



PORT OF ANCHORAGE INTERMODAL EXPANSION PROJECT – OPTION 1 15% CONCEPT DESIGN FOR ALASKA DISTRICT, JOINT BASE ELMENDORFRICHARDSON, ALASKA

Prepared for:

ALASKA DISTRICT U.S. ARMY CORPS OF ENGINEERS

Prepared by:

CH2M HILL

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EXECUTIVE SUMMARY

The purpose of this report is to inform the stakeholders of the cost and schedule risks and their resulting impacts on project cost and duration. The project is considering three options, developed to a 15% CONCEPT stage of design. The project includes Features 08 Roads, Railroads; 12 Navigation Ports & Harbors; 16 Bank Stabilization; and 19 Buildings, Grounds, & Utilities. The method used was a Cost and Schedule Risk Analysis as directed in W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE. The contingency results are shown in Table 1 with the relative confidence of cost under run. Recommended risk mitigation strategies are varied and summarized in Section 8 of this report.

Table 1. Executive Summary of Risk Analysis

Confidence Level	Value
60%	\$363,274,838
80%	\$376,982,054
100%	\$446,700,447

1. PURPOSE

The purpose of this report is to present the cost and schedule forecasts of the Port of Anchorage Intermodal Expansion Project – Option 1, 15% Concept design. The purpose for a Cost and Schedule Risk Analysis (CSRA) is to study elements related to cost and schedule to derive an outcome contingency calculation at the 80th percentile confidence level, for both cost and schedule, which are measured in terms of dollars and months, respectively.

2. BACKGROUND

This project, at the concept design state (15%), was requested by Alaska District U.S. Army Corps of Engineers (USACE) after CH2M HILL completed for review the study on the halted design and construction of the Port of Anchorage Intermodal Expansion Project. The project currently is considering three options, all of which have design developed to the Concept stage (15%). Each option is considered independently and an estimate and CSRA have been developed for each.

3. REPORT SCOPE

The scope of the risk analysis report is to calculate and present the cost and schedule contingencies at the 80 percent confidence level using the risk analysis processes as mandated by USACE Engineer Regulation (ER) 1110-2-1150, Engineering and Design for Civil Works, ER 1110-2-1302, Civil Works Cost Engineering, and Engineer Technical Letter 1110-2-573, Construction Cost Estimating Guide for Civil Works. The report presents the contingency results for both cost and schedule risks for all project features. The study and presentation can include or exclude consideration for operation and maintenance or life cycle costs, depending upon the program or decision document intended for funding.

3.1 Project Scope

The report includes the project technical scope, estimates, and schedules as developed and presented by CH2M HILL. Consequently, these documents serve as the basis for the risk analysis. In general, the construction scope consists of the following:

- 08 Roads, Railroads, and Bridges (15% Concept Design Stage)
- 12 Navigation Ports & Harbors (15% Concept Design Stage)
- 16 Bank Stabilization (15% Concept Design Stage)
- 19 Buildings, Grounds, & Utilities (15% Concept Design Stage)

3.2 USACE Risk Analysis Process

The risk analysis process followed the contract stipulations and the USACE Headquarters requirements as well as the guidance provided by the Cost Engineering Directory of Expertise for Civil Works (Cost Engineering DX). The risk analysis process reflected within the risk analysis report uses probabilistic cost and schedule risk analysis

methods within the framework of the Crystal Ball software. The risk analysis results are intended to serve several functions, one being the establishment of reasonable contingencies reflective of an 80 percent confidence level to accomplish the project work successfully within that established contingency amount. Furthermore, the scope of the report includes the identification and communication of important steps, logic, key assumptions, limitations, and decisions to help ensure that risk analysis results can be appropriately interpreted.

Risk analysis results are also intended to provide project leadership with contingency information for scheduling, budgeting, and project control purposes, as well as provide tools to support decision-making and risk management as the project progresses through planning and implementation. To fully recognize its benefits, cost and schedule risk analyses should be considered as an ongoing process conducted concurrent to, and iteratively with, other important project processes such as scope and execution plan development, resource planning, procurement planning, cost estimating, budgeting, and scheduling.

In addition to broadly defined risk analysis standards and recommended practices, the risk analysis is performed to meet the requirements and recommendations of the following documents and sources:

- W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE
- ER 1110-2-1150, Engineering and Design for Civil Works Projects
- ER 1110-2-1302, Civil Works Cost Engineering
- ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works
- Cost and Schedule Risk Analysis Process guidance prepared by the USACE Cost Engineering DX

4. METHODOLOGY/PROCESS

The Project Delivery Team (PDT) was composed of members of Task 3 Concept Plan Charrette, as well as CH2M HILL personnel later executing the estimate and risk analysis.

The Cost Engineering DX guidance for cost and schedule risk analysis generally focuses on the 80-percent level of confidence (P80) for cost contingency calculation. It should be noted that use of P80 as a decision criteria is a risk adverse approach.

The risk analysis process uses *Monte Carlo* techniques to determine probabilities and contingency. The *Monte Carlo* techniques are facilitated computationally by a commercially available risk analysis software package (Crystal Ball) that is an add-in to Microsoft Excel. Cost estimates are packaged into an Excel format and used directly for cost risk analysis purposes. Because Crystal Ball is an Excel add-in, the schedules for each option are recreated in an Excel format from their native format. The level of detail recreated in the Excel-format schedule is sufficient for risk analysis purposes that reflect the established risk register, but generally less than that of the native format.

The primary steps, in functional terms, of the risk analysis process are described in the following subsections. Risk analysis results would be provided in Section 6.

4.1 Identify and Assess Risk Factors

Identifying the risk factors with the PDT is considered a qualitative process that results in establishing a risk register that serves as the document for the further study using the Crystal Ball risk software. Risk factors are events and conditions that may influence or drive uncertainty in project performance. They may be inherent characteristics or conditions of the project or external influences, events, or conditions such as weather or economic conditions. Risk factors may have either favorable or unfavorable impacts on project cost and schedule.

Checklists or historical databases of common risk factors are sometimes used to facilitate risk factor identification. However, key risk factors are often unique to a project and not readily derivable from historical information. Therefore, input from the entire PDT is obtained using creative processes such as brainstorming or other facilitated risk assessment meetings. In practice, a combination of professional judgment from the PDT and empirical data from similar projects is desirable and is considered.

Formal PDT meetings were held as a part of the design charrette for the purposes of identifying and assessing risk factors. The meetings held included capable and qualified representatives from multiple project team disciplines and functions:

- Project/program managers
- Environmental
- Civil, structural, geotechnical, and hydraulic design
- Cost and schedule engineers
- Key sponsors

Additionally, numerous conference calls and informal meetings are conducted throughout the risk analysis process on an as-needed basis to further facilitate risk factor identification, market analysis, and risk assessment.

4.2 Quantify Risk Factor Impacts

The quantitative impacts of risk factors on project plans are analyzed using a combination of professional judgment, empirical data, and analytical techniques. Risk factor impacts are quantified using probability distributions, because risk factors are entered into the Crystal Ball software in the form of probability density functions.

Similar to the identification and assessment process, risk factor quantification involves multiple project team disciplines and functions. However, the quantification process used herein relied more extensively on collaboration between cost engineering, designers, and risk analysis team members with lesser inputs from other functions and disciplines.

The following are PDT quantifying risk factor impacts:

- Maximum possible value for the risk factor
- Minimum possible value for the risk factor
- Most likely value (the statistical mode), if applicable
- Nature of the probability density function used to approximate risk factor uncertainty
- Mathematical correlations between risk factors
- Affected cost estimate and schedule elements

In this analysis, the risk discussions focused on the various project features as presented within the USACE Civil Works Work Breakdown Structure for cost accounting purposes. It was recognized that the various features carry differing degrees of risk as related to cost, schedule, design complexity, and design progress. The project features under study are presented in Table 2:

Roads, Railroads, and Bridges
Navigation Ports & Harbors
Bank Stabilization
Buildings, Grounds, & Utilities

Table 2. Work Breakdown Structure by Feature

The resulting product from the PDT discussions is captured within a risk register as presented in Section 6 for both cost and schedule risk concerns. Note that the risk register records the PDT's risk concerns, and potential impacts to the current cost and schedule estimates. The concerns should support the team's decisions related to event likelihood, impact, and the resulting risk levels for each risk event.

4.3 Analyze Cost Estimate and Schedule Contingency

Contingency is analyzed using the Crystal Ball software, an add-in to the Microsoft Excel format of the cost estimate and schedule. *Monte Carlo* simulations are performed by applying the risk factors (quantified as probability density functions) to the appropriate estimated cost and schedule elements identified by the PDT. Contingencies are calculated by applying only the moderate and high level risks identified for each option (i.e., low-level risks are typically not considered, but remain within the risk register to serve historical purposes as well as support follow-on risk studies as the project and risks evolve).

For the cost estimate, the contingency is calculated as the difference between the P80 cost forecast and the base cost estimate. For schedule contingency analysis, the option schedule contingency is calculated as the difference between the P80 option duration forecast and the base schedule duration. These contingencies are then used to

calculate the time value of money impact of project delays that are included in the presentation of total cost contingency in Section 6. The resulting time value of money, or added risk escalation, is then added into the contingency amount to reflect the USACE standard for presenting the "total project cost" for the fully funded project amount.

5. KEY ASSUMPTIONS

The following are key assumptions for the risk analysis identified by the PDT and risk analysts.

- Contract acquisition strategy assumed to be single prime contract DBB.
- Accuracy range of estimate is +30% to -15%.
- The contingency is determined after consideration of the project's exposure to the studied risks. The recommended level of 80% should be carefully examined.
- All impact levels, those with high, moderate, or low risk level ratings, were studied and applied within the risk analysis.

6. RISK ANALYSIS RESULTS

6.1 Risk Register

The risk register reflects the results of risk factor identification and assessment, risk factor quantification, and contingency analysis (provided in Attachment A). A risk register can be an effective tool for managing identified risks throughout the project life cycle. As such, it is generally recommended that risk registers be updated as the designs, cost estimates, and schedule are further refined, especially on large projects with extended schedules. Recommended uses of the risk register going forward include:

- Documenting risk mitigation strategies pursued in response to the identified risks and their assessment in terms of probability and impact.
- Providing project sponsors, stakeholders, and leadership/management with a documented framework from which risk status can be reported in the context of project controls.
- Communicating risk management issues.
- Providing a mechanism for eliciting risk analysis feedback and project control input.
- Identifying risk transfer, elimination, or mitigation actions required for implementation of risk management plans.

6.2 Cost Risk Analysis – Base Cost Contingency Results

Cost risk as studied by the PDT and developed through the register and *Monte Carlo* processes is presented here. This section does not include cost escalation risk, which is studied separately and reported below in Section 6.4.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register (and to the three-point estimate, see Attachment B for code references). Generally, the areas of high criticality are Market Conditions and Bidding Competition (PR-2), Poor construction quality/Hidden defects (CON-4), Historic Change Order Growth (CON-8), and Acts of God (PR-5).

Base Cost Sensitivity Chart

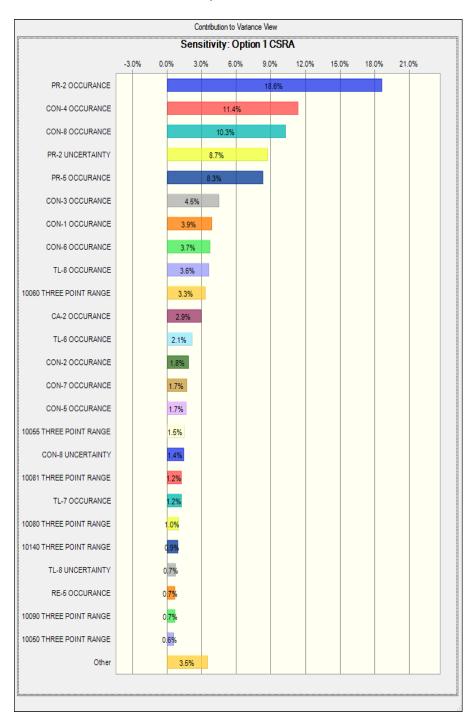
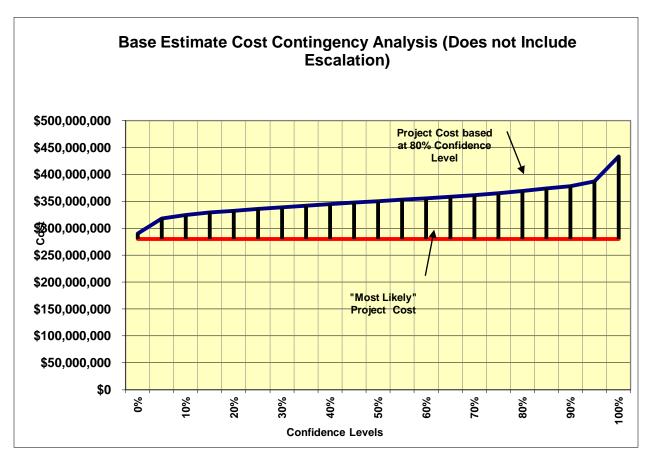


Table 3. Base Cost Confidence

Contingency Analysis

Most Likely Cost Estimate	\$280,0	
Confidence Level	Value	Contingency
0%	\$289,931,745	3.52%
5%	\$317,888,449	13.50%
10%	\$324,315,564	15.79%
15%	\$329,113,977	17.51%
20%	\$332,402,618	18.68%
25%	\$335,573,293	19.81%
30%	\$338,904,440	21.00%
35%	\$341,841,390	22.05%
40%	\$344,687,563	23.07%
45%	\$347,437,117	24.05%
50%	\$350,162,976	25.02%
55%	\$352,884,064	25.99%
60%	\$355,465,340	26.91%
65%	\$358,347,762	27.94%
70%	\$361,655,747	29.12%
75%	\$365,125,430	30.36%
80%	\$369,172,557	31.81%
85%	\$373,836,524	33.47%
90%	\$377,729,070	34.86%
95%	\$387,158,666	38.23%
100%	\$433,521,071	54.78%

Base Cost Confidence Chart



NOTE: These results reflect only those contingencies established from the cost risk analysis. For combined cost and schedule risk analysis, refer to Section 6.4.

6.3 Schedule Risk Analysis - Schedule Contingency Results

The base schedule was estimated at 30 months, and assumed a construction start in April 2015. Risks were analyzed for schedule impact, and the resulting uncertainty is expressed below.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register. Generally, the areas of high criticality are Unpredictable Funding (PPM-1), Lack of a Master Plan (D-01), and Acts of God (PR-5).

Schedule Sensitivity Chart:

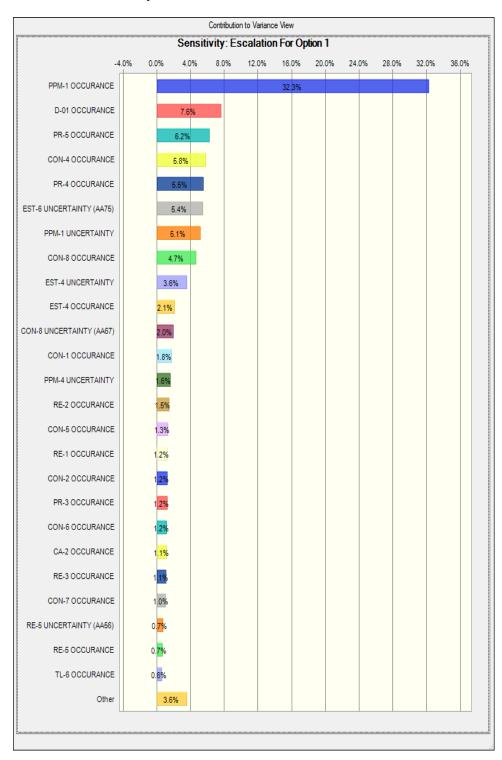
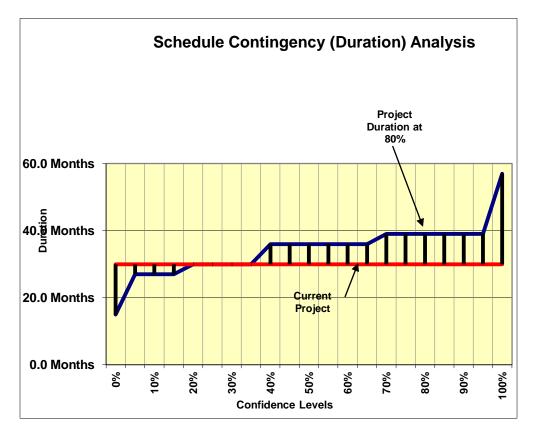


Table 4. Schedule Confidence

Contingency Analysis

Gonting Gridy 7 than yold								
Most Likely Schedule	30.0 N	Months						
Confidence Level	Value	Contingency						
0%	15.0 Months	-50.00%						
5%	27.0 Months	-10.00%						
10%	27.0 Months	-10.00%						
15%	27.0 Months	-10.00%						
20%	30.0 Months	0.00%						
25%	30.0 Months	0.00%						
30%	30.0 Months	0.00%						
35%	30.0 Months	0.00%						
40%	36.0 Months	20.00%						
45%	36.0 Months	20.00%						
50%	36.0 Months	20.00%						
55%	36.0 Months	20.00%						
60%	36.0 Months	20.00%						
65%	36.0 Months	20.00%						
70%	39.0 Months	30.00%						
75%	39.0 Months	30.00%						
80%	39.0 Months	30.00%						
85%	39.0 Months	30.00%						
90%	39.0 Months	30.00%						
95%	39.0 Months	30.00%						
100%	57.0 Months	90.00%						

Schedule Confidence Chart



NOTE: These results reflect only those contingencies established from the schedule risk analysis.

6.4 Combined Cost and Schedule Contingency Results

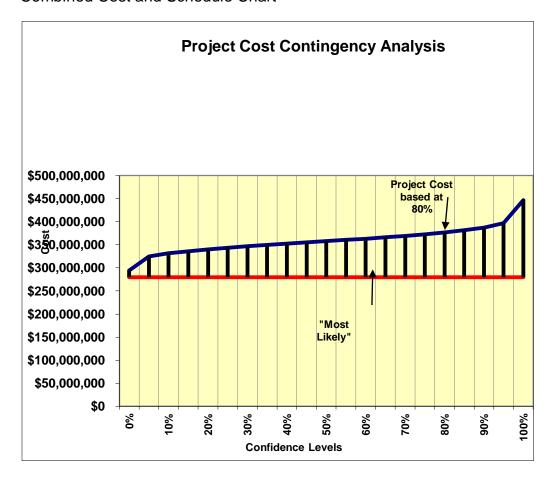
The cost risk analysis and schedule risk analysis contribute to a total project cost risk analysis. The schedule risk creates exposure to delays and risk of cost escalation. The purpose of analyzing schedule risk allows the project uncertainty to comprehend both the cost elements and their risks, but also how those costs are affected by the time element of the project and its associated risks. Presented here are the combine cost and schedule contingency results:

Table 5. Cost Confidence (Combined Cost and Schedule)

Contingency Analysis

Contingency Analysis							
Most Likely Cost Estimate	\$280,08	82,839					
Confidence Level	Value	Contingency					
0%	\$294,477,887	5.14%					
5%	\$325,037,021	16.05%					
10%	\$331,464,136	18.35%					
15%	\$336,262,549	20.06%					
20%	\$340,212,115	21.47%					
25%	\$343,382,790	22.60%					
30%	\$346,713,938	23.79%					
35%	\$349,650,888	24.84%					
40%	\$352,497,060	25.85%					
45%	\$355,246,614	26.84%					
50%	\$357,972,473	27.81%					
55%	\$360,693,561	28.78%					
60%	\$363,274,838	29.70%					
65%	\$366,157,259	30.73%					
70%	\$369,465,245	31.91%					
75%	\$372,934,928	33.15%					
80%	\$376,982,054	34.60%					
85%	\$381,646,021	36.26%					
90%	\$387,526,528	38.36%					
95%	\$396,956,124	41.73%					
100%	\$446,700,447	59.49%					

Combined Cost and Schedule Chart



7. MAJOR FINDINGS/OBSERVATIONS

CH2M HILL prepared an estimate as an input to the CSRA, which utilized contingencies typical for the project type and design stage, as well as those identified by the stakeholders as required. This estimate is considered a deterministic, point-value estimate, from which contingencies and escalation was removed in order to study the project's exposure to risk and their impacts on cost and schedule. The results find that these contingencies as used in the deterministic estimate are reasonable in providing a similar degree of confidence as resulted from the CSRA study. The benefits of the CSRA are the identification of risks for future mitigation and management effort, as well as to communicate the underlying contributors to project cost and schedule variance.

Table 6 presents project contingencies, which include base cost plus cost and schedule contingencies.

Table 6. Project Contingencies (Cost and Schedule Contingencies)

Confidence Level	Project Cost	Contingency (%)	Contingency (\$)
P0	\$294,477,887	5.14%	\$14,395,048
P10	\$331,464,136	18.35%	\$51,381,297
P20	\$340,212,115	21.47%	\$60,129,277
P30	\$346,713,938	23.79%	\$66,631,099
P40	\$352,497,060	25.85%	\$72,414,222
P50	\$357,972,473	27.81%	\$77,889,635
P60	\$363,274,838	29.70%	\$83,191,999
P70	\$369,465,245	31.91%	\$89,382,406
P80	\$376,982,054	34.60%	\$96,899,216
P90	\$387,526,528	38.36%	\$107,443,689
P100	\$446,700,447	59.49%	\$166,617,609

8. MITIGATION RECOMMENDATIONS

Risk mitigation recommendations and strategies are as tabulated in the following risk register entries.

Risk No.	Risk/Opportunity Event	Concerns	Risk Level	Responsibility (POC)	Recommended Mitigation
PPM-1	Political considerations and pressures can impact funding	Incremental and unpredictable funding	High	Project Sponsor(s)	Coordinate decisions and/or contract and construction events to minimize impact of political pressures.
PPM-4	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk could become known and mitigated prior to construction. Construction risk can be negative or positive.	Low	Contracting	Have contractors discuss project delivery innovations and foreseeable planning difficulties during RFQ period.
CA-1	Misappropriation of risk to the contractor or owner	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: design-build, design-bid-build and general contractor/construction manager. Risk could be positive or negative.	Low	Contracting	Consider all contract types including recent innovations, as allowed by procurement constraints. Receive input from the construction community.
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the ongoing dredging contracts and the repair/construction contract can interfere or limit work.	Low	Contracting	Clearly delineate in the contract the method for contract coordination, and who has the right to occupy the work at various stages of construction and operation.
TL-1	Handling of groundwater/surface water from hill behind north extension (Safety)	Assumes a pile supported design	Low	Construction	Highlight this risk in ITB, specifications, Pre-bid meeting, Contract, schedule, and communicate to all controlling parties before and during construction. Secure contractor mitigation plan.
TL-6	Continuing port operations vs. construction phasing over extended time increments	Risk that some berths are unusable due to maneuvering or dredging requirements for extended times. Impact to construction progress and production because of complexities of sequencing.	Moderate	Operations	Coordinate with stakeholder to optimize operations and construction impacts
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath Terminals 2 and 3, earthwork quantities for all options, and global stability for Option 5 at Terminals 2 and 3 are in question.	Moderate	Geotechnical/ Civil Design	Perform new surveys
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Moderate	Geotechnical/ Civil Design	Normally done as design progresses
D-01	Master plan	Lack of a current port master plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon Container Cargo terminal) or that could be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Low	Project Manager	Convene stakeholders to determine the ability and timeframe to develop a master plan.
D-08	Deferring TOTE terminal maintenance and planning because "we are moving the terminal"		Low	Operations	Examine ROI and other risks for optimal solution
D-09	Potential cost to TOTE for the expansion/development e.g. new gatehouse, shop, yard reconfiguration		Low	Operations	Include this cost after any design and logistics study is done to mitigate it

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
RE-1	Permits in place	Risk of having a negative impact on the existing 404 Permit because it is already in place for the North Extension assuming the design and construction methodology did not change	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-2	Permit modifications	High risk of having permit modifications (negative impact) later that may cost time and money due to whether or not the existing North Extension is the best plan	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-3	Permit exposure	Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-4	Excluding/including appropriate natural resource agency folks in the process early and often	Low risk of having negative environmental and regulatory issues late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Low	Environmental	Ensure buy-in/inclusion is pursued
RE-5	Beluga whale listing as a threatened and endangered species reduces the amount of work that can be performed during the day.	Stop and go operations also reduce productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well.	Moderate	Environmental	Design solutions as are warranted by ROI, assume risk.
CON-1	The construction should be allowed on both the ocean and land side of the new dock system.	Over restrictive site limitations	Low	Construction	Verify and communicate the site limitations, consider all effect of such a limitation before making same required.
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule	Moderate	Contracting	Consider that any onerous risk transferred to the contractor comes at a premium, and the determination of that premium is influenced by other circumstances such as market demand and overall state of the economy
CON-3	Availability of experienced contractors/ subcontractors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/ contractor availability (i.e. pile/tussle supported docks vs. OCSP® system).		Low	Contracting	This can be addressed with an RFQ process that results in a bid go or no-go
CON-4	Poor construction quality/hidden defects	Weak or lack of QA/QC can result in rework, additional costs, and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Moderate	Project Manager	Use QA/QC best practices, examine others that were successful on other port projects

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture? Where will material inspections be performed for acceptance? What are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs?	Moderate	Cost Engineering	Perform an analysis of impact of material availability when specifying material sources.
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring	Moderate	Operations	Coordinate these with operations in order to minimize
CON-7	Access and security issues	Changes in security protocols, impact of access requirements on available labor force, daily production, and morale	Moderate	Contracting	Consider what options the port has to make the project attractive to contractors and workers, and communicate those options in the ITB, contract, pre-bid, etc.
CON-8	Historical change order growth	Need to study market behavior for region and project type for historical changes - Walla Walla for reference	High	Cost Engineering	Investigate contractors during RFQ for propensity for change order growth. Consider contract type alternatives that minimize the exposure to both owner and contractor.
CON-9	Diesel fuel volatility	\$6M marine + \$2M civil	Low	Cost Engineering	Maintain awareness of fuel pricing at bid time. Consider master agreement with suppliers. To provide min max at an agreed price
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	High	Project Sponsor(s)	Create separable construction packages
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	High	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
PR-2	Market conditions and bidding competition	The base estimate is assuming 10% indirect costs and 20% overhead and profit markup structure, which favors a low demand market. Should there be little supply due to increased demand, the contractors are expected to add overhead and profit, up to 15% more than in the estimate	High	Contracting	Remain cognizant of the supply and demand for various contractor capabilities related to the project features. Select a contract type that leverages the market supply and demand forecast for the bid period.

Risk	Diel /Our entropits Front	6	Risk Level	Responsibility	December of a decision of the contract of the
No.	Risk/Opportunity Event	Concerns		(POC)	Recommended Mitigation
PR-3	Labor disruptions	This is covered previously, but there is some related risk to the	Low	Construction	Require labor resource identification,
		contractor that could affect schedule, and thus his escalation			contingency plan and forecast from contractors during RFP period. Maintain
		exposure			contact with labor organizations. Consider low
					cost amenities that will attract skilled and
					qualified labor and supervision.
PR-4	Acts of God (seismic events: volcanic	Weather (snow, freezing - subarctic related) impacts on	Low	Contracting	Refer to insurance and contracting general terms and conditions
	activity, earthquakes, tsunamis; or severe weather: freezing, flooding or	production - estimate does not include "act of God" level impacts			terms and conditions
	hurricane)	impacts			
PR-5	Acts of God (seismic events: volcanic	Seismic (earthquakes) impacts on production, labor availability,	Low	Contracting	Refer to insurance and contracting general
	activity, earthquakes, tsunamis; or	materials delivery, placed work damages - estimate does not			terms and conditions
	severe weather: freezing, flooding or	include "act of God" level impacts			
	hurricane)				

ITB = invitation to bid

POC = point of contact

QA/QC = quality control/quality assurance

RFQ = request for quote

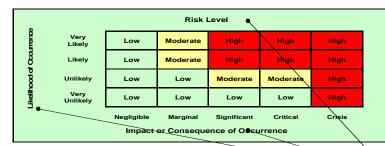
ROI = return on investment

TOTE = Totem Ocean Trailer Express, Inc.

21

ATTACHMENT A DETAILED RISK REGISTER

Port of Anchorage Intermodal Expansion Project 15% CONCEPT - Risk Register



Overall Project Scope
The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately one mile north of downtown Anchorage. The scope of the work is to demolish [existing wharf, trestle and] sheet pile wall, construct new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities and utilities.

Cost Impacts
500,000,000 scale of project, Crisis, 100,000,000; Critical 50,000,000; Significant \$20,000,000, Marginal \$10,000,000.

Schedule Impacts
4 year scale of project: Crisis 2 years; Critical 1 year; Significant 6 months; Marginal 3 months; Negligible <1 month. Event Likeliness
Very Unlikely 1 in 10, Unlikely 3 in 10, Likely 7 in 10, Very Likely 9 in 10.

			Project Cost			Project Schedule								
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
Contract F	ntract Risks (Internal Risk Items are those that are generated, caused, or controlled within the PDT's sphere of influence.)													
	PROJECT & PROGRAM MGMT													
	Political considerations and pressures can impact funding	Incremental and unpredictable funding	Likely	Significant	HIGH	escalation related	Likely	Critical	HIGH	1 year	Triangular		Project Sponsor(s)	Project Cost & Schedule
	Regulatory Permitting	It is critical to have all permitting in place before awarding construction contracts. Possibly look at making the project management team responsible for obtaining permits.	Unlikely	Significant	MODERAT E	escalation related	Unlikely	Significant	MODERAT E	6 mo		RE-3	Project Manager	Project Cost & Schedule
PPM-3	Economic tradeoffs	Consumer price sensitivity will- impact support for the project	Likely	Significant	HIGH		Likely		0					
	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk can become known and mitigated prior to construction. Construction risk can be neg or pos	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	CONTRACT ACQUISITION RISKS													

			Project Cost				Project S	Schedule						
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CA-1	Misappropriation of risk to the contractor or owner.	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: designbuild, design-bid-build and General Contractor/Construction Manager (GC/CM). Risk could be pos or neg	Very Unlikely	Marginal	LOW	\$10M	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the on-going dredging contracts and the repair/construction contract can interfere or limit work.	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	TECHNICAL RISKS													
TL-1	Handling of groundwater/surface water from hill behind north extension. (Safety)	Assumes a pile supported design	Very Unlikely	Negligible	LOW	\$1M	Very Unlikely	Negligible	LOW	none	Triangular		Construction	Project Cost
TL-2	Port configuration that- shoals in during the- winter months when- dredging cannot occur- (interrupting vessel- operations in terms of time and money	Positioning vessels	Unlikely	Significant	MODERAT E		Unlikely		θ					
TL-3	Port layout that hampers current vessels to maneuver, dock, and moor with the current tugs.	(Higher horsepower tugs needed- or ice sweeping vessels off dock- and aground)	Unlikely	Significant	MODERAT E		Unlikely		θ					
TL-4	Focusing on the North- dock completion rather- than the entire port- system as a whole-	(risk building the wrong project for today that may be incompatible with future needs)	Unlikely	Marginal	LOW		Unlikely		0					
TL-5	Port configuration that cannot be dredged with existing hopper equipment	(Operations money is getting- tighter and the potential could exist to not be able to fully- dredge)	Very Unlikely	Significant	L OW		Very Unlikely		0					

				Projec	t Cost			Project	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
	Continuing port operations vs. construction phasing over extended time increments.	(Risk that some berths are unusable due to maneuvering or dredging requirements for extended times.) Impact to construction progress and production due to complexities of sequencing	Likely	Marginal	MODERAT E	\$10M	Likely	Marginal	MODERAT E	2 mo	Triangular		Operations	Project Cost & Schedule
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath terminals #2 and #3, earthwork quantities for all options, and global stability for option 5 at terminals #2 and #3 are in question	Likely	Marginal	MODERAT E	\$10M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Likely	Marginal	MODERAT E	\$15M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
	DESIGN RISKS					,					- Transgara		···· = corg··	
D-01 D-02	Master plan b. Fail to ID- requirements c. Time to develop- 100% design	Lack of a current Port Master Plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon) or that can be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Very Unlikely Very Unlikely Very Unlikely	Marginal Marginal	LOW	\$10M	Very Unlikely Very- Unlikely Very- Unlikely	Critical	LOW 9	1 year	Triangular		Project Manager	Project Cost & Schedule
	d. Impact to cost from changes		Very- Unlikely	Marginal Marginal	LOW		Very Unlikely		θ					

				Projec	t Cost	Cost Project Schedule								
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	С	Component
	e. Location and													
	structure Impact to	What is the new structures impact	Verv				Very							
D-05	Safe Navigation	to Safe Navigation and mooring?	Unlikely	Marginal	LOW		Unlikely		0					
	f. Impact from loss of	come management and management												
	acreage	Effects on operation with loss of	Very				Very							
D-06		acreage?	Unlikely	Significant	LOW		Unlikely		0					
	Continuing silting			J			,							
	issues at the stern of													
	Tote vessels													
D-07					θ		0		0					
	Deferring Tote terminal													
	maintenance and													
	planning because "we													
	are moving the													
	terminal"													
D-08			Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
	Potential cost to Tote													
	for the													
	expansion/developmen t e.g. new gatehouse,													
	shop, yard													
	reconfiguration													
D-09	J		Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
				- J			,	- 5 5						,
	REGULATORY AND													
	ENVIRONMENTAL													
	RISKS								0					
		Risk of having a negative impact												
		on the existing 404 permit												
		because it is already in place for												
		the North Extension assuming the design and construction				escalation								Project Cost &
RE-1	Permits in place	methodology did not change	Unlikely	Marginal	LOW	related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Schedule
		High risk of having permit mods						3						
		(negative impact) later that may												
		cost time and money due to												
		whether or not the existing North												
		Extension is the best plan												Desired Ossi O
DE 2	Permit mods		Unlikely	Marginal	LOW	escalation	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-Z	remin mous		Unlikely	Marginal	LUW	related	Unikely	Marginal	LOW	2 1110	mangular		Environmental	Scriedule

			Project Cost					Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-3		Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Unlikely	Marginal	LOW	escalation related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-4	Excluding/Including appropriate natural resource agency folks in the process early and often:	Low risk of having environmental and regulatory issues that are negative late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Very Unlikely	Significant	LOW	escalation related	Very Unlikely	Marginal	LOW	-3 to +1 mo	Triangular		Environmental	Project Cost & Schedule
RE-5	Beluga whale listing as a Threatened and Endangered species reduces the amount of work that can be performed during the day. NEPA permits a. 404 (exp	Stop and go operations also reduces productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well. Many of the permits expire in the near future. What new requirements will a new or hybrid structure entail? Will a new EA be	Very Likely	Marginal	MODERAT E	\$10M	Very Likely	Marginal	MODERAT E	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-6	duantities remain) b. LOA c. What new permits will a new structure	required? Can the process be streamlined? How much time and effort will be required for submission and review? Impact to construction of not having permits in place?	Likely	Marginal	MODERAT E				0					

			Project Cost Project Schedule											
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-7	Endangered species- (beluga whales) a. Impact to in-water- work- i. Low tide ii. Harassment and- takes b. Monitoring- i. Contractor ii. Scientific- iii. Cost associated-	Loss of 8 hours of in water work- daily around low times. Meeting whale harassment and having- minimal takes. Monitoring requirement both from- contractor and scientific by permit- and the cost associated.	Likely	Marginal	MODERAT E				0					
	CONSTRUCTION RISKS								0					
CON-1	The construction should be allowed on both the ocean and land side of the new dock system.	Over restrictive site limitations	Very Unlikely	Significant	LOW	\$20M	Very Unlikely	Significant	LOW	6 MO	Triangular		Construction	Project Cost & Schedule
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule		Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 mo	Triangular		Contracting	Project Cost & Schedule
CON-3	Availability of experienced contractors/subcontract ors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/contractor availability (i.e. pile/tussle supported docks vs. OCSP dock system).		Very Unlikely	Significant	LOW	\$25m	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost

			Project Cost					Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CON-4	Poor construction quality/Hidden defects	Weak or lack of Quality Control/Quality Assurance can result in rework, additional costs and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Unlikely	Significant	MODERAT E	\$25m	Unlikely	Significant	MODERAT E	6 MO	Triangular		Project Manager	Project Cost & Schedule
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material Inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture, where will material inspections be performed for acceptance, and what are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs to	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 MO	Triangular		Cost Engineering	Project Cost & Schedule
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring Changes in security protocols, impact of access requirements on	Unlikely	Significant	MODERAT E	\$20M	Unlikely	Marginal	LOW	3 MO	Triangular		Operations	Project Cost & Schedule
CON-7	Access and Security Issues	available labor force, daily production, morale,	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	2 mo	Triangular		Contracting	Project Cost & Schedule
CON-8	Historic Change Order Growth	Need to study market behavior for region and project type for historicals - Walla Walla for reference	Likely	Significant	HIGH	\$25m	Likely	Significant	HIGH	6 mo	Triangular		Cost Engineering Cost	Project Cost & Schedule
CON-9	Diesel Fuel Volatility ESTIMATE AND SCHEDULE RISKS	\$6M Marine + \$2M civil	Very Likely	Negligible	LOW	+6 TO -2m				none	Triangular		Engineering	Project Cost

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
EST-1	Insufficient funds, uncertain levels and frequency of future funds		Likely	Significant	HIGH	\$20M	Likely	Significant	HIGH	6 mo		PPM-1		
EST-2	Risk of reducing revenue from leasable Port property in the event reserved site needs of the Project contractor are- overestimated (a non- capital concern)		Likely	Marginal	MODERAT E				9					
EST-3	Interruption of normal- commercial shipping- and revenue stream- due to either- construction activity or- environmental- constraints (a non- capital concern)		Likely	Marginal	MODERAT E				θ					
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	Very Likely	Significant	HIGH		Very Likely	Significant	HIGH	6 mo	Triangular		Project Sponsor(s)	Project Cost & Schedule
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	Very Likely	Significant	нісн	+20 /-20% of those component s	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Very Likely	Negligible	LOW	\$5M	Very Likely	Marginal	MODERAT E	4 mo	Triangular		Cost Engineering	Project Cost & Schedule
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Very Likely	Negligible	LOW	+10% of waste	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
	O & M RISKS										J .			,

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
FL-1	Potential negative risk to existing snow clearing and sanding/sweeping operations capacity	potential need for additional equipment and manpower to maintain response time and storage/disposal capacity	Likely	Marginal	MODERAT E				0					
FL-2	Potential negative risk of snow clearing, sanding, and sweeping operations on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-3	Potential negative risk of freeze-thaw cycles on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-4	Potential negative risk to site circulation by above-grade bus bar crane power systems		Likely	Marginal	MODERAT E				0					
FL-5	Potential negative risk of additional site lighting on JBER nighttime aircraft operations		Very Unlikely	Significant	LOW				0					
FL-6	Potential negative risk of certain fender systems interfering and causing ship line damage during tide cycle		Likely	Marginal	MODERAT E				0					
FL-7	Potential negative risk to structures and appurtenances by aggressive corrosion environment	USING REINFORCED CONCRETE	Unlikely	Marginal	LOW									

			Project Cost			Project S	Schedule							
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	Affected Project
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	C C	Component
	Potential negative risk to structures and													
	appurtenances by ice													
FL-8	flows and large tide cycle range		Unlikely	Marginal	LOW									
120	cycle range		Offinicity	iviaigiilai	LOW									
	Potential negative risk													
	associated with existing condition of existing													
FL-9	structures and utilities		Unlikely	Marginal	LOW				0					
Program	matic Risks (External Ri	isk Items are those that are generat	ed, caused, o	or controlled e	exclusively or	itside the PD	T's sphere of	influence.)					T	
		The history of the project has created a problem with public												
		trust that has caused the budget												
		to be funded incrementally. How												
		can these challenges be overcome to attain funding												
		needed? Impact of incremental												
	Public trust	funding has to be addressed so-												
	a. Incremental funding- b. Budget challenge	that public is fully aware of impacts i.e. increasing cost and												
PR-1	b. Budget challenge	delay in completion.	Likely	Significant	HIGH				θ					
		, .	•											
		The base estimate is assuming a												
		10% indirects and 20% OH&P												
		markup structure, which favors a												
		low demand market. Should there be little supply due to												
		increased demand, the												
	Mauliat ann dùtana an d	contractors are expected to add				0 += 450/								
PR-2	Market conditions and bidding competition	overhead and profit, up to 15% more than in the estimate	Likely	Critical	HIGH	0 to 15% more	Likely	Negligible	LOW	none	Triangular		Contracting	Project Cost
	5 1 1 2 2 2 2		,				/	<u> </u>			<u> </u>		1	,
		This is covered in XX above, but there is some related risk to the												
		contractor that could affect												
		schedule, and thus his escalation				based on								Project Cost &
PR-3	Labor disruptions	exposure	Unlikely	Marginal	LOW	esc	Unlikely	Marginal	LOW	3 mo	Triangular		Construction	Schedule
	Acts of God (seismic events: volcanic													
	activity, earthquakes,	Weather (snow, freezing -												
	tsunamis; or severe	subarctic related) impacts on												
PR-4	weather: freezing,	production - estimate does not include "act of God" level impacts	Unlikely	Marginal	LOW	\$3M	Unlikely	Significant	MODERAT E	6 ma	Triangular		Contracting	Project Cost & Schedule
rr-4	flooding or hurricane)	include actor God lever impacts	Uniikely	Marginal	LOW	φ3IVI	Unikely	Significant		6 mo	mangular		Contracting	Scriedule

			Project Cost				Project \$	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*		Rough Order Impact (mo)		Responsibility/PO C	Affected Project Component
	Acts of God (seismic												
	events: volcanic	Seismic (earthquakes) impacts on											
	activity, earthquakes,	production, labor availability,											
	tsunamis; or severe	materials delivery, placed work											
	weather: freezing,	damages - estimate does not	Very				Very						Project Cost &
PR-5	flooding or hurricane)	include "act of God" level impacts	Unlikely	Critical	LOW	\$50M	Unlikely	Critical	LOW	1 yr	Triangular	Contracting	Schedule

*Likelihood, Impact, and Risk Level to be verified through market research and analysis (conducted by cost engineer).

- 1. Risk/Opportunity identified with reference to the Risk Identification Checklist and through deliberation and study of the PDT.
- 2. Discussions and Concerns elaborates on Risk/Opportunity Events and includes any assumptions or findings (should contain information pertinent to eventual study and analysis of event's impact to project).
- 3. Likelihood is a measure of the probability of the event occurring -- Very Unlikely, Unlikely, Moderately Likely, Likely, Very Likely. The likelihood of the event will be the same for both Cost and Schedule, regardless of impact.
- 4. Impact is a measure of the event's effect on project objectives with relation to scope, cost, and/or schedule -- Negligible, Marginal, Significant, Critical, or Crisis. Impacts on Project Cost may vary in severity from impacts on Project Schedule.
- 5. Risk Level is the resultant of Likelihood and Impact Low, Moderate, or High. Refer to the matrix located at top of page.
- 6. Variance Distribution refers to the behavior of the individual risk item with respect to its potential effects on Project Cost and Schedule. For example, an item with clearly defined parameters and a solid most likely scenario would probably follow a triangular or normal distribution.

 An risk item for which the PDT has little data or probability of modeling with respect to effects on cost or schedule (i.e. "anyone's guess") would probably follow a uniform or discrete uniform distribution.
- 7. The responsibility or POC is the entity responsible as the Subject Matter Expert (SME) for action, monitoring, or information on the PDT for the identified risk or opportunity.
- 8. Correlation recognizes those risk events that may be related to one another. Care should be given to ensure the risks are handled correctly without a "double counting."
- 9. Affected Project Component identifies the specific item of the project to which the risk directly or strongly correlates.
- 10. Project Implications identifies whether or not the risk item affects project cost, project schedule, or both. The PDT is responsible for conducting studies for both Project Cost and for Project Schedule.
- 11. Results of the risk identification process are studied and further developed by the Cost Engineer, then analyzed through the Monte Carlo Analysis Method for Cost (Contingency) and Schedule (Escalation) Growth.

ATTACHMENT B COST ESTIMATE (INPUT TO CSRA)

Cost Estimate

Port of Anchorage Intermodal Expansion Project 15% Concept Plans – Option 1 Contract No. W912PP-09-D-0016 Task Order ZJ03

Prepared for

Alaska District U.S. Army Corps of Engineers

February 26, 2013



2020 SW 4^{th} Avenue 3^{rd} Floor Portland, Oregon 97201

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Tables

1 Overall Costs

Cost Estimate

1. Executive Summary

The construction cost for the project is described herein and in Table 1.

TABLE 1
Overall Costs

Accuracy Range per ASTM E2516 - 11, Standard Classification for Cost Estimate Classification System, see Section 2.5

Description	Amount	Rounded
Option 1 estimate	\$366,847,382	\$365,000,000
Hi range + 30%	\$476,901,594	\$475,000,000
Lo range – 15%	\$311,820,275	\$310,000,000

ASTM = American Society for Testing and Materials (formerly, now ASTM International)

The executive summary provides an overview of the Cost Estimate. Reliance on this information is advised to be in consideration of the full context of this report.

