brief narrative attached to the CSRA. A documented meeting of the PDT is required. The PDT is required to receive a collective briefing on the risk issues for the project by a risk specialist. The specialist then facilitates a review and discussion of the risk register. The resulting notes and comments are captured by the risk facilitator for modification of the risk register.

An acceptable CSRA requires the use of a comprehensive WBS for use in the analysis process. Further the risk register should include internal and external risk factors. Internal risk factors are those faced by an organization within itself that arise during normal operations of the organization. These generally fall in three areas: human factors, technology factors, and physical factors. External risks arise from outside and organization. These include natural disasters, civil disruptions, and environmental hazards.

Lastly, the CSRA results need to be presented in a presentation that can be included in a TPCS or similar document. The presentation should reflect all the details (risk register, tornado charts, contingency summary, specific driver risks, market research, and mitigation recommendations) of the previous three requirements.

The Legis team received a 17-page PDF EAA Storage Reservoir Project_CSRA_Report_20180424 for the CSRA exercise. At an 80% confidence level, with a baseline project cost of $1,518,052,000, the baseline estimate cost contingency amount is $516,137,680.

Also at an 80% confidence level, with a project base schedule duration of 97.0 months, the schedule contingency duration is 28.1 months.

The total baseline estimate construction cost with contingency is $2,034,189,680 and the project schedule duration with contingency is 125.1 months.

Recommendations – The Legis team presents the following recommendations relative to the Cost and Schedule Risk Analysis:

- Provide evidence of PDT involvement in the risk analysis process (meeting minutes, sign-in sheets, etc.).
- Provide market research.

5.8 ATR Checklist

USACE provides a comprehensive checklist of the items required for the ATR. Due to the current status of the development of the SFWMD ATR documents, the Legis Team recommends that completing the checklist be delayed until the package is more completely developed. (See *Appendix 8.3 USACE ATR Package Checklist*)

6.0 CONCLUSION

The Legis Team recognizes that the documents provided by the client represent an "in-process" picture at a given date of the development of the client's ATR submittal package. The team also recognizes that while it has been analyzing this set of documents, the client's team has been making corrections and improvements such that some (or many) of our comments may be moot. That said, we recommend that the client utilize the ATR Package Checklist from this report to assess the current standing of the ATR package. In the alternative, Legis Consultancy can be engaged to undertake further review of the project as it evolves.

7.0 ACRONYMS AND ABBREVIATIONS

AACEI	Association for the Advancement of Cost Engineering, International
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ATR	Agency Technical Review
CCP	Certified Cost Professional
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CPM	Critical Path Method
CSRA	Cost and Schedule Risk Analysis
EAA	Everglades Agricultural Area
ECB	Engineering and Construction Bulletin
EIS	Environmental Impact Statement
EM	Engineer Manual
ER	Engineer Regulation
ETL	Engineer Technical Letter
FWO	Future without Projection Condition
JD	Juris Doctor
LORS	Lake Okeechobee Regulation Schedule
MII	Second Generation Micro-Computer Aided Estimating System
NICET	National Institute for Certification in Engineering Technologies
NDA	Non-Disclosure Agreement
NTP	Notice to Proceed
NWW	United States Army Corps of Engineers, Walla Walla District
ODC	Other Direct Costs
P6	Primavera Professional Project Management (Version 6)
PACR	Post Authorization Change Report
PE	Professional Engineer
PIR	Project Implementation Report
PMP	Project Management Professional
PPA	Project Partnership Agreement
PSP	Planning and Scheduling Professional
QA	Quality Assurance
QC	Quality Control
QTO	Quantity Take-Off
ROM	Rough Order of Magnitude
SFWMD	South Florida Water Management District

SOW	Scope of Work
STA	Storm water Treatment Area
TSP	Tentatively Selected Plan
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

8.0 APPENDICES

8.1 User Cost Reports

8.1.1 USR Cost Item Summary

8.1.2 USR Cost Item Detail

8.2 Quantity Reports

8.2.1 Zero Quantity Detail

8.2.2 Estimator Report Detail

8.3 ATR Package Checklist

8.4 Legis Draft Report #1 for SFWMD submitted 20180219

8.5 Legis Telephonic Meeting Notes (in lieu of Draft #2) with SFWMD 20180305

8.6 Legis Draft Report #3 for SFWMD submitted 20180314

APPENDIX 8.1.1

USR COST ITEM SUMMARY

# Entries		Description
12		7' x 7' Box Culvert Gate, Full Installation
10		Blasted Rock Processing [Crushing Plant]
6		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]
29		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]
2		Dewater Pump Relocation Crew
15		Dewatering Operation and Maintenance [2 laborers]
15		Dewatering Pump Operation [Fuel Costs]
15		Dewatering Pump Rentals [24" Hydraflow Pumps]
6		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]
17		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]
6		Excavate to Stockpile [3.5-cy Hydraul. Excav.]
33		Excavate, Push Muck to Stockpile [Dozer]
2		Fill and Compact Base [Front End Loader, Compactor]
8		Fill and Compact Random Fill [Front End Loader, Compactor]
8		Fill and Compact Random Fill, Canals [Dozers, Compactor]
9		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]
3		Fill and Compact Road Stone
29		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]
4		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]
4		Material Handling Between Stockpiles [Dozers]
8		Material Handling Between Stockpiles, Canals/Culverts [Dozers]
19		Material Handling Between Stockpiles, Levees [Dozers]
3		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab]
4		Pumps for 300 cfs Pump Station [Materials]
6		Push Material to Stockpile [Dozer]
33		Push Muck to Place, from Stockpile [Dozer]
4		Slurry Wall Installation
2		Place Riprap [Hydraul. Excavat.]
52		Vault Toilet [Material and Installation]
365		**TOTAL: USR Line Item Cost Entries**

APPENDIX 8.1.2

USR COST ITEM DETAIL

sfwmd.gov

LEGIS CONSULTANCY, INC.

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		12' x 12' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	PRIME CONTRACTOR 4	61,632.00	184,896.00
USR	Z		25' x 16' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	PRIME CONTRACTOR 6	1,168,000.00	3,504,000.00
USR	Z		25' x 16' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	PRIME CONTRACTOR 6	1,168,000.00	3,504,000.00
USR	Z		25' x 18' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	PRIME CONTRACTOR 6	1,314,000.00	3,942,000.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	PRIME CONTRACTOR 4	20,972.00	41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	PRIME CONTRACTOR 4	20,972.00	62,916.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	4	EA	Q	PRIME CONTRACTOR 4	20,972.00	83,888.00
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2121	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	10,967.78
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2842	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	14,696.10
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	22,990.44
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	29,464.59
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	50,319.39

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	79,665.04
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	514,782.19
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	725,889.89
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	951,807.45
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025.00	CY	Q*1.25	PRIME CONTRACTOR 5	4.92	1,173,955.32
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	1,788,503.00	CY	Q	PRIME CONTRACTOR 1	2.26	4,281,545.94
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	898,659.00	CY	Q	PRIME CONTRACTOR 2	2.26	2,151,324.20
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	65,479.00	CY	Q	PRIME CONTRACTOR 5	2.26	156,751.96
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	72,946.00	CY	Q	PRIME CONTRACTOR 5	2.26	174,627.41
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	80,577.00	CY	Q	PRIME CONTRACTOR 5	2.26	192,895.47
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	121,592.00	CY	Q	PRIME CONTRACTOR 5	2.26	291,082.39
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,661.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	3,976.31
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,666.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	11,170.06
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	8,376.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	20,051.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	8,376.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	20,051.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	24,652.66

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,535.00	CY	Q	PRIME CONTRACTOR 4	2.26	25,220.02
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,435.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	27,374.56
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	15,618.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	37,388.35
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,318.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	43,851.96
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,318.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	43,851.96
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	19,832.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	47,476.36
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23,005.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	55,072.29
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	26,458.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	63,338.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	46,525.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	111,377.46
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	70,224.00	CY	Q*1.25	PRIME CONTRACTOR 4	2.26	168,111.14
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,000.00	CY	Q	PRIME CONTRACTOR 5	2.26	9,575.71
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,000.00	CY	Q	PRIME CONTRACTOR 5	2.26	9,575.71
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	27,056.16
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	27,056.16
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302.00	CY	Q*1.25	PRIME CONTRACTOR 6	2.26	27,056.16
USR	Z		Dewater Pump Relocation Crew	Assumes placing/relocating pumps every 2000-lf of canal. Assumes 2-days for each relocation period.	66.00	DAY	<none>	Dewatering Subcontractor (1)	3070.25	277,243.86
USR	Z		Dewater Pump Relocation Crew	Assumes placing/relocating pumps every 2000-lf of canal. Assumes 2-days for each relocation period.	60.00	DAY	<none>	Dewatering Subcontractor (2)	3070.25	252,039.88

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	36.00	MO	<none>	Dewatering Subcontractor (1)	937.44	54,689.51
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	6.00	MO	<none>	Dewatering Subcontractor (2)	937.44	9,114.92
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	3.00	MO	<none>	Dewatering Subcontractor (5)	937.44	4,557.46
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	3.00	MO	<none>	Dewatering Subcontractor (5)	937.44	4,557.46
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	4.00	MO	<none>	Dewatering Subcontractor (5)	937.44	6,076.61
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	12.00	MO	<none>	Dewatering Subcontractor (5)	937.44	18,229.84
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	24.00	MO	<none>	Dewatering Subcontractor (5)	937.44	36,459.67
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	30.00	MO	Q	Dewatering Subcontractor (5)	937.44	45,574.59
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	36.00	MO	<none>	Dewatering Subcontractor (5)	937.44	54,689.51
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	48.00	MO	Q	Dewatering Subcontractor (5)	937.44	72,919.34
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	54.00	MO	Q	Dewatering Subcontractor (5)	937.44	82,034.26
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	63.00	MO	Q	Dewatering Subcontractor (5)	937.44	95,706.64
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	7.00	MO	<none>	Dewatering Subcontractor (8)	937.44	10,634.07
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	7.00	MO	<none>	Dewatering Subcontractor (8)	937.44	10,634.07
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	60.00	MO	<none>	PRIME CONTRACTOR 8	937.44	68,095.34
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	36.00	MO	<none>	Dewatering Subcontractor (1)	12528	451,008.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	6.00	MO	<none>	Dewatering Subcontractor (2)	12528	75,168.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	3.00	MO	<none>	Dewatering Subcontractor (5)	12528	37,584.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	3.00	MO	<none>	Dewatering Subcontractor (5)	12528	37,584.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	4.00	MO	<none>	Dewatering Subcontractor (5)	12528	50,112.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	12.00	MO	<none>	Dewatering Subcontractor (5)	12528	150,336.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	24	MO	<none>	Dewatering Subcontractor (5)	12,528.00	300,672.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	30	MO	Q	Dewatering Subcontractor (5)	12,528.00	375,840.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	36	MO	<none>	Dewatering Subcontractor (5)	12,528.00	451,008.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	48	MO	Q	Dewatering Subcontractor (5)	12528	601,344.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	54	MO	Q	Dewatering Subcontractor (5)	12528	676,512.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	63	MO	Q	Dewatering Subcontractor (5)	12528	789,264.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	7	MO	<none>	Dewatering Subcontractor (8)	12528	87,696.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	7	MO	<none>	Dewatering Subcontractor (8)	12528	87,696.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	60	MO	<none>	PRIME CONTRACTOR 8	12528	751,680.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period per 2-mile stretch for a total of 30-Rental-Pump-Months.	180	MO	<none>	Dewatering Subcontractor (1)	12528	2,255,040.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	30	MO	<none>	Dewatering Subcontractor (2)	12528	375,840.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 3-Month period each for a total of 30-Rental-Pump-Months.	15	MO	<none>	Dewatering Subcontractor (5)	12528	187,920.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	15	MO	<none>	Dewatering Subcontractor (5)	12528	187,920.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 4-Month period each for a total of 30-Rental-Pump-Months.	20	MO	<none>	Dewatering Subcontractor (5)	12528	250,560.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	60	MO	<none>	Dewatering Subcontractor (5)	12528	751,680.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 24-Month period.	120	MO	<none>	Dewatering Subcontractor (5)	12528	1,503,360.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	150	MO	Q*5	Dewatering Subcontractor (5)	12528	1,879,200.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	180	MO	<none>	Dewatering Subcontractor (5)	12528	2,255,040.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	240	MO	Q*5	Dewatering Subcontractor (5)	12,528.00	3,006,720.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	270	MO	Q*5	Dewatering Subcontractor (5)	12,528.00	3,382,560.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for duration of construction.	315	MO	Q*5	Dewatering Subcontractor (5)	12,528.00	3,946,320.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	35	MO	<none>	Dewatering Subcontractor (8)	12,528.00	438,480.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	35	MO	<none>	Dewatering Subcontractor (8)	12,528.00	438,480.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 60-Month period.	300	MO	<none>	PRIME CONTRACTOR 8	12,528.00	3,758,400.00
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	19441	LCY	Q*1.25	Excavation Subcontractor (8)	2.63	53,740.44
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	43061	LCY	Q*1.25	Excavation Subcontractor (8)	2.63	119,032.82
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2496	LCY	Q*1.5	PRIME CONTRACTOR 8	2.63	6,866.02
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2496	LCY	Q*1.5	PRIME CONTRACTOR 8	2.63	6,866.02
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23334	LCY	Q*1.5	PRIME CONTRACTOR 8	2.63	64,187.34
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23334	LCY	Q*1.5	PRIME CONTRACTOR 8	2.63	64,187.34
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	13181	LCY	Q	PRIME CONTRACTOR 5	2.63	36,436.02
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	53527	LCY	Q	PRIME CONTRACTOR 5	2.63	147,963.82
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	101712	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	281,160.83
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	107288	LCY	Q	PRIME CONTRACTOR 5	2.63	296,574.48
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	274288	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	758,209.87

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	382721	LCY	Q	PRIME CONTRACTOR 5	2.63	1,057,949.45
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	413056	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	1,141,804.00
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	827915	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	2,288,592.01
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	888366	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	2,455,695.73
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1288606	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	3,562,072.67
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2111935	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	5,837,987.67
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2256522	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	6,237,667.17
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2917951	LCY	Q	PRIME CONTRACTOR 5	2.63	8,066,044.63
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3592890	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	9,931,767.56
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5326232	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	14,723,216.74
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6075850	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	16,795,373.63
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6285692	LCY	Q*1.25	PRIME CONTRACTOR 5	2.63	17,375,436.46
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 1	4.91	23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 1	4.91	23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 2	4.91	23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 2	4.91	23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	4.91	23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	4.91	23,902.66
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,163.00	BCY	Q	Excavation Subcontractor (8)	1.13	5,007.72
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	432,733.00	BCY	Q	PRIME CONTRACTOR 1	1.13	520,539.10

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	140,521.00	BCY	Q	PRIME CONTRACTOR 2	1.13	169,034.20
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,267.00	BCY	Q	PRIME CONTRACTOR 4	1.13	1,524.09
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368.00	BCY	Q	PRIME CONTRACTOR 4	1.13	2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368.00	BCY	Q	PRIME CONTRACTOR 4	1.13	2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368.00	BCY	Q	PRIME CONTRACTOR 4	1.13	2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368.00	BCY	Q	PRIME CONTRACTOR 4	1.13	2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,212.00	BCY	Q	PRIME CONTRACTOR 4	1.13	5,066.66
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,212.00	BCY	Q	PRIME CONTRACTOR 4	1.13	5,066.66
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,441.00	BCY	Q	PRIME CONTRACTOR 4	1.13	5,342.13
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,171.00	BCY	Q	PRIME CONTRACTOR 4	1.13	6,220.25
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,846.00	BCY	Q	PRIME CONTRACTOR 4	1.13	7,032.22
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,256.00	BCY	Q	PRIME CONTRACTOR 4	1.13	12,337.05
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,553.00	BCY	Q	PRIME CONTRACTOR 5	1.13	22,317.60
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	79,700.00	BCY	Q	PRIME CONTRACTOR 5	1.13	95,871.97
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	98,546.00	BCY	Q	PRIME CONTRACTOR 5	1.13	118,542.02
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	123,941.00	BCY	Q	PRIME CONTRACTOR 5	1.13	149,089.94
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	162,484.00	BCY	Q	PRIME CONTRACTOR 5	1.13	195,453.72
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	286,571.00	BCY	Q	PRIME CONTRACTOR 5	1.13	344,719.28
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	359,300.00	BCY	Q	PRIME CONTRACTOR 5	1.13	432,205.76
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	752,217.00	BCY	Q	PRIME CONTRACTOR 5	1.13	904,849.77

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	847,992.00	BCY	Q	PRIME CONTRACTOR 5	1.13	1,020,058.53
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,809,142.00	BCY	Q	PRIME CONTRACTOR 5	1.13	2,176,236.02
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,865,367.00	BCY	Q	PRIME CONTRACTOR 5	1.13	2,243,869.67
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3,062,006.00	BCY	Q	PRIME CONTRACTOR 5	1.13	3,683,319.36
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162.00	BCY	Q	PRIME CONTRACTOR 6	1.13	1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162.00	BCY	Q	PRIME CONTRACTOR 6	1.13	1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162.00	BCY	Q	PRIME CONTRACTOR 6	1.13	1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,388.00	BCY	Q	PRIME CONTRACTOR 8	1.13	1,658.96
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,388.00	BCY	Q	PRIME CONTRACTOR 8	1.13	1,658.96
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	17,059.00	BCY	Q	PRIME CONTRACTOR 8	1.13	20,389.21
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	17,059.00	BCY	Q	PRIME CONTRACTOR 8	1.13	20,389.21
USR	Z		Fill and Compact Base [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	887.00	LCY	<none>	PRIME CONTRACTOR 5	5.77	5,464.47
USR	Z		Fill and Compact Base [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	905.00	LCY	<none>	PRIME CONTRACTOR 5	5.77	5,575.37
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 1	5.83	28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 2	5.83	28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	731	LCY	<none>	PRIME CONTRACTOR 4	5.83	4,543.99
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	423	LCY	Q*1.386	PRIME CONTRACTOR 5	5.83	2,629.42
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	423	LCY	Q*1.386	PRIME CONTRACTOR 5	5.83	2,629.42

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 5	5.83	28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	5.83	28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	5.83	28,594.18
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 1	4.64	22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,235,629.00	LCY	Q*1.25	PRIME CONTRACTOR 1	4.64	10,998,980.05
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 2	4.64	22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,123,324.00	LCY	Q*1.25	PRIME CONTRACTOR 2	4.64	5,526,595.99
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,506.00	LCY	Q*1.25	PRIME CONTRACTOR 4	4.64	22,168.89
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	4.64	22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	170,940.00	LCY	Q*1.25	PRIME CONTRACTOR 5	4.64	841,000.74
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	369,014.00	LCY	Q*1.25	PRIME CONTRACTOR 5	4.64	1,815,496.95
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	55,442.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	344,634.49
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	274,288.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	1,705,008.95
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	367,749.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	2,285,974.36
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	808,569.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	5,026,167.31

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,091,624.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	6,785,673.04
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3,439,636.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	21,381,213.01
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,380,532.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	33,446,068.36
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,885,208.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	36,583,198.30
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	8,864,024.00	LCY	Q*1.25	PRIME CONTRACTOR 5	5.83	55,099,895.82
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	13,376.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	2.16	30,942.75
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	96,037.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	2.16	222,162.76
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	103,253.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	2.16	238,855.56
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 1	3.68	17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 2	3.68	17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,506.00	LCY	Q*1.25	PRIME CONTRACTOR 4	3.68	17,177.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,121.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	8,085.41
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,121.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	8,085.41
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,842.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	10,833.91
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,842.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	10,833.91

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	16,948.48
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	16,948.48
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	3.68	17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	3.68	17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,152.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	19,639.80
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	21,721.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	21,721.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	37,095.29
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	37,095.29
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	13,376.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	3.68	50,990.30
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	58,728.81
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	58,728.81
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	96,037.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	3.68	366,100.13
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	379,495.75
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	379,495.75

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	103,253.00	LCY	Q*5280*30*1/27	PRIME CONTRACTOR 5	3.68	393,608.05
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	535,123.67
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	535,123.67
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	701,669.36
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	701,669.36
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	865,436.04
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.68	865,436.04
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,496.00	LCY	Q*1.5	PRIME CONTRACTOR 8	4.43	11,392.84
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,496.00	LCY	Q*1.5	PRIME CONTRACTOR 8	4.43	11,392.84
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	23,334.00	LCY	Q*1.5	PRIME CONTRACTOR 8	4.43	106,506.62
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	23,334.00	LCY	Q*1.5	PRIME CONTRACTOR 8	4.43	106,506.62
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,235,629.00	LCY	Q*1.25	PRIME CONTRACTOR 1	2.99	7,156,552.96
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,123,324.00	LCY	Q*1.25	PRIME CONTRACTOR 2	2.99	3,595,913.14
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	81,849.00	LCY	Q*1.25	PRIME CONTRACTOR 5	2.99	262,009.80
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	91,182.00	LCY	Q*1.25	PRIME CONTRACTOR 5	2.99	291,886.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 1	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 2	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	2.99	14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	100,721.00	LCY	Q*1.25	PRIME CONTRACTOR 5	2.99	322,421.64
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	151,990.00	LCY	Q*1.25	PRIME CONTRACTOR 5	2.99	486,540.69
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	19,441.00	LCY	Q*1.25	Excavation Subcontractor (8)	3.42	70,782.70
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	43,061.00	LCY	Q*1.25	Excavation Subcontractor (8)	3.42	156,780.72
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	16,476.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	59,987.44
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	66,909.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	243,608.86
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	101,712.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	370,323.04
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	134110	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	488,280.86
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	274288	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	998,654.70

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	413056	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	1,503,894.87
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	478401	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	1,741,809.36
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	827915	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	3,014,354.27
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	888366	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	3,234,450.21
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1288606	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	4,691,683.33
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2111935	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	7,689,340.44
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2256522	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	8,215,767.00
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3592890	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	13,081,346.91
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3647439	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	13,279,954.27
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	6075850	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	22,121,551.62
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	6285692	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	22,885,564.99
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,503,045.00	LCY	Q*1.25	PRIME CONTRACTOR 5	3.42	34,599,619.89
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab, w/ Phased Construction]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used. Also, the FDOT report noted a 20% increase to be included for phased construction. Given the two bridges located at this site, phasing would be required to complete, as traffic would be rerouted onto one side of the highway to complete one bridge.	11,200.00	SF	Q	PRIME CONTRACTOR 7	206	2,307,200.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab, w/ Phased Construction]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used. Also, the FDOT report noted a 20% increase to be included for phased construction. Given the two bridges located at this site, phasing would be required to complete, as traffic would be rerouted onto one side of the highway to complete one bridge.	13,600.00	SF	Q	PRIME CONTRACTOR 7	206	2,801,600.00
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used.	8,800.00	SF	Q	PRIME CONTRACTOR 7	171.75	1,511,400.00
USR	Z		Pump, 200 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received February 2018.	3.00	EA	<none>	PRIME CONTRACTOR 8	600000	
USR	Z		Pump, 400 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received February 2018.	2	EA	<none>	PRIME CONTRACTOR 8	2400900	4,801,800.00
USR	Z		Pump, 800 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received January 2018.	4	EA	<none>	PRIME CONTRACTOR 8	10300000	41,200,000.00
USR	Z		Pumps for 300 cfs Pump Station [Materials]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Creel Pump Inc. (863-465-5757). Quote received July 2015 and escalated to 2Q18 price levels.	6	EA	<none>	PRIME CONTRACTOR 8	120750	724,500.00
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 1	1.49	7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 1	1.49	7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 2	1.49	7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 2	1.49	7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4600	LCY	Q*1.15	PRIME CONTRACTOR 5	1.49	7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600.00	LCY	Q*1.15	PRIME CONTRACTOR 5	1.49	7,299.36
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,996.00	BCY	Q*1.2	Excavation Subcontractor (8)	1.41	7,527.35
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	519,280.00	BCY	Q*1.2	PRIME CONTRACTOR 1	1.41	782,386.64
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	168,625.00	BCY	Q*1.2	PRIME CONTRACTOR 2	1.41	254,063.22

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,520.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	2,290.15
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,054.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	7,614.74
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,054.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	7,614.74
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,329.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	8,029.08
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6,205.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	9,348.92
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	7,015.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	10,569.33
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	12,307.00	BCY	Q*1.2	PRIME CONTRACTOR 4	1.41	18,542.66
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	22,264.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	33,544.63
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	66,416.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	100,067.38
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	103,284.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	155,615.51
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	118,255.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	178,171.95
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	236,462.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	356,271.59
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	238,810.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	359,809.26
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	359,302.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	541,351.65
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	902,660.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	1,360,016.03
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,554,653.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	2,342,358.14

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,170,970.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	3,270,948.08
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,238,440.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	3,372,603.50
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3,674,407.00	BCY	Q*1.2	PRIME CONTRACTOR 5	1.41	5,536,140.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394.00	BCY	Q*1.2	PRIME CONTRACTOR 6	1.41	2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394.00	BCY	Q*1.2	PRIME CONTRACTOR 6	1.41	2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394.00	BCY	Q*1.2	PRIME CONTRACTOR 6	1.41	2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,735.00	BCY	Q*1.25	PRIME CONTRACTOR 8	1.41	2,597.36
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,735.00	BCY	Q*1.25	PRIME CONTRACTOR 8	1.41	2,597.36
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	21,324.00	BCY	Q*1.25	PRIME CONTRACTOR 8	1.41	31,922.87
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	21,324.00	BCY	Q*1.25	PRIME CONTRACTOR 8	1.41	31,922.87
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	78,588.00	CY	Q*46*3/27	PRIME CONTRACTOR 3	285	22,397,580.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	104,819.00	CY	Q*46*3/27	PRIME CONTRACTOR 3	285	29,873,415.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	134,637.00	CY	Q*46*3/27	PRIME CONTRACTOR 3	285	38,371,545.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	159,160.00	CY	Q*46*3/27	PRIME CONTRACTOR 3	285	45,360,600.00
USR	Z		Place Riprap [Hydraul. Excavat.]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,266.00	LCY	<none>	PRIME CONTRACTOR 5	2.62	12,046.31
USR	Z		Place Riprap [Hydraul. Excavat.]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,351.00	LCY	<none>	PRIME CONTRACTOR 5	2.62	12,286.33
USR	Z		Courtesy Dock [Material and Installation]	Quantity: Based on estimated number of docks required; Sub Bid: Based on full installation costs provided by XXXXXX.	1.00	EA	Q	Recreation Subcontractor (5)	10000	10,000.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Courtesy Dock [Material and Installation]	Quantity: Based on estimated number of docks required; Sub Bid: Based on full installation costs provided by XXXXXX.	5.00	EA	Q	Recreation Subcontractor (5)	10000	50,000.00
USR	Z		ADA Fishing Platform [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1.00	EA	Q	Recreation Subcontractor (5)	50000	52,100.00
USR	Z		Airboat Crossing [Material and Installation]	Quantity: Based on estimated number of airboat crossings required; Sub Bid: Based on full installation costs provided by XXXXXX.	1.00	EA	Q	Recreation Subcontractor (5)	75000	75,000.00
USR	Z		Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	1.00	EA	Q	Recreation Subcontractor (5)	1500000	1,500,000.00
USR	Z		Fire Ring [Material and Installation]	Quantity: Based on estimated number of fire rings required; Sub Bid: Based on full installation costs provided by XXXXXX.	30	EA	Q	Recreation Subcontractor (5)	250.00	7,500.00
USR	Z		Fishing Pier [Material and Installation]	Quantity: Based on estimated number of piers required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	50,000.00	50,000.00
USR	Z		Group Shelter, 16' x 24' [Material and Installation]	Quantity: Based on estimated number of shelters required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	30,000.00	31,200.00
USR	Z		Group Shelter, 16' x 24' [Material and Installation]	Quantity: Based on estimated number of shelters required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	30,000.00	31,200.00
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	4,500.00	4,500.00
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	Recreation Subcontractor (5)	4,500.00	9,000.00
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	Recreation Subcontractor (5)	4,500.00	9,000.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	20,000.00	20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	20,000.00	20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	20,000.00	20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	20,000.00	20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	20,000.00	20,900.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	3	EA	Q	Recreation Subcontractor (5)	20,000.00	62,700.00
USR	Z		Mob / Demob Crew	<none>	25	DAY	<none>	PRIME CONTRACTOR 1	2,150.68	61,167.49
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	PRIME CONTRACTOR 1	2,150.68	110,101.47
USR	Z		Mob / Demob Crew	<none>	25	DAY	<none>	PRIME CONTRACTOR 2	2,150.68	61,167.49
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	PRIME CONTRACTOR 2	2,150.68	110,101.47
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	PRIME CONTRACTOR 4	2,150.68	73,400.98
USR	Z		Mob / Demob Crew	<none>	60	DAY	<none>	PRIME CONTRACTOR 4	2,150.68	146,801.96
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	17,126.90
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	17,126.90
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	17,126.90
USR	Z		Mob / Demob Crew	<none>	10	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	24,466.99
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	36,700.49
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	36,700.49
USR	Z		Mob / Demob Crew	<none>	40	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	97,867.98
USR	Z		Mob / Demob Crew	<none>	60	DAY	<none>	PRIME CONTRACTOR 5	2,150.68	146,801.96
USR	Z		Mob / Demob Crew	<none>	20	DAY	<none>	PRIME CONTRACTOR 6	2,150.68	48,933.99
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	PRIME CONTRACTOR 6	2,150.68	73,400.98
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	PRIME CONTRACTOR 7	2,150.68	39,192.85
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	PRIME CONTRACTOR 7	2,150.68	78,385.70
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	PRIME CONTRACTOR 8	2,150.68	72,468.81
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	PRIME CONTRACTOR 8	2,150.68	108,703.21
USR	Z		Pump Installation Crew		200	HR	<none>	PRIME CONTRACTOR 8	404.88	93,597.60
USR	Z		Pump Installation Crew		200	HR	<none>	PRIME CONTRACTOR 8	404.88	93,597.60
USR	Z		Pump Installation Crew		400	HR	<none>	PRIME CONTRACTOR 8	404.88	187,195.19
USR	Z		Pump Station Demolition Crew		160	HR	<none>	PRIME CONTRACTOR 8	455.23	83,306.94
USR	Z		Rock Crusher Mob/Demob Crew	<none>	20	DAY	<none>	PRIME CONTRACTOR 5	10,735.81	231,280.06
USR	Z		Rock Crusher Mob/Demob Crew	<none>	30	DAY	<none>	PRIME CONTRACTOR 5	10,735.81	346,920.10
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	Recreation Subcontractor (5)	100,000.00	200,000.00
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	Recreation Subcontractor (5)	100,000.00	200,000.00
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	3	EA	Q	Recreation Subcontractor (5)	100,000.00	300,000.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	40,000.00	41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	40,000.00	41,800.00

SRC	SRC TAG	O/R	Description	Notes	QTY	UOM	Link/ Formula	Contractor	Unit Bare	Total Direct
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	40,000.00	41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	Recreation Subcontractor (5)	40,000.00	41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	5	EA	Q	Recreation Subcontractor (5)	40,000.00	209,000.00

APPENDIX 8.2.1

ZERO QUANTITY DETAIL

Eight (8) Zero Cost items only, appearing only in JOOH.

No report generated.

APPENDIX 8.2.2

ESTIMATOR REPORT DETAIL

sfwmd.gov

LEGIS CONSULTANCY, INC.