2. Estimate Information

2.1 Purpose of Estimate

The purpose of this Cost Estimate is to establish an engineer's opinion of probable cost for design documents at 15% concept design, suitable for further development using U.S. Army Corps of Engineers (USACE) Cost and Schedule Risk Analysis (CSRA) Guidance (17 May 2009) to calculate total project costs.

2.2 Client

The client is the Alaska District USACE.

2.3 Project Location and General Scope

The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately 1 mile north of downtown Anchorage. The general scope of the work for Option 1 is to demolish an existing sheet pile wall, construct a new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities, and utilities.

2.4 Date and Preparation

The estimate was prepared January - February 2013, by CH2M HILL team members as listed:

- Jorge Abisambra/WPB (marine work)
- Robert Wells/PDX, (civil "*" scope) phone 503-872-4622 x24622
- Joe Taylor/ANC (civil quantities)
- John O'Reilly/SAC (quality assurance and quality control)

The estimate was requested by Doug Playter/SEA for project number 462130.

2.5 Estimate Classification and Methodology

This cost estimate prepared is considered a Budget Level or Class 4 estimate per American Society for Testing and Materials (ASTM) E2516-11. It is considered accurate to +30% to -15%, based upon a design deliverable (15% Concept Plans).

The estimating effort did decompose the scope to a sufficient level to support a thorough analysis of all major cost elements at the work package level, for purposes of performing risk analysis and identifying those critical items which might be expected to create cost variances of +0.5% in the bottom line estimate.

The individual scope items inclusions under Section 3.b.vi of the Task Order preceded by an asterisk were estimated by parametric estimating techniques. The estimated costs for these asterisked items were developed using the 11 April 2012 Port of Anchorage (POA) Intermodal Expansion Project Budgetary Cost Estimate Report and calculated as "blended costs" per unit of measure. Additionally, the estimated costs for the Marine Terminal Buildings (complete structures, including foundation, structure, shell, interior finishes, and all utilities) and Corrosion Protection were calculated by the same parametric technique.

This estimate was developed, as required by USACE CSRA Guidance (17 May 2009), as an input to the CSRA. The CSRA is a separate document prepared concurrently with this estimate.

The estimate is appended to this report as Appendix A.

3. Basis of Estimate

3.1 Basis Documents

The estimate is based on 15% drawings for Option 1, developed by CH2M HILL, dated February 2013. Additionally, the estimate used portions of the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, as directed, for parametric cost estimating.

3.2 Key Assumptions

- Project is to be offered to bidders on a lowest responsive basis, in time to allow construction progress to begin April 2015.
- Permitting and regulatory agencies to have issued all permits, modifications, and amendments, so as not to impede the construction start and progress in any way.
- Project is to be fully funded prior to the start of construction.

3.3 Project Delivery Schedule and Method

It is assumed that the environmental, permitting, and design phase will continue to early 2015, with a bid and award date that supports an April 2015 construction start. The scheduled duration for Option 1 is 30 months, ending late 2017. The assumed delivery method is a single prime contract with the Municipality of Anchorage, Alaska.

3.4 Labor, Materials, Subcontracts and Other Direct Costs

3.4.1 Labor

Labor rates used are based on 2013 prevailing wage rates adjusted for Anchorage, Alaska, as well as those used in the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjust for inflation by 1.28%.

3.4.2 Materials

Materials pricing is based on recent and historical vendor quotations, as well as pricing used in the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjusted for inflation by 1.28%.

3.4.3 Subcontracts

It is assumed that the Prime Contractor may employ various specialty subcontractors, such as electrical, telecom, utility, and earthwork subcontractors.

3.4.4 Long Lead Items

Galvanized steel sheet and cylinder piling, fender materials assumed to be 5 months lead-time.

3.4.5 Owner Supplied

Steel sheet pile in quantities assumed to supply majority of bulkhead sheet pile materials.

3.4.6 Allowances

Landscaping allowance for restoration of disturbed areas, \$150,000 subcontractor price.

3.5 Markups, Taxes and Other Indirect Costs

Detail on markups used, taxes included, contingencies, owner costs, or any other cost additions.

•	General requirements/site indirect costs	10%
•	Taxes on material and equipment	0%
•	Prime Overhead, Profit	20%
•	Bond	1%
•	Contingency	20%
•	PM, CM and Design (Owner's Costs)	18%
•	Owner's Contingency (Reserve)	8.5%

3.6 Market Conditions

Market conditions adjustments were not considered for this project; it remains market neutral. An adjustment is unwarranted because of market condition volatility and because the project will be executed in the future.

3.7 Escalation Costs

Escalation is based on USACE EM 1110-2-1304 (31 March 2012), Table A-1, Quarterly Cost Index by CWBS Feature Code. Feature codes relevant to this project are:

- 08 Roads, Railroads, and Bridges (Cherry Hill Road, Rail extension)
- Navigation Ports & Harbors (Wharf and bulkhead, including dredging and demo)
- 16 Bank Stabilization (Slope protection)
- 19 Buildings, Grounds, & Utilities (Landside work)

Escalation costs are estimated in two parts: The first part is to escalate the project costs prepared in February 2013 dollars to the assumed bid date of April 2015; the second part is the escalation of costs through the duration of the project, the mid-point of which is assumed to be mid 2014. The severing of escalation will allow the project to input into CSRA, removing only the escalation for the project duration, which then will be modeled per the CSRA guidance. The use of costs, as directed, from the POA Intermodal Expansion Project Budgetary Cost Estimate Report, dated 11 April 2012, required the addition of 1.28% escalation to bring it current to the year and month of estimate, February 2013.

3.8 Detailed Scope, Clarifications, Inclusions and Exclusions

3.8.1 Civil Scope

Option 1 does not propose any new improvements to the wharves or trestles at Terminals 2 and 3. As such, this option excludes Horizon Container Cargo terminal enhancement.

At the north extension, a new pile-supported Wet Barge Berth and new roll-on/roll-off (RO/RO) Berth are proposed, as well as a new sheet pile bulkhead. Approximately 31 acres of new paved upland area would be provided.

The integrity and function of the existing Dry Barge Berth would be maintained but removal of the existing OCSP® structure, mass excavation of existing embankment, and construction dredging would be required. The remaining slopes would be protected with a layer of armor stone.

3.8.2 Demolition of Existing Infrastructure and Mass Excavation

Option 1 would require moderate demolition of existing infrastructure and mass excavation.

At the north extension portion of the project, the OCSP® system including tail walls would be demolished from the existing Dry Barge Berth south. The portions of traditional Z-pile walls previously installed at the north extension would also be removed. The OCSP® system installed for the Dry Barge Berth would remain in place.

Mass excavation of previously constructed embankment and construction dredging would be required. Salvage of existing armor stone would also be included. The existing Dry Barge Berth would be maintained in approximately its existing condition but some regrading at the interface between the Dry Barge Berth and new upland area would be required.

3.8.3 Civil Elements to be Constructed

Option 1 would include the following specific civil design elements:

- Water service and fire suppression lines
- Sanitary sewer lines
- Storm drain piping and inlets
- Electrical, communication, and security lines
- Cherry Hill Haul Road realignment and new rail spur
- Paved upland area
- Landscaped areas
- Site grading and drainage

3.8.4 Structural Scope

The major structural components of Option 1 would consist of two pile-supported wharves, six access trestles, and a cellular steel sheet pile bulkhead. Other ancillary structural components to support port operations would include heavy-duty fenders, mooring bollards, quick release hooks along the wharf face, and a stevedore building. The pile-supported wharves would provide a total of 1,800 linear feet of new dock face and two new berths: (1) a barge berth to support containerized, break bulk, or bulk cargo operations, and (2) a RO/RO Berth to support containerized RO/RO operations.

3.8.5 Slope Protection

All new embankment slopes would be covered by a 6-foot-thick layer of armor rock and riprap, a mitigation measure to prevent piping conditions at the slope surface.

3.8.6 Corrosion Protection

Corrosion Protection System for Pile-Supported Wharf

The steel casing in the top part of the hybrid piles would be sacrificial. The presence of the steel casing would delay the onset of corrosion in the reinforced concrete core. A corrosion allowance is built into the design of the hollow steel pipe pile that would form the lower part of the hybrid pile. All-steel reinforcing bar used in the pile-supported wharf and trestle, including deck, piles, and pile caps, would be epoxy coated to increase corrosion resistance. High-performance concrete water/cement ratio and air entrainment admixture would be in accordance with American Concrete Institute 201.2R *Guide to Durable Concrete* to establish a dense, low-permeability concrete.

Corrosion Protection System for Sheet Pile Bulkhead

All existing sheet piles in the POA stockpile were specified to be hot-dip galvanized with a minimum zinc thickness of 6 to 12 mils. Galvanization would be the sole corrosion protection element for sheet piles exposed to the atmospheric and splash zones. An impressed-current cathodic protection system would protect structural components of the sheet pile bulkheads that would be submerged in or in contact with soil. Cathodic protection

anodes would be installed on the seaward side of sheet piling for protection of seaside surfaces, and additional anodes would be installed in drilled holes landside to protect surfaces exposed to soil and mud.

Corrosion Protection System for Fender Piles

A galvanic anode cathodic protection system would protect the portions of the fender piles that would be submerged in or in contact with soil. Based on the estimated surface area per fender pile, approximately 2,000 pounds of aluminum anode would be required for a 20-year service life. Eight or nine aluminum anodes could be fabricated into "bracelet" anodes that could be fastened or welded to the fender pile.

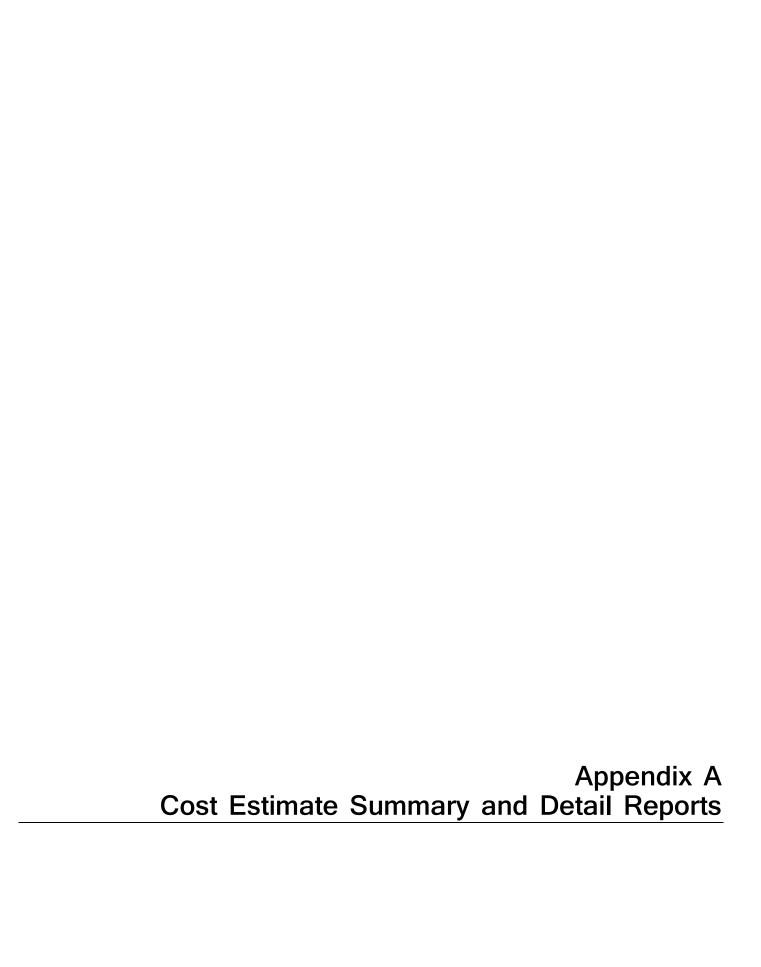
3.8.7 Exclusions

- Hazardous materials handling and disposal
- Natural gas utilities

3.9 Cost Resources

The following cost resources were used in the development of the cost estimate.

- 11 April 2012 POA Intermodal Expansion Project Budgetary Cost Estimate Report
- Vendor quotes on equipment and materials
- Estimator judgment



		DIRECT	INDIRECT					
	Labor	8,190,204.49		8,190,204.49				
	Burden	4,426,800.21		4,426,800.21				
	Lab+Bur	12,617,004.70		12,617,004.70	6.73	38%		
	Perm Matl	61,132,325.36		61,132,325.36	32.64	45%		
	Const Exp	318,010.90		318,010.90	0.1	0 0 .00% 100.00% sc3 Total Escalation 0 0		
	Equipment	21,771,807.91		21,771,807.91	11.62	26%		
	Subs	64,782,006.93		64,782,006.93	34.59	94%		
	Other	26,641,078.43		26,641,078.43	14.22	27%		
	Total Costs:	187,262,234.23		187,262,234.23	100.00	00%		
	% of Total	100.000%	0.000%	100.000%				
Escalation on:	Labor	Burden	Perm Matl	Const Matl	Со Едр	Rented Eqp		
	0	0	0	0	0	0		
	100.00 %	100.00%	100.00%	100.00 %	100.00 %	100.00 %		
	Eq Op Exp	Sub	Misc1	Misc2	Misc3 To	tal Escalation		
	0	0	0	0	0	0		
	100.00 %	100.00%	100.00 %	100.00 %	100.00%	100.00 %		

* Data Below here is dependent on the Summary Process. *	
The Summary Process was last run 02/26/2013 at 8:29 PM	

Markup on Resource Costs	35,202,256.42	18.7984%
MARKUP TOTALS ===> Cost Addons	35,202,256.42	18.7984%
Escalation to February 2015 3.4700 % of Cost, Mkup, & Prev	7,846,813.54	4.1903%
Escalation to Proj Midpoint 2.0500 % of Cost, Mkup, & Prev	4,796,585.26	2.5614%
Contingency 20.0000 % of Cost, Mkup, & Prev Addons	47,755,270.77	25.5018%
PM, CM, Design 18.0000 % of Cost, Mkup, & Prev Addons	51,575,692.43	27.5420%
Owner's Contingency 8.5000 % of Cost, Mkup, & Prev Addon	28,739,121.95	15.3470%
Bond from Summary Table	3,668,464.38	1.9590%
MARKUP, ADDON & BOND TOTALS ===>	179,584,204.75	
COST + MARKUP>	\$366,846,438.98 (On Takeoff Quantity)	(% of costs)
There * ARE NOT * closing accounts for this bid.		
Rounding difference: Unbalancing difference:	943.19	-Effect on Bid- Adjusted
From Cut&Add Sheet-costs: From Cut&Add Sheet-markup: Pass Through Adjustments:		(on Bid Quantity) (on Bid Quantity) None

20:30

13-008-1 *** Bob Wells POA 15% CONCEPT OPTION 1

BID TOTALS

Bid Total	Unit Price	<u>Units</u>	Quantity	<u>Description</u>	Biditem
,710,877.64	1,710,877.64	LS	1.000	Construction Staging	10040
	23,078,216.31		1.000	Demolition	10050
,310,660.00	52.57	CY	938,000.000	Dredging	10055
5,969,049.96	1,088.43 9	FT	88,172.000	Piling	10060
,253,936.00	9,660.88	LF	2,200.000	Sheet Pile Bulkhead	10080
8,086,297.5	18,086,297.52	LS-	1.000	Credit Sheetpile Materials on site	10081
0,629,535.00	197.86 2	SF	149,750.000	Concrete Deck Superstructure	10090
,762,770.12	293,795.02	EA	6.000	Abutments	10100
,641,979.20	4,641,979.20	LS	1.000	Fendering	10120
),668,800.00	191.68 3	CY	160,000.000	Slope Protection	10140
9,939,526.71	\$2.		btotal Marine Work	***	
				GENERAL CONSTRUCTION	
,518,984.70	45,518,984.70	LS 4	1.000	Surface Pavements	10150
731,885.94	731,885.94	LS	1.000	Traffic Control Parking	10160
	2,067,798.24	LS	1.000	Surface water control	10170
,947,008.02	4,947,008.02	LS	1.000	Potable Water Utilities	10180
,947,008.02		LS	1.000	Fire Suppression Utilities	10190
704,567.53	704,567.53	LS	1.000	Sanitary Sewer Utilities	10200
	18,099,336.17		1.000	Electrical Power Utilities	10210
5,428,494.77		LS	1.000	Telecommunications Utilities	10230
	13,328,244.27		1.000	Railroad Spur	10240
293,849.78	293,849.78	LS	1.000	Surface Restoration/Landscaping	10250
2,845,968.39		LS	1.000	Marine Terminal Buildings incl Crane Maint	10260
,612,428.17				•	
,603,459.16	8,603,459.16	LS	1.000	Other	10290
5,907,855.45	\$12		eneral Construction	***Subtota	
5,6	16,778,822.29 1 1,612,428.17 8,603,459.16		1.000 1.000 1.000	Corrosion Control Cherry Hill Road Upgrades Other	10270 10280 10290

^{**}Notes:

Items in italics are Non-Additive.

890006

Carpenter Crew Mob

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Direct Cost Report

Activity Resource	Desc	Qu Pcs	uantity Unit		Unit Cost	Labor M	Perm C aterial Matl	onstr Eq /Exp M	uip Sub- ent Contract	Total
•	= 10040 CLIEN Construction Staging iditems of Parent Item 10040	T# = 01-12	2	Unit =	LS	Takeoff Qu	an:	1.000 E	ngr Quan:	1.000
•	= 10042 CLIEN Mobilization and Demobiliza iditems of Parent Item 10042		2	Unit =	LS	Takeoff Qu	an:	1.000 E	ngr Quan:	1.000
	10043 CLIEN Mobilization	T#= 03-12	2 I	and Item Unit =	SCHEDUL LS	.E: 1 Takeoff Qu	100 an:	1.000 E	ngr Quan:	0.000
219000	Misc Hauling/Trucking			Quan:	1.00 L	S Hrs/Sl	hft: 10.00	Cal: 510	WC: CCISP	
***** Copied	and adjusted from Y Trucking - Flat Bed	:\TBG-E	NGI\EST\13- 20.00 HR	008-5 **	* * * * 100.000		2	2,000		2,000
540000	Temporary Construction F	ence		Quan:	750.00 L	F Hrs/Sl	hft: 10.00	Cal: 510	WC: CCISP	
	and adjusted from Y E Temporary Chainlinkfence		NGI\EST\13- 750.00 LF	008-5 **	* * * * 12.000		ç	9,000		9,000
890005	Pile Crew Mobilization			Quan:	1.00 L	S Hrs/Sl	hft: 10.00	Cal: 510	WC: CCISP	
**** Copied	and adjusted from Y	:\TBG-E	NGI\EST\13-	008-5 **	***					
Mobilization MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11 8MWH-A-1 8MWH-C-1 8PILE26 9100000 M105 M165 M170 M190 M195	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver M-Welder M-Skilled Laborer M-Laborer	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	20.00 DA 2.00 DA 2.00 DA 2.00 DA 2.00 HR 20.00 HR	00 CH	Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720 34.950 32.000 29.250 27.520	1,251 1,240 1,155 1,008 958		3,2 3 4 1 2 2	Eqp Pes: 100 1667 1550 160 160 160 160 160 160 170 170 170 170 170 170 170 170 170 17	17.00 140 400 3,267 350 60 200 350 400 60 100 200 2 60 70 100 130 200 50 910 1,000 1,251 1,240 1,155 1,008 958

Quan:

1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

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Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor N	Perm Material M	Constr Iatl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =	10043 CLIE	NT# = 03	3-12	Land Item	SCHEDU		100				
Description =	Mobilization			Unit =	LS	Takeoff Q	uan:	1.000	Engr	Quan:	0.000
**** Copied	d and adjusted from	Y:\TBG	-ENGI\EST\1	3-008-5 **	***						
<u>MARWOO</u>	Marine Carpenters Crew		2	20.00 CH	Prod:	2.000	00 S I	Lab Pcs:	10.00	Eqp Pcs	: 16.00
8211050	Fuel, Oil, Grease 50g/d		2.00 DA		200.000				400		400
8CRANEC100	Crane Manitowoc 222B 1	1.00	20.00 HR		106.961				2,139		2,139
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	20.00 HR		3.000				60		60
8MBC-Z-1	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBC-Z-2	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBS-Z-9	Spud Barge M-80x28'	1.00	20.00 HR		10.000				200		200
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000				60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000				100		100
8MCN-A-13	Container Steel 20'	1.00	20.00 HR		0.100				2		2
8MFW-A-1	Work Float	1.00	20.00 HR		2.000				40		40
8MFW-A-2	Work Float	1.00	20.00 HR		2.000				40		40
8MGN-Z-17	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MGN-Z-18	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MLT-A-2	Light Tower, Genie	1.00	20.00 HR		3.500				70		70
8MVP-A-2	FORD F150 SUPERC 2	1.00	20.00 HR		6.500				130		130
8WELD400	Welder 400 AMP	2.00	40.00 HR		2.044				82		82
M100	Foreman - Carpenter	1.00	20.00 MH		34.720	1,222					1,222
M170	M-Welder	1.00	20.00 MH		32.000	1,155					1,155
M173	M-Lead Carpenter	1.00	20.00 MH		28.250	1,046					1,046
M175	M-Carpenter	3.00	60.00 MH		27.520	3,076					3,076
M180	M-Carpenter Helper	3.00	60.00 MH		27.520	2,875					2,875
OPCR100	Op Eng 1A- Crane 100-200	1.00	20.00 MH		33.480	1,051					1,051
\$14,088.62	200.0000 MH/L	.S	200.00 MH	[(6458.54]	10,426			3,663		14,089
060015	Rigging Supplies			Quan:	1.00	LS Hrs/S	Shft: 10.	00 Cal:	510 WC	: CCISP	
**** Copied	d and adjusted from	Y:\TBG	-ENGI\EST\1	3-008-5 **	***						
31RIGGING	Rigging Supplies		1.00 LS		5,000.000			15,000			15,000
====> Item ' \$54,801.53 54,801.530	Totals: 10043 - 320.0000 MH/LS 1 LS	Mobiliza	320.00 MH	[10	0702.78] 1	17,089 7,089.49	27	27,140 7,140.00	10,572 10,572.04		54,802 54,801.53
BID ITEM = Description =	Transportation	NT#= 03	3-12	Land Item Unit =	SCHEDU LS	LE: 1 Takeoff Q	100 uan:	1.000	Engr	Quan:	0.000
Description =											
219000	Misc Hauling/Trucking			Ouan:	1.00	LS Hrs/S	Shft: 10.	00 Cal:	510 WC	: CCISP	
219000	Misc Hauling/Trucking d and adjusted from			Quan:	1.00	LS Hrs/S	Shft: 10.	00 Cal:	510 WC	: CCISP	

Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

rental tugging services to and from Tacoma, Washington State. Distance Tacoma to Anchorage: 1,472 N Miles at 4.5 knots, 1,472/4.5= 327 hours ===> 13.62 days say 14 days

14 days in and 14 days back 2 days on stand by = 30 days

Marine Tugs

then tug needs to go back and do it all over again for demobilization

890007

^{*****} Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 *****

\$14,712.91

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13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33 Bob Wells **Direct Cost Report**

Activity	Desc	Quantity	,	Unit		Perm	Constr	Equip	Sub-	
Resource		Pcs	Unit	Cost	Labor	Material	Matl/Exp	Ment	Contract	Total

BID ITEM = 10044 CLIENT# = 03-12 Description = Transportation	Land Item SCHEDULE: 1 Unit = LS Takeoff Quan:	100 1.000 Engr Quan:	0.000
5TUGSERVICE Tug Rental 60.00 DA	6,500.000	390,000	390,000
8211060 ==> Fuel, Oil, Grease 1400 60.00 DA	5,810.000	348,600	348,600
\$738,600.00	[]	390,000 348,600	738,600
====> Item Totals: 10044 - Transportation	[]	398,000 348,600	746,600
\$746,600.000 1 LS		398,000.00 348,600.00	746,600.00

 $BID\ ITEM = 10046$ CLIENT# = 03-12Land Item SCHEDULE: 1 Description = Demobilization Unit =LS Takeoff Quan: 1.000 Engr Quan: 0.000

115000	Remove Fence (Chain Link)			Quan:	1.00 LS	S Hrs/Shft:	10.00 Cal:	510 WC	: CCISP	
***** Copied	d and adjusted from	Y:\TBG	-ENGI\EST\13	-008-5 **	***					
LAB4	Foreman + 3 Laborers		30	.00 CH	Prod:	3.0000 S	Lab Pcs:	4.00	Eqp Pcs:	1.00
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	30.00 HR		8.476			254		254
LFORMN	Laborer-Foreman	1.00	30.00 MH		29.250	1,321				1,321
LPWR	Laborer-Power Tools	3.00	90.00 MH		28.020	3,827				3,827
\$5,402.41	120.0000 MH/	LS	120.00 MH	[3	3739.23]	5,148		254		5,402

890010	Subcontractor Pile Crew I	Demobili	zation	Quan:	1.00 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Conie	d and adjusted from T	\ mp.c	ENGT\ EGE\ 13	000 E ***	* *					
MARPIL	Marine Piling & Demo Crev			00 CH	Prod:	2.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		2.00 DA		70.000	2.0000 3	140	0.00	Eqp res.	140
8211050	Fuel, Oil, Grease 50g/d		2.00 DA 2.00 DA		00.000		140	400		400
8CRANEC200	Crane Manitowoc 777 20	1.00	20.00 HR		63.361			3,267		3,267
8DRILLR	***DRILLS - ROCK***	1.00	20.00 HR 20.00 HR		17.500			350		350
8MAC-A-10	Compressor 185 CFM	1.00	20.00 HR 20.00 HR		3.000			60		60
8MBM-Z-2	M.Barge2110 GRT OB-80-		20.00 HR		10.000			200		200
8MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 HR 20.00 HR		17.500			350		350
8MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 HR		20.000			400		400
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000			60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000			100		100
8MDH-A-7	DELMAG D19 HAMMER	1.00	20.00 HR		10.000			200		200
8MFD-A-1	FAIRLEADS	1.00	20.00 HR		0.100			2		2
8MGN-Z-11	Generator 10 KW	1.00	20.00 HR		3.000			60		60
8MLT-A-1	Light Tower, Genie	1.00	20.00 HR		3.500			70		70
8MPE-A-11	Extractor Pile	1.00	20.00 HR		5.000			100		100
8MVP-A-11	FORD F150 SUPERC 10	1.00	20.00 HR		6.500			130		130
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	20.00 HR		10.000			200		200
8MWM-C-1	Welder Diesel 400 AMP	1.00	20.00 HR		2.500			50		50
8PILE26	Vibro Hammer 150 TN	1.00	20.00 HR		45.492			910		910
9100000	Subsistance 5 workers		2.00 DA	5	00.000		1,000			1,000
M105	Foreman - General Marine	1.00	20.00 MH		35.720	1,251				1,251
M165	M-Piledriver	1.00	20.00 MH		34.950	1,240				1,240
M170	M-Welder	1.00	20.00 MH		32.000	1,155				1,155
M190	M-Skilled Laborer	1.00	20.00 MH		29.250	1,008				1,008
M195	M-Laborer	1.00	20.00 MH		27.520	958				958
OPCR100	Op Eng 1A- Crane 100-200	1.00	20.00 MH		33.480	1,051				1,051
		_								

890011	Subcontractor Carpenter Crew Demob	Onan:	1 00 T C	IIma/Chft.	10.00	Cal: 510 WC: CCISP
9AMALI	Subcontractor Carbenier Crew Demon	CHIAII:	1.00 1.5	THE STATE OF THE S	117.1717	Cal: 510 WC: CCISE

120.00 MH

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 *****

120.0000 MH/LS

[4244.24]

6,664

1,140

6,909

14,713

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Un	it	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
		NT# = (03-12	Land Item	SCHED						
Description =	Demobilization			Unit =	LS	Takeoff	Quan:	1.000	Engr	Quan:	0.000
8211050	Fuel, Oil, Grease 50g/d		2.00 DA	L	200.000				400		400
8CRANEC100	Crane Manitowoc 222B 1	1.00	20.00 HR		106.961				2,139		2,139
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	20.00 HR		3.000				60		60
8MBC-Z-1	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBC-Z-2	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBS-Z-9	Spud Barge M-80x28'	1.00	20.00 HR		10.000				200		200
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000				60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000				100		100
8MCN-A-13	Container Steel 20'	1.00	20.00 HR		0.100				2		2
8MFW-A-1	Work Float	1.00	20.00 HR		2.000				40		40
8MFW-A-2	Work Float	1.00	20.00 HR		2.000				40		40
8MGN-Z-17	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MGN-Z-18	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MLT-A-2	Light Tower, Genie	1.00	20.00 HR		3.500				70		70
8MVP-A-2	FORD F150 SUPERC 2	1.00	20.00 HR		6.500				130		130
8WELD400	Welder 400 AMP	2.00	40.00 HR		2.044	1 222			82		82
M100	Foreman - Carpenter	1.00	20.00 MF 20.00 MF		34.720	1,222					1,222
M170 M173	M-Welder M-Lead Carpenter	1.00 1.00	20.00 MF		32.000 28.250	1,155 1,046					1,155 1,046
M175	M-Carpenter	3.00	60.00 MF		27.520	3,076					3,076
M180	M-Carpenter Helper	3.00	60.00 MI		27.520	2,875					2,875
OPCR100	Op Eng 1A- Crane 100-200		20.00 MF		33.480	1,051					1,051
\$14,088.62	200.0000 MH/L		200.00 MF		6458.54]	10,426			3,663		14,089
534,203.94	Totals: 10046 - 440.0000 MH/LS 1 LS	Demo	oilization 440.00 MF	H [1	4442.01]	22,238 22,237.62		1,140 1,140.00	10,826 10,826.32		34,204 34,203.94
34,203.94	440.0000 MH/LS	- Demok		H [1			ub-Bidite	1,140.00			
\$34,203.94 34,203.940 =====> Item	440.0000 MH/LS 1 LS Totals: 10042 -		440.00 MF	nobilization	Total	22,237.62 of Above S	ub-Bidite	1,140.00 ms	10,826.32		34,203.94
====> Item \$34,203.94 34,203.940 ====> Item \$835,605.47 835,605.470	440.0000 MH/LS 1 LS		440.00 MF	nobilization	Total (22,237.62		1,140.00	10,826.32 369,998		
\$34,203.94 34,203.940 ====> Item \$835,605.47 835,605.470 BID ITEM =	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS	Mobili	zation and Der 760.00 MI	nobilization	Total (22,237.62 of Above S 39,327 39,327.11	10	1,140.00 ms 426,280 26,280.00	369,998 369,998.36	Quan:	34,203.94 835,605
\$34,203.94 34,203.940 ====> Item \$835,605.47 835,605.470	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE	Mobili	zation and Der 760.00 MI	nobilization H [2 Land Item Unit =	Total - 5144.79] SCHED FT	22,237.62 of Above S 39,327 39,327.11	4 1(Quan:	1,140.00 ms 426,280 226,280.00	369,998 369,998.36 Engr	Quan:	835,605 835,605.47
====> Item \$835,605.47 BID ITEM = Description =	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIENT Environmental Protection &	Mobili NT# = 0 Turbidi	zation and Der 760.00 MI	nobilization H [2 Land Item Unit =	Total - 5144.79] SCHED FT 1,000.00	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff	4 1(Quan:	1,140.00 ms 426,280 226,280.00	369,998 369,998.36 Engr	Quan:	835,605 835,605.47
====> Item \$835,605.47 BID ITEM = Description =	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install	Mobili NT# = 0 Turbidi	zation and Der 760.00 MI	nobilization H [2 Land Item Unit =	Total - 5144.79] SCHED FT 1,000.00	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (1(Quan:	1,140.00 ms 426,280 226,280.00	369,998 369,998.36 Engr	Quan:	835,605 835,605.47
######################################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence	Mobili NT# = 0 Turbidi	zation and Der 760.00 MI	Land Item Unit =	Total (******	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (1(Quan:	1,140.00 ms 426,280 226,280.00 00 664.000 0.00 Cal:	369,998 369,998.36 Engr	Quan:	835,605 835,605.47
######################################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers	Mobili NT# = 0 Turbidi	zation and Der 760.00 MI	Land Item Unit = Quan: 13-008-5 **	Total (22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (1(Quan:	1,140.00 ms 426,280 226,280.00 664.000 0.00 Cal: Lab Pcs:	369,998 369,998.36 Engr	Quan:	835,605 835,605.47 0.000
### ### ##############################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence	Mobili NT# = (Turbidi Y:\TB	2ation and Der 760.00 MI 03-12 ty Bar G-ENGI\EST'	Land Item Unit = Quan: 13-008-5 **	Total (************************************	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (1(Quan:	1,140.00 ms 426,280 226,280.00 664.000 0.00 Cal: Lab Pcs:	369,998 369,998.36 Engr	Quan:	34,203.94 835,605 335,605.47 0.000 :: 1.00 1,000
#### Copie LAB3 BICSF BTRKPU70 LFORMN	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga	Mobili NT# = 0 Turbidi Y:\TB	2ation and Der 760.00 MI 03-12 ty Bar 1,000.00 LF 10.00 HR	Land Item Unit = Quan: 13-008-5 ** 10.00 CH	Total (************************************	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (O LF Hrs d: 100.06	1(Quan:	1,140.00 ms 426,280 226,280.00 664.000 0.00 Cal: Lab Pcs:	369,998 369,998.36 Engr	Quan:	34,203.94 835,605 335,605.47 0.000 :: 1.00 1,000 85
334,203.94 34,203.940 ====> Item 3835,605.47 335,605.470 BID ITEM = Description = 130000 ****** Copie LAB3 BIECSF BTRKPU70 LFORMN LPWR	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga Laborer-Foreman	Mobili NT# = 0 Turbidi 1.00 1.00 2.00	2ation and Der 760.00 MI 03-12 ty Bar 3-ENGI\EST' 1,000.00 LF 10.00 MR 10.00 MF	Land Item Unit = Quan: 13-008-5 ** 10.00 CH	Total (************************************	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff (O LF Hrs d: 100.06	1(Quan:	1,140.00 ms 426,280 226,280.00 664.000 0.00 Cal: Lab Pcs:	369,998 369,998.36 Engr	Quan:	34,203.94 835,605 835,605.47 0.000 1.000 85 440
######################################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga Laborer-Foreman Laborer-Power Tools	Mobili NT# = 0 Turbidi 1.00 1.00 2.00	2ation and Der 760.00 MI 03-12 ty Bar 1,000.00 LF 10.00 MR 10.00 MH 20.00 MH	Land Item Unit = Quan: 13-008-5 ** 10.00 CH	Total (************************************	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff () LF Hrs d: 100.0(440 850 1,291	1(Quan: 10/Shft: 1	1,140.00 ms 426,280 226,280.00 00 664.000 0.00 Cal: Lab Pcs: 1,000	369,998 369,998.36 Engr 3.00 85	Quan: :: CCISP Eqp Pcs	34,203.94 835,605 835,605.47 0.000 1.000 85 440 850
######################################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga Laborer-Foreman Laborer-Power Tools 0.0300 MH/L Turbidity Barrier	Mobili NT# = 0 Turbidi 1.00 1.00 2.00 F	224ion and Der 760.00 MI 03-12 ty Bar 1,000.00 LF 10.00 MR 10.00 MR 20.00 MR	Land Item Unit = Quan: \[\frac{13-008-5}{10.00} \] If	Total (****** 1,000.00 **** Prod 1,000 8,476 29,250 28,020 [0,938] 1,000.00	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff () LF Hrs d: 100.0(440 850 1,291	1(Quan: 10/Shft: 1	1,140.00 ms 426,280 026,280.00 00 664.000 Lab Pcs: 1,000	369,998 369,998.36 Engr 3.00 85	Quan: :: CCISP Eqp Pcs	34,203.94 835,605 835,605.47 0.000 1.000 85 440 850
######################################	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga Laborer-Foreman Laborer-Power Tools 0.0300 MH/L Turbidity Barrier d and adjusted from	Mobili NT# = 0 Turbidi 1.00 1.00 2.00 .F	224ion and Der 760.00 MI 03-12 ty Bar 1,000.00 LF 10.00 MR 10.00 MR 20.00 MR	Land Item Unit = Quan: 13-008-5 ** 10.00 CH It	Total (****** SCHED FT 1,000.00 **** Prod 1.000 8.476 29.250 28.020 [0.938] 1,000.00 ****	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff () LF Hrs d: 100.0(440 850 1,291	4 Quan: Ooo UH	1,140.00 ms 426,280 26,280.00 00 664.000 Lab Pes: 1,000 1,000 0.00 Cal:	369,998 369,998.36 Engr 3.00 85 85	Quan: E: CCISP Eqp Pcs	34,203.94 835,605 335,605.47 0.000 1,000 85 440 850 2,376
#### Copie LAB3 #### Copie LAB3 #### Copie LAB3 #### Copie LAB3 #### Copie #### Copie MARPIL	440.0000 MH/LS 1 LS Totals: 10042 - 760.0000 MH/LS 1 LS = 10047 CLIE Environmental Protection & Silt Fence - Install d and adjusted from Foreman + 2 Laborers Silt Fence Leased 4x2, 3/4 Ton Ga Laborer-Foreman Laborer-Power Tools 0.0300 MH/L Turbidity Barrier	Mobili NT# = 0 Turbidi 1.00 1.00 2.00 .F	224ion and Der 760.00 MI 03-12 ty Bar 1,000.00 LF 10.00 MR 10.00 MR 20.00 MR	Land Item Unit = Quan: \[\frac{13-008-5}{10.00} \] If	Total (****** 1,000.00 **** Prod 1,000 8,476 29,250 28,020 [0,938] 1,000.00	22,237.62 of Above S 39,327 39,327.11 ULE: 1 Takeoff () LF Hrs d: 100.0(440 850 1,291	1(Quan: 10/Shft: 1	1,140.00 ms 426,280 026,280.00 00 664.000 Lab Pcs: 1,000	369,998 369,998.36 Engr 3.00 85	Quan: :: CCISP Eqp Pcs	34,203.94 835,605 335,605.47 0.000 1,000 85 440 850 2,376

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Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost		rm Constr rial Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =	10047 CLIEN	T#= 03	-12	Land Item	SCHEDU	LE: 1	100			
Description =	Environmental Protection &	Turbidity	Bar	Unit =	FT	Takeoff Quan:	664.000) Engr	Quan:	0.000
3WELD	Weld Supplies (1 man-Stick		1.00 DA		70.000		70			70
8211050	Fuel, Oil, Grease 50g/d		1.00 DA		200.000			200		200
3CRANEC200	Crane Manitowoc 777 20	1.00	10.00 HR		163.361			1,634		1,634
BDRILLR	***DRILLS - ROCK***	1.00	10.00 HR		17.500			175		175
BMAC-A-10	Compressor 185 CFM	1.00	10.00 HR		3.000			30		30
BMBM-Z-2	M.Barge2110 GRT OB-80-	1.00	10.00 HR		10.000			100		100
BMBS-Z-14	Spud Barge M-120x45'	1.00	10.00 HR		17.500			175		175
BMBT-Z-12	Tug Push Boat 200 HP	1.00	10.00 HR		20.000			200		200
BMBW-Z-2	18' Aluminum Boat & O/	1.00	10.00 HR		3.000			30		30
BMCE-A-40	Bucket Clamshell 3 CYD	1.00	10.00 HR		5.000			50		50
8MDH-A-7	DELMAG D19 HAMMER	1.00	10.00 HR		10.000			100		100
BMFD-A-1	FAIRLEADS	1.00	10.00 HR		0.100			1		1
8MGN-Z-11	Generator 10 KW	1.00	10.00 HR		3.000			30		30
BMLT-A-1	Light Tower, Genie	1.00	10.00 HR		3.500			35		35
BMPE-A-11	Extractor Pile	1.00	10.00 HR		5.000			50		50
BMVP-A-11	FORD F150 SUPERC 10	1.00	10.00 HR		6.500			65		65
BMWH-A-1	WINCH 3-DRUM RB-90	1.00	10.00 HR		10.000			100		100
3MWM-C-1	Welder Diesel 400 AMP	1.00	10.00 HR		2.500			25		25
3PILE26	Vibro Hammer 150 TN	1.00	10.00 HR		45.492			455		455
100000	Subsistance 5 workers		1.00 DA		500.000		500			500
M105	Foreman - General Marine	1.00	10.00 MH		35.720	625				625
M165	M-Piledriver	1.00	10.00 MH		34.950	620				620
M170	M-Welder	1.00	10.00 MH		32.000	577				577
M190	M-Skilled Laborer	1.00	10.00 MH		29.250	504				504
M195	M-Laborer	1.00	10.00 MH		27.520	479				479
OPCR100	Op Eng 1A- Crane 100-200		10.00 MH		33.480	526	14.570	2.455		526
21,356.46	0.0600 MH/LI	ř	60.00 MH		[2.122]	3,332	14,570	3,455		21,356
32005	Erosion Control - Hay Bal	es		Quan:	400.00	EA Hrs/Shft:	10.00 Cal	: 510 WC	: CCISP	
**** Copied	d and adjusted from N	:\TBG-								
LAB4	Foreman + 3 Laborers			6.66 CH	Prod:	6.0000 U		4.00	Eqp Pcs:	1.00
1ECHB	Hay Bales		400.00 EA		5.000		2,000			2,000
TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	66.67 HR		8.476			565		565
FORMN	Laborer-Foreman	1.00	66.67 MH		29.250	2,936				2,936
LPWR	Laborer-Power Tools	3.00	200.00 MH		28.020	8,505	2 000			8,505
14,005.50	0.6666 MH/E	A	266.67 MH		[20.774]	11,440	2,000	565		14,006
====> Item	Totals: 10047 -	Environi	nental Protect	ion & Turbid	ity Bar					
37,737.51	0.5371 MH/FT		356.67 MH	İ	[17.123]	16,063	17,570	4,104		37,738
6.834	664 FT					24.19	26.46	6.18		56.83
56.834	664 FT				Total of	24.19 f Above Sub-Bio		6.18		56.8
T4.	T-4-1 10040	C	.4: C4 ·		_					
====> Item '	Totals: 10040 - 1,116.6700 MH/LS		tion Staging 1,116.67 MH	Г 2	6514.61]	55,390	113 850	374,103	5	373,343

BID ITEM = 10050 Description = Demolition CLIENT# = 01-12Marine Item SCHEDULE: 1 100

LS Takeoff Quan: 1.000 1.000 Unit = Engr Quan:

Dredging: 938,000 CY Excavation: 734,000 cy

M105

M165

M170

M190 M195

OPCR100

Foreman - General Marine 1.00

Op Eng 1A- Crane 100-200 1.00

M-Piledriver

M-Skilled Laborer

M-Welder

M-Laborer

2,550.00 MH

2,550.00 MH

2,550.00 MH

2,550.00 MH

2,550.00 MH

2,550.00 MH

1.00

1.00

1.00

1.00

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159,491

158,107

147,237

128,561

122,187

134,058

Direct Cost Report

Quantity Activity Desc Unit Perm Constr Equip Sub-Unit Pcs Resource Cost Labor Material Matl/Exp Ment Contract Total CLIENT# = 01-12 Marine Item SCHEDULE: 1 $BID\ ITEM = 10050$ 100 LS Takeoff Quan: 1.000 1.000 Description = Demolition Unit = Engr Quan:

Salvage Armor Rock: 10,100 CY Armor Rock: 131,600 CY Total to install: 141,700 CY

205025	Excavation		Marine	Quan: 734,000.00 CY	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
	d and adjusted from Y	7:\TB	G-ENGI\EST\13-00)8-5 ****				
	100 CY OF SALVAGED							
MARLAN	Demolition Crew on land		2,451.57		245.1575 S	Lab Pcs:	19.00	Eqp Pcs: 13.00
8211050	Fuel, Oil, Grease 50g/d	0.00	245.16 DA	200.000			49,032	49,032
8BHLD480 8CRANEC100	BHL Cat 450E 1.75CY Crane Manitowoc 222B 1	8.00 1.00	19,612.60 HR	45.473 106.961			891,844 262,223	891,844
8TRKPU10	Pickup 4x2 3/4 Ton Gas	4.00	2,451.58 HR 9,806.30 HR	7.044			69,076	262,223 69,076
9100010	Subistance 10 workerss	4.00	245.16 DA	1,000.000		245,160	09,070	245,160
M105	Foreman - General Marine	1.00	2,451.58 MH	· · · · · · · · · · · · · · · · · · ·	53,335	243,100		153,335
M150	M-Operator, Crane	1.00	2,451.58 MH		16,797			146,797
M195	M-Laborer	8.00	19,612.60 MH		39,765			939,765
OPCR100	Op Eng 1A- Crane 100-200		2,451.58 MH		28,884			128,884
OPEXC3	Op Eng 3- Backhoe to 3Y	8.00	19,612.60 MH	32.390 1,00	*			1,004,847
\$3,890,963.19	0.0634 MH/CY		46,579.94 MH	[2.138] 2,37		245.160	1,272,175	3,890,963
						·		
205030	Excavation to Stockpile		Marine	Quan: 734,000.00 LS	Hrs/Shft:	10.00 Cal:	510 WC:	: CCISP
_	d and adjusted from Y	7:\TB	G-ENGI\EST\13-00	08-5 **** inclu	des 10,100	cy ripra	o + 734,	000 cy
excavation 5TRKCY	Tensilsing CV		734,000.00 CY	8.000		5,872,000		5 972 000
JIRKCI	Trucking - CY		/34,000.00 C1	8.000		3,872,000		5,872,000
500510	Removal of Open Cell Shee	ets	Marine	Quan: 15,300.00 FT	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
	Removal of Open Cell Sheet and adjusted from Y			,	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
***** Copied	and adjusted from Y Marine Piling & Demo Crew	7∶∖TB v	G-ENGI\EST\13-00 2,550.00	08-5 ***** CH Prod:	Hrs/Shft: 255.0000 S	Lab Pcs:	510 WC :	Eqp Pcs: 17.00
***** Copied MARPIL 3WELD	d and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick	7∶∖TB v	G-ENGI\EST\13-00 2,550.00 255.00 DA	O8-5 ***** CH Prod: 70.000			6.00	Eqp Pcs: 17.00 17,850
***** Copied <u>MARPIL</u> 3WELD 8211050	d and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d	ζ∶∖TB v	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA	O8-5 ***** CH Prod: 70.000 200.000		Lab Pcs:	6.00 51,000	Eqp Pcs: 17.00 17,850 51,000
***** Copied MARPIL 3WELD 8211050 8CRANEC200	d and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	7∶\TB v 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361		Lab Pcs:	6.00 51,000 416,571	Eqp Pcs: 17.00 17,850 51,000 416,571
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR	d and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK***	7:\TB v 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500		Lab Pcs:	6.00 51,000 416,571 44,625	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR 2,550.00 HR 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-	1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR 2,550.00 HR 2,550.00 HR 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45'	1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR 2,550.00 HR 2,550.00 HR 2,550.00 HR 2,550.00 HR 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP	1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/	1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 25,500	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	OB-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000 3.000 3.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	O8-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	OB-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000 6.500		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750 16,575	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750 16,575
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 255.00 DA 255.00 DA 2,550.00 HR	OB-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500 10.000		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 255,500 255 7,650 8,925 12,750 16,575 25,500	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750 16,575 25,500
***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13-00 2,550.00 DA 255.00 DA 255.00 DA 2,550.00 HR	OB-5 ***** CH Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000 6.500		Lab Pcs:	6.00 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750 16,575	Eqp Pcs: 17.00 17,850 51,000 416,571 44,625 7,650 25,500 44,625 51,000 7,650 12,750 25,500 255 7,650 8,925 12,750 16,575

35.720 159,491

34.950 158,107

32.000 147,237

29.250 128,561

27.520 122,187

33.480 134,058

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POA 15% CONCEPT OPTION 1 02/26/2013 13-008-1 20:33 Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Labor Ma	Perm Constr aterial Matl/Exp	Equip Ment	Sub- Contract Total
BID ITEM = Description =	10050 CLIEN Demolition	NT# =	01-12 N	Iarine Item SCHED Unit = LS	ULE: 1 Takeoff Qua	100 an: 1.000	Engr	Quan: 1.000
\$1,875,896.60	1.0000 MH/F	Γ	15,300.00 MH	[35.369]	849,641	145,350	880,905	1,875,897
500530	Removal of Rip Rap		Marine	Quan: 10,100.00	CY Hrs/Sh	nft: 10.00 Cal:	510 WC	: CCISP
**** Copied	d and adjusted from 1	Y:\TE	BG-ENGI\EST\13-	008-5 **** trı	cking inc	luded in exc	avatiuon	to stockpile
MARLAN	Demolition Crew on land		89.3	2 CH Prod	l: 8.9320	S Lab Pcs:	19.00	Eqp Pcs: 13.00
8211050	Fuel, Oil, Grease 50g/d		8.93 DA	200.000			1,786	1,786
8BHLD480	BHL Cat 450E 1.75CY	8.00	714.56 HR	45.473			32,493	32,493
8CRANEC100	Crane Manitowoc 222B 1	1.00	89.32 HR	106.961			9,554	9,554
8TRKPU10	Pickup 4x2 3/4 Ton Gas	4.00	357.28 HR	7.044			2,517	2,517
9100010	Subistance 10 workerss		8.93 DA	1,000.000		8,930		8,930
M105	Foreman - General Marine	1.00	89.32 MH	35.720	5,587			5,587
M150	M-Operator, Crane	1.00	89.32 MH	33.480	5,348			5,348
M195	M-Laborer	8.00	714.56 MH	27.520	34,239			34,239
OPCR100	Op Eng 1A- Crane 100-200	1.00	89.32 MH	33.480	4,696			4,696
OPEXC3	Op Eng 3- Backhoe to 3Y	8.00	714.56 MH	32.390	36,610			36,610
\$141,759.63	0.1680 MH/C	Y	1,697.08 MH	[5.661]	86,480	8,930	46,350	141,760
		Demo		_				
\$11,780,619.42 11,780,619.420	63,577.0200 MH/LS 1 LS		63,577.02 MH	[2167710.36] 3,3	3,309,750 09,750.03	6,271,440 6,271,440.00		11,780,619 11,780,619.42

BID ITEM = 10055 Description = Dredging CLIENT# = 01-12 Land Item SCHEDULE: 100

CY Takeoff Quan: 938,000.000 Engr Quan: 938,000.000 Unit =

640000	Mechanical Dredging			Quan: 938,000.00 CY Hrs/Shft:	10.00 Cal: 510 WC:	CCISP
***** Conica	l and adjusted from Y	· \ mp	C ENGT\EGE\13 0	10 Ett ****		
DREDGE	Marine Piling & Demo Crew		4.709.14		Lab Pcs: 12.00	Eqp Pcs: 36.00
3WELD	Weld Supplies (1 man-Stick		1,177.29 DA	70.000	82,410	82,410
8211060	Fuel, Oil, Grease 1400g/d		588.64 DA	5,810.000	3,419,998	3,419,998
8CRANEC200	Crane Manitowoc 777 20	2.00	9,418.29 HR	163.361	1,538,581	1,538,581
8DRILLR	***DRILLS - ROCK***	2.00	9,418.29 HR 9,418.29 HR	17.500	1,536,561	1,336,361
8MAC-A-10		2.00	9,418.29 HR 9,418.29 HR	3.000	28,255	28,255
8MBM-Z-2	Compressor 185 CFM M.Barge2110 GRT OB-80-	2.00	9,418.29 HR 9,418.29 HR	10.000	94,183	94,183
8MBS-Z-10	Scow Barge	4.00	18,836.57 HR	227.000	4,275,901	4,275,901
8MBS-Z-14	Spud Barge M-120x45'	2.00	9,418.29 HR	17.500	164,820	164,820
8MBT-Z-12	Tug Push Boat 200 HP	2.00	9,418.29 HR 9,418.29 HR	20.000	188,366	188,366
8MBW-Z-2	18' Aluminum Boat & O/	2.00	9,418.29 HR	3.000	28,255	28,255
8MCE-A-40	Bucket Clamshell 3 CYD	2.00	9,418.29 HR 9,418.29 HR	5.000	47,091	47,091
8MDH-A-7	DELMAG D19 HAMMER	2.00	9,418.29 HR	10.000	94,183	94,183
8MFD-A-1	FAIRLEADS	2.00	9,418.29 HR 9,418.29 HR	0.100	94,183	94,163
8MGN-Z-11	Generator 10 KW	2.00	9,418.29 HR	3.000	28,255	28,255
8MLT-A-1	Light Tower, Genie	2.00	9,418.29 HR	3.500	32,964	32,964
8MPE-A-11	Extractor Pile	2.00	9,418.29 HR	5.000	47,091	47,091
8MVP-A-11	FORD F150 SUPERC 10	2.00	9,418.29 HR	6.500	61,219	61,219
8MWH-A-1	WINCH 3-DRUM RB-90	2.00	9,418.29 HR	10.000	94,183	94,183
8MWM-C-1	Welder Diesel 400 AMP	2.00	9,418.29 HR	2.500	23,546	23,546
9100010	Subistance 10 workerss	2.00	588.64 DA	1,000.000	588,640	588,640
M105	Foreman - General Marine	2.00	9,418.29 MH	35.720 589,071	300,040	589,071
M165	M-Piledriver	2.00	9,418.29 MH	34.950 583,960		583,960
M170	M-Welder	2.00	9,418.29 MH	32.000 543,812		543,812
M170 M190	M-Skilled Laborer	2.00	9,418.29 MH	29.250 474,835		474,835
M195	M-Laborer	2.00	9,418.29 MH	27.520 474,833		451,291
OPCR100	Op Eng 1A- Crane 100-200		9,418.29 MH	33.480 495,138		495,138
\$14,141,809.61	0.0602 MH/CY		56,509.74 MH	[2.131] 3,138,106	671,050 10,332,654	14,141,810

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13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33

Bob Wells **Direct Cost Report**

Activity	Desc	Qu	antity	Unit	Perm	Constr	Equip	Sub-	
Resource		Pcs	Unit	Cost	Labor Material	Matl/Exp	Ment C	Contract	Total

BID ITEM = 10055 CLIENT#= 01-12 Land Item SCHEDULE: 1 100

Description = Dredging Unit = CY Takeoff Quan: 938,000.000 Engr Quan: 938,000.000

640010	Spoils Disposal			Quan	938,000.00	CY Hrs/Shft:	10.00 Cal: 510 WC	: CCISP
**** Conied		. · / mp	G ENGT\ EGE\ 13 0/	00 ETT	++++			
_	d and adjusted from Y	· /IB				470 01 42 C	I I D 10.00	E B 15.00
DDISPO	Dredge Disposal		4,709.14	СН	Prod:	470.9143 S		Eqp Pcs: 15.00
8211060	Fuel, Oil, Grease 1400g/d	4.00	588.64 DA		5,810.000		3,419,998	3,419,998
8CRANEC100	Crane Manitowoc 222B 1	1.00	4,709.14 HR		106.961		503,694	503,694
8DOZER	Bulldozer	2.00	9,418.29 HR		50.000		470,915	470,915
8EXCAV-Z-1	Excavator	2.00	9,418.29 HR		45.000		423,823	423,823
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	4,709.14 HR		3.000		14,127	14,127
8MBS-Z-14	Spud Barge M-120x45'	1.00	4,709.14 HR		17.500		82,410	82,410
8MBT-Z-12	Tug Push Boat 200 HP	1.00	4,709.14 HR		20.000		94,183	94,183
8MBW-Z-2	18' Aluminum Boat & O/	1.00	4,709.14 HR		3.000		14,127	14,127
8MCN-A-13	Container Steel 20'	1.00	4,709.14 HR		0.100		471	471
8MGN-Z-11	Generator 10 KW	1.00	4,709.14 HR		3.000		14,127	14,127
8MLT-A-1	Light Tower, Genie	1.00	4,709.14 HR		3.500		16,482	16,482
8MWM-C-1	Welder Diesel 400 AMP	1.00	4,709.14 HR		2.500		11,773	11,773
8PMP-Z-1	Slurry Pump	2.00	9.418.29 HR		150.000		1,412,744	1,412,744
9100000	Subsistance 5 workers		588.64 DA		500.000		294,320	294,320
M105	Foreman - General Marine	1.00	4.709.14 MH		35.720	294,535		294,535
M170	M-Welder	1.00	4.709.14 MH			271,906		271,906
M195	M-Laborer	3.00	14,127.43 MH			676,936		676,936
OPCR100	Op Eng 1A- Crane 100-200	1.00	4.709.14 MH		33.480	247,569		247,569
OPEXC3	1 0	4.00	18,836.57 MH		32.390	965,087		965,087
\$9,229,226.51	0.0502 MH/CY	Y	47,091.42 MH		[1.73] 2,	,	294,320 6,478,875	9,229,227
905	MOBILIZATION-DEMOI	BILIZ	ATION	Quan	ı: 1.00 I	LS Hrs/Shft:	10.00 Cal: 510 WC	: CCISP

5MOBE	Dregding Mob and Demob	1.00 LS	1,800,000.000	1,800,000	1,800,000
====> Item \$25,171,036.12 26.835	Totals: 10055 - Dree 0.1104 MH/CY 938000 CY	lging 103,601.16 MH	[3.861] 5,594,138 5.96	2,765,370 16,811,528 2.95 17.92	25,171,036 26.83

BID ITEM = **10060** CLIENT# = 01-12 Marine Item SCHEDULE: 1 100

Description = Piling Unit = FT Takeoff Quan: 88,172.000 Engr Quan: 88,172.000

303000 Supply Pipe Piles Marine Quan: 88,172.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 *****

2PP48INCH 48 In Diam Pipe Pile 88,172.00 LF 430.000 37,913,960 37,913,960

303010 Pile Painting & Wrapping Marine Quan: 1.04 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Option 1

48 " O 1 " Thick Steel Pipe Pile

Outside Diameter = 48 in Wall Thickness = 1.000 in

 $\label{thm:condition} \mbox{Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) \\ \mbox{Weight (Ton)}$

84,968.00 1 84,968.00 502.43 42,690,472.2 21,345.2

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

Page 9

Total

POA 15% CONCEPT OPTION 1 02/26/2013 20:33 13-008-1 Bob Wells **Direct Cost Report**

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract

 $BID\ ITEM = 10060$ CLIENT# = 01-12Marine Item SCHEDULE: 100

Piling Unit = FT Takeoff Quan: 88,172.000 Engr Quan: 88,172.000 Description =

116.55 486 48 711,827.9

2PP48COATING Pipe Pile Shop Coating 740,300.96 SF 4.000 2,961,204 2,961,204

303022 **Set Pile Template** Marine Quan: 1.04 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 *****

31PILETEMPLA Pipe Pile Template 1.04 LS 60,000.000 62,400 62,400

303035 Piling - Pipe Marine 504.33 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP Onan:

Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft) A1 18 178 3,204.00 85.00 19,226.6 25,632 A19 17 178 3,026.00 85.00 18,158.4 24,208 A36 55 178 9,790.00 85.00 58,747.9 78.320 B1 18 178 3,204.00 85.00 19,226.6 25,632 B19 17 178 3,026.00 85.00 18,158.4 24,208 B36 55 173 9,515.00 85.00 58,747.9 78.320 C1 18 173 3,114.00 85.00 19,226.6 25,632 C19 17 173 2,941.00 85.00 18,158.4 24,208 C36 55 173 9,515.00 85.00 58,747.9 78,320 D1 18 168 3,024.00 85.00 19,226.6 25,632 D19 17 168 2,856.00 85.00 18,158.4 24.208 D36 55 173 9,515.00 85.00 58,747.9 78,320

E10 2 188 376.00 85.00 2,136.3 2,848 E25 2 198 396.00 85.00 2,136.3 2,848 E40 12 198 2,376.00 85.00 12,817.7 17,088

F10 2 183 366.00 85.00 2,136.3 2,848 F25 2 193 386.00 85.00 2,136.3

F40 12 193 2,316.00 85.00 12,817.7 17,088

G10 2 178 356.00 85.00 2,136.3 2,848 G25 2 188 376.00 85.00 2,136.3 2,848

G40 8 188 1,504.00 85.00 8,545.2 11,392

H10 2 173 346.00 85.00 2,136.3 2,848

H25 8 183 1,464.00 85.00 8,545.2 11,392

H40 2 183 366.00 85.00 2,136.3

I10 2 168 336.00 85.00 2,136.3 2.848

I25 2 178 356.00 85.00 2,136.3 2,848 I40 8 178 1,424.00 85.00 8,545.2 11,392

J10 2 163 326.00 85.00 2,136.3 2,848

J25 2 178 356.00 85.00 2,136.3 2,848

J40 8 178 1,424.00 85.00 8,545.2 11,392

K10 2 158 316.00 85.00 2,136.3 2,848

K25 2 173 346.00 85.00 2,136.3 2,848

K40 8 173 1,384.00 85.00 8,545.2 11,392

L10 2 158 316.00 85.00 2,136.3 2,848

L25 2 173 346.00 85.00 2,136.3 L40 8 168 1,344.00 85.00 8,545.2 11,392

M10 2 148 296.00 85.00 2,136.3 2,848 M25 2 158 316.00 85.00 2,136.3 2,848

M40 8 163 1,304.00 85.00 8,545.2 11,392

N10 2 133 266.00 85.00 2,136.3 2,848

N25 2 143 286.00 85.00 2,136.3 2,848

N40 8 178 1,424.00 85.00 8,545.2 11,392

040 8 173 1,384.00 85.00 8,545.2 11,392

P40 8 158 1,264.00 85.00 8,545.2 11,392

486 173.5 84,968.00 519,118.0 cf 692,064 ft

Average 174.8 19,226.6 cy

MARPIL	Marine Piling & Demo Crew		1,260.79	CH	Prod:	126.0794 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		126.08 DA		70.000		8,826			8,826
8211050	Fuel, Oil, Grease 50g/d		126.08 DA		200.000			25,216		25,216
8CRANEC200	Crane Manitowoc 777 20	1.00	1,260.79 HR		163.361			205,964		205,964
8DRILLR	***DRILLS - ROCK***	1.00	1,260.79 HR		17.500			22,064		22,064

Bob Wells Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Unit Cost	Per Labor Mater		Equip Ment	Sub- Contract Total
BID ITEM = Description =	10060 CLIEN	NT# = (01-12	Marine Item SCHED Unit = FT	ULE: 1 Takeoff Quan:	100 88,172.000	Engr (Quan: 88,172.000
•		4.00	4.040.50.110		rakcom Quan.	00,172.000	C	,
8MAC-A-10	Compressor 185 CFM	1.00	1,260.79 HR	3.000			3,782	3,782
8MBM-Z-2	M.Barge2110 GRT OB-80-		1,260.79 HR	10.000			12,608	12,608
8MBS-Z-14 8MBT-Z-12	Spud Barge M-120x45'	1.00	1,260.79 HR	17.500			22,064 25,216	22,064
8MBW-Z-2	Tug Push Boat 200 HP 18' Aluminum Boat & O/	1.00 1.00	1,260.79 HR 1,260.79 HR	20.000 3.000			3,782	25,216 3,782
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	1,260.79 HR 1,260.79 HR	5.000			6,304	6,304
8MDH-A-7	DELMAG D19 HAMMER		1,260.79 HR 1,260.79 HR	10.000			12,608	12,608
8MFD-A-1	FAIRLEADS	1.00	1,260.79 HR 1,260.79 HR	0.100			12,008	12,008
8MGN-Z-11	Generator 10 KW	1.00	1,260.79 HR 1,260.79 HR	3.000			3,782	3,782
8MLT-A-1	Light Tower, Genie	1.00	1,260.79 HR	3.500			4,413	4,413
8MPE-A-11	Extractor Pile	1.00	1,260.79 HR	5.000			6,304	6,304
8MVP-A-11	FORD F150 SUPERC 10	1.00	1,260.79 HR	6.500			8,195	8,195
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	1,260.79 HR	10.000			12,608	12,608
8MWM-C-1	Welder Diesel 400 AMP	1.00	1,260.79 HR	2.500			3,152	3,152
8PILE26	Vibro Hammer 150 TN	1.00	1,260.79 HR	45.492			57,356	57,356
9100000	Subsistance 5 workers		126.08 DA	500.000		63,040	,	63,040
M105	Foreman - General Marine	1.00	1,260.79 MH	35.720	78,857	,-		78,857
M165	M-Piledriver	1.00	1,260.79 MH	34.950	78,172			78,172
M170	M-Welder	1.00	1,260.79 MH	32.000	72,798			72,798
M190	M-Skilled Laborer	1.00	1,260.79 MH	29.250	63,564			63,564
M195	M-Laborer	1.00	1,260.79 MH	27.520	60,413			60,413
OPCR100	Op Eng 1A- Crane 100-200	1.00	1,260.79 MH	33.480	66,282			66,282
\$927,495.50	14.9995 MH/E		7,564.74 MH	[530.515]	420,086	71,866	435,544	927,496
303040	Piling - Concrete Filling		Marine	Quan: 1.04	LS Hrs/Shft:	10.00 Cal:	510 WC:	CCISP
		V:\TR		•	LS Hrs/Shft:	10.00 Cal:	510 WC:	CCISP
**** Copied	d and adjusted from	Y:\TB	G-ENGI\EST\13	-008-5 ****				
**** Copied	d and adjusted from Marine Carpenters Crew	Y:\TB	G-ENGI\EST\13- 1,252.	-008-5 **** 36 CH Pro d		10.00 Cal: Lab Pcs:	10.00	Eqp Pcs: 16.00
***** Copied <u>MARWOO</u> 8211050	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d		G-ENGI\EST\13- 1,252. 125.24 DA	-008-5 ***** 36 CH Prod 200.000			10.00 25,048	Eqp Pcs: 16.00 25,048
***** Copied <u>MARWOO</u> 8211050 8CRANEC100	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	1.00	G-ENGI\EST\13- 1,252. 125.24 DA 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961			10.00 25,048 133,954	Eqp Pcs: 16.00 25,048 133,954
***** Copied <u>MARWOO</u> 8211050 8CRANEC100 8MAC-A-17	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai	1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000			10.00 25,048 133,954 3,757	Eqp Pcs: 16.00 25,048 133,954 3,757
***** Copied <u>MARWOO</u> 8211050 8CRANEC100	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500			10.00 25,048 133,954 3,757 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140
***** Copiec <u>MARWOO</u> 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40	1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000			10.00 25,048 133,954 3,757	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140
***** Copiec <u>MARWOO</u> 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500			10.00 25,048 133,954 3,757 8,140 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140
***** Copiec <u>MARWOO</u> 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524
***** Copiec MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/	1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500			10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WELD400	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044	i: 125.2363 S		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WVP-A-2 8WUP-A-2 8WUP-A-2 8WUP-A-2 8WUP-A-2 8WUP-A-2	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044 34.720	1: 125.2363 S		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WVP-A-2 8WELD400 M100 M170	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000	76,520 72,311		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000 28.250	76,520 72,311 65,525		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311 65,525
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173 M175	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000 28.250 27.520	76,520 72,311 65,525 192,612		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311 65,525 192,612
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173 M175 M180	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter Helper	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 MH	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000 28.250 27.520 27.520	76,520 72,311 65,525 192,612 180,026		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311 65,525 192,612 180,026
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173 M175	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 HR	7008-5 ***** 36 CH Process 200.000 106.961 3.000 6.500 6.500 10.000 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000 28.250 27.520 27.520 33.480	76,520 72,311 65,525 192,612		10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140	Eqp Pcs: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311 65,525 192,612 180,026 65,839
***** Copied MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8WVP-A-2 8WELD400 M100 M170 M173 M175 M180 OPCR100	d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13 1,252. 125.24 DA 1,252.36 HR 1,252.36 MH	-008-5 ***** 36 CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 32.000 28.250 27.520 27.520	76,520 72,311 65,525 192,612 180,026 65,839 652,834	Lab Pes:	10.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120	Eqp Pes: 16.00 25,048 133,954 3,757 8,140 8,140 12,524 3,757 6,262 125 2,505 2,505 2,505 2,505 4,383 8,140 5,120 76,520 72,311 65,525 192,612 180,026 65,839 882,203

Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft) A1 18 178 3,204.00 85.00 19,226.6 25,632 A19 17 178 3,026.00 85.00 18,158.4 24,208 A36 55 178 9,790.00 85.00 58,747.9 78,320

CH2MHILL 13-008-1 Bob Wells

2RR02

2RR10

Gr 60 Rebar

Rebar Supports

1.10 4,783,999.59 LB

4.783,999.59 LB

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Sub-Equip Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total $BID\ ITEM = 10060$ CLIENT# = 01-12Marine Item SCHEDULE: Description = Piling Unit =FT Takeoff Quan: 88,172.000 Engr Quan: 88,172.000 B1 18 178 3,204.00 85.00 19,226.6 25,632 B19 17 178 3,026.00 85.00 18,158.4 24,208 B36 55 173 9,515.00 85.00 58,747.9 78,320 C1 18 173 3,114.00 85.00 19,226.6 25,632 C19 17 173 2,941.00 85.00 18,158.4 24,208 C36 55 173 9,515.00 85.00 58,747.9 D1 18 168 3,024.00 85.00 19,226.6 25,632 D19 17 168 2,856.00 85.00 18,158.4 24,208 D36 55 173 9,515.00 85.00 58,747.9 78,320 E10 2 188 376.00 85.00 2,136.3 2,848 E25 2 198 396.00 85.00 2,136.3 2,848 E40 12 198 2,376.00 85.00 12,817.7 F10 2 183 366.00 85.00 2,136.3 2,848 F25 2 193 386.00 85.00 2,136.3 2,848 F40 12 193 2,316.00 85.00 12,817.7 17,088 G10 2 178 356.00 85.00 2,136.3 2,848 G25 2 188 376.00 85.00 2,136.3 2,848 G40 8 188 1,504.00 85.00 8,545.2 11,392 H10 2 173 346.00 85.00 2,136.3 2,848 H25 8 183 1,464.00 85.00 8,545.2 11,392 H40 2 183 366.00 85.00 2,136.3 2,848 I10 2 168 336.00 85.00 2,136.3 2,848 125 2 178 356.00 85.00 2,136.3 2,848 I40 8 178 1,424.00 85.00 8,545.2 11,392 J10 2 163 326.00 85.00 2,136.3 2,848 J25 2 178 356.00 85.00 2,136.3 т40 8 178 1.424.00 85.00 8.545.2 11.392 K10 2 158 316.00 85.00 2,136.3 2,848 K25 2 173 346.00 85.00 2,136.3 2,848 K40 8 173 1,384.00 85.00 8,545.2 11,392 L10 2 158 316.00 85.00 2,136.3 2,848 L25 2 173 346.00 85.00 2,136.3 2,848 L40 8 168 1,344.00 85.00 8,545.2 11,392 M10 2 148 296.00 85.00 2,136.3 2,848 M25 2 158 316.00 85.00 2,136.3 2,848 M40 8 163 1,304.00 85.00 8,545.2 11,392 N10 2 133 266.00 85.00 2,136.3 2,848 N25 2 143 286.00 85.00 2,136.3 2,848 N40 8 178 1,424.00 85.00 8,545.2 11,392 040 8 173 1,384.00 85.00 8,545.2 P40 8 158 1,264.00 85.00 8,545.2 11,392 486 173.5 84,968.00 519,118.0 cf 692,064 Average 174.8 19,226.6 cy 2CR14 5000 PSI Concrete 1.10 17,311.79 CY 105.000 1,817,738 1,817,738 303043 **Concrete Pumping** Marine 1.04 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 ***** 5CONCP36M Concrete Concrete Pump 36 626.16 HR 125.000 78,270 78,270 303045 Quan: 4,349,090.53 LB Hrs/Shft: 10.00 Cal: 510 WC: CCISP Piling - Rebar Marine Option 1 ====>48" Pipe Pile Area II PIECES SIZE WEIGHT LENGTH POUNDS TONS UNIT EXT. PRICE PRICE INST. EA. 1 #8 2.670 1,426,984 3,810,048 1905.02 0.65 \$2,476,531.08 hook dowels @ 5' 3,810,048 1905.02 10% 4,191,053 SUBTOTAL: \$2,476,531.08 TAX 6.5%: \$160,974.52 TOTAL: \$2,637,505.60 8% \$211,000.45

0.480

0.050

2,296,320

239,200

2,296,320

239,200

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Activity Resource	Desc	Quanti Pcs	ty Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = Description = 2RS16 5REBAR \$3,858,164.99	Piling	TT# = 01-12 16.00 8,069.2 4,349,090.3	22 EA	Iarine Item Unit =	SCHEDU FT 13.000 0.280	Takeoff (Quan: 104,900	00 88,172.000 1,217,745 1,217,745	Engr	Quan: {	88,172.000 104,900 1,217,745 3,858,165
304000	Pile Splices - Pipe pile		Marine	Quan:	499.85	EA Hrs	/Shft:	10.00 Cal:	510 WC:	: CCISP	
***** Copied 5SPLICES	and adjusted from Y Welding Subcontractor		\EST\13- 75 EA	008-5 **	*** 650.000			487,338			487,338
====> Item 7 \$48,988,772.73 555.605	Totals: 10060	Piling 20,088.3	36 MH		[7.621] 1	,072,920 12.17	45,333,321 514.15	1,917,618 21.75	664,913 7.54	4	48,988,773 555.60
BID ITEM = Description =	10080 CLIEN Sheet Pile Bulkhead	VT# = 01-12	M	Marine Item Unit =	SCHEDU LF	JLE: 1 Takeoff (00 2,200.000	Engr	Quan:	2,200.000
301000	Supply Open Cell Flat She	ets	Marine	Quan:	7,414,501.00	LB Hrs	Shft:	10.00 Cal:	510 WC	: CCISP	
2FSZ	and adjusted from N STEEL SHEET PILE Z Galvanization of SSP	7:\TBG-ENGI 7,414,501.0 7,414,501.0	00 LB	008-5 **	0.950 0.350	2	2,043,776 2,595,075 9,638,851				7,043,776 2,595,075 9,638,851
201015											
301015	Sheeting Template		Marine	Quan:	1.00	LS Hrs	Shft:	10.00 Cal:	510 WC:	: CCISP	
**** Copied	Sheeting Template I and adjusted from Machine Company			008-5 **		LS Hrs	s/Shft:	10.00 Cal: 85,000	510 WC	: CCISP	85,000
***** Copied 31SHEETEMPLA 301020	and adjusted from MA Open Cell Template Drive Sheeting Bulkhead	1.0	\EST\13- 00 LS Marine	008-5 ** 85 Quan:	*** ,000.000						85,000
***** Copied 31SHEETEMPLA 301020	A open Cell Template Drive Sheeting Bulkhead I and adjusted from Marine Piling & Demo Crev Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	1.00 1,530.0	Marine \(\text{13-} 00 LS \) Marine \(\text{13-} 1,530.0 \) 00 DA 00 DA 00 HR	008-5 ** 85 Quan:	*** ,000.000	LF Hrs	:/Shft:	85,000			,

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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material	Const Matl/Exp	1 .	p Sul nt Contra	
	10080 Sheet Pile Bulkhead	CLIENT# = 01-	12	Marine Item Unit =	SCHED LF	ULE: 1 Takeoff (00 2,200.00	00 Eng	gr Quan:	2,200.000
M195 OPCR100 \$1,125,537.95	M-Laborer Op Eng 1A- Crane 4.1727	100-200 1.00	1,530.00 MH 1,530.00 MH 9,180.00 MH	[27.520 33.480 147.584]	73,312 80,435 509,785		87,210) 528,54	3	73,312 80,435 1,125,538
====> Item T \$10,849,389.25 4,931.541	4.1727 MH/	- Sheet Pile LF 9 200 LF	e Bulkhead 9,180.00 MH	[147.584]	509,785 231.72	9,638,851 4,381.30				10,849,389 4,931.54
	10081 Credit Sheetpile Mat	CLIENT# = 01- erials on site	12	Marine Item Unit =	SCHED LS	ULE: 1 Takeoff (00 1.00	00 Eng	gr Quan:	1.000
301000	Supply Open Cell	Flat Sheets	Marin	e Quan:	7,101,861.70	LB Hrs	s/Shft:	10.00 Ca	ıl: 510 W	C: CCIS	P
Unused PS 27 Total LF 26,0 Unit weight Total weight 2FSZ	040.00 116,453	.00 5,927,457.70 JE -7,10	7,101,861 1,861.70 LB 1,861.70 LB	.70 Lbs	0.950 0.350	-2	5,746,769 2,485,652 0,232,420				-6,746,769 -2,485,652 -9,232,420
====> Item T \$-9,232,420.22 -9,232,420.219		- Credit Sł	neetpile Materi	als on site	[]		9,232,420 32,420.21			بـ	-9,232,420 9,232,420.21
	10090 Concrete Deck Supe	CLIENT# = 01-	12	Marine Item Unit =	SCHED SF	ULE: 1 Takeoff (00 149,750.00	00 Eng	gr Quan:	149,750.000
322005	Final Deck Produc	t	Marin	e Quan:	149,750.00	SF Hrs	s/Shft:	10.00 Ca	ıl: 510 W	'C: CCIS	P
_	and adjusted Concrete Superstruc			3-008-5 **				15,124,750)		15,124,750
====> Item T \$15,124,750.00 101.000		- Concrete 49750 SF	Deck Superstr	ructure	[]			15,124,750 101.00			15,124,750 101.00
BID ITEM =	10100 Abutments	CLIENT# = 01-	12	Marine Item Unit =	SCHED EA	ULE: 1 Takeoff (00 6.00	00 Eng	gr Quan:	6.000
							103 0	10.00 C	J. 510 W		.
Description =	Supply Pipe Piles		Marin	e Quan:	1,058.40	FT Hrs	s/Shft:	10.00 Ca	II: 210 W	C: CCIS	P
Description = 20030000	Supply Pipe Piles and adjusted 48 In Diam Pipe Pil					FT Hrs	455,112		II: 510 VV	C: CCIS	455,112
Description = 3030000 ***** Copied	and adjusted	e	ENGI\EST\1	3-008-5 **	***		455,112		d: 510 W		455,112

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 10100 CLIENT# = 01-12Marine Item SCHEDULE: 100 Description = Abutments Unit = EA Takeoff Quan: 6.000 Engr Quan: 6.000 303022 Set Pile Template Marine **Quan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 ***** 6,000 31PILETEMPLA Pipe Pile Template 1.00 LS 6,000.000 6,000 303035 Piling - Pipe 10.00 Cal: 510 WC: CCISP Marine **Ouan:** 6.00 EA Hrs/Shft: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 ***** MARPIL Marine Piling & Demo Crew 15.00 CH **Prod:** 1.5000 S Lab Pcs: 6.00 Eqp Pcs: 17.00 1.50 DA 70.000 105 105 3WELD Weld Supplies (1 man-Stick 8211050 Fuel, Oil, Grease 50g/d 1.50 DA 200.000 300 300 8CRANEC200 Crane Manitowoc 777 20 1.00 15.00 HR 2,450 2,450 163.361 8DRILLR ***DRILLS - ROCK*** 1.00 15.00 HR 17.500 263 263 1.00 15.00 HR 8MAC-A-10 Compressor 185 CFM 3.000 45 45 8MBM-Z-2 M.Barge2110 GRT OB-80- 1.00 15.00 HR 10.000 150 150 8MBS-Z-14 Spud Barge M-120x45' 1.00 15.00 HR 17.500 263 263 8MBT-Z-12 Tug Push Boat 200 HP 1.00 15.00 HR 20.000 300 300 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 15.00 HR 45 45 3.000 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 15.00 HR 75 75 5.000 8MDH-A-7 DELMAG D19 HAMMER 1.00 15.00 HR 10.000 150 150 8MFD-A-1 **FAIRLEADS** 1.00 15.00 HR 0.100 2 2 Generator 10 KW 45 8MGN-Z-11 1.00 15.00 HR 3.000 45 8MLT-A-1 Light Tower, Genie 1.00 15.00 HR 3.500 53 53 8MPE-A-11 Extractor Pile 1.00 15.00 HR 5.000 75 75 8MVP-A-11 FORD F150 SUPERC 10 1.00 15.00 HR 6.500 98 98 150 150 8MWH-A-1 WINCH 3-DRUM RB-90 1.00 15.00 HR 10.000 Welder Diesel 400 AMP 8MWM-C-1 1.00 15.00 HR 2.500 38 38 8PILE26 Vibro Hammer 150 TN 1.00 15.00 HR 45.492 682 682 9100000 Subsistance 5 workers 1.50 DA 500.000 750 750 938 938 1.00 M105 Foreman - General Marine 15.00 MH 35.720 M165 M-Piledriver 1.00 15.00 MH 34.950 930 930 M170 M-Welder 1.00 15.00 MH 32.000 866 866 M190 M-Skilled Laborer 1.00 15.00 MH 29.250 756 756 M195 M-Laborer 1.00 15.00 MH 27.520 719 719 Op Eng 1A- Crane 100-200 1.00 OPCR100 33.480 789 15.00 MH 789 \$11,034.68 15.0000 MH/EA 90.00 MH [530.532] 4,998 855 5,182 11,035 303040 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Piling - Concrete Filling** Marine Quan: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5 ***** MARWOO Marine Carpenters Crew 15.00 CH Prod: 1.5000 S Lab Pcs: 10.00 Eqp Pcs: 16.00 8211050 Fuel, Oil, Grease 50g/d 1.50 DA 200,000 300 300 8CRANEC100 Crane Manitowoc 222B 1 1.00 15.00 HR 106.961 1,604 1,604 8MAC-A-17 Atlas Copco 185 CFM Ai 1.00 15.00 HR 3.000 45 45 8MBC-Z-1 Barge Carpenter 12'X40 1.00 15.00 HR 6.500 98 98 8MBC-Z-2 Barge Carpenter 12'X40 15.00 HR 6.500 98 98 1.00 8MBS-Z-9 Spud Barge M-80x28' 1.00 15.00 HR 10.000 150 150 15.00 HR 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 3.000 45 45 Bucket Clamshell 3 CYD 15.00 HR 75 75 8MCE-A-40 1.00 5.000 2 8MCN-A-13 Container Steel 20' 1.00 15.00 HR 0.100 2 8MFW-A-1 Work Float 1.00 15.00 HR 2.000 30 30 8MFW-A-2 Work Float 2.000 30 30 1.00 15.00 HR 8MGN-Z-17 Generator 8 KW 1.00 15.00 HR 2.000 30 30 8MGN-Z-18 Generator 8 KW 1.00 15.00 HR 2.000 30 30 8MLT-A-2 Light Tower, Genie 1.00 15.00 HR 3.500 53 53 FORD F150 SUPERC 2 98 98 8MVP-A-2 1.00 15.00 HR 6.500 8WELD400 Welder 400 AMP 2.00 30.00 HR 2.044 61 61 M100 Foreman - Carpenter 1.00 15.00 MH 34.720 917 917

CH2MHILL Page 15 13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33 Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Perr Labor Materia		nstr Exp	Equip Ment	Sub- Contract	Total
BID ITEM =		NT# = (01-12	Marine Item	SCHEDUL		100				
Description =	Abutments			Unit =	EA Ta	akeoff Quan:	6	5.000	Engr	Quan:	6.000
M170	M-Welder	1.00	15.00 MH		32.000	866					866
M173	M-Lead Carpenter	1.00	15.00 MH		28.250	785					785
M175	M-Carpenter	3.00	45.00 MH		27.520	2,307					2,307
M180	M-Carpenter Helper	3.00	45.00 MH			2,156					2,156
OPCR100	Op Eng 1A- Crane 100-200		15.00 MH	г.	33.480	789			0.747		789
\$10,566.48	150.0000 MH/LS	S	150.00 MH	[4	1843.91]	7,819			2,747		10,566
303042	Concrete Supply		Marine	Quan:	219.75 CY	Hrs/Shft:	10.00	Cal: 51	.0 WC	: CCISP	
_	and adjusted from Y	Y:\TB0		-008-5 **	***						
2CR14	5000 PSI Concrete	1.10	241.71 CY		105.000	25,38	0				25,380
303043	Concrete Pumping		Marine	Quan:	1.00 LS	Hrs/Shft:	10.00	Cal: 51	0 WC:	: CCISP	
**** Conied	and adjusted from N	Y:\TR(G-ENGI\EST\13:	-008-5 **	***						
5CONCP36M	Concrete Concrete Pump 36		7.50 HR	000 3	125.000		ģ	938			938
303045	Piling - Rebar		Marine	Quan:	1.00 LS	Hrs/Shft:	10.00	Cal: 51	0 WC	: CCISP	
**** Conied	and adjusted from N	Y:\TR(G-ENGI\EST\13:	-008-5 **	***						
2RR02	Gr 60 Rebar	•	23,347.50 LB	000 5	0.480	11,20	7				11,207
2RR10	Rebar Supports	1110	23,347.50 LB		0.050	1,16					1,167
2RS16	Coupler T-25 (#8)	16.00	96.00 EA		13.000	1,24					1,248
5REBAR	Rebar Sub		21,224.01 LB		0.280		5,9	943			5,943
\$19,564.90					[]	13,62	2 5,9	943			19,565
204000	DU GU DI U		37	0	(00 E A	TT /CL 64	40.00	C-1. 51	0 WC	· CCISP	
304000	Pile Splices - Pipe pile		Marine	Quan:	6.00 EA	A Hrs/Shft:	10.00	Cai: 51	U WC	. CCISI	
**** Copied	and adjusted from N	Y:\TBO	G-ENGI\EST\13	_	***	Hrs/Snit:			.U W.C.	. ceisi	15 600
	• •	Y:\TB0		_		A Hrs/Snit:		600	U WC.	. CCISI	15,600
**** Copied	and adjusted from N	Y:\TB0	G-ENGI\EST\13	_	***		15,0	600			15,600
***** Copied 5SPLICES	and adjusted from Welding Subcontractor Concrete Cap Dolphins		G-ENGI\EST\13 24.00 EA	-008-5 ** Quan:	*** 650.000 6.00 EA		15,0	600			15,600
***** Copied 5SPLICES 322910 ***** Copied	and adjusted from Silveding Subcontractor Concrete Cap Dolphins and adjusted from Silveding Si	Y:\TB(G-ENGI\EST\13 24.00 EA G-ENGI\EST\13	-008-5 ** Quan:	*** 650.000 6.00 EA	Hrs/Shft:	15,0	600 Cal: 51		: CCISP	15,600
***** Copied 5SPLICES 322910	and adjusted from Welding Subcontractor Concrete Cap Dolphins	Y:\TB(G-ENGI\EST\13 24.00 EA G-ENGI\EST\13	Quan:	*** 650.000 6.00 EA	4 Hrs/Shft: 36.0000 S	15,0 10.00 Lab F	600 Cal: 51	0 WC		17.00
***** Copied 5SPLICES 322910 ***** Copied MARPIL	and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Welding & Demo Crew	Y:\TB0 W 1.10	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360.	Quan:	*** 650.000 6.00 EA *** Prod:	Hrs/Shft:	15,0 10.00 Lab F	600 Cal: 51	0 WC	: CCISP	,
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creve 5000 PSI Concrete	Y:\TB0 W 1.10 1.05	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY	Quan:	*** 650.000 6.00 EA *** Prod: 105.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51	0 WC	: CCISP	17.00 26,334
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creve 5000 PSI Concrete Gr 60 Rebar	Y:\TB0 W 1.10 1.05	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pes:	0 WC	: CCISP	17.00 26,334 18,318
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creve 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick	Y:\TB0 W 1.10 1.05	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	0 WC : 6.00	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Great Go Rebar Weld Supplies (1 man-Stick Rebar Subfuel, Oil, Grease 50g/d) Crane Manitowoc 777 20	Y:\TBO W 1.10 1.05	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	0 WC: 6.00 7,200 58,810	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Great Gold Rebar Weld Supplies (1 man-Stick Rebar Subcontractor) Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK***	Y:\TBO W 1.10 1.05 C	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	0 WC: 6.00 7,200 58,810 6,300	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creve 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	Y:\TB0 W 1.10 1.05 C 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR 360.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	0 WC: 6.00 7,200 58,810 6,300 1,080	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creve 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-	Y:\TBG W 1.10 1.05 (1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR 360.00 HR 360.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	0 WC: 6.00 7,200 58,810 6,300 1,080 3,600	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45'	Y:\TBG W 1.10 1.05 (1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR 360.00 HR 360.00 HR 360.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Great Go Rebar Weld Supplies (1 man-Stick Rebar Subfuel, Oil, Grease 50g/d) Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP	Y:\TBG W 1.10 1.05 C 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR 360.00 HR 360.00 HR 360.00 HR 360.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Marine Piling & Demo Creved Subcontractor Greater Subcontractor Weld Supplies (1 man-Stick Rebar Subcontractor Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/	Y:\TBG W 1.10 1.05 C 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD	Y:\TBG W 1.10 1.05 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER	Y:\TBO W 1.10 1.05 (1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS	Y:\TBO W 1.10 1.05 1.00 1.00 1.00 1.00 1.00 1.0	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 3,600 3,600
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW	Y:\TBO W 1.10 1.05 (1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 3,600 3,600 3,600
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie	Y:\TBO W 1.10 1.05 C 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile	Y:\TBO W 1.10 1.05 3 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 36.00 HR 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 36 1,080 1,260 1,800	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260 1,800
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	Y:\TBO W 1.10 1.05 3 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,800 3,600 36 1,080 1,260 1,800 2,340	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260 1,800 2,340
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11 8MWH-A-1	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crew 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.10 1.05 3 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500 10.000	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pcs: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 36 1,080 1,260 1,800 2,340 3,600	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260 1,800 2,340 3,600
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	Y:\TBO W 1.10 1.05 3 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pes: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,800 3,600 36 1,080 1,260 1,800 2,340	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260 1,800 2,340
***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MYP-A-11 8MWH-A-1 8MWH-A-1	and adjusted from Melding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crew 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP	1.10 1.05 3 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	G-ENGI\EST\13- 24.00 EA G-ENGI\EST\13- 360. 250.80 CY 38,162.25 LB 36.00 DA 38,162.01 LB 360.00 HR	Quan:	*** 650.000 6.00 EA *** Prod: 105.000 0.480 70.000 0.280 200.000 163.361 17.500 20.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 10.000 6.500 10.000 2.500	36.0000 S 26,33	15,0 10.00 Lab F 4 8	600 Cal: 51 Pes: 520 685	7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 36 1,080 1,260 1,800 2,340 3,600 900	: CCISP	17.00 26,334 18,318 2,520 10,685 7,200 58,810 6,300 1,080 3,600 6,300 7,200 1,080 1,800 3,600 36 1,080 1,260 1,800 2,340 3,600 900