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
USR	Z		12' x 12' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	$ 61,632.00	$ 184,896.00
			12' x 12' Box Culvert Gate, Full Installation Total		**3**				**$ 184,896.00**
USR	Z		25' x 16' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	$ 1,168,000.00	$ 3,504,000.00
USR	Z		25' x 16' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	$ 1,168,000.00	$ 3,504,000.00
			25' x 16' SS Spillway Gate, Full Installation Total		**6**				**$ 7,008,000.00**
USR	Z		25' x 18' SS Spillway Gate, Full Installation	Sub Bid: Based on recent costs for similar spillway gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	$ 1,314,000.00	$ 3,942,000.00
			25' x 18' SS Spillway Gate, Full Installation Total		**3**				**$ 3,942,000.00**
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	2	EA	Q	$ 20,972.00	$ 41,944.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	3	EA	Q	$ 20,972.00	$ 62,916.00
USR	Z		7' x 7' Box Culvert Gate, Full Installation	Sub Bid: Based on recent costs for culvert gates constructed within the SFWMD (Jack Ismalon, jismalo@sfwmd.gov). Cost includes all necessary materials and installation of the gate.	4	EA	Q	$ 20,972.00	$ 83,888.00
			7' x 7' Box Culvert Gate, Full Installation Total		**19**				**$ 398,468.00**
				SPILLWAY GATE	**19**	**EA**		**$ 20,972.00**	**$ 398,468.00**
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	63	CY	Q*1.1	$ 122.00	$ 8,147.16
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	234	CY	Q*1.1	$ 122.00	$ 30,260.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	234	CY	Q*1.1	$ 122.00	$ 30,260.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	234	CY	Q*1.1	$ 122.00	$ 30,260.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	234	CY	Q*1.1	$ 122.00	$ 30,260.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	234	CY	Q*1.1	$ 122.00	$ 30,260.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	292	CY	Q*1.1	$ 122.00	$ 37,761.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	317	CY	Q*1.1	$ 122.00	$ 40,994.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	317	CY	Q*1.1	$ 122.00	$ 40,994.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	317	CY	Q*1.1	$ 122.00	$ 40,994.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	317	CY	Q*1.1	$ 122.00	$ 40,994.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	333	CY	Q*1.1	$ 122.00	$ 43,063.56
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	333	CY	Q*1.1	$ 122.00	$ 43,063.56
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	333	CY	Q*1.1	$ 122.00	$ 43,063.56
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	333	CY	Q*1.1	$ 122.00	$ 43,063.56
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	500	CY	Q*1.1	$ 122.00	$ 64,660.00
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	500	CY	Q*1.1	$ 122.00	$ 64,660.00
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	500	CY	Q*1.1	$ 122.00	$ 64,660.00
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	500	CY	Q*1.1	$ 122.00	$ 64,660.00
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	517	CY	Q*1.1	$ 122.00	$ 66,858.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	550	CY	Q*1.1	$ 122.00	$ 71,126.00

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	563	CY	Q*1.1	$ 122.00	$ 72,807.16
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	563	CY	Q*1.1	$ 122.00	$ 72,807.16
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	594	CY	Q*1.1	$ 122.00	$ 76,816.08
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	594	CY	Q*1.1	$ 122.00	$ 76,816.08
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	733	CY	Q*1.1	$ 122.00	$ 94,791.56
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	837	CY	Q*1.1	$ 122.00	$ 108,240.84
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	890	CY	Q*1.1	$ 122.00	$ 115,094.80
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	890	CY	Q*1.1	$ 122.00	$ 115,094.80
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,147	CY	Q*1.1	$ 122.00	$ 148,330.04
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,287	CY	Q*1.1	$ 122.00	$ 166,434.84
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,380	CY	Q*1.1	$ 122.00	$ 178,461.60
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,706	CY	Q*1.1	$ 122.00	$ 220,619.92
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,868	CY	Q*1.1	$ 122.00	$ 241,569.76
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,929	CY	Q*1.1	$ 122.00	$ 249,458.28
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,039	CY	Q*1.1	$ 122.00	$ 263,683.48
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,224	CY	Q*1.1	$ 122.00	$ 287,607.68
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,536	CY	Q*1.1	$ 122.00	$ 327,955.52
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,719	CY	Q*1.1	$ 122.00	$ 351,621.08
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,798	CY	Q*1.1	$ 122.00	$ 361,837.36
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	3,337	CY	Q*1.1	$ 122.00	$ 431,540.84
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,884	CY	Q*1.1	$ 122.00	$ 243,638.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,884	CY	Q*1.1	$ 122.00	$ 243,638.88
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,936	CY	Q*1.1	$ 122.00	$ 250,363.52
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	61	CY	Q*1.1	$ 122.00	$ 7,888.52
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	61	CY	Q*1.1	$ 122.00	$ 7,888.52
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	242	CY	Q*1.1	$ 122.00	$ 31,295.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	242	CY	Q*1.1	$ 122.00	$ 31,295.44
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	299	CY	Q*1.1	$ 122.00	$ 38,666.68
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	299	CY	Q*1.1	$ 122.00	$ 38,666.68
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	491	CY	Q*1.1	$ 122.00	$ 63,496.12
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	491	CY	Q*1.1	$ 122.00	$ 63,496.12

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,320	CY	Q*1.1	$ 122.00	$ 170,702.40
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,320	CY	Q*1.1	$ 122.00	$ 170,702.40
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	97	CY	Q*1.1	$ 122.00	$ 12,544.04
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,010	CY	Q*1.1	$ 122.00	$ 130,613.20
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	1,368	CY	Q*1.1	$ 122.00	$ 176,909.76
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	2,550	CY	Q*1.1	$ 122.00	$ 329,766.00
RSM	33113350520		Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments	<none>	3,582	CY	Q*1.1	$ 122.00	$ 463,224.24
			Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local aggregate, sand, Portland cement (Type III) and water, delivered, excludes all additives and treatments Total		**57,197**				**$ 7,396,716.04**
				CONCRETE, READY MIX ((Material Cost Only)	**57,197**	**CY**		**$ 129.32**	**$ 7,396,716.04**
RSM	33053401440		Structural concrete, in place, column (4000 psi), round, up to 3% reinforcing by area, 24" diameter, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	43	CY	Q	$ 999.79	$ 48,204.55
RSM	33053401440		Structural concrete, in place, column (4000 psi), round, up to 3% reinforcing by area, 24" diameter, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	43	CY	Q	$ 999.79	$ 48,204.55
RSM	33053401440		Structural concrete, in place, column (4000 psi), round, up to 3% reinforcing by area, 24" diameter, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	3,162	CY	Q	$ 999.79	$ 3,442,072.47
			Structural concrete, in place, column (4000 psi), round, up to 3% reinforcing by area, 24" diameter, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing Total		**3,248**				**$ 3,538,481.57**
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
RSM	33053402750		Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	4	CY	<none>	$ 437.44	$ 2,140.18
			Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing Total		**57**				**$ 27,822.34**
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	24	CY	Q/30*4/27	$ 369.99	$ 10,660.60
RSM	33053402950		Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing	<none>	34	CY	Q*1.1	$ 369.99	$ 13,853.00
			Structural concrete, in place, elevated slab (4000 psi), two way beam and slab, 125 psf superimposed load, 25' span, includes forms(4 uses), reinforcing steel, concrete, placing and finishing Total		**247**				**$ 109,798.40**
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
RSM	33053403590		Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	1	EA	<none>	$ 816.73	$ 896.08
			Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing Total		**13**				**$ 11,649.04**
RSM	33053404250		Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	30	CY	<none>	$ 378.58	$ 13,055.19
RSM	33053404250		Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	30	CY	<none>	$ 378.58	$ 13,055.19
RSM	33053404250		Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	30	CY	<none>	$ 378.58	$ 13,055.19
			Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing Total		**89**				**$ 39,165.57**
RSM	33053400350		Structural concrete, in place, beam (3500 psi), 5 kip per LF, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	147	CY	<none>	$ 615.80	$ 99,855.08
RSM	33053400350		Structural concrete, in place, beam (3500 psi), 5 kip per LF, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	<none>	147	CY	<none>	$ 615.80	$ 99,855.08
			Structural concrete, in place, beam (3500 psi), 5 kip per LF, 25' span, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing Total		**293**				**$ 199,710.16**
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	5	CY	<none>	$ 145.68	$ 835.27
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	50	CY	<none>	$ 145.68	$ 7,857.92
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	50	CY	<none>	$ 145.68	$ 7,857.92
RSM	33053404700		Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing	<none>	50	CY	<none>	$ 145.68	$ 7,857.92
			Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), and placing, excludes finishing Total		**219**				**$ 34,432.27**
				STRUCTURAL CONCRETE (In Place) - INCLUDES MATERIAL	**4,166**	**CY**		**$ 950.72**	**$ 3,961,059.35**
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	333	CY	Q*1.1	$ 10.21	$ 4,015.17
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	333	CY	Q*1.1	$ 10.21	$ 4,015.17
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	333	CY	Q*1.1	$ 10.21	$ 4,015.17
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	333	CY	Q*1.1	$ 10.21	$ 4,015.17
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	594	CY	Q*1.1	$ 10.21	$ 7,162.20
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	594	CY	Q*1.1	$ 10.21	$ 7,162.20
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,287	CY	Q*1.1	$ 10.21	$ 15,518.09
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,868	CY	Q*1.1	$ 10.21	$ 22,523.54
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	2,224	CY	Q*1.1	$ 10.21	$ 26,816.03
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	2,719	CY	Q*1.1	$ 10.21	$ 32,784.53
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	242	CY	Q*1.1	$ 10.21	$ 2,917.93
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	242	CY	Q*1.1	$ 10.21	$ 2,917.93
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	491	CY	Q*1.1	$ 10.21	$ 5,920.27
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	491	CY	Q*1.1	$ 10.21	$ 5,920.27
RSM	33113701600		Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,010	CY	Q*1.1	$ 10.21	$ 11,375.73
			Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leveling (strike off) & consolidation, excludes material Total		**13,094**				**$ 157,079.40**
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	500	CY	Q*1.1	$ 4.60	$ 2,712.95
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	500	CY	Q*1.1	$ 4.60	$ 2,712.95
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	500	CY	Q*1.1	$ 4.60	$ 2,712.95
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	500	CY	Q*1.1	$ 4.60	$ 2,712.95
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	890	CY	Q*1.1	$ 4.60	$ 4,829.06
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	890	CY	Q*1.1	$ 4.60	$ 4,829.06
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	1,929	CY	Q*1.1	$ 4.60	$ 10,466.57
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	2,039	CY	Q*1.1	$ 4.60	$ 11,063.42
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	2,536	CY	Q*1.1	$ 4.60	$ 13,760.10
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	2,798	CY	Q*1.1	$ 4.60	$ 15,181.68
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	3,337	CY	Q*1.1	$ 4.60	$ 18,106.25
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	299	CY	Q*1.1	$ 4.60	$ 1,622.35
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	299	CY	Q*1.1	$ 4.60	$ 1,622.35

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	1,320	CY	Q*1.1	$ 4.60	$ 7,162.20
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	1,320	CY	Q*1.1	$ 4.60	$ 7,162.20
RSM	33113702950		Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material	<none>	3,582	CY	Q*1.1	$ 4.60	$ 18,155.00
			Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes leveling (strike off) & consolidation, excludes material Total		**23,239**				**$ 124,812.04**
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	63	CY	Q*1.1	$ 15.32	$ 1,139.44
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	234	CY	Q*1.1	$ 15.32	$ 4,232.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	292	CY	Q*1.1	$ 15.32	$ 5,281.21
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	317	CY	Q*1.1	$ 15.32	$ 5,733.37
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	317	CY	Q*1.1	$ 15.32	$ 5,733.37
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	317	CY	Q*1.1	$ 15.32	$ 5,733.37
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	317	CY	Q*1.1	$ 15.32	$ 5,733.37
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	517	CY	Q*1.1	$ 15.32	$ 9,350.64
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	550	CY	Q*1.1	$ 15.32	$ 9,947.49
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	563	CY	Q*1.1	$ 15.32	$ 10,182.62
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	563	CY	Q*1.1	$ 15.32	$ 10,182.62
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	733	CY	Q*1.1	$ 15.32	$ 13,257.30
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	837	CY	Q*1.1	$ 15.32	$ 15,138.28
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,147	CY	Q*1.1	$ 15.32	$ 20,745.05
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,380	CY	Q*1.1	$ 15.32	$ 24,959.17
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,706	CY	Q*1.1	$ 15.32	$ 30,855.32
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,884	CY	Q*1.1	$ 15.32	$ 34,074.69
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,884	CY	Q*1.1	$ 15.32	$ 34,074.69
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,936	CY	Q*1.1	$ 15.32	$ 35,015.18
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	61	CY	Q*1.1	$ 15.32	$ 1,103.27
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	61	CY	Q*1.1	$ 15.32	$ 1,103.27
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	97	CY	Q*1.1	$ 15.32	$ 1,638.78
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	1,368	CY	Q*1.1	$ 15.32	$ 23,111.89
RSM	33113705350		Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material	<none>	2,550	CY	Q*1.1	$ 15.32	$ 43,081.37
			Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off) & consolidation, excludes material Total		**20,864**				**$ 372,569.02**
				STRUCTURAL CONCRETE (Placement) EXCLUDES Material	**57,197**	**CY**		**$ 11.44**	**$ 654,460.46**
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	4,500	SF	<none>	$ 3.60	$ 19,705.23
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	4,500	SF	<none>	$ 3.60	$ 19,705.23
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	4,500	SF	<none>	$ 3.60	$ 19,705.23
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	4,500	SF	<none>	$ 3.60	$ 19,705.23
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	8,000	SF	<none>	$ 3.60	$ 35,031.53
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	8,000	SF	<none>	$ 3.60	$ 35,031.53
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	16,000	SF	<none>	$ 3.60	$ 70,063.06
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	17,500	SF	<none>	$ 3.60	$ 76,631.47
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	24,000	SF	<none>	$ 3.60	$ 105,094.58
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	28,000	SF	<none>	$ 3.60	$ 122,610.35
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	3,300	SF	Q*15	$ 3.60	$ 14,450.51
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	3,300	SF	Q*15	$ 3.60	$ 14,450.51
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	6,690	SF	Q*15	$ 3.60	$ 29,295.12

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	6,690	SF	Q*15	$ 3.60	$ 29,295.12
RSM	31113351600		C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning	<none>	21,980	SF	<none>	$ 3.60	$ 89,934.96
			C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4 use, includes shoring, erecting, bracing, stripping and cleaning Total		**161,460**				**$ 700,709.66**
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	740	SFC	<none>	$ 2.46	$ 2,268.35
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,200	SFC	<none>	$ 2.46	$ 3,678.41
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,200	SFC	<none>	$ 2.46	$ 3,678.41
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,400	SFC	<none>	$ 2.46	$ 4,291.47
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,400	SFC	<none>	$ 2.46	$ 4,291.47
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,400	SFC	<none>	$ 2.46	$ 4,291.47
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	1,400	SFC	<none>	$ 2.46	$ 4,291.47
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	2,600	SFC	<none>	$ 2.46	$ 7,969.88
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	2,600	SFC	<none>	$ 2.46	$ 7,969.88
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	4,100	SFC	<none>	$ 2.46	$ 12,567.89
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	11,525	SFC	Q*5	$ 2.46	$ 35,328.02
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	2,000	SFC	<none>	$ 2.46	$ 6,130.68
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	2,000	SFC	<none>	$ 2.46	$ 6,130.68
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	3,264	SFC	Q*12	$ 2.46	$ 10,005.26
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	3,264	SFC	Q*12	$ 2.46	$ 10,005.26
RSM	31113653060		C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning	<none>	2,376	SFC	<none>	$ 2.46	$ 6,726.96
			C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erecting, bracing, stripping and cleaning Total		**42,469**				**$ 129,625.56**
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	1,154	SFC	Q*20	$ 2.92	$ 4,295.05
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	4,260	SFC	Q*20	$ 2.92	$ 15,855.22
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	5,300	SFC	Q*20	$ 2.92	$ 19,725.98
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	9,000	SFC	<none>	$ 2.92	$ 33,496.95
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	9,000	SFC	<none>	$ 2.92	$ 33,496.95
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	9,000	SFC	<none>	$ 2.92	$ 33,496.95
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	9,000	SFC	<none>	$ 2.92	$ 33,496.95
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	9,400	SFC	Q*20	$ 2.92	$ 34,985.71
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	10,000	SFC	Q*20	$ 2.92	$ 37,218.84
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	13,320	SFC	Q*20	$ 2.92	$ 49,575.49
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	15,600	SFC	<none>	$ 2.92	$ 58,061.38
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	15,600	SFC	<none>	$ 2.92	$ 58,061.38
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	23,200	SFC	<none>	$ 2.92	$ 86,347.70

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	31,000	SFC	<none>	$ 2.92	$ 115,378.39
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	37,000	SFC	<none>	$ 2.92	$ 137,709.69
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	45,000	SFC	<none>	$ 2.92	$ 167,484.76
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	34,260	SFC	Q*20	$ 2.92	$ 127,511.73
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	34,260	SFC	Q*20	$ 2.92	$ 127,511.73
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	35,200	SFC	Q*20	$ 2.92	$ 131,010.30
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	1,668	SFC	Q*30	$ 2.92	$ 6,208.10
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	1,668	SFC	Q*30	$ 2.92	$ 6,208.10
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	2,360	SFC	<none>	$ 2.92	$ 8,020.95
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	16,793	SFC	<none>	$ 2.92	$ 57,074.48
RSM	31113859460		C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning	<none>	46,360	SFC	<none>	$ 2.92	$ 157,564.03
			C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on 50 uses of purchased forms, 4 uses of bracing lumber, includes erecting, bracing, stripping and cleaning Total		**440,703**				**$ 1,619,072.91**
				COPNCRETE FORMS	**644,632**	**SFC**		**$ 3.80**	**$ 2,449,408.13**
RSM	32111600500		Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	17	TON	Q*158/2000	$ 1,335.06	$ 25,525.25
RSM	32111600500		Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	17	TON	Q*158/2000	$ 1,335.06	$ 25,525.25
RSM	32111600500		Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	35	TON	Q*158/2000	$ 1,335.06	$ 52,551.98
RSM	32111600500		Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	35	TON	Q*158/2000	$ 1,335.06	$ 52,551.98
RSM	32111600500		Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	73	TON	Q*158/2000	$ 1,335.06	$ 106,529.71
			Reinforcing steel, in place, elevated slabs, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories Total		**177**				**$ 262,684.17**
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	182	TON	Q*158/2000	$ 1,477.94	$ 306,988.26
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	22	TON	Q*158/2000	$ 1,477.94	$ 36,245.18
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	22	TON	Q*158/2000	$ 1,477.94	$ 36,245.18
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	95	TON	Q*158/2000	$ 1,477.94	$ 159,815.96
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	95	TON	Q*158/2000	$ 1,477.94	$ 159,815.96
RSM	32111600500		Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Assumes 158-lbs/cy of concrete	257	TON	Q*158/2000	$ 1,477.94	$ 418,614.09
			Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories Total		**672**				**$ 1,117,724.63**
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	5	TON	Q*158/2000	$ 1,322.56	$ 6,832.64
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	124	TON	Q	$ 1,322.56	$ 183,887.03
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	124	TON	Q	$ 1,322.56	$ 183,887.03
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	124	TON	Q	$ 1,322.56	$ 183,887.03
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	124	TON	Q	$ 1,322.56	$ 183,887.03
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	207	TON	Q	$ 1,322.56	$ 307,617.16
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	207	TON	Q	$ 1,322.56	$ 307,617.16
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	447	TON	Q	$ 1,322.56	$ 663,953.98
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	480	TON	Q	$ 1,322.56	$ 712,673.65
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	552	TON	Q	$ 1,322.56	$ 820,213.40
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	737	TON	Q	$ 1,322.56	$ 1,095,152.73
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	135	TON	Q*158/2000	$ 1,322.56	$ 200,968.62
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	135	TON	Q*158/2000	$ 1,322.56	$ 200,968.62
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	139	TON	Q*158/2000	$ 1,322.56	$ 206,464.44
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	4	TON	Q*158/2000	$ 1,322.56	$ 6,535.56
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	4	TON	Q*158/2000	$ 1,322.56	$ 6,535.56

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	7	TON	Q*158/2000	$ 1,322.56	$ 10,112.11
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	98	TON	Q*158/2000	$ 1,322.56	$ 142,002.94
RSM	32111600700		Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	<none>	183	TON	Q*158/2000	$ 1,322.56	$ 264,503.95
			Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories Total		**3,837**				**$ 5,687,700.64**
				REINFORCING STEEL	**4,686**	**TON**		**$ 1,508.35**	**$ 7,068,109.44**
RSM	347113262320	Sb	Concrete barrier: Used vehicle barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid cost for slip-forms.	<none>	15,376	LF	<none>	$ 93.21	$ 1,492,422.32
RSM	347113262320	Sb	Concrete barrier: Used vehicle barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid cost for slip-forms.	<none>	20,508	LF	<none>	$ 93.21	$ 1,990,543.51
RSM	347113262320	Sb	Concrete barrier: Used vehicle barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid cost for slip-forms.	<none>	25,937	LF	<none>	$ 93.21	$ 2,517,492.05
			Concrete barrier: Used vehicle barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid cost for slip-forms. Total		61,821				**$ 6,000,457.88**
RSM	347113262320	Sb	Concrete Barrier: Used vehicle guide rails, median barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid for slip forms.	<none>	31,126	LF	<none>	$ 93.21	$ 3,021,145.76
			Concrete Barrier: Used vehicle guide rails, median barrier, cast in place concrete, slipformed, 3'-6" high, 2' wide. Added $40 sub-bid for slip forms. Total		31,126				**$ 3,021,145.76**
				CONCRETE BARRIERS (Traffic Control)	**92,947**	**LF**		**$ 97.06**	**$ 9,021,603.64**
RSM	33723500670		Roller compacted concrete, paving, asphalt paver, 8" layers, includes material	<none>	296,462	SY	<none>	$ 21.03	$ 6,619,836.70
RSM	33723500670		Roller compacted concrete, paving, asphalt paver, 8" layers, includes material	<none>	395,412	SY	<none>	$ 21.03	$ 8,829,336.88
RSM	33723500670		Roller compacted concrete, paving, asphalt paver, 8" layers, includes material	<none>	400,077	SY	<none>	$ 21.03	$ 8,933,503.82
RSM	33723500670		Roller compacted concrete, paving, asphalt paver, 8" layers, includes material	<none>	480,105	SY	<none>	$ 21.03	$ 10,720,485.93
			Roller compacted concrete, paving, asphalt paver, 8" layers, includes material Total		**1,572,056**				**$ 35,103,163.33**
				ROLLER COMPACTED CONCRETE	**1,572,056**	SY		**$ 22.33**	**$ 35,103,163.33**
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	1	ACR	Q	$ 1,636.69	$ 1,795.73
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	2	ACR	Q*0.5	$ 1,636.69	$ 3,591.46
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	149	ACR	Q	$ 1,636.69	$ 267,563.46
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	1	ACR	Q	$ 1,636.69	$ 1,795.73
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	2	ACR	Q*0.5	$ 1,636.69	$ 3,591.46
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	136	ACR	Q	$ 1,636.69	$ 244,218.99
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	3	ACR	Q*0.5	$ 1,636.69	$ 5,387.18
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	1	ACR	Q*0.5	$ 1,636.69	$ 1,795.73
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	3	ACR	Q*0.5	$ 1,636.69	$ 5,387.18
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	4	ACR	Q	$ 1,636.69	$ 7,182.91
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	10	ACR	Q*10	$ 1,636.69	$ 17,957.28
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	20	ACR	Q	$ 1,636.69	$ 35,914.56
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	31	ACR	Q	$ 1,636.69	$ 55,667.56
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	33	ACR	Q	$ 1,636.69	$ 59,259.02
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	33	ACR	Q	$ 1,636.69	$ 59,259.02
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	42	ACR	Q	$ 1,636.69	$ 75,420.57
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	43	ACR	Q	$ 1,636.69	$ 77,216.30
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	89	ACR	Q	$ 1,636.69	$ 159,819.78
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	155	ACR	Q	$ 1,636.69	$ 278,337.82
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	256	ACR	Q	$ 1,636.69	$ 459,706.34
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	293	ACR	Q	$ 1,636.69	$ 526,148.27
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	574	ACR	Q	$ 1,636.69	$ 1,030,747.81
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	This number is from adding up all of the areas disturbed by levee/dam construction.	579	ACR	Q	$ 1,636.69	$ 1,039,726.45
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	2	ACR	Q*0.5	$ 1,636.69	$ 2,693.59
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	1	ACR	Q*0.5	$ 1,636.69	$ 1,885.32
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter	Areas disturbed by levee/dam construction.	2	ACR	Q*0.5	$ 1,636.69	$ 2,668.46
RSM	311110100020		Clearing & grubbing, cut & chip light trees, to 6" diameter		5	ACR	Q	$ 1,636.69	$ 9,012.91
			Clearing & grubbing, cut & chip light trees, to 6" diameter Total		**2,469**				**$ 4,433,750.89**
				CLEARING & GRIBBING	**2,469**	ACR		**$ 1,795.77**	**$ 4,433,750.89**
USR	Z		Dewater Pump Relocation Crew	Assumes placing/relocating pumps every 2000-lf of canal. Assumes 2-days for each relocation period.	66	DAY	<none>	$ 3,070.25	$ 277,243.86
USR	Z		Dewater Pump Relocation Crew	Assumes placing/relocating pumps every 2000-lf of canal. Assumes 2-days for each relocation period.	60	DAY	<none>	$ 3,070.25	$ 252,039.88
			Dewater Pump Relocation Crew Total		**126**				**$ 529,283.74**
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	36	MO	<none>	$ 937.44	$ 54,689.51
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	6	MO	<none>	$ 937.44	$ 9,114.92
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	3	MO	<none>	$ 937.44	$ 4,557.46
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	3	MO	<none>	$ 937.44	$ 4,557.46
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	4	MO	<none>	$ 937.44	$ 6,076.61
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	12	MO	<none>	$ 937.44	$ 18,229.84
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	24	MO	<none>	$ 937.44	$ 36,459.67
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	30	MO	Q	$ 937.44	$ 45,574.59
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	36	MO	<none>	$ 937.44	$ 54,689.51
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	48	MO	Q	$ 937.44	$ 72,919.34
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	54	MO	Q	$ 937.44	$ 82,034.26
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	63	MO	Q	$ 937.44	$ 95,706.64
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	7	MO	<none>	$ 937.44	$ 10,634.07
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	7	MO	<none>	$ 937.44	$ 10,634.07
USR	Z		Dewatering Operation and Maintenance [2 laborers]	Assumes 2 laborers monitoring dewatering pumps half time for duration of pumping.	60	MO	<none>	$ 937.44	$ 68,095.34
			Dewatering Operation and Maintenance [2 laborers] Total		**393**				**$ 573,973.29**
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	36	MO	<none>	$ 12,528.00	$ 451,008.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	6	MO	<none>	$ 12,528.00	$ 75,168.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	3	MO	<none>	$ 12,528.00	$ 37,584.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	3	MO	<none>	$ 12,528.00	$ 37,584.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	4	MO	<none>	$ 12,528.00	$ 50,112.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	12	MO	<none>	$ 12,528.00	$ 150,336.00

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	24	MO	<none>	$ 12,528.00	$ 300,672.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	30	MO	Q	$ 12,528.00	$ 375,840.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	36	MO	<none>	$ 12,528.00	$ 451,008.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	48	MO	Q	$ 12,528.00	$ 601,344.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	54	MO	Q	$ 12,528.00	$ 676,512.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	63	MO	Q	$ 12,528.00	$ 789,264.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	7	MO	<none>	$ 12,528.00	$ 87,696.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	7	MO	<none>	$ 12,528.00	$ 87,696.00
USR	Z		Dewatering Pump Operation [Fuel Costs]	Sub Bid: Assumes pumps burn average 4 gallons per hour at $2.61/gal. Monthly cost of 4-GPH x 8-hrs/day x 30-day/month x $2.61/gal x 5-pumps = $12,528/mo.	60	MO	<none>	$ 12,528.00	$ 751,680.00
			Dewatering Pump Operation [Fuel Costs] Total		**393**				**$ 4,923,504.00**
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period per 2-mile stretch for a total of 30-Rental-Pump-Months.	180	MO	<none>	$ 12,528.00	$ 2,255,040.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	30	MO	<none>	$ 12,528.00	$ 375,840.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 3-Month period each for a total of 30-Rental-Pump-Months.	15	MO	<none>	$ 12,528.00	$ 187,920.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	15	MO	<none>	$ 12,528.00	$ 187,920.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 4-Month period each for a total of 30-Rental-Pump-Months.	20	MO	<none>	$ 12,528.00	$ 250,560.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	60	MO	<none>	$ 12,528.00	$ 751,680.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 24-Month period.	120	MO	<none>	$ 12,528.00	$ 1,503,360.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	150	MO	Q*5	$ 12,528.00	$ 1,879,200.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	180	MO	<none>	$ 12,528.00	$ 2,255,040.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	240	MO	Q*5	$ 12,528.00	$ 3,006,720.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 50-Month period each for a total of 30-Rental-Pump-Months.	270	MO	Q*5	$ 12,528.00	$ 3,382,560.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for duration of construction.	315	MO	Q*5	$ 12,528.00	$ 3,946,320.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	35	MO	<none>	$ 12,528.00	$ 438,480.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 6-Month period each for a total of 30-Rental-Pump-Months.	35	MO	<none>	$ 12,528.00	$ 438,480.00
USR	Z		Dewatering Pump Rentals [24" Hydraflow Pumps]	Sub Bid: MWI (Eric McKendree, 772-770-0004) quote for 24" Hydraflo Pump (19,000 GPM) of $8,120/mo with escalation from 3Q15 to 2Q18 per CCWIS factors; Quantity: Assumes five (5) units will be rented for a 60-Month period.	300	MO	<none>	$ 12,528.00	$ 3,758,400.00
			Dewatering Pump Rentals [24" Hydraflow Pumps] Total		**1,965**				**$ 24,617,520.00**
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	91	DAY	<none>	$ 526.30	$ 62,630.89
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	126	DAY	<none>	$ 526.30	$ 86,719.69
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	126	DAY	<none>	$ 526.30	$ 86,719.69
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	126	DAY	<none>	$ 526.30	$ 86,719.69
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	126	DAY	<none>	$ 526.30	$ 86,719.69
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	182	DAY	<none>	$ 526.30	$ 125,261.77
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	182	DAY	<none>	$ 526.30	$ 125,261.77
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	210	DAY	<none>	$ 526.30	$ 144,532.81
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	273	DAY	<none>	$ 526.30	$ 187,892.66
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	273	DAY	<none>	$ 526.30	$ 187,892.66
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	336	DAY	<none>	$ 526.30	$ 231,252.50
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	220	DAY	<none>	$ 526.30	$ 151,415.33
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	220	DAY	<none>	$ 526.30	$ 151,415.33
RSM	312319201100		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose	<none>	240	DAY	<none>	$ 526.30	$ 165,180.36
			Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose Total		**2,731**				**$ 1,879,614.84**

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	273	DAY	<none>	$ 340.00	$ 92,820.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	378	DAY	<none>	$ 340.00	$ 128,520.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	378	DAY	<none>	$ 340.00	$ 128,520.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	378	DAY	<none>	$ 340.00	$ 128,520.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	378	DAY	<none>	$ 340.00	$ 128,520.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	546	DAY	<none>	$ 340.00	$ 185,640.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	546	DAY	<none>	$ 340.00	$ 185,640.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	630	DAY	<none>	$ 340.00	$ 214,200.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	819	DAY	<none>	$ 340.00	$ 278,460.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	819	DAY	<none>	$ 340.00	$ 278,460.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for duration.	1,008	DAY	<none>	$ 340.00	$ 342,720.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for dewatering	660	DAY	<none>	$ 340.00	$ 224,400.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for dewatering	660	DAY	<none>	$ 340.00	$ 224,400.00
RSM	312319201120		Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump	Assumes 3 additional pumps required for dewatering	720	DAY	<none>	$ 340.00	$ 244,800.00
			Dewatering, pumping 8 hours, attended 2 hrs per day, 6" centrifugal pump, includes 20 LF of suction hose and 100 LF of discharge hose, add for additional pump Total		**8,193**				**$ 2,785,620.00**
				DEWATERING (Equipment and Support Cost)	**13,801**	DAY			**$ 35,309,515.87**
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
RSM	321123238210		Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness	<none>	8	CY	<none>	$ 163.51	$ 1,388.02
			Base course drainage layers, aggregate base course for concrete slabs and capillary water barrier, 1" minus graded gravel, 6" compacted thickness Total		**104**				**$ 18,044.26**
RSM	321123231523		Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep		225	ECY	Q*225	$ 27.38	$ 6,542.21
RSM	321123231523		Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep		861	ECY	Q*1550*90*2/12/27	$ 27.38	$ 25,034.84
RSM	321123231523		Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep		1,800	ECY	Q*900	$ 27.38	$ 52,337.65
RSM	321123231523		Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep		5,185	ECY	Q*5185	$ 27.38	$ 150,761.51
RSM	321123231523		Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep		22,000	ECY	Q*25*2/27	$ 27.38	$ 639,682.41
			Base course drainage layers, aggregate base course for roadways and large paved areas, alternate method to figure base course, crushed stone, compacted, 1-1/2", 12" deep Total		**30,071**				**$ 874,358.62**
RSM	321123230400		Base course drainage layers, aggregate base course for roadways and large paved areas, bank run gravel, spread and compacted, 12" deep	<none>	9,000	SY	Q/9	$ 8.54	$ 81,740.87

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	321123230400		Base course drainage layers, aggregate base course for roadways and large paved areas, bank run gravel, spread and compacted, 12" deep	<none>	9,000	SY	Q/9	$ 8.54	$ 81,740.87
			Base course drainage layers, aggregate base course for roadways and large paved areas, bank run gravel, spread and compacted, 12" deep Total		**18,000**				**$ 163,481.74**
RSM	321123230300		Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 12" deep	<none>	32,853	SY	Q*14/9	$ 10.24	$ 356,703.84
RSM	321123230300		Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 12" deep	<none>	32,853	SY	Q*14/9	$ 10.24	$ 356,703.84
			Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 12" deep Total		**65,706**				**$ 713,407.68**
RSM	321123230100		Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 6" deep	<none>	4,840	SY	Q*43560/9	$ 5.38	$ 27,602.25
RSM	321123230100		Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 6" deep	<none>	4,840	SY	Q*43560/9	$ 5.38	$ 27,602.25
RSM	321123230100		Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 6" deep	<none>	48,400	SY	Q*10*43560/9	$ 5.38	$ 276,022.49
			Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4" stone base, to 6" deep Total		**58,080**				**$ 331,226.99**
				BASE COURSE,, DRAINAGE LAYER	**171,961**			**$ 12.22**	**$ 2,100,519.29**
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	1,788,503	CY	Q	$ 2.26	$ 4,281,545.94
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	898,659	CY	Q	$ 2.26	$ 2,151,324.20
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	65,479	CY	Q	$ 2.26	$ 156,751.96
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	72,946	CY	Q	$ 2.26	$ 174,627.41
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	80,577	CY	Q	$ 2.26	$ 192,895.47
USR	Z		Canal Excavation to Stockpile [3.5-cy hydraul. excavators]	<none>	121,592	CY	Q	$ 2.26	$ 291,082.39
			Canal Excavation to Stockpile [3.5-cy hydraul. excavators] Total		**3,027,756**				**$ 7,248,227.37**
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,661	CY	Q*1.25	$ 2.26	$ 3,976.31
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,666	CY	Q*1.25	$ 2.26	$ 11,170.06
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709	CY	Q*1.25	$ 2.26	$ 11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709	CY	Q*1.25	$ 2.26	$ 11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709	CY	Q*1.25	$ 2.26	$ 11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,709	CY	Q*1.25	$ 2.26	$ 11,273.00
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	8,376	CY	Q*1.25	$ 2.26	$ 20,051.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	8,376	CY	Q*1.25	$ 2.26	$ 20,051.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	8,376	CY	Q*1.25	$ 2.26	$ 20,051.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298	CY	Q*1.25	$ 2.26	$ 24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298	CY	Q*1.25	$ 2.26	$ 24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298	CY	Q*1.25	$ 2.26	$ 24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,298	CY	Q*1.25	$ 2.26	$ 24,652.66
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,535	CY	Q	$ 2.26	$ 25,220.02
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,435	CY	Q*1.25	$ 2.26	$ 27,374.56
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	15,618	CY	Q*1.25	$ 2.26	$ 37,388.35
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,318	CY	Q*1.25	$ 2.26	$ 43,851.96
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,318	CY	Q*1.25	$ 2.26	$ 43,851.96
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	19,832	CY	Q*1.25	$ 2.26	$ 47,476.36
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23,005	CY	Q*1.25	$ 2.26	$ 55,072.29
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	26,458	CY	Q*1.25	$ 2.26	$ 63,338.53
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	46,525	CY	Q*1.25	$ 2.26	$ 111,377.46
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	70,224	CY	Q*1.25	$ 2.26	$ 168,111.14
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,000	CY	Q	$ 2.26	$ 9,575.71
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,000	CY	Q	$ 2.26	$ 9,575.71
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834	CY	Q*1.25	$ 2.26	$ 13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834	CY	Q*1.25	$ 2.26	$ 13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,834	CY	Q*1.25	$ 2.26	$ 13,966.17
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302	CY	Q*1.25	$ 2.26	$ 27,056.16
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302	CY	Q*1.25	$ 2.26	$ 27,056.16
USR	Z		Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	11,302	CY	Q*1.25	$ 2.26	$ 27,056.16
			Canal/Culvert Excavation to Stockpile [3.5-cy hydraul. excavators] Total		**402,783**				**$ 964,233.11**
				EXCAVATION	**3,430,539**	**CY**		**$ 2.39**	**$ 8,212,460.48**

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	312316421200		Excavating, bulk bank measure, 1-1/2 C.Y. capacity = 70 C.Y./hour, front end loader, track mounted, excluding truck loading		163	BCY	Q*.5/27	$ 1.45	$ 265.63
RSM	312316421200		Excavating, bulk bank measure, 1-1/2 C.Y. capacity = 70 C.Y./hour, front end loader, track mounted, excluding truck loading		207	BCY	Q*.5/27	$ 1.45	$ 337.34
RSM	312316421200		Excavating, bulk bank measure, 1-1/2 C.Y. capacity = 70 C.Y./hour, front end loader, track mounted, excluding truck loading		252	BCY	Q*.5/27	$ 1.45	$ 410.67
			Excavating, bulk bank measure, 1-1/2 C.Y. capacity = 70 C.Y./hour, front end loader, track mounted, excluding truck loading Total		**622**				**$ 1,013.64**
				EXCAVATION (Bank Measure)	**622**	**BCY**		**$ 1.63**	**$ 1,013.64**
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,163	BCY	Q	$ 1.13	$ 5,007.72
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	432,733	BCY	Q	$ 1.13	$ 520,539.10
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	140,521	BCY	Q	$ 1.13	$ 169,034.20
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,267	BCY	Q	$ 1.13	$ 1,524.09
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368	BCY	Q	$ 1.13	$ 2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368	BCY	Q	$ 1.13	$ 2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368	BCY	Q	$ 1.13	$ 2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,368	BCY	Q	$ 1.13	$ 2,848.49
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,212	BCY	Q	$ 1.13	$ 5,066.66
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,212	BCY	Q	$ 1.13	$ 5,066.66
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,441	BCY	Q	$ 1.13	$ 5,342.13
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,171	BCY	Q	$ 1.13	$ 6,220.25
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,846	BCY	Q	$ 1.13	$ 7,032.22
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	10,256	BCY	Q	$ 1.13	$ 12,337.05
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	18,553	BCY	Q	$ 1.13	$ 22,317.60
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	79,700	BCY	Q	$ 1.13	$ 95,871.97
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	98,546	BCY	Q	$ 1.13	$ 118,542.02
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	123,941	BCY	Q	$ 1.13	$ 149,089.94
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	162,484	BCY	Q	$ 1.13	$ 195,453.72
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	286,571	BCY	Q	$ 1.13	$ 344,719.28
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	359,300	BCY	Q	$ 1.13	$ 432,205.76
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	752,217	BCY	Q	$ 1.13	$ 904,849.77
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	847,992	BCY	Q	$ 1.13	$ 1,020,058.53
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,809,142	BCY	Q	$ 1.13	$ 2,176,236.02
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,865,367	BCY	Q	$ 1.13	$ 2,243,869.67
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3,062,006	BCY	Q	$ 1.13	$ 3,683,319.36
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162	BCY	Q	$ 1.13	$ 1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162	BCY	Q	$ 1.13	$ 1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,162	BCY	Q	$ 1.13	$ 1,397.78
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,388	BCY	Q	$ 1.13	$ 1,658.96
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,388	BCY	Q	$ 1.13	$ 1,658.96
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	17,059	BCY	Q	$ 1.13	$ 20,389.21
USR	Z		Excavate, Push Muck to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	17,059	BCY	Q	$ 1.13	$ 20,389.21
			Excavate, Push Muck to Stockpile [Dozer] Total		**10,128,493**				**$ 12,183,387.36**
				EXCAVATION (Push to Stockpile)	**10,128,493**	**BCY**		**$ 1.20**	**$ 12,183,387.36**
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,121	CY	Q*1.25	$ 4.92	$ 10,967.78
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,842	CY	Q*1.25	$ 4.92	$ 14,696.10
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446	CY	Q*1.25	$ 4.92	$ 22,990.44
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698	CY	Q*1.25	$ 4.92	$ 29,464.59
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731	CY	Q*1.25	$ 4.92	$ 50,319.39
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406	CY	Q*1.25	$ 4.92	$ 79,665.04
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551	CY	Q*1.25	$ 4.92	$ 514,782.19
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376	CY	Q*1.25	$ 4.92	$ 725,889.89

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065	CY	Q*1.25	$ 4.92	$ 951,807.45
USR	Z		Blasted Rock Processing [Crushing Plant]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025	CY	Q*1.25	$ 4.92	$ 1,173,955.32
			Blasted Rock Processing [Crushing Plant] Total		**691,261**				**$ 3,574,538.19**
				CRUSHING OF BLASTED ROCK	**691,261**	**CY**		**$ 5.17**	**$ 3,574,538.19**
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		15,553	BCY	Q	$ 7.78	$ 129,219.79
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.	Drilling for blast holes.	1,788,503	BCY	Q	$ 7.78	$ 14,859,511.05
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.	Drilling for blast holes.	898,659	BCY	Q	$ 7.78	$ 7,466,374.58
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		3,733	BCY	Q	$ 7.78	$ 31,015.08
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		8,238	BCY	Q	$ 7.78	$ 68,444.20
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		8,238	BCY	Q	$ 7.78	$ 68,444.20
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		8,238	BCY	Q	$ 7.78	$ 68,444.20
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		8,238	BCY	Q	$ 7.78	$ 68,444.20
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		14,654	BCY	Q	$ 7.78	$ 121,750.58
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		14,654	BCY	Q	$ 7.78	$ 121,750.58
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		15,866	BCY	Q	$ 7.78	$ 131,820.30
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		18,404	BCY	Q	$ 7.78	$ 152,906.90
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		21,166	BCY	Q	$ 7.78	$ 175,854.56
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		37,220	BCY	Q	$ 7.78	$ 309,236.83
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		80,577	BCY	Q	$ 7.78	$ 669,462.01
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		81,370	BCY	Q	$ 7.78	$ 676,050.54
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		121,592	BCY	Q	$ 7.78	$ 1,010,229.04
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		219,430	BCY	Q	$ 7.78	$ 1,823,101.50
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		330,445	BCY	Q	$ 7.78	$ 2,745,453.11
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		662,332	BCY	Q	$ 7.78	$ 5,502,886.87
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		710,693	BCY	Q	$ 7.78	$ 5,904,687.04
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		2,874,312	BCY	Q	$ 7.78	$ 23,880,793.56
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		4,260,986	BCY	Q	$ 7.78	$ 35,401,768.16
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		4,860,680	BCY	Q	$ 7.78	$ 40,384,236.52
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		5,028,554	BCY	Q	$ 7.78	$ 41,778,992.67
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		4,667	BCY	Q	$ 7.78	$ 38,775.08
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		4,667	BCY	Q	$ 7.78	$ 38,775.08
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		4,667	BCY	Q	$ 7.78	$ 38,775.08
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		1,664	BCY	Q	$ 7.78	$ 13,772.67
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		1,664	BCY	Q	$ 7.78	$ 13,772.67
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		15,556	BCY	Q	$ 7.78	$ 128,754.57
RSM	312316300250		Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y.		15,556	BCY	Q	$ 7.78	$ 128,754.57
			Drilling and blasting rock, areas where blasting mats are required, over 1500 C.Y. Total		**22,140,776**				**$ 183,952,257.79**
				DRILLING & BLASTING	**22,140,776**	**BCY**		**$ 8.31**	**$ 183,952,257.79**
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	19,441	LCY	Q*1.25	$ 2.63	$ 53,740.44
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	43,061	LCY	Q*1.25	$ 2.63	$ 119,032.82
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,496	LCY	Q*1.5	$ 2.63	$ 6,866.02
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,496	LCY	Q*1.5	$ 2.63	$ 6,866.02
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23,334	LCY	Q*1.5	$ 2.63	$ 64,187.34
USR	Z		Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	23,334	LCY	Q*1.5	$ 2.63	$ 64,187.34
			Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.] Total		**114,162**				**$ 314,879.98**
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	13,181	LCY	Q	$ 2.63	$ 36,436.02
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	53,527	LCY	Q	$ 2.63	$ 147,963.82
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	101,712	LCY	Q*1.25	$ 2.63	$ 281,160.83
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	107,288	LCY	Q	$ 2.63	$ 296,574.48

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USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	274,288	LCY	Q*1.25	$ 2.63	$ 758,209.87
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	382,721	LCY	Q	$ 2.63	$ 1,057,949.45
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	413,056	LCY	Q*1.25	$ 2.63	$ 1,141,804.00
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	827,915	LCY	Q*1.25	$ 2.63	$ 2,288,592.01
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	888,366	LCY	Q*1.25	$ 2.63	$ 2,455,695.73
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,288,606	LCY	Q*1.25	$ 2.63	$ 3,562,072.67
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,111,935	LCY	Q*1.25	$ 2.63	$ 5,837,987.67
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,256,522	LCY	Q*1.25	$ 2.63	$ 6,237,667.17
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,917,951	LCY	Q	$ 2.63	$ 8,066,044.63
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3,592,890	LCY	Q*1.25	$ 2.63	$ 9,931,767.56
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,326,232	LCY	Q*1.25	$ 2.63	$ 14,723,216.74
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6,075,850	LCY	Q*1.25	$ 2.63	$ 16,795,373.63
USR	Z		Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6,285,692	LCY	Q*1.25	$ 2.63	$ 17,375,436.46
			Excavate Blasted Rock to Stockpile, Levees [3.5-cy Hydraul. Excav.] Total		**32,917,732**				**$ 90,993,952.74**
				HANDLING OF BLASTED MATERIAL (To Stockpile)	**33,031,894**	**LCY**		**$ 2.76**	**$ 91,308,832.72**
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 3.68	$ 17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 3.68	$ 17,535.54
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,506	LCY	Q*1.25	$ 3.68	$ 17,177.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,121	LCY	Q*1.25	$ 3.68	$ 8,085.41
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,121	LCY	Q*1.25	$ 3.68	$ 8,085.41
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,842	LCY	Q*1.25	$ 3.68	$ 10,833.91
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,842	LCY	Q*1.25	$ 3.68	$ 10,833.91
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446	LCY	Q*1.25	$ 3.68	$ 16,948.48
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,446	LCY	Q*1.25	$ 3.68	$ 16,948.48
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,152	LCY	Q*1.25	$ 3.68	$ 19,639.80
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698	LCY	Q*1.25	$ 3.68	$ 21,721.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,698	LCY	Q*1.25	$ 3.68	$ 21,721.20
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731	LCY	Q*1.25	$ 3.68	$ 37,095.29
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,731	LCY	Q*1.25	$ 3.68	$ 37,095.29
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	13,376	LCY	Q*5280*30*1/27	$ 3.68	$ 50,990.30
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406	LCY	Q*1.25	$ 3.68	$ 58,728.81
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	15,406	LCY	Q*1.25	$ 3.68	$ 58,728.81
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	96,037	LCY	Q*5280*30*1/27	$ 3.68	$ 366,100.13
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551	LCY	Q*1.25	$ 3.68	$ 379,495.75
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	99,551	LCY	Q*1.25	$ 3.68	$ 379,495.75
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	103,253	LCY	Q*5280*30*1/27	$ 3.68	$ 393,608.05
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376	LCY	Q*1.25	$ 3.68	$ 535,123.67
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	140,376	LCY	Q*1.25	$ 3.68	$ 535,123.67
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065	LCY	Q*1.25	$ 3.68	$ 701,669.36
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	184,065	LCY	Q*1.25	$ 3.68	$ 701,669.36
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025	LCY	Q*1.25	$ 3.68	$ 865,436.04
USR	Z		Load and Haul Rock, to/from Process Plant [on-site, 10-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	227,025	LCY	Q*1.25	$ 3.68	$ 865,436.04
			Load and Haul Rock, to/from Process Plant [on-site, 10-mile] Total		**1,623,246**				**$ 6,187,933.48**
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,496	LCY	Q*1.5	$ 4.43	$ 11,392.84
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,496	LCY	Q*1.5	$ 4.43	$ 11,392.84
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	23,334	LCY	Q*1.5	$ 4.43	$ 106,506.62
USR	Z		Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	23,334	LCY	Q*1.5	$ 4.43	$ 106,506.62

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
			Load and Haul Rock, to/from Stockpile [on-site, 1-mile] Total		**51,660**				**$ 235,798.92**
				LOAD & HAUL	**1,674,906**	**LCY**		**$ 3.84**	**$ 6,423,732.40**
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,235,629	LCY	Q*1.25	$ 2.99	$ 7,156,552.96
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,123,324	LCY	Q*1.25	$ 2.99	$ 3,595,913.14
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	81,849	LCY	Q*1.25	$ 2.99	$ 262,009.80
USR	Z		Material Handling Between Stockpiles [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	91,182	LCY	Q*1.25	$ 2.99	$ 291,886.00
			Material Handling Between Stockpiles [Dozers] Total		**3,531,984**				**$ 11,306,361.90**
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 2.99	$ 14,725.23
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	100,721	LCY	Q*1.25	$ 2.99	$ 322,421.64
USR	Z		Material Handling Between Stockpiles, Canals/Culverts [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	151,990	LCY	Q*1.25	$ 2.99	$ 486,540.69
			Material Handling Between Stockpiles, Canals/Culverts [Dozers] Total		**280,311**				**$ 897,313.71**
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	19,441	LCY	Q*1.25	$ 3.42	$ 70,782.70
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	43,061	LCY	Q*1.25	$ 3.42	$ 156,780.72
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	16,476	LCY	Q*1.25	$ 3.42	$ 59,987.44
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	66,909	LCY	Q*1.25	$ 3.42	$ 243,608.86
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	101,712	LCY	Q*1.25	$ 3.42	$ 370,323.04
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	134,110	LCY	Q*1.25	$ 3.42	$ 488,280.86
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	274,288	LCY	Q*1.25	$ 3.42	$ 998,654.70
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	413,056	LCY	Q*1.25	$ 3.42	$ 1,503,894.87
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	478,401	LCY	Q*1.25	$ 3.42	$ 1,741,809.36
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	827,915	LCY	Q*1.25	$ 3.42	$ 3,014,354.27
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	888,366	LCY	Q*1.25	$ 3.42	$ 3,234,450.21
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,288,606	LCY	Q*1.25	$ 3.42	$ 4,691,683.33
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,111,935	LCY	Q*1.25	$ 3.42	$ 7,689,340.44
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,256,522	LCY	Q*1.25	$ 3.42	$ 8,215,767.00
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3,592,890	LCY	Q*1.25	$ 3.42	$ 13,081,346.91
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3,647,439	LCY	Q*1.25	$ 3.42	$ 13,279,954.27
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	6,075,850	LCY	Q*1.25	$ 3.42	$ 22,121,551.62
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	6,285,692	LCY	Q*1.25	$ 3.42	$ 22,885,564.99
USR	Z		Material Handling Between Stockpiles, Levees [Dozers]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	9,503,045	LCY	Q*1.25	$ 3.42	$ 34,599,619.89
			Material Handling Between Stockpiles, Levees [Dozers] Total		**38,025,714**				**$ 138,447,755.48**
				MATERIAL HANDLING (Between Stockpiles)	**41,838,009**	**LCY**		**$ 3.60**	**$ 150,651,431.09**
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
USR	Z		Excavate to Stockpile [3.5-cy Hydraul. Excav.]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated	4,600	LCY	Q*1.15	$ 4.91	$ 23,902.66
			Excavate to Stockpile [3.5-cy Hydraul. Excav.] Total		**27,600**				**$ 143,415.96**
				HANDLING OF EXCAVATED MATERIAL (To Stockpile)	**27,600**	LCY		**$ 5.20**	**$ 143,415.96**
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
USR	Z		Push Material to Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,600	LCY	Q*1.15	$ 1.49	$ 7,299.36
			Push Material to Stockpile [Dozer] Total		**27,600**				**$ 43,796.16**
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	4,996	BCY	Q*1.2	$ 1.41	$ 7,527.35
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	519,280	BCY	Q*1.2	$ 1.41	$ 782,386.64

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	168,625	BCY	Q*1.2	$ 1.41	$ 254,063.22
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,520	BCY	Q*1.2	$ 1.41	$ 2,290.15
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842	BCY	Q*1.2	$ 1.41	$ 4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842	BCY	Q*1.2	$ 1.41	$ 4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842	BCY	Q*1.2	$ 1.41	$ 4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,842	BCY	Q*1.2	$ 1.41	$ 4,281.97
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,054	BCY	Q*1.2	$ 1.41	$ 7,614.74
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,054	BCY	Q*1.2	$ 1.41	$ 7,614.74
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	5,329	BCY	Q*1.2	$ 1.41	$ 8,029.08
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	6,205	BCY	Q*1.2	$ 1.41	$ 9,348.92
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	7,015	BCY	Q*1.2	$ 1.41	$ 10,569.33
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	12,307	BCY	Q*1.2	$ 1.41	$ 18,542.66
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	22,264	BCY	Q*1.2	$ 1.41	$ 33,544.63
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	66,416	BCY	Q*1.2	$ 1.41	$ 100,067.38
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	103,284	BCY	Q*1.2	$ 1.41	$ 155,615.51
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	118,255	BCY	Q*1.2	$ 1.41	$ 178,171.95
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	236,462	BCY	Q*1.2	$ 1.41	$ 356,271.59
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	238,810	BCY	Q*1.2	$ 1.41	$ 359,809.26
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	359,302	BCY	Q*1.2	$ 1.41	$ 541,351.65
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	902,660	BCY	Q*1.2	$ 1.41	$ 1,360,016.03
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,554,653	BCY	Q*1.2	$ 1.41	$ 2,342,358.14
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,170,970	BCY	Q*1.2	$ 1.41	$ 3,270,948.08
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	2,238,440	BCY	Q*1.2	$ 1.41	$ 3,372,603.50
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	3,674,407	BCY	Q*1.2	$ 1.41	$ 5,536,140.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394	BCY	Q*1.2	$ 1.41	$ 2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394	BCY	Q*1.2	$ 1.41	$ 2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,394	BCY	Q*1.2	$ 1.41	$ 2,100.31
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,735	BCY	Q*1.25	$ 1.41	$ 2,597.36
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	1,735	BCY	Q*1.25	$ 1.41	$ 2,597.36
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	21,324	BCY	Q*1.25	$ 1.41	$ 31,922.87
USR	Z		Push Muck to Place, from Stockpile [Dozer]	Quantity: Based on quantity calculations provided in the cost engineering report; Output: Based on estimated production rate calculation provided in cost engineering report.	21,324	BCY	Q*1.25	$ 1.41	$ 31,922.87
			Push Muck to Place, from Stockpile [Dozer] Total		**12,482,976**				**$ 18,807,354.13**
				HANDLING OF EXCAVATED MATERIAL (Push to Stockpile)	**22,639,069**	**LCY**		**$ 1.37**	**$ 31,034,537.65**
RSM	312323156000	OLE	Borrow, clay, till, or blasted rock, 1 C.Y. bucket, loading and/or spreading, shovel	Item used to account for material cost for bentonite core fill in levee.	409,334	BCY	<none>	$ 12.40	$ 5,380,286.10
RSM	312323156000	OLE	Borrow, clay, till, or blasted rock, 1 C.Y. bucket, loading and/or spreading, shovel	Item used to account for material cost for bentonite core fill in levee.	545,956	BCY	<none>	$ 12.40	$ 7,176,045.66
RSM	312323156000	OLE	Borrow, clay, till, or blasted rock, 1 C.Y. bucket, loading and/or spreading, shovel	Item used to account for material cost for bentonite core fill in levee.	828,617	BCY	<none>	$ 12.40	$ 10,891,341.85
RSM	312323156000	OLE	Borrow, clay, till, or blasted rock, 1 C.Y. bucket, loading and/or spreading, shovel	Item used to account for material cost for bentonite core fill in levee.	909,927	BCY	<none>	$ 12.40	$ 11,960,080.49
			Borrow, clay, till, or blasted rock, 1 C.Y. bucket, loading and/or spreading, shovel Total		**2,693,834**				**$ 35,407,754.10**
RSM	312323155070		Borrow, select granular fill, 3 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		18,979	BCY	Q*18979	$ 22.28	$ 448,677.09
			Borrow, select granular fill, 3 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted Total		**18,979**				**$ 448,677.09**
RSM	312323155020		Borrow, select granular fill, 3 C.Y. bucket, loading and/or spreading, shovel		3,000	BCY	Q/27	$ 22.50	$ 71,635.68
RSM	312323155020		Borrow, select granular fill, 3 C.Y. bucket, loading and/or spreading, shovel		3,000	BCY	Q/27	$ 22.50	$ 71,635.68
			Borrow, select granular fill, 3 C.Y. bucket, loading and/or spreading, shovel Total		**6,000**				**$ 143,271.36**
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		225	BCY	Q*225	$ 22.68	$ 5,420.39
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		350	BCY	Q*350	$ 22.68	$ 8,431.71
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		450	BCY	Q*450	$ 22.68	$ 10,840.77

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		675	BCY	Q*225	$ 22.68	$ 16,261.16
RSM	312323155050		Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted		25,000	BCY	Q*25000	$ 22.68	$ 602,265.23
			Borrow, select granular fill, 3/4 C.Y. bucket, loading and/or spreading, front end loader, wheel mounted Total		**27,825**				**$ 670,321.21**
RSM	312323160035		Fill by borrow and utility bedding, borrow, select fill for shoulders and embankments, spread fill, with front-end loader	<none>	67	LCY	<none>	$ 23.49	$ 1,668.71
			Fill by borrow and utility bedding, borrow, select fill for shoulders and embankments, spread fill, with front-end loader Total		**67**				**$ 1,668.71**
				FILL/BACKFILL (Borrow Supply)	**2,746,705**	**BCY**		**$ 13.35**	**$ 36,671,692.47**
USR	Z		Fill and Compact Base [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	887	LCY	<none>	$ 5.77	$ 5,464.47
USR	Z		Fill and Compact Base [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	905	LCY	<none>	$ 5.77	$ 5,575.37
			Fill and Compact Base [Front End Loader, Compactor] Total		**1,792**				**$ 11,039.84**
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 5.83	$ 28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 5.83	$ 28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	731	LCY	<none>	$ 5.83	$ 4,543.99
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	423	LCY	Q*1.386	$ 5.83	$ 2,629.42
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	423	LCY	Q*1.386	$ 5.83	$ 2,629.42
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 5.83	$ 28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 5.83	$ 28,594.18
USR	Z		Fill and Compact Random Fill [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 5.83	$ 28,594.18
			Fill and Compact Random Fill [Front End Loader, Compactor] Total		**24,577**				**$ 152,773.73**
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 4.64	$ 22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	2,235,629	LCY	Q*1.25	$ 4.64	$ 10,998,980.05
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 4.64	$ 22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,123,324	LCY	Q*1.25	$ 4.64	$ 5,526,595.99
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,506	LCY	Q*1.25	$ 4.64	$ 22,168.89
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,600	LCY	Q*1.15	$ 4.64	$ 22,631.35
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	170,940	LCY	Q*1.25	$ 4.64	$ 841,000.74
USR	Z		Fill and Compact Random Fill, Canals [Dozers, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	369,014	LCY	Q*1.25	$ 4.64	$ 1,815,496.95
			Fill and Compact Random Fill, Canals [Dozers, Compactor] Total		**3,917,213**				**$ 19,272,136.67**
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	55,442	LCY	Q*1.25	$ 5.83	$ 344,634.49
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	274,288	LCY	Q*1.25	$ 5.83	$ 1,705,008.95
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	367,749	LCY	Q*1.25	$ 5.83	$ 2,285,974.36
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	808,569	LCY	Q*1.25	$ 5.83	$ 5,026,167.31
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	1,091,624	LCY	Q*1.25	$ 5.83	$ 6,785,673.04
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	3,439,636	LCY	Q*1.25	$ 5.83	$ 21,381,213.01
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,380,532	LCY	Q*1.25	$ 5.83	$ 33,446,068.36
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	5,885,208	LCY	Q*1.25	$ 5.83	$ 36,583,198.30
USR	Z		Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	8,864,024	LCY	Q*1.25	$ 5.83	$ 55,099,895.82
			Fill and Compact Random Fill, Levee Build Up [Front End Loader, Compactor] Total		**26,167,072**				**$ 162,657,833.64**
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	13,376	LCY	Q*5280*30*1/27	$ 2.16	$ 30,942.75
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	96,037	LCY	Q*5280*30*1/27	$ 2.16	$ 222,162.76
USR	Z		Fill and Compact Road Stone	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	103,253	LCY	Q*5280*30*1/27	$ 2.16	$ 238,855.56
			Fill and Compact Road Stone Total		**212,666**				**$ 491,961.07**
				FILL / BACKFILL	**30,323,320**	**LCY**		**$ 6.02**	**$ 182,585,744.95**
HNC	312216100020		Fine grade, for roadway, base or leveling course		5	MSY	Q*43560/9/1000	$ 545.20	$ 2,886.98
HNC	312216100020		Fine grade, for roadway, base or leveling course		10	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 5,834.10
HNC	312216100020		Fine grade, for roadway, base or leveling course		173	MSY	Q*5280*24/9/1000	$ 545.20	$ 104,051.50
HNC	312216100020		Fine grade, for roadway, base or leveling course		5	MSY	Q*43560/9/1000	$ 545.20	$ 2,886.98
HNC	312216100020		Fine grade, for roadway, base or leveling course		10	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 5,834.10
HNC	312216100020		Fine grade, for roadway, base or leveling course		159	MSY	Q*5280*24/9/1000	$ 545.20	$ 95,631.15
HNC	312216100020		Fine grade, for roadway, base or leveling course		15	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 8,721.08
HNC	312216100020		Fine grade, for roadway, base or leveling course		5	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 2,886.98
HNC	312216100020		Fine grade, for roadway, base or leveling course		15	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 8,721.08
HNC	312216100020		Fine grade, for roadway, base or leveling course		19	MSY	Q*43560/9/1000	$ 545.20	$ 11,668.20
HNC	312216100020		Fine grade, for roadway, base or leveling course		40	MSY	Q*5280*30/9/1000	$ 545.20	$ 24,058.15
HNC	312216100020		Fine grade, for roadway, base or leveling course		48	MSY	Q*10*43560/9/1000	$ 545.20	$ 29,110.36
HNC	312216100020		Fine grade, for roadway, base or leveling course		288	MSY	Q*5280*30/9/1000	$ 545.20	$ 173,218.68
HNC	312216100020		Fine grade, for roadway, base or leveling course		310	MSY	Q*5280*30/9/1000	$ 545.20	$ 186,450.67
HNC	312216100020		Fine grade, for roadway, base or leveling course		7	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 4,390.61
HNC	312216100020		Fine grade, for roadway, base or leveling course		5	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 3,031.02

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
HNC	312216100020		Fine grade, for roadway, base or leveling course		7	MSY	Q*43560/9/1000*0.5	$ 545.20	$ 4,349.65
			Fine grade, for roadway, base or leveling course Total		**1,120**				**$ 673,731.29**
				FINE GRADING, Roadway	**1,120**	MSY		**$ 601.55**	**$ 673,731.29**
RSM	312216100100		Fine grading, for roadway, base or leveling course, large area, 6,000 S.Y. or more	<none>	32,853	SY	Q*14/9	$ 0.52	$ 18,332.66
RSM	312216100100		Fine grading, for roadway, base or leveling course, large area, 6,000 S.Y. or more	<none>	32,853	SY	Q*14/9	$ 0.52	$ 18,332.66
			Fine grading, for roadway, base or leveling course, large area, 6,000 S.Y. or more Total		**65,706**				**$ 36,665.32**
RSM	312216100200		Fine grading, grade subgrade for base course, roadways	<none>	9,000	SY	Q/9	$ 0.30	$ 2,994.39
RSM	312216100200		Fine grading, grade subgrade for base course, roadways	<none>	9,000	SY	Q/9	$ 0.30	$ 2,994.39
			Fine grading, grade subgrade for base course, roadways Total		**18,000**				**$ 5,988.78**
RSM	312216103310		Fine grading, slopes, steep, finish grading	Grade slopes.	38,720	SY	<none>	$ 0.15	$ 6,127.98
RSM	312216103310		Fine grading, slopes, steep, finish grading	Grade slopes.	38,720	SY	<none>	$ 0.15	$ 6,127.98
RSM	312216103310		Fine grading, slopes, steep, finish grading	<none>	38,720	SY	<none>	$ 0.15	$ 6,127.98
RSM	312216103310		Fine grading, slopes, steep, finish grading	<none>	38,720	SY	<none>	$ 0.15	$ 6,127.98
			Fine grading, slopes, steep, finish grading Total		**154,880**				**$ 24,511.92**
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	Site graded to level and prep slope for seeding.	164	ACR	Q	$ 712.73	$ 125,427.25
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	Site graded to level and prep slope for seeding.	136	ACR	Q	$ 712.73	$ 104,012.84
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	8	ACR	Q	$ 712.73	$ 6,118.40
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	17	ACR	Q	$ 712.73	$ 13,001.61
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	23	ACR	Q	$ 712.73	$ 17,590.41
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	26	ACR	Q	$ 712.73	$ 19,884.81
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	36	ACR	Q	$ 712.73	$ 27,532.81
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	40	ACR	Q	$ 712.73	$ 30,592.01
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	48	ACR	Q	$ 712.73	$ 36,710.42
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	59	ACR	Q	$ 712.73	$ 45,123.22
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	75	ACR	Q	$ 712.73	$ 57,360.02
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	90	ACR	Q	$ 712.73	$ 68,832.03
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	104	ACR	Q	$ 712.73	$ 79,539.23
RSM	312216103312		Fine grading, slopes, steep, large quantities, finish grading	<none>	208	ACR	Q	$ 712.73	$ 159,078.47
			Fine grading, slopes, steep, large quantities, finish grading Total		**1,034**				**$ 790,803.53**
				FINE GRADING	**44,245,626**	**SY**		**$ 0.02**	**$ 857,969.55**
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab, w/ Phased Construction]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used. Also, the FDOT report noted a 20% increase to be included for phased construction. Given the two bridges located at this site, phasing would be required to complete, as traffic would be rerouted onto one side of the highway to complete one bridge.	11,200	SF	Q	$ 206.00	$ 2,307,200.00
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab, w/ Phased Construction]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used. Also, the FDOT report noted a 20% increase to be included for phased construction. Given the two bridges located at this site, phasing would be required to complete, as traffic would be rerouted onto one side of the highway to complete one bridge.	13,600	SF	Q	$ 206.00	$ 2,801,600.00
			New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab, w/ Phased Construction] Total		**24,800**				**$ 5,108,800.00**
USR	Z		New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab]	Sub Bid: Cost is based on Florida DOT Bridge Cost Report from 2014. Cost has been escalated to 2018 price levels, and reflects the Reinforced Concrete Flat Slab Simple Span item from the Florida DOT report. The report noted a range with low cost of $115/sf and a high of $160/sf. For this project, $160/sf with additional escalation has been used.	8,800	SF	Q	$ 171.75	$ 1,511,400.00
			New Bridge Installation Cost [Short Span, Reinf. Concrete Flat Slab] Total		**8,800**				**$ 1,511,400.00**
					33,600	SF		**$ 197.03**	**$ 6,620,200.00**
HNC	331113401330		Pipe, black steel, plain end, welded, 1" wall thickness, 144" diameter, excludes excavation or backfill		1,632	LF	<none>	$ 3,406.61	$ 5,923,290.77
			Pipe, black steel, plain end, welded, 1" wall thickness, 144" diameter, excludes excavation or backfill Total		**1,632**				**$ 5,923,290.77**
HNC	331113401290		Pipe, black steel, plain end, welded, 7/8" wall thickness, 120" diameter, excludes excavation or backfill		816	LF	<none>	$ 2,535.41	$ 2,207,254.87
			Pipe, black steel, plain end, welded, 7/8" wall thickness, 120" diameter, excludes excavation or backfill Total		**816**				**$ 2,207,254.87**
HNC	331113401270		Pipe, black steel, plain end, welded, 7/8" wall thickness, 96" diameter, excludes excavation or backfill		1,224	LF	<none>	$ 2,374.37	$ 3,099,807.27
			Pipe, black steel, plain end, welded, 7/8" wall thickness, 96" diameter, excludes excavation or backfill Total		**1,224**				**$ 3,099,807.27**
				DISCHARGE PIPING	**3,672**	LF		**$ 3,058.37**	**$ 11,230,352.91**
USR	Z		Pump, 200 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received February 2018.	3	EA	<none>	$ 600,000.00	
			Pump, 200 cfs [Material and Installation] Total		**3**				**$ 1,800,000.00**
USR	Z		Pump, 400 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received February 2018.	2	EA	<none>	$ 2,400,900.00	$ 4,801,800.00
			Pump, 400 cfs [Material and Installation] Total		**2**				**$ 4,801,800.00**
USR	Z		Pump, 800 cfs [Material and Installation]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Patterson Pump Company (C. Steve McIntyre, 706-886-2101). Quote received January 2018.	4	EA	<none>	$ 10,300,000.00	$ 41,200,000.00
			Pump, 800 cfs [Material and Installation] Total		**4**				**$ 41,200,000.00**
USR	Z		Pumps for 300 cfs Pump Station [Materials]	Quantity: Based on estimated number of pumps required; Sub Bid: Based on material and installation quote provided by Creel Pump Inc. (863-465-5757). Quote received July 2015 and escalated to 2Q18 price levels.	6	EA	<none>	$ 120,750.00	$ 724,500.00
			Pumps for 300 cfs Pump Station [Materials] Total		**6**				**$ 724,500.00**
				PUMPS	**15**	EA		**$ 3,235,086.67**	**$ 48,526,300.00**
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		30,800	SF	<none>	$ 14.30	$ 505,390.13
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		35,700	SF	<none>	$ 14.30	$ 585,793.10
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		35,700	SF	<none>	$ 14.30	$ 585,793.10
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		35,700	SF	<none>	$ 14.30	$ 585,793.10

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		35,700	SF	<none>	$ 14.30	$ 585,793.10
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		48,000	SF	<none>	$ 14.30	$ 787,620.98
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		49,000	SF	<none>	$ 14.30	$ 804,029.75
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		49,000	SF	<none>	$ 14.30	$ 804,029.75
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		52,000	SF	<none>	$ 14.30	$ 853,256.06
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		54,000	SF	<none>	$ 14.30	$ 886,073.60
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		75,320	SF	<none>	$ 14.30	$ 1,235,908.58
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		27,450	SF	<none>	$ 14.30	$ 450,420.75
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		27,450	SF	<none>	$ 14.30	$ 450,420.75
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		27,450	SF	<none>	$ 14.30	$ 450,420.75
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		7,200	SF	<none>	$ 14.30	$ 118,143.15
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		7,200	SF	<none>	$ 14.30	$ 118,143.15
RSM	314116101600		Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales		78,241	SF	<none>	$ 14.30	$ 1,199,886.21
			Sheet piling, steel, 27 psf, 20' excavation, per S.F., drive, extract and salvage, excludes wales Total		**675,911**				**$ 11,006,916.01**
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	10,800	SF	<none>	$ 26.41	$ 309,167.98
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	10,800	SF	<none>	$ 26.41	$ 309,167.98
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	4,800	SF	Q	$ 26.41	$ 137,407.99
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	2,580	SF	<none>	$ 26.41	$ 73,856.80
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	2,580	SF	<none>	$ 26.41	$ 73,856.80
RSM	314116101500		Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales	<none>	9,980	SF	<none>	$ 26.41	$ 285,694.12
			Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales Total		**79,940**				**$ 2,288,415.59**
				SHEET PILING	**755,851**	SF		**$ 17.59**	**$ 13,295,331.60**
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	78,588	CY	Q*46*3/27	$ 285.00	$ 22,397,580.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	104,819	CY	Q*46*3/27	$ 285.00	$ 29,873,415.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	134,637	CY	Q*46*3/27	$ 285.00	$ 38,371,545.00
USR	Z		Slurry Wall Installation	Sub Bid: Cost based on quote provided by Thrift Contracting (Allen Thrift, (772) 486-2600) for full installation of slurry wall. Unit price includes mob/demob, site prep, dewatering, and all other miscellaneous contractor needs in addition to slurry wall install.	159,160	CY	Q*46*3/27	$ 285.00	$ 45,360,600.00
			Slurry Wall Installation Total		**477,204**				**$ 136,003,140.00**
				SLURRY WALL	**477,204**	**CY**		**$ 285.00**	**$ 136,003,140.00**
USR	Z		Place Riprap [Hydraul. Excavat.]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,266	LCY	<none>	$ 2.62	$ 12,046.31
USR	Z		Place Riprap [Hydraul. Excavat.]	Quantity: Based on calculations provided in the cost engineering report; Productivity: Based on estimated production rate calculation provided in the cost engineering report.	4,351	LCY	<none>	$ 2.62	$ 12,286.33
			Place Riprap [Hydraul. Excavat.] Total		**8,617**				**$ 24,332.64**
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		87	LCY	Q*1.15	$ 40.57	$ 3,756.41
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		2,085	LCY	Q*1.15	$ 40.57	$ 90,024.29
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,330	LCY	Q*1.15	$ 40.57	$ 186,956.92
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		5,359	LCY	Q*1.15	$ 40.57	$ 231,386.17
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		5,619	LCY	Q*1.15	$ 40.57	$ 242,612.22
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		6,647	LCY	Q*1.15	$ 40.57	$ 286,998.30
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		1,285	LCY	Q*1.15	$ 40.57	$ 55,482.60
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		1,285	LCY	Q*1.15	$ 40.57	$ 55,482.60
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		1,285	LCY	Q*1.15	$ 40.57	$ 55,482.60
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		2,805	LCY	Q*1.15	$ 40.57	$ 120,972.26
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		2,805	LCY	Q*1.15	$ 40.57	$ 120,972.26
HNC	313713100230		Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces		4,797	LCY	Q*1.15	$ 40.57	$ 206,881.98
			Rip-rap, random pieces, dumped from truck, 10 - 200 pound pieces Total		**60,039**				**$ 2,591,793.21**
				RIP RAP	**68,656**	**LCY**		**$ 38.10**	**$ 2,616,125.85**
RSM	315216102750		Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximum	<none>	5,760	LF	<none>	$ 44.74	$ 329,981.40
RSM	315216102750		Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximum	<none>	5,760	LF	<none>	$ 44.74	$ 329,981.40
RSM	315216102750		Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximum	<none>	5,760	LF	<none>	$ 44.74	$ 329,981.40
			Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximum Total		**17,280**				**$ 989,944.20**
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 3 piles each 40-ft deep	120	VLF	<none>	$ 24.87	$ 3,199.22