Page 16 13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33 Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = Description =	10100 CLIEN Abutments	NT# = 0	1-12	Marine Item Unit =	SCHED EA	ULE:		6.000	Engr	Quan:	6.000
M165 M170 M190 M195 OPCR100 \$320,169.70	M-Piledriver M-Welder M-Skilled Laborer M-Laborer Op Eng 1A- Crane 100-200 360.0000 MH/EA		360.00 MH 360.00 MH 360.00 MH 360.00 MH 360.00 MH 2,160.00 MH	[]	34.950 32.000 29.250 27.520 33.480 2732.72]	22,321 20,786 18,150 17,250 18,926 119,949	44,652	31,205	124,363		22,321 20,786 18,150 17,250 18,926 320,170
====> Item T \$899,832.25 149,972.042	Totals: 10100 - 400.0000 MH/EA 6 EA	Abutme	ents 2,400.00 MH	[1	4070.57]		574,233 95,705.51	60,541 10,090.10	132,292 22,048.68	14	899,832 49,972.04
	10120 CLIEN Fendering	NT# = 0	1-12	Marine Item Unit =	SCHED LS	ULE: 1 Takeoff		00 1.000	Engr	Quan:	1.000
620010	Fendering and bollard Sys	tem	Marine	Quan:	1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC	: CCISP	
	and adjusted from Nation and adjusted from National										
24 fenders @ 48 cylindric 3 pneutmatic Total:	\$58,333.00= \$1,399, al fenders @ \$5,499= fenders @ \$24,182.0	,992.0 = \$263 00= \$7	0 ,952.00 2,546 ,736,490.00								
2BOLLARD 2FENDER	Bollards Fender system		24.00 EA 1.00 LS		2,700.000 36,490.000		544,800 1,736,490			1	544,800 1,736,490
\$2,281,290.00	Tender system				[]	2	2,281,290			2	2,281,290
	Install Fenders and Bollare	ds	Marine	Quan:			2,281,290	10.00 Cal:	510 WC		2,281,290
\$2,281,290.00 620020			Marine		1.00		2,281,290		510 WC		2,281,290
\$2,281,290.00 620020 ***** Copied ***** Copied	Install Fenders and Bollard and adjusted from National and adjusted from National Action States	Y:\TBG Y:\TBG	Marine -ENGI\EST\13 -ENGI\EST\13	-008-5 * -008-5H	1.00 **** ****	LS Hr	2,281,290 s/Shft:	10.00 Cal:		: CCISP	
\$2,281,290.00 620020 ***** Copied	Install Fenders and Bollard and adjusted from N	Y:\TBG Y:\TBG v	Marine -ENGI\EST\13 -ENGI\EST\13	-008-5 *	1.00	LS Hr	2,281,290		510 WC 6.00		17.00 840
\$2,281,290.00 620020 ***** Copied MARPIL	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d	Y:\TBG Y:\TBG v	Marine -ENGI\EST\13 -ENGI\EST\13	-008-5 * -008-5H	1.00 **** ***** Prod	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:		: CCISP	17.00
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	Y:\TBG Y:\TBG W 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	1.00 **** Prod 70.000 200.000 163.361	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603	: CCISP	17.00 840 2,400 19,603
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR	Install Fenders and Bollard and adjusted from Sand Andrews (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK***	Y:\TBG Y:\TBG V 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR 120.00 HR	-008-5 * -008-5H	1.00 **** **** Prod 70.000 200.000 163.361 17.500	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100	: CCISP	17.00 840 2,400 19,603 2,100
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	Y:\TBG Y:\TBG W 1.00 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR 120.00 HR 120.00 HR	-008-5 * -008-5H	1.00 **** **** Prod 70.000 200.000 163.361 17.500 3.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360	: CCISP	17.00 840 2,400 19,603 2,100 360
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR 120.00 HR 120.00 HR 120.00 HR	-008-5 * -008-5H	**** **** Prod 70.000 200.000 163.361 17.500 3.000 10.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45'	Y:\TBG Y:\TBG W 1.00 1.00 1.00 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR 120.00 HR 120.00 HR 120.00 HR 120.00 HR	-008-5 * -008-5H	1.00 **** **** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR 120.00 HR 120.00 HR 120.00 HR	-008-5 * -008-5H	**** **** Prod 70.000 200.000 163.361 17.500 3.000 10.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	1.00 **** **** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600
\$2,281,290.00 ***** Copied ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBV-Z-2 8MCE-A-40 8MDH-A-7	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marine -ENGI\EST\13 -ENGI\EST\13 120 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200
\$2,281,290.00 ***** Copied **** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ****DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12
\$2,281,290.00 ***** Copied **** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ****DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW	Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marine -ENGI\EST\13 -ENGI\EST\13 1200 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360
\$2,281,290.00 ***** Copied **** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ****DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie	Y:\TBG Y:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 1200 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000 3.000 3.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360 420	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420
\$2,281,290.00 ***** Copied ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11	Install Fenders and Bollard and adjusted from Stand adjusted from Stand adjusted from Stand and adjusted from Stand and adjusted from Stand and adjusted from Stand Stan	Y:\TBG Y:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 1200 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360 420 600	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360 420 600
\$2,281,290.00 ***** Copied **** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ****DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie	Y:\TBG Y:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 1200 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000 3.000 3.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360 420	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420
\$2,281,290.00 ***** Copied ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11	Install Fenders and Bollard and adjusted from Stand adjusted from Stand and adjusted from Stand and adjusted from Stand and adjusted from Stand and adjusted from Stand	Y:\TBG Y:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 1200 DA 12.00 DA 12.00 DA 12.00 HR 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 5.000 5.000 6.500	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,100 2,400 360 600 1,200 12 360 420 600 780
\$2,281,290.00 ***** Copied ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MVP-A-11 8MVP-A-11	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN	Y:\TBG Y:\TBG V:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000	LS Hr	2,281,290 s/Shft:	10.00 Cal: Lab Pcs: 840	6.00 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MC-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MYP-A-11 8MVP-A-11 8MVP-A-11 8MWH-A-1 8MWH-C-1 8PILE26 9100000	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK *** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers	Y:\TBG Y:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 3.500 5.000 6.500 10.000 2.500 45.492 500.000	LS Hr:	2,281,290 s/Shft:	10.00 Cal: Lab Pcs:	6.00 2,400 19,603 2,100 360 2,100 2,400 360 600 1,200 12 360 420 600 780 1,200 300	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200 300 5,459 6,000
\$2,281,290.00 620020 ***** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MC-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MVP-A-11 8MVP-A-11 8MVP-A-11 8MWH-A-1 8MWH-C-1 8PILE26 9100000 M105	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK *** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine	Y:\TBG Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 HR 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720	LS Hr:	2,281,290 s/Shft:	10.00 Cal: Lab Pcs: 840	6.00 2,400 19,603 2,100 360 2,100 2,400 360 600 1,200 12 360 420 600 780 1,200 300	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200 300 5,459 6,000 7,505
\$2,281,290.00 620020 ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MVP-A-11 8MVP-A-11 8MVP-A-11 8MVP-A-11 8MVP-A-11 8MWH-C-1 8PILE26 9100000 M105 M165	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver	Y:\TBG Y:\TBG V:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720 34.950	7,505 7,440	2,281,290 s/Shft:	10.00 Cal: Lab Pcs: 840	6.00 2,400 19,603 2,100 360 2,100 2,400 360 600 1,200 12 360 420 600 780 1,200 300	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200 300 5,459 6,000 7,505 7,440
\$2,281,290.00 620020 ***** Copied **** Copied **** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MYP-A-11 8MVP-A-11 8MVP-A-11 8MVP-A-11 8MWH-C-1 8PILE26 9100000 M105 M165 M170	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver M-Welder	Y:\TBG Y:\TBG Y:\TBG V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720 34.950 32.000	7,505 7,440 6,929	2,281,290 s/Shft:	10.00 Cal: Lab Pcs: 840	6.00 2,400 19,603 2,100 360 2,100 2,400 360 600 1,200 12 360 420 600 780 1,200 300	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200 300 5,459 6,000 7,505 7,440 6,929
\$2,281,290.00 620020 ***** Copied ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MYP-A-11 8MVP-A-11 8MVP-A-11 8MWH-A-1 8MWH-C-1 8PILE26 9100000 M105 M165	Install Fenders and Bollard and adjusted from Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver	Y:\TBG Y:\TBG V:\TBG V: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Marine -ENGI\EST\13 -ENGI\EST\13 12.00 DA 12.00 DA 12.00 DA 120.00 HR	-008-5 * -008-5H	**** Prod 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720 34.950	7,505 7,440	2,281,290 s/Shft:	10.00 Cal: Lab Pcs: 840	6.00 2,400 19,603 2,100 360 2,100 2,400 360 600 1,200 12 360 420 600 780 1,200 300	: CCISP	17.00 840 2,400 19,603 2,100 360 1,200 2,400 360 600 1,200 12 360 420 600 780 1,200 300 5,459 6,000 7,505 7,440

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Direct Cost Report

Engr Quan:

1.000

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

 $BID\ ITEM = 10120$ CLIENT# = 01-12Marine Item SCHEDULE: 100 Description = Fendering Unit = LS Takeoff Quan: 1.000

120.00 MH OPCR100 Op Eng 1A- Crane 100-200 1.00 33.480 6,309 6.309 \$88,277.49 720.0000 MH/LS 720.00 MH [25465.44] 39,983 6,840 41,454 88,277

- Fendering ====> Item Totals: 10120

[25465.44] 39,983 2,281,290 2,369,567 \$2,369,567.49 720.0000 MH/LS 720.00 MH 6,840 41,454 2,369,567.490 39,983.13 2,281,290.00 6,840.00 41,454.36 2,369,567.49 1 LS

CLIENT# = 01-12 Marine Item SCHEDULE: $BID\ ITEM = 10140$ 1 100

Description = Unit = CY Takeoff Quan: 160,000.000 Engr Quan: 160,000.000 Slope Protection

203900 **Supply Armor Rock** Ouan: 160,000.00 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

per plan C-8 supply armor rock: 131,600 CY

60.000 12,537,050 12,537,050 2ARMOR Armor Stone 208,950.83 TN

209900	Install Slope Protection	Marine	Quan: 172,279.64	CY Hrs/Shft:	10.00 Cal: 510 WC	CCISP
MARLAN	Demolition Crew on land	1,964.74	CH Pro	1: 196.4742 S	Lab Pcs: 19.00	Eqp Pcs: 13.00
8211050	Fuel, Oil, Grease 50g/d	196.47 DA	200.000		39,294	39,294
8BHLD480	BHL Cat 450E 1.75CY 8.00	15,717.93 HR	45.473		714,741	714,741
8CRANEC100	Crane Manitowoc 222B 1 1.00	1,964.74 HR	106.961		210,151	210,151
8TRKPU10	Pickup 4x2 3/4 Ton Gas 4.00	7,858.97 HR	7.044		55,359	55,359
9100010	Subistance 10 workerss	196.47 DA	1,000.000		196,470	196,470
M105	Foreman - General Marine 1.00	1,964.74 MH	35.720	122,885		122,885
M150	M-Operator, Crane 1.00	1,964.74 MH	33.480	117,646		117,646
M195	M-Laborer 8.00	15,717.93 MH	27.520	753,147		753,147
OPCR100	Op Eng 1A- Crane 100-200 1.00	1,964.74 MH	33.480	103,290		103,290
OPEXC3	Op Eng 3- Backhoe to 3Y 8.00	15,717.93 MH	32.390	805,304		805,304
\$3,118,286.91	0.2166 MH/CY	37,330.08 MH	[7.301]	1,902,272	196,470 1,019,544	3,118,287
====> Item	Totals: 10140 - Slope	Protection	_			
\$15,655,336.71	0.2333 MH/CY	37,330.08 MH	[7.861]	1,902,272 12,537,05	0 196,470 1,019,544	15,655,337
97.846	160000 CY			11.89 78.30	5 1.23 6.37	97.85

 $BID\ ITEM = 10150$ CLIENT# = 01-19 Land Item SCHEDULE: 1 100

1.000 Surface Pavements Takeoff Quan: 1.000 Description = Unit = LS Engr Quan:

23 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ASPHALT PAVING Quan:

This is the parametric cost from ICRC estimate site prep, earthwork and paving, per SY

150,041.00 SY 23,235,844 23,235,844 4SUB Subcontract 154.863

CLIENT# = 01-19Land Item SCHEDULE: 1 100 $BID\ ITEM = 10160$

Traffic Control Parking Takeoff Quan: 1.000 1.000 Description = Unit = LS Engr Quan:

TRAFFIC CONTROL/ACCESS Quan: 150,041.00 SY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

This is the parametric cost from ICRC estimate for striping and signage, per SY

4SUB 150,041.00 SY 373,602 373,602 Subcontract 2.490

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 10170CLIENT# = 01-19 Land Item SCHEDULE: 100

Unit = Takeoff Quan: 1.000 1.000 Description = Surface water control LS Engr Quan:

DRAINAGE Quan: 150,041.00 SY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

This is the parametric cost from ICRC estimate for lump sum surface drainage, costed per SY

4SUB 150,041.00 SY 7.035 1,055,538 1,055,538 Subcontract

BIDITEM = 10180CLIENT# = 01-19 Land Item SCHEDULE: 1 100

Description = Potable Water Utilities Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

411 WATER MAINS 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

Potable water as lump sum from ICRC estimate

2,525,274.000 4SUB Subcontract 1.00 LS 2,525,274 2,525,274

CLIENT# = 01-19 SCHEDULE: BID ITEM = 10190Land Item 1

Description = Fire Suppression Utilities Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 411 WATER MAINS **Ouan:**

Estimating Fire suppression water as Potable water lump sum from ICRC estimate (assumes the ICRC estimate

only had Potable water).

2,525,274.000 4SUB Subcontract 1.00 LS 2.525.274 2.525.274

BID ITEM = 10200 CLIENT# = 01-19Land Item SCHEDULE: 1 100

Description = Sanitary Sewer Utilities Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

SANITARY SEWER 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 412 Onan:

San Sewer as lump sum from ICRC estimate

4SUB Subcontract 1.00 LS 359,657.000 359,657 359,657

BID ITEM = 10210 CLIENT# = 01-19 Land Item SCHEDULE:

Electrical Power Utilities Takeoff Quan: 1.000 1.000 Description = Unit = LS Engr Quan:

ELEC. UTILITIES 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

Electrical Utilities as lump sum from ICRC estimate

9,239,076.000 9,239,076 9,239,076 4SUB Subcontract 1.00 LS

CLIENT# = 01-19 Land Item SCHEDULE: 1 100 BID ITEM = 10230

Description = Telecommunications Utilities Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 419 TEL/COM. UTILITIES Quan:

Telecomm utilities cost taken as lump sum from ICRC estimate

3,281,521.000 4SUB Subcontract 1.00 LS 3,281,521 3,281,521

Page 19 13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33 Bob Wells

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 10240 CLIENT# = 01-08Land Item SCHEDULE: 100

Railroad Spur Unit = Takeoff Quan: 1.000 1.000 Description = LS Engr Quan:

RAIL SPUR Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Rail and appurtenances taken as lump sum from ICRC estimate

6,803,601.000 4SUB 1.00 LS 6,803,601 6,803,601 Subcontract

BID ITEM = 10250 CLIENT# = 01-19 Land Item SCHEDULE: - 1 100

Surface Restoration/Landscaping Description = Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

209000 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Restorations Quan:

No restoration was identified in ICRC estimate. Assuming a nominal amount for landscape and plants. 150,000.000 4SUB

Subcontract 1.00 LS 150,000 150,000

CLIENT# = 01-19 SCHEDULE: BID ITEM = 10260 Land Item 1

Description = Marine Terminal Buildings incl Crane Mai Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Tote Marine and AWWU Meeting Buildings 1.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP 89 **Ouan:**

Parametric cost taken as lump sum from ICRC estimate - used for stevedore facilities

1,452,767.000 4SUB Subcontract 1.00 EA 1,452,767 1,452,767

BID ITEM = 10270CLIENT# = 01-12Land Item SCHEDULE:

Description = Corrosion Control Unit = Takeoff Quan: 1.000 Engr Quan: 1.000 LS

CATHODIC PROTECTION Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Updated numbers from Jerry Duppong/SEA based on current structural (replaces ICRC estimate)

4SUB Subcontract 1.00 LS 8,565,000.000 8,565,000 8,565,000

Land Item BID ITEM = 10280CLIENT# = 01-08SCHEDULE: 100

Description = Cherry Hill Road Upgrades Unit = Takeoff Quan: 1.000 1.000 Engr Quan:

EARTHWORK/BASE/PAVING 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

Road upgrade cost from ICRC estimate

1.00 LS 823,088.000 823,088 823,088 4SUB Subcontract

BID ITEM = 10290 CLIENT# = 01-12 Land Item SCHEDULE:

Description = Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

MARINE MAMMAL MONITORING 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

4SUB Subcontract 1.00 LS 3,624,482.000 3,624,482 3,624,482

Page 20 13-008-1 POA 15% CONCEPT OPTION 1 02/26/2013 20:33 Bob Wells **Direct Cost Report**

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

= 10290 BID ITEM CLIENT# = 01-12Land Item SCHEDULE: 100

Description = Other Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

890000 KABATA WORK **Quan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

1.00 LS 767,282.000 4SUB Subcontract 767,282 767,282

====> Item Totals: 10290 - Other

\$4,391,764.00 4,391,764 4,391,764 [] 4,391,764.00 4,391,764.00

4,391,764.000 1 LS

12,617,005 61,132,325 26,959,089 21,771,807 64,782,007 187,262,234 \$187,262,233.66 *** Report Totals *** 238.013.29 MH

>>> indicates Non Additive Activity

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

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

Bid Date: Owner: Engineering Firm:

Estimator-In-Charge:

JOB NOTES

Estimate created on: 03/12/2008 by User#: 0 -

Source used: C:\HEAVYBID\BIANK\BLANK.zip (a backup) from 04/20/2006 4:40:12 PM

************Estimate created on: 03/20/2008 by User#: 0 -

Source used: R:\CURRENT DEVELOPMENT\HEAVYBID\INSTALLS\CURRENT INSTALL SOURCE\BACKUPS\BLANK.zip (a backup)

from 03/18/2008 11:43:18 AM

************Estimate created on: 03/21/2008 by User#: 0 -

Source used: C:\HEAVYBID\BACKUPS\BLANK.zip (a backup) from 03/20/2008 8:40:26 AM

Source estimate used: Y:\TBG-ENGI\EST\ESTMAST

*************Estimate created on: 02/07/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\13-008

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

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

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

⁵¹⁰ 5 days @ 10hrs/day



PORT OF ANCHORAGE INTERMODAL EXPANSION PROJECT – OPTION 5 15% CONCEPT DESIGN FOR ALASKA DISTRICT, JOINT BASE ELMENDORFRICHARDSON, ALASKA

Prepared for:

ALASKA DISTRICT U.S. ARMY CORPS OF ENGINEERS

Prepared by:

CH2M HILL

Date: February 2013

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EXECUTIVE SUMMARY

The purpose of this report is to inform the stakeholders of the cost and schedule risks and their resulting impacts on project cost and duration. The project is considering three options, developed to a 15% CONCEPT stage of design. The project includes Features 08 Roads, Railroads; 12 Navigation Ports & Harbors; 16 Bank Stabilization; and 19 Buildings, Grounds, & Utilities. The method used was a Cost and Schedule Risk Analysis as directed in W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE. The contingency results are shown in Table 1 with the relative confidence of cost under run. Recommended risk mitigation strategies are varied and summarized in Section 8 of this report.

Table 1. Executive Summary of Risk Analysis

Confidence Level	Value
60%	\$617,549,866
80%	\$641,540,311
100%	\$762,871,020

1. PURPOSE

The purpose of this report is to present the cost and schedule forecasts of the Port of Anchorage Intermodal Expansion Project – Option 5, 15% Concept design. The purpose for a Cost and Schedule Risk Analysis (CSRA) is to study elements related to cost and schedule to derive an outcome contingency calculation at the 80th percentile confidence level, for both cost and schedule, which are measured in terms of dollars and months, respectively.

2. BACKGROUND

This project, at the concept design state (15%), was requested by Alaska District U.S. Army Corps of Engineers (USACE) after CH2M HILL completed for review the study on the halted design and construction the Port of Anchorage Intermodal Expansion Project. The project currently is considering three options, all of which have design developed to the Concept stage (15%). Each option is considered independently and an estimate and CSRA have been developed for each.

3. REPORT SCOPE

The scope of the risk analysis report is to calculate and present the cost and schedule contingencies at the 80 percent confidence level using the risk analysis processes as mandated by USACE Engineer Regulation (ER) 1110-2-1150, Engineering and Design for Civil Works, ER 1110-2-1302, Civil Works Cost Engineering, and Engineer Technical Letter 1110-2-573, Construction Cost Estimating Guide for Civil Works. The report presents the contingency results for both cost and schedule risks for all project features. The study and presentation can include or exclude consideration for operation and maintenance or life cycle costs, depending upon the program or decision document intended for funding.

3.1 Project Scope

The report includes the project technical scope, estimates, and schedules as developed and presented by CH2M HILL. Consequently, these documents serve as the basis for the risk analysis. In general, the construction scope consists of the following:

- 08 Roads, Railroads, and Bridges (15% Concept Design Stage)
- 12 Navigation Ports & Harbors (15% Concept Design Stage)
- 16 Bank Stabilization (15% Concept Design Stage)
- 19 Buildings, Grounds, & Utilities (15% Concept Design Stage)

3.2 USACE Risk Analysis Process

The risk analysis process followed the contract stipulations and the USACE Headquarters requirements as well as the guidance provided by the Cost Engineering Directory of Expertise for Civil Works (Cost Engineering DX). The risk analysis process reflected within the risk analysis report uses probabilistic cost and schedule risk analysis

methods within the framework of the Crystal Ball software. The risk analysis results are intended to serve several functions, one being the establishment of reasonable contingencies reflective of an 80 percent confidence level to accomplish the project work successfully within that established contingency amount. Furthermore, the scope of the report includes the identification and communication of important steps, logic, key assumptions, limitations, and decisions to help ensure that risk analysis results can be appropriately interpreted.

Risk analysis results are also intended to provide project leadership with contingency information for scheduling, budgeting, and project control purposes, as well as provide tools to support decision-making and risk management as the project progresses through planning and implementation. To fully recognize its benefits, cost and schedule risk analyses should be considered as an ongoing process conducted concurrent to, and iteratively with, other important project processes such as scope and execution plan development, resource planning, procurement planning, cost estimating, budgeting, and scheduling.

In addition to broadly defined risk analysis standards and recommended practices, the risk analysis is performed to meet the requirements and recommendations of the following documents and sources:

- W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE
- ER 1110-2-1150, Engineering and Design for Civil Works Projects
- ER 1110-2-1302, Civil Works Cost Engineering
- ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works
- Cost and Schedule Risk Analysis Process guidance prepared by the USACE Cost Engineering DX

4. METHODOLOGY/PROCESS

The Project Delivery Team (PDT) was composed of members of Task 3 Concept Plan Charrette, as well as CH2M HILL personnel later executing the estimate and risk analysis.

The Cost Engineering DX guidance for cost and schedule risk analysis generally focuses on the 80-percent level of confidence (P80) for cost contingency calculation. It should be noted that use of P80 as a decision criteria is a risk adverse approach.

The risk analysis process uses *Monte Carlo* techniques to determine probabilities and contingency. The *Monte Carlo* techniques are facilitated computationally by a commercially available risk analysis software package (Crystal Ball) that is an add-in to Microsoft Excel. Cost estimates are packaged into an Excel format and used directly for cost risk analysis purposes. Because Crystal Ball is an Excel add-in, the schedules for each option are recreated in an Excel format from their native format. The level of detail recreated in the Excel-format schedule is sufficient for risk analysis purposes that reflect the established risk register, but generally less than that of the native format.

The primary steps, in functional terms, of the risk analysis process are described in the following subsections. Risk analysis results would be provided in Section 6.

4.1 Identify and Assess Risk Factors

Identifying the risk factors with the PDT is considered a qualitative process that results in establishing a risk register that serves as the document for the further study using the Crystal Ball risk software. Risk factors are events and conditions that may influence or drive uncertainty in project performance. They may be inherent characteristics or conditions of the project or external influences, events, or conditions such as weather or economic conditions. Risk factors may have either favorable or unfavorable impacts on project cost and schedule.

Checklists or historical databases of common risk factors are sometimes used to facilitate risk factor identification. However, key risk factors are often unique to a project and not readily derivable from historical information. Therefore, input from the entire PDT is obtained using creative processes such as brainstorming or other facilitated risk assessment meetings. In practice, a combination of professional judgment from the PDT and empirical data from similar projects is desirable and is considered.

Formal PDT meetings were held as a part of the design charrette for the purposes of identifying and assessing risk factors. The meetings held included capable and qualified representatives from multiple project team disciplines and functions:

- Project/program managers
- Environmental
- Civil, structural, geotechnical, and hydraulic design
- Cost and schedule engineers
- Key sponsors

Additionally, numerous conference calls and informal meetings are conducted throughout the risk analysis process on an as-needed basis to further facilitate risk factor identification, market analysis, and risk assessment.

4.2 Quantify Risk Factor Impacts

The quantitative impacts of risk factors on project plans are analyzed using a combination of professional judgment, empirical data, and analytical techniques. Risk factor impacts are quantified using probability distributions, because risk factors are entered into the Crystal Ball software in the form of probability density functions.

Similar to the identification and assessment process, risk factor quantification involves multiple project team disciplines and functions. However, the quantification process used herein relied more extensively on collaboration between cost engineering, designers, and risk analysis team members with lesser inputs from other functions and disciplines.

The following is an example of the PDT quantifying risk factor impacts:

- Maximum possible value for the risk factor
- Minimum possible value for the risk factor
- Most likely value (the statistical mode), if applicable
- Nature of the probability density function used to approximate risk factor uncertainty
- Mathematical correlations between risk factors
- Affected cost estimate and schedule elements

In this study, the risk discussions focused on the various project features as presented within the USACE Civil Works Work Breakdown Structure for cost accounting purposes. It was recognized that the various features carry differing degrees of risk as related to cost, schedule, design complexity, and design progress. The project features under study are presented in Table 2:

Table 2. Work Breakdown Structure by Feature

08	Roads, Railroads, and Bridges
12	Navigation Ports & Harbors
16	Bank Stabilization
20	Buildings, Grounds, & Utilities

The resulting product from the PDT discussions is captured within a risk register as presented in Section 6 for both cost and schedule risk concerns. Note that the risk register records the PDT's risk concerns, and potential impacts to the current cost and schedule estimates. The concerns should support the team's decisions related to event likelihood, impact, and the resulting risk levels for each risk event.

4.3 Analyze Cost Estimate and Schedule Contingency

Contingency is analyzed using the Crystal Ball software, an add-in to the Microsoft Excel format of the cost estimate and schedule. *Monte Carlo* simulations are performed by applying the risk factors (quantified as probability density functions) to the appropriate estimated cost and schedule elements identified by the PDT. Contingencies are calculated by applying only the moderate and high level risks identified for each option (i.e., low-level risks are typically not considered, but remain within the risk register to serve historical purposes as well as support follow-on risk studies as the project and risks evolve).

For the cost estimate, the contingency is calculated as the difference between the P80 cost forecast and the base cost estimate. For schedule contingency analysis, the option schedule contingency is calculated as the difference between the P80 option duration forecast and the base schedule duration. These contingencies are then used to

calculate the time value of money impact of project delays that are included in the presentation of total cost contingency in Section 6. The resulting time value of money, or added risk escalation, is then added into the contingency amount to reflect the USACE standard for presenting the "total project cost" for the fully funded project amount.

5. KEY ASSUMPTIONS

The following are key assumptions for the risk analysis identified by the PDT and risk analysts.

- Contract acquisition strategy assumed to be single prime contract DBB.
- Accuracy range of estimate is +30% to -15%.
- The contingency is determined after consideration of the project's exposure to the studied risks. The recommended level of 80% should be carefully examined.
- All impact levels, those with high, moderate, or low risk level ratings, were studied and applied within the risk analysis.

6. RISK ANALYSIS RESULTS

6.1 Risk Register

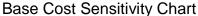
The risk register reflects the results of risk factor identification and assessment, risk factor quantification, and contingency analysis (provided in Attachment A). A risk register can be an effective tool for managing identified risks throughout the project life cycle. As such, it is generally recommended that risk registers be updated as the designs, cost estimates, and schedule are further refined, especially on large projects with extended schedules. Recommended uses of the risk register going forward include:

- Documenting risk mitigation strategies pursued in response to the identified risks and their assessment in terms of probability and impact.
- Providing project sponsors, stakeholders, and leadership/management with a
 documented framework from which risk status can be reported in the context
 of project controls.
- Communicating risk management issues.
- Providing a mechanism for eliciting risk analysis feedback and project control input.
- Identifying risk transfer, elimination, or mitigation actions required for implementation of risk management plans.

6.2 Cost Risk Analysis - Cost Contingency Results

Cost risk as studied by the PDT and developed through the register and *Monte Carlo* processes is presented here. This section does not include cost escalation risk, which is studied separately and reported below in Section 6.4.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register (and to the three-point estimate, see Attachment B for code references). Generally, the areas of high criticality are Market Conditions and Bidding Competition (PR-2), Historic Change Order Growth (CON-8), Piling for Wharf Area Phase II & and Phase III (30260 Three Point Range), Poor construction quality/Hidden defects (CON-4), and Acts of God (PR-5).



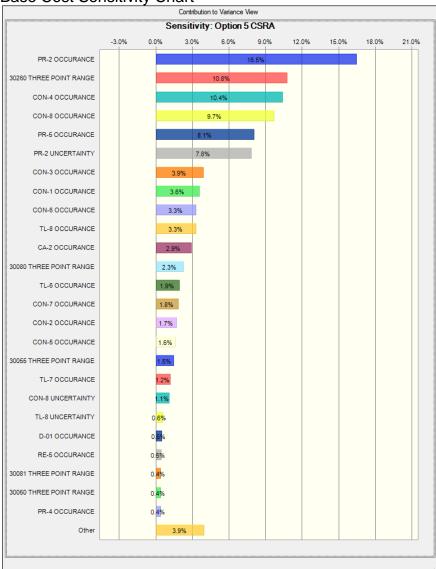
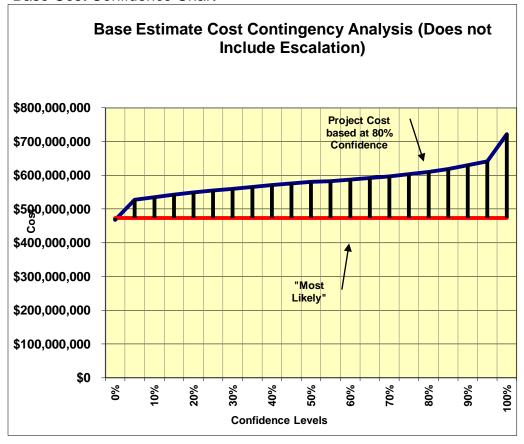


Table 3. Base Cost Confidence

Contingency Analysis

Johning Chey Analysis											
Most Likely Cost Estimate	\$472,992,722										
Confidence Level	Value	Contingency									
0%	\$467,560,608	-1.15%									
5%	\$526,988,523	11.42%									
10%	\$535,014,238	13.11%									
15%	\$542,397,924	14.67%									
20%	\$548,801,154	16.03%									
25%	\$554,851,107	17.31%									
30%	\$560,171,634	18.43%									
35%	\$565,646,946	19.59%									
40%	\$570,883,046	20.70%									
45%	\$575,765,533	21.73%									
50%	\$580,281,187	22.68%									
55%	\$582,022,176	23.05%									
60%	\$587,092,354	24.12%									
65%	\$592,201,418	25.20%									
70%	\$596,478,809	26.11%									
75%	\$602,967,357	27.48%									
80%	\$609,884,757	28.94%									
85%	\$618,350,631	30.73%									
90%	\$629,893,501	33.17%									
95%	\$641,476,215	35.62%									
100%	\$721,473,927	52.53%									

Base Cost Confidence Chart



NOTE: These results reflect only those contingencies established from the cost risk analysis. For combined cost and schedule risk analysis, refer to Section 6.4.

6.3 Schedule Risk Analysis - Schedule Contingency Results

The base schedule was estimated at 54 months, and assumed a construction start in April 2015. Risks were analyzed for schedule impact, and the resulting uncertainty is expressed below.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register. Generally, the areas of high criticality are Unpredictable Funding (PPM-1), Lack of a Master Plan (D-01), and Acts of God (PR-5).

Schedule Sensitivity Chart

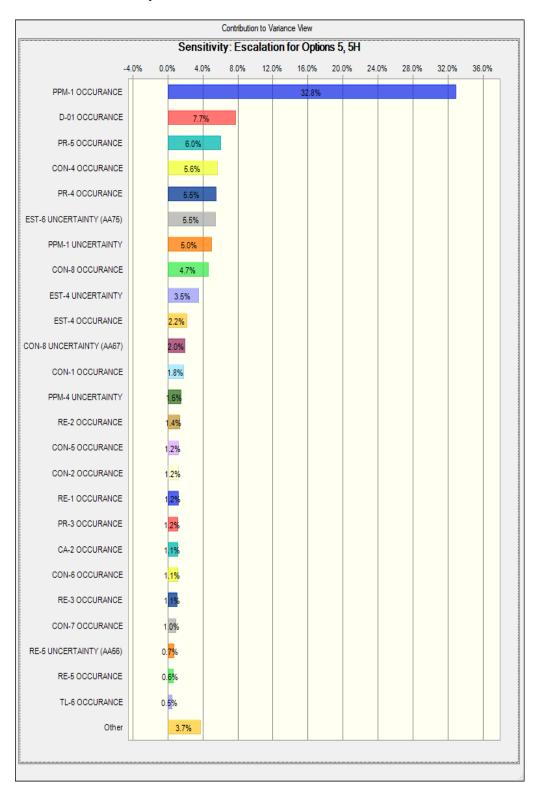
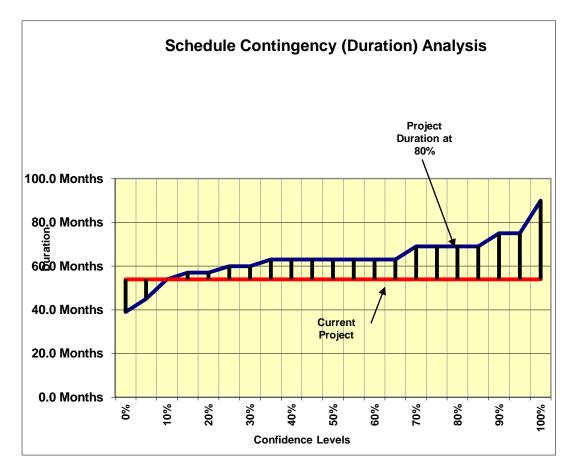


Table 4. Schedule Confidence

Contingency Analysis

Most Likely Schedule	54.0 N	Months				
Confidence Level	Value	Contingency				
0%	39.0 Months	-27.78%				
5%	45.0 Months	-16.67%				
10%	54.0 Months	0.00%				
15%	57.0 Months	5.56%				
20%	57.0 Months	5.56%				
25%	60.0 Months	11.11%				
30%	60.0 Months	11.11%				
35%	63.0 Months	16.67%				
40%	63.0 Months	16.67%				
45%	63.0 Months	16.67%				
50%	63.0 Months	16.67%				
55%	63.0 Months	16.67%				
60%	63.0 Months	16.67%				
65%	63.0 Months	16.67%				
70%	69.0 Months	27.78%				
75%	69.0 Months	27.78%				
0%	69.0 Months	27.78%				
85%	69.0 Months	27.78%				
90%	75.0 Months	38.89%				
95%	75.0 Months	38.89%				
100%	90.0 Months	66.67%				

Schedule Confidence Chart



NOTE: These results reflect only those contingencies established from the schedule risk analysis.

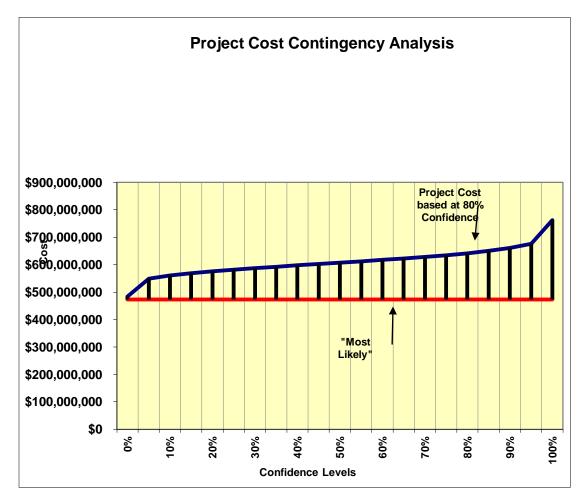
6.4 Combined Cost and Schedule Contingency Results

The cost risk analysis and schedule risk analysis contribute to a total project cost risk analysis. The schedule risk creates exposure to delays and risk of cost escalation. The purpose of analyzing schedule risk allows the project uncertainty to comprehend both the cost elements and their risks, but also how those costs are affected by the time element of the project and its associated risks. Presented here are the combine cost and schedule contingency results:

Table 5. Cost Confidence (Combined Cost and Schedule)

Most Likely Cost Estimate	\$472,9	92,722
Confidence Level	Value	Contingency
0%	\$484,106,164	2.35%
5%	\$549,245,329	16.12%
10%	\$560,750,574	18.55%
15%	\$569,313,084	20.36%
20%	\$575,716,314	21.72%
25%	\$581,766,267	23.00%
30%	\$587,086,793	24.12%
35%	\$592,562,106	25.28%
40%	\$597,798,206	26.39%
45%	\$602,680,693	27.42%
50%	\$607,196,347	28.37%
55%	\$612,479,687	29.49%
60%	\$617,549,866	30.56%
65%	\$622,658,929	31.64%
70%	\$628,134,363	32.80%
75%	\$634,622,911	34.17%
80%	\$641,540,311	35.63%
85%	\$650,006,186	37.42%
90%	\$661,549,056	39.86%
95%	\$676,738,233	43.08%
100%	\$762,871,020	61.29%

Combined Cost and Schedule Chart



7. MAJOR FINDINGS/OBSERVATIONS

CH2M HILL prepared an estimate as an input to the CSRA, which utilized contingencies typical for the project type and design stage, as well as those identified by the stakeholders as required. This estimate is considered a deterministic, point-value estimate, from which contingencies and escalation was removed in order to study the project's exposure to risk and their impacts on cost and schedule. The results find that these contingencies as used in the deterministic estimate are reasonable in providing a similar degree of confidence as resulted from the CSRA study. The benefits of the CSRA are the identification of risks for future mitigation and management effort, as well as to communicate the underlying contributors to project cost and schedule variance.

Table 6 presents project contingencies, which include base cost plus cost and schedule contingencies.

Table 6. Project Contingencies (Base Cost Plus Cost and Schedule Contingencies)

Confidence Level	Project Cost	Contingency (%)	Contingency (\$)
P0	\$484,106,164	2.35%	\$11,113,441
P10	\$560,750,574	18.55%	\$87,757,852
P20	\$575,716,314	21.72%	\$102,723,592
P30	\$587,086,793	24.12%	\$114,094,071
P40	\$597,798,206	26.39%	\$124,805,484
P50	\$607,196,347	28.37%	\$134,203,624
P60	\$617,549,866	30.56%	\$144,557,143
P70	\$628,134,363	32.80%	\$155,141,641
P80	\$641,540,311	35.63%	\$168,547,589
P90	\$661,549,056	39.86%	\$188,556,333
P100	\$762,871,020	61.29%	\$289,878,297

8. MITIGATION RECOMMENDATIONS

Risk mitigation recommendations and strategies are tabulated in the following risk register entries.

Risk No.	Risk/Opportunity Event	Concerns	Risk Level	Responsibility (POC)	Recommended Mitigation
PPM-1	Political considerations and pressures can impact funding	Incremental and unpredictable funding	High	Project Sponsor(s)	Coordinate decisions and/or contract and construction events to minimize impact of political pressures.
PPM-4	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk could become known and mitigated prior to construction. Construction risk can be negative or positive.	Low	Contracting	Have contractors discuss project delivery innovations and foreseeable planning difficulties during RFQ period.
CA-1	Misappropriation of risk to the contractor or owner	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: design-build, design-bid-build and general contractor/construction manager. Risk could be positive or negative.	Low	Contracting	Consider all contract types including recent innovations, as allowed by procurement constraints. Receive input from the construction community.
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the ongoing dredging contracts and the repair/construction contract can interfere or limit work.	Low	Contracting	Clearly delineate in the contract the method for contract coordination, and who has the right to occupy the work at various stages of construction and operation.
TL-1	Handling of groundwater/surface water from hill behind north extension (Safety)	Assumes a pile supported design	Low	Construction	Highlight this risk in ITB, specifications, Pre-bid meeting, Contract, schedule, and communicate to all controlling parties before and during construction. Secure contractor mitigation plan.
TL-6	Continuing port operations vs. construction phasing over extended time increments	Risk that some berths are unusable due to maneuvering or dredging requirements for extended times. Impact to construction progress and production because of complexities of sequencing	Moderate	Operations	Coordinate with stakeholder to optimize operations and construction impacts
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath Terminals 2 and 3, earthwork quantities for all options, and global stability for Option 5 at Terminals 2 and 3 are in question	Moderate	Geotechnical/ Civil Design	Perform new surveys
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Moderate	Geotechnical/ Civil Design	Normally done as design progresses
D-01	Master plan	Lack of a current port master plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon Container Cargo terminal) or that could be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Low	Project Manager	Convene stakeholders to determine the ability and timeframe to develop a master plan.
D-08	Deferring Tote terminal maintenance and planning because "we are moving the terminal"		Low	Operations	Examine ROI and other risks for optimal solution
D-09	Potential cost to TOTE for the expansion/development e.g. new gatehouse, shop, yard reconfiguration		Low	Operations	Include this cost after any design and logistics study is done to mitigate it

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
RE-1	Permits in place	Risk of having a negative impact on the existing 404 permit because it is already in place for the North Extension assuming the design and construction methodology did not change	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-2	Permit modifications	High risk of having permit modifications (negative impact) later that may cost time and money due to whether or not the existing North Extension is the best plan	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-3	Permit exposure	Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-4	Excluding/including appropriate natural resource agency folks in the process early and often.	Low risk of having negative environmental and regulatory issues late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Low	Environmental	Ensure buy-in/inclusion is pursued
RE-5	Beluga whale listing as a threatened and endangered species reduces the amount of work that can be performed during the day.	Stop and go operations also reduce productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well.	Moderate	Environmental	Design solutions as are warranted by ROI, assume risk.
CON-1	The construction should be allowed on both the ocean and land side of the new dock system	Over restrictive site limitations	Low	Construction	Verify and communicate the site limitations, consider all effect of such a limitation before making same required.
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule	Moderate	Contracting	Consider that any onerous risk transferred to the contractor comes at a premium, and the determination of that premium is influenced by other circumstances such as market demand and overall state of the economy
CON-3	Availability of experienced contractors/subcontractors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/contractor availability (i.e. pile/tussle supported docks vs. OCSP® system).		Low	Contracting	This can be addressed with an RFQ process that results in a bid go or no-go
CON-4	Poor construction quality/hidden defects	Weak or lack of QA/QC can result in rework, additional costs, and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Moderate	Project Manager	Use QA/QC best practices, examine others that were successful on other port projects

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture? Where will material inspections be performed for acceptance? What are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs?	Moderate	Cost Engineering	Perform an analysis of impact of material availability when specifying material sources.
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring	Moderate	Operations	Coordinate these with operations in order to minimize
CON-7	Access and security issues	Changes in security protocols, impact of access requirements on available labor force, daily production, and morale	Moderate	Contracting	Consider what options the port has to make the project attractive to contractors and workers, and communicate those options in the ITB, contract, pre-bid, etc.
CON-8	Historical change order growth	Need to study market behavior for region and project type for historical changes - Walla Walla for reference	High	Cost Engineering	Investigate contractors during RFQ for propensity for change order growth. Consider contract type alternatives that minimize the exposure to both owner and contractor.
CON-9	Diesel fuel volatility	\$6M marine + \$2M civil	Low	Cost Engineering	Maintain awareness of fuel pricing at bid time. Consider master agreement with suppliers. To provide min max at an agreed price
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	High	Project Sponsor(s)	Create separable construction packages
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	High	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
PR-2	Market conditions and bidding competition	The base estimate is assuming 10% indirect costs and 20% overhead and profit markup structure, which favors a low demand market. Should there be little supply due to increased demand, the contractors are expected to add overhead and profit, up to 15% more than in the estimate	High	Contracting	Remain cognizant of the supply and demand for various contractor capabilities related to the project features. Select a contract type that leverages the market supply and demand forecast for the bid period

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
PR-3	Labor disruptions	This is covered previously, but there is some related risk to the contractor that could affect schedule, and thus his escalation exposure	Low	Construction	Require labor resource identification, contingency plan and forecast from contractors during RFP period. Maintain contact with labor organizations. Consider low cost amenities that will attract skilled and qualified labor and supervision.
PR-4	Acts of God (seismic events: volcanic activity, earthquakes, tsunamis; or severe weather: freezing, flooding or hurricane)	Weather (snow, freezing - subarctic related) impacts on production - estimate does not include "act of God" level impacts	Low	Contracting	Refer to insurance and contracting general terms and conditions
PR-5	Acts of God (seismic events: volcanic activity, earthquakes, tsunamis; or severe weather: freezing, flooding or hurricane)	Seismic (earthquakes) impacts on production, labor availability, materials delivery, placed work damages - estimate does not include "act of God" level impacts	Low	Contracting	Refer to insurance and contracting general terms and conditions

ITB = invitation to bid

POC = point of contact

QA/QC = quality control/quality assurance

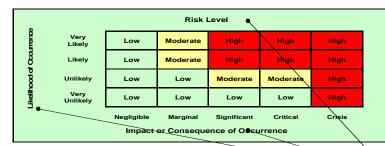
RFQ = request for quote

ROI = return on investment

TOTE = Totem Ocean Trailer Express, Inc.

ATTACHMENT A DETAILED RISK REGISTER

Port of Anchorage Intermodal Expansion Project 15% CONCEPT - Risk Register



Overall Project Scope
The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately one mile north of downtown Anchorage. The scope of the work is to demolish [existing wharf, trestle and] sheet pile wall, construct new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities and utilities.

Cost Impacts
500,000,000 scale of project, Crisis, 100,000,000; Critical 50,000,000; Significant \$20,000,000, Marginal \$10,000,000.

Schedule Impacts
4 year scale of project: Crisis 2 years; Critical 1 year; Significant 6 months; Marginal 3 months; Negligible <1 month. Event Likeliness
Very Unlikely 1 in 10, Unlikely 3 in 10, Likely 7 in 10, Very Likely 9 in 10.

			Project Cost				Project Schedule							
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
Contract F	ntract Risks (Internal Risk Items are those that are generated, caused, or controlled within the PDT's sphere of influence.)													
	PROJECT & PROGRAM MGMT													
	Political considerations and pressures can impact funding	Incremental and unpredictable funding	Likely	Significant	HIGH	escalation related	Likely	Critical	HIGH	1 year	Triangular		Project Sponsor(s)	Project Cost & Schedule
	Regulatory Permitting	It is critical to have all permitting in place before awarding construction contracts. Possibly look at making the project management team responsible for obtaining permits.	Unlikely	Significant	MODERAT E	escalation related	Unlikely	Significant	MODERAT E	6 mo		RE-3	Project Manager	Project Cost & Schedule
PPM-3	Economic tradeoffs	Consumer price sensitivity will- impact support for the project	Likely	Significant	HIGH		Likely		0					
	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk can become known and mitigated prior to construction. Construction risk can be neg or pos	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	CONTRACT ACQUISITION RISKS													

			Project Cost				Project Schedule							
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CA-1	Misappropriation of risk to the contractor or owner.	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: designbuild, design-bid-build and General Contractor/Construction Manager (GC/CM). Risk could be pos or neg	Very Unlikely	Marginal	LOW	\$10M	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the on-going dredging contracts and the repair/construction contract can interfere or limit work.	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	TECHNICAL RISKS													
TL-1	Handling of groundwater/surface water from hill behind north extension. (Safety)	Assumes a pile supported design	Very Unlikely	Negligible	LOW	\$1M	Very Unlikely	Negligible	LOW	none	Triangular		Construction	Project Cost
TL-2	Port configuration that- shoals in during the- winter months when- dredging cannot occur- (interrupting vessel- operations in terms of- time and money	Positioning vessels	Unlikely	Significant	MODERAT		Unlikely		θ					
TL-3	Port layout that hampers current vessels to maneuver, dock, and moor with the current tugs.	(Higher horsepower tugs needed or ice sweeping vessels off dockand aground)	Unlikely	Significant	MODERAT		Unlikely		θ					
TL-4	Focusing on the North- dock completion rather- than the entire port- system as a whole-	(risk building the wrong project for today that may be incompatible- with future needs)	Unlikely	Marginal	LOW		Unlikely		0					
TL-5	Port configuration that cannot be dredged with existing hopper equipment	(Operations money is getting- tighter and the potential could exist to not be able to fully- dredge)	Very Unlikely	Significant	L OW		Very Unlikely		0					

			Project Cost			Project Schedule								
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
	Continuing port operations vs. construction phasing over extended time increments.	(Risk that some berths are unusable due to maneuvering or dredging requirements for extended times.) Impact to construction progress and production due to complexities of sequencing	Likely	Marginal	MODERAT E	\$10M	Likely	Marginal	MODERAT E	2 mo	Triangular		Operations	Project Cost & Schedule
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath terminals #2 and #3, earthwork quantities for all options, and global stability for option 5 at terminals #2 and #3 are in question	Likely	Marginal	MODERAT E	\$10M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Likely	Marginal	MODERAT E	\$15M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
	DESIGN RISKS					7.0					g		= 55.51	
D-01 D-02	Master plan b. Fail to ID- requirements c. Time to develop- 100% design	Lack of a current Port Master Plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon) or that can be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Very Unlikely Very Unlikely Very Unlikely	Marginal Marginal	LOW	\$10M	Very Unlikely Very- Unlikely Very- Unlikely	Critical	LOW 9	1 year	Triangular		Project Manager	Project Cost & Schedule
	d. Impact to cost from changes		Unlikely Very Unlikely	Marginal Marginal	LOW		Unlikely Very Unlikely		0					

				Projec	t Cost			Project	Schedule					
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	С	Component
	e. Location and													
	structure Impact to	What is the new structures impact	Verv				Very							
D-05	Safe Navigation	to Safe Navigation and mooring?	Unlikely	Marginal	LOW		Unlikely		0					
	f. Impact from loss of	come management and management												
	acreage	Effects on operation with loss of	Very				Very							
D-06		acreage?	Unlikely	Significant	LOW		Unlikely		0					
	Continuing silting			J			,							
	issues at the stern of													
	Tote vessels													
D-07					θ		0		0					
	Deferring Tote terminal													
	maintenance and													
	planning because "we													
	are moving the													
	terminal"													
D-08			Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
	Potential cost to Tote													
	for the													
	expansion/developmen t e.g. new gatehouse,													
	shop, yard													
	reconfiguration													
D-09	J		Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
				- J			,	- 5 5						,
	REGULATORY AND													
	ENVIRONMENTAL													
	RISKS								0					
		Risk of having a negative impact												
		on the existing 404 permit												
		because it is already in place for												
		the North Extension assuming the design and construction				escalation								Project Cost &
RE-1	Permits in place	methodology did not change	Unlikely	Marginal	LOW	related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Schedule
		High risk of having permit mods						3						
		(negative impact) later that may												
		cost time and money due to												
		whether or not the existing North												
		Extension is the best plan												Desired Ossi O
DE 2	Permit mods		Unlikely	Marginal	LOW	escalation	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-Z	remin mous		Unlikely	Marginal	LUW	related	Unikely	Marginal	LOW	2 1110	mangular		Environmental	Scriedule

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-3		Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Unlikely	Marginal	LOW	escalation related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-4	Excluding/Including appropriate natural resource agency folks in the process early and often:	Low risk of having environmental and regulatory issues that are negative late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Very Unlikely	Significant	LOW	escalation related	Very Unlikely	Marginal	LOW	-3 to +1 mo	Triangular		Environmental	Project Cost & Schedule
RE-5	Beluga whale listing as a Threatened and Endangered species reduces the amount of work that can be performed during the day. NEPA permits a. 404 (exp	Stop and go operations also reduces productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well. Many of the permits expire in the near future. What new requirements will a new or hybrid structure entail? Will a new EA be	Very Likely	Marginal	MODERAT E	\$10M	Very Likely	Marginal	MODERAT E	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-6	duantities remain) b. LOA c. What new permits will a new structure	required? Can the process be streamlined? How much time and effort will be required for submission and review? Impact to construction of not having permits in place?	Likely	Marginal	MODERAT E				0					

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-7	Endangered species- (beluga whales) a. Impact to in-water- work- i. Low tide ii. Harassment and- takes b. Monitoring- i. Contractor ii. Scientific- iii. Cost associated-	Loss of 8 hours of in water work- daily around low times. Meeting whale harassment and having- minimal takes. Monitoring requirement both from- contractor and scientific by permit- and the cost associated.	Likely	Marginal	MODERAT E				0					
	CONSTRUCTION RISKS								0					
CON-1	The construction should be allowed on both the ocean and land side of the new dock system.	Over restrictive site limitations	Very Unlikely	Significant	LOW	\$20M	Very Unlikely	Significant	LOW	6 MO	Triangular		Construction	Project Cost & Schedule
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule		Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 mo	Triangular		Contracting	Project Cost & Schedule
CON-3	Availability of experienced contractors/subcontract ors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/contractor availability (i.e. pile/tussle supported docks vs. OCSP dock system).		Very Unlikely	Significant	LOW	\$25m	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CON-4	Poor construction quality/Hidden defects	Weak or lack of Quality Control/Quality Assurance can result in rework, additional costs and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Unlikely	Significant	MODERAT E	\$25m	Unlikely	Significant	MODERAT E	6 MO	Triangular		Project Manager	Project Cost & Schedule
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material Inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture, where will material inspections be performed for acceptance, and what are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs to	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 MO	Triangular		Cost Engineering	Project Cost & Schedule
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring Changes in security protocols, impact of access requirements on	Unlikely	Significant	MODERAT E	\$20M	Unlikely	Marginal	LOW	3 MO	Triangular		Operations	Project Cost & Schedule
CON-7	Access and Security Issues	available labor force, daily production, morale,	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	2 mo	Triangular		Contracting	Project Cost & Schedule
CON-8	Historic Change Order Growth	Need to study market behavior for region and project type for historicals - Walla Walla for reference	Likely	Significant	HIGH	\$25m	Likely	Significant	HIGH	6 mo	Triangular		Cost Engineering Cost	Project Cost & Schedule
CON-9	Diesel Fuel Volatility ESTIMATE AND SCHEDULE RISKS	\$6M Marine + \$2M civil	Very Likely	Negligible	LOW	+6 TO -2m				none	Triangular		Engineering	Project Cost

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
EST-1	Insufficient funds, uncertain levels and frequency of future funds		Likely	Significant	HIGH	\$20M	Likely	Significant	HIGH	6 mo		PPM-1		
EST-2	Risk of reducing revenue from leasable Port property in the event reserved site needs of the Project contractor are- overestimated (a non- capital concern)		Likely	Marginal	MODERAT E				9					
EST-3	Interruption of normal- commercial shipping- and revenue stream- due to either- construction activity or- environmental- constraints (a non- capital concern)		Likely	Marginal	MODERAT E				θ					
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	Very Likely	Significant	HIGH		Very Likely	Significant	HIGH	6 mo	Triangular		Project Sponsor(s)	Project Cost & Schedule
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	Very Likely	Significant	нісн	+20 /-20% of those component s	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Very Likely	Negligible	LOW	\$5M	Very Likely	Marginal	MODERAT E	4 mo	Triangular		Cost Engineering	Project Cost & Schedule
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Very Likely	Negligible	LOW	+10% of waste	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
	O & M RISKS										J .			,

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
FL-1	Potential negative risk to existing snow clearing and sanding/sweeping operations capacity	potential need for additional equipment and manpower to maintain response time and storage/disposal capacity	Likely	Marginal	MODERAT E				0					
FL-2	Potential negative risk of snow clearing, sanding, and sweeping operations on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-3	Potential negative risk of freeze-thaw cycles on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-4	Potential negative risk to site circulation by above-grade bus bar crane power systems		Likely	Marginal	MODERAT E				0					
FL-5	Potential negative risk of additional site lighting on JBER nighttime aircraft operations		Very Unlikely	Significant	LOW				0					
FL-6	Potential negative risk of certain fender systems interfering and causing ship line damage during tide cycle		Likely	Marginal	MODERAT E				0					
FL-7	Potential negative risk to structures and appurtenances by aggressive corrosion environment	USING REINFORCED CONCRETE	Unlikely	Marginal	LOW									

				Projec	t Cost			Project S	Schedule					
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	Affected Project
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	C C	Component
	Potential negative risk to structures and													
	appurtenances by ice													
FL-8	flows and large tide cycle range		Unlikely	Marginal	LOW									
120	cycle range		Offinicity	iviaigiilai	LOW									
	Potential negative risk													
	associated with existing condition of existing													
FL-9	structures and utilities		Unlikely	Marginal	LOW				0					
Program	matic Risks (External Ri	isk Items are those that are generat	ed, caused, o	or controlled e	exclusively or	itside the PD	T's sphere of	influence.)					T	
		The history of the project has created a problem with public												
		trust that has caused the budget												
		to be funded incrementally. How												
		can these challenges be overcome to attain funding												
		needed? Impact of incremental												
	Public trust	funding has to be addressed so-												
	a. Incremental funding- b. Budget challenge	that public is fully aware of impacts i.e. increasing cost and												
PR-1	b. Budget challenge	delay in completion.	Likely	Significant	HIGH				θ					
		, .	•											
		The base estimate is assuming a												
		10% indirects and 20% OH&P												
		markup structure, which favors a												
		low demand market. Should there be little supply due to												
		increased demand, the												
	Mauliat ann dùtana an d	contractors are expected to add				0 += 450/								
PR-2	Market conditions and bidding competition	overhead and profit, up to 15% more than in the estimate	Likely	Critical	HIGH	0 to 15% more	Likely	Negligible	LOW	none	Triangular		Contracting	Project Cost
	5 1 1 2 2 2 2		,				/	<u> </u>			<u> </u>			,
		This is covered in XX above, but there is some related risk to the												
		contractor that could affect												
		schedule, and thus his escalation				based on								Project Cost &
PR-3	Labor disruptions	exposure	Unlikely	Marginal	LOW	esc	Unlikely	Marginal	LOW	3 mo	Triangular		Construction	Schedule
	Acts of God (seismic events: volcanic													
	activity, earthquakes,	Weather (snow, freezing -												
	tsunamis; or severe	subarctic related) impacts on												
PR-4	weather: freezing,	production - estimate does not include "act of God" level impacts	Unlikely	Marginal	LOW	\$3M	Unlikely	Significant	MODERAT E	6 ma	Triangular		Contracting	Project Cost & Schedule
rr-4	flooding or hurricane)	include actor God lever impacts	Uniikely	Marginal	LOW	φ3IVI	Unikely	Significant		6 mo	mangular		Contracting	Scriedule

				Project Cost				Project \$	Schedule				
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*		Rough Order Impact (mo)		Responsibility/PO C	Affected Project Component
	Acts of God (seismic												
	events: volcanic	Seismic (earthquakes) impacts on											
	activity, earthquakes,	production, labor availability,											
	tsunamis; or severe	materials delivery, placed work											
	weather: freezing,	damages - estimate does not	Very				Very						Project Cost &
PR-5	flooding or hurricane)	include "act of God" level impacts	Unlikely	Critical	LOW	\$50M	Unlikely	Critical	LOW	1 yr	Triangular	Contracting	Schedule

*Likelihood, Impact, and Risk Level to be verified through market research and analysis (conducted by cost engineer).

- 1. Risk/Opportunity identified with reference to the Risk Identification Checklist and through deliberation and study of the PDT.
- 2. Discussions and Concerns elaborates on Risk/Opportunity Events and includes any assumptions or findings (should contain information pertinent to eventual study and analysis of event's impact to project).
- 3. Likelihood is a measure of the probability of the event occurring -- Very Unlikely, Unlikely, Moderately Likely, Likely, Very Likely. The likelihood of the event will be the same for both Cost and Schedule, regardless of impact.
- 4. Impact is a measure of the event's effect on project objectives with relation to scope, cost, and/or schedule -- Negligible, Marginal, Significant, Critical, or Crisis. Impacts on Project Cost may vary in severity from impacts on Project Schedule.
- 5. Risk Level is the resultant of Likelihood and Impact Low, Moderate, or High. Refer to the matrix located at top of page.
- 6. Variance Distribution refers to the behavior of the individual risk item with respect to its potential effects on Project Cost and Schedule. For example, an item with clearly defined parameters and a solid most likely scenario would probably follow a triangular or normal distribution.

 An risk item for which the PDT has little data or probability of modeling with respect to effects on cost or schedule (i.e. "anyone's guess") would probably follow a uniform or discrete uniform distribution.
- 7. The responsibility or POC is the entity responsible as the Subject Matter Expert (SME) for action, monitoring, or information on the PDT for the identified risk or opportunity.
- 8. Correlation recognizes those risk events that may be related to one another. Care should be given to ensure the risks are handled correctly without a "double counting."
- 9. Affected Project Component identifies the specific item of the project to which the risk directly or strongly correlates.
- 10. Project Implications identifies whether or not the risk item affects project cost, project schedule, or both. The PDT is responsible for conducting studies for both Project Cost and for Project Schedule.
- 11. Results of the risk identification process are studied and further developed by the Cost Engineer, then analyzed through the Monte Carlo Analysis Method for Cost (Contingency) and Schedule (Escalation) Growth.

ATTACHMENT B COST ESTIMATE (INPUT TO CSRA)

Cost Estimate

Port of Anchorage Intermodal Expansion Project 15% Concept Plans – Option 5 Contract No. W912PP-09-D-0016 Task Order ZJ03

Prepared for

Alaska District U.S. Army Corps of Engineers

February 26, 2013



2020 SW 4th Avenue 3rd Floor Portland, Oregon 97201

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Tables

1 Overall Costs

Cost Estimate

1. Executive Summary

The construction cost for the project is described herein and in Table 1.

TABLE 1
Overall Costs

Accuracy Range per ASTM E2516 - 11, Standard Classification for Cost Estimate Classification System, see Section 2.5

Description	Amount	Rounded
Option 5 estimate	\$619,720,950	\$620,000,000
Hi range + 30%	\$805,637,235	\$805,000,000
Lo range – 15%	\$526,762,807	\$525,000,000

ASTM = American Society for Testing and Materials (formerly, now ASTM International)

The executive summary provides an overview of the Cost Estimate. Reliance on this information is advised to be in consideration of the full context of this report.

2. Estimate Information

2.1 Purpose of Estimate

The purpose of this Cost Estimate is to establish an engineer's opinion of probable cost for design documents at 15% concept design, suitable for further development using U.S. Army Corps of Engineers (USACE) Cost and Schedule Risk Analysis (CSRA) Guidance (17 May 2009) to calculate total project costs.

2.2 Client

The client is the Alaska District USACE.

2.3 Project Location and General Scope

The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately 1 mile north of downtown Anchorage. The scope of the work is to demolish an existing wharf, trestle and sheet pile wall, construct a new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities, and utilities.

2.4 Date and Preparation

The estimate was prepared January and February 2013, by CH2M HILL team members as listed:

- Jorge Abisambra/WPB
- Robert Wells/PDX, phone 503-872-4622 x24622
- Joe Taylor/ANC (quantities)
- John O'Reilly/SAC (quality assurance and quality control)

The estimate was requested by Doug Playter/ATL for project number 462130.

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2.5 Estimate Classification and Methodology

This cost estimate prepared is considered a Budget Level or Class 4 estimate per American Society for Testing and Materials (ASTM) E2516-11. It is considered accurate to +30% to -15%, based upon a design deliverable (15% Concept Plans).

The estimating effort did decompose the scope to a sufficient level to support a thorough analysis of all major cost elements at the work package level, for purposes of performing risk analysis and identifying those critical items which might be expected to create cost variances of +0.5% in the bottom line estimate.

The individual scope items inclusions under Section 3.b.vi of the Task Order preceded by an asterisk were estimated by parametric estimating techniques. The estimated costs for these asterisked items were developed using the 11 April 2012 Port of Anchorage (POA) Intermodal Expansion Project Budgetary Cost Estimate Report and calculated as "blended costs" per unit of measure. The estimated costs for the Marine Terminal Buildings (complete structures, including foundation, structure, shell, interior finishes, and all utilities) were calculated by parametric technique.

This estimate was developed, as required by USACE CSRA Guidance (17 May 2009), as an input to the CSRA. The CSRA is a separate document prepared concurrently with this estimate. The CSRA then used three-point range estimates for each of the 15% Concept Plans to forecast costs for each scope element not otherwise identified for estimation by parametric techniques. Further, *Monte Carlo* assessment performed a sensitivity analysis of critical items and a simulation on the individual cost elements to provide a probabilistic evaluation of the reported estimated project costs (Cost Risk Analysis Model). A quantitative analysis was performed for those project risks identified for such analysis (Risk Register development and Qualitative Analysis from Task 3, Charrette). This information, along with further supplemental information derived from PDT members during the cost estimating phase, formed the basis of the Cost Risk Analysis and Schedule Risk Analysis under the CSRA effort.

The estimate is appended to this report as Appendix A.

3. Basis of Estimate

3.1 Basis Documents

The estimate is based on 15% drawings for Option 5, developed by CH2M HILL, dated February 2013. Additionally, the estimate used portions of the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, as directed, for parametric cost estimating.

3.2 Key Assumptions

- Project is to be offered to bidders on a lowest responsive basis, in time to allow construction progress to begin April 2015.
- Permitting and regulatory agencies to have issued all permits, modifications, and amendments, so as not to impede the construction start and progress in any way.
- Project is to be fully funded prior to the start of construction.

3.3 Project Delivery Schedule and Method

It is assumed that the environmental, permitting, and design phase will continue to early 2015, with a bid and award date that supports an April 2015 construction start. The scheduled duration for Option 5 is 54 months, ending late 2019. The assumed delivery method is a single prime contract with the Municipality of Anchorage, Alaska.

3.4 Labor, Materials, Subcontracts and Other Direct Costs

3.4.1 Labor

Labor rates used are based on 2013 prevailing wage rates adjusted for Anchorage, Alaska, as well as those used in the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjusted for inflation by 1.28%.

3.4.2 Materials

Materials pricing is based on recent and historical vendor quotations, as well as pricing used in the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjusted for inflation by 1.28%.

3.4.3 Subcontracts

It is assumed that the Prime Contractor may employ various specialty subcontractors, such as electrical, telecom, utility and earthwork subcontractors.

3.4.4 Long Lead Items

Galvanized steel sheet and cylinder piling, fender materials assumed to be 5 months lead-time.

3.4.5 Owner Supplied

Steel sheet pile in quantities assumed to supply the majority of bulkhead materials.

3.4.7 Allowances

Landscaping allowance for restoration of disturbed areas, \$150,000 subcontractor price.

3.5 Markups, Taxes and Other Indirect Costs

Detail on markups used, taxes included, contingencies, or owner costs or any other cost additions. Note that the costs and pricing used.

•	General requirements/site indirect costs	10%
•	Taxes on material and equipment	0%
•	Prime Overhead, Profit	20%
•	Bond	1%
•	Contingency	20%
•	PM, CM and Design (Owner's Costs)	18%
•	Owner's Contingency (Reserve)	8.5%

3.6 Market Conditions

Market conditions adjustments were not considered for this project; it remains market neutral. An adjustment is unwarranted because of market condition volatility and because the project is to be executed in the future.

3.7 Escalation Costs

Escalation is based on USACE EM 1110-2-1304 (31 March 2012), TABLE A-1, QUARTERLY COST INDEX BY CWBS FEATURE CODE. Feature codes relevant to this project are:

- 08 Roads, Railroads, and Bridges (Cherry Hill Road, Rail extension)
- Navigation Ports & Harbors (Wharf and bulkhead, including dredging and demo)
- 16 Bank Stabilization (Slope protection)
- 19 Buildings, Grounds, & Utilities (Landside work)

Escalation costs are estimate in two parts: The first part is to escalate the project costs prepared in February 2013 dollars to the assumed bid date of April 2015; the second part is the escalation of costs through the duration of the project, the mid-point of which is assumed to be mid 2014. The severing of escalation will allow the project to input into CSRA, removing only the escalation for the project duration, which then will be modeled per the CSRA guidance.

3

The use of costs, as directed, from the POA Intermodal Expansion Project Budgetary Cost Estimate Report, dated 11 April 2012, required the addition of 1.28% escalation to bring it current to the year and month of estimate, February 2013.

3.8 Detailed Scope, Clarifications, Inclusions and Exclusions

3.8.1 Civil Scope

Option 5 would involve construction of new pile-supported wharves and trestles at the same location as the wharves and trestles at Terminals 2 and 3. A new sheet pile bulkhead would be required at the north extension and behind the new berths at Terminals 2 and 3, in front of the existing port upland area. Approximately 27 acres of new paved upland area would be provided, along with a new Wet Barge Berth.

The integrity and function of the existing Dry Barge Berth would be maintained, but removal of the existing OCSP® system, mass excavation of existing embankment, and construction dredging would be required. The remaining slopes would be protected with a layer of armor stone.

3.8.2 Demolition of Existing Infrastructure and Mass Excavation

The Option 5 demolition plan is depicted in Civil Sheet C4 of Appendix F. Option 5 would require significant demolition of existing infrastructure and mass excavation.

At the southern end of the project, existing Terminals 2 and 3, including utilities, crane rail, wharf, and piling, would require demolition.

At the north extension portion of the project, the OCSP® system including tail walls would be demolished from the existing Dry Barge Berth south. The portions of traditional Z-pile walls previously installed at the north extension would also be removed. The OCSP® system installed for the Dry Barge Berth would remain in place.

Mass excavation of previously constructed embankment and construction dredging would be required. Salvage of existing armor stone would also be included. Concept excavation, dredging, and armor stone salvage quantities are shown in the civil partial site plans and typical sections in Appendix F. The existing Dry Barge Berth would be maintained in approximately its existing condition but some regrading at the interface between the Dry Barge Berth and new upland area would be required.

3.8.3 Civil Elements to be Constructed

Option 5 would include the following specific civil design elements:

- Water service and fire suppression lines
- Sanitary sewer lines
- Storm drain piping and inlets
- Electrical, communication, security, and crane power lines
- Cherry Hill Haul Road realignment and new rail spur
- Paved upland area
- Landscaped areas
- Site grading and drainage

3.8.4 Structural Scope

The main structural components of Option 5 would consist of three pile-supported wharves, nine access trestles, a cellular steel sheet pile bulkhead, and several retaining walls. Other ancillary structural components to support port operations would include heavy-duty fenders, mooring bollards, quick release hooks along the wharf face, two stevedore buildings, and container-crane-supporting infrastructure. The pile-supported wharves would provide 2,900 linear feet of new dock face and three new berths: (1) a barge berth to support containerized, break bulk, or bulk cargo operations; (2) an roll-on/roll-off (RO/RO) berth to support containerized RO/RO operations; and (3) a container cargo berth to support lift-on/lift-off (LO/LO) container cargo operations.

3.8.5 Slope Protection

The embankment slopes at the Wet Barge Berth and north extension location would be covered by a 6-foot-thick layer of armor rock and riprap. Use of the armor rock and riprap would be a mitigation measure to prevent piping conditions at the slope surface.

3.8.6 Corrosion Protection

Corrosion Protection System for Pile-Supported Wharf

The steel casing in the top part of the hybrid piles would be sacrificial. The presence of the steel casing would delay onset of corrosion in the reinforced concrete core. A corrosion allowance is built into the design of the hollow steel pipe pile that would form the lower part of the hybrid pile. All steel reinforcing bar used in the pile-supported wharf and trestle, including deck, piles, and pile caps, would be epoxy-coated to increase corrosion resistance. High-performance concrete water/cement ratio and air entrainment admixture will be in accordance with American Concrete Institute 201.2R, *Guide to Durable Concrete*, to establish a dense, low-permeability concrete.

Corrosion Protection System for Sheet Pile Bulkhead and Retaining Wall

All existing sheet piles in the POA stockpile were specified to be hot-dip galvanized with a minimum zinc thickness of 6 to 12 mils. Galvanization would be the sole corrosion protection element for sheet piles exposed to the atmospheric and splash zones. An impressed current cathodic protection system would protect structural components submerged in or in contact with soil. Cathodic protection anodes would be installed on the seaside of sheet piling for protection of seaside surfaces, and additional anodes would be installed in drilled holes landside to protect surfaces exposed to soil and mud.

3.8.7 Exclusions

- Hazardous materials handling and disposal
- Natural gas utilities

3.9 Cost Resources

The following cost resources were used in the development of the cost estimate.

- 11 April 2012 POA Intermodal Expansion Project Budgetary Cost Estimate Report
- Vendor guotes on equipment and materials
- · Estimator judgment



POA 15% CONCEPT OPTION 5

	Ед Ор Ехр	Sub	Misc1	Misc2	Misc3 To	tal Escalation
	0 100.00 %	0 100.00%	0 100.00 %	0 100.00 %	0 100.00 %	0 100.00 %
Escalation on:	Labor	Burden	Perm Matl	Const Matl	Co Eqp	Rented Eqp
	% of Total	100.000%	0.000%	100.000%		
	Total Costs:	300,117,045.67		300,117,045.67	100.00	01%
	Other	45,309,689.49		45,309,689.49	15.09	97%
	Subs	65,749,217.44		65,749,217.44	21.90	08%
	Equipment	35,472,913.91		35,472,913.91	11.82	
	Const Exp	912,829.90		912,829.90	0.30	
	Perm Matl	25,462,742.00 127,209,652.93		25,462,742.00 127,209,652.93	8.48 42.38	
	Burden Lab+Bur	10,389,239.50		10,389,239.50		52%
	Labor	15,073,502.50		15,073,502.50		23%
		DIRECT	INDIRECT	_	% OF TO	

^{*} Data Below here is dependent on the Summary Process. * The Summary Process was last run 02/26/2013 at 8:58 PM

Markup on Resource Costs	68,745,517.13	22.9062%
MARKUP TOTALS ===> Cost Addons	68,745,517.13	22.9062%
Escalation to February 2015 3.4700 % of Cost, Mkup, & Prev	13,014,571.31	4.3365%
Escalation to Proj Midpoint 3.9400 % of Cost, Mkup, & Prev	15,290,125.97	5.0947%
Contingency 20.0000 % of Cost, Mkup, & Prev Addons	80,672,877.84	26.8805%
PM, CM, Design 18.0000 % of Cost, Mkup, & Prev Addons	87,126,708.06	29.0309%
Owner's Contingency 8.5000 % of Cost, Mkup, & Prev Addon	48,548,937.88	16.1767%
Bond from Summary Table	6,197,129.12	2.0649%
MARKUP, ADDON & BOND TOTALS ===>	319,595,867.31	106.4904%
COST + MARKUP>	\$619,712,912.98 (On Takeoff Quantity)	(% of costs)
There * ARE NOT * closing accounts for this bid.		
		-Effect on Bid-
Rounding difference:	8,036.58	Adjusted
Unbalancing difference: From Cut&Add Sheet-costs:		(on Bid Quantity)
From Cut&Add Sheet-costs. From Cut&Add Sheet-markup:		(on Bid Quantity)
Pass Through Adjustments:		None None

02/26/2013

21:00

13-008-5

POA 15% CONCEPT OPTION 5

*** Bob Wells

BID TOTALS

PHASE I	<u>Biditem</u>	<u>Description</u>	Quantity	<u>Units</u> <u>Unit Price</u> <u>Bid Total</u>
30050 Demolition	30040	Construction Staging	1.000	LS 1,865,869.73 1,865,869.73
30050 Demolition		PHASE I		
300555	30050		1.000	LS 33,287,672.92 33,287,672.92
30060				
30080 Sheet Pile Bulkhead		• •		
Credit Free Issue Sheet Pile		•		
Concrete Deck Superstructure				LS-19,064,062.12 -19,064,062.1
30100 Abutments	30090	Concrete Deck Superstructure	51,600.000	
Slope Protection	30100	<u> •</u>	2.000	
PHASE I & III	30120	Fendering	1.000	LS 1,795,507.98 1,795,507.98
30250 Demolition 1.000 LS	30140	· · · · · · · · · · · · · · · · · · ·	119,000.000	CY 231.71 27,573,490.00
30250 Demolition 1.000 LS		PHASE II & III		
30260 Piling Wharf Area II & III 168,378.000 FT 1,099.64 185,1230290 Concrete Deck Superstructure & Rail Foundation 235,069.000 SF 214,06 50,318 30300 Abutments 7.000 EA 374,648.16 2,622 30310 100-gage Crain Rails 2,160.000 FT 428.88 922 30320 Fendering 1.000 LS 3,995,096.26 3,995 30320 Fendering 1.000 LS 3,995,096.26 3,995 30320 Surface Pavements 1.000 LS 671,910.89 671 30550 Surface Pavements 1.000 LS 671,910.89 671 30570 Surface water control 1.000 LS 1,898,350.66 1,898 30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30610 Electrical Power Utilities 1.000 LS 742,657.21 744 30610 Electrical Power Utilities 1.000 LS 1,9077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 3,09,735.61 30560 Marine Terminal Buildings incl Crane Maint 1.000 LS 3,09,735.61 30560 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068 30690 Other 1.000 LS 9,068,5	30250		1.000	LS
Concrete Deck Superstructure & Rail Foundation 235,069,000 SF 214,06 50,318 30300 Abutments 7.000 EA 374,648.16 2.622 30320 Fondering 1.000 LS 3,995,096.26 3,992 30320 Fondering 1.000 LS 3,995,096.26 3,992 30320 Fondering 1.000 LS 3,995,096.26 3,992 30320 Surface Pavements 1.000 LS 671,910.89 671 30550 Surface Pavements 1.000 LS 671,910.89 671 30570 Surface water control 1.000 LS 671,910.89 671 30570 Surface water control 1.000 LS 1,898,350.66 1,898 30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 724,657.21 744 30610 Electrical Power Utilities 1.000 LS 742,657.21 744 30610 Electrical Power Utilities 1.000 LS 742,657.21 74 30620 Natural Gas Utilities 1.000 LS 6,776,026.11 6,776 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 3,09,735.61 30650 Surface Restoration/Landscaping 1.000 LS 3,09,735.61 30680 Marine Terminal Buildings incl Crane Maint 1.000 LS 3,09,735.61 30680 Cherry Hill Road Upgrades 1.000 LS 9,068,571.41 9,068 30690 Other 1.000 LS 9,068,571.41 9,068				
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***Subtotal Marine Work \$483,955				
#**Subtotal Marine Work \$483,955 GENERAL CONSTRUCTION 30550 Surface Pavements 1.000 LS 41,788,890.59 41,788,30560 Traffic Control Parking 1.000 LS 671,910.89 673 30570 Surface water control 1.000 LS 1,898,350.66 1,898,30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657,21 74 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30630 Telecommunications Utilities 1.000 LS 2,07 30630 Telecommunications Utilities 1.000 LS 6,776,026,11 6,776 30640 Railroad Spur 1.000 LS 14,048,783,48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 30 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 3,999,649.02 5,999 30670 Corrosion Control 1.000 LS 3,599,549,79 23,255 30680 Cherry Hill Road Upgrades 1.000 LS 9,068,571.41 9,068				
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30550 Surface Pavements 1.000 LS 41,788,890.59 41,788 30560 Traffic Control Parking 1.000 LS 671,910.89 671 30570 Surface water control 1.000 LS 1,898,350.66 1,898 30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 74 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 6,776,026.11 6,776 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 2,3254,949,79 23,255 30680 Cherry Hill Road Upgrades 1.000 LS 9,068,571.41 9,068 <th></th> <th>***Subt</th> <th>otal Marine Work</th> <th>\$483,955,122.01</th>		***Subt	otal Marine Work	\$483,955,122.01
30560 Traffic Control Parking 1.000 LS 671,910.89 673 30570 Surface water control 1.000 LS 1,898,350.66 1,898 30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 742 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 6,776,026.11 6,776 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 1,699,597.78 1,699 30680 Cherry Hill Road Upgrades 1.000 LS 9,068,571.41 9,068 30690 Other 1.000 LS 9,068,571.41 9,068		GENERAL CONSTRUCTION		
30570 Surface water control 1.000 LS 1,898,350.66 1,898 30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 742 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 2.07 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30550	Surface Pavements	1.000	LS 41,788,890.59 41,788,890.59
30580 Potable Water Utilities 1.000 LS 5,214,448.59 5,214 30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 742 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 6,776,026.11 6,776 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 9,068,571.41 9,068 30690 Other 1.000 LS 9,068,571.41 9,068	30560	Traffic Control Parking	1.000	LS 671,910.89 671,910.89
30590 Fire Suppression Utilities 1.000 LS 5,214,448.59 5,214 30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 742 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 2.07 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30570	Surface water control	1.000	LS 1,898,350.66 1,898,350.66
30600 Sanitary Sewer Utilities 1.000 LS 742,657.21 742 30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077 30620 Natural Gas Utilities 1.000 LS 2.07 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30580	Potable Water Utilities	1.000	LS 5,214,448.59 5,214,448.59
30610 Electrical Power Utilities 1.000 LS 19,077,805.75 19,077,305.75 19,077,305.75 19,077,306	30590	Fire Suppression Utilities	1.000	LS 5,214,448.59 5,214,448.59
30620 Natural Gas Utilities 1.000 LS 2.07 30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30600	Sanitary Sewer Utilities	1.000	LS 742,657.21 742,657.21
30630 Telecommunications Utilities 1.000 LS 6,776,026.11 6,776 30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30610	Electrical Power Utilities	1.000	LS 19,077,805.75 19,077,805.75
30640 Railroad Spur 1.000 LS 14,048,783.48 14,048 30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30620	Natural Gas Utilities	1.000	LS 2.07 2.07
30650 Surface Restoration/Landscaping 1.000 LS 309,735.61 309 30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30630	Telecommunications Utilities	1.000	LS 6,776,026.11 6,776,026.11
30660 Marine Terminal Buildings incl Crane Maint 1.000 LS 5,999,649.02 5,999 30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30640	Railroad Spur	1.000	LS 14,048,783.48 14,048,783.48
30670 Corrosion Control 1.000 LS 23,254,949.79 23,254 30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30650	Surface Restoration/Landscaping	1.000	LS 309,735.61 309,735.61
30680 Cherry Hill Road Upgrades 1.000 LS 1,699,597.78 1,699 30690 Other 1.000 LS 9,068,571.41 9,068	30660	Marine Terminal Buildings incl Crane Maint	1.000	LS 5,999,649.02 5,999,649.02
30690 Other 1.000 LS 9,068,571.41 9,068	30670	Corrosion Control	1.000	LS 23,254,949.79 23,254,949.79
	30680	Cherry Hill Road Upgrades	1.000	LS 1,699,597.78 1,699,597.78
***Subtotal General Construction \$135,765	30690	Other	1.000	LS 9,068,571.41 9,068,571.41
Subtotal Collectal Collistituction \$155,700		***Subtotal Car	neral Construction	\$135,765,827.55
		Subiotal Gel	iciai Construction	\$155,705,627.55

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9100000

M105

M165

Subsistance 5 workers

M-Piledriver

Foreman - General Marine 1.00

2.00 DA

20.00 MH

20.00 MH

1.00

500.000

35.720

34.950

1,251

1,385

1,000

1,000

1,251

1,385

13-008-5	POA 15% CONCEPT OPTION 5		02/26/2013	21:01
Bob Wells		Direct Cost Report		

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost		erm Cons erial Matl/Ex		p Sub- it Contract	Total
PARENT ITEM Description = Listing of Sub-l	I = 30040 CLIEN Construction Staging Biditems of Parent Item 3004	NT# = (2-12	Unit =	LS	Takeoff Quan	: 1.0	00 Eng	gr Quan:	1.000
2334119 01 5415 2	<u> </u>									
PARENT ITEM Description =	Mobilization and Demobiliza		3-12	Unit =	LS	Takeoff Quan	: 1.0	00 Eng	gr Quan:	1.000
Listing of Sub-I	Biditems of Parent Item 3004	12:								
BID ITEM = Description =	= 30043 CLIEN Mobilization	NT# = 0	3-12	Land Item Unit =	SCHEDUL LS	LE: 1 Takeoff Quan	100	00 Eng	gr Quan:	0.000
219000	Misc Hauling/Trucking			Quan:	1.00 L	S Hrs/Shft	t: 10.00 C	al: 510 W	C: CCISP	
*****	9	v./ mp.	PMOT\ DOD\ 1	000 511						
_	d and adjusted from d									
-	j	,								
20 loade v	1 = 20 hours									
5TRKFB	Trucking - Flat Bed		20.00 HR		100.000		2,00	0		2,000
540000	Temporary Construction	Fence		Quan:	750.00 L	F Hrs/Shft	t: 10.00 C	al: 510 W	C: CCISP	
**** Copie	d and adjusted from	Y:\TB0	G-ENGI\EST\13	3-008-5H	****					
	d and adjusted from						_			
	nk fence will cost \$ CE Temporary Chainlinkfence	9.00/	ft. then car 750.00 LF	n be sold	installe 12.000	d at \$15/:	ft 9,00	0		9,000
STCHAINTENC	LE Temporary Chammikrence		730.00 EF		12.000		9,00			9,000
890005	Pile Crew Mobilization			Quan:	1.00 L	S Hrs/Shft	t: 10.00 C	al: 510 W	C: CCISP	
**** Conie	d and adjusted from	V:\TR(-ENGI\EST\13	R-008-5H	****					
_	d and adjusted from '									
**** Copie	d and adjusted from	C:\HEA	VYBID\EST\01	L2-008A *	***					
Mobilizatio	n form Tacoma Washin	at on								
MARPIL	Marine Piling & Demo Crev	_	20	0.00 CH	Prod:	2.0000	S Lab Pc	s: 6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		2.00 DA		70.000		14		11	140
8211050	Fuel, Oil, Grease 50g/d		2.00 DA		200.000			40	0	400
8CRANEC200	Crane Manitowoc 777 20	1.00	20.00 HR		163.361			3,26	7	3,267
8DRILLR	***DRILLS - ROCK***	1.00	20.00 HR		17.500			350		350
8MAC-A-10	Compressor 185 CFM	1.00	20.00 HR		3.000			6	0	60
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	20.00 HR		10.000			20	0	200
8MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 HR		17.500			350	0	350
8MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 HR		20.000			40	0	400
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000			6	0	60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000			10		100
8MDH-A-7	DELMAG D19 HAMMER	1.00	20.00 HR		10.000			20		200
8MFD-A-1										200
	FAIRLEADS	1.00	20.00 HR		0.100				2	2
8MGN-Z-11	FAIRLEADS Generator 10 KW	1.00	20.00 HR		0.100 3.000			6	0	2 60
8MLT-A-1	FAIRLEADS Generator 10 KW Light Tower, Genie	1.00 1.00	20.00 HR 20.00 HR		0.100 3.000 3.500			60 70	0	2 60 70
8MLT-A-1 8MPE-A-11	FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile	1.00 1.00 1.00	20.00 HR 20.00 HR 20.00 HR		0.100 3.000 3.500 5.000			60 70 100	0 0 0	2 60 70 100
8MLT-A-1 8MPE-A-11 8MVP-A-11	FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	1.00 1.00 1.00 1.00	20.00 HR 20.00 HR 20.00 HR 20.00 HR		0.100 3.000 3.500 5.000 6.500			60 70 100 130	0 0 0 0	2 60 70 100 130
8MLT-A-1 8MPE-A-11 8MVP-A-11 8MWH-A-1	FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00 1.00 1.00 1.00 1.00	20.00 HR 20.00 HR 20.00 HR 20.00 HR 20.00 HR		0.100 3.000 3.500 5.000 6.500 10.000			60 70 100 130 200	0 0 0 0	2 60 70 100 130 200
8MLT-A-1 8MPE-A-11 8MVP-A-11	FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	1.00 1.00 1.00 1.00	20.00 HR 20.00 HR 20.00 HR 20.00 HR		0.100 3.000 3.500 5.000 6.500			60 70 100 130	0 0 0 0 0 0	2 60 70 100 130