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 3 piles each 40-ft deep	120	VLF	<none>	$ 24.87	$ 3,199.22
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 3 piles each 40-ft deep	120	VLF	<none>	$ 24.87	$ 3,199.22
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 3 piles each 40-ft deep	120	VLF	<none>	$ 24.87	$ 3,199.22
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 6 piles each 40-ft deep	240	VLF	<none>	$ 24.87	$ 6,398.44
RSM	316223132600		Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization	Assumes 3 piles each 40-ft deep	120	VLF	<none>	$ 24.87	$ 3,191.24
			Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF, excludes mobilization or demobilization Total		**2,760**				**$ 73,574.08**
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
RSM	260533252250		Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter	<none>	1	EA	<none>	$ 291.54	$ 313.80
			Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter Total		**13**				**$ 4,079.40**
USR	Z		Courtesy Dock [Material and Installation]	Quantity: Based on estimated number of docks required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	$ 10,000.00	$ 10,000.00
USR	Z		Courtesy Dock [Material and Installation]	Quantity: Based on estimated number of docks required; Sub Bid: Based on full installation costs provided by XXXXXX.	5	EA	Q	$ 10,000.00	$ 50,000.00
			Courtesy Dock [Material and Installation] Total		**6**				**$ 60,000.00**
RSM	312323201504		Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 25 min load/wait/unload, 12 C.Y. truck, cycle 50 miles, 45 MPH, excludes loading equipment	<none>	407	LCY	Q*1/27*1.25	$ 8.66	$ 3,784.05
RSM	312323201504		Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 25 min load/wait/unload, 12 C.Y. truck, cycle 50 miles, 45 MPH, excludes loading equipment	<none>	519	LCY	Q*1/27*1.25	$ 8.66	$ 4,825.36
RSM	312323201504		Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 25 min load/wait/unload, 12 C.Y. truck, cycle 50 miles, 45 MPH, excludes loading equipment	<none>	630	LCY	Q*1/27*1.25	$ 8.66	$ 5,857.38
			Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 25 min load/wait/unload, 12 C.Y. truck, cycle 50 miles, 45 MPH, excludes loading equipment Total		**1,556**				**$ 14,466.79**
RSM	24113175200		Demolish, remove pavement & curb, remove concrete, mesh reinforced, to 6" thick, hydraulic hammer, excludes hauling and disposal fees	<none>	978	SY	Q/9	$ 5.61	$ 6,377.96
RSM	24113175200		Demolish, remove pavement & curb, remove concrete, mesh reinforced, to 6" thick, hydraulic hammer, excludes hauling and disposal fees	<none>	1,244	SY	Q/9	$ 5.61	$ 8,112.67
RSM	24113175200		Demolish, remove pavement & curb, remove concrete, mesh reinforced, to 6" thick, hydraulic hammer, excludes hauling and disposal fees	<none>	1,511	SY	Q/9	$ 5.61	$ 9,853.89
			Demolish, remove pavement & curb, remove concrete, mesh reinforced, to 6" thick, hydraulic hammer, excludes hauling and disposal fees Total		**3,733**				**$ 24,344.52**
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
RSM	87120400500		Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function	<none>	1	EA	<none>	$ 143.61	$ 154.75
			Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, keyed, single cylinder function Total		**13**				**$ 2,011.75**
HNC	81313130560		Doors, commercial, steel, flush, full panel, hollow core, 20 ga., 2'-0" x 7'-0" x 1-3/4" thick		4	EA	<none>	$ 435.61	$ 1,855.65
HNC	81313130560		Doors, commercial, steel, flush, full panel, hollow core, 20 ga., 2'-0" x 7'-0" x 1-3/4" thick		4	EA	<none>	$ 435.61	$ 1,855.65
HNC	81313130560		Doors, commercial, steel, flush, full panel, hollow core, 20 ga., 2'-0" x 7'-0" x 1-3/4" thick		4	EA	<none>	$ 435.61	$ 1,855.65
			Doors, commercial, steel, flush, full panel, hollow core, 20 ga., 2'-0" x 7'-0" x 1-3/4" thick Total		**12**				**$ 5,566.95**
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
RSM	81313130700		Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick	<none>	2	EA	<none>	$ 759.01	$ 1,616.87
			Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-0" x 1-3/4" thick Total		**26**				**$ 21,019.31**
RSM	83613200320		Doors, residential, garage, overhead, sectional, fiberglass, deluxe, 16' x 7', incl. hardware, excl. frame	<none>	1	EA	<none>	$ 2,202.03	$ 2,341.38
RSM	83613200320		Doors, residential, garage, overhead, sectional, fiberglass, deluxe, 16' x 7', incl. hardware, excl. frame	<none>	1	EA	<none>	$ 2,202.03	$ 2,341.38
RSM	83613200320		Doors, residential, garage, overhead, sectional, fiberglass, deluxe, 16' x 7', incl. hardware, excl. frame	<none>	1	EA	<none>	$ 2,202.03	$ 2,341.38
			Doors, residential, garage, overhead, sectional, fiberglass, deluxe, 16' x 7', incl. hardware, excl. frame Total		**3**				**$ 7,024.14**
RSM	233416107160		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 1450 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,671.21	$ 1,795.37
			Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 1450 CFM, 12" galvanized curb, 13" sq. damper Total		**1**				**$ 1,795.37**
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
RSM	233416107140		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper	<none>	1	EA	<none>	$ 1,110.82	$ 1,200.25
			Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, direct drive, 1/4" S.P., 815 CFM, 12" galvanized curb, 13" sq. damper Total		**13**				**$ 15,603.25**
RSM	233416107220		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 2750 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 1,785.82	$ 1,913.03

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
			Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 2750 CFM, 12" galvanized curb, 21" sq. damper Total		**1**				**$ 1,913.03**
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
RSM	233416107230		Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper	<none>	1	EA	<none>	$ 2,006.46	$ 2,152.17
			Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V belt drive, 1/4" S.P., 3500 CFM, 12" galvanized curb, 21" sq. damper Total		**13**				**$ 27,978.21**
RSM	323113200300		Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete	<none>	1,000	LF	Q	$ 22.37	$ 23,810.02
RSM	323113200300		Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete	<none>	1,000	LF	Q	$ 22.37	$ 23,810.02
RSM	323113200300		Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete	<none>	1,000	LF	Q	$ 22.37	$ 23,810.02
RSM	323113200300		Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete	<none>	2,280	LF	Q	$ 22.37	$ 54,225.40
RSM	323113200300		Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete	<none>	2,280	LF	Q	$ 22.37	$ 54,225.40
			Fence, chain link industrial, aluminized steel, 2" posts @ 10' OC, 3 strands barb wire, 9 ga. wire, 6' high, includes excavation, & concrete Total		**7,560**				**$ 179,880.86**
RSM	323113200940		Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire	<none>	1,000	LF	Q*1000	$ 41.65	$ 44,290.03
RSM	323113200940		Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire	<none>	1,000	LF	Q*1000	$ 41.65	$ 44,290.03
RSM	323113200940		Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire	<none>	2,500	LF	Q*2500	$ 41.65	$ 110,725.07
RSM	323113200940		Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire	<none>	2,280	LF	<none>	$ 41.65	$ 100,899.34
			Fence, chain link industrial, aluminized steel, 6 ga. wire, 2-1/2" posts @ 10' OC, 8' high, includes excavation, in concrete, excludes barbed wire Total		**6,780**				**$ 300,204.47**
USR	Z		ADA Fishing Platform [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 50,000.00	$ 52,100.00
			ADA Fishing Platform [Material and Installation] Total		**1**				**$ 52,100.00**
USR	Z		Airboat Crossing [Material and Installation]	Quantity: Based on estimated number of airboat crossings required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	$ 75,000.00	$ 75,000.00
			Airboat Crossing [Material and Installation] Total		**1**				**$ 75,000.00**
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
RSM	230593103600		Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor)	<none>	6	EA	<none>	$ 420.00	$ 2,520.00
			Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers, laboratory fume hood, (Subcontractor's quote including material & labor) Total		**78**				**$ 32,760.00**
RSM	15623100850		Barricades, traffic cones, PVC, 28" high	<none>	100	EA	<none>	$ 20.50	$ 2,173.00
RSM	15623100850		Barricades, traffic cones, PVC, 28" high	<none>	200	EA	<none>	$ 20.50	$ 4,346.00
RSM	15623100850		Barricades, traffic cones, PVC, 28" high	<none>	200	EA	<none>	$ 20.50	$ 4,346.00
			Barricades, traffic cones, PVC, 28" high Total		**500**				**$ 10,865.00**
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		167	LF	<none>	$ 43.62	$ 7,781.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		172	LF	<none>	$ 43.62	$ 8,013.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		312	LF	<none>	$ 43.62	$ 14,536.97
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		390	LF	<none>	$ 43.62	$ 18,171.22
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		390	LF	<none>	$ 43.62	$ 18,171.22
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		980	LF	<none>	$ 43.62	$ 45,661.01
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		2,400	LF	<none>	$ 43.62	$ 111,822.87
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		250	LF	<none>	$ 43.62	$ 11,648.22
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		250	LF	<none>	$ 43.62	$ 11,648.22
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		250	LF	<none>	$ 43.62	$ 11,648.22
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		340	LF	<none>	$ 43.62	$ 15,841.57
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		340	LF	<none>	$ 43.62	$ 15,841.57
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		340	LF	<none>	$ 43.62	$ 15,841.57
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		172	LF	<none>	$ 43.62	$ 8,004.34
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		600	LF	<none>	$ 43.62	$ 27,922.13
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		600	LF	<none>	$ 43.62	$ 27,922.13
HTW	25413103731		Biological lagoons, floating lagoon separators, self buoyant, 3' depth		600	LF	<none>	$ 43.62	$ 27,922.13
			Biological lagoons, floating lagoon separators, self buoyant, 3' depth Total		**19,913**				**$ 927,693.32**
USR	Z		Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	$ 1,500,000.00	$ 1,500,000.00
			Boat Ramp [Material and Installation] Total		**1**				**$ 1,500,000.00**
RSM	323113307815		Chain link fence gates and posts, motor operators for gates, up to 20' wide swing, excludes electric wiring & excavation		3	EA	Q	$ 2,960.16	$ 10,095.76
RSM	323113307815		Chain link fence gates and posts, motor operators for gates, up to 20' wide swing, excludes electric wiring & excavation		4	EA	Q	$ 2,960.16	$ 13,461.02
RSM	323113307815		Chain link fence gates and posts, motor operators for gates, up to 20' wide swing, excludes electric wiring & excavation		5	EA	Q	$ 2,960.16	$ 16,826.27
			Chain link fence gates and posts, motor operators for gates, up to 20' wide swing, excludes electric wiring & excavation Total		**12**				**$ 40,383.05**
RSM	323113104752		Chain link fences & gates, gate, chain link, galvanized steel, single, 4' x 7', excludes excavation	<none>	4	EA	<none>	$ 442.61	$ 1,887.04
RSM	323113104752		Chain link fences & gates, gate, chain link, galvanized steel, single, 4' x 7', excludes excavation	<none>	4	EA	<none>	$ 442.61	$ 1,887.04
RSM	323113104752		Chain link fences & gates, gate, chain link, galvanized steel, single, 4' x 7', excludes excavation	<none>	4	EA	<none>	$ 442.61	$ 1,887.04
			Chain link fences & gates, gate, chain link, galvanized steel, single, 4' x 7', excludes excavation Total		**12**				**$ 5,661.12**
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 839.61

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	104413532200		Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment	<none>	2	EA	<none>	$ 383.85	$ 836.39
			Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in door, stainless steel door & frame, 8" x 12" x 36", excludes equipment Total		**28**				**$ 11,751.32**
USR	Z		Fire Ring [Material and Installation]	Quantity: Based on estimated number of fire rings required; Sub Bid: Based on full installation costs provided by XXXXXX.	30	EA	Q	$ 250.00	$ 7,500.00
			Fire Ring [Material and Installation] Total		**30**				**$ 7,500.00**
USR	Z		Fishing Pier [Material and Installation]	Quantity: Based on estimated number of piers required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	$ 50,000.00	$ 50,000.00
			Fishing Pier [Material and Installation] Total		**1**				**$ 50,000.00**
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	168	SF	<none>	$ 62.93	$ 11,248.21
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	360	SF	<none>	$ 62.93	$ 24,103.30
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	432	SF	<none>	$ 62.93	$ 28,923.97
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	504	SF	<none>	$ 62.93	$ 33,744.63
RSM	55313100186		Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	<none>	768	SF	<none>	$ 62.93	$ 51,420.38
			Floor grating, aluminum, 1-3/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels Total		**3,072**				**$ 205,681.54**
RSM	55313702500		Floor grating, steel, expanded mesh, 3.14# per S.F., field fabricated from panels	Item accounts for trash rack.	1,680	SF	Q	$ 7.99	$ 14,463.47
RSM	55313702500		Floor grating, steel, expanded mesh, 3.14# per S.F., field fabricated from panels	Item accounts for trash rack.	1,680	SF	Q	$ 7.99	$ 14,463.47
RSM	55313702500		Floor grating, steel, expanded mesh, 3.14# per S.F., field fabricated from panels	Item accounts for trash rack.	9,180	SF	<none>	$ 7.99	$ 79,032.52
			Floor grating, steel, expanded mesh, 3.14# per S.F., field fabricated from panels Total		**12,540**				**$ 107,959.46**
RSM	55313700432		Floor grating, steel, painted, 1-1/2" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 4" O.C., up to 300 S.F., field fabricated from panels	<none>	240	SF	<none>	$ 20.34	$ 5,279.62
RSM	55313700432		Floor grating, steel, painted, 1-1/2" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 4" O.C., up to 300 S.F., field fabricated from panels	<none>	240	SF	<none>	$ 20.34	$ 5,279.62
RSM	55313700432		Floor grating, steel, painted, 1-1/2" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 4" O.C., up to 300 S.F., field fabricated from panels	<none>	548	SF	<none>	$ 20.34	$ 12,055.14
			Floor grating, steel, painted, 1-1/2" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 4" O.C., up to 300 S.F., field fabricated from panels Total		**1,028**				**$ 22,614.38**
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		2	EA	Q*2	$ 1,099.27	$ 2,339.95
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		8	EA	Q*2	$ 1,099.27	$ 9,359.80
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		2	EA	Q*2	$ 1,099.27	$ 2,339.95
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		8	EA	Q*2	$ 1,099.27	$ 9,359.80
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		12	EA	Q*2	$ 1,099.27	$ 14,039.70
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		2	EA	Q*2	$ 1,099.27	$ 2,339.95
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		4	EA	Q*2	$ 1,099.27	$ 4,679.90
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		8	EA	Q*2	$ 1,099.27	$ 9,359.80
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		12	EA	Q*2	$ 1,099.27	$ 14,039.70
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		6	EA	Q*2	$ 1,099.27	$ 7,019.85
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		4	EA	Q*2	$ 1,099.27	$ 4,701.07
HNC	323113307400		Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation		6	EA	Q*2	$ 1,099.27	$ 7,013.91
			Gates, swing, chain link, without barbed wire, double, galvanized, 8' high, 16' wide, excludes excavation Total		**74**				**$ 86,593.38**
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		170	SY	<none>	$ 1.82	$ 335.98
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		822	SY	<none>	$ 1.82	$ 1,624.56
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,560	SY	<none>	$ 1.82	$ 3,083.11
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,890	SY	<none>	$ 1.82	$ 3,735.31
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		1,980	SY	<none>	$ 1.82	$ 3,913.18
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		2,310	SY	<none>	$ 1.82	$ 4,565.38
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		6,454	SY	<none>	$ 1.82	$ 12,755.39
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		6,583	SY	<none>	$ 1.82	$ 13,010.34
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		625	SY	<none>	$ 1.82	$ 1,235.22
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		625	SY	<none>	$ 1.82	$ 1,235.22
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		625	SY	<none>	$ 1.82	$ 1,235.22
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		4,475	SY	<none>	$ 1.82	$ 8,809.90
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		4,475	SY	<none>	$ 1.82	$ 8,809.90
HTW	334626100114		Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene		4,475	SY	<none>	$ 1.82	$ 8,809.90
			Geotextile Fabric, 170 Mil Thick Non-Woven Polypropylene Total		**44,869**				**$ 88,574.16**
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30

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RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
RSM	334626100150		Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines	<none>	472	SF	<none>	$ 0.61	$ 330.30
			Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain lines Total		**6,136**				**$ 4,293.90**
USR	Z		Group Shelter, 16' x 24' [Material and Installation]	Quantity: Based on estimated number of shelters required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 30,000.00	$ 31,200.00
USR	Z		Group Shelter, 16' x 24' [Material and Installation]	Quantity: Based on estimated number of shelters required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 30,000.00	$ 31,200.00
			Group Shelter, 16' x 24' [Material and Installation] Total		**2**				**$ 62,400.00**
HNC	344319100500		Junction boxes, size 1, 4 hubs, 4" x 2"		4	EA	<none>	$ 142.61	$ 640.86
			Junction boxes, size 1, 4 hubs, 4" x 2" Total		**4**				**$ 640.86**
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	1	EA	Q	$ 4,500.00	$ 4,500.00
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	$ 4,500.00	$ 9,000.00
USR	Z		Kayak Launch [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	$ 4,500.00	$ 9,000.00
			Kayak Launch [Material and Installation] Total		**5**				**$ 22,500.00**
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 20,000.00	$ 20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 20,000.00	$ 20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 20,000.00	$ 20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 20,000.00	$ 20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 20,000.00	$ 20,900.00
USR	Z		Kiosk Shelter [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	3	EA	Q	$ 20,000.00	$ 62,700.00
			Kiosk Shelter [Material and Installation] Total		**8**				**$ 167,200.00**
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	51	VLF	<none>	$ 64.65	$ 3,582.76
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	105	VLF	<none>	$ 64.65	$ 7,376.28
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	105	VLF	<none>	$ 64.65	$ 7,376.28
RSM	55133130400		Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage	<none>	105	VLF	<none>	$ 64.65	$ 7,376.28
			Ladder, shop fabricated, aluminum, 20" W, bolted to concrete, excl cage Total		**825**				**$ 57,956.44**
RSM	55133130100		Ladder, shop fabricated, steel, 20" W, bolted to concrete, excl cage	<none>	120	VLF	<none>	$ 50.15	$ 6,557.84
RSM	55133130100		Ladder, shop fabricated, steel, 20" W, bolted to concrete, excl cage	<none>	120	VLF	<none>	$ 50.15	$ 6,557.84
RSM	55133130100		Ladder, shop fabricated, steel, 20" W, bolted to concrete, excl cage	<none>	342	VLF	<none>	$ 50.15	$ 18,689.84
			Ladder, shop fabricated, steel, 20" W, bolted to concrete, excl cage Total		**582**				**$ 31,805.52**
RSM	87913100400		Metal casework, key cabinets, wall mounted, 30 key capacity	<none>	1	EA	<none>	$ 71.32	$ 75.76
			Metal casework, key cabinets, wall mounted, 30 key capacity Total		**1**				**$ 75.76**
USR	Z		Mob / Demob Crew	<none>	25	DAY	<none>	$ 2,150.68	$ 61,167.49
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	$ 2,150.68	$ 110,101.47
USR	Z		Mob / Demob Crew	<none>	25	DAY	<none>	$ 2,150.68	$ 61,167.49
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	$ 2,150.68	$ 110,101.47
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	$ 2,150.68	$ 73,400.98
USR	Z		Mob / Demob Crew	<none>	60	DAY	<none>	$ 2,150.68	$ 146,801.96
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	$ 2,150.68	$ 17,126.90
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	$ 2,150.68	$ 17,126.90
USR	Z		Mob / Demob Crew	<none>	7	DAY	<none>	$ 2,150.68	$ 17,126.90
USR	Z		Mob / Demob Crew	<none>	10	DAY	<none>	$ 2,150.68	$ 24,466.99
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	$ 2,150.68	$ 36,700.49
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	$ 2,150.68	$ 36,700.49
USR	Z		Mob / Demob Crew	<none>	40	DAY	<none>	$ 2,150.68	$ 97,867.98

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
USR	Z		Mob / Demob Crew	<none>	60	DAY	<none>	$ 2,150.68	$ 146,801.96
USR	Z		Mob / Demob Crew	<none>	20	DAY	<none>	$ 2,150.68	$ 48,933.99
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	$ 2,150.68	$ 73,400.98
USR	Z		Mob / Demob Crew	<none>	15	DAY	<none>	$ 2,150.68	$ 39,192.85
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	$ 2,150.68	$ 78,385.70
USR	Z		Mob / Demob Crew	<none>	30	DAY	<none>	$ 2,150.68	$ 72,468.81
USR	Z		Mob / Demob Crew	<none>	45	DAY	<none>	$ 2,150.68	$ 108,703.21
			Mob / Demob Crew Total		**561**				**$ 1,377,745.01**
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	30	EA	<none>	$ 1,411.52	$ 45,848.82
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	30	EA	<none>	$ 1,411.52	$ 45,848.82
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	4	EA	<none>	$ 1,411.52	$ 6,113.18
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	4	EA	<none>	$ 1,411.52	$ 6,113.18
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	7	EA	<none>	$ 1,411.52	$ 10,698.06
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	7	EA	<none>	$ 1,411.52	$ 10,698.06
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	7	EA	<none>	$ 1,411.52	$ 10,698.06
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	7	EA	<none>	$ 1,411.52	$ 10,698.06
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	25	EA	<none>	$ 1,411.52	$ 38,207.35
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	10	EA	<none>	$ 1,411.52	$ 15,282.94
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	10	EA	<none>	$ 1,411.52	$ 15,282.94
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	8	EA	<none>	$ 1,411.52	$ 12,731.50
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	8	EA	<none>	$ 1,411.52	$ 12,731.50
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	20	EA	<none>	$ 1,411.52	$ 30,329.72
RSM	15436501600		Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer	<none>	20	EA	<none>	$ 1,411.52	$ 30,329.72
			Mobilization or demobilization, delivery charge for equipment, hauled on 50-ton capacity towed trailer Total		**322**				**$ 492,648.66**
RSM	412213130475		Overhead bridge crane, under hung hoist, electric operating, 2 girder, 25 ton, 40' span	<none>	2	EA	<none>	$ 99,395.46	$ 211,782.40
RSM	412213130475		Overhead bridge crane, under hung hoist, electric operating, 2 girder, 25 ton, 40' span	<none>	2	EA	<none>	$ 99,395.46	$ 211,782.40
RSM	412213130475		Overhead bridge crane, under hung hoist, electric operating, 2 girder, 25 ton, 40' span	<none>	2	EA	<none>	$ 99,395.46	$ 211,782.40
			Overhead bridge crane, under hung hoist, electric operating, 2 girder, 25 ton, 40' span Total		**6**				**$ 635,347.20**
RSM	337139131440		Overhead line conductors & devices, underbuilt circuits, per wire, 210 to 636 kcmil	<none>	2,500	LF	<none>	$ 2.56	$ 6,847.26
RSM	337139131440		Overhead line conductors & devices, underbuilt circuits, per wire, 210 to 636 kcmil	<none>	2,500	LF	<none>	$ 2.56	$ 6,847.26
RSM	337139131440		Overhead line conductors & devices, underbuilt circuits, per wire, 210 to 636 kcmil	<none>	2,500	LF	<none>	$ 2.56	$ 6,847.26
			Overhead line conductors & devices, underbuilt circuits, per wire, 210 to 636 kcmil Total		**7,500**				**$ 20,541.78**
HNC	321713132010		Parking barriers, bollard, concrete filled steel pipe, 8' long, 8" diameter		9	EA	<none>	$ 817.88	$ 7,802.89
			Parking barriers, bollard, concrete filled steel pipe, 8' long, 8" diameter Total		**9**				**$ 7,802.89**
RSM	321216130160		Plant-mix asphalt paving, for highways and large paved areas, binder course, 3" thick, no hauling included	<none>	9,000	SY	Q/9	$ 11.78	$ 112,969.31
RSM	321216130160		Plant-mix asphalt paving, for highways and large paved areas, binder course, 3" thick, no hauling included	<none>	9,000	SY	Q/9	$ 11.78	$ 112,969.31
			Plant-mix asphalt paving, for highways and large paved areas, binder course, 3" thick, no hauling included Total		18,000			$ 23.56	$ 225,938.62
RSM	321216130460		Plant-mix asphalt paving, for highways and large paved areas, wearing course, 3" thick, no hauling included	<none>	9,000	SY	Q/9	$ 13.02	$ 124,896.54
RSM	321216130460		Plant-mix asphalt paving, for highways and large paved areas, wearing course, 3" thick, no hauling included	<none>	9,000	SY	Q/9	$ 13.02	$ 124,896.54
			Plant-mix asphalt paving, for highways and large paved areas, wearing course, 3" thick, no hauling included Total		**18,000**				**$ 249,793.08**
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
RSM	116813100200		Playground equipment, bike rack, permanent, 10' long	<none>	1	EA	Q	$ 501.95	$ 536.18
			Playground equipment, bike rack, permanent, 10' long Total		**7**				**$ 3,753.26**
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Interior Wall	144	SF	<none>	$ 25.91	$ 4,000.18
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
RSM	34513500700		Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi	Exterior Walls	864	SF	<none>	$ 25.91	$ 24,001.08
			Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi Total		**13,104**				**$ 364,016.38**
RSM	334113402344		Public storm utility drainage piping, 90 degree bends or elbows, corrugated metal pipe, galvanized and bituminous coated with paved invert, 24" diameter, 14 ga.	<none>	54	EA	<none>	$ 432.30	$ 25,764.72
RSM	334113402344		Public storm utility drainage piping, 90 degree bends or elbows, corrugated metal pipe, galvanized and bituminous coated with paved invert, 24" diameter, 14 ga.	<none>	54	EA	<none>	$ 432.30	$ 25,764.72
			Public storm utility drainage piping, 90 degree bends or elbows, corrugated metal pipe, galvanized and bituminous coated with paved invert, 24" diameter, 14 ga. Total		**108**				**$ 51,529.44**
RSM	334113402140		Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 24" diameter, excludes excavation and backfill	<none>	2,241	LF	<none>	$ 29.23	$ 73,667.15
RSM	334113402140		Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 24" diameter, excludes excavation and backfill	<none>	2,241	LF	<none>	$ 29.23	$ 73,667.15
			Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 24" diameter, excludes excavation and backfill Total		**4,482**				**$ 147,334.30**
RSM	334113402160		Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 30" diameter, excludes excavation and backfill	<none>	1,533	LF	<none>	$ 39.73	$ 69,852.22
RSM	334113402160		Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 30" diameter, excludes excavation and backfill	<none>	2,336	LF	<none>	$ 39.73	$ 106,441.48
			Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 14 ga., 30" diameter, excludes excavation and backfill Total		**3,869**				**$ 176,293.70**
RSM	334113402240		Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 8 ga., 72" diameter, excludes excavation and backfill	<none>	225	LF	<none>	$ 141.28	$ 34,024.82
			Public storm utility drainage piping, corrugated metal pipe, galvanized and bituminous coated with paved invert, 20' lengths, 8 ga., 72" diameter, excludes excavation and backfill Total		**225**				**$ 34,024.82**
RSM	334113402280		Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized and bituminous coated with paved invert, 30" diameter, 16 ga., excludes excavation and backfill	<none>	21	EA	<none>	$ 612.66	$ 14,259.73
RSM	334113402280		Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized and bituminous coated with paved invert, 30" diameter, 16 ga., excludes excavation and backfill	<none>	32	EA	<none>	$ 612.66	$ 21,729.11
			Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized and bituminous coated with paved invert, 30" diameter, 16 ga., excludes excavation and backfill Total		53			$ 1,225.32	$ 35,988.84
RSM	**334113402810**		**Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized uncoated, 24" diameter**	**<none>**	**27**	**EA**	**<none>**		**$ 8,034.64**
RSM	334113402810		Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized uncoated, 24" diameter	<none>	27	EA	<none>	$ 265.09	$ 8,034.64

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
			Public storm utility drainage piping, end sections, corrugated metal pipe, galvanized uncoated, 24" diameter Total		**54**				**$ 16,069.28**
RSM	332113100500		Public water supply wells, wells domestic water, gravel pack well, complete, 40' deep, 24" diameter casing x 18" diameter screen, includes gravel & casing	<none>	1	EA	<none>	$ 50,021.99	$ 53,052.61
RSM	332113100500		Public water supply wells, wells domestic water, gravel pack well, complete, 40' deep, 24" diameter casing x 18" diameter screen, includes gravel & casing	<none>	1	EA	<none>	$ 50,021.99	$ 53,052.61
RSM	332113100500		Public water supply wells, wells domestic water, gravel pack well, complete, 40' deep, 24" diameter casing x 18" diameter screen, includes gravel & casing	<none>	1	EA	<none>	$ 50,021.99	$ 53,052.61
			Public water supply wells, wells domestic water, gravel pack well, complete, 40' deep, 24" diameter casing x 18" diameter screen, includes gravel & casing Total		**3**				**$ 159,157.83**
USR	Z		Pump Installation Crew		200	HR	<none>	$ 404.88	$ 93,597.60
USR	Z		Pump Installation Crew		200	HR	<none>	$ 404.88	$ 93,597.60
USR	Z		Pump Installation Crew		400	HR	<none>	$ 404.88	$ 187,195.19
			Pump Installation Crew Total		**800**				**$ 374,390.39**
USR	Z		Pump Station Demolition Crew		160	HR	<none>	$ 455.23	$ 83,306.94
			Pump Station Demolition Crew Total		**160**				**$ 83,306.94**
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	314	LF	<none>	$ 96.97	$ 32,610.49
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	378	LF	<none>	$ 96.97	$ 39,257.21
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	408	LF	<none>	$ 96.97	$ 42,372.87
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	432	LF	<none>	$ 96.97	$ 44,865.39
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	527	LF	<none>	$ 96.97	$ 54,731.62
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	836	LF	<none>	$ 96.97	$ 86,822.83
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	836	LF	<none>	$ 96.97	$ 86,822.83
RSM	55213500210		Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	<none>	836	LF	<none>	$ 96.97	$ 86,822.83
			Railing, pipe, aluminum, clear finish, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated Total		**6,137**				**$ 637,358.52**
RSM	55213500040		Railing, pipe, aluminum, dark anodized finish, 2 rails, 3'-6" high, posts @ 5' O.C., 1-1/4" dia, shop fabricated	<none>	180	LF	<none>	$ 76.25	$ 14,691.25
RSM	55213500040		Railing, pipe, aluminum, dark anodized finish, 2 rails, 3'-6" high, posts @ 5' O.C., 1-1/4" dia, shop fabricated	<none>	180	LF	<none>	$ 76.25	$ 14,691.25
			Railing, pipe, aluminum, dark anodized finish, 2 rails, 3'-6" high, posts @ 5' O.C., 1-1/4" dia, shop fabricated Total		**360**				**$ 29,382.50**
USR	Z		Rock Crusher Mob/Demob Crew	<none>	20	DAY	<none>	$ 10,735.81	$ 231,280.06
USR	Z		Rock Crusher Mob/Demob Crew	<none>	30	DAY	<none>	$ 10,735.81	$ 346,920.10
			Rock Crusher Mob/Demob Crew Total		**50**				**$ 578,200.16**
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	Q	$ 3,862.04	$ 4,107.11
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA		$ 3,862.04	$ 4,107.11
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	Q	$ 3,862.04	$ 4,107.11
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	Q	$ 3,862.04	$ 4,107.11
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	2	EA	Q	$ 3,862.04	$ 8,214.23
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	3	EA		$ 3,862.04	$ 12,321.34
RSM	101423137290		Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	3	EA		$ 3,862.04	$ 12,321.34
			Roof Sign Board, custom, weather resistant, engraved & color filled, including mounting Total		**12**				**$ 49,285.35**
RSM	347113171400		Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 0.5' W x 32" H	<none>	10	EA	<none>	$ 571.34	$ 6,159.46
RSM	347113171400		Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 0.5' W x 32" H	<none>	250	EA	<none>	$ 571.34	$ 153,986.44
RSM	347113171400		Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 0.5' W x 32" H	<none>	250	EA	<none>	$ 571.34	$ 153,986.44
			Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 0.5' W x 32" H Total		**510**				**$ 314,132.34**
RSM	347113171500		Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 6" W x 32" H, 10 or more same site	<none>	20	EA	<none>	$ 550.89	$ 11,736.98
			Security vehicle barriers, concrete barrier, jersey, 10' L x 2' by 6" W x 32" H, 10 or more same site Total		**20**				**$ 11,736.98**
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	Hydroseeding slopes.	164	ACR	Q	$ 3,055.47	$ 533,884.27
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	Hydroseeding slopes.	136	ACR	Q	$ 3,055.47	$ 442,733.30
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	8	ACR	Q	$ 3,055.47	$ 26,043.14
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	17	ACR	Q	$ 3,055.47	$ 55,341.66
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	23	ACR	Q	$ 3,055.47	$ 74,874.01
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	26	ACR	Q	$ 3,055.47	$ 84,640.19
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	36	ACR	Q	$ 3,055.47	$ 117,194.11

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	40	ACR	Q	$ 3,055.47	$ 130,215.68
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	48	ACR	Q	$ 3,055.47	$ 156,258.81
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	59	ACR	Q	$ 3,055.47	$ 192,068.12
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	75	ACR	Q	$ 3,055.47	$ 244,154.39
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	90	ACR	Q	$ 3,055.47	$ 292,985.27
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	104	ACR	Q	$ 3,055.47	$ 338,560.76
RSM	329219131000		Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed	<none>	208	ACR	Q	$ 3,055.47	$ 677,121.51
			Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed Total		**1,034**				**$ 3,366,075.22**
RSM	24119200300		Selective demolition, dump charges, typical urban city, rubbish only, includes tipping fees only	<none>	407	TON	Q	$ 63.00	$ 27,179.46
RSM	24119200300		Selective demolition, dump charges, typical urban city, rubbish only, includes tipping fees only	<none>	519	TON	Q	$ 63.00	$ 34,658.82
RSM	24119200300		Selective demolition, dump charges, typical urban city, rubbish only, includes tipping fees only	<none>	630	TON	Q	$ 63.00	$ 42,071.40
			Selective demolition, dump charges, typical urban city, rubbish only, includes tipping fees only Total		**1,556**				**$ 103,909.68**
RSM	101423137290		Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	<none>	$ 3,862.04	$ 4,107.11
RSM	101423137290		Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	<none>	$ 3,862.04	$ 4,107.11
RSM	101423137290		Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	<none>	$ 3,862.04	$ 4,107.11
RSM	101423137290		Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	Q	$ 3,862.04	$ 4,107.11
RSM	101423137290		Sign Board, custom, weather resistant, engraved & color filled, including mounting	<none>	1	EA	<none>	$ 3,862.04	$ 4,107.11
			Sign Board, custom, weather resistant, engraved & color filled, including mounting Total		**5**				**$ 20,535.55**
HNC	101453200560		Signs, stock, reflectorized, UTMCD standard, warning sign, 24" x 24", with posts		8	EA	<none>	$ 62.64	$ 558.16
HNC	101453200560		Signs, stock, reflectorized, UTMCD standard, warning sign, 24" x 24", with posts		16	EA	<none>	$ 62.64	$ 1,116.31
HNC	101453200560		Signs, stock, reflectorized, UTMCD standard, warning sign, 24" x 24", with posts		16	EA	<none>	$ 62.64	$ 1,116.31
			Signs, stock, reflectorized, UTMCD standard, warning sign, 24" x 24", with posts Total		**40**				**$ 2,790.78**
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		1	EA	Q	$ 1,283.00	$ 1,365.18
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		1	EA	Q	$ 1,283.00	$ 1,365.18
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		1	EA	Q	$ 1,283.00	$ 1,365.18
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		1	EA	Q	$ 1,283.00	$ 1,365.18
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		4	EA	Q	$ 1,283.00	$ 5,460.72
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		12	EA	Q	$ 1,283.00	$ 16,382.15
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		12	EA	Q	$ 1,283.00	$ 16,382.15
RSM	323343131020		Site seating, picnic tables, recycled plastic, various colors, 8' long		30	EA	Q	$ 1,283.00	$ 40,955.36
			Site seating, picnic tables, recycled plastic, various colors, 8' long Total		**62**				**$ 84,641.10**
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	$ 100,000.00	$ 200,000.00
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	2	EA	Q	$ 100,000.00	$ 200,000.00
USR	Z		Small Boat Ramp [Material and Installation]	Quantity: Based on estimated number of fishing platforms required; Sub Bid: Based on full installation costs provided by XXXXXX.	3	EA	Q	$ 100,000.00	$ 300,000.00
			Small Boat Ramp [Material and Installation] Total		**7**				**$ 700,000.00**
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
RSM	231323260200		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 14,628.61	$ 15,568.39
			Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon,		**13**				**$ 202,389.07**
RSM	231323260300		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 2,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 19,136.62	$ 20,318.38
RSM	231323260300		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 2,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 19,136.62	$ 20,318.38
RSM	231323260300		Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 2,000 gallon, incl. pad & pump	<none>	1	EA	<none>	$ 19,136.62	$ 20,318.38
			Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 2,000 gallon, incl. pad & pump Total		**3**				**$ 60,955.14**
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	2,705	LF	Q	$ 0.51	$ 1,565.85
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03

SRC	SRC TAG	O/R	DESCRIPTION	NOTE	QTY	UOM	LINK	UNTI BARE	DIRECT
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	6,492	LF	<none>	$ 0.51	$ 3,758.03
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	1,000	LF	<none>	$ 0.51	$ 578.87
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	1,000	LF	<none>	$ 0.51	$ 578.87
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	1,000	LF	<none>	$ 0.51	$ 578.87
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	3,700	LF	<none>	$ 0.51	$ 2,120.00
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	3,700	LF	<none>	$ 0.51	$ 2,120.00
RSM	312514161000		Synthetic erosion control, silt fence, install and maintain, remove, 3' high	<none>	3,700	LF	<none>	$ 0.51	$ 2,120.00
			Synthetic erosion control, silt fence, install and maintain, remove, 3' high Total		**88,217**				**$ 51,000.79**
RSM	312514161000		Synthetic erosion control, silt fence, polypropylene, ideal conditions, 3' high	Calculated from the length of level and canal impacts.	92,947	LF	<none>	$ 0.51	$ 53,804.35
			Synthetic erosion control, silt fence, polypropylene, ideal conditions, 3' high Total		**92,947**				**$ 53,804.35**
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	2,400	LF	Q*600	$ 4.19	$ 10,815.78
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	2,400	LF	Q*600	$ 4.19	$ 10,815.78
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	3,600	LF	Q*600	$ 4.19	$ 16,223.67
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	1,200	LF	Q*600	$ 4.19	$ 5,407.89
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	3,600	LF	Q*600	$ 4.19	$ 16,223.67
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	4,000	LF	Q*1000	$ 4.19	$ 18,026.30
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	1,800	LF	Q*600	$ 4.19	$ 8,111.84
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	1,200	LF	Q*600	$ 4.19	$ 5,472.85
RSM	15626500100		Temporary fencing, chain link, 6' high, 11 ga	<none>	1,800	LF	Q*600	$ 4.19	$ 8,093.62
			Temporary fencing, chain link, 6' high, 11 ga Total		**22,000**				**$ 99,191.40**
RSM	333613130220		Utility septic tank and effluent wet well, septic tanks precast concrete, 4 piece, 5,000 gallon, excludes excavation or piping	<none>	1	EA	<none>	$ 9,984.10	$ 10,615.48
RSM	333613130220		Utility septic tank and effluent wet well, septic tanks precast concrete, 4 piece, 5,000 gallon, excludes excavation or piping	<none>	1	EA	<none>	$ 9,984.10	$ 10,615.48
RSM	333613130220		Utility septic tank and effluent wet well, septic tanks precast concrete, 4 piece, 5,000 gallon, excludes excavation or piping	<none>	1	EA	<none>	$ 9,984.10	$ 10,615.48
			Utility septic tank and effluent wet well, septic tanks precast concrete, 4 piece, 5,000 gallon, excludes excavation or piping Total		**3**				**$ 31,846.44**
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 40,000.00	$ 41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 40,000.00	$ 41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 40,000.00	$ 41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	1	EA	Q	$ 40,000.00	$ 41,800.00
USR	Z		Vault Toilet [Material and Installation]	Quantity: Based on estimated number of vault toilets required; Material: Based on quote provided by XXXXXXX (awaiting quotes, price and notes will be updated upon recieving); Sub Bid: Based on installation costs provided by XXXXXX.	5	EA	Q	$ 40,000.00	$ 209,000.00
			Vault Toilet [Material and Installation] Total		**9**				**$ 376,200.00**
RSM	347113261150		Vehicle guide rails, guide/guard rail, steel box beam, corrugated beam	<none>	200	LF	<none>	$ 44.94	$ 9,541.67
RSM	347113261150		Vehicle guide rails, guide/guard rail, steel box beam, corrugated beam	<none>	200	LF	Q	$ 44.94	$ 9,541.67
			Vehicle guide rails, guide/guard rail, steel box beam, corrugated beam Total		**400**				**$ 19,083.34**
RSM	89119203390		Wall louvers, galvanized steel, fixed blades, commercial grade, 60" x 60"	<none>	8	EA	<none>	$ 632.58	$ 5,401.63
RSM	89119203390		Wall louvers, galvanized steel, fixed blades, commercial grade, 60" x 60"	<none>	8	EA	<none>	$ 632.58	$ 5,401.63
RSM	89119203390		Wall louvers, galvanized steel, fixed blades, commercial grade, 60" x 60"	<none>	8	EA	<none>	$ 632.58	$ 5,401.63
			Wall louvers, galvanized steel, fixed blades, commercial grade, 60" x 60" Total		**24**				**$ 16,204.89**
RSM	331113401110		Water supply distribution piping, pipe, black steel, plain end, welded, 1/2" wall thickness, 48" diameter, excludes excavation or backfill	<none>	15	LF	<none>	$ 491.48	$ 7,922.28
RSM	331113401110		Water supply distribution piping, pipe, black steel, plain end, welded, 1/2" wall thickness, 48" diameter, excludes excavation or backfill	<none>	15	LF	<none>	$ 491.48	$ 7,922.28
			Water supply distribution piping, pipe, black steel, plain end, welded, 1/2" wall thickness, 48" diameter, excludes excavation or backfill Total		**30**				**$ 15,844.56**
RSM	323129100220		Wood fences & gates, board fence, preservative treated, 2 rail, 1" x 4" boards, 2" x 4" rails, 4" x 4" post, 3' high, includes post and post hole	<none>	100	LF	<none>	$ 13.37	$ 1,435.53
			Wood fences & gates, board fence, preservative treated, 2 rail, 1" x 4" boards, 2" x 4" rails, 4" x 4" post, 3' high, includes post and post hole Total		**100**				**$ 1,435.53**
RSM	323129100240		Wood fences & gates, board fence, preservative treated, 2 rail, 1" x 4" boards, 2" x 4" rails, 4" x 4" post, 4' high, includes post and post hole		200	LF	Q	$ 15.31	$ 3,285.13
			Wood fences & gates, board fence, preservative treated, 2 rail, 1" x 4" boards, 2" x 4" rails, 4" x 4" post, 4' high, includes post and post hole Total		**200**				**$ 3,285.13**
				ALL OTHER COST ITEMS					**$ 16,586,386.78**
				TOTAL DIRECT COST					**$ 1,050,000,865.92**

APPENDIX 8.3

ATR CHECKLIST REPORT

Documents

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
					KEY DOCUMENTS SUPPORTING ATR AND COMMENTS	**COMMENTS**
					ER 1105-2-100, Planning Guidance Notebook.	
					ER 1110-2-1150, Engineering and Design for Civil Works Projects.	
					ER 1110-1-1300, Cost Engineering Policy and General Requirements.	
					ER 1110-2-1302, Civil Works Cost Engineering.	
					EM 1110-2-1304, Civil Works Construction Cost Index System (CWCCIS).	
					ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works.	
					EC 1105-2-410, Review of Decision Documents.	
					Cost Dx Website: http://www.nww.usace.army.mil/html/OFFICES/Ed/C/csra.asp	
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
				DOC	**DOCUMENTS PROVIDED FOR ATR**	
				DOC 1	Report: As a minimum, the Main Report, the Engineering Appendix, Cost Appendix.	
				DOC 2	Scoping documents such as drawings, presentations, photos for each alternative under serious study.	
				DOC 3	Record of DQC - District Quality Control form.	
				DOC 4	Quantity Take-offs.	

N/P not provided
N/A not applicable

Estimate

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	**COMMENTS**
				NOTE	**PROJECT NOTES - (General Construction Details and Narrative)**	
				NOTE	**Basis of Cost Estimate Notes**	
				NOTE 1	Project notes provide a clear presentation of the alternative and scope.	
				NOTE 2	Estimate products clearly depict author and estimate date.	
				NOTE 3	Each alternative is dated to the same point in time and date.	
				NOTE 4	Notes and element titles are adequate to convey project scope and estimate assumptions.	
				NOTE 5	Costs include any potential Hazardous, Toxic, and Radioactive Waste (HTRW) concerns.	
				NOTE 6	Cost Basis notes provided for significant project costs (>1% of construction value)	
				EST	**GENERAL ESTIMATE LAYOUT**	
				EST 1	Alternative estimates developed in accordance with guidelines established in ETL 1110-2-573.	
				EST 2	The alternative estimates reflect a reasonable consistency in development related to estimate software, methodolgy, assumptions, processes and cost date.	
				EST 3	WBS adequately reflects all project scope and makes distinction of major construction elements.	
				EST 4	Major Folder quantity units and unit prices appear reasonable.	
				EST 5	Unit priced titles clearly indicate the scope of the unit price (labor, equipment, materials, delivery, mobilization, sub and prime contractor, haul, placement, discposal, etc.)	
				EST 6	Major construction features supported by quantity take-offs and appear reasonable.	
				EST 7	Total mobilization and demobilization costs applied and reasonable.	
				EST 8	Overuse of Cost Book unit prices for critical cost items that could undermine the total cost accuracy.	
				EST 9	Overuse of Lump Sum, Each or Allowance items that do not accurately convey scope or pricing.	

					Construction Estimate Details - Class 4 Estimate Data	
				EST 11	Current labor database used that match the location where the work is occurring.	
				EST 12	Current equipment manual and fuel prices utilized.	
				EST 13	Adequate crews and productivities that reflect the work being performed.	
				EST 14	Unit prices appear reasonable based on crew assembly and productivity.	
				EST 15	Clarification of unit price and what it includes: direct & indirect costs, sub and prime contractors, markups.	
				EST 16	Markups appear reasonable.	
				EST 17	Handling methods adequately considered related to demolition or excavation, load and transport, placement or disposal.	
				EST 18	Earthwork quantities make reasonable adjustments between BCY, LCY and ECY.	
					Parametric or Unit Priced Items - Class 5 Estimate Data	
				EST 19	Unit prices appear reasonable based upon the element title.	
				EST 20	Major cost elements include note of cost bases, such as historical, trends, bid data, etc.	
				EST 21	Handling methods adequately considered related to demolition or excavation, load and transport, placement or disposal.	
				EST 22	Earthwork quantities make reasonable adjustments between BCY, LCY and ECY.	
				EST 23	Cost basis provided for special systems and equipment such as pumping stations, navlock gates, etc.	
				EST 24	Dredging – Unit price appears reasonable based on historical costs, locale, type of dredge, fuel prices, productivity.	
				EST 25	Cost basis provided for estimated allowances.	
				MAT	**Materials**	
				MAT 1	Major quantities supported by a quantity take-off document.	
				MAT 2	Estimate correctly includes State Sales Tax or Gross Receipts Tax to materials and supplies purchased for the contract.	
				MAT 3	Line item note description for material purchase indicates if shipping is included for major items.	

Schedule

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	**COMMENTS**
					SCHEDULES	
				SCH	**Construction Schedule**	
				SCH 1	Construction schedule adequate to reflect the estimate of each alternative.	
				SCH 2	Schedule used to establish constant dollar basis as needed.	
				SCH 3	Construction schedule used to calculate the construction escalation based on current OMB rates.	

Contingency

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	**COMMENTS**
					RISK-BASED CONTINGENCY	
				CONT	**Contingency Value**	
				CONT 1	Contingency values reasonable for each alternative.	
				CONT 2	Contingency development basis provided for determining values.	
				CONT 3	Considers other factors other than just technical design and construction.	
				CONT 4	Considers external risk potentials.	

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	**COMMENTS**
				TPCS	**PROJECT COST SUMMARY in Current Dollars (first column set)**	
				TPCS 1	Price level date shown is consistent with the estimate preparation date.	
				TPCS 2	All project-related Civil Works WBS Features depicted.	
				TPCS 3	Base costs reflects the esitmate development in current dollars.	
				TPCS 4	Costs reasonable for PED (30 Feature). Note: percentages are sometimes used to develop these costs.	
				TPCS 5	Costs reasonable for Construction Management (31 Feature Code). Note: percentages are sometimes used to develop these costs.	
				TPCS 6	Contingency application reasonable for each alternative.	

Reports

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	
Project Review Phase:						
Project Report Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	**COMMENTS**
					REPORTS - Basic Information for Reviewer – Scope and Form	
				MR	**Draft Main Report, General**	
				MR 1	Complete report document provided for ATR. As a minimum: Main Report, Engineering Appendix, Cost Appendix, cost tables and project schedule.	
				MR 2	Package meets the requirements within ER 1105-2-100, Exhibit G of the Planning Guidance Notebook?	
				MR 3	Presents the various estimate scopes, technical/design data, method of construction, and assumptions used for developing the comparative estimates included and described (ER 1110-2-1302).	
				MR 4	Comparative cost estimates developed at the same price level.	
				MR 5	TPC of each comparative estimate accurately used in the economic analysis comparisons, such as costs and benefits at the same price level (ER 1105-2-100).	

Documents

ESTIMATE PRODUCTS **Review for decision document estimates, Feasibility estimates thru IGE**

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	**REVIEW COMMENTS**
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
					KEY DOCUMENTS SUPPORTING ATR AND COMMENTS	
					ER 1105-2-100, Planning Guidance Notebook.	
					ER 1110-2-1150, Engineering and Design for Civil Works Projects.	
					ER 1110-1-1300, Cost Engineering Policy and General Requirements.	
					ER 1110-2-1302, Civil Works Cost Engineering.	
					EM 1110-2-1304, Civil Works Construction Cost Index System (CWCCIS).	
					ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works.	
					EC 1105-2-410, Review of Decision Documents.	
					Cost Dx Website: http://www.nww.usace.army.mil/html/OFFICES/Ed/C/default.asp	
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
				DOC	**DOCUMENTS PROVIDED FOR ATR**	
				DOC 1	Report: As a minimum, the Main Report, the Engineering Appendix, Cost Appendix.	
				DOC 2	Scoping documents such as drawings, presentations, photos.	
				DOC 3	Supporting Detailed Estimates in MCACES MII and CEDEP dredge estimates in electronic format.	
				DOC 4	Construction Schedule.	
				DOC 5	Total Project Schedule, all Features (PED, Acquisiton, and Construction).	
				DOC 6	Cost and Schedule Risk Analysis (>$40M) or basis for contingency when <$40M.	
				DOC 7	CSRA Report documenting the process.	
				DOC 8	Total Project Cost Summary (TPCS).	
				DOC 9	Summarizes and describes the basis and development of TPC. For example, the source and basis of engineering and design (E&D) (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimates (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule.	
				DOC 10	Quantity Take-offs (details and summary).	
				SC	**SCOPING DOCUMENTS**	
				SC 1	Scoping documents are adequately developed to the design phase in accordance with ER 1110-2-1150, presenting the Main Report, plan formulation and recommended plan, related scope and cost appendixes, risk analyses, etc.	

Documents

				SC 2	Adequate scoping documents have been provided to convey a thorugh and confident understanding of the project scope.	
				SC 2	The scoping documents are accurately portrayed within the estimates.	
				SC 3	Reviewer is confident of scope captured within the estimate, schedule and risk review.	

Estimate

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	**REVIEW COMMENTS**
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
					PROJECT NOTES - (General Construction Details and Narrative)	
				NOTE	**Basis of Cost Estimate Notes**	**REVIEW COMMENTS**
				NOTE 1	Project and Top Folder notes notes present a clear understanding and scope definition.	
				NOTE 2	Scope presented in the project notes is consistent with the scope of the documents for the corresponding plan.	
				NOTE 3	Major project construction features clearly identified in the estimate subfolders.	
				NOTE 4	Top Folder notes clarify major assumptions such as acquisition strategy, expected bid competition, prime and subcontractor assignments, major cost quotes, major construction processes, construction phasing and/or sequencing.	
				NOTE 5	Top Folder notes address significant or high-risk cost items in the project scope.	
				NOTE 6	Notes are adequate to convey project scope and estimate assumptions.	
					Construction Estimate Notes on Critical Costs	**REVIEW COMMENTS**
				NOTE 8	General assumptions noted in the project notes and whether they seem reasonable.	
				NOTE 9	Folder notes provide basis of estimate related to assumptions, quotes, and historical data?	
				NOTE 10	Site and project access considered and presented in the notes.	
				NOTE 11	Critical material sources identified and supported by research.	
				NOTE 12	Unusual construction conditions considered and documented (e.g., studies, geotechnical data, borrow sources, water and water diversion, and weather).	
				NOTE 13	Unique construction techniques considered, documented and reasonable.	
				NOTE 14	Environmental concerns addressed impacting construction activities.	
				NOTE 15	Acquisition Plan identified and matches the estimate structure.	
				NOTE 16	Subcontracting plan and subcontract crafts identified.	
				NOTE 17	Effective dates for pricing labor, equipment, and material are current.	
				EST	Summarizes and describes the basis and development of TPC. For example, the source and basis of engineering and design (E&D) (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimat**es (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule.**	
				EST 1	Estimate developed in proper Work Breakdown Structure (WBS) format in accordance with all guidelines (ETL 1110-2-573).	
				EST 2	Folder title structure and the descriptions adequate to determine what is being estimated.	
				EST 3	WBS adequately reflects all project scope.	
				EST 4	Prime and subcontractor assignments appear reasonable.	
				EST 5	Major Folder quantity units and unit proces appear reasonable.	
				EST 6	Major folders developed to support a coherent construction schedule development.	
				EST 7	Major construction features supported by quantity take-offs and appear reasonable.	

Estimate

					CONSTRUCTION ESTIMATE DETAILS	
				MISC	**Miscellaneous Estimate Details**	**REVIEW COMMENTS**
				MISC 1	Estimate covers the many minor cost items, that together, can add significantly to the project.	
				MISC 2	Costs include any potential Hazardous, Toxic, and Radioactive Waste (HTRW) concerns.	
				MISC 3	Limited use of generic Cost Book unit prices for critical cost items that could undermine the total cost accuracy.	
				MISC 4	Limted use of Lump Sum, Each or Allowance items that do not accurately convey scope or pricing.	
				MISC 5	Limited use of over-ridden unit or detailed costs that results in lost confidence and greater risks.	
				LAB	**Labor**	**REVIEW COMMENTS**
				LAB 1	Current labor rates used that match the estimate date and location where the work is occurring.	
				LAB 2	Actual labor rates determined to be reasonable, considering the type of work and other site factors.	
				LAB 3	Overtime application appears justified, reasonable and logical for major work items.	
				LAB 4	If overtime is used, the direct cost markup factors correctly entered and applied.	
				LAB 5	Application of Payroll Tax and Insurance (PT&I) for the selected Contractors: State Unemployment Insurance (SUI) based on the state in which the work is occurring vs. using the AVG default.	
				LAB 6	Under PT&I for Workmen's Compensation Insurance (WCI), was the selected Contractor Class based on the actual work to be performed vs. using the default for Concrete Work?	
				LAB 7	Labor rates take into consideration potential labor shortages and includes any necessary subsistence or per diem for critical labor elements.	
				LAB 8	Labor consideration made in mobilization and demobilization efforts.	
				LAB 9	Correct labor rates used for Building, Heavy, Highway, Residential.	
				LAB 10	Marine Work – Work performed on or over navigable waterways addresses Longshoreman and Harbor Workers Act insurance, if required by the state.	
				LAB 11	Dredging – Labor rate database updated to reflect the latest wage rates available for dredging work at the location.	
				LAB 12	Dredging – Labor rates appear reasonable, based on the location and type of plant performing the work.	
				EQ	**Equipment**	**REVIEW COMMENTS**
				EQ 1	Correct regional equipment rates used for the location where the work is occurring.	
				EQ 2	Database updated to reflect the latest fuel prices for the work site.	
				EQ 3	Critical equipment choices, size and rates appear reasonable, considering work type and site conditions.	
				EQ 4	Rates for Average, Difficult, Severe or Standby are correctly applied and justified within the notes.	
				EQ 5	Standby rates used, in order to ensure that Ownership Costs for equipment were covered for the normal 40 hour work week.	
				EQ 6	Standby rates included for equipment mobilization and demobilization.	

				EQ 7	Rental rates used for equipment not normally owned by the selected contractor. Were operating costs for rented equipment included?	
				EQ 8	If warranted, were other factors (such as the Cost of Money) updated to reflect current conditions?	
				EQ 9	Dredging – Based on the actual site conditions, quantities, disposal areas, and schedule: was the selected dredge plant determined to be appropriate for the contract at hand?	
				EQ 10	work.	
				EQ 11	Dredging – Dredge plant costs based on the current CEDEP database.	
				EQ 12	Dredging - Was the dredge plant database, contained in CEDEP, reviewed and were plant costs determined to be reasonable based on the proposed work?	
				EQ 13	Dredging – Include costs for dredge plant during periods of standby or non-working hours and weather impacts.	
				CP	**Crews & Productivity**	**REVIEW COMMENTS**
				CP 1	Critical crew composition and productivity appear reasonable for the major work items.	
				CP 2	Productivity efficiencies or inefficiencies considered and explained.	
				CP 3	Critical project productivity rates appear reasonable. Notes describe logic.	
				CP 4	Heavy equipment crews include the supporting labor and equipment necessary to perform the task at the selected productivity.	
				CP 5	For large earthwork projects, crew assemblies and productivities for excavation, load, haul, placement, compaction and disposal correlate.	
				CP 6	Dredging – crew productivity and any applied efficiency factors adequately justified in the estimate.	
				MAT	**Materials**	**REVIEW COMMENTS**
				MAT 1	Major quantities supported by a quantity take-off document.	
				MAT 2	Major, critical or volatile materials and quantities identified at the detail level.	
				MAT 3	Estimate correctly includes State Sales Tax or Gross Receipts Tax to materials and supplies purchased for the contract.	
				MAT 4	Estimate notes identify the source of major material quotes, with source, name and date of quote (escalation concern).	
				MAT 5	Estimate makes adjustments for loss due to handling, placement, cutting, transportation, contamination, etc. Notes document adjustments.	
				MAT 6	Earthwork quantities indentified based on BCY for excavated material, LCY for hauled material, ECY for placed material.	
				MAT 7	Earthwork quantities make reasonable adjustments between BCY, LCY and ECY.	
				MAT 8	Line item note description for material purchase indicates if shipping is included for major items.	

Estimate

				MOB	**Mobilization - Preparatory Work, Demobilization – Cleanup**	**REVIEW COMMENTS**
				MOB 1	Mobilization and demobilization costs are detailed or appropriate.	
				MOB 2	Total mobilization and demobilization cost appear reasonable.	
				MOB 3	Multiple mobilizations considered for longer projects impacted by weather or environmental restrictions.	
				MOB 4	Dredge work: Estimate includes preparation of dredge attendant plant for transfer, the cost to move all plant and equipment return of tug or towing vessel, and preparation of the plant to start work.	
				MOB 5	Dredge Work: Project and estimate clearly include a construction support site.	
				MOB 6	Dredge Work: Estimate includes all costs to secure machinery and equipment for storage.	
				MOB 7	Dredging - Pipeline mobilization, assembly and relocation for surface and underwater appropriately considered.	
				SUB	**Subcontracting**	**REVIEW COMMENTS**
				SUB 1	Subcontractor assignments and markups reasonable for the tasks assigned.	
				SUB 2	Estimate identifies subcontract quotes and addresses markup applications with the quotes.	
				SUB 3	Appropriate consideration has been made in addressing multi-tier subcontracting for specialty items.	
				PR	**Prime Contractor**	**REVIEW COMMENTS**
				PR 1	Prime contractor(s) has been aptly assigned with reasonable markups.	
				PR 2	Are appropriate taxes included or excluded as may be required?	
				PR 3	Field office overhead reasonable for this project?	
				PR 4	Field Office Overhead includes mobilization if not identified elsewhere.	
				PR 5	Home office overhead appears reasonable for the type of prime contractor specialty.	
				PR 6	Profit appears reasonable and based on the weighted guideline method or justified by other means.	
				PR 7	Bond appears reasonable.	

Schedule

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	**REVIEW COMMENTS**
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
				SCH	**SCHEDULES**	
				CS	**Construction Schedule**	**REVIEW COMMENTS**
				CS 1	Reflects the estimate and identifies critical aspects of the project scope and construction activities.	
				CS 2	Key milestones are depicted.	
				CS 3	Reflects reasonable logic of activities performed.	
				CS 4	Indicates a likely critical path.	
				CS 5	Reflects the estimate productivities for critical path items.	
				CS 6	Presents sequential and parallel activities where reasonable.	
				CS 7	Makes distinction between single shift, and double shift.	
				CS 8	Takes into consideration overtime where applicable.	
				CS 9	Depicts critical or time-sensitive orders or procurements.	
				CS 10	Considers weather issues, environmental restrictions, winter construction.	
				CS 11	Considers project ramp up, mobilization and demobilization.	
				PS	**Project Schedule**	**REVIEW COMMENTS**
				PS 1	The Project Schedule in the decision document report includes all FEATURE activities; i.e. review and approval, planning, engineering and design, procurement, construction, close-out and turn-over.	
				PS 2	The project schedule clearly presents reasonable dates to determine inflation based on escalation indexes, i.e., the activity beginning date or the activity midpoint?	

CSRA-Contingency

Project Title & Location:					Everglades Agricultural Area Storage Reservoir Project	**REVIEW COMMENTS**
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
					RISK-BASED CONTINGENCY	
				CSRA	**Formal Cost and Schedule Risk Analysis (CSRA for >$40M)**	**REVIEW COMMENTS**
				CSRA 1	CSRA structure and process follows the Cost Dx guidance.	
				CSRA 2	CSRA model provided in electronic format using Excel and Crystal Ball softwares.	
				CSRA 3	CSRA Report follows Cost Dx template.	
				CSRA 4	CSRA considers total cost and total schedule, all features.	
				CSRA 5	Risk Register developed by major PDT members for all project Features.	
				CSRA 6	Organizational and PM risks considered.	
				CSRA 7	Contract Acquisition risks considered.	
				CSRA 8	Technical risks considered.	
				CSRA 9	Scope quality and detail addressed.	
				CSRA 10	Lands and Damages and Relocations considered.	
				CSRA 11	Regualtory and Environmental risks considered.	
				CSRA 12	Construction risks considered.	
				CSRA 13	Estimate and schedule accuracy risks considered.	
				CSRA 14	Volatile pricing and extreme escalation considered.	
				CSRA 15	Material availability and transport considered.	
				CSRA 16	External risks: funding, stakeholders, labor, weather, opposition, bidding competition considered.	
				CSRA 17	Does the CSRA consider opportunities such as VE and alternatives?	
				CSRA 18	Summarizes and describes the basis and development of TPC. For example, the source and basis of engineering and design (E&D) (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimates (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule.	

				CSRA 19	Risk model considers any risk duplications and correlations between cost and schedule risk events?	
				CSRA 20	Risk event correlations have been minimized.	
				CSRA 21	CSRA model includes the moderate and high risks.	
				CSRA 22	CSRA considers both internal and external risks.	
				CSRA 23	CSRA supported by market research and documented assumptions.	
				CSRA 24	CSRA results traceable back to the PDT Risk Events.	
				CSRA 25	CSRA model variance distributions appear reasonable w/ backup assumptions.	
				CSRA 26	Contingency value based upon an 80% confidence level.	
				CSRA 27	Contingencies appear reasonable based on project complexity and ATR findings.	
				RB	**Risk Based Contingency Development for <$40M**	**REVIEW COMMENTS**
				RB 1	Supported by a studied development per major Feature (not just a value w/o basis).	
				RB 2	Developed as a weighted aggregate of major construction features.	
				RB 3	Considers other factors other than just technical design and construction (see CSRA above).	
				RB 4	Considers external risk potentials (see CSRA External Risks above)	
				CV	**Contingency Value**	**REVIEW COMMENTS**
				CV 1	Rates appear reasonable for each major Feature item?	
				CV 2	Overall rate appears reasonable based on reviewers knowledge of project scope and estimates.	

TPCS

Project Title & Location:					Everglades Agricultural Area Storage Reservoir Project	REVIEW COMMENTS
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
Y	N	N/P	N/A		REVIEW CATEGORIES	
				TPCS	**TOTAL PROJECT COST SUMMARY in Current Dollars (first column set)**	
				TPCS 1	Proper TPCS format (ETL 1110-2-573).	
				TPCS 2	Price level date shown is consistent with the estimate preparation date.	
				TPCS 3	All project-related Civil Works WBS Features depicted.	
				TPCS 4	Base costs reflects the esitmate development in current dollars.	
				TPCS 5	Summary page roll up supported by sub-project calculations.	
				TPCS 6	Costs reasonable for PED (30 Feature). Note: percentages are sometimes used to develop these costs.	
				TPCS 7	30 Feature clearly includes costs for PM, P&E, E&D, Reviews & VE, Contracting, reprographics, EDC, Planning during construction.	
				TPCS 8	Costs reasonable for Construction Management (31 Feature Code). Note: percentages are sometimes used to develop these costs.	
				TPCS 9	Contingencies shown separately for each Feature.	
				TPCS 10	Contingency rates match the risk based contingency results (commonly the 80 percent confidence level).	
					TOTAL PROJECT COST SUMMARY in Current Dollars (second column set)	
				TPCS 11	Depicts budget year for decision document funding request.	
				TPCS 12	Includes escalation from estimate date to budget year: EM 1110-2-1304, Civil Works Construction Cost Index System (CWCCIS).	
				TPCS 13	Captures total project cost for all Featrures to budget year.	
					TOTAL PROJECT COST Inflated to Fully Funded Estimate (third column set)	
				TPCS 14	Escalation dates and rates shown for each inflated Feature.	
				TPCS 15	Escalation dates consistent with the project schedule.	
				TPCS 16	Escalation based on price indexes from the current CWCCIS, EM 1110-2-1304 and correctly applied.	
				TPCS 17	Summarizes and describes the basis and development of TPC. For example, the source and basis of engineering and design (E&D) (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimates (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule.	

TPCS

					TOTAL PROJECT COST SUMMARY - Federal and Non-Federal Costs	
				TPCS 18	Federal and non-Federal cost share percentages shown.	
				TPCS 19	Project cost share percent consistent with the Cost Sharing Agreement?	
				TPCS 20	If applicable, is the cost/value of non-Federal in-kind services shown?	
				TPCS 21	Cost shares calculated correctly.	
				TPCS 22	Signature blocks for PM, Cost Chief, Real Estate Chief (ER 1110-2-1302)	

Reports

Project Title & Location:					**Everglades Agricultural Area Storage Reservoir Project**	**REVIEW COMMENTS**
Project Review Phase:						
Product Date:						
Reviewer Name & Phone:						
Review Date:						
Y	**N**	**N/P**	**N/A**		**REVIEW CATEGORIES**	
					REPORTS - Basic Information for Reviewer – Scope and Form	
				MR	**Draft Main Report, General**	**REVIEW COMMENTS**
				MR 1	Complete report document provided for ATR. As a minimum: Main Report, Engineering Appendix, Cost Appendix, cost tables and project schedule.	
				MR 2	Package meets the requirements within ER 1105-2-100, Exhibit G of the Planning Guidance Notebook?	
				MR 3	Executive Summary clearly presents the "Total Project Cost" (TPC) inflated through the project schedule. The TPC at the time the project is authorized by Congress becomes the Baseline Cost Estimate (BCE). The BCE is subject to cost limits of Section 902 Water Resources Development Act of 1986. (ER 1105-2-100)	
				MR 4	Reported costs for all project Features included in the TPC and reflect the estimating products.	
				MR 5	Report indicates the Total Project Schedule or duration (ER 1110-2-1150).	
				MR 6	Both required costs (budget constant dollars and fully funded) presented in the Executive Summary.	
				MR 7	Report makes distinction between the Federal and Non-Federal dollars.	
					Comparative Construction Cost Estimates	**REVIEW COMMENTS**
				MR 8	Presents the various estimate scopes, technical/design data, method of construction, and assumptions used for developing the comparative estimates included and described (ER 1110-2-1302).	
				MR 9	Comparative cost estimates developed at the same price level.	
				MR 10	TPC of each comparative estimate accurately used in the economic analysis comparisons, such as costs and benefits at the same price level (ER 1105-2-100).	
				MR 11	Contingencies adequate for each alternative in consideration for the alternative risks/complexity.	