Page 2

POA 15% CONCEPT OPTION 5 02/26/2013 13-008-5 21:01 Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity U	Jnit		Unit Cost	Labor	Peri Materia	m Constr al Matl/Exp	Equip Ment (Sub- Contract	Total
BID ITEM = Description =	30043 CLIEN	NT# = ()3-12		Land Item Unit =	SCHEDU LS	JLE: Takeoff		100	Engr Q)uan:	0.000
	M W-14	1.00	20.00.1	411						0		
M170	M-Welder M-Skilled Laborer	1.00 1.00	20.00 M			41.050	1,561					1,561
M190 M195	M-Laborer	1.00	20.00 M 20.00 M			35.430 35.430	1,399 1,399					1,399 1,399
OPCR100	Op Eng 1A- Crane 100-200		20.00 P			39.190	1,342					1,342
\$16,384.16	120.0000 MH/L		120.00 M			[4878.94]	8,335		1,140	6,909		16,384
890006	Carpenter Crew Mob				Quan	: 1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC:	CCISP	
**** Copied	d and adjusted from	Y:\TBG	G-ENGI\ES	T\13	3-008-5Н	****						
_	d and adjusted from	Y:\TBG	G-ENGI\ES			***						
MARWOO	Marine Carpenters Crew				0.00 CH	Prod	l: 2.0	0000 S	Lab Pcs:	10.00	Eqp Pcs:	16.00
8211050	Fuel, Oil, Grease 50g/d		2.00 I			200.000				400		400
8CRANEC100	Crane Manitowoc 222B 1	1.00	20.00 I			106.961				2,139		2,139
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	20.00 I			3.000				60		60
8MBC-Z-1	Barge Carpenter 12'X40	1.00	20.00 H			6.500				130		130
8MBC-Z-2	Barge Carpenter 12'X40	1.00	20.00 H			6.500				130		130
8MBS-Z-9	Spud Barge M-80x28'	1.00	20.00 H			10.000				200		200
8MBW-Z-2	18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00	20.00 H			3.000				60		60
8MCE-A-40		1.00	20.00 I 20.00 I			5.000				100 2		100 2
8MCN-A-13	Container Steel 20' Work Float	1.00 1.00				0.100 2.000				40		40
8MFW-A-1 8MFW-A-2	Work Float	1.00	20.00 I 20.00 I			2.000				40		40
8MGN-Z-17	Generator 8 KW	1.00	20.00 I			2.000				40		40
8MGN-Z-17	Generator 8 KW	1.00	20.00 I			2.000				40		40
8MLT-A-2	Light Tower, Genie	1.00	20.00 I			3.500				70		70
8MVP-A-2	FORD F150 SUPERC 2	1.00	20.00 I			6.500				130		130
8WELD400	Welder 400 AMP	2.00	40.00 I			2.044				82		82
M100	Foreman - Carpenter	1.00	20.00 N	ИΗ		34.720	1,222					1,222
M170	M-Welder	1.00	20.00 M	ИΗ		41.050	1,561					1,561
M173	M-Lead Carpenter	1.00	20.00 1	ИΗ		35.490	1,400					1,400
M175	M-Carpenter	3.00	60.00 N	ИΗ		35.490	4,201					4,201
M180	M-Carpenter Helper	3.00	60.00 I	ИΗ		35.490	4,201					4,201
OPCR100	Op Eng 1A- Crane 100-200	1.00	20.00 M	ИΗ		39.190	1,342					1,342
\$17,589.31	200.0000 MH/L	S	200.00 N	ИΗ		[7994.58]	13,926			3,663		17,589
960015	Rigging Supplies				Quan	: 1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC:	CCISP	
**** Copied	d and adjusted from d and adjusted from Rigging Supplies	Y:\TB0	G-ENGI\ES	T\12 T\01	2-060A ** L2-008A *	***			15,000			15,000
====> Item '	Γotals: 30043 -	Mobili	zation			_						
\$59,973.47	320.0000 MH/LS		320.00 M	ИΗ]	12873.52]	22,261		27,140	10,572		59,973
59,973.470	1 LS					:	22,261.43		27,140.00 1	0,572.04	5	9,973.47
BID ITEM =	30044 CLIEN	NT#= ()3-12		Land Item	SCHEDU	JLE:	1	100			
Description =	Transportation				Unit =		Takeoff		1.000	Engr Q	Quan:	0.000
219000	Misc Hauling/Trucking				Quan	: 1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC:	CCISP	

^{*****} Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ****

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02/26/2013 21:01

Direct	Cost	Repor

	Desc	Pcs	Quantity Unit		Unit Cost	Labor N	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = Description =	Transportation	CLIENT# = 03	-12	Land Item Unit =	SCHEDUI LS	LE: 1 Takeoff Q		1.000	Engr	Quan:	0.000
20 loads x 6	4 hours = 80 hour Trucking - Flat Bed	rs	80.00 HR		100.000			8,000			8,000
890007	Marine Tugs			Quan:	1.00 I	LS Hrs/S	Shft: 1	10.00 Cal:	510 WC	: CCISP	
***** Copie	d and adjusted fi	rom Y:\TBG-	-ENGI\EST\1	3-008-5Н *	****						
Distance Tac at 4.5 knots	ing services to a comma to Anchorage s, 1,472/4.5= 32 and 14 days back	e: 1,472 N 7 hours ===	Miles => 13.62 da	ys say 14							
_	eds to go back a		_	_	mohilizat	ion					
		na ao ie ai	ir over aga	III IOI GC		21011					
so, say 60 o 5TUGSERVICE 8211060 \$738,600.00	_	1400	60.00 DA 60.00 DA		5,500.000 5,810.000			390,000 390,000	348,600 348,600		390,000 348,600 738,600
====> Item \$746,600.00 746,600.000	Totals: 30044	- Transpo	rtation		[]		3	398,000 398,000.00	348,600 348,600.00	74	746,600 46,600.00
BID ITEM = Description =		CLIENT# = 03	12	Land Item	SCHEDUI	LE: 1	10	,,,			
115000	Demobilization Remove Fence (Chai	in Link)		Unit = Quan:		Takeoff Q		1.000 10.00 Cal:		Quan: : CCISP	0.000
**** Copied		rom Y:\TBG- rom Y:\TBG- ft of link and /d Y 8.00 2B 1 1.00 Gas 4.00 ss arine 1.00 8.00 0-200 1.00 0 3Y 8.00	ENGI\EST\1 fencing to	Quan: 3-008-5H * 2-060A *** limit the 0.00 CH	1.00 I ****	LS Hrs/S	Shft: 1				
***** Copied ***** Copied Per drawings MARLAN 8211050 8BHLD480 8CRANEC100 8TRKPU10 9100010 M105 M150 M195 OPCR100 OPEXC3	Remove Fence (Chair d and adjusted find and adjusted find and adjusted find the state of the sta	rom Y:\TBG- rom Y:\TBG- rom Y:\TBG- ft of link and /d /Y 8.00 2B 1 1.00 Gas 4.00 ss arine 1.00 8.00 1.00 8.00 10-200 1.00 5 3Y 8.00 MH/LS	ENGI\EST\1 fencing to 1.00 DA 80.00 HR 10.00 HR 40.00 HR 1.00 DA 10.00 MH 10.00 MH 10.00 MH 80.00 MH 10.00 MH 10.00 MH	Quan: 3-008-5H * 2-060A *** limit the 0.00 CH	1.00 I ***** Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 39.190 37.430	625 756 5,594 671 5,193 12,840	Shft: 1	Lab Pcs:	19.00 200 3,638 1,070 282	Eqp Pes:	13.00 200 3,638 1,070 282 1,000 625 756 5,594 671 5,193

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02/26/2013

	Direct	Cost Report	
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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor 1	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
		NT# = (03-12	Land Item	SCHEDU			00		_	
Description =	Demobilization			Unit =	LS	Takeoff Q	(uan:	1.000	Engr	Quan:	0.000
8MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 HR		17.500				350		350
8MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 HR		20.000				400		400
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000				60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000				100		100
8MDH-A-7	DELMAG D19 HAMMER		20.00 HR		10.000				200		200
BMFD-A-1	FAIRLEADS	1.00	20.00 HR		0.100				2		2
BMGN-Z-11	Generator 10 KW	1.00	20.00 HR		3.000				60		60
BMLT-A-1	Light Tower, Genie	1.00	20.00 HR		3.500				70		70
BMPE-A-11	Extractor Pile	1.00	20.00 HR		5.000				100		100
MVP-A-11	FORD F150 SUPERC 10	1.00	20.00 HR		6.500				130		130
MWH-A-1	WINCH 3-DRUM RB-90	1.00	20.00 HR		10.000				200		200
SMWM-C-1	Welder Diesel 400 AMP	1.00	20.00 HR		2.500				50		50
PILE26	Vibro Hammer 150 TN	1.00	20.00 HR		45.492				910		910
100000	Subsistance 5 workers	4.65	2.00 DA		500.000			1,000			1,000
И105	Foreman - General Marine	1.00	20.00 MH		35.720	1,251					1,251
M165	M-Piledriver	1.00	20.00 MH		34.950	1,385					1,385
И170	M-Welder	1.00	20.00 MH		41.050	1,561					1,561
И190	M-Skilled Laborer	1.00	20.00 MH		35.430	1,399					1,399
И195	M-Laborer	1.00	20.00 MH		35.430	1,399					1,399
PCR100	Op Eng 1A- Crane 100-200		20.00 MH		39.190	1,342					1,342
	120.0000 MH/L	S	120.00 MH	[4	1878.94]	8,335		1,140	6,909		16,384
16,384.16											
<u> </u>	Subcontractor Carpenter		emob	Quan:	1.00	LS Hrs/	Shft: 1	10.00 Cal:	510 WC	: CCISP	
390011	Subcontractor Carpenter d and adjusted from	Crew D	G-ENGI\EST\1	3-008-5н *	****	LS Hrs/	Shft: 1	10.00 Cal:	510 WC	: CCISP	
390011 ***** Copie	Subcontractor Carpenter d and adjusted from d and adjusted from	Crew D	G-ENGI\EST\1 G-ENGI\EST\1	3-008-5H * 2-060A ***	****						16 00
90011 **** Copie **** Copie MARWOO	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew	Crew D	G-ENGI\EST\1 G-ENGI\EST\1 2	3-008-5н *	**** *** Prod		Shft: 1	Lab Pcs:	10.00	Eqp Pcs:	16.00 400
990011 **** Copie **** Copie MARWOO 211050	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d	Crew D Y:\TBC	G-ENGI\EST\1 G-ENGI\EST\1 2 2.00 DA	3-008-5H * 2-060A ***	**** Prod 200.000				10.00 400		400
#### Copie #### Copie MARWOO 211050 CRANEC100	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	Crew D Y:\TBG Y:\TBG	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961				10.00 400 2,139		400 2,139
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17	d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai	Y:\TBC Y:\TBC	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000				10.00 400 2,139 60		400 2,139 60
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1	d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	Crew D Y:\TBG 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR 20.00 HR 20.00 HR 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500				10.00 400 2,139 60 130		400 2,139 60 130
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2	d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40	Y:\TBC Y:\TBC	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR 20.00 HR 20.00 HR 20.00 HR 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500				10.00 400 2,139 60 130 130		400 2,139 60 130 130
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9	d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR 20.00 HR 20.00 HR 20.00 HR 20.00 HR 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000				10.00 400 2,139 60 130 130 200		400 2,139 60 130 130 200
#### Copie #### Copie MARWOO 211050 CCRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2	d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/	Y:\TBG Y:\TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000				10.00 400 2,139 60 130 130 200 60		400 2,139 60 130 130 200 60
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000				10.00 400 2,139 60 130 130 200 60 100		400 2,139 60 130 130 200 60 100
#### Copie #### Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20'	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100				10.00 400 2,139 60 130 130 200 60 100 2		400 2,139 60 130 130 200 60 100 2
**** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000				10.00 400 2,139 60 130 200 60 100 2 40		400 2,139 60 130 130 200 60 100 2 40
MARWOO 211050 CCRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000				10.00 400 2,139 60 130 200 60 100 2 40 40		400 2,139 60 130 130 200 60 100 2 40 40
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000				10.00 400 2,139 60 130 200 60 100 2 40 40 40		400 2,139 60 130 130 200 60 100 2 40 40
#### Copie #### Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000				10.00 400 2,139 60 130 200 60 100 2 40 40 40 40		400 2,139 60 130 130 200 60 100 2 40 40 40
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	**** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500				10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70		400 2,139 60 130 130 200 60 100 2 40 40 40 40 70
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500				10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130
90011 **** Copie **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WVP-A-2 WELD400	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044	: 2.00			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70		400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130 82
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WVP-A-2 WVP-A-2 WVP-A-2 WVP-A-2 WVP-A-1	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720	: 2.00			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130 82 1,222
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WVP-A-2 WELD400 ##################################	Subcontractor Carpenter d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050	; 2.00 1,222 1,561			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130 82 1,222 1,561
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCE-A-40 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 4170 4170 4173	d and adjusted from d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490	1,222 1,561 1,400			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400
90011 **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 4100 4170 4173 4175	d and adjusted from d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 4.720 41.050 35.490 35.490	1,222 1,561 1,400 4,201			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201
90011 **** Copie **** Copie **** Copie MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 4170 4173 4175 4180	d and adjusted from d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A ***	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 35.490	1,222 1,561 1,400 4,201 4,201			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201
##### Copie ##### Copie MARWOO #211050 ### Copie MAC-A-17 ### Copie ### Copi	d and adjusted from d and adjusted from d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A *** 0.00 CH	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 4.720 41.050 35.490 35.490	1,222 1,561 1,400 4,201 4,201 1,342			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342
#### Copie #### Copie MARWOO #### Copie MARWOO #### Copie MARWOO ##### Copie ##### Copie ##### Copie ##### Copie ##### Copie ####################################	d and adjusted from and adjusted from and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/L	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A *** 0.00 CH	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190	1,222 1,561 1,400 4,201 4,201			10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130 82		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201
##### Copie ##### Copie MARWOO \$211050 \$CRANEC100 \$MAC-A-17 \$MBC-Z-1 \$MBC-Z-2 \$MBC-Z-2 \$MBW-Z-2 \$MCE-A-40 \$MCP-A-13 \$MFW-A-13 \$MFW-A-13 \$MFW-A-2 \$MFW-A-2 \$MFW-A-2 \$MFW-A-2 \$MFW-A-2 \$MFW-A-2 \$MFW-A-2 \$MFW-A-3 \$MFW-A-2 \$MFW-A-3 \$MFW-A-1 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A-2 \$MFW-A-3 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A-2 \$MFW-A-3 \$MFW-A-1 \$MFW-A-1 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A-1 \$MFW-A-1 \$MFW-A-2 \$MFW-A-1 \$MFW-A	d and adjusted from and adjusted from and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/L	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENGI\EST\1 G-ENGI\EST\1 2.00 DA 20.00 HR	3-008-5H * 2-060A *** 0.00 CH	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190 7994.58]	1,222 1,561 1,400 4,201 4,201 1,342 13,926		Lab Pes:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130 82		400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342 17,589
***** Copie MARWOO 8211050 8CRANEC100 8BMAC-A-17 8BMBC-Z-1 8BMBC-Z-2 8BMBS-Z-9 8BMBW-Z-2 8BMCE-A-40 8BMCN-A-13 8BMFW-A-1 8BMFW-A-1 8BMFW-A-2 8BMGN-Z-17 8BMGN-Z-18 8BMFW-A-2 8BWELD400 M170 M173 M175 M180 OPCR100 \$17,589.31	d and adjusted from and adjusted from and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/L	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\EST\1 G-ENG	3-008-5H * 2-060A *** 0.00 CH	Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 41.050 35.490 35.490 35.490 39.190 7994.58]	1,222 1,561 1,400 4,201 4,201 1,342			10.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130 82	Eqp Pcs:	400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342

8PILE26

9100000

M105

M165

M170

M190

M195

OPCR100

\$22,192.08

Vibro Hammer 150 TN

Subsistance 5 workers

M-Piledriver

M-Skilled Laborer

M-Welder

M-Laborer

Foreman - General Marine

Op Eng 1A- Crane 100-200 1.00

0.0600 MH/LF

1.00

1.00

1.00

1.00

1.00

1.00

10.00 HR

1.00 DA

10.00 MH

10.00 MH

10.00 MH

10.00 MH

10.00 MH

10.00 MH

60.00 MH

02/26/2013

Direct Cost Report	
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Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total CLIENT# = 03-12 BID ITEM = 30046Land Item SCHEDULE: 100 Takeoff Quan: 0.000 Description = Demobilization Unit =LS 1.000 Engr Quan: ====> Item Totals: 30042 - Mobilization and Demobilization [33413.82] \$859,576.20 830.0000 MH/LS 830.00 MH 57,363 427,280 374,933 859,576 427,280.00 374,933.29 859,576.200 1 LS 57,362.91 859,576.20

BID ITEM = 30047 CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Environmental Protection & Turbidity Bar Unit = FT Takeoff Quan: 664.000 Engr Quan: 0.000

call on the plans D-101

430000	Silt Fence - Install			Quan:	1,000.00 LI	F Hrs/Shft:	10.00 Cal:	510 WC:	: CCISP	
**** Conjec	l and adjusted from Y	\ mp.a	ENGT\EGE\12 0	10 ETT :	****					
	l and adjusted from Y									
LAB3	Foreman + 2 Laborers	, -	10.00		Prod:	100.0000 UH	Lab Pcs:	3.00	Eqp Pcs:	1.00
31ECSF	Silt Fence		1,000.00 LF		1.000		1,000			1,000
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	10.00 HR		8.476			85		85
LFORMN	Laborer-Foreman	1.00	10.00 MH		34.720	613				613
LPWR	Laborer-Power Tools	2.00	20.00 MH		34.720	1,226				1,226
\$2,924.45	0.0300 MH/LI	F	30.00 MH		[1.146]	1,840	1,000	85		2,924
432000	Turbidity Barrier			Ouen	1 000 00 1 1	F Hrs/Shft:	10.00 Cale	510 WC	CCISP	
432000	Turbluity Barrier			Quaii.	1,000.00 L1	1118/51111.	10.00 Cal.	310 W.C.	CCISI	
**** Copied	l and adjusted from Y	Y:\TBG	-ENGI\EST\13-00	08-5н	****					
***** Copied	l and adjusted from ?	Y:\TBG	-ENGI\EST\12-06	50A **	* * *					
MARPIL	Marine Piling & Demo Crev	V	10.00	CH	Prod:	1.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
	Turbidity Barrier		1,000.00 LF		14.000		14,000			14,000
3WELD	Weld Supplies (1 man-Stick		1.00 DA		70.000		70			70
8211050	Fuel, Oil, Grease 50g/d		1.00 DA		200.000			200		200
8CRANEC200	Crane Manitowoc 777 20	1.00	10.00 HR		163.361			1,634		1,634
8DRILLR	***DRILLS - ROCK***	1.00	10.00 HR		17.500			175		175
8MAC-A-10	Compressor 185 CFM	1.00	10.00 HR		3.000			30		30
8MBM-Z-2	M.Barge2110 GRT OB-80-		10.00 HR		10.000			100		100
8MBS-Z-14	Spud Barge M-120x45'	1.00	10.00 HR		17.500			175		175
8MBT-Z-12	Tug Push Boat 200 HP	1.00	10.00 HR		20.000			200		200
8MBW-Z-2	18' Aluminum Boat & O/	1.00	10.00 HR		3.000			30		30
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	10.00 HR		5.000			50		50
8MDH-A-7	DELMAG D19 HAMMER	1.00	10.00 HR		10.000			100		100
8MFD-A-1	FAIRLEADS	1.00	10.00 HR		0.100			1		1
8MGN-Z-11	Generator 10 KW	1.00	10.00 HR		3.000			30		30
8MLT-A-1	Light Tower, Genie	1.00	10.00 HR		3.500			35		35
8MPE-A-11	Extractor Pile	1.00	10.00 HR		5.000			50		50
8MVP-A-11	FORD F150 SUPERC 10	1.00	10.00 HR		6.500			65		65
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	10.00 HR		10.000			100		100
8MWM-C-1	Welder Diesel 400 AMP	1.00	10.00 HR		2.500			25		25

45.492

500.000

35.720

34.950

41.050

35.430

35.430

39.190

[2.439]

625

692

780

699

699

671

4,168

455

3,455

500

14,570

455

500

625

692

780

699

699

671

22,192

Page 6

POA 15% CONCEPT OPTION 5 02/26/2013 13-008-5 21:01 Bob Wells

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =		NT# = (Land Item	SCHEDU			00			0.000
Description =	Environmental Protection &	Turbidi	ty Bar	Unit =	FT	Takeoff (Quan:	664.000) Engr	Quan:	0.000
32005	Erosion Control - Hay Bal	les		Quan:	400.00	EA Hrs/	Shft: 1	10.00 Cal:	510 WC	: CCISP	
**** Copied A bale size nandle	d and adjusted from d and adjusted from of 14"x18"x22" will be length is 22"/12=	Y:\TB0 weigl	G-ENGI\EST\12 n about 37 to	-060A ***	***	a safeı	r bale	weight	for many	people	to
	e 600 ft ====> qty	of ba			_						
LAB4	Foreman + 3 Laborers			66 CH	Prod:	6.00	00 UH	Lab Pcs:	4.00	Eqp Pcs:	1.00
B1ECHB BTRKPU70	Hay Bales	1.00	400.00 EA		5.000			2,000	5 <i>C</i> F		2,000
FORMN	Leased 4x2, 3/4 Ton Ga Laborer-Foreman	1.00 1.00	66.67 HR 66.67 MH		8.476 34.720	4,088			565		565 4,088
LFURMIN LPWR	Laborer-Foreman Laborer-Power Tools	3.00	200.00 MH		34.720	12,265					12,265
S18,918.10	0.6666 MH/E		266.67 MH	ı	54.720 [25.462]	16,353		2,000	565		18,918
10,710.10	0.0000 MH/L		200.07 14111	ı		10,555		2,000	303		10,710
====> Item '		Enviro	nmental Protection	n & Turbidi	ity Bar						
44,034.63	0.5371 MH/FT		356.67 MH	[[20.738]	22,360		17,570	4,104		44,035
6.317	664 FT					33.68		26.46	6.18		66.32
		Constr	uction Staging	Γ Δ'	_	79.723	ıb-Bidite		379.038		903.611
6903,610.83	Totals: 30040 - 1,186.6700 MH/LS 1 LS	Constr	uction Staging 1,186.67 MH	[4'	7183.71]	79,723 9,723.18		444,850 444,850.00	379,038 379,037.65	90	903,611 03,610.83
6903,610.83 003,610.830 BID ITEM =	1,186.6700 MH/LS 1 LS	Constr	1,186.67 MH	[4 ' Marine Item Unit =	7183.71] 7' SCHEDU	79,723 9,723.18	10	444,850	379,037.65	90 Quan:	/
8903,610.83 003,610.830 BID ITEM = Description =	1,186.6700 MH/LS 1 LS 30050 CLIEN		1,186.67 MH	Marine Item Unit =	7183.71] 7' SCHEDU	79,723 9,723.18 JLE: 1 Takeoff (1(Quan:	444,850 444,850.00 00 1.000	379,037.65 D Engr	Quan:	03,610.83
BID ITEM = Costo = Cos	1,186.6700 MH/LS 1 LS 30050 CLIEN Demolition	NT# = (1,186.67 MH)2-12 Marine	Marine Item Unit = Quan:	7183.71] 70 SCHEDULS 952,000.00 (79,723 9,723.18 JLE: 1 Takeoff (1(Quan:	444,850 444,850.00 00 1.000	379,037.65 D Engr	Quan:	03,610.83
BID ITEM = Description = 205025 ***** Copies excavate 3,0997,000cy/30	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 2000cy/day= 333 days	NT# = (1,186.67 MH)2-12 Marine G-ENGI\EST\13	Marine Item Unit = Quan: -008-5H *	7183.71] 7 SCHEDU LS 952,000.00 (79,723 9,723.18 ULE: 1 Takeoff (CY Hrs/	10 Quan:	444,850.00 1.000 1.000 Cal:	379,037.65 Engr	Quan:	1.000
BID ITEM = Description = 205025 ***** Copies excavate 3,6 097,000cy/36 MARLAN	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 0000cy/day= 333 days Demolition Crew on land	NT# = (1,186.67 MH D2-12 Marine G-ENGI\EST\13	Marine Item Unit = Quan:	7183.71] 7 SCHEDULS 952,000.00 (79,723 9,723.18 ULE: 1 Takeoff C	10 Quan:	444,850 444,850.00 00 1.000	379,037.65 Engr : 510 WC	Quan:	1.000
BID ITEM = Description = 0.05025 ***** Copies excavate 3,6 0.997,000cy/36 MARLAN 2211050	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 0000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d	NT# = (Y:\TB0	1,186.67 MH D2-12 Marine G-ENGI\EST\13: 3,179. 317.97 DA	Marine Item Unit = Quan: -008-5H *	7183.71] 7 SCHEDULS 952,000.00 (79,723 9,723.18 ULE: 1 Takeoff (CY Hrs/	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr : 510 WC	Quan: : CCISP Eqp Pcs:	1.000 13.00 63,594
### Copies ### Copies ### Copies #### Copies ##### Copies ##### Copies ##### Copies ##### Copies ##### Copies ###################################	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY	NT# = (Y:\TB0	1,186.67 MH D2-12 Marine G-ENGI\EST\13: 3,179. 317.97 DA 25,437.59 HR	Marine Item Unit = Quan: -008-5H *	7183.71] 7 SCHEDULS 952,000.00 (****** Prod: 200.000 45.473	79,723 9,723.18 ULE: 1 Takeoff (CY Hrs/	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724	Quan: : CCISP Eqp Pcs:	1.000 13.00 63,594 1,156,724
BID ITEM = Description = 205025 ***** Copies excavate 3,6 997,000cy/36 MARLAN 2211050 BHLD480 BCRANEC100	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 2000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1	NT# = (Y:\TB0 8.00 1.00	1,186.67 MH D2-12 Marine G-ENGI\EST\13: 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR	Marine Item Unit = Quan: -008-5H *	7183.71] 7 SCHEDULS 952,000.00 6 ****** Prod: 200.000 45.473 106.961	79,723 9,723.18 ULE: 1 Takeoff (CY Hrs/	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	1.000 13.00 63,594 1,156,724 340,104
### Copies ### Copies ### Copies ### Copies #### Copies ##### Copies ##### Copies ##### Copies ###################################	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 2000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas	NT# = (Y:\TB0 8.00 1.00	1,186.67 MH D2-12 Marine G-ENGI\EST\13 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR	Marine Item Unit = Quan: -008-5H *	7183.71] 7 SCHEDULS 952,000.00 6 ***** Prod: 200.000 45.473 106.961 7.044	79,723 9,723.18 ULE: 1 Takeoff (CY Hrs/	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724	Quan: : CCISP Eqp Pcs:	1.000 1.000 1.000 63,594 1,156,724 340,104 89,591
BID ITEM = Description = 205025 ***** Copies excavate 3,6 297,000cy/36 MARLAN 2211050 BHLD480 BCRANEC100 ETRKPU10 2100010	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 2000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas Subistance 10 workerss	NT# = (Y:\TB0 1.00 4.00	1,186.67 MH D2-12 Marine G-ENGI\EST\13 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA	Marine Item Unit = Quan: -008-5H *	7183.71] 77 SCHEDULS 952,000.00 (45.473) 106.961 7.044 1,000.000	79,723 9,723.18 ULE: 1 Takeoff C	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	1.000 13.00 63,594 1,156,724 340,104 89,591 317,970
### Copies ### Copies ### Copies ### Copies #### Copies ##### Copies ##### Copies ##### Copies ##### Copies ###################################	1,186.6700 MH/LS 1 LS 30050 CLIENT Demolition Excavation to Waste d and adjusted from 2000 cy per day: 2000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas Subistance 10 workerss Foreman - General Marine	NT# = (Y:\TB0 1.00 4.00	1,186.67 MH D2-12 Marine G-ENGI\EST\13 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA 3,179.70 MH	Marine Item Unit = Quan: -008-5H *	7183.71] 77 SCHEDULS 952,000.00 6 ***** Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720	79,723 9,723.18 ULE: 1 Takeoff C CY Hrs/	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	1.000 1.000 63,594 1,156,724 340,104 89,591 317,970 198,876
BID ITEM = Description = 205025 ***** Copies excavate 3,0 997,000cy/30 MARLAN 8211050 8BHLD480 8CRANEC100 8TRKPU10 9100010 M105 M150	1,186.6700 MH/LS 1 LS 1 LS 1 LS 2 30050 CLIENT Demolition Excavation to Waste 2 and adjusted from 2000 cy per day: 2 000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas Subistance 10 workerss Foreman - General Marine M-Operator, Crane	NT# = (Y:\TB0 1.00 4.00 1.00 1.00	1,186.67 MH D2-12 Marine 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA 3,179.70 MH 3,179.70 MH	Marine Item Unit = Quan: -008-5H *	7183.71] 75 SCHEDULS 952,000.00 (45.473) 106.961 7.044 1,000.000 35.720 39.190	79,723 9,723.18 ULE: 1 Takeoff C CY Hrs/ 317.96	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	13.00 63,594 1,156,724 340,104 89,591 317,970 198,876 240,479
######################################	1,186.6700 MH/LS 1 LS 1 LS 1 LS 2 30050 CLIENT Demolition Excavation to Waste 2 and adjusted from 2000 cy per day: 2 000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas Subistance 10 workerss Foreman - General Marine M-Operator, Crane M-Laborer	NT# = 0 Y:\TB0 1.00 4.00 1.00 1.00 8.00	1,186.67 MH D2-12 Marine 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA 3,179.70 MH 3,179.70 MH 25,437.59 MH	Marine Item Unit = Quan: -008-5H *	7183.71] 75 SCHEDULS 952,000.00 6 ***** Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1	79,723 9,723.18 ULE: 1 Takeoff C CY Hrs/ 317.96 198,876 240,479 ,778,758	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	13.00 63,594 1,156,724 340,104 89,591 317,970 198,876 240,479 1,778,758
BID ITEM = Description = 205025 ***** Copies excavate 3, 6 997,000cy/36 MARLAN 8211050 8BHLD480 8CRANEC100 8TRKPU10 9100010 M105 M150 M195 DPCR100	1,186.6700 MH/LS 1 LS 1	8.00 1.00 4.00 1.00 8.00 1.00	1,186.67 MH D2-12 Marine 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA 3,179.70 MH 3,179.70 MH 25,437.59 MH 3,179.70 MH	Marine Item Unit = Quan: -008-5H *	7183.71] 75 SCHEDULS 952,000.00 (45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1 39.190	79,723 9,723.18 ULE: 1 Takeoff C CY Hrs/ 317.96 198,876 240,479 ,778,758 213,284	10 Quan:	444,850.00 00 1.000 10.00 Cal:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pcs:	13.00 63,594 1,156,724 340,104 89,591 317,970 198,876 240,479 1,778,758 213,284
### ##################################	1,186.6700 MH/LS 1 LS 1 LS 1 LS 2 30050 CLIENT Demolition Excavation to Waste 2 and adjusted from 2000 cy per day: 2 000cy/day= 333 days Demolition Crew on land Fuel, Oil, Grease 50g/d BHL Cat 450E 1.75CY Crane Manitowoc 222B 1 Pickup 4x2 3/4 Ton Gas Subistance 10 workerss Foreman - General Marine M-Operator, Crane M-Laborer	8.00 1.00 4.00 1.00 8.00 1.00 8.00 8.00	1,186.67 MH D2-12 Marine 3,179. 317.97 DA 25,437.59 HR 3,179.70 HR 12,718.80 HR 317.97 DA 3,179.70 MH 3,179.70 MH 25,437.59 MH	Marine Item Unit = Quan: -008-5H *	7183.71] 75 SCHEDULS 952,000.00 6 ***** Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1	79,723 9,723.18 ULE: 1 Takeoff C CY Hrs/ 317.96 198,876 240,479 ,778,758 213,284 ,651,348	10 Quan:	444,850 144,850.00 00 1.000 10.00 Cal: Lab Pcs:	379,037.65 Engr 19.00 63,594 1,156,724 340,104	Quan: : CCISP Eqp Pes:	13.00 63,594 1,156,724 340,104 89,591 317,970 198,876 240,479 1,778,758

Quan: 966,700.00 LS Hrs/Shft:

WC: NONE

8.00

Marine

Excavation to Stockpile

205030

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13-008-5 POA 15% CONCEPT OPTION 5 02/26/2013 21:01 Bob Wells

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 30050CLIENT# = 02-12Marine Item SCHEDULE: 1

Description = Demolition Unit =LS Takeoff Quan: 1.000 Engr Quan: 1.000

cost per cy= \$350/15cy= \$23.5/cy

966,699.99 CY 8.000 5TRKCY Trucking - CY 7,733,600 7,733,600

500510 Removal of Open Cell Sheets Marine Quan: 15,300.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****

Open Cell wall #1: 28 back extensions of 230 ft= 6,440 ft and 27 semi circles of 3.14*30/2= 47ft*27=

1,267ft ===> 6,440+ 1,267= 7,707ft

Open Cell wall #2: 22 back extensions of 180 ft= 3,960ft + 47*21= 4,947 ft

Open Cell wall #3: 12 back extensions of 125 ft= 1,500+47*11= 2,017

Total cells: 7,707+4,947+2,017= 14,671 ft

Additional cicular cells #1= 3.1416*100= 314 ft semicicle#2= 314/2*2= 314 ft

Grand total removal: 14,671+314+314= 15,299 say 15,300 ft by 60 ft.. if removal is at a rate of 60 ft per day ==> 15,300/60= 255 days.

it can be faster using 2 crews. yet, fo the sake of developing costs we will assume on single crew.

MARPIL	Marine Piling & Demo Crew		2,550.00	CH Pro	d: 255.0000 S	Lab Pcs:	6.00	Eqp Pcs: 17.00
3WELD	Weld Supplies (1 man-Stick		255.00 DA	70.000		17,850		17,850
8211050	Fuel, Oil, Grease 50g/d		255.00 DA	200.000			51,000	51,000
8CRANEC200	Crane Manitowoc 777 20	1.00	2,550.00 HR	163.361			416,571	416,571
8DRILLR	***DRILLS - ROCK***	1.00	2,550.00 HR	17.500			44,625	44,625
8MAC-A-10	Compressor 185 CFM	1.00	2,550.00 HR	3.000			7,650	7,650
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	2,550.00 HR	10.000			25,500	25,500
8MBS-Z-14	Spud Barge M-120x45'	1.00	2,550.00 HR	17.500			44,625	44,625
8MBT-Z-12	Tug Push Boat 200 HP	1.00	2,550.00 HR	20.000			51,000	51,000
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,550.00 HR	3.000			7,650	7,650
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,550.00 HR	5.000			12,750	12,750
8MDH-A-7	DELMAG D19 HAMMER	1.00	2,550.00 HR	10.000			25,500	25,500
8MFD-A-1	FAIRLEADS	1.00	2,550.00 HR	0.100			255	255
8MGN-Z-11	Generator 10 KW	1.00	2,550.00 HR	3.000			7,650	7,650
8MLT-A-1	Light Tower, Genie	1.00	2,550.00 HR	3.500			8,925	8,925
8MPE-A-11	Extractor Pile	1.00	2,550.00 HR	5.000			12,750	12,750
8MVP-A-11	FORD F150 SUPERC 10	1.00	2,550.00 HR	6.500			16,575	16,575
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	2,550.00 HR	10.000			25,500	25,500
8MWM-C-1	Welder Diesel 400 AMP	1.00	2,550.00 HR	2.500			6,375	6,375
8PILE26	Vibro Hammer 150 TN	1.00	2,550.00 HR	45.492			116,005	116,005
9100000	Subsistance 5 workers		255.00 DA	500.000		127,500		127,500
M105	Foreman - General Marine	1.00	2,550.00 MH	35.720	159,491			159,491
M165	M-Piledriver	1.00	2,550.00 MH	34.950	176,544			176,544
M170	M-Welder	1.00	2,550.00 MH	41.050	199,020			199,020
M190	M-Skilled Laborer	1.00	2,550.00 MH	35.430	178,312			178,312
M195	M-Laborer	1.00	2,550.00 MH	35.430	178,312			178,312
OPCR100	Op Eng 1A- Crane 100-200	1.00	2,550.00 MH	39.190	171,046			171,046
\$2,088,979.95	1.0000 MH/FT		15,300.00 MH	[40.658]	1,062,725	145,350	880,905	2,088,980

500530 Removal of Rip Rap Marine Quan: 14,700.00 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****

remove 136,000 cy

remove 600 cy/day ===> 226 days if remove 1200 cy/day===> 113 days

Demolition Crew on land 130.00 CH 13.0000 S Lab Pcs: 19.00 MARLAN Prod: Eqp Pcs: 13.00 8211050 Fuel, Oil, Grease 50g/d 13.00 DA 200.000 2,600 2,600 Bob Wells

Page 8 13-008-5 POA 15% CONCEPT OPTION 5 02/26/2013 21:01

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 30050CLIENT# = 02-12Marine Item SCHEDULE: 100 Description = Demolition Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 8BHLD480 BHL Cat 450E 1.75CY 8.00 1.040.00 HR 45.473 47,292 47,292 8CRANEC100 Crane Manitowoc 222B 1 1.00 130.00 HR 106.961 13,905 13,905 8TRKPU10 Pickup 4x2 3/4 Ton Gas 4.00 520.00 HR 7.044 3,663 3,663 1,000.000 13,000 9100010 Subistance 10 workerss 13.00 DA 13,000 Foreman - General Marine 1.00 130.00 MH M105 35.720 8.131 8.131 M150 M-Operator, Crane 1.00 130.00 MH 39.190 9,832 9,832 M195 M-Laborer 8.00 1,040.00 MH 35.430 72,723 72,723 Op Eng 1A- Crane 100-200 1.00 OPCR100 130.00 MH 39.190 8,720 8,720 OPEXC3 Op Eng 3- Backhoe to 3Y 8.00 1,040.00 MH 37.430 67,514 67,514 0.1680 MH/CY 247,380 \$247,380.19 2,470.00 MH [6.78] 166,920 13,000 67,460 ====> Item Totals: 30050 - Demolition \$16,120,687.17 78,184.2800 MH/LS 78,184.28 MH [3159538.23] 5,312,390 8,209,920 2,598,377 16,120,687 8,209,919.92 2,598,377.45 16,120,687.170 5,312,389.80 16,120,687.17 1 LS

BID ITEM = 30055Land Item SCHEDULE: 100 1

Description = Dredging Unit = Takeoff Quan: 1,581,000.000 Engr Quan: 1,581,000.000

640000 **Mechanical Dredging** Quan: 1,580,999.99 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****

one mechanical crew does 1000 cy/day

2 crews will do 2,000cy/day=

1,225,000/2,000= 615 days ===> say 615 days

DREDGE	Marine Piling & Demo Crev	v	7,937.26	CH	Prod	1: 793.726	5 S	Lab Pcs:	12.00	Eqp Pcs:	36.00
3WELD	Weld Supplies (1 man-Stick		1,984.32 DA		70.000			138,902			138,902
8211060	Fuel, Oil, Grease 1400g/d		992.16 DA		5,810.000				5,764,450	5,	764,450
8CRANEC200	Crane Manitowoc 777 20	2.00	15,874.53 HR		163.361			2	2,593,279	2,	593,279
8DRILLR	***DRILLS - ROCK***	2.00	15,874.53 HR		17.500				277,804		277,804
8MAC-A-10	Compressor 185 CFM	2.00	15,874.53 HR		3.000				47,624		47,624
8MBM-Z-2	M.Barge2110 GRT OB-80-	2.00	15,874.53 HR		10.000				158,745		158,745
8MBS-Z-10	Scow Barge	4.00	31,749.06 HR		227.000			7	7,207,037	7,	207,037
8MBS-Z-14	Spud Barge M-120x45'	2.00	15,874.53 HR		17.500				277,804		277,804
8MBT-Z-12	Tug Push Boat 200 HP	2.00	15,874.53 HR		20.000				317,491		317,491
8MBW-Z-2	18' Aluminum Boat & O/	2.00	15,874.53 HR		3.000				47,624		47,624
8MCE-A-40	Bucket Clamshell 3 CYD	2.00	15,874.53 HR		5.000				79,373		79,373
8MDH-A-7	DELMAG D19 HAMMER	2.00	15,874.53 HR		10.000				158,745		158,745
8MFD-A-1	FAIRLEADS	2.00	15,874.53 HR		0.100				1,587		1,587
8MGN-Z-11	Generator 10 KW	2.00	15,874.53 HR		3.000				47,624		47,624
8MLT-A-1	Light Tower, Genie	2.00	15,874.53 HR		3.500				55,561		55,561
8MPE-A-11	Extractor Pile	2.00	15,874.53 HR		5.000				79,373		79,373
8MVP-A-11	FORD F150 SUPERC 10	2.00	15,874.53 HR		6.500				103,184		103,184
8MWH-A-1	WINCH 3-DRUM RB-90	2.00	15,874.53 HR		10.000				158,745		158,745
8MWM-C-1	Welder Diesel 400 AMP	2.00	15,874.53 HR		2.500				39,686		39,686
9100010	Subistance 10 workerss		992.16 DA		1,000.000			992,160			992,160
M105	Foreman - General Marine	2.00	15,874.53 MH		35.720	992,879					992,879
M165	M-Piledriver	2.00	15,874.53 MH		34.950	1,099,037				1,	099,037
M170	M-Welder	2.00	15,874.53 MH		41.050	1,238,963				1,	238,963
M190	M-Skilled Laborer	2.00	15,874.53 MH		35.430	1,110,048				1,	110,048
M195	M-Laborer	2.00	15,874.53 MH		35.430	1,110,048				1,	110,048
OPCR100	Op Eng 1A- Crane 100-200	2.00	15,874.53 MH		39.190	1,064,811				1,	064,811
\$25,162,584.84	0.0602 MH/C	Y	95,247.18 MH		[2.449]	6,615,787		1,131,062	17,415,735	25,	162,585

Bob Wells

POA 15% CONCEPT OPTION 5

Direct	Cost	Re	port

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21:01

				211000	Cost Hepo				
Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Const Material Matl/Exp	1 1	Sub- Contract Total
BID ITEM = Description =	30055 Dredging			Land Item Unit =	SCHED! CY		100 Quan: 1,581,000.00)() Engr	Quan: 1,581,000.000
•	hat dredging spoils	and w	n at a normi					_	
	by barge/dredging s								
- Joe DDISPO	Dredge Disposal		7.03	37.26 CH	Dwa	ı. <i>7</i> 02 <i>7</i> ′	265 S Lab Pes:	: 10.00	Eqp Pcs: 15.00
3211060	Fuel, Oil, Grease 1400g/d		992.16 DA		Proc 5,810.000	d: 793.72	205 5 Laures.	5,764,450	
CRANEC100	Crane Manitowoc 222B 1	1.00	7,937.27 HR		106.961			848,978	
BDOZER	Bulldozer	2.00	15,874.53 HR		50.000			793,727	793,727
BEXCAV-Z-1	Excavator	2.00	15,874.53 HR		45.000			714,354	714,354
MAC-A-17	Atlas Copco 185 CFM Ai	1.00	7,937.27 HR		3.000			23,812	
BMBS-Z-14	Spud Barge M-120x45'	1.00	7,937.27 HR		17.500			138,902	138,902
BMBT-Z-12	Tug Push Boat 200 HP	1.00	7,937.27 HR		20.000			158,745	158,745
MBW-Z-2	18' Aluminum Boat & O/	1.00	7,937.27 HR		3.000			23,812	23,812
3MCN-A-13	Container Steel 20'	1.00	7,937.27 HR		0.100			794	794
MGN-Z-11	Generator 10 KW	1.00	7,937.27 HR		3.000			23,812	23,812
BMLT-A-1	Light Tower, Genie	1.00	7,937.27 HR		3.500			27,780	
BMWM-C-1	Welder Diesel 400 AMP	1.00	7,937.27 HR		2.500			19,843	19,843
PMP-Z-1	Slurry Pump	2.00	15,874.53 HR		150.000			2,381,180	2,381,180
100000	Subsistance 5 workers		992.16 DA		500.000		496,080)	496,080
1105	Foreman - General Marine	1.00	7,937.27 MH		35.720	496,440			496,440
M170	M-Welder	1.00	7,937.27 MH		41.050	619,482			619,482
M195	M-Laborer	3.00	23,811.80 MH			1,665,072			1,665,072
OPCR100 OPEXC3	Op Eng 1A- Crane 100-200		7,937.27 MH			532,406			532,406
\$16,790,741.93	Op Eng 3- Backhoe to 3Y 0.0502 MH/C	4.00 V	31,749.06 MH 79,372.67 MH			2,061,074 5,374,474	106.080) 10,920,188	2,061,074 16,790,742
10,770,741.73	0.0302 WIII/C	1	77,372.07 WIII		[2.034]	3,374,474	470,000	, 10,,,20,100	10,750,742
005	MOBILIZATION-DEMO	BILIZ	ATION	Quan:		LS Hrs		al: 510 WC	: CCISP
SMOBE	Dredging Mob and Demobe	;	1.00 LS	1,8	800,000.000		1,800,000)	1,800,000
====> Item		Dredgi	-		[4.504]	11 000 261	2 427 143	2 28,335,924	42.752.227
\$43,753,326.77 27.674	0.1104 MH/CY 1581000		174,619.85 MH		[4.304]	7.58	2.17		43,753,327 27.67
BID ITEM =	: 30060 CLIEN	NT# = (02-12	Marine Item	n SCHED	OULE: 1	100		
Description =	Piling Wharf Area I			Unit =	FT	Takeoff (Quan: 31,215.00	00 Engr	Quan: 31,215.000
AREA 1									
48 " 0 1	" Thick Steel I	Pipe I	Pile						
	Outside Diameter = 4 Wall Thickness = 1.0		n						
Tip Elev Weight (vation Top Elevation	n Ler	ngth (ft) Q	uantity To	otal Len	gth (ft) Unit Weight	(lb/ft)	Weight (lb)
31,2	215.00 1 31,215.00	502	.43 15,683,3	52.5 7,84	1.7				
	vation Top Elevation 61 180 48 261,506.8		ngth (ft) Q	uantity D	iameter	Coating	(SF)		
A1 A19	pe Qty Piles Pile Ler 18 178 3,204.00 85.0 2 17 178 3,026.00 85	00 19	,226.6 25,6 8,158.4 24,	32 208	e Fill V	olume Co	oncrete (CF)	Rebar (F	rt)