					Cost Engineering Appendix	REVIEW COMMENTS
				CA 1	Summarizes the scope of the supporting documents and describes the basis of the estimate, such as method of construction, major assumptions and cost data resources used to cost the major cost elements (ER 1110-2-1302).	
				CA 2	Summarizes the uncertainties associated with major cost items (ER 1105-2-100, appendix E).	
				CA 3	Summarizes the cost risk and resulting contingency development for the recommended plan construction cost estimate. A risk analysis report is required for any project estimated to greater than $40M.	
				CA 4	Describes the development of the Plan construction schedule.	
				CA 5	Summarizes and describes the basis and development of TPC. For example, the source and basis of engineering and design (E&D) (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimates (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule.	

APPENDIX 8.4

LEGIS DRAFT REPORT

SUBMITTED 2018.02.19

sfwmd.gov

LEGIS CONSULTANCY, INC.

Everglades Agricultural Area Storage Reservoir Project - Preparation for Agency Technical Review

[1st DRAFT]

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL

19 February 2018

Purchase Order No.: 4500104361
Order Date: 12/22/2017
Purchasing Agent: J. Harris-Fitzroy

sfwmd.gov

LEGIS CONSULTANCY, INC.

Prepared by:	William Stevenson Manager Cost Engineering, Legis Consultancy, Inc.	Feb 19, 2018 *Date*
Prepared by:	Patrick S. Ray, JD, CCP, PMP Vice President, Legis Consultancy, Inc.	Feb 19, 2018 *Date*
Reviewed by:	David R. Smart, JD, PMP President, Legis Consultancy, Inc.	Feb 19, 2018 *Date*
Approved by:	Michael C. Ray, PE, CCP, PSP, PMP Managing Principal, Legis Consultancy, Inc.	Feb 19, 2018 *Date*

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Notice

This report is intended solely for the use of the South Florida Water Management District and J-TECH (a joint venture of Tetra Tech, Inc. and Jacobs Engineering Group, Inc.) and is not intended for use by any other person, partnership, corporation or any other entity, in whole or in part, without the express written consent of the South Florida Water Management District or J-TECH. Legis Consultancy, Inc. hereby disclaims any and all responsibility and liability for consequences of any other use or reliance by others on this document or any information contained herein.

1.0 EXECUTIVE SUMMARY

On December 22, 2017, the South Florida Water Management District (SFWMD) engaged Legis Consultancy, Inc. (Legis) to provide comments and technical support on the status of the Everglades Agricultural Area Storage Reservoir Project documentation prepared for the District in advance of the Agency Technical Review (ATR). This draft report provides the initial comments.

Project Background: As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is known as the Everglades Agricultural Area Storage Reservoir Project. New construction for the project is expected to continue until late 2027. The project is broken down into six key features: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir, 4) Gated Spillway Construction, 5) Bridges, and 6) New and Relocated Pump Stations.

Legis Team: The Legis team consisted of seven professionals including one principal-in-charge, one project manager, two principal cost engineers, one senior cost engineer, one research assistant, and one technical editor.

Scope of Work: The scope of work includes a kickoff meeting and project technical support, conducted all via telephone. Submittals will include a first draft report, a second draft report, and a summary report.

Confidentiality and Document Security: Legis considers all of its work on this assignment to be procurement-sensitive. All Legis personnel have executed non-disclosure agreements that cover the firm's work and documents.

Documents Provided by the Client: SFWMD supplied Legis with the necessary documents (narratives, schedules, quantity takeoffs, estimates, etc.) to begin the assignment.

Approach to the Assignment: Legis developed and documented an eleven-step approach to completing the assignment.

Record of Quality Management: Legis recommended the inclusion of a Record of Quality Management in the District's ATR submittal.

Scoping Documents: Legis reviewed the scoping documents provided and made recommendations for additional content to be included in the District's ATR submittal.

Quantity Development: Legis found that certain quantity calculations, while provided, were not used on the MII cost estimate. Legis provided specific comments on quantity issues for the Pump Stations, Bridges, Culverts, and Levees.

MII Estimate: Legis reviewed the District's MII cost estimate and found approximately 300 items that had zero quantities – resulting in no cost being recorded in the estimate. Legis also found approximately 150 User Items in the estimate which required attention

Project Schedule: Legis reviewed the project schedule and made recommendations for improvement in the area of crew productivity.

Cost Schedule Risk Analysis: Legis reviewed the project schedule and made recommendations for improvement. Specifically, it recommended the inclusion in the District's ATR documentation of the Risk register and active involvement of the project delivery team.

2.0 PROJECT OVERVIEW

A general overview is discussed in this section. Details are provided on 1) the Everglades Agricultural Area Storage Reservoir Project, 2) Legis Consultancy's Team, 3) Legis Consultancy's Scope of Work, and 4) document security issues.

2.1 Project Background

As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District (SFWMD) is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is the known as the Everglades Agricultural Area Storage Reservoir Project.

New construction for the project is expected to continue until late 2027. The project is broken down into six key features: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir, 4) Gated Spillway Construction, 5) Bridges, and 6) New and Relocated Pump Stations. Specifically, two areas of the project are expected to be the most costly and of the longest durations to construct. First, a new reservoir will be constructed: the A-2 East Reservoir with a storage capacity of 240,000 ac/ft. Second a new pump station (4,600 CFS) will be constructed and a 300 CFS pump will be relocated to a new pump station.

As the U.S. Army will likely finance the majority of the Everglades Agricultural Area Storage Reservoir Project, the project cost, schedule and economic risk will need to be approved by the Assistant Secretary of the Army for Civil Works (Mr. Ryan A. Fisher - Acting) prior to work commencing. SFWMD understands that the cost, schedule and economic risk will undergo a review similar to the current U.S. Army Corps of Engineers (USACE) Agency Technical Review (ATR) process. This ATR process is rigorous and requires adherence to multiple Engineering Regulations (ER), Engineer Manuals (EM), Engineer Circulars (EC), Engineer Technical Letters (ETL), and memorandums of guidance.

2.2 Team Personnel

The Legis Consultancy Team consisted of the following members:

Individual	Role
Michael Ray, PE[1], CCP[2], PSP[3], PMP[4]	Principal-in-Charge; Executive QC
David Smart, JD[5], PMP [4]	Project Manager
Bill Stevenson	Principal Cost Engineer
Patrick Ray, JD [5], CCP [2], PMP [4]	Principal Cost Engineer
Daniel Jamison	Senior Cost Engineer
Michele Huff	Engineering Research Assistant
Melissa Marion-Landais	Technical Editor

[1] PE – Professional Engineer

[2] CCP – Certified Cost Professional (AACEI–Association for the Advancement of Cost Engineering International)

[3] PSP – Planning & Scheduling Professional (AACEI–Association for the Advancement of Cost Engineering International)

[4] PMP – Project Management Professional (PMI–Project Management Institute)

[5] JD – Juris Doctor (Consultant, Non-practicing Attorney)

2.3 Legis Consultancy, Inc. Scope of Work

As defined in the SFWMD Purchase Order, Legis Consultancy's Scope of Work is defined as:

Task 1 Kickoff Meeting
Within two weeks of Notice to Proceed (NTP) Legis shall coordinate with the District and lead a project kickoff meeting. At this meeting Legis will identify project team members, review the scope of work, identify any issues or coordination items and review the project schedule.

Task 2 Project Support
Legis will provide technical support via phone directly with the District's planning consultant (JTech) as needed prior to submission of the ATR documents. Technical assistance will include preliminary review of work prior to the District's completion of the draft PACR report, such as review and updating of the CEPP Risk Register to fit the CEPP PACR. Legis will not provide analysis, cost estimates or other technical assistance during this task which may compromise the independent nature of their review.

Task 3 ATR Level Review
The submittal package, as described above, will be provided to Legis for their technical review. The ATR will include review of a first draft including the complete scoping documents and complete MII cost estimate. Review comments will be compiled in an excel spreadsheet by Legis and submitted to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent Legis backcheck.
Upon completion of the first draft the District will submit a second draft report which will include the complete P6 schedule and the complete Cost & Schedule Risk Analysis along with an updated report incorporating Legis comments as well as comments that may be incorporated from other District review effort (i.e. an IEPR review). Legis will compile their review comments in an excel spreadsheet and submit to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of second draft comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent backcheck.

Task 4 Legis ATR-Level Summary Report
Upon completion of Task 3 Legis shall provide to the District a report summarizing their efforts on the project. The report shall include a description of the reviews performed, who provided the reviews, and a description of the process that was taken to insure compliance with Corps standards.

2.4 Legis Consultancy Execution of Scope of Work

See *Section 4.0 Methodology*.

2.5 Document Control & Security

Legis Consultancy treats client and project information as confidential by default. Legis personnel are required to sign a non-disclosure agreement ("NDA") with the company as a term of employment. For most projects, Legis is bound by multiple NDA's which may include the contract vehicle as well as project specific NDA's. Federal contractors are required to comply with NIST 800-171, Protecting Controlled Unclassified Information in Non-federal Information Systems and Organizations. Most Legis project work, particularly for government entities, is treated as Controlled Unclassified Information ("CUI") under the procurement sensitive and infrastructure sensitive categories.

Data security is also maintained at the CUI level per NIST 800-171. This level mandates many precautions to guard against unauthorized data access. For example, Legis uses the, “least possible access rule”, when determining user permissions to the Legis primary domain controller. This means a user is given access to only what is needed for the project at hand.

3.0 DOCUMENTS REVIEWED

Below are the documents and packages reviewed by Legis Consultancy for the preparation of this report. All were provided by SFWMD in electronic form.

Legis was instructed by SFWMD to remove #10 from the documents provided.

SFWMD Support
Legis Project No. 2114

#	FILE NAME	CONTAINS	DATE DELIVERED	FORMAT
1	00_Appendix B_Cost Engineering	Narrative Project Summary	2.8.2018	pdf
2	00_Executive Summary -020618	Narrative Executive Summary	2.8.2018	word
3	01_B.3-MCACES_EAA_Summary_20180201	MII Roll-up	2.8.2018	pdf
4	02_B.4-SCHEDULE (MS Project)_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
5	04_Attachment B-EAA Storage Reservoir Project_CSRA_Report_20180205	Cost Schedule Risk Analysis	2.8.2018	pdf
6	05_Attachment C-Appendix B_Quantities Spreadsheets	Quantity Take Offs	2.8.2018	pdf
7	240-A1(L) Levees N-1	Quantity Take Offs	2.8.2018	pdf
8	A THRU E	Plans	2.8.2018	pdf
9	F(L) THRU N-1	Plans	2.8.2018	pdf
~~10~~	~~FULL 240A1(L) Structure-Levee Quantity Appendix_011918~~	~~Plans and Quantity Take Offs~~	~~2.8.2018~~	~~pdf~~
11	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	pdf
12	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	word
13	MCACES_EAA Reservoir_v5		2.8.2018	visual bsc
14	MCACES_EAA Reservoir_v5	MII Native Estimate	2.8.2018	mii
15	ROM Cost per DESIGN_122917_v18_Used for Populating MCACES_011818	Excel Summary of Estimate	2.8.2018	excel
16	SCHEDULE_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
17	DRAFT Schedule_Preliminary_EAA Reservoir_v6	MS Project - Project Schedule	2.12.2018	MS project

4.0 METHODOLOGY

The study was conducted in the following manner:

- The Legis Consultancy team leader held an internal kickoff meeting at which the team members were briefed on the assignment.
- All team members then reviewed the documents provided by the client and the USACE ATR requirements.
- The team leader prepared the report outline and distributed to the team members.
- After the documents were reviewed, the team met again at which time the team leader made specific research, analytic and writing assignments based on each team member's area of expertise and experience.
- Each team member then delved deeper into the documentation related to his/her assignment, undertook the appropriate analysis, and prepared an internal draft covering his/her section of the report.
- The team leader assembled the various section drafts for the technical editor to strengthen.
- The assembled draft was reviewed by the project quality control officer.
- The reviewed document was returned to the drafters for adjustments.
- The technical editor reviewed the changed draft.
- The team leader prepared the document for a final principal-in-charge review.
- The project manager shipped the draft document to the client.

5.0 FINDINGS AND RECOMMENDATIONS

5.1 General

Depending on the maturity level of a project, a USACE ATR Team (ATR Team) typically relies on a required set of documents to be provided by the project sponsor to conduct the ATR. Projects can be determined to be at one of three levels of maturity: Alternative Formulation Briefing (AFB) Level – parametric based products, Feasibility Level – detail based products, and Post Authorization /Appropriation – detail based products.

The Everglades Agricultural Area Storage Reservoir Project is at the feasibility level so an ATR Team would expect to review the following documents:

- Record of Quality Management process
- Quantity Development
- Scoping documents (reports, plans, and investigations) that support quantities quantity development
- Microcomputer Aided Cost Estimating System (MCACES) estimate(s) in the MCACES electronic software for the recommended plan
- Total project schedule and construction schedule to support escalation calculations
- Risk-based processes used to establish basis of contingencies, a formal risk analyses and risk report for projects greater than the established cost threshold

5.2 Record of Quality Management Process

The Legis Team has not been provided a record of the quality control process applied to the development of the documents.

There are various ways to accomplish this, one of which is to maintain a Comment-Resolution Sheet (similar to USACE's DrChecks) which documents the quality control checks and their final disposition. Typically, drafts of the various documents are reviewed by the preparing organization's quality control officer who enters the comment on the Comment-Resolution Sheet. The sheet is then returned to the document's drafter who either a) accepts the comment or further indicates that the correction will be made, or b) rejects the comment and includes an explanation as why the original condition is correct. At the completion of the Comment-Resolution process, all comments must be closed out to the agreement of both parties. The last step has the quality reviewer confirming that all agreed upon changes were in-fact applied to the document.

Copies of the closed out and signed documents would then be included in the formal USACE submittal. Many firms have similar quality management processes which would likely meet the ATR requirements.

Recommendations – The Legis team presents the following recommendations relative to the Quality Management Process:

- Include the record of the in-house quality management process applied to this project.
- Include a narrative that introduces the selected process and attach the evidence of its application to this project.

5.3 Scoping Documents

Scoping documents generally include project reports, narratives, plans, and investigations. Due to the high risk associated with project scope, these documents are viewed as vital support to quantity development, schedule development, and risk assessment.

The Legis Team has been supplied with two narratives related to the Everglades Agricultural Area Storage Reservoir Project: *00_Appendix B_Cost Engineering* and *00_Executive Summary – 020618*. Both documents contain owner produced narratives with limited details concerning need for the project, various alternatives, cost/schedule information, and the tentatively selected plan. Lastly, approximately ten typical drawings (culvert, pumping, levee, and spillway) were supplied.

Recommendations – The Legis team presents the following recommendations relative to the project schedule:

- The final package should include any additional detailed narratives concerning cost, schedule, and risk.
- The final package should include any pertinent reports, pictures, plans, presentations, studies, or the like produced by consultants or the project owner.

5.4 Quantity Development

A successful ATR submittal requires a comprehensive quantity takeoff (QTO) to support the items contained in the MII estimate. Each QTO should briefly describe the item being quantified, provide a set of understandable calculations and identify the units of measure used. Care must be taken to properly convert from one set of units to another set of units when such a conversion is appropriate. (For example, typically measurements of a concrete structure are in feet, the volume is calculated in cubic feet and this quantity is converted into cubic yards. This is a simple concept that far too often is the subject of error because the unit of measure was not properly identified.)

There must be a clear linkage between the QTO result and the MII estimate quantity and note. Simple QTO calculations can be undertaken in the MII note field. More complex calculations are best undertaken using a QTO spread sheet.

The Legis team reviewed the QTO files provided by the client and observed the following:

- The QTO calculations were generally clear.
- The assumptions appeared appropriate.
- The units of measure were appropriate.
- There were often many QTO calculations that were not reflected in the MII estimate and notes.
- The linkage between the QTO documentation and the MI estimate was often difficult to understand without interpretation of the calculations.

The Legis team selected 4 elements for a more detailed analysis. These include P-1 Pumping Station, B-1 Bridge, C-1 Culvert, and Levee Section A.

Pump Station: Table 5.4.1 (P1 Pumping Station) compares the QTO of 30 items with those found in the MII estimate. Each of the 30 items had the appropriate calculations but the results were not reflected in the MII estimate and notes. In their place, one lump sum placeholder was used. The Pump Station Scope Assumptions call for 60" diameter discharge pipes whereas the takeoff lists only 12', 10', and 8' diameter pipes. These observations in whole or in part apply to all pump stations on the project.

LEGIS CONSULTANCY, INC.	**Everglades Agricultural Area Storage Reservoir Project**	**Legis Consultancy, Inc.**
	Preparation for Agency Technical Review Report	**February 19, 2018**
	QTO Analysis	
	Pump Station	**Table 5.4.1**

Contract 6

Pumping Plants

P-1 Pump Station

Item Description	U/M	Calculated QTO	Quantity in MII Notes	Quantity in MII Estimate	Legis Comment
Excavation	cy	54164	---	---	
Concrete	cy	11015	---	---	
Rebar	tn	874	---	---	
Piping 12'	lf	1632	---	---	
Piping 10'	lf	816	---	---	
Piping 8'	lf	1224	---	---	
Piping 12' 45 Deg Bends	ea	16	---	---	
Piping 10' 45 Deg Bends	ea	8	---	---	QTO not used in MII
Piping 8' 45 Deg Bends	ea	12	---	---	
Rip Rap	cy	4171	---	---	
Geotextile Fabric	sf	40278	---	---	
Trash Rack	sf	1680	---	---	
Roll-up garage doors 12' x 14'	ea	4	---	---	
Louvers 7'-4" x 7'-4"	ea	8	---	---	
Overhead crane, 25 Ton	ea	2	---	---	
Power line connection	lf	2500	---	---	
Septic tank	ea	1	---	---	
Potable water well	ea	1	---	---	
Generator fuel tank	gal	2000	---	---	
Generator (?)	ea	1	---	---	
48" discharge piping	lf	60 (?)	---	---	
concrete encasement	cy	146.6	---	---	
Floor grating	sf	240	---	---	
Ladders	vlf	120	---	---	
Railings	lf	180	---	---	
Haul road	sy	32853	---	---	
Chain link fence	lf	2280	---	---	
Silt fence	lf	3700	---	---	
Silt boom	lf	600	---	---	
Pump Station, 4600 cfs	ea	---	---	1	Place holder used

Table 5.4.1 P1 Pumping Station

Bridge: A review of the B-1 Bridge (2 Lane) QTO shows the 21 items had calculated quantities. Again, the 21 calculated quantities were not found in the MII estimate; rather one place holder was employed. These observations in whole or in part apply to all bridges on the project.

LEGIS CONSULTANCY, INC.	**Everglades Agricultural Area Storage Reservoir Project**	**Legis Consultancy, Inc.**
	Preparation for Agency Technical Review Report	**February 19, 2018**
	QTO Analysis	
	Bridge	**Table 5.4.2**

Contract 5

Roads, Railroads and Beidges

B-1 Bridge (2 Lane)

Item Description	U/M	Calculated QTO	Quantity in MII Notes	Quantity in MII Estimate	Legis Comment
Mobilization	ls	1	---	---	QTO not used in MII
Concrete Reinforcement, Gr 60, Sheet piles	lb	4333	--	--	
Concrete Reinforcement, Gr 60, Pile Caps	lb	22064.04	--	--	
Concrete Reinforcement, Gr 60, Closure Pours	lb	1803.6	--	--	
Concrete Reinforcement, Gr 60, Barrier Walls	lb	11205.25	--	--	
Concrete Reinforcement, Gr 60, Aproach Slabs	lb	18300	--	--	
Concrete, ready mix, Class II, Sheet piles	cy	36	--	--	
Concrete, ready mix, Class II, Pile Caps	cy	131.93	--	--	
Concrete, ready mix, Class II, Closure Pours	cy	31.92	--	--	
Concrete, ready mix, Class II, Barrier Walls	cy	95.76	--	--	
Concrete, ready mix, Class II, Aproach Slabs	cy	80	--	--	
FDOT Class 4 Bridge Deck Grooving	sf	560	--	--	
Precast Prestessed Deck Units, 18" x 5'-6" x 34'-0"	lf	544	--	--	
Precast Prestessed Deck Units, 18" x 5'-9" x 34'-0"	lf	272	--	--	
Precast Prestessed Deck Units, 18" x 5'-6" x 24'-0"	lf	384	--	--	
Precast Prestessed Deck Units, 18" x 5'-9" x 24'-0"	lf	192	--	--	
Piles, 14" FDOT piles, Wing Walls	lf	480	--	--	
Piles, 18" FDOT piles, End Bent, Test Pile	lf	120	--	--	
Piles, 18" FDOT piles, End Bent	lf	400	--	--	
Piles, 18" FDOT piles, Interior Bent, Test Pile	lf	60	--	--	
Piles, 18" FDOT piles, Interior Bent	lf	920	--	--	
Bridge, 2 lane	ea	--	1	1	Place holder used

Table 5.4.2 B-1 Bridge

Culvert: The QTO for Culvert C-1 presents a different issue. The QTO addresses 29 items of which only 16 are reflected in the MII estimate and 11 in the MII notes. Of the 16 items in the MII estimate, 3 MII quantities differ significantly from the quantity calculated in the QTO. A more cursory review of QTO for Culverts C-2 through C-10 indicates that the comments relative to Culvert C-1 apply to the Culverts C-2 through C-10. The Legis Team was unable to review the QTO for Culvert C-11 as it was not included in the documents received from the Client. It is noteworthy that the MII estimate for item C-11 does contain 6 quantities which were priced in the MII estimate. These observations in whole or in part apply to all culverts on the project.

LEGIS CONSULTANCY, INC.	**Everglades Agricultural Area Storage Reservoir Project**	**Legis Consultancy, Inc.**
	Preparation for Agency Technical Review Report	**February 19, 2018**
	QTO Analysis	
	Culvert	**Table 5.4.3**

Contract 3
Floodway Control/Diversion Structures
Water Control Structures
Culvert C-1

Item Description	U/M	Calculated QTO	Quantity in MII Notes	Quantity in MII Estimate	Legis Comment
Drilling and blasting Rock …	bcy	34110	34110	34110	
Excavate and load, bank measure, blasted rock …	bcy	34110	---	34110	
… Concrete, Box culvert C.I.P 12' x 12' …	lf	---	---	1540	
Sheet piling, steel, 38psf, 25' excavation …	sf	4800	4800	4800	
Structural concrete, inplace, column 4000 psi …	cy	---	23.7	23.7	
Railing, pipe aluminum, … 3 rails, …	lf	408	408	408	
Floor grating, aluminum, 1-3/4" x 3/16 bearing bars ..	sf	432	432	432	
Slide gates, hydraulic structures, steel …	ea	3	3	4	
Backfill, bank measure, blasted rock, dozer	bcy	42638	42638	42638	
Riprap, random pieces, dumped from truck	lcy	4659.3	740	740	
Timber piles, treated wood pile … to 40' long …	vlf	344	---	240	
Synthetic erosion control, silt fence, … 3' high	lf	---	6492	7500	
Precast wall panel … 20' x 8' x 4" (Adjusted)	sf	---	---	1200	
Doors, commerical, steel, flush, full panel … 4/0x8/0	ea	2	2	2	
Conduit fittings for rigid galv steel, boxed …	ea	---	---	1	
Vent hood, wall mounted, stainless steel, 36" …	ea	6	6	5	
Fire extinguishers	ea	2	---	---	
20" exhaust fan	ea	1	1	---	
12" exhaust fan	ea	1	1	---	
Generator fuel tank,____ gal	gal	1000	---	---	
Gate seal	lf	144	144	---	
Control building slab, concrete	cy	5.3	---	---	
Control building roof slab	sf	4.4	---	---	
Control building rebar	tn	---	---	---	
Control building roof	sf	---	---	---	
Fuel Pad	cy	3.6	---	---	
Geotextile fabric	sf	17000	---	---	
Conduit boxes	ea	2	2	---	
Generator (?)	ea	---	---	---	

Table 5.4.3 C-1 Culvert

Levee: Table 5.4.4 (Levee Section A) compares the QTO of 4 items with the 15 items found in the MII estimate. Two calculated quantities do not appear in the MII estimate. Four of the items in the MII estimate have zero quantity. These observations in whole or in part apply to all levees on the project.

LEGIS CONSULTANCY, INC.	**Everglades Agricultural Area Storage Reservoir Project**	**Legis Consultancy, Inc.**
	Preparation for Agency Technical Review Report	**February 19, 2018**
	QTO Analysis	
	Levee	**Table 5.4.4**

Contract 3
Levees and Floodwalls
Levee Construction
Material Handling - Berm Buildup

Item Description	U/M	Calculated QTO	Quantity in MII Notes	Quantity in MII Estimate	Legis Comment
Blasting of rock, main canal	cy	---	(Price)	0	
Excavate and stockpile #1, 5cy bucket, hyd excavatc	bcy	274288	---	274288	
Excavate and stockpile #2, 5cy bucket, hyd excavatc	bcy	274288	---	274288	
Excavate and stockpile #4, 5cy bucket, hyd excavatc	bcy	---	---	0	
Excavate and stockpile #3, 5cy bucket, hyd excavatc	bcy	---	---	0	
Push rock, buildup Levee, … dozer,, 150' push	bcy	274288	---	274288	
Blasting of rock, A2 borrow area	cy	---	(Price)	0	
Excavate from borrow area for processing blasted roc	bcy	---	---	4446	
Processing, rockcrusher, 200 T/hr canal berms	hr	---	576	23	
Excavate and load after processing blasted rock	bcy	---	---	4446	
Haul and dunp rock	lcy	---	---	4446	
Push rock, build up levee … dozer, 150 ' push	bcy	---	---	4446	
Compaction, backfill, bulk … dozer ….vibrating roller	ecy	274288	---	274288	
Push muck, … dozer 150' push	bcy	22264	---	21248	
Hydro seeding	ac	23	---	---	
Clearing and Grubing	ac	33	---	---	

Table 5.4.4 Levee Section A

The QTOs for Structures SW-2 through SW-4 are developed in a manner similar to the Culvert QTOs with detailed calculations. Structures SW-2 through SW-4 differ in that the results of these calculations are not used in the MII estimate; rather the MII estimate contains a single lump sum entry, leaving the QTO calculations for naught. It should be noted that references to these structures as both "SW-(number)" and "S-(number) in the MII estimate creates confusion.

It is difficult to relate the QTO components to the MII estimate because of differing terminology and differing locations in the estimate.

Recommendations – The Legis team presents the following recommendations relative to the QTO development:

- Remove QTO calculations that do not result in quantities found in the MII estimate. If there is a reason to keep such calculations, clearly label them as not being used in the MII estimate.
- Round off quantities to eliminate decimal fractions where appropriate.
- Scrub the assumptions section to eliminate inconsistencies with the calculations.
- Identify on the QTO exactly what element of the MII estimate the QTO calculation applies to.

5.5 MCACES MII Estimate

The MII estimate work breakdown structure (WBS) appears to be well developed. Because the WBS is complex and because major components sometimes appear in more than one contract element (Example: Spillways.), it might be useful to include in the project narrative a discussion of the major elements consistent with how they appear in the MII estimate WBS.

A summary review of the MII estimate reveals that it includes many user created cost items (USR). An MII USR item is an item which has been modified from the standard item in the MII data base. Modifications include changes in crew components (labor or equipment), crew productivity and material cost.

The USACE ATR protocol has very proscriptive rules for the use USR items in the MII estimate. A USR item must be based a current quote from a qualified (verifiable) vendor, a published vendor catalogue, or valid historical costs. The estimator's judgment as to the cost will not suffice. If historical costs are used, calculations must be offered as to adjustments for scale, inflation, etc. There are approximately 150 USR items in the current estimate. (See *Appendix 8.1 User Item Report*)

Numerous items at the detail level show costs of zero because they lack of quantity entries. If the item is valid, enter the appropriate quantity. If the item is not valid, delete it. There are 298 zero quantity items in the current estimate. (See *Appendix 8.2 Zero Quantity Report*)

MII cost entries for bridges appear to be lump sums for labor, equipment, material and subcontractor costs. These entries should be based on a) a fully developed bottoms-up estimate, b) possibly a parametric estimate, c) a quote from a qualified source, or d) valid historic costs adjusted to the date of the MII estimate. In the case of the bridges a possible source would be square foot (deck area) costs published by the state DOT. In the case of DOT historical costs, the calculations should identify how the DOT bid results are reduced by contractor profit, contractor jobsite overhead, contractor home-office overhead and sales tax to render them equivalent to MII bare costs.

MII cost entries for the pump stations and spillways are also unsupported single lump sums. These too must be supported as described above.

At times, titling at the WBS level of the MII estimate appears inconsistent. For example, The MII estimate lists Culvert C-1 as 4 gated 12'W x 12'H. The QTO lists Culvert C-1 as triple gated 12'W x 12'H.

The MII estimate appears to be based on the USACE "Construction Equipment Ownership and Operating Expense Schedule – Region 7" (Region 7 Equipment Book). The estimate should reflect the Region 3 Equipment Book. The Region 7 Equipment Book covers the southwestern states. The Region 3 Equipment Book covers the southeastern states including Florida.

The MII cost estimate does not appear to include engineering, inspection, administration and other owner's costs.

The MII estimate is based on an incorrect Cost Book; Cost Book 2012B was used. The most recent Cost Book is 2015A.

The equipment fuel cost in the Equipment Section appears high; it should reflect the Florida labor market.

The Labor Rates are based on the Los Angeles rates; they should reflect the Florida market at the time of the estimate.

The Escalation is calculated form 2010 to 2011 but not applied to the estimate; it should be from the date of the estimate to the mid-point of construction.

The order of Markups is incorrect. The order should correctly be: Job Office, Home Office, Profit, Bond, and Tax.

Consideration should be given to Subcontractor markups where appropriate.

The MII estimate software has a Project Cleanup Wizard which lists abnormalities within the estimate. For example, it lists zero cost items, items missing markups, etc. In the case of the current MII estimate, the Project Cleanup Wizard Report is approximately 280 pages long. While too long to include in this report, Legis recommends that as the estimate approaches completion, this report be used.

Recommendations – The Legis team presents the following recommendations relative to the MII estimate:

- Eliminate all zero quantity MII estimate items that are not needed. If they are to be included, populate the appropriate quantities.
- Confirm that all non-zero quantity MII items have backup either in the QTO package or in the notes section of the MII estimate.
- Confirm that the USACE "Construction Equipment Ownership and Operating Expense Schedule used in the MII estimate is for Region 3.
- Confirm that the Labor Rate file is based on the current Davis Bacon rates.
- Scrub all MII estimate folder and Item titling to ensure consistency with the QTO.
- Confirm that the Markups are appropriate for the project.
- Investigate how engineering, inspection, administration and other owner's costs will be handled.
- Confirm that proper Cost Book is used.
- Confirm that proper Markup order is used.
- Confirm that the escalation is correct.

5.6 Project Schedule

The project schedule for Everglades Agricultural Area Storage Reservoir Project is found in two PDF and one native document:

- 02_B.4-SCHEDULE (MSProject)_Preliminary_EAA Reservoir_v5

- SCHEDULE_Preliminary_EAA Reservoir_v5
- DRAFT Schedule_Preliminary_EAA Reservoir_v6

While there looks to be a slightly different appearance (line verses bar) of the three documents (each appears to be from MS Project Scheduling Software), all three present the same substantive durations for the project. Project Start Date is 01.01.2020 and finish date is 12.24.2027 for a total project duration of 2915 calendar days or 95.8 months. The project schedule is broken into seven parts:

- CONTRACT 1 - Miami Canal Conveyance Improvements (duration "650 days")
- CONTRACT 2 - North New River Conveyance Improvements (duration "650 days")
- CONTRACT 3 - A-2 Reservoir and A-2 STA Embankments, Canals and Control Structures (C1-C11 + S1) (duration "1560 days")
- CONTRACT 4 - Gated Spillways Construction (S-2, S-3 and S-4) (duration "585 days")
- CONTRACT 5 - Bridges; U.S. 27 Bridges and L-23 Bridge (B-1, B-2 and B-3) (duration "1170 days")
- CONTRACT 6 - A-2 Reservoir Pump Station (P-1) (duration "1300 days")

A review of project logic indicates the following:

- <u>Contract 1</u>
  - ***ID24 Contract 1*** Start Date is preceded (SS) by 78 weeks by ***ID1 Project Start Date***
- <u>Contract 2</u>
  - ***ID27 Contract 2*** Start Date is preceded (SS) by 78 weeks by ***ID1 Project Start Date***
- <u>Contract 3</u>
  - ***ID32 F(L):Levee*** Start Date precedes (SS) **ID33** ***J-1:Levee*** Start Date by 52 weeks which precedes (SS) **ID34 K(L):Levee** Start Date by 52 weeks which proceeds (SS) **L(L):Levee** Start Date by 52 weeks
  - ***ID 40 A:Levee*** and ***ID41 B-1:Levee*** Finish Dates precede (FS) ***C:Levee*** and ***E:Levee*** Start Dates. ***C:Levee*** and ***E:Levee*** Finish dates precede (FS) ***N:Levee*** and ***N-1 Levee*** Start Dates.
  - ***ID 40 A:Levee*** Start Date precedes (SS) ***ID46 CP-1 Canal Plug/Demo G-200/Construct C-2***
  - Recreational Facilities ***ID48 Site A*** precedes (SS) ***ID1 Project*** Start Date by 182 weeks and remaining recreation facilities are grouped in pairs (***ID 48 A*** + **ID 49 B**, **ID 50 C** + ***ID 51D***, ***ID 52 E***+ ***ID 53 F***, ***ID 54 G*** + ***ID 55 H***, and ***ID 56 I*** + ***ID57 J***) following proceeding pair in a Finish to Start relationship (FS)
  - ***ID59 SW-1 Overflow*** Start Date preceded (SS) by ***ID32 F(L):Levee*** Start date by 52 weeks.
  - ***ID60 C-1: 4-Gated Box Culvert*** Start Date preceded (SS) by ***ID32 F(L):Levee*** Start date by 104 weeks.
  - ***ID61 C-2: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID41 B-1: Levee*** Start Date by 65 weeks
  - ***ID62 C-3: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID34 K(L): Levee*** Start Date by 52 weeks
  - ***ID63 C-4: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID34 K(L): Levee*** Start Date by 52 weeks
  - ***ID64 C-5: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID42 C: Levee*** Start Date
  - ***ID65 C-6: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID42 C: Levee*** Start Date by 52 weeks

- ***ID66 C-7: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID40 A: Levee*** Start Date by 13 weeks
- ***ID67 C-8: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID45 N-1: Levee*** Start Date by 26 weeks
- ***ID68 C-9: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID33 J-1(L): Levee*** Start Date by 52 weeks
- ***ID69 C-10: 2-Gated Box Culvert*** Start Date preceded (SS) by ***ID33 J-1(L): Levee*** Start Date by 52 weeks
- ***ID70 C-11: 4-Gated Box Culvert*** Start Date is preceded (FS) by ***ID75 SW-3 Spillway*** Finish Date

- Contract 4
  - ***ID74 SW-2*** Start Date is preceded (SS) by 13 weeks by ***ID1 Project Start Date***
  - ***ID 75 SW-3*** Start Date follows (FS) ***ID74 SW-2*** Finish Date and ***ID76 SW-4*** Start Date follows (FS) ***ID 75 SW-3*** Finish Date
- Contract 5
  - ***ID80 B-1: Bridge*** Start Date is preceded (SS) by 78 weeks by ***ID1 Project Start Date***
  - ***ID80 B-1: Bridge*** Finish Date precedes (FS) ***ID81 B-2: Bridge*** which precedes ***(FS) ID82 B-3 Bridge*** Start Date
- Contract 6
  - ***ID86 P-1: Pump Station*** Start Date is preceded (SS) by 78 weeks by ***ID1 Project Start Date***

In general, the schedule looks adequate for this stage of project maturity. As a reviewer would expect, the schedule appears to be driven by funding and conceptual dates, as opposed to true duration dates based on quantities and productivity. Resource levels are listed as a) Reservoir Dam Crews – two per embankment, a) Canal Crew – two, c) Levee Crews – two, d) Recreation Crews – two, e) Culvert Crews – three, f) Culvert Crews (Spillways) – three, g) Bridge Crews – one, and h) Pump Station Crews - one. All the crews look reasonable in a vacuum but a local market labor study should be conducted to support any labor availability (skilled and unskilled) assumptions in a rural area executing approximately $400 M in new construction per year for five years. This analysis should also include a review of material (primarily dirt and concrete) and equipment availability.