B1 18 178 3,204.00 85.00 19,226.6 25,632 B19 17 178 3,026.00 85.00 18,158.4 24,208 C1 18 173 3,114.00 85.00 19,226.6 25,632 C19 17 173 2,941.00 85.00 18,158.4 24,208

13-008-5 Bob Wells

I25 2 178 356.00 85.00 2,136.3

Direct Cost Report

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Activity
               Desc
                                       Quantity
                                                                Unit
                                                                              Perm
                                                                                     Constr
                                                                                             Equip
                                                                                                     Sub-
   Resource
                                  Pcs
                                              Unit
                                                               Cost
                                                                      Labor Material Matl/Exp
                                                                                              Ment Contract
                                                                                                             Total
BID ITEM = 30060
                            CLIENT# = 02-12
                                                   Marine Item SCHEDULE: 1
Description = Piling Wharf Area I
                                                       Unit =
                                                                FT Takeoff Quan:
                                                                                  31,215.000
                                                                                              Engr Quan: 31,215.000
         D1 18 168 3,024.00 85.00 19,226.6 25,632
         D19 17 168 2,856.00 85.00 18,158.4 24,208
         E10 2 188 376.00 85.00 2,136.3 2,848
         E25 2 198 396.00 85.00 2,136.3
                                          2.848
         F10 2 183 366.00 85.00 2,136.3
                                          2,848
         F25 2 193 386.00 85.00 2,136.3 2,848
         G10 2 178 356.00 85.00 2,136.3
                                          2.848
         G25 2 188 376.00 85.00 2,136.3
                                          2,848
         H10 2 173 346.00 85.00 2,136.3
                                          2,848
         H25 2 183 366.00 85.00 2,136.3 2,848
         I10 2 168 336.00 85.00 2,136.3
                                          2,848
         I25 2 178 356.00 85.00 2,136.3
                                          2,848
         J10 2 163 326.00 85.00 2,136.3
                                          2.848
         J25 2 173 346.00 85.00 2,136.3
                                          2,848
         K10 2 158 316.00 85.00 2,136.3
                                          2,848
        K25 2 173 346.00 85.00 2,136.3
                                          2,848
         L10 2 158 316.00 85.00 2,136.3 2,848
         L25 2 173 346.00 85.00 2,136.3
                                          2.848
         M10 2 148 296.00 85.00 2,136.3
                                          2,848
        M25 2 158 316.00 85.00 2,136.3 2,848
         N1 2 133 266.00 85.00 2,136.3 2,848
         N3 2 143 286.00 85.00 2,136.3 2,848
          180 171.6 31,215.00 192,265.9 cf 256,320
          Average 173.4 7,121.0 cy
             Supply Pipe Piles
                                             Marine
                                                       Quan: 31,215.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP
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303000
***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****
AREA 1
48 " 0 1
             " Thick Steel Pipe Pile
       Outside Diameter = 48 in
       Wall Thickness = 1.000 in
Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb)
Weight (Ton)
    31,215.00 1 31,215.00 502.43 15,683,352.5 7,841.7
Coating
Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)
    115.61 180 48 261,506.8
     Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft)
     A1 18 178 3,204.00 85.00 19,226.6 25,632
     A19 17 178 3,026.00 85.00 18,158.4 24,208
     B1 18 178 3,204.00 85.00 19,226.6 25,632
     B19 17 178 3,026.00 85.00 18,158.4 24,208
     C1 18 173 3,114.00 85.00 19,226.6 25,632
     C19 17 173 2,941.00 85.00 18,158.4 24,208
     D1 18 168 3,024.00 85.00 19,226.6 25,632
    D19 17 168 2,856.00 85.00 18,158.4 24,208
     E10 2 188 376.00 85.00 2,136.3 2,848
     E25 2 198 396.00 85.00 2,136.3 2,848
     F10 2 183 366.00 85.00 2,136.3
                                    2,848
     F25 2 193 386.00 85.00 2,136.3
                                    2,848
     G10 2 178 356.00 85.00 2,136.3
                                    2,848
     G25 2 188 376.00 85.00 2,136.3
                                    2,848
    H10 2 173 346.00 85.00 2,136.3
                                    2,848
     H25 2 183 366.00 85.00 2,136.3
     I10 2 168 336.00 85.00 2,136.3
                                    2.848
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2,848

CH2MHILL

Page 11 13-008-5 POA 15% CONCEPT OPTION 5 02/26/2013 21:01 Bob Wells

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 30060CLIENT# = 02-12Marine Item SCHEDULE: 1 Description = Piling Wharf Area I Unit =FT Takeoff Quan: 31,215.000 Engr Quan: 31,215.000 J10 2 163 326.00 85.00 2,136.3 2,848 J25 2 173 346.00 85.00 2,136.3 2,848 K10 2 158 316.00 85.00 2,136.3 2,848 K25 2 173 346.00 85.00 2,136.3 2.848 L10 2 158 316.00 85.00 2,136.3 2,848 L25 2 173 346.00 85.00 2,136.3 2,848 M10 2 148 296.00 85.00 2,136.3 2,848 M25 2 158 316.00 85.00 2,136.3 N1 2 133 266.00 85.00 2,136.3 2,848 N3 2 143 286.00 85.00 2,136.3 2,848 180 171.6 31,215.00 192,265.9 cf 256,320 Average 173.4 7,121.0 cy 2PP48INCH 48 In Diam Pipe Pile 31,215.00 LF 430.000 13,422,450 13,422,450

303010 Pile Painting & Wrapping Marine Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

AREA 1

48 " 0 1 " Thick Steel Pipe Pile

> Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb)

Weight (Ton)

31,215.00 1 31,215.00 502.43 15,683,352.5 7,841.7

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

115.61 180 48 261,506.8

1,046,027 1,046,027 2PP48COATING Pipe Pile Shop Coating 261,506.76 SF 4.000

303022 **Set Pile Template** Marine Ouan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****

60,000 60,000 31PILETEMPLA Pipe Pile Template 1.00 LS 60,000.000

303035	Piling - Pipe		Marine	Quan: 176.96 I	EA Hrs/Shft:	10.00 Cal:	510 WC:	: CCISP
**** Copied	d and adjusted from Y	Y:\TBG	G-ENGI\EST\13-0)8-5H ****				
MARPIL	Marine Piling & Demo Crev	v	442.39	CH Prod:	44.2390 S	Lab Pcs:	6.00	Eqp Pcs: 17.00
3WELD	Weld Supplies (1 man-Stick		44.24 DA	70.000		3,097		3,097
8211050	Fuel, Oil, Grease 50g/d		44.24 DA	200.000			8,848	8,848
8CRANEC200	Crane Manitowoc 777 20	1.00	442.39 HR	163.361			72,269	72,269
8DRILLR	***DRILLS - ROCK***	1.00	442.39 HR	17.500			7,742	7,742
8MAC-A-10	Compressor 185 CFM	1.00	442.39 HR	3.000			1,327	1,327
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	442.39 HR	10.000			4,424	4,424
8MBS-Z-14	Spud Barge M-120x45'	1.00	442.39 HR	17.500			7,742	7,742
8MBT-Z-12	Tug Push Boat 200 HP	1.00	442.39 HR	20.000			8,848	8,848
8MBW-Z-2	18' Aluminum Boat & O/	1.00	442.39 HR	3.000			1,327	1,327
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	442.39 HR	5.000			2,212	2,212
8MDH-A-7	DELMAG D19 HAMMER	1.00	442.39 HR	10.000			4,424	4,424
8MFD-A-1	FAIRLEADS	1.00	442.39 HR	0.100			44	44
8MGN-Z-11	Generator 10 KW	1.00	442.39 HR	3.000			1,327	1,327
8MLT-A-1	Light Tower, Genie	1.00	442.39 HR	3.500			1,548	1,548
8MPE-A-11	Extractor Pile	1.00	442.39 HR	5.000			2,212	2,212
8MVP-A-11	FORD F150 SUPERC 10	1.00	442.39 HR	6.500			2,876	2,876
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	442.39 HR	10.000			4,424	4,424
8MWM-C-1	Welder Diesel 400 AMP	1.00	442.39 HR	2.500			1,106	1,106
8PILE26	Vibro Hammer 150 TN	1.00	442.39 HR	45.492			20,125	20,125
9100000	Subsistance 5 workers		44.24 DA	500.000		22,120		22,120
M105	Foreman - General Marine	1.00	442.39 MH	35.720	27,669			27,669

Direct Cost Report

Bob Wells

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = Description =	30060 CLIE Piling Wharf Area I	ENT# = (02-12	Marine Iten Unit =		ULE: 1		00 31,215.000	Engr	Quan: 3	1,215.000
M165	M-Piledriver	1.00	442.39 MH		34.950	30,628					30,628
M170	M-Welder	1.00	442.39 MH		41.050	34,527					34,527
M190	M-Skilled Laborer	1.00	442.39 MH		35.430	30,935					30,935
M195	M-Laborer	1.00	442.39 MH		35.430	30,935					30,935
OPCR100	Op Eng 1A- Crane 100-20		442.39 MH	r	39.190	29,674		25 217	152 925		29,674
\$362,410.00	14.9996 MH/	LA	2,654.34 MH		609.854]	184,368		25,217	152,825		362,410
303040	Piling - Concrete Filling		Marine	Quan	1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Copied	d and adjusted from	Y:\TB	G-ENGI\EST\13	3-008-5H	****						
MARWOO	Marine Carpenters Crew			2.39 CH	Prod	: 44.2	2390 S	Lab Pcs:	10.00	Eqp Pcs:	16.00
8211050	Fuel, Oil, Grease 50g/d		44.24 DA		200.000				8,848		8,848
8CRANEC100	Crane Manitowoc 222B 1	1.00	442.39 HR		106.961				47,318		47,318
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	442.39 HR		3.000				1,327		1,327
8MBC-Z-1	Barge Carpenter 12'X40	1.00	442.39 HR		6.500				2,876		2,876
8MBC-Z-2	Barge Carpenter 12'X40	1.00	442.39 HR		6.500				2,876		2,876
8MBS-Z-9	Spud Barge M-80x28'	1.00	442.39 HR		10.000				4,424		4,424
8MBW-Z-2	18' Aluminum Boat & O/	1.00	442.39 HR		3.000				1,327		1,327
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	442.39 HR 442.39 HR		5.000				2,212 44		2,212 44
8MCN-A-13 8MFW-A-1	Container Steel 20' Work Float	1.00 1.00	442.39 HR 442.39 HR		0.100 2.000				885		885
8MFW-A-2	Work Float	1.00	442.39 HR 442.39 HR		2.000				885		885
8MGN-Z-17	Generator 8 KW	1.00	442.39 HR		2.000				885		885
8MGN-Z-18	Generator 8 KW	1.00	442.39 HR		2.000				885		885
8MLT-A-2	Light Tower, Genie	1.00	442.39 HR		3.500				1,548		1,548
8MVP-A-2	FORD F150 SUPERC 2	1.00	442.39 HR		6.500				2,876		2,876
8WELD400	Welder 400 AMP	2.00	884.78 HR		2.044				1,808		1,808
M100	Foreman - Carpenter	1.00	442.39 MH		34.720	27,030					27,030
M170	M-Welder	1.00	442.39 MH		41.050	34,527					34,527
M173	M-Lead Carpenter	1.00	442.39 MH		35.490	30,973					30,973
M175	M-Carpenter	3.00	1,327.17 MH		35.490	92,919					92,919
M180	M-Carpenter Helper	3.00	1,327.17 MH		35.490	92,919					92,919
OPCR100	Op Eng 1A- Crane 100-20		442.39 MH		39.190	29,674					29,674
\$389,066.51	4,423.9000 MH/	LS	4,423.90 MH	[1'	76836.11]	308,043			81,023		389,067
303042	Concrete Supply		Marine	Quan	5,168.00	CY Hr	s/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Copied	d and adjusted from	Y:\TB	G-ENGI\EST\13	3-008-5H	****						
2CR14	5000 PSI Concrete		5,684.80 CY		105.000		596,904				596,904
303043	Concrete Pumping		Marine	Quan	0.88	LS Hr	s/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Coniec	d and adjusted from	V:\TR	G-ENGI\EST\13	R-008-5H	****						
5CONCP36M	Concrete Concrete Pump 3		221.19 HR	000 311	125.000			27,649			27,649
303045	Piling - Rebar		Marine	Quan	684,374.00	LS Hr	s/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Copied	d and adjusted from	Y:\TB	G-ENGI\EST\13	3-008-5H	****						
Option 5 === PIECES SIZE INST. EA. #3 0.376 (#4 0.668 (==>48" Pipe Pile Ar WEIGHT LENGTH POUNI PRICE PRICE 0.00 0.00 0.65 \$0.00 0.00 0.00 0.65 \$0.00	ea I DS TON 0 0 ti	S UNIT EXT.								

tie ## 2.670 256,320 684,374 342.19 0.65 \$444,843.36 hook dowels @ 5' #9 3.400 0 0.00 0.65 \$0.00 #10 4.303 0 0.00 0.65 \$0.00

#7 2.044 0.00 0.00 0.65 \$0.00

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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material		nstr Exp	Equip Ment	Sub- Contract	
Description =	Piling Wharf Area I	NT# = 02	2-12	Marine Item Unit =	SCHEDU FT	ULE: 1 Takeoff		00 31,215	5.000	Engr	Quan:	31,215.000
#14 7.650 #18 13.600 684,374 10% 752,8 SUBTOTA TAX 6.5 TOTAL:	112 L: \$444,843.36 %: \$28,914.82 \$473,758.18 8% \$37											
2RR02 2RR10	Gr 60 Rebar Rebar Supports		52,811.40 LB 52,811.40 LB		0.480 0.050		361,349 37,641					361,349 37,641
2RS16	**		3,095.40 EA		13.000		40,240					40,240
5REBAR	Rebar Sub	68	84,374.00 LB		0.280		420.220	191,				191,625
\$630,854.96					[]		439,230	191,	023			630,855
304000	Pile Splices - Pipe pile		Marin	ie Quan:	176.96	EA Hrs	s/Shft:	10.00	Cal: 5	10 WC	: CCISP	
***** Copied 5SPLICES	l and adjusted from Y Welding Subcontractor	Y:\TBG	G-ENGI\EST\1 265.43 EA	.3-008-5Н	* * * * * 650.000			172,	530			172,530
====> Item T \$16,707,890.76 535.252	Totals: 30060 - 1 0.2267 MH/FT 31215 FT		Wharf Area I 7,078.24 MH		[9.122]	492,411 15.77	15,504,611 496.70		020 2	233,848 7.49		16,707,891 535.25
	30080 CLIEN Sheet Pile Bulkhead Supply Open Cell Flat She	NT# = 02	2-12 Mari n	Marine Item Unit =		Takeoff	Quan:	00 4,300 10.00			Quan:	4,300.000
Description = 301000 ***** Copied 2FSZ	Sheet Pile Bulkhead	ets Y:\TBG 19,29	Marin	Unit = e Quan:	LF 19,296,150.00	Takeoff LB Hrs	Quan:	4,300 10.00			`	<i></i>
Description = 301000 ***** Copied 2FSZ 2SSPGALVANIZ	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE	ets Y:\TBG 19,29	Mari n -ENGI\EST\1 96,149.87 LB	Unit = Quan: 3-008-5H	LF 19,296,150.00 ***** 0.950 0.350 []	Takeoff LB Hrs 18	Quan: s/Shft: 3,331,342 5,753,653	4,300 10.00	Cal: 5	10 WC	: CCISP	18,331,342 6,753,653 25,084,995
Description = 301000 ***** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Z Galvanization of SSP Sheeting Template and adjusted from Y	Y:\TBG 19,29 19,29 Y:\TBG	Marin ENGI\EST\1 96,149.87 LB 96,150.00 LB 	Unit = Quan: .3-008-5H Quan: .3-008-5H	LF 19,296,150.00 ***** 0.950 0.350 [] 3.74	Takeoff LB Hrs 18	Quan: s/Shft: 3,331,342 5,753,653 5,084,995	4,300 10.00	Cal: 5	10 WC	: CCISP	18,331,342 6,753,653 25,084,995
Description = 301000 ***** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied 31SHEETEMPLA	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Calvanization of SSP Sheeting Template and adjusted from Y AOpen Cell Template	Y:\TBG 19,29 19,29 Y:\TBG	MarieENGI\EST\1 96,149.87 LB 96,150.00 LB MarieENGI\EST\1 3.74 LS	Unit = Re Quan: .3-008-5H Re Quan: .3-008-5H 8.	LF 19,296,150.00 ***** 0.950 0.350 [] 3.74 ***** 5,000.000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317,	Cal: 5.	10 WC	: CCISP	18,331,342 6,753,653 25,084,995 317,900
Description = 301000 ***** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied 31SHEETEMPLA	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead	Y:\TBG 19,29 19,29 Y:\TBG	Marin S-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin S-ENGI\EST\1 3.74 LS Marin	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .4456667888.	LF 19,296,150.00 ***** 0.950 0.350 [] 3.74 ***** 5,000.000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317,	Cal: 5.	10 WC	: CCISP	18,331,342 6,753,653 25,084,995 317,900
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	Y:\TBG 19,29 Y:\TBG Y:\TBG X:\TBG	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 4-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .4456667888.	LF 19,296,150.00 ***** 0.950 0.350 [] 3.74 ***** 5,000.000 4,300.00 ***** Prod: 70.000 200.000 163.361	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 188,662	: CCISP	18,331,342 6,753,653 25,084,995 317,900 es: 17.00 20,939 59,826 488,662
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK****	Y:\TBG 19,29 19,29 Y:\TBG Y:\TBG	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 4-ENGI\EST\1 2,99 299.13 DA 299.13 DA	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	LF 19,296,150.00 ***** 0.950 0.350 [] 3.74 ***** 5,000.000 4,300.00 ***** Prod: 70.000 200.000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826	: CCISP	18,331,342 6,753,653 25,084,995 317,900 es: 17.00 20,939 59,826 488,662 52,348
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	Y:\TBG Y:\TBG Y:\TBG Y:\TBG Y:\TBG 1.00 1.00 1.00	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 2,991.30 DA 2,991.30 HR 2,991.30 HR 2,991.30 HR 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	LF 19,296,150,00 ***** 0,950 0,350 [] 3.74 ***** **** Prod: 70,000 200,000 163,361 17,500 3,000 10,000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 188,662 52,348 8,974 29,913	: CCISP	18,331,342 6,753,653 25,084,995 317,900 ss: 17.00 20,939 59,826 488,662 52,348 8,974 29,913
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK *** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45'	Y:\TBG Y:\TBG Y:\TBG Y:\TBG X:\TBG 01.00 1.00 1.00 1.00 1.00	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR 2,991.30 HR 2,991.30 HR 2,991.30 HR 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	LF 19,296,150,00 9 ***** 0,950 0,350 [] 3.74 ***** 5,000,000 4,300,00 9 ***** Prod: 70,000 200,000 163,361 17,500 3,000 10,000 17,500	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 88,662 52,348 8,974 29,913 52,348	: CCISP	18,331,342 6,753,653 25,084,995 317,900 es: 17.00 20,939 59,826 488,662 52,348 8,974 29,913 52,348
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP	Y:\TBG Y:\TBG Y:\TBG Y:\TBG X:\TBG 01.00 1.00 1.00 1.00 1.00 1.00	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	***** Prod: 70,000 200,000 17,500 20,000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 488,662 52,348 8,974 29,913 52,348 59,826	: CCISP	18,331,342 6,753,653 25,084,995 317,900 317,900 20,939 59,826 488,662 52,348 8,974 29,913 52,348 59,826
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Y STEEL SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Y A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK *** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45'	Y:\TBG Y:\TBG Y:\TBG Y:\TBG X:\TBG 01.00 1.00 1.00 1.00 1.00	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR 2,991.30 HR 2,991.30 HR 2,991.30 HR 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	LF 19,296,150,00 9 ***** 0,950 0,350 [] 3.74 ***** 5,000,000 4,300,00 9 ***** Prod: 70,000 200,000 163,361 17,500 3,000 10,000 17,500	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 88,662 52,348 8,974 29,913 52,348	: CCISP	18,331,342 6,753,653 25,084,995 317,900 es: 17.00 20,939 59,826 488,662 52,348 8,974 29,913 52,348
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Yestell Sheet Galvanization of SSP Sheeting Template and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER	Y:\TBG 19,29 19,29 Y:\TBG Y:\TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	***** Prod: 70.000 200.000 17.500 20.000 3.000 10.000 10.000 10.000 10.000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 188,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913	: CCISP	18,331,342 6,753,653 25,084,995 317,900 317,900 20,939 59,826 488,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Yesteel SHEET PILE Galvanization of SSP Sheeting Template and adjusted from Yesteel Sheeting Bulkhead and adjusted from Yesteel S	Y:\TBG 19,29 19,29 Y:\TBG Y:\TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marie 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marie 3-ENGI\EST\1 3.74 LS Marie 3-ENGI\EST\1 2,99 299.13 DA 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	***** 19,296,150.00 ***** 0.950 0.350 [] 3.74 ***** 5,000.000 4,300.00 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 188,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913 299	: CCISP	18,331,342 6,753,653 25,084,995 317,900 20,939 59,826 488,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913 299
Description = 301000 ****** Copied 2FSZ 2SSPGALVANIZ \$25,084,994.88 301015 ****** Copied 31SHEETEMPLA 301020 ****** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7	Sheet Pile Bulkhead Supply Open Cell Flat Sheet and adjusted from Yestell Sheet Galvanization of SSP Sheeting Template and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Cell Template Drive Sheeting Bulkhead and adjusted from Yestell Acopen Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER	Y:\TBG 19,29 19,29 Y:\TBG Y:\TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	Marin 3-ENGI\EST\1 96,149.87 LB 96,150.00 LB Marin 3-ENGI\EST\1 3.74 LS Marin 3-ENGI\EST\1 2,99 299.13 DA 299.13 DA 2,991.30 HR	Unit = Quan: .3-008-5H Quan: .3-008-5H 8: .3-008-5H	***** Prod: 70.000 200.000 17.500 20.000 3.000 10.000 10.000 10.000 10.000	Takeoff LB Hrs 18 6 25 LF Hrs	Quan: s/Shft: 3,331,342 5,753,653 5,084,995 s/Shft:	4,300 10.00 10.00 317, 10.00 Lab I	Cal: 5. 900 Cal: 5.	10 WC 10 WC 6.00 59,826 188,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913	: CCISP	18,331,342 6,753,653 25,084,995 317,900 317,900 20,939 59,826 488,662 52,348 8,974 29,913 52,348 59,826 8,974 14,957 29,913

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Bob Wells **Direct Cost Report**

Activity Resource	Desc	Pcs	Quantity Unit	t	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Sub Ment Contrac	
BID ITEM = Description =	Sheet Pile Bulkhead	NT# = 02	2-12	Marine Iter Unit :		OULE: Takeoff		00 4,300.000	Engr Quan:	4,300.000
8MVP-A-11 8MWH-A-1	FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00	2,991.30 HR 2,991.30 HR		6.500 10.000				19,443 29,913	19,443 29,913
8MWM-C-1 8PILE26 9100000 M105 M165 M170 M190 M195	Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver M-Welder M-Skilled Laborer M-Laborer	1.00 1.00 1.00 1.00 1.00 1.00	2,991.30 HR 2,991.30 HR 299.13 DA 2,991.30 MH 2,991.30 MH 2,991.30 MH 2,991.30 MH 2,991.30 MH		2.500 45.492 500.000 35.720 34.950 41.050 35.430 35.430	187,092 207,096 233,463 209,171 209,171		149,565	7,478 136,080	7,478 136,080 149,565 187,092 207,096 233,463 209,171 209,171
OPCR100 \$2,450,496.32	Op Eng 1A- Crane 100-200 4.1739 MH/L		2,991.30 MH 7,947.80 MH		39.190 [169.702]	200,647 1,246,639		170,504	1,033,354	200,647 2,450,496
301030	Bulkhead Concrete Pile C	ар	Mari	ine Quan	: 2,400.00	CY H	rs/Shft:	8.00	WC: NONE	
7.0 STEEL P. 8.0 STEEL P. 9.0 CIP CONG 2CR14	-PILE L.B. 729,120 1: S PILING GR. 50 L.B. IPE PILE 10INCH DIA. CRETE CLASS 4000 - P 5000 PSI Concrete	2,640 L.B. 9 ILE CA	9,964,109	lbs ??	240.000		633,600			633,600
\$28,486,991.20 6,624.882	4.1739 MH/LF 4300 LF	1	7,947.80 MH		[169.702]		25,718,595 5,981.07	488,404 113.58	1,033,354 240.31	28,486,991 6,624.88
BID ITEM = Description =	= 30081 CLIEN Credit Free Issue Sheet Pile	NT#= 02	2-12	Land Item Unit =	SCHED LS	ULE: Takeoff		00 1.000	Engr Quan:	1.000
301000	Supply Open Cell Flat She	ets	Mari							
				ine Quan	: 7,101,861.70	LB H	rs/Shft: 1	10.00 Cal:	510 WC: CCISI	•
Total LF 26 Unit weight Total weigh 2FSZ 2SSPGALVANI \$-9,232,420.18	,040.00 116,453.00 45.10 50.90 t 1,174,404.00 5,927 STEEL SHEET PILE Z Galvanization of SSP	-7,10 -7,10	01,861.70 LB 01,861.59 LB	1.70 Lbs	0.950 0.350	- -	6,746,769 2,485,652 9,232,420	10.00 Cal:	510 WC: CCISE	-6,746,769 -2,485,652 -9,232,420
Total LF 26 Unit weight Total weight 2FSZ 2SSPGALVANI \$-9,232,420.18 =====> Item \$-9,232,420.18	7.5 PS 31 ,040.00 116,453.00 45.10 50.90 t 1,174,404.00 5,927 STEEL SHEET PILE Z Galvanization of SSP	-7,10 -7,10	01,861.70 LB	1.70 Lbs	0.950 0.350	- - -	6,746,769 2,485,652	10.00 Cal:		-6,746,769 -2,485,652
Total LF 26 Unit weight Total weight 2FSZ 2SSPGALVANI \$-9,232,420.18 =====> Item \$-9,232,420.179 BID ITEM =	7.5 PS 31 ,040.00 116,453.00 45.10 50.90 t 1,174,404.00 5,927 STEEL SHEET PILE Z Galvanization of SSP Totals: 30081 -	-7,10 -7,10 Credit F NT# = 02	01,861.70 LB 01,861.59 LB Tree Issue She	1.70 Lbs	0.950 0.350 [] - []	- - - -9,2	6,746,769 2,485,652 9,232,420 9,232,420 32,420.17	00 51,600.000	-9	-6,746,769 -2,485,652 -9,232,420 -9,232,420 2,232,420.17
Total LF 26 Unit weight Total weight 2FSZ 2SSPGALVANI \$-9,232,420.18 ====> Item \$-9,232,420.179 BID ITEM = Description =	7.5 PS 31 ,040.00 116,453.00 45.10 50.90 t 1,174,404.00 5,927 STEEL SHEET PILE Z Galvanization of SSP Totals: 30081 - 1 LS	-7,10 -7,10 Credit F NT# = 02	01,861.70 LB 01,861.59 LB Tree Issue She	1.70 Lbs et Pile Marine Iter Unit :	0.950 0.350 [] - []	- - -9,2 DULE: Takeoff	6,746,769 2,485,652 9,232,420 9,232,420 32,420.17	00 51,600.000	-9	-6,746,769 -2,485,652 -9,232,420 -9,232,420 0,232,420.17
Unit weight Total weight 2FSZ 2SSPGALVANI \$-9,232,420.18 ====> Item \$-9,232,420.179 BID ITEM Description = 322005 ***** Copied	7.5 PS 31 ,040.00 116,453.00 45.10 50.90 t 1,174,404.00 5,927 STEEL SHEET PILE Z Galvanization of SSP Totals: 30081 - 1 LS = 30090 CLIEN Concrete Deck Superstructur	-7,10 -7,10 Credit F NT# = 02 re	01,861.70 LB 01,861.59 LB Cree Issue Shee 2-12	1.70 Lbs et Pile Marine Iter Unit =	0.950 0.350 [] - [] m SCHEE = SF	- - -9,2 DULE: Takeoff	6,746,769 2,485,652 9,232,420 9,232,420 32,420.17	00 51,600.000	-9 Engr Quan:	-6,746,769 -2,485,652 -9,232,420 -9,232,420 0,232,420.17

13-008-5 POA 15% CONCEPT OPTION 5 02/26/2013 2 Bob Wells **Direct Cost Report**

Activity Resource	Desc	Quanti Pcs	ty Unit		Unit Cost L	Per abor Materi		Equip Ment Co	Sub- ontract Total
BID ITEM = Description = 104.819	30090 CLIEN Concrete Deck Superstructure 51600 SF	TT# = 02-12	M	Marine Item Unit =	SCHEDULE SF Tal	: 1 keoff Quan:	100 51,600.000 104.82) Engr Qu	an: 51,600.000 104.82
	30100 CLIEN Abutments	TT# = 02-12	N	Marine Item Unit =	SCHEDULE EA Tal	: 1 keoff Quan:	2.000) Engr Qu	an: 2.000
303000	Supply Pipe Piles		Marine	Quan:	352.80 FT	Hrs/Shft:	10.00 Cal	: 510 WC: C	CISP
***** Copied 2PP48INCH	and adjusted from Y 48 In Diam Pipe Pile		\EST\13- 80 LF		* * * * 430.000	151,70)4		151,704
303010	Pile Painting & Wrapping		Marine	Quan:	0.01 LS	Hrs/Shft:	10.00 Cal	: 510 WC: C	CISP
	and adjusted from No.	7:\TBG-ENGI 2,955.0		008-5н *	* * * * 4.000	11,82	22		11,822
303022	Set Pile Template		Marine	Quan:	0.01 LS	Hrs/Shft:	10.00 Cal	: 510 WC: C	CISP
	and adjusted from N		\EST\13-)1 LS		* * * * 000.000		600		600
303035	Piling - Pipe		Marine	Quan:	2.00 EA	Hrs/Shft:	10.00 Cal	: 510 WC: C	CISP
MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11 8MVP-A-11 8MVP-A-11 8MVM-C-1 8PILE26 9100000 M105 M165 M170 M190 M195	and adjusted from Marine Piling & Demo Crev Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers Foreman - General Marine M-Piledriver M-Welder M-Skilled Laborer M-Laborer Op Eng 1A- Crane 100-200	0.3 0.5 1.00 5.0		00 CH	Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720 34.950 41.050 35.430 39.190	313 346 390 350 350 335	Lab Pcs: 35	100 817 88 15 50 88 100 15 25 50 1 15 18 25 33 50 13 227	17.00 35 100 35 100 817 88 15 50 88 100 15 25 50 1 15 18 25 33 50 13 346 390 350 350 335 35 100 135 150 150 150 150 150 150 150 150 150 15
\$4,096.04	15.0000 MH/E	A 30.0	00 MH]	609.88] 2	2,084	285	1,727	4,096
303040	Piling - Concrete Filling		Marine	Quan:	0.01 LS	Hrs/Shft:	10.00 Cal	: 510 WC: C	CISP
MARWOO	and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d			00 CH	**** Prod: 200.000	0.5000 S	Lab Pcs:	10.00 E	Eqp Pcs: 16.00 100

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POA 15% CONCEPT OPTION 5

Direct Cost Report

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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Perr Labor Materia			Equip Sub- Ment Contract	Total
BID ITEM =		NT# =	02-12	Marine Item			100	2.000	E O	2 000
1	Abutments			Unit =		akeoff Quan:		2.000	Engr Quan:	2.000
8CRANEC100	Crane Manitowoc 222B 1	1.00	5.00 HR		106.961				535	535
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	5.00 HR		3.000				15	15
8MBC-Z-1 8MBC-Z-2	Barge Carpenter 12'X40	1.00 1.00	5.00 HR		6.500 6.500				33 33	33 33
8MBS-Z-9	Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00	5.00 HR 5.00 HR		10.000				50	50
8MBW-Z-2	18' Aluminum Boat & O/	1.00	5.00 HR		3.000				15	15
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	5.00 HR		5.000				25	25
8MCN-A-13	Container Steel 20'	1.00	5.00 HR		0.100				1	1
8MFW-A-1	Work Float	1.00	5.00 HR		2.000				10	10
8MFW-A-2	Work Float	1.00	5.00 HR		2.000				10	10
8MGN-Z-17	Generator 8 KW	1.00	5.00 HR		2.000				10	10
8MGN-Z-18	Generator 8 KW	1.00	5.00 HR		2.000				10	10
8MLT-A-2	Light Tower, Genie	1.00	5.00 HR		3.500				18	18
8MVP-A-2	FORD F150 SUPERC 2	1.00	5.00 HR		6.500				33	33
8WELD400	Welder 400 AMP	2.00	10.00 HR		2.044				20	20
M100	Foreman - Carpenter	1.00	5.00 MH		34.720	306				306
M170	M-Welder	1.00	5.00 MH		41.050	390				390
M173 M175	M-Lead Carpenter M-Carpenter	1.00 3.00	5.00 MH 15.00 MH		35.490	350 1,050				350 1,050
M180	M-Carpenter Helper	3.00	15.00 MH 15.00 MH		35.490 35.490	1,050				1,050
OPCR100	Op Eng 1A- Crane 100-200		5.00 MH		39.190	335				335
\$4,397.34	5,000.0000 MH/L		50.00 MH	1	199867]	3,482			916	4,397
303042	Concrete Supply		Marine	Ouan:		Hrs/Shft:	10.00	Cal: 510	WC: CCISP	•
	•••			_		1115/51111.	10.00	Cal. 510	WC. CCISI	
***** Copied 2CR14	and adjusted from 5000 PSI Concrete	Y:\TB 1.10	G-ENGI\EST\13- 80.57 CY	-008-5н *	105.000	8,46	0			8,460
202042										
303043	Concrete Pumping		Marine	Quan:	0.01 LS	Hrs/Shft:	10.00	Cal: 510	WC: CCISP	
	Concrete Pumping and adjusted from	Y:\TB				Hrs/Shft:	10.00	Cal: 510	WC: CCISP	
	• 0					Hrs/Shft:	10.00	Cal: 510	WC: CCISP	313
**** Copied	and adjusted from		G-ENGI\EST\13	-008-5н *	125.000	Hrs/Shft: Hrs/Shft:		313		313
***** Copied 5CONCP36M 303045	and adjusted from Concrete Concrete Pump 36	5	G-ENGI\EST\13- 2.50 HR Marine	-008-5н * Quan:	7,075.00 LS			313		313
***** Copied 5CONCP36M 303045	and adjusted from Concrete Concrete Pump 36 Piling - Rebar	5	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB	-008-5н * Quan:	7,075.00 LS		10.00	313		313
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports	5 Y:\TB 1.10	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB	-008-5н * Quan:	7,075.00 LS 7,075.00 LS 7,075.00 LS	3,73 38	10.00 6 9	313		3,736 389
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8)	6 Y:\TB	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA	-008-5н * Quan:	7,075.00 LS 7,075.00 LS ***** 0.480 0.050 13.000	Hrs/Shft: 3,73	10.00 6 9 6	313 Cal: 510		3,736 389 416
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports	5 Y:\TB 1.10	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB	-008-5н * Quan:	7,075.00 LS 7,075.00 LS ***** 0.480 0.050 13.000 0.280	3,73 38 41	10.00 6 9 6	313 Cal: 510		3,736 389 416 1,981
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8)	5 Y:\TB 1.10	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA	-008-5н * Quan:	7,075.00 LS 7,075.00 LS ***** 0.480 0.050 13.000	3,73 38	10.00 6 9 6	313 Cal: 510		3,736 389 416
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8)	5 Y:\TB 1.10	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA	-008-5н * Quan:	7,075.00 LS 7,075.00 LS ***** 0.480 0.050 13.000 0.280 []	3,73 38 41	10.00 6 9 6	313 Cal: 510 1,981 1,981	WC: CCISP	3,736 389 416 1,981
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub	Y:\TB 1.10 16.00	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13-	Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54	10.00 6 9 6 1	313 Cal: 510 1,981 1,981 Cal: 510	WC: CCISP	3,736 389 416 1,981 6,522
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile	Y:\TB 1.10 16.00	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine	Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54	10.00 6 9 6 1	313 Cal: 510 1,981 1,981	WC: CCISP	3,736 389 416 1,981
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from	Y:\TB 1.10 16.00	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13-	Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54	10.00 6 9 6 1 10.00	313 Cal: 510 1,981 1,981 Cal: 510 1,950	WC: CCISP	3,736 389 416 1,981 6,522
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor	Y:\TB 1.10 16.00 Y:\TB	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft:	10.00 6 9 6 1 10.00	313 Cal: 510 1,981 1,981 Cal: 510 1,950	WC: CCISP	3,736 389 416 1,981 6,522
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins	9:\TB 1.10 16.00 Y:\TB	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft:	10.00 6 9 6 1 10.00	313 Cal: 510 1,981 1,981 Cal: 510 1,950 Cal: 510	WC: CCISP	3,736 389 416 1,981 6,522
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ****** Copied	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from	Y:\TB Y:\TB W 1.10	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft:	10.00 6 9 6 1 10.00 10.00	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510	WC: CCISP WC: CCISP	3,736 389 416 1,981 6,522
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Cree 5000 PSI Concrete Gr 60 Rebar	Y:\TB 1.10 16.00 Y:\TB W 1.10 1.05	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S	10.00 6 9 6 1 10.00 Lab 8	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510	WC: CCISP WC: CCISP	3,736 389 416 1,981 6,522 1,950
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Crete 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Weld Supplies (1 man	Y:\TB 1.10 16.00 Y:\TB W 1.10 1.05	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY 12,720.75 LB 12.00 DA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S 8,77	10.00 6 9 6 1 10.00 Lab 8 6	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510 Pes: 6	WC: CCISP WC: CCISP	3,736 389 416 1,981 6,522 1,950 17.00 8,778 6,106 840
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Cret 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub	Y:\TB 1.10 16.00 Y:\TB W 1.10 1.05	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY 12,720.75 LB 12.00 DA 12,720.67 LB	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S 8,77	10.00 6 9 6 1 10.00 Lab 8 6	313 Cal: 510 1,981 1,981 Cal: 510 1,950 Cal: 510 Pes: 6. 840 3,562	WC: CCISP WC: CCISP OO Eqp Pcs:	3,736 389 416 1,981 6,522 1,950 17.00 8,778 6,106 840 3,562
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050	Piling - Rebar and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Cree 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d	Y:\TB 1.10 16.00 Y:\TB W 1.10 1.05	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY 12,720.75 LB 12.00 DA 12,720.67 LB 12.00 DA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S 8,77	10.00 6 9 6 1 10.00 Lab 8 6	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510 Pes: 6 840 3,562	WC: CCISP WC: CCISP OO Eqp Pcs:	3,736 389 416 1,981 6,522 1,950 17.00 8,778 6,106 840 3,562 2,400
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200	and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Cres 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	Y:\TB Y:\TB Y:\TB W 1.10 1.05 C	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY 12,720.75 LB 12.00 DA 12,720.67 LB 12.00 DA 12,000 HR	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S 8,77	10.00 6 9 6 1 10.00 Lab 8 6	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510 Pes: 6 840 3,562	WC: CCISP WC: CCISP OO Eqp Pcs:	3,736 389 416 1,981 6,522 1,950 17.00 8,778 6,106 840 3,562 2,400 19,603
***** Copied 5CONCP36M 303045 ***** Copied 2RR02 2RR10 2RS16 5REBAR \$6,521.64 304000 ***** Copied 5SPLICES 322910 ***** Copied MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050	Piling - Rebar and adjusted from Concrete Concrete Pump 36 Piling - Rebar and adjusted from Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile and adjusted from Welding Subcontractor Concrete Cap Dolphins and adjusted from Marine Piling & Demo Cree 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d	Y:\TB 1.10 16.00 Y:\TB W 1.10 1.05	G-ENGI\EST\13- 2.50 HR Marine G-ENGI\EST\13- 7,782.50 LB 7,782.50 LB 32.00 EA 7,074.67 LB Marine G-ENGI\EST\13- 3.00 EA G-ENGI\EST\13- 120. 83.60 CY 12,720.75 LB 12.00 DA 12,720.67 LB 12.00 DA	Quan: -008-5H * Quan: -008-5H * Quan: -008-5H *	7,075.00 LS 7,075.	3,73 38 41 4,54 Hrs/Shft: 12.0000 S 8,77	10.00 6 9 6 1 10.00 Lab 8 6	313 Cal: 510 1,981 1,981 Cal: 510 Cal: 510 Pes: 6 840 3,562	WC: CCISP WC: CCISP OO Eqp Pcs:	3,736 389 416 1,981 6,522 1,950 17.00 8,778 6,106 840 3,562 2,400

CH2MHILL 13-008-5 Bob Wells

8MDH-A-7

DELMAG D19 HAMMER 1.00

100.00 HR

10.000

1,000

1,000

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POA 15% CONCEPT OPTION 5

Direct Cost Report

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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Su Ment Contr	ub- ract Total
		ENT# =	02-12	Marine Item				00	-	• 000
Description =	Abutments			Unit =	EA	Takeoff	Quan:	2.000	Engr Quan:	2.000
MBM-Z-2	M.Barge2110 GRT OB-8		120.00 HR		10.000				1,200	1,200
MBS-Z-14	Spud Barge M-120x45'	1.00	120.00 HR		17.500				2,100	2,100
MBT-Z-12	Tug Push Boat 200 HP	1.00	120.00 HR		20.000				2,400	2,400
MBW-Z-2 MCE-A-40	18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00 1.00	120.00 HR 120.00 HR		3.000 5.000				360 600	360 600
MDH-A-7	DELMAG D19 HAMME		120.00 HR 120.00 HR		10.000				1,200	1,200
MFD-A-1	FAIRLEADS	1.00	120.00 HR		0.100				12	12
MGN-Z-11	Generator 10 KW	1.00	120.00 HR		3.000				360	360
MLT-A-1	Light Tower, Genie	1.00	120.00 HR		3.500				420	420
MPE-A-11	Extractor Pile	1.00	120.00 HR		5.000				600	600
MVP-A-11	FORD F150 SUPERC 10		120.00 HR		6.500				780	780
MWH-A-1	WINCH 3-DRUM RB-90		120.00 HR		10.000				1,200	1,200
MWM-C-1	Welder Diesel 400 AMP	1.00	120.00 HR		2.500				300	300
PILE26 100000	Vibro Hammer 150 TN Subsistance 5 workers	1.00	120.00 HR 12.00 DA		45.492 500.000			6,000	5,459	5,459 6,000
105	Foreman - General Marin	e 1.00	120.00 DA 120.00 MH		35.720	7,505		0,000		7,505
165	M-Piledriver	1.00	120.00 MH		34.950	8,308				8,308
170	M-Welder	1.00	120.00 MH		41.050	9,366				9,366
1190	M-Skilled Laborer	1.00	120.00 MH		35.430	8,391				8,391
I 195	M-Laborer	1.00	120.00 MH		35.430	8,391				8,391
PCR100	Op Eng 1A- Crane 100-2	00 1.00	120.00 MH		39.190	8,049				8,049
===> Item 06,614.53 3,307.265	Totals: 30100 400.0000 MH/EA 2 EA	- Abutn	nents 800.00 MH	[162	- 246.035]	55,576 27,787.98	191,411	15,530 7,765.10	44,097	306,615 153,307.27
ID ITEM = escription =	= 30120 CLI Fendering	ENT# =	02-12	Marine Item Unit =	SCHED LS	ULE:		00 1.000	Engr Quan:	1.000
20010	Fendering and bollard S	system	Marin	e Quan:	1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC: CCIS	SP
**** Copie	ed and adjusted from	Y:\TB	G-ENGI\EST\1	3-008-5н *	****					
0 cylindri	@ \$58,333.00= \$580, .cal fenders @ \$5,49 .c fenders @ \$24,182	9= \$10 .00= \$								
BOLLARD	Bollards		12.00 LS	2	2,063.000		24,756			24,756
FENDER	Fender system		1.00 LS	762	2,859.000		762,859			762,859
87,615.00					[]		787,615			787,615
0020	Install Fenders and Boll	ards	Marin	e Quan:	1.00	LS Hr	s/Shft:	10.00 Cal:	510 WC: CCIS	SP
_	ed and adjusted from									
MARPIL	Marine Piling & Demo C			0.00 CH	Prod	i: 10.0	000 S	Lab Pcs:	6.00 Eqp	Pcs: 17.00
	Weld Supplies (1 man-St	ck	10.00 DA		70.000			700	2,000	700 2,000
VELD			10 00 5 4		200 000					
VELD 211050	Fuel, Oil, Grease 50g/d	1.00	10.00 DA		200.000					
WELD 211050 CRANEC200	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20		100.00 HR		163.361				16,336	16,336
WELD 211050 CRANEC200 DRILLR	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK***	1.00	100.00 HR 100.00 HR		163.361 17.500				16,336 1,750	16,336 1,750
WELD 211050 CRANEC200 DRILLR MAC-A-10	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	1.00 1.00	100.00 HR 100.00 HR 100.00 HR		163.361 17.500 3.000				16,336 1,750 300	16,336 1,750 300
VELD 11050 CRANEC200 DRILLR MAC-A-10 MBM-Z-2	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-8	1.00 1.00 0- 1.00	100.00 HR 100.00 HR 100.00 HR 100.00 HR		163.361 17.500 3.000 10.000				16,336 1,750 300 1,000	16,336 1,750 300 1,000
VELD 11050 CRANEC200 PRILLR 4AC-A-10 4BM-Z-2 4BS-Z-14	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	1.00 1.00	100.00 HR 100.00 HR 100.00 HR		163.361 17.500 3.000				16,336 1,750 300	16,336 1,750 300
/ELD 11050 RANEC200 RILLR IAC-A-10 IBM-Z-2 IBS-Z-14 IBT-Z-12	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-8 Spud Barge M-120x45'	1.00 1.00 0- 1.00 1.00	100.00 HR 100.00 HR 100.00 HR 100.00 HR 100.00 HR		163.361 17.500 3.000 10.000 17.500				16,336 1,750 300 1,000 1,750	16,336 1,750 300 1,000 1,750
WELD 211050 CRANEC200 DRILLR MAC-A-10 MBM-Z-2 MBS-Z-14 MBT-Z-12 MBW-Z-2 MCE-A-40	Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-8 Spud Barge M-120x45' Tug Push Boat 200 HP	1.00 1.00 0- 1.00 1.00 1.00 1.00	100.00 HR 100.00 HR 100.00 HR 100.00 HR 100.00 HR 100.00 HR		163.361 17.500 3.000 10.000 17.500 20.000				16,336 1,750 300 1,000 1,750 2,000	16,336 1,750 300 1,000 1,750 2,000