A productivity analysis should be conducted based on SFWMD historical data or similar to determine durations assigned to large work items. These include: a) three years for planning and engineering, b) four years per reservoir levee (with three running concurrently in 2025, c) two years per channel/canal, d) one year per culvert (four running concurrently in 2024 and 2025), e) one year per spillway, f) 18 months per bridge, and g) five years for construction of the 4,600 CFS pump station.

Additionally, many of project features carry similar durations but are of varying sizes. Examples included: 2 Gated Box Culverts and 4 Gated Box Culverts carrying identical durations of 39 weeks, 2,300/3,000/4,000 CFS Spillways all with 39 week durations, and two lane bridges (which the reviewer can only assume have varying lengths) having identical durations of 18 months.

It should be noted that with the exception of many horizontal or most vertical projects scheduling of project activities can vary greatly. Considerations can include resource availability, site accessibility, funding accessibility, payment schedule, owner requirements, and other related influences. It is suggested that a brief narrative accompany to schedule so that the reviewer can determine if any of these are factors and how the schedule relates to the estimate.

Another potential schedule issue to discuss is that all of the six contract start dates are directly reliant on the construction start milestone (ID 1 Project Start Date) of 01.03.2022. Any delay in this milestone date can possibly cause a delay in construction execution.

Recommendations – The Legis team presents the following recommendations relative to the project schedule:

- Project schedule should reflect actual contract durations based on labor, equipment, and material market assessment.
- Project schedule should reflect actual productivity for local market.
- Review crew numbers and sizes to ensure accuracy for resource loaded schedule.
- Activities of differing quantities (bridges, spillways, and levees) should not have exactly the same durations.

5.7 Cost and Schedule Risk Analysis

ER 1110-2-1150, ER 1110-2-1302, and ETL 1110-2-573 govern the civil works contingency development using risk-based principles. USACE requires the use Oracle Crystal Ball Monte Carlo Simulation software. Established contingency values must be risk based. ATR Guidance requires the inclusion of four critical items in the process:

- Project delivery team active involvement and respective risk potentials.
- All project features of the civil works work breakdown structure.
- Internal and external risk factors.
- Report presentation and reflection in the Total Project Cost Summary (TPCS).

ER 1110-2-1302 requires involvement of the Project Delivery Team (PDT) with the cost. Specifically, the involvement of areas of design, contracting, construction, legal, project management, and construction management are necessary to the development of an appropriate risk register. This participation is reflected in a sign-in sheet or a brief narrative attached to the CSRA.

An acceptable CSRA requires the use of a comprehensive WBS for use in the analysis process. Further the risk register should include internal and external risk factors. Internal risk factors are those faced by an organization within itself that arise during normal operations of the organization. These generally fall in three areas: human factors, technology factors, and physical factors. External risks arise from outside and organization. These include natural disasters, civil disruptions, and environmental hazards.

Lastly, the CSRA results need to be presented in a presentation that can be included in a TPCS or similar document. The presentation should reflect all the details (risk register, tornado charts, contingency summary, specific driver risks, market research, and mitigation recommendations) of the previous three requirements.

The Legis team received a 21 page pdf 04_Attachment B-EAA Storage Reservoir Project_CSRA_Report_20180205 for the CSRA exercise. Acceptable details are provided to reach the 28 percent cost contingency and the 30 percent schedule contingency.

Two issues are apparent from the current CSRA. First, the MS Project schedule provided indicates a project duration of 2915 calendar days or 95.8 months. The CSRA input indicates a duration of 97 months. Second, the CSRA specifies an estimate value of $1,297,732,550 was used for the Monte Carlo Simulation. However, the estimate value represented in the MII file is $1,292,752,666. While this difference of $4,978,884 and 1.2 months likely have minimal impact on the CSRA outcome, these values should be reconciled.

Recommendations – The Legis team presents the following recommendations relative to the Cost and Schedule Risk Analysis:

- Provide risk register and accompanying narrative.
- Provide evidence of PDT involvement in the risk analysis process (meeting minutes, sign-in sheets, etc.).
- Provide market research.
- Reconcile inputs to match MS Project and MII outcomes.

5.8 ATR Checklist

USACE provides a comprehensive checklist of the items required for the ATR. Due to the current status of the early development of the SFWMD ATR documents, the Legis Team recommends that completing the checklist be delayed until the package is more completely developed. (See *Appendix 8.3 USACE ATR Package Checklist*)

6.0 CONCLUSION

The Legis Team recognizes that the documents provided by the client represent an “in-process” picture at a given date of the development of the client’s ATR submittal package. The team also recognizes that while it has been analyzing this set of documents, the client’s team has been making corrections and improvements such that some (or many) of our comments may be moot. That said, we recommend that the client utilize the ATR Package Checklist from this report to assess the current standing of the ATR package.

7.0 ACRONYMS AND ABBREVIATIONS

AACEI	Association for the Advancement of Cost Engineering, International
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ATR	Agency Technical Review
CCP	Certified Cost Professional
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CPM	Critical Path Method
CSRA	Cost and Schedule Risk Analysis
EAA	Everglades Agricultural Area
ECB	Engineering and Construction Bulletin
EIS	Environmental Impact Statement
EM	Engineer Manual
ER	Engineer Regulation
ETL	Engineer Technical Letter
FWO	Future Without Projection Condition
JD	Juris Doctor
LORS	Lake Okeechobee Regulation Schedule
MII	Second Generation Micro-Computer Aided Estimating System
NICET	National Institute for Certification in Engineering Technologies
NDA	Non-Disclosure Agreement
NTP	Notice to Proceed
NWW	United States Army Corps of Engineers, Walla Walla District
ODC	Other Direct Costs
P6	Primavera Professional Project Management (Version 6)
PACR	Post Authorization Change Report
PE	Professional Engineer
PIR	Project Implementation Report
PMP	Project Management Professional
PPA	Project Partnership Agreement
PSP	Planning and Scheduling Professional
QA	Quality Assurance
QC	Quality Control
QTO	Quantity Take-Off
ROM	Rough Order of Magnitude
SFWMD	South Florida Water Management District

SOW	Scope of Work
STA	Stormwater Treatment Area
TSP	Tentatively Selected Plan
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

8.0 APPENDICES

8.1 User Item Report

8.2 Zero Quantity Report

8.3 ATR Package Checklist

APPENDIX 8.5

LEGIS TELEPHONIC MEETING NOTES

SUBMITTED 2018.03.05

sfwmd.gov

LEGIS CONSULTANCY, INC.

Legis Consultancy/South Florida Water Management District

Conference Call in lieu of Draft Report Submittal #2

Date: Monday, March 5, 2018
Time: 3 - 4pm (eastern)
Participants:

- David Smart – Legis Consultancy
- Patrick Ray – Legis Consultancy
- Bill Stevenson – Legis Consultancy
- Mike Ray – Legis Consultancy
- Scott Vose – JTECH
- Mike Albert – SFWMD
- Jack – JTECH
- Stuart Mcgahee - JTECH
- Georgia Vince – JTECH
- Francisco Martinez – JTECH
- Ray Sciertino – JTECH
- Jennifer Leeds – SFWMD

Topics Discussed:

- Legis Consultancy Presented Findings
    - QM Process
        - Need Comment Resolution Report
        - Consider self-review and peer-review
    - Scoping Docs
        - Discussed need for project pictures, plans, reports, narratives
        - PDT will provide 305 page report plus numerous supporting appendices
    - QTOs
        - Findings for C-1
            - Many QTO values don't match MII values
            - Unexplained difference in volumes
            - Inconsistencies in concrete volumes
            - MII for concrete building uses CIP for input
            - QTO and MII quantities for doors are inconsistent
            - QTO and MII quantities for hoods are inconsistent
        - Pump 1
            - Placeholders without support
        - Bridge 1
            - QTO developed but MII is a User Created Item for a lump sum

- MII Estimate
    - Zero quantity items – 128
    - Estimate needs to match QTO backup
    - Use profit weighted guidelines for all contractors
    - Markups are out of order
    - Consider a TPCS – project cost summary sheet
    - Escalation
    - Schedule durations in MII need to match MS Project schedule
    - 306 User Created Items
    - Buried contingency – stone work?
    - Omitted folder
- Schedule
    - Provide any supporting documents
    - Missing 300 CFS pump
    - Review bridge durations
        - Bridge 1 – 52 weeks
        - Bridge 2 – 78 weeks
        - Bridge 3 – 78 weeks

    However each is $8.1 million
- CSRA
    - Need proof of PDT involvement in creation of Risk Register
    - Include any supporting market research

APPENDIX 8.6

LEGIS DRAFT REPORT

SUBMITTED 2018.03.14

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LEGIS CONSULTANCY, INC.

Everglades Agricultural Area Storage Reservoir Project - Preparation for Agency Technical Review

[ATR-Level Draft Summary Report]

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL

14 March 2018

Purchase Order No.: 4500104361
Order Date: 12/22/2017
Purchasing Agent: J. Harris-Fitzroy

sfwmd.gov

LEGIS CONSULTANCY, INC.

Prepared by:	William Stevenson Manager Cost Engineering, Legis Consultancy, Inc.	3.14.2018 *Date*
Prepared by:	Patrick S. Ray, JD, CCP, PMP Vice President, Legis Consultancy, Inc.	3.14.2018 *Date*
Reviewed by:	David R. Smart, JD, PMP President, Legis Consultancy, Inc.	3.14.2018 *Date*
Approved by:	Michael C. Ray, PE, CCP, PSP, PMP Managing Principal, Legis Consultancy, Inc.	3.14.2018 *Date*

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Notice

This report is intended solely for the use of the South Florida Water Management District and J-TECH (a joint venture of Tetra Tech, Inc. and Jacobs Engineering Group, Inc.) and is not intended for use by any other person, partnership, corporation or any other entity, in whole or in part, without the express written consent of the South Florida Water Management District or J-TECH. Legis Consultancy, Inc. hereby disclaims any and all responsibility and liability for consequences of any other use or reliance by others on this document or any information contained herein.

1.0 EXECUTIVE SUMMARY

On December 22, 2017, the South Florida Water Management District (SFWMD) engaged Legis Consultancy, Inc. (Legis) to provide comments and technical support on the status of the Everglades Agricultural Area Storage Reservoir Project documentation prepared for the District in advance of the Agency Technical Review (ATR). While a substantial portion of the review has been performed, the SFWMD and Legis continue to work through outstanding issues. Draft I was reported on February 19, 2018, Draft II was reported by conference March 5, 2018. This document constitutes the *ATR-Level Draft Summary Report*. SFWMD anticipates a final summary report (Task 4) which includes a review of all final Post Authorization Change Report (PACR) documentation pertinent to ATR and resolution (or explanation of unresolved issues) of final ATR comments. The final report will be submitted March 30, 2018.

Project Background: As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is known as the Everglades Agricultural Area Storage Reservoir Project. New construction for the project is expected to continue until late 2027. The project is broken down into eight contracts: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir Levee Embankment Slurry Walls, 4) Reservoir and A-2 STA Culvert and Spillway, 5) A-2 Reservoir and A-2 STA Embankments and Canals, 6) Gate Spillways Construction, 7) Bridges, and 8) A-2 Reservoir Pump Station.

Legis Team: The Legis team consisted of seven professionals including one principal-in-charge, one project manager, two principal cost engineers, one senior cost engineer, one research assistant, and one technical editor.

Scope of Work: The scope of work includes a kickoff meeting and project technical support, conducted all via telephone. Submittals will include a 1) ATR-Level Review – 1st Draft, 2) ATR-Level Review – 2nd Draft, 3) ATR-Level Draft Summary Report and a 4) Summary Report.

Confidentiality and Document Security: Legis considers all of its work on this assignment to be procurement-sensitive. All Legis personnel have executed non-disclosure agreements that cover the firm's work and documents.

Documents provided by the Client: SFWMD supplied Legis with thirty-two documents (narratives, schedules, quantity takeoffs, estimates, etc.) relative to the project.

Approach to the Assignment: Legis developed and documented an eleven-step approach to completing the assignment.

Recommendations:

Quality Management Process

- Include the firm Quality Management Program and how program is applied to this specific project.
- Include more occurrences of QC activities.
- Ensure that QC activities address all areas of project.
- Comment/resolution form should detail specific area of QC activities.

Scoping Documents

- Scoping documents appear adequate and reasonable for a project at this stage of maturity.

Quantity Development

- Remove QTO calculations that do not result in quantities found in the MII estimate. If there is a reason to keep such calculations, clearly label them as not being used in the MII estimate.
- Round off quantities to eliminate decimal fractions where appropriate.
- Scrub the assumptions section to eliminate inconsistencies with the calculations.

- Identify on the QTO exactly what element of the MII estimate the QTO calculation applies to.

MCACES MII Estimate

- Update folder quantities and units of measure.
- Update notes for folders where lower level folders do not match folder structure.
- Contractor Classifications should be reevaluated and updated.
- Review contractor assignments.
- Reassess formulas for consistency.
- Review quantity variations for excavated and blasted rock.
- Reexamine equipment found in crew costs.
- Review crew productivities to match project schedule.
- Update labor rates for consistency.
- Review zero quantity items found in JOOH.
- Reexamine approximately 40 User Items to update notes and vendor quotes.
- Update bridge costs.
- Move Mobilization costs to project cost.
- Review contractor profit calculations to ensure USACE Profit Weighted Guidelines are satisfied.
- Reexamine JOOH models to eliminate unnecessary items.

Project Schedule

- The project schedule appears adequate and reasonable for a project at this stage of maturity.

Cost and Schedule Risk Analysis

- Provide risk register and accompanying narrative.
- Provide evidence of PDT involvement in the risk analysis process (meeting minutes, sign-in sheets, etc.).
- Provide market research.

2.0 PROJECT OVERVIEW

A general overview is discussed in this section. Details are provided on 1) the Everglades Agricultural Area Storage Reservoir Project, 2) Legis Consultancy's Team, 3) Legis Consultancy's Scope of Work, and 4) document security issues.

2.1 Project Background

As a result of environmentally damaging freshwater water discharges from the Lake Okeechobee area to the Florida Bay, the South Florida Water Management District (SFWMD) is conducting a feasibility study to determine if a large scale new construction civil works project is practicable to reduce this damage. Currently, the tentatively selected plan (TSP) is the known as the Everglades Agricultural Area Storage Reservoir Project.

New construction for the project is expected to continue until late 2027. The project is broken down into eight contracts: 1) Miami Canal Conveyance Improvements, 2) North New River Conveyance Improvements, 3) Reservoir Levee Embankment Slurry Walls, 4) Reservoir and A-2 STA Culvert and Spillway, 5) A-2 Reservoir and A-2 STA Embankments and Canals, 6) Gate Spillways Construction, 7) Bridges, and 8) A-2 Reservoir Pump Station. Specifically, two areas of the project are expected to be the most costly and of the longest durations to construct. First, a new reservoir will be constructed: the A-2 East Reservoir with a storage capacity of 240,000 ac/ft. Second a new pump station (4,600 CFS) will be constructed and a 300 CFS pump will be relocated to a new pump station.

As the U.S. Army will likely finance the majority of the Everglades Agricultural Area Storage Reservoir Project, the project cost, schedule and economic risk must be approved by the Assistant Secretary of the Army for Civil Works (Mr. Ryan A. Fisher - Acting) prior to work commencing. SFWMD understands that the cost, schedule and economic risk will undergo a review similar to the current U.S. Army Corps of Engineers (USACE) Agency Technical Review (ATR) process. This ATR process is rigorous and requires adherence to multiple Engineering Regulations (ER), Engineer Manuals (EM), Engineer Circulars (EC), Engineer Technical Letters (ETL), and memorandums of guidance.

2.2 Team Personnel

The Legis Consultancy Team consisted of the following members:

Individual	Role
Michael Ray, PE[1], CCP[2], PSP[3], PMP[4]	Principal-in-Charge; Executive QC
David Smart, JD[5], PMP[4]	Project Manager
Bill Stevenson	Principal Cost Engineer
Patrick Ray, JD[5], CCP[2], PMP[4]	Principal Cost Engineer
Daniel Jamison	Senior Cost Engineer
Michele Huff	Engineering Research Assistant
Melissa Marion-Landais	Technical Editor

[1] PE – Professional Engineer

[2] CCP – Certified Cost Professional (AACEI–Association for the Advancement of Cost Engineering International)

[3] PSP – Planning & Scheduling Professional (AACEI–Association for the Advancement of Cost Engineering International)

[4] PMP – Project Management Professional (PMI–Project Management Institute)

[5] JD – Juris Doctor (Consultant, Non-practicing Attorney)

2.3 Legis Consultancy, Inc. Scope of Work

As contained in the SFWMD Purchase Order (and subsequent modification), Legis Consultancy's Scope of Work is defined as:

Task 1 Kickoff Meeting
Within two weeks of Notice to Proceed (NTP) Legis shall coordinate with the District and lead a project kickoff meeting. At this meeting Legis will identify project team members, review the scope of work, identify any issues or coordination items and review the project schedule.

Task 2 Project Support
Legis will provide technical support via phone directly with the District's planning consultant (JTech) as needed prior to submission of the ATR documents. Technical assistance will include preliminary review of work prior to the District's completion of the draft PACR report, such as review and updating of the CEPP Risk Register to fit the CEPP PACR. Legis will not provide analysis, cost estimates or other technical assistance during this task which may compromise the independent nature of their review.

Task 3 ATR Level Review
The submittal package, as described above, will be provided to Legis for their technical review. The ATR will include review of a first draft including the complete scoping documents and complete MII cost estimate. Review comments will be compiled in an excel spreadsheet by Legis and submitted to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent Legis backcheck.
Upon completion of the first draft the District will submit a second draft report which will include the complete P6 schedule and the complete Cost & Schedule Risk Analysis along with an updated report incorporating Legis comments as well as comments that may be incorporated from other District review effort (i.e. an IEPR review). Legis will compile their review comments in an excel spreadsheet and submit to the District within 10 days from receipt of the draft document. Legis will coordinate and conduct, within one week of second draft comment submission, an ATR workshop to review comments. The District shall then provide comment responses for subsequent backcheck.

Task 4 Legis ATR-Level Summary Report
Upon completion of Task 3 Legis shall provide to the District a report summarizing their efforts on the project. The report shall include a description of the reviews performed, who provided the reviews, and a description of the process that was taken to insure compliance with Corps standards.

Task 5 Legis ATR-Level Draft Summary Report (Added via PO Rev1)
Legis shall provide to the District, no later than March 14, 2018, a report summarizing their efforts to-date on the project. The report shall include a description of the reviews performed, who provided the reviews, and draft comments based on the materials reviewed. This task has been added via revision with the intent to have draft documentation of review comments and summary report for the work performed through March 14, 2018. The report shall include a statement recognizing that, while a substantial portion of the review has been performed, the SFWMD and Legis continue to work through outstanding review issues. The report shall further note that SFWMD anticipates a final summary report (Task 4) which includes review of all final PACR documentation pertinent to the ATR and resolution (or explanation of unresolved issues) of final ATR comments.

Task 6 Resolution of Draft Summary Report Comments (Added via PO Rev1)
Legis shall provide support and coordination to SFWMD staff to adequately address, by resolution or by documenting the status of unresolved issues, comments provided in the draft summary report (Task 5). Legis shall conduct at least one (1) meeting with SFWMD staff to the

discuss the status and resolution summary prior to completion of the final summary report (Task 4).

Note: Revision shall include updating Payment and Deliverable Schedule to include new tasks. Costs for Task 5 and 6 will be submitted by Legis for SFWMD approval. Schedule shall include March 14 for Task 5 deliverable. Task 4 deliverable should be revised to note 7 days from completion of Task 6.

2.4 Legis Consultancy Execution of Scope of Work

See *Section 4.0 Methodology*.

2.5 Document Control & Security

Legis Consultancy treats client and project information as confidential by default. Legis personnel are required to sign a non-disclosure agreement (NDA) with the company as a condition of employment. For most projects, Legis is bound by multiple NDA's which may include the contract vehicle as well as project specific NDA's. Federal contractors are required to comply with NIST 800-171, Protecting Controlled Unclassified Information in Non-federal Information Systems and Organizations. Most Legis project work, particularly for government entities, is treated as Controlled Unclassified Information (CUI) under the procurement sensitive and infrastructure sensitive categories.

Data security is also maintained at the CUI level per NIST 800-171. This level mandates many precautions to guard against unauthorized data access. For example, Legis uses the, "least possible access rule", when determining user permissions to the Legis primary domain controller. This means a user is given access to only what is needed for the project at hand.

3.0 DOCUMENTS REVIEWED

Below are the documents and packages reviewed by Legis Consultancy for the preparation of this report. All were provided by SFWMD in electronic form.

Legis was instructed by SFWMD to remove #10 from the documents provided.

SFWMD Support
Legis Project No. 2114

#	FILE NAME	CONTAINS	DATE DELIVERED	FORMAT
1	00_Appendix B_Cost Engineering	Narrative Project Summary	2.8.2018	pdf
2	00_Executive Summary -020618	Narrative Executive Summary	2.8.2018	word
3	01_B.3-MCACES_EAA_Summary_20180201	MII Roll-up	2.8.2018	pdf
4	02_B.4-SCHEDULE (MS Project)_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
5	04_Attachment B-EAA Storage Reservoir Project_CSRA_Report_20180205	Cost Schedule Risk Analysis	2.8.2018	pdf
6	05_Attachment C-Appendix B_Quantities Spreadsheets	Quantity Take Offs	2.8.2018	pdf
7	240-A1(L) Levees N-1	Quantity Take Offs	2.8.2018	pdf
8	A THRU E	Plans	2.8.2018	pdf
9	F(L) THRU N-1	Plans	2.8.2018	pdf
10	~~FULL 240A1(L) Structure-Levee Quantity Appendix_011918~~	~~Plans and Quantity Take Offs~~	~~2.8.2018~~	~~pdf~~
11	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	pdf
12	MCACES_EAA Reservoir_Report_012018_v1	MII Estimate Report	2.8.2018	word
13	MCACES_EAA Reservoir_v5		2.8.2018	visual bsc
14	MCACES_EAA Reservoir_v5	MII Native Estimate	2.8.2018	mii
15	ROM Cost per DESIGN_122917_v18_Used for Populating MCACES_011818	Excel Summary of Estimate	2.8.2018	excel
16	SCHEDULE_Preliminary_EAA Reservoir_v5	Project Schedule	2.8.2018	pdf
17	DRAFT Schedule_Preliminary_EAA Reservoir_v6	MS Project - Project Schedule	2.12.2018	MS project
18	Appendix_QTO_022718_v2	Quantity Take Offs	3.2.2018	pdf
19	DRAFT Schedule_Preliminary_EAA Reservoir_v7	MS Project - Project Schedule	3.2.2018	MS project
20	DRAFT Schedule_Preliminary_EAA Reservoir_v7	Project Schedule	3.2.2018	pdf
21	EAA Earthwork Production Requirments	Earthworks QTO	3.2.2018	pdf
22	EAA_Storage Res_MCACES Summary_20180301	MII Roll-up	3.2.2018	pdf
23	MCACES_EAA Reservoir_v5	MII Native Estimate	3.2.2018	mii
24	Appendix B_Cost Engineering_03.12.2018	Cost Narrative	3.13.2018	pdf
25	ATT A_Schedule_EAA Reservoir_Legis Review #3	Schedule	3.13.2018	pdf
26	ATT B Appendix_QTO_031218_v5	Quantity Take Offs	3.13.2018	pdf
27	CEPP PAC Report_TPCS_20180312	Total Project Cost Summary	3.13.2018	pdf
28	Copy of QM-QC_031218	Quality Control Document	3.13.2018	excel
29	EAA Storage Reservoir Project_CSRA_Report_03.12.2018	Cost Schedule Risk Analysis	3.13.2018	pdf
30	EAA_MCACES Summary_20180312	MII Roll-up	3.13.2018	pdf
31	MCACES_EAA Reservoir_20180312	MII Native Estimate	3.13.2018	mlp
32	Schedule_EAA Reservoir_Legis Review #3	MS Project - Project Schedule	3.13.2018	mpp

4.0 METHODOLOGY

The study was conducted in the following manner:

- The Legis Consultancy team leader held an internal kickoff meeting at which the team members were briefed on the assignment.
- All team members then reviewed the documents provided by the client and the USACE ATR requirements.
- The team leader prepared the report outline and distributed to the team members.
- After the documents were reviewed, the team met again at which time the team leader made specific research, analytic and writing assignments based on each team member's area of expertise and experience.
- Each team member then delved deeper into the documentation related to his/her assignment, undertook the appropriate analysis, and prepared an internal draft covering his/her section of the report.
- The team leader assembled the various section drafts for the technical editor to strengthen.
- The assembled draft was reviewed by the project quality control officer.
- The reviewed document was returned to the drafters for adjustments.
- The technical editor reviewed the changed draft.
- The team leader prepared the document for a final principal-in-charge review.
- The project manager shipped the draft document to the client.

5.0 FINDINGS AND RECOMMENDATIONS

5.1 General

Depending on the maturity level of a project, a USACE ATR Team (ATR Team) typically relies on a required set of documents to be provided by the project sponsor to conduct the ATR. Projects can be determined to be at one of three levels of maturity: 1) Alternative Formulation Briefing (AFB) Level – parametric based products, 2) Feasibility Level – detail based products, or 3) Post Authorization /Appropriation – detail based products.

The Everglades Agricultural Area Storage Reservoir Project is at the feasibility level so an ATR Team would expect to review the following documents:

- Record of Quality Management process
- Quantity Development
- Scoping documents (reports, plans, and investigations) that support quantities quantity development
- Microcomputer Aided Cost Estimating System (MCACES) Estimate(s) in the MCACES electronic software for the recommended plan
- Total project schedule and construction schedule to support escalation calculations
- Risk-based processes used to establish basis of contingencies, a formal risk analyses and risk report for projects greater than the established cost threshold

5.2 Record of Quality Management Process

The Legis Team has been provided with a document titled Copy of QM-QC_031218 for a record of the project quality management process. The document begins with a section titled “method” which provides bullet point details of the quality management processes utilized on the EAA Cost Engineering Project. Following are presentations of fifteen occurrences when Quality Control activities were conducted.

First, it is assumed that J-TECH has a lengthy and robust Quality Management Program for client deliverables. This document should be presented as part of an agency review. Second, a reviewer will likely be looking for a greater number of Quality Control Occurrences that touch all parts of the deliverable (in this case no QC of schedule and CSRA was presented). Lastly, QC details should include the specific area reviewed (example: Structural Calculations for B-1 Bridge).

Recommendations – The Legis team presents the following recommendations relative to the Quality Management Process:

- Include the firm Quality Management Program and how program is applied to this specific project.
- Include more occurrences of QC activities.
- Ensure that QC activities address all areas of project.
- Comment/resolution form should detail specific area of QC activities.

5.3 Scoping Documents

The Legis Team was provided with a project scoping document titled *DRAFT_CEPP PACR_Main Report_02-16-2018*. The main document is 305 pages and has seven annexes and eight appendices. The document contains maps, charts, graphs, pictures, etc. that detail abundant project details. Areas covered include: cost, schedule, risk, real estate, adaptive management, nuisance, wildlife, regulatory, modeling and numerous other project specific items. This document, as well as

00_Appendix B_Cost Engineering and *00_Executive Summary – 020618* appear to provide appropriate project scope details for any future reviewer.

Recommendations – Scoping documents appear adequate and reasonable for a project at this stage of maturity.

5.4 Quantity Development

A successful ATR submittal requires a comprehensive quantity takeoff (QTO) to support the items contained in the MII estimate. Each QTO should briefly describe the item being quantified, provide a set of understandable calculations and identify the units of measure used. Care must be taken to properly convert from one set of units to another set of units when such a conversion is appropriate. (For example, typically measurements of a concrete structure are in feet, the volume is calculated in cubic feet and this quantity is converted into cubic yards. This is a simple concept that far too often is the subject of error because the unit of measure was not properly identified.)

There must be a clear linkage between the QTO result and the MII estimate quantity and note fields. Simple QTO calculations can be undertaken in the MII note field. More complex calculations are best undertaken using a QTO spread sheet.

The Legis team reviewed the QTO files provided by the client and observed the following:

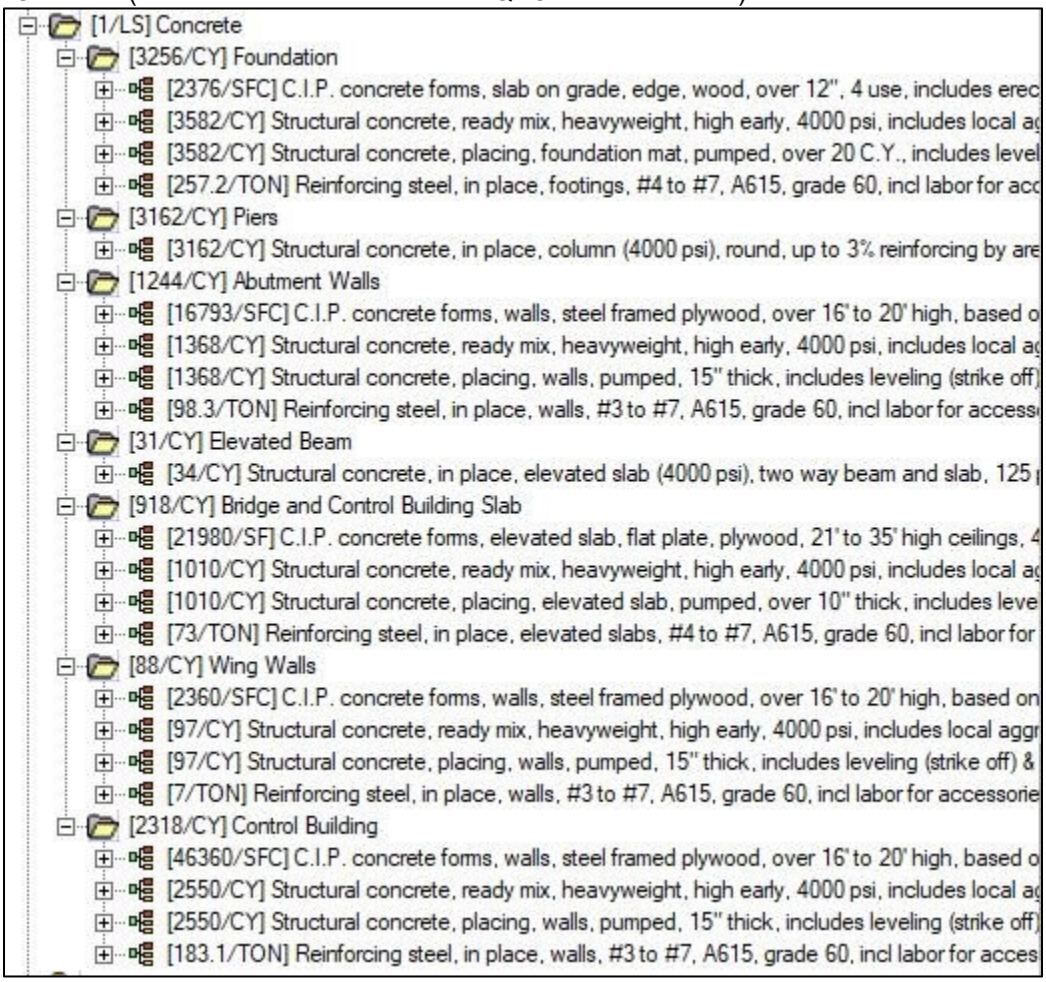
- The QTO calculations were generally clear.
- The assumptions appeared appropriate.
- The units of measure were appropriate.
- There were often many QTO calculations that were not reflected in the MII estimate and notes.
- The linkage between the QTO documentation and the MII estimate was often difficult to understand without interpretation of the calculations.

The Legis team selected 4 elements for a more detailed analysis. These include P-1 Pumping Station, B-1 Bridge, C-1 Culvert, Levee Section A, and SW-2 Spillway.

Pump Stations: The following items are of concern found in Pump Station P-1. While only Pump Station P-1 was reviewed in detail due to time constraints, these observations, in whole or in part, apply to all pump stations on the project.

- Coffer Dam
  - QTO refers to cofferdam in summary of quantities and provides 2 quantities without backup calculations.
  - MII omits the cofferdam item.

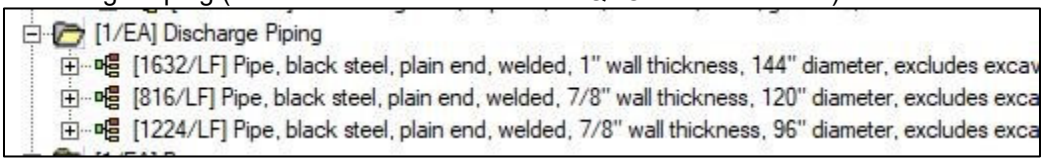
- Concrete (Below is the MII estimate and QTOs should match.)



  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - All concrete items: QTO does not contain formwork takeoff.

  - Reinforcing steel: QTO indicates 873.7 tn.
  - Reinforcing steel: MII reflects approximately 619 tn reinforcing steel (Some concrete items include reinforcing steel, this should be clarified in QTO.)

- Discharge Piping (Below is the MII estimate and QTOs should match.)



  - QTO assumption section states the discharge piping is 60 in diameter.
  - MII lists Piping as 96, 120 and 144 in diameter.

  - QTO indicates 36 each 45 degree bends for 96, 120 and 144 in diameter pipe.
  - MII omits pipe bends.

  - QTO indicate that all piping has a wall thickness of 0.75 in.
  - MII indicates 7/8 in and 1 in wall thicknesses.

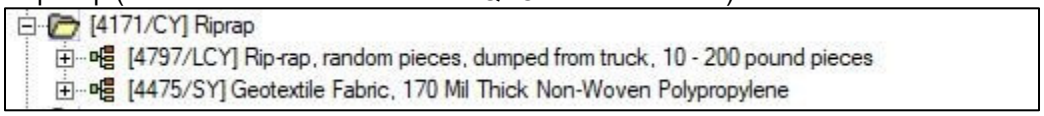
  - QTO indicates no thrust blocks or other pipe restraints.
  - MII omits thrust blocks or other pipe restraints.

- Pumps (Below is the MII estimate and QTOs should match.)

  - QTO indicates 9 pumps.
  - MII reflects 9 pumps (Material and Installation included) plus 200 hours of installation time. Needs clarification.

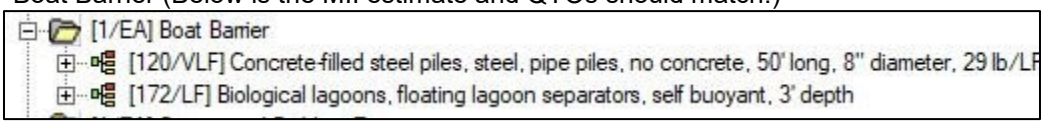
  - QTO assumption section indicates 5 ea 900 cfs pumps.
  - MII reflects 4 ea 800 cfs, 2 ea 400 cfs, and 3 ea 200 cfs pumps.

- Rip Rap (Below is the MII estimate and QTOs should match.)



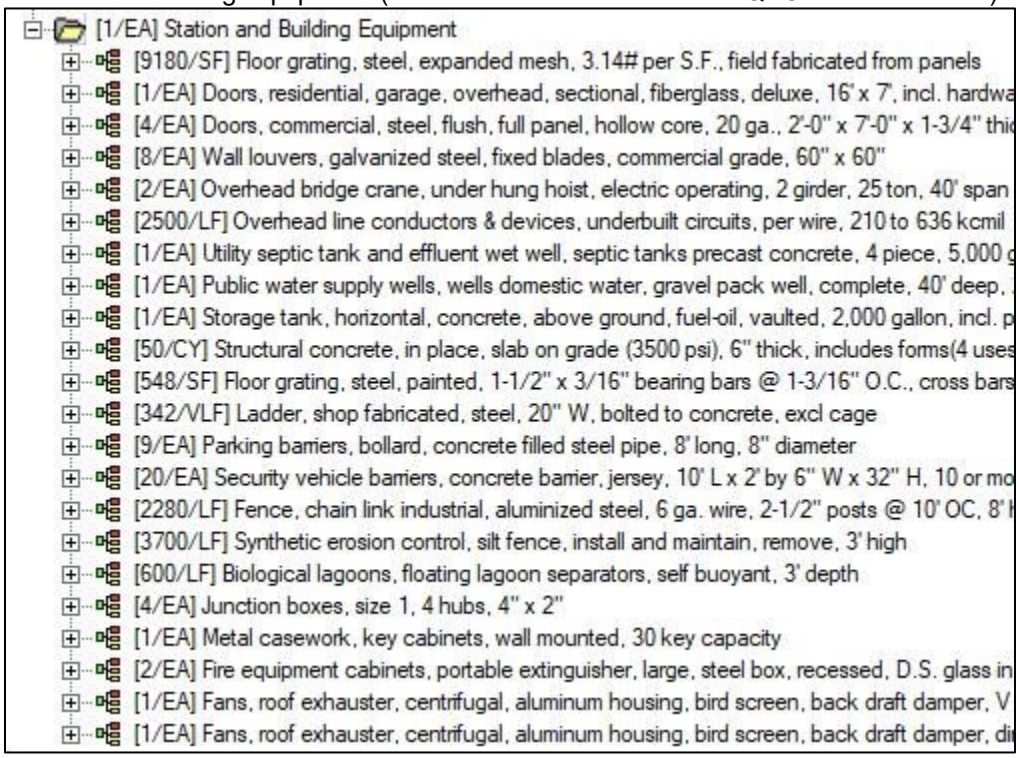
  - QTO indicates quantity in sf.
  - MII reflects quantity in sy.
  - Convert from sf to sy in QTO.

- Boat Barrier (Below is the MII estimate and QTOs should match.)



  - QTO indicates 3 ea pile.
  - MII reflects 120 lf piling.
  - QTO unclear; should indicate assumed length of pile and calculation to lf.

- Station and Building Equipment (Below is the MII estimate and QTOs should match.)

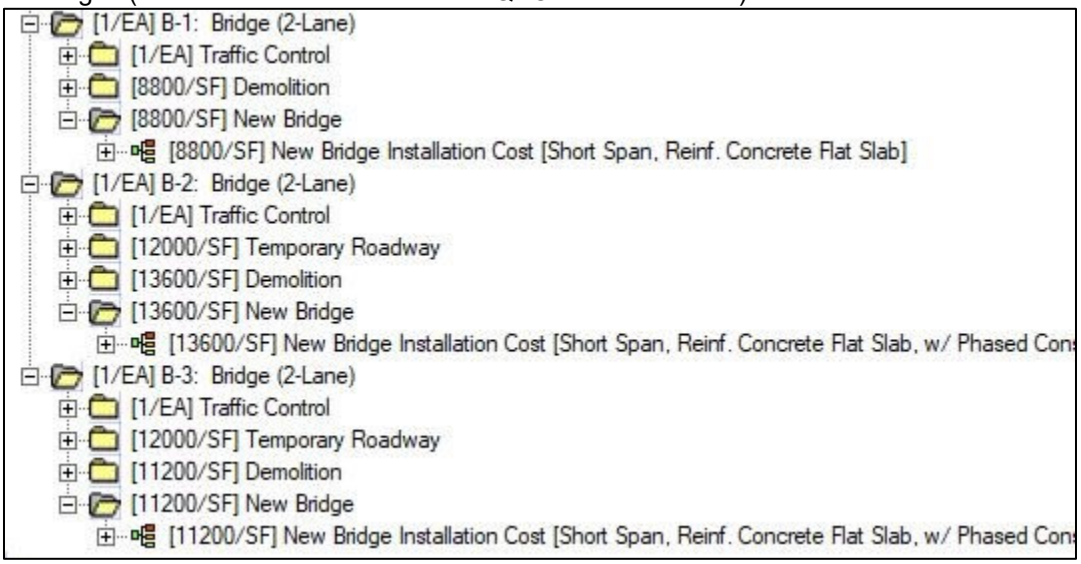


  - QTO indicates 65 cy structural concrete.
  - MII reflects 50 cy structural concrete.

  - QTO indicates 4 doors but no door hardware.
  - MII omits door hardware.

Bridges: The following items of concern are found Bridges B-1, B-2 and B-3.

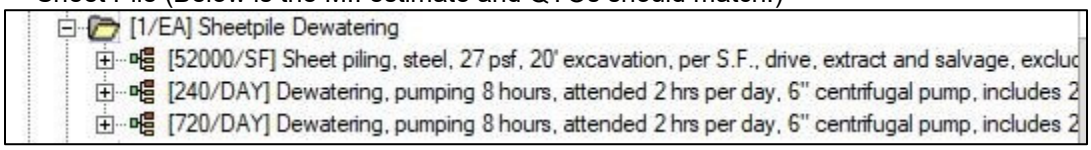
- Bridges (Below is the MII estimate and QTOs should match.)



  - QTO lists 3 bridges, all 200 ft long, but of varying roadway widths.
  - QTO lists all 3 bridges as 2 lane.
  - MII reflects 3 bridges having varying deck areas
  - MII reflects all 3 bridges as 2 lane

Culverts: The following items are of concern in Culvert C-1. While only Culvert C-1 was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all culverts on the project.

- Sheet Pile (Below is the MII estimate and QTOs should match.)



  - QTO indicates 95767 sf.
  - MII reflects 52000 sf.
  - Possible error in QTO calculation.

- Culvert Concrete (Below is the MII estimate and QTOs should match.)

```
[1854/CY] Foundation
    [2600/SFC] C.I.P. concrete forms, slab on grade, edge, wood, over 12", 4 use, includes erec
    [2039/CY] Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local ag
    [2039/CY] Structural concrete, placing, foundation mat, pumped, over 20 C.Y., includes level
[1255/CY] Culvert Walls
    [37000/SFC] C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based o
    [1380/CY] Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local ag
    [1380/CY] Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off)
[2472/CY] Top Slab
    [17500/SF] C.I.P. concrete forms, elevated slab, flat plate, plywood, 21' to 35' high ceilings, 4
    [2719/CY] Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local ag
    [2719/CY] Structural concrete, placing, elevated slab, pumped, over 10" thick, includes leve
[470/CY] Miscellaneous Concrete
    [9400/SFC] C.I.P. concrete forms, walls, steel framed plywood, over 16' to 20' high, based on
    [517/CY] Structural concrete, ready mix, heavyweight, high early, 4000 psi, includes local ag
    [517/CY] Structural concrete, placing, walls, pumped, 15" thick, includes leveling (strike off)
```

  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - All concrete items: QTO does not contain formwork takeoff.

- Steel Rebar (Below is the MII estimate and QTOs should match.)

```
[479.8/TON] Reinforcing Steel
    [479.8/TON] Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for acces
```

  - QTO indicates 381.8 tn.
  - MII reflects 479.8 tn.
  - QTO notes refer to both 1.2% and 0.8% volume of concrete. Confusing. Recommend omitting one of the notes or clarifying.

- Gates (Below is the MII estimate and QTOs should match.)

```
[3/EA] Gates
    [3/EA] 12' x 12' Box Culvert Gate, Full Installation
```

  - QTO contains 144 lf gate seal.
  - MII omits gate seal item.

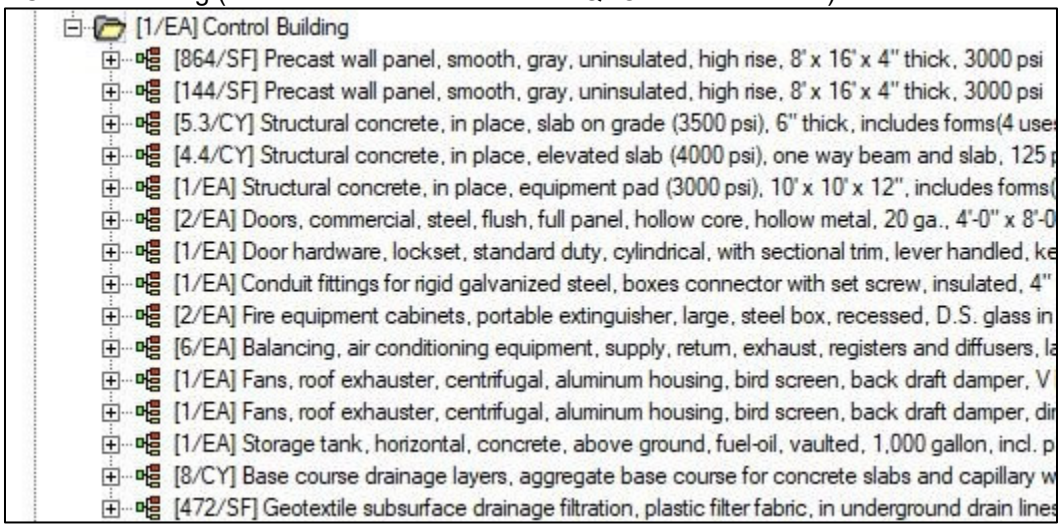
- Boat Barrier (Below is the MII estimate and QTOs should match.)

```
[1/EA] Boat Barrier
    [120/VLF] Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/L
    [172/LF] Biological lagoons, floating lagoon separators, self buoyant, 3' depth
```

  - QTO indicates 6 ea pile.
  - MII reflects 120 lf piling.
  - QTO unclear, should indicate assumed length of pile and calculation to lf.

  - QTO indicates 344 lf of barrier.
  - MII reflects 172 lf of barrier.

- Control Building (Below is the MII estimate and QTOs should match.)



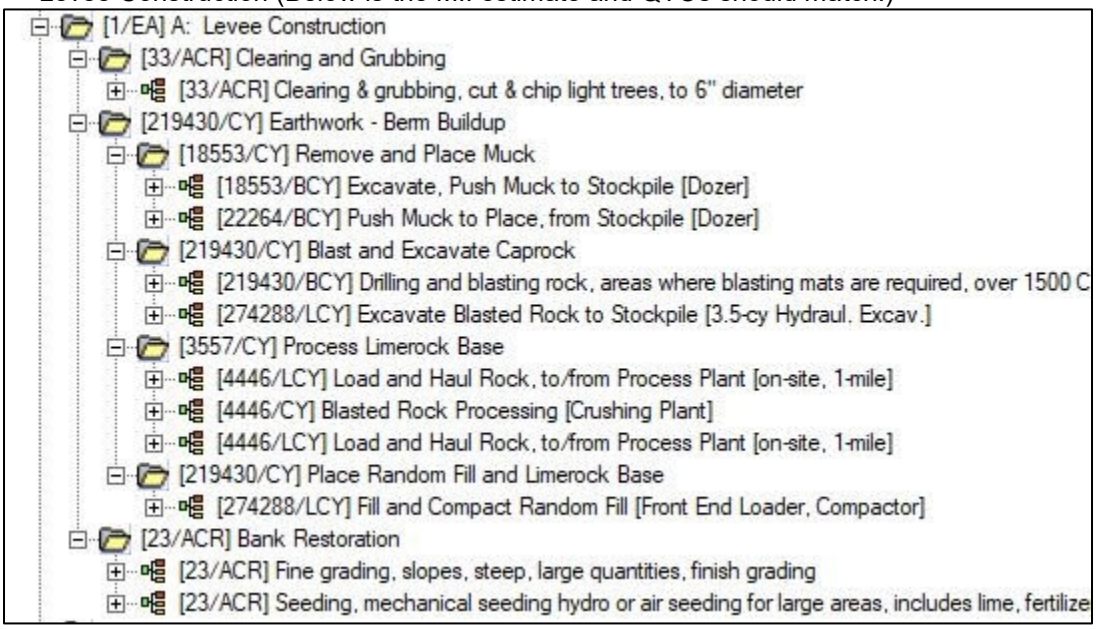
  - QTO indicates 10.7 cy and 1.8 cy of poured-in-place walls.
  - MII reflects 864 sf and 144 sf of precast concrete walls.

  - QTO indicates 2 doors.
  - MII reflects only one set of door hardware.
  - Balance of door hardware (hinges, door stops, etc.) appears missing.

  - QTO indicates 6 hoods.
  - MII omits hoods.

Levees: The following items are of concern in Levee A. While only Levee A was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all levees on the project

- Levee Construction (Below is the MII estimate and QTOs should match.)



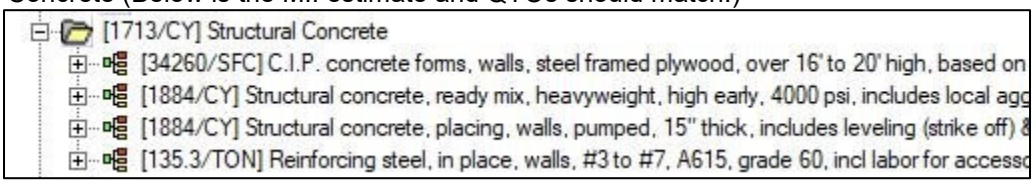
  - QTO indicates random fill as 274288 cy.
  - MII Random Fill folder label reflects 219430 cy.

  - QTO does not specifically identify blasted rock quantity (labeling issue).
  - MII reflects 219430 cy blasted rock.

  - QTO does not identify 219430 cy as a quantity. One must assume it is the sum of 215873 cy and 3557 cy in the table.

Spillways: The following items are of concern in Spillway SW-2. While only Spillway SW-2 was reviewed in detail due to time restraints, these observations, in whole or in part, apply to all Spillways on the project.

- Concrete (Below is the MII estimate and QTOs should match.)



  - All concrete items: Ready mix items should include waste; Placement items should reflect neat quantity.
  - All concrete items: QTO does not contain formwork takeoff.

- Wing Walls and Cutoff (Below is the MII estimate and QTOs should match.)

```
[1/EA] Wingwalls and Cutoff
  [29.6/CY] Structural concrete, in place, free-standing wall (3000 psi), 8" thick x 14' high, includ
  [2580/SF] Sheet piling, steel, 27 psf, 20' excavation, per S.F., left in place, excludes wales
  [5760/LF] Cofferdams, tie-back method, tie-backs only, based on tie-backs total length, maximu
```

  - QTO indicates Sheet Pile as 9580 sf.
  - MII reflects 2580 sf.

- Boat Barrier (Below is the MII estimate and QTOs should match.)

```
[1/EA] Boat Barrier
  [120/VLF] Concrete-filled steel piles, steel, pipe piles, no concrete, 50' long, 8" diameter, 29 lb/LF
  [172/LF] Biological lagoons, floating lagoon separators, self buoyant, 3' depth
```

  - QTO indicates 6 ea pile.
  - MII reflects 240 lf piling.
  - QTO unclear, should indicate assumed length of pile and calculation to lf.

  - QTO indicates 340 lf of barrier.
  - MII reflects 172 lf of barrier.

- Control Building (Below is the MII estimate and QTOs should match.)

```
[1/EA] Control Building
  [864/SF] Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi
  [144/SF] Precast wall panel, smooth, gray, uninsulated, high rise, 8' x 16' x 4" thick, 3000 psi
  [5.3/CY] Structural concrete, in place, slab on grade (3500 psi), 6" thick, includes forms(4 use
  [4.4/CY] Structural concrete, in place, elevated slab (4000 psi), one way beam and slab, 125
  [1/EA] Structural concrete, in place, equipment pad (3000 psi), 10' x 10' x 12", includes forms
  [2/EA] Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 20 ga., 4'-0" x 8'-
  [1/EA] Door hardware, lockset, standard duty, cylindrical, with sectional trim, lever handled, k
  [1/EA] Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4"
  [2/EA] Fire equipment cabinets, portable extinguisher, large, steel box, recessed, D.S. glass in
  [6/EA] Balancing, air conditioning equipment, supply, return, exhaust, registers and diffusers,
  [1/EA] Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, V
  [1/EA] Fans, roof exhauster, centrifugal, aluminum housing, bird screen, back draft damper, d
  [1/EA] Storage tank, horizontal, concrete, above ground, fuel-oil, vaulted, 1,000 gallon, incl.
  [8/CY] Base course drainage layers, aggregate base course for concrete slabs and capillary
  [472/SF] Geotextile subsurface drainage filtration, plastic filter fabric, in underground drain line
```

  - QTO indicates 10.7 cy and 1.8 cy of poured-in-place walls.
  - MII reflects 864 sf and 144 sf of precast concrete walls.

  - QTO indicates 2 doors.
  - MII reflects only one set of door hardware.
  - Balance of door hardware (hinges, door stops, etc.) appears to be missing.

  - QTO indicates 6 hoods.
  - MII omits hoods.

It is often difficult to relate the QTO components to the MII estimate because of differing terminology and differing locations in the estimate.

Recommendations – The Legis team presents the following recommendations relative to the QTO development:

- Remove QTO calculations that do not result in quantities found in the MII estimate. If there is a reason to keep such calculations, clearly label them as not being used in the MII estimate.
- Round off quantities to eliminate decimal fractions where appropriate.
- Scrub the assumptions section to eliminate inconsistencies with the calculations.
- Identify on the QTO exactly what element of the MII estimate the QTO calculation applies to.

5.5 MCACES MII Estimate

Estimate Structure
Estimate has been organized based on the Civil Works Classification System
With the exception of Earthwork related items, folder quantities for other work generally contain Quantities and Unit of Measure equal to 1 EA. It is recommended that Quantities and Unit of Measure be updated based on the work and quantities contained within the folder.

Project Folders
Overall, folder notes are provided to define scope of work in detail which in most cases does match the lower level folders. Some folders, such as Contract 6, Flood Control Diversion, Water Control Structure include scope for work that could not be identified the lower level folders. Folder notes indicate a total of 4 spillway structures, however folders are included for only 3 structures - SW-2, SW-3, and SW-4.

Contracting Plan
Overall, it appears that the Prime Contractor will self-perform the bulk of all work activities with the exception of Dewatering, Concrete, Piling. Pumps, and Recreation.

Subcontracting Plans should be re-evaluated based on the work items contained within each project. In general, it would not be expected that a Heavy Civil Contractor will self-perform items such as Electrical, Building Construction, Gate Fabrication and Installation, among others.

Contractor Classifications for Sub contractors should be re-evaluated and updated or supported with notes, based on the work being performed. Currently the Dewatering Sub is indicated as Pile Driving.

Work Items
Estimate contains the following Earthwork Quantities:

Blasted Rock Processing [Crushing Plant]	691,261
Excavate Blasted Rock to Stockpile [3.5-cy Hydraul. Excav.]	42,259,486
Excavate to Stockpile [3.5-cy Hydraul. Excav.]	36,800
Excavate, Push Muck to Stockpile [Dozer]	10,400,944
Fill and Compact Random Fill [Front End Loader, Compactor]	29,884,978
Load and Haul Rock, to/from Process Plant [on-site, 1-mile]	1,429,730
Load and Haul Rock, to/from Stockpile [on-site, 1-mile]	23,457,886
Material Handling Between Stockpiles [Dozer, Loader]	38,120,932

All Items for Earthwork as included as a USR Cost, representing $370,491,139.50 in Direct Cost, or 35% of the total Direct Cost.
Review of detail for these quantities indicates that several items have incorrect contractor assignments, inconsistent quantity formulas, or contain what appear to be inconsistent quantities.

Contractor Assignment Example:

Contract 8, Dewatering Operation and Maintenance [2 laborers] is assigned to Prime Contractor, yet all other items are assigned to Dewatering Sub

Inconsistent Formulas:

Contract 5, Two line items for Fill and Compact Random Fill [Front End Loader, Compactor] are based on what appears to be a 38.6% swell factor.

Contract 5, One line item for Fill and Compact Random Fill [Front End Loader, Compactor] is based on what appears to be no swell factor

Contract 5, Four line items for Fill and Compact Random Fill [Front End Loader, Compactor] are based on what appears to be a 15% swell factor.

Quantity Variation:

Contract 5, Blasted Rock Processing [Crushing Plant] contains 621,261 LCY which includes a 25% swell factor.

Contract 5, Excavate Blasted Rock to Stockpile [3.5-cy Hydraulic Excavation] contains 38,388,954 LCY, which includes a 25% swell factor.

Crew Development
Crew Cost for several cost items appears to be lacking necessary equipment to complete the work or does not contain sufficient notes to clearly describe work plan.

Example:

Item 314116101600 - Sheet piling, steel, 27 psf, 20' excavation, per SF, drive, extract and salvage, excludes wales

Work appears to be marine based installation of cofferdam for construction. Crew contains no cost for marine based equipment.

Assuming work will be competed in a dewatered area, has the cost of Design for cofferdam consider to be Life Safety included?

Item 025413103731 - Biological lagoons, floating lagoon separators, self-buoyant, 3' depth

Appears to be water-based operations from the work item descriptions, however contain no cost of equipment to work from water.

Project Duration
Duration stated in the MCACES file stands at 2,555 Days, or 7 years, based on 100% productivity and a single 10 hour shift, 6 days per week.

Based on the Crew Hours (2,779,448 Hours) from MII, a total of 277,945 Crew days will be required to complete the project. Based on MII, work is expected to be completed utilizing a single shift, 6 days per week.

Based on the information contained within MII, a minimum of 18 separate crews will be required, working concurrently, 6 days per week, for 7 years to complete construction.

Production Rates
Production Rates appear to be based on the information contained in the Cost Engineering Appendix. Production rate sources are noted in the MII folder and are assumed to be accurate as stated.

Labor Cost
Current Estimate includes 8,323,883 Man-hours at an average hourly rate (Bare Cost) of $24.71 which is considered to be reasonable as a whole.

Detailed review by labor class indicates inconsistency, specifically with Laborers, which should be reviewed. Base wage rates range from $7.25 to $33.08 for Laborer, with Fringes being applied inconsistently. See example below.

It is also noted that the majority of Labor rate are based on union labor compared to Davis-Bacon or Open shop labor, which should be supported given the lack of union labor in South Florida.

Labor Classification	Jbase	Abase	Fbase	Tax Fringe	Amount
General Labor, Lowest Paid	$ 7.25	$ 5.44	$ 8.25	$ -	
Semi-Skilled	$ 10.64	$ 7.98	$ 11.64	$ -	$ 14.52
Semi-Skilled, Outside	$ 10.64	$ 7.98	$ 11.64	$ -	$ 1.00
Traffic Control	$ 28.99	$ 15.94	$ 30.99	$ 1.50	
Skilled Worker	$ 35.24	$ 28.19	$ 36.24	$ 9.39	
Skilled, Outside	$ 33.08	$ 24.81	$ 34.08	$ 10.30	

Incorrect Quantities
Review indicates that 13 line items contain Quantity of 1 EA, which appears to be understated or incorrect.

Reference:

> Item 260533252250 - Conduit fittings for rigid galvanized steel, boxes connector with set screw, insulated, 4" diameter
>
> Item occurs 13 times, with a quantity of 1 each, which should be validated and updated.
>
> This item appears to represent Conduit runs, given there are no additional conduit listing in the estimate. It is likely that conduit runs will be longer than 1 EA.

Certain zero quantity items exist under Job Office Overhead.

Contractor Assignments
Contractor Assignment have been made for all Project Work Items, however as previously noted, these appear to be inconsistent at times.

USR Cost Items
In general, USR Cost Items appear to be supported through project notes.

A total of 325 entries are based on USR created items in the Estimate and represent a total of 40 unique work items. Total Direct cost of all USR items in the estimate stands at $612,084,025.47, or 58.5% of the total Direct Cost.

Four (4) Items contain no documentation to support the total cost of $326,101 in Direct Cost for these items.

Thirty (30) items are based on incomplete notes and/or quotations, representing $51,589,900 in Direct Cost for these items.

Three (3) items for Bridges have been included with identical descriptions, however only two of these items include 20% increase in Unit Cost based on FDOT. Total Direct Cost for these bridges stands at $6,620,200

Mobilization
Estimate includes $49,872,958.47 (4% markup) for Mobilization which has been applied as a contractor markup and is evenly distributed throughout all project and attached to each individual item, inflating unit cost.

Based on the Order of Markups applied, cost for Small Tools, JOOH, HOOH, Profit, or Bond will not be added to the cost of mobilization. This has the potential to understate cost by 13% overall. Mobilization should be moved from Markups to the Project Cost.

Markups
Order of Markups has been updated and has been arranged based on typical USACE projects.

Prime Contractor Profit
Profit for each of the eight contractors has been developed using the Profit Weighted Guidelines, however at least one variable per contractor has not been evaluated. In general Level of Difficulty and Degree of Assistance by Government has been evaluated for each contractor.

Job Office Model
Work Items are included for items such as SNOW REMOVAL which are likely to be unnecessary and should be removed. Currently these items are listed with “0” Quantity, and “0” Cost, and do not affect the overall cost of the model.

Recommendations – The Legis team presents the following recommendations relative to the MCACES MII Estimate:

- Update folder quantities and units of measure.
- Update notes for folders where lower level folders do not match folder structure.
- Contractor Classifications should be reevaluated and updated.
- Review contractor assignments.
- Reassess formulas for consistency.
- Review quantity variations for excavated and blasted rock.
- Reexamine equipment found in crew costs.
- Review crew productivities to match project schedule.
- Update labor rates for consistency.
- Review zero quantity items found in JOOH.
- Reexamine approximately 40 User Items to update notes and vendor quotes.
- Update bridge costs.
- Move Mobilization costs to project cost.
- Review contractor profit calculations to ensure USACE Profit Weighted Guidelines are satisfied.
- Reexamine JOOH models to eliminate unnecessary items.

5.6 Project Schedule

The current project schedule for Everglades Agricultural Area Storage Reservoir Project is found in one PDF and one native document:

- ATT A Schedule_EAA Reservoir_Legis Review #3 - PDF
- Schedule_EAA Reservoir_Legis Review #3

While there looks to be a slightly different appearance (line verses bar) of the two documents (each appears to be from MS Project Scheduling Software), both present the same substantive durations for the project. Project Start Date is 01.01.2020 and finish date is 12.21.2027 for a total project duration of 2912 calendar days or 95.7 months. The project schedule is broken into nine parts:

- General – Lands & Damages, Relocations, Planning, Engineering & Design, Construction Management, Fish and Wildlife (duration "2080 days")
- CONTRACT 1 – Miami Canal Conveyance Improvements (duration "780 days")
- CONTRACT 2 – North New River Conveyance Improvements (duration "390 days")
- CONTRACT 3 – Reservoir Levee Embankment Slurry Walls (duration "415 days")
- CONTRACT 4 – Reservoir and A-2 STA Culvert and Spillway (duration "520 days")
- CONTRACT 5 – A-2 Reservoir and A-2 STA Embankments and Canals (duration "1452 days")
- CONTRACT 6 – Gate Spillways Construction (duration "525 days")
- CONTRACT 7 – Bridges (duration "800 days")
- CONTRACT 8 – A-2 Reservoir Pump Station (duration "1557 days")

In general, the schedule appears adequate for this stage of project maturity. Project logic appears reasonable and sound. Documents and interviews indicate that resource levels are a) Reservoir Dam Crews – two per embankment, a) Canal Crew – two, b) Levee Crews – two, c) Recreation Crews – two, d) Culvert Crews – three, e) Culvert Crews (Spillways) – three, f) Bridge Crews – one, and g) Pump Station Crews – one. All the crews look reasonable in a vacuum but a local market labor study should be conducted to support any labor availability (skilled and unskilled) assumptions in a rural area executing approximately $400 M in new construction per year for five years. This analysis should also include a review of material (primarily dirt and concrete) and equipment availability. Additionally, the productivity analysis should be conducted based on SFWMD historical data or similar to determine the appropriateness of durations assigned to large work items. These include: a) planning and engineering, b) reservoir levees, c) channels and canals, d) culverts (multiple cases of concurrent construction), e) spillways, f) bridges, and g) construction of the 4,600 CFS pump station.

It should be noted that with the exception of many horizontal or most vertical projects, scheduling of project activities can vary greatly. Considerations can include resource availability, site accessibility, funding accessibility, payment schedule, owner requirements, and other related influences. It is suggested that a brief narrative accompany the schedule so that the reviewer can determine if any of these are factors and how the schedule relates to the estimate.

Recommendations – The project schedule appears adequate and reasonable for a project at this stage of maturity.

5.7 Cost and Schedule Risk Analysis

ER 1110-2-1150, ER 1110-2-1302, and ETL 1110-2-573 govern the civil works contingency development using risk-based principles. USACE requires the use Oracle Crystal Ball Monte Carlo Simulation software. Established contingency values must be risk based. ATR Guidance requires the inclusion of four critical items in the process:

- Project delivery team active involvement and respective risk potentials.
- All project features of the civil works work breakdown structure.
- Internal and external risk factors.
- Report presentation and reflection in the Total Project Cost Summary (TPCS).

ER 1110-2-1302 requires involvement of the Project Delivery Team (PDT) with the cost. Specifically, the involvement of areas of design, contracting, construction, legal, project management, and construction management are necessary to the development of an appropriate risk register. This participation is reflected in a sign-in sheet or a brief narrative attached to the CSRA.

An acceptable CSRA requires the use of a comprehensive WBS for use in the analysis process. Further the risk register should include internal and external risk factors. Internal risk factors are those faced by an organization within itself that arise during normal operations of the organization. These generally fall in three areas: human factors, technology factors, and physical factors. External risks arise from outside and organization. These include natural disasters, civil disruptions, and environmental hazards.

Lastly, the CSRA results need to be presented in a presentation that can be included in a TPCS or similar document. The presentation should reflect all the details (risk register, tornado charts, contingency summary, specific driver risks, market research, and mitigation recommendations) of the previous three requirements.

The Legis team received a 22 page PDF EAA Storage Reservoir Project_CSRA_Report_03.12.2018 for the CSRA exercise. Acceptable details are provided to reach the 34 percent ($518,179,720) cost contingency and the 30 percent (29.1 months) schedule contingency. With contingencies added, the project total construction cost is $2,042,237,720 and the project construction schedule duration is 128 months.

Recommendations – The Legis team presents the following recommendations relative to the Cost and Schedule Risk Analysis:

- Provide risk register and accompanying narrative.
- Provide evidence of PDT involvement in the risk analysis process (meeting minutes, sign-in sheets, etc.).
- Provide market research.

5.8 ATR Checklist

USACE provides a comprehensive checklist of the items required for the ATR. Due to the current status of the early development of the SFWMD ATR documents, the Legis Team recommends that completing the checklist be delayed until the package is more completely developed. (See *Appendix 8.3 USACE ATR Package Checklist*)

6.0 CONCLUSION

The Legis Team recognizes that the documents provided by the client represent an “in-process” picture at a given date of the development of the client’s ATR submittal package. The team also recognizes that while it has been analyzing this set of documents, the client’s team has been making corrections and improvements such that some (or many) of our comments may be moot. That said, we recommend that the client utilize the ATR Package Checklist from this report to assess the current standing of the ATR package.

7.0 ACRONYMS AND ABBREVIATIONS

AACEI	Association for the Advancement of Cost Engineering, International
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ATR	Agency Technical Review
CCP	Certified Cost Professional
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CPM	Critical Path Method
CSRA	Cost and Schedule Risk Analysis
EAA	Everglades Agricultural Area
ECB	Engineering and Construction Bulletin
EIS	Environmental Impact Statement
EM	Engineer Manual
ER	Engineer Regulation
ETL	Engineer Technical Letter
FWO	Future without Projection Condition
JD	Juris Doctor
LORS	Lake Okeechobee Regulation Schedule
MII	Second Generation Micro-Computer Aided Estimating System
NICET	National Institute for Certification in Engineering Technologies
NDA	Non-Disclosure Agreement
NTP	Notice to Proceed
NWW	United States Army Corps of Engineers, Walla Walla District
ODC	Other Direct Costs
P6	Primavera Professional Project Management (Version 6)
PACR	Post Authorization Change Report
PE	Professional Engineer
PIR	Project Implementation Report
PMP	Project Management Professional
PPA	Project Partnership Agreement
PSP	Planning and Scheduling Professional
QA	Quality Assurance
QC	Quality Control
QTO	Quantity Take-Off
ROM	Rough Order of Magnitude
SFWMD	South Florida Water Management District

SOW	Scope of Work
STA	Stormwater Treatment Area
TSP	Tentatively Selected Plan
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

8.0 APPENDICES

8.1 User Item Report

8.2 Zero Quantity Report

8.3 ATR Package Checklist