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Direct Cost Report

Description Fendering
8MFD-A-1 FAIRLEADS
8MGN-Z-11 Generator 10 KW 1.00 100.00 HR 3.000 300 8MLT-A-1 Light Tower, Genie 1.00 100.00 HR 3.500 350 8MLT-A-11 Extractor Pile 1.00 100.00 HR 5.000 500 8MYP-A-11 FORD F150 SUPERC 10 1.00 100.00 HR 6.500 650 8MYP-A-11 FORD F150 SUPERC 10 1.00 100.00 HR 6.500 650 8MWHA-1 WINCH 3-DRUM RB-90 1.00 100.00 HR 10.000 1.000 8MWHA-1 WINCH 3-DRUM RB-90 1.00 100.00 HR 2.500 250 8PILE26 Vibro Hammer 150 TN 1.00 100.00 HR 45.492 4,549 9100000 Subsistance 5 workers 10.00 DA 500.000 5,000 M105 Foreman - General Marine 1.00 100.00 MH 35.720 6,255 M170 M-Welder 1.00 100.00 MH 34.950 6,923 M170 M-Welder 1.00 100.00 MH 41.050 7,805 M190 M-Skilled Laborer 1.00 100.00 MH 35.430 6,993 M195 M-Laborer 1.00 100.00 MH 35.430 6,993 OPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 35.430 6,993 OPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 8 ====>> Item Totals: 30120 - Fendering 8869,535.780 1 LS
SMLT-A-1
SMPE-A-11
SMVP-A-11
SMWH-A-1 WINCH 3-DRUM RB-90 1.00 100.00 HR 10.000 1,000
SMWM-C-1 Welder Diesel 400 AMP 1.00 100.00 HR 2.500 250
SPILE26
Subsistance 5 workers
M165 M-Piledriver 1.00 100.00 MH 34.950 6,923 M170 M-Welder 1.00 100.00 MH 41.050 7,805 M190 M-Skilled Laborer 1.00 100.00 MH 35.430 6,993 M195 M-Laborer 1.00 100.00 MH 35.430 6,993 DPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8 =====> Item Totals: 30120 - Fendering 8869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 369,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 M-1,675.48 787,615.00 5,700.00 34,545.30 869,5 BID ITEM = 30140 CLIENT#= 02-12 Marine Item SCHEDULE: 1 100 Description = Slope Protection Unit = CY Takeoff Quan: 119,000.000 Engr Quan: 119,00 Description = Slope Armor Rock Quan: 107,415.23 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP
M170 M-Welder 1.00 100.00 MH 41.050 7,805 M190 M-Skilled Laborer 1.00 100.00 MH 35.430 6,993 M195 M-Laborer 1.00 100.00 MH 35.430 6,993 OPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8 =====> Item Totals: 30120 - Fendering 8869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 Marine Item SCHEDULE: 1 100 Description = Slope Protection Unit = CY Takeoff Quan: 119,000.000 Engr Quan: 119,000 203900 Supply Armor Rock Quan: 107,415.23 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP
M190 M-Skilled Laborer 1.00 100.00 MH 35.430 6,993 M195 M-Laborer 1.00 100.00 MH 35.430 6,993 DPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8 > Item Totals: 30120 - Fendering 8869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 41,675.48 787,615.00 5,700.00 34,545.30 869,5 BID ITEM = 30140 CLIENT# = 02-12 Marine Item SCHEDULE: 1 100 Description = Slope Protection Unit = CY Takeoff Quan: 119,000.000 Engr Quan: 119,000 203900 Supply Armor Rock Quan: 107,415.23 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP
M195 M-Laborer 1.00 100.00 MH 35.430 6,993 DPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8
OPCR100 Op Eng 1A- Crane 100-200 1.00 100.00 MH 39.190 6,708 881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8 > Item Totals: 30120 - Fendering 8869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH/LS 600.00 M
881,920.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 5,700 34,545 8 =====> Item Totals: 30120 - Fendering 8869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH/LS 600.00 MH/L
See==== Item Totals: 30120 - Fendering
869,535.78 600.0000 MH/LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 1 LS 600.00 MH [24394.7] 41,675 787,615 5,700 34,545 86 869,535.780 5,700.00 34,545.30 869,5 BID ITEM = 30140 CLIENT# = 02-12 Marine Item SCHEDULE: 1 100 Description = Slope Protection Unit = CY Takeoff Quan: 119,000.000 Engr Quan: 119,00 CO3900 Supply Armor Rock Quan: 107,415.23 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP ******* Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ******
BID ITEM = 30140 CLIENT# = 02-12 Marine Item SCHEDULE: 1 100 Description = Slope Protection Unit = CY Takeoff Quan: 119,000.000 Engr Quan: 119,00 CO3900 Supply Armor Rock Quan: 107,415.23 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP ******* Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ******
BID ITEM = 30140
Description = Slope Protection
209900 Install Slope Protection Marine Quan: 127,113.64 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP
***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****
MARLAN Demolition Crew on land 2,594.15 CH Prod: 259.4156 S Lab Pcs: 19.00 Eqp Pcs:
3211050 Fuel, Oil, Grease 50g/d 259.42 DA 200.000 51,884 5
3BHLD480 BHL Cat 450E 1.75CY 8.00 20,753.25 HR 45.473 943,713 94
CRANEC100 Crane Manitowoc 222B 1 1.00 2,594.16 HR 106.961 277,474 27
TRKPU10 Pickup 4x2 3/4 Ton Gas 4.00 10,376.62 HR 7.044 73,093 7 100010 Subistance 10 workerss 259.42 DA 1,000.000 259,420 25
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19 M195 M-Laborer 8.00 20,753.25 MH 35.430 1,451,199 1,45
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19 M195 M-Laborer 8.00 20,753.25 MH 35.430 1,451,199 1,45 OPCR100 Op Eng 1A- Crane 100-200 1.00 2,594.16 MH 39.190 174,008 174,008
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19 M195 M-Laborer 8.00 20,753.25 MH 35.430 1,451,199 1,45 OPCR100 Op Eng 1A- Crane 100-200 1.00 2,594.16 MH 39.190 174,008 17 OPEXC3 Op Eng 3- Backhoe to 3Y 8.00 20,753.25 MH 37.430 1,347,252 1,34
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19 M195 M-Laborer 8.00 20,753.25 MH 35.430 1,451,199 1,45 DPCR100 Op Eng 1A- Crane 100-200 1.00 2,594.16 MH 39.190 174,008 176 DPEXC3 Op Eng 3- Backhoe to 3Y 8.00 20,753.25 MH 37.430 1,347,252 1,344 MH/CY 49,288.98 MH [15.646] 3,330,906 259,420 1,346,163 4,93
M105 Foreman - General Marine 1.00 2,594.16 MH 35.720 162,253 16 M150 M-Operator, Crane 1.00 2,594.16 MH 39.190 196,195 19 M195 M-Laborer 8.00 20,753.25 MH 35.430 1,451,199 1,45 OPCR100 Op Eng 1A- Crane 100-200 1.00 2,594.16 MH 39.190 174,008 17 OPEXC3 Op Eng 3- Backhoe to 3Y 8.00 20,753.25 MH 37.430 1,347,252 1,34

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Sub-Equip Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total Resource

BID ITEM = 30260 Land Item SCHEDULE: 100

Piling Wharf Area II & III Description = Unit = FT Takeoff Quan: 168,378.000 Engr Quan: 168,378.000

303000 **Supply Pipe Piles** Marine Quan: 168,378.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

AREA 1

48 " 0 1 " Thick Steel Pipe Pile

> Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

168,378.00 1 168,378.00 502.43 84,598,158.5 42,299.1

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

131.91 851 48 1,410,603.5

Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft)

A1 55 203 11,165.00 85.00 58,747.9 78,320

A56 109 223 24,307.00 85.00 116,427.7 155,216

B1 55 198 10,890.00 85.00 58,747.9 78,320

B56 55 213 11,715.00 85.00 58,747.9 78,320

C1 55 198 10,890.00 85.00 58,747.9 78,320

C56 55 203 11,165.00 85.00 58,747.9 78,320

D-1 55 193 10,615.00 85.00 58,747.9 78.320

D56 55 198 10,890.00 85.00 58,747.9 78,320

E6A 12 203 2,436.00 85.00 12,817.7 17,088

E56 55 193 10,615.00 85.00 58,747.9 78,320

F6A 12 193 2,316.00 85.00 12,817.7 17,088 F56 55 188 10,340.00 85.00 58,747.9

G6A 8 188 1,504.00 85.00 8,545.2 11,392

G56 109 198 21,582.00 85.00 116,427.7 155,216

H6A 8 183 1,464.00 85.00 8,545.2 11,392

H60 10 193 1,930.00 85.00 10,681.4 14,240

I6A 8 178 1,424.00 85.00 8,545.2 11,392

160 10 183 1,830.00 85.00 10,681.4 14,240

J6A 8 173 1,384.00 85.00 8,545.2 11,392

J60 6 178 1,068.00 85.00 6,408.9 8.544

K6A 8 168 1,344.00 85.00 8,545.2 K60 6 173 1,038.00 85.00 6,408.9 8,544

L6A 8 163 1,304.00 85.00 8,545.2 11,392

L60 6 168 1,008.00 85.00 6,408.9 8,544

M6A 8 158 1,264.00 85.00 8,545.2 11,392

M60 6 163 978.00 85.00 6,408.9 8,544

N6A 8 128 1,024.00 85.00 8,545.2 11,392

N60 6 148 888.00 85.00 6,408.9 8,544

851 183.9 168,378.00 908,990.5 cf 1,211,824

Average 197.9 33,666.3 cy

2PP48INCH 48 In Diam Pipe Pile 168,378.00 LF 430.000 72,402,540 72,402,540

303010 Pile Painting & Wrapping Marine **Quan:** 4.78 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

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2PP48COATING Pipe Pile Shop Coating 1,410,603.40 SF 4.000 5,642,414 5,642,414

303022 **Set Pile Template** Marine Ouan: 4.78 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H *****

31PILETEMPLA Pipe Pile Template 4.78 LS 60,000.000 286,800 286,800

Piling - Pipe 303035 954.52 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine Ouan:

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity	Unit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
	30260			L	and Item	SCHEDU			00	F	0 160	270 000
-	Piling Wharf Area II & III				Unit =	FT	Takeoff	Quan:	168,378.000	Engr	Quan: 168	5,3 /8.000
	and adjusted from N		G-ENGI\E									
MARPIL	Marine Piling & Demo Crev		220.52		1 CH	Prod:	238.6	310 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		238.63			70.000			16,704	47.706		16,704
8211050	Fuel, Oil, Grease 50g/d	1.00	238.63			200.000				47,726		47,726
8CRANEC200	Crane Manitowoc 777 20	1.00	2,386.31			163.361				389,830		389,830
8DRILLR	***DRILLS - ROCK***	1.00	2,386.31			17.500				41,760		41,760
8MAC-A-10 8MBM-Z-2	Compressor 185 CFM	1.00	2,386.31			3.000				7,159		7,159
	M.Barge2110 GRT OB-80-	1.00	2,386.31			10.000				23,863		23,863
8MBS-Z-14 8MBT-Z-12	Spud Barge M-120x45' Tug Push Boat 200 HP	1.00	2,386.31 2,386.31			17.500 20.000				41,760 47,726		41,760 47,726
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,386.31			3.000				7,159		7,159
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,386.31			5.000				11,932		11,932
8MDH-A-7	DELMAG D19 HAMMER	1.00	2,386.31			10.000				23,863		23,863
8MFD-A-1	FAIRLEADS	1.00	2,386.31			0.100				23,003		239
8MGN-Z-11	Generator 10 KW	1.00	2,386.31			3.000				7,159		7,159
8MLT-A-1	Light Tower, Genie	1.00	2,386.31			3.500				8,352		8,352
8MPE-A-11	Extractor Pile	1.00	2,386.31			5.000				11,932		11,932
8MVP-A-11	FORD F150 SUPERC 10	1.00	2,386.31			6.500				15,511		15,511
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	2,386.31			10.000				23,863		23,863
8MWM-C-1	Welder Diesel 400 AMP	1.00	2,386.31			2.500				5,966		5,966
8PILE26	Vibro Hammer 150 TN	1.00	2,386.31			45.492				108,558		108,558
9100000	Subsistance 5 workers		238.63			500.000			119,315	,		119,315
M105	Foreman - General Marine	1.00	2,386.31				149,253		117,010			149,253
M165	M-Piledriver	1.00	2,386.31			34.950	165,211					165,211
M170	M-Welder	1.00	2,386.31			41.050	186,245					186,245
M190	M-Skilled Laborer	1.00	2,386.31			35.430	166,866					166,866
M195	M-Laborer	1.00	2,386.31			35.430	166,866					166,866
OPCR100	Op Eng 1A- Crane 100-200	1.00	2,386.31				160,066					160,066
\$1,954,882.99	15.0000 MH/E		14,317.86	MH		[609.87]	994,506		136,019	824,358	1	,954,883
303040	Piling - Concrete Filling		:	Marine	Quan:	4.78]	LS Hrs	s/Shft:	10.00 Cal:	510 WC	: CCISP	
**** Conied	l and adjusted from N	7:\TR	G-ENGI\E	:ST\13-	008-5H	****						
MARWOO	Marine Carpenters Crew	1. (12	O DIVOT (I		1 CH	Prod:	238.6	310 S	Lab Pcs:	10.00	Eqp Pcs:	16.00
8211050	Fuel, Oil, Grease 50g/d		238.63			200.000	. 200.0	010 0	Luo I cs.	47,726	Eqp res.	47,726
8CRANEC100	Crane Manitowoc 222B 1	1.00	2,386.31			106.961				255,242		255,242
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	2,386.31			3.000				7,159		7,159
8MBC-Z-1	Barge Carpenter 12'X40	1.00	2,386.31			6.500				15,511		15,511
8MBC-Z-2	Barge Carpenter 12'X40	1.00	2,386.31			6.500				15,511		15,511
8MBS-Z-9	Spud Barge M-80x28'	1.00	2,386.31			10.000				23,863		23,863
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,386.31			3.000				7,159		7,159
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,386.31			5.000				11,932		11,932
8MCN-A-13	Container Steel 20'	1.00	2,386.31			0.100				239		239
8MFW-A-1	Work Float	1.00	2,386.31	HR		2.000				4,773		4,773
8MFW-A-2	Work Float	1.00	2,386.31	HR		2.000				4,773		4,773
8MGN-Z-17	Generator 8 KW	1.00	2,386.31	HR		2.000				4,773		4,773
8MGN-Z-18	Generator 8 KW	1.00	2,386.31	HR		2.000				4,773		4,773
8MLT-A-2	Light Tower, Genie	1.00	2,386.31	HR		3.500				8,352		8,352
8MVP-A-2	FORD F150 SUPERC 2	1.00	2,386.31	HR		6.500				15,511		15,511
8WELD400	Welder 400 AMP	2.00	4,772.62	HR		2.044				9,755		9,755
M100	Foreman - Carpenter	1.00	2,386.31	MH		34.720	145,805					145,805
M170	M-Welder	1.00	2,386.31	MH		41.050	186,245					186,245
M173	M-Lead Carpenter	1.00	2,386.31	MH		35.490	167,073					167,073
M175												501 210
	M-Carpenter	3.00	7,158.93	MH		35.490	501,219					501,219
M180	M-Carpenter M-Carpenter Helper	3.00 3.00	7,158.93 7,158.93				501,219 501,219					501,219
	-	3.00		MH								

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Page 21 02/26/2013 POA 15% CONCEPT OPTION 5 13-008-5 21:01 Bob Wells **Direct Cost Report**

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

BIDITEM = 30260Land Item SCHEDULE: 100

Description = Piling Wharf Area II & III Unit = Takeoff Quan: 168,378.000 Engr Quan: 168,378.000

303042 **Concrete Supply** Marine Ouan: 27,877.00 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

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Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft)

A1 55 203 11,165.00 85.00 58,747.9 78,320

A56 109 223 24,307.00 85.00 116,427.7 155,216

B1 55 198 10,890.00 85.00 58,747.9 78,320

B56 55 213 11,715.00 85.00 58,747.9 78,320

C1 55 198 10,890.00 85.00 58,747.9 78,320

C56 55 203 11,165.00 85.00 58,747.9 78,320

D-1 55 193 10,615.00 85.00 58,747.9 78,320

D56 55 198 10,890.00 85.00 58,747.9 78,320

E6A 12 203 2,436.00 85.00 12,817.7 17,088

E56 55 193 10,615.00 85.00 58,747.9 78,320

F6A 12 193 2,316.00 85.00 12,817.7 17,088

F56 55 188 10,340.00 85.00 58,747.9 78,320

G6A 8 188 1,504.00 85.00 8,545.2 11,392

G56 109 198 21,582.00 85.00 116,427.7 155,216

H6A 8 183 1,464.00 85.00 8,545.2 11,392

H60 10 193 1,930.00 85.00 10,681.4 14,240

I6A 8 178 1,424.00 85.00 8,545.2 11,392

160 10 183 1,830.00 85.00 10,681.4 14,240

J6A 8 173 1,384.00 85.00 8,545.2 11,392

J60 6 178 1,068.00 85.00 6,408.9 8,544

K6A 8 168 1,344.00 85.00 8,545.2 11,392

K60 6 173 1,038.00 85.00 6,408.9 8.544

L6A 8 163 1,304.00 85.00 8,545.2 11,392

L60 6 168 1,008.00 85.00 6,408.9 8.544

M6A 8 158 1,264.00 85.00 8,545.2 11,392

M60 6 163 978.00 85.00 6,408.9 8,544

N6A 8 128 1,024.00 85.00 8,545.2 11,392 N60 6 148 888.00 85.00 6,408.9 8,544

851 183.9 168,378.00 908,990.5 cf 1,211,824

Average 197.9 33,666.3 cy

2CR14 5000 PSI Concrete 1.10 30,664.71 CY 105.000 3.219.795 3,219,795

303043 **Concrete Pumping** 4.78 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine Quan:

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149,145 5CONCP36M Concrete Concrete Pump 36 1,193.16 HR 125.000 149,145

303045 Piling - Rebar Ouan: 3,235,570.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine

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Option 5 ====>48" Pipe Pile Area II

PIECES SIZE WEIGHT LENGTH POUNDS TONS UNIT EXT.

INST. EA. PRICE PRICE

1 #8 2.670 1,211,824 3,235,570 1617.79 0.65 \$2,103,120.55 hook dowels @ 5'

3,235,570 1617.79

10% 3,559,127

SUBTOTAL: \$2,103,120.55

\$136,702.84 TAX 6.5%:

TOTAL: \$2,239,823.39 8% \$179,185.87

0.480 1,708,381 1,708,381 2RR02 Gr 60 Rebar 1.10 3,559,126.97 LB 2RR10 Rebar Supports 3,559,126.97 LB 0.050 177,956 177,956 2RS16 Coupler T-25 (#8) 16.00 14,634.38 EA 13.000 190,247 190,247 5REBAR Rebar Sub 3,235,569.97 LB 0.280 905.960 905.960 \$2,982,543.83 [] 2,076,584 905,960 2,982,544

8MBW-Z-2

8MCE-A-40

18' Aluminum Boat & O/

Bucket Clamshell 3 CYD

17.50 HR

17.50 HR

3.000

5.000

53

88

53

88

1.00

1.00

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM Land Item SCHEDULE: 100 30260 Description = Piling Wharf Area II & III Unit = Takeoff Quan: 168,378.000 Engr Quan: 168,378.000 304000 Pile Splices - Pipe pile Marine **Quan:** 954.52 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 930,664 Welding Subcontractor 1,431.79 EA 930,664 ==> Item Totals: 30260 - Piling Wharf Area II & III \$89,667,458.71 0.2267 MH/FT 38,180.96 MH [9.122] 2,656,131 83,341,332 2,408,587 1,261,408 89,667,459 532.537 168378 FT 15.77 494.97 14.30 7.49 532.54 BID ITEM = 30290Land Item SCHEDULE: 100 Concrete Deck Superstructure & Rail Foun Unit = Takeoff Quan: 235,069.000 Engr Quan: 235,069.000 Description = SF Ouan: 241,275.72 SF Hrs/Shft: 10.00 Cal: 510 WC: CCISP 322005 **Final Deck Product** Marine ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 52SUPERSTRUC Concrete Superstructure 241,275.72 SF 101.000 24.368.848 24.368.848 **====>** Item Totals: 30290 - Concrete Deck Superstructure & Rail Foun \$24,368,847.72 24,368,848 24,368,848 235069 SF 103.667 103.67 103.67 BID ITEM = 30300Land Item SCHEDULE: 100 1 Description = Unit = Takeoff Quan: 7.000 7.000 Abutments EA Engr Quan: 303000 Quan: 1,234.80 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Supply Pipe Piles** Marine ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 2PP48INCH 530,964 48 In Diam Pipe Pile 1,234.80 LF 430.000 530,964 303010 Pile Painting & Wrapping Quan: 0.05 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 41,379 2PP48COATING Pipe Pile Shop Coating 10,344.67 SF 4.000 41,379 303022 Set Pile Template Marine Quan: 0.05 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 31PILETEMPLA Pipe Pile Template 0.05 LS 60,000.000 3,000 3,000 303035 Piling - Pipe 7.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine Quan: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H **** MARPIL Marine Piling & Demo Crew 17.50 CH Prod: 1.7500 S Lab Pcs: 6.00 Eqp Pcs: 17.00 3WELD Weld Supplies (1 man-Stick 1.75 DA 70.000 123 123 8211050 Fuel, Oil, Grease 50g/d 1.75 DA 200,000 350 350 8CRANEC200 Crane Manitowoc 777 20 1.00 17.50 HR 163.361 2.859 2,859 ***DRILLS - ROCK*** 8DRILLR 1.00 17.50 HR 17.500 306 306 8MAC-A-10 Compressor 185 CFM 17.50 HR 1.00 3.000 53 53 8MBM-Z-2 M.Barge2110 GRT OB-80- 1.00 17.50 HR 10.000 175 175 8MBS-Z-14 Spud Barge M-120x45' 1.00 17.50 HR 17.500 306 306 8MBT-Z-12 Tug Push Boat 200 HP 1.00 17.50 HR 20.000 350 350

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Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor Ma		Constr :l/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =	30300			Land Item	SCHEDU		100				
Description =	Abutments			Unit =	EA	Takeoff Quai	n:	7.000	Engr	Quan:	7.000
8MDH-A-7	DELMAG D19 HAMMER	1.00	17.50 HR		10.000				175		175
	FAIRLEADS	1.00	17.50 HR		0.100				2		2
8MGN-Z-11	Generator 10 KW	1.00	17.50 HR		3.000				53		53
8MLT-A-1	Light Tower, Genie	1.00	17.50 HR		3.500				61		61
	Extractor Pile	1.00	17.50 HR		5.000				88		88
	FORD F150 SUPERC 10	1.00	17.50 HR		6.500				114		114
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	17.50 HR		10.000				175 44		175 44
BMWM-C-1 BPILE26	Welder Diesel 400 AMP Vibro Hammer 150 TN	1.00 1.00	17.50 HR		2.500 45.492				796		796
9100000	Subsistance 5 workers	1.00	17.50 HR 1.75 DA		45.492 500.000			875	/96		796 875
M105	Foreman - General Marine	1.00	17.50 MH		35.720	1,095		0/3			1,095
M165	M-Piledriver	1.00	17.50 MH 17.50 MH		34.950	1,093					1,093
	M-Welder	1.00	17.50 MH		41.050	1,366					1,366
M190	M-Skilled Laborer	1.00	17.50 MH		35.430	1,224					1,224
M195	M-Laborer	1.00	17.50 MH		35.430	1,224					1,224
	Op Eng 1A- Crane 100-200		17.50 MH		39.190	1,174					1,174
\$14,336.16	15.0000 MH/E		105.00 MH	1	609.869]	7,293		998	6,045		14,336
		•									1 1,550
303040	Piling - Concrete Filling		Marine	Quan:	0.05 1	LS Hrs/Shi	ft: 10.00	Cal:	510 WC	: CCISP	
	and adjusted from Y	Y:\TBC	G-ENGI\EST\13	-008-5H	****						
	Marine Carpenters Crew			.50 CH	Prod:	1.7500	S Lab	Pcs:	10.00	Eqp Pcs:	16.00
	Fuel, Oil, Grease 50g/d		1.75 DA		200.000				350		350
	Crane Manitowoc 222B 1	1.00	17.50 HR		106.961				1,872		1,872
BMAC-A-17	Atlas Copco 185 CFM Ai	1.00	17.50 HR		3.000				53		53
	Barge Carpenter 12'X40	1.00	17.50 HR		6.500				114		114
	Barge Carpenter 12'X40	1.00	17.50 HR		6.500				114		114
	Spud Barge M-80x28'	1.00	17.50 HR		10.000				175		175
8MBW-Z-2	18' Aluminum Boat & O/	1.00	17.50 HR		3.000				53 88		53
SMCE-A-40	Bucket Clamshell 3 CYD	1.00	17.50 HR		5.000				2		88 2
8MCN-A-13 8MFW-A-1	Container Steel 20' Work Float	1.00 1.00	17.50 HR 17.50 HR		0.100 2.000				35		35
8MFW-A-2	Work Float	1.00	17.50 HR 17.50 HR		2.000				35		35
SMGN-Z-17	Generator 8 KW	1.00	17.50 HR 17.50 HR		2.000				35		35
8MGN-Z-17	Generator 8 KW	1.00	17.50 HR		2.000				35		35
	Light Tower, Genie	1.00	17.50 HR		3.500				61		61
BMVP-A-2	FORD F150 SUPERC 2	1.00	17.50 HR		6.500				114		114
SWELD400	Welder 400 AMP	2.00	35.00 HR		2.044				72		72
	Foreman - Carpenter	1.00	17.50 MH		34.720	1,069			. –		1,069
M170	M-Welder	1.00	17.50 MH		41.050	1,366					1,366
	M-Lead Carpenter	1.00	17.50 MH		35.490	1,225					1,225
M175	M-Carpenter	3.00	52.50 MH		35.490	3,676					3,676
M180	M-Carpenter Helper	3.00	52.50 MH		35.490	3,676					3,676
OPCR100	Op Eng 1A- Crane 100-200	1.00	17.50 MH		39.190	1,174					1,174
\$15,390.64	3,500.0000 MH/LS	S	175.00 MH	[1	39905.2]	12,186			3,205		15,391
303042	Concrete Supply		Marine	Quan:	256.39	CY Hrs/Shi	ft: 10.00	Cal:	510 WC	: CCISP	
***** Copied	and adjusted from N	Y:\TBG	-ENGI\EST\13	s-008-5н	****						
2CR14	5000 PSI Concrete	1.10	282.01 CY		105.000	29	,611				29,611
303043	Concrete Pumping		Marine	Quan:	0.05 1	LS Hrs/Shi	ft: 10.00	Cal:	510 WC	: CCISP	
		\ mpc	N ENGT LEGEL 13	-000-EH	++++						
**** Copied	and adjusted from a	1 • / IB(- FNGT / FST / T :	1-000-51							
***** Copied 5CONCP36M	Concrete Concrete Pump 36		8.75 HR	HC-000-3H	125.000			1,094			1,094

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Perm Labor Material	Constr Matl/Exp	Equip Sub- Ment Contract	Total
BID ITEM Description =	= 30300 Abutments			Land Item Unit =	SCHEDU EA	JLE: 1 100 Takeoff Quan:	7.000	Engr Quan:	7.000
2RR02 2RR10 2RS16 5REBAR \$22,826.04	Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub	1.10 16.00	27,238.75 LB 27,238.75 LB 112.00 EA 24,762.50 LB		0.480 0.050 13.000 0.280	13,075 1,362 1,456 15,893	6,934 6,934		13,075 1,362 1,456 6,934 22,826
303900	ADDED CODES		Marine	Ouan:	0.05	LS Hrs/Shft: 8	3.00	WC: NONE	

^{*****} Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** There are no cost resources for this activity.

304000	Pile Splices - Pipe pile		Marine	Quan:	7.00	EA H	rs/Shft:	10.00	Cal:	510 V	WC: CCISP	
**** Conied	and adjusted from N	7 • \ TD	C_FNCT\FCT\13_0(าด_5บ :	****							
5SPLICES	Welding Subcontractor	. • (11	10.50 EA	J0-J11	650.000			6	825			6,825
551 21025	Welding Suscentituetor		10.00 2.1		020.000			0,	.020			0,020
322910	Concrete Cap Dolphins			Quan:	7.00	EA H	rs/Shft:	10.00	Cal:	510 V	WC: CCISP	
**** Copied	and adjusted from Y	:\TB	G-ENGI\EST\13-0	08-5H	****							
MARPIL	Marine Piling & Demo Crev	V	420.00	CH	Pro	d: 42.0	0000 S	Lab l	Pcs:	6.00	Eqp Pcs:	17.00
2CR14	5000 PSI Concrete	1.10	292.60 CY		105.000		30,723	3				30,723
2RR02	Gr 60 Rebar	1.05	44,522.64 LB		0.480		21,371	1				21,371
WELD	Weld Supplies (1 man-Stick		42.00 DA		70.000			2,	940			2,940
REBAR	Rebar Sub		744,522.33 LB		0.280			208.	466			208,466
211050	Fuel, Oil, Grease 50g/d		42.00 DA		200.000					8,4	.00	8,400
CRANEC200	Crane Manitowoc 777 20	1.00	420.00 HR		163.361					68,6	512	68,612
DRILLR	***DRILLS - ROCK***	1.00	420.00 HR		17.500					7,3	50	7,350
MAC-A-10	Compressor 185 CFM	1.00	420.00 HR		3.000					1,2	60	1,260
MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	420.00 HR		10.000					4,2	.00	4,200
MBS-Z-14	Spud Barge M-120x45'	1.00	420.00 HR		17.500					7,3	50	7,350
MBT-Z-12	Tug Push Boat 200 HP	1.00	420.00 HR		20.000					8,4	.00	8,400
MBW-Z-2	18' Aluminum Boat & O/	1.00	420.00 HR		3.000					1,2	60	1,260
MCE-A-40	Bucket Clamshell 3 CYD	1.00	420.00 HR		5.000					2,1	00	2,100
MDH-A-7	DELMAG D19 HAMMER	1.00	420.00 HR		10.000					4,2	.00	4,200
MFD-A-1	FAIRLEADS	1.00	420.00 HR		0.100						42	42
MGN-Z-11	Generator 10 KW	1.00	420.00 HR		3.000					1,2	60	1,260
MLT-A-1	Light Tower, Genie	1.00	420.00 HR		3.500					1,4		1,470
MPE-A-11	Extractor Pile	1.00	420.00 HR		5.000					2,1		2,100
MVP-A-11	FORD F150 SUPERC 10	1.00	420.00 HR		6.500					2,7		2,730
MWH-A-1	WINCH 3-DRUM RB-90	1.00	420.00 HR		10.000					4,2		4,200
MWM-C-1	Welder Diesel 400 AMP	1.00	420.00 HR		2.500					1,0		1,050
PILE26	Vibro Hammer 150 TN	1.00	420.00 HR		45.492					19,1		19,107
100000	Subsistance 5 workers		42.00 DA		500.000			21.	000	- ,		21,000
1105	Foreman - General Marine	1.00	420.00 MH		35.720	26,269)					26,269
M165	M-Piledriver	1.00	420.00 MH		34.950	29,078						29,078
M170	M-Welder	1.00	420.00 MH		41.050	32,780						32,780
1190	M-Skilled Laborer	1.00	420.00 MH		35.430	29,369						29,369
1195	M-Laborer	1.00	420.00 MH		35.430	29,369						29,369
PCR100	Op Eng 1A- Crane 100-200		420.00 MH		39.190	28,172						28,172
6604,627.39	360.0000 MH/E		2,520.00 MH	[1	4636.82]	175,037		232,	406	145,0	90	604,627
.	20200			-	_							
====> Item T 51,270,052.71	Totals: 30300	Abutn	nents 2,800.00 MH	[16	246.011]	194 516	669,940) 251.	256	154,3	41	1,270,053
181,436.101	7 EA		2,000.00 WIII	[10	2 TO.OII]	27,787.97						31,436.10
31,730.101	/ LA					21,101.91	75,105.15	, 55,69.	J./1 Z	22,040.	.00 10	51,450.10

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 30310Land Item SCHEDULE: 100

Takeoff Quan: 2,160.000 Description = 100-gage Crain Rails Unit = FT Engr Quan: 2,160.000

387000 Steel Railing grantry cranes Quan: 2,160.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 52CRANERAIL Crane Rail Installation 2,160.00 FT 207.700 448,632 448,632 30310 ==> Item Totals: - 100-gage Crain Rails \$448,632.00 [] 448,632 448,632 207.700 2160 FT 207.70 207.70

SCHEDULE: BID ITEM = 30320 Land Item 100 1

Takeoff Quan: 1.000 1.000 Unit = Description = Fendering LS Engr Ouan:

620010 Fendering and bollard System Marine Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** 2BOLLARD **Bollards** 30.00 LS 2,063.000 61,890 61,890 2FENDER Fender system 30.00 LS 58,333.000 1,749,990 1,749,990 \$1,811,880.00 1,811,880 1,811,880 []

620020 **Install Fenders and Bollards** Marine **Ouan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5H ***** **MARPIL** Marine Piling & Demo Crew 150.00 CH **Prod:** 15.0000 S Lab Pcs: 6.00 Eqp Pcs: 17.00 3WELD Weld Supplies (1 man-Stick 15.00 DA 70.000 1.050 1.050 8211050 Fuel, Oil, Grease 50g/d 15.00 DA 200.000 3,000 3,000 8CRANEC200 Crane Manitowoc 777 20 1.00 150.00 HR 24,504 163.361 24,504 ***DRILLS - ROCK*** 8DRILLR 1.00 150.00 HR 17.500 2,625 2,625 Compressor 185 CFM 1.00 150.00 HR 8MAC-A-10 3.000 450 450 8MBM-Z-2 M.Barge2110 GRT OB-80- 1.00 150.00 HR 10.000 1,500 1.500 8MBS-Z-14 Spud Barge M-120x45' 1.00 150.00 HR 17.500 2,625 2,625 8MBT-Z-12 Tug Push Boat 200 HP 1.00 150.00 HR 20.000 3,000 3,000 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 150.00 HR 3.000 450 450 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 150.00 HR 5.000 750 750 DELMAG D19 HAMMER 1.00 1,500 1,500 8MDH-A-7 150.00 HR 10.000 8MFD-A-1 **FAIRLEADS** 1.00 150.00 HR 0.100 15 15 Generator 10 KW 8MGN-Z-11 1.00 150.00 HR 3.000 450 450 Light Tower, Genie 8MLT-A-1 1.00 150.00 HR 3.500 525 525 8MPE-A-11 Extractor Pile 1.00 150.00 HR 5.000 750 750 8MVP-A-11 FORD F150 SUPERC 10 1.00 150.00 HR 6.500 975 975 WINCH 3-DRUM RB-90 1,500 8MWH-A-1 1.00 150.00 HR 10.000 1,500 8MWM-C-1 Welder Diesel 400 AMP 1.00 150.00 HR 2.500 375 375 8PILE26 Vibro Hammer 150 TN 1.00 150.00 HR 45.492 6,824 6,824 9100000 Subsistance 5 workers 15.00 DA 500.000 7,500 7,500 M105 Foreman - General Marine 1.00 150.00 MH 35.720 9,382 9,382 M-Piledriver 10,385 1.00 150.00 MH 34.950 10,385 M165 M170 M-Welder 1.00 150.00 MH 41.050 11,707 11,707 M190 M-Skilled Laborer 1.00 150.00 MH 35.430 10,489 10,489 M195 M-Laborer 1.00 150.00 MH 35.430 10,489 10,489 Op Eng 1A- Crane 100-200 1.00 OPCR100 150.00 MH 39.190 10.062 10,062 \$122,881.18 900.0000 MH/LS 900.00 MH [36592.05] 62,513 8.550 51.818 122,881 ===> Item Totals: 30320 - Fendering \$1,934,761.18 900.0000 MH/LS 900.00 MH [36592.05] 62,513 1,811,880 8,550 51.818 1,934,761 62,513.23 1,811,880.00 1,934,761.180 1 LS 8,550.00 51,817.95 1,934,761.18 CH2MHILL

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 30550 CLIENT# = 02-19Land Item SCHEDULE: 100

Takeoff Quan: 1.000 1.000 Description = Surface Pavements Unit = LS Engr Quan:

ASPHALT PAVING **Ouan:** 1.00 LS Hrs/Shft: 8.00 WC: NONE

This is the parametric cost from ICRC estimate site prep, earthwork and paving, per SY

4SUB 130,681.00 SY 154.863 20,237,691 20,237,691 Subcontract

BID ITEM = 30560CLIENT# = 02-19Land Item SCHEDULE: 1

Description = Traffic Control Parking Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

TRAFFIC CONTROL/ACCESS Quan: 130,681.00 SY Hrs/Shft: 8.00 WC: NONE

This is the parametric cost from ICRC estimate for striping and signage, per ${\tt SY}$

4SUB Subcontract 130,681.00 SY 2.490 325,396 325,396

CLIENT# = 02-19BID ITEM = 30570Land Item SCHEDULE: 1

Description = Surface water control Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

DRAINAGE Ouan: 130,681.00 SY Hrs/Shft: 8.00 WC: NONE

This is the parametric cost from ICRC estimate for lump sum surface drainage, costed per SY

4SUB Subcontract 130,681.00 SY 7.035 919,341 919,341

BID ITEM = 30580CLIENT# = 02-19Land Item SCHEDULE:

Description = Potable Water Utilities LS Takeoff Quan: 1.000 1.000 Unit = Engr Quan:

WATER MAINS Quan: 1.00 LS Hrs/Shft: WC: NONE

Potable water as lump sum from ICRC estimate

4SUB 1.00 LS 2,525,274.000 Subcontract 2,525,274 2,525,274

BID ITEM = 30590CLIENT# = 02-19SCHEDULE: Land Item - 1 100

Description = Fire Suppression Utilities Unit = Takeoff Quan: 1.000 1.000 Engr Quan:

WATER MAINS 1.00 LS Hrs/Shft: 8.00 WC: NONE Quan:

Estimating Fire suppression water as Potable water lump sum from ICRC estimate (assumes the ICRC estimate

only had Potable water).

2,525,274.000 4SUB Subcontract 1.00 LS 2,525,274 2,525,274

CLIENT# = 02-19SCHEDULE: 1 100 BID ITEM = 30600Land Item

Description = Sanitary Sewer Utilities Unit =LS Takeoff Quan: 1.000 Engr Quan: 1.000

412 SANITARY SEWER 1.00 LS Hrs/Shft: 8.00 WC: NONE Quan:

San Sewer as lump sum from ICRC estimate

4SUB Subcontract 1.00 LS 359,657.000 359,657 359,657 CH2MHILL

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 30610CLIENT# = 02-19Land Item SCHEDULE: 100

Electrical Power Utilities Takeoff Quan: 1.000 1.000 Description = Unit = LS Engr Quan:

ELEC. UTILITIES Quan: 1.00 LS Hrs/Shft: WC: NONE

Electrical Utilities as lump sum from ICRC estimate

9,239,076.000 4SUB Subcontract 1.00 LS 9,239,076 9,239,076

BID ITEM = 30620CLIENT# = 02-19Land Item SCHEDULE: 1 100

Description = Natural Gas Utilities Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

419 NAT GAS UTIL Quan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

Natural gas has been removed from the project, a place holder is left.

4SUB Subcontract 1.00 LS 1.000 1

CLIENT# = 02-19SCHEDULE: BID ITEM = 30630 Land Item 1

Description = Telecommunications Utilities Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

TEL/COM. UTILITIES 419 **Ouan:** 1.00 LS Hrs/Shft: 8.00 WC: NONE

Telecomm utilities cost taken as lump sum from ICRC estimate

3,281,521.000 4SUB Subcontract 1.00 LS 3,281,521 3,281,521

BID ITEM = 30640CLIENT# = 02-08Land Item SCHEDULE: 100

Description = Railroad Spur Unit = Takeoff Quan: 1.000 Engr Quan: 1.000 LS

RAIL SPUR Quan: 1.00 LS Hrs/Shft: WC: NONE

Rail and appurtenances taken as lump sum from ICRC estimate

4SUB Subcontract 1.00 LS 6,803,601.000 6,803,601 6,803,601

= 30650 BID ITEM CLIENT# = 02-19Land Item SCHEDULE: 100

Description = Surface Restoration/Landscaping Unit = Takeoff Quan: 1.000 1.000 Engr Quan:

209000 Restorations 1.00 LS Hrs/Shft: 8.00 WC: NONE Quan:

No restoration was identified in ICRC estimate. Assuming a nominal amount for landscape and plants.

1.00 LS 150,000.000 150,000 4SUB Subcontract 150,000

BID ITEM = 30660 CLIENT# = 02-19Land Item SCHEDULE:

Description = Marine Terminal Buildings incl Crane Mai Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Tote Marine and AWWU Meeting Buildings 2.00 EA Hrs/Shft: 8.00 WC: NONE **Quan:**

Parametric cost taken as lump sum from ICRC estimate - used for stevedore facilities

1,452,767.000 4SUB Subcontract 2.00 EA 2,905,534 2,905,534 CH2MHILL 13-008-5

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Activity

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Direct Cost Report

Unit

Perm

Constr

Equip

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 30670CLIENT# = 02-12Land Item SCHEDULE: 100

Quantity

Takeoff Quan: 1.000 1.000 Description = Corrosion Control Unit = LS Engr Quan:

CATHODIC PROTECTION Quan: 1.00 LS Hrs/Shft: WC: NONE

Updated numbers from Jerry Duppong/SEA based on current structural (replaces ICRC estimate)

11,262,000.000 4SUB 1.00 LS 11,262,000 11,262,000 Subcontract

BID ITEM = 30680 CLIENT# = 02-08Land Item SCHEDULE: 1 100

Cherry Hill Road Upgrades Description = Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

EARTHWORK/BASE/PAVING 1.00 LS Hrs/Shft: 8.00 WC: NONE Quan:

Road upgrade cost from ICRC estimate

Desc

823,088.000 4SUB Subcontract 1.00 LS 823,088 823,088

CLIENT# = 02-12BID ITEM = 30690 Land Item SCHEDULE: 1 100

Description = Other Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

MARINE MAMMAL MONITORING 89 Onan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

1.00 LS 3,624,482.000 4SUB Subcontract 3,624,482 3,624,482

890000 KABATA WORK Quan: 1.00 LS Hrs/Shft: WC: NONE

4SUB 1.00 LS 767,282.000 Subcontract 767,282 767,282

====> Item Totals: 30690 - Other

\$4,391,764.00 4.391.764 4.391.764 []

4,391,764.000 1 LS 4,391,764.00 4,391,764.00

*** Report Totals *** 371,586.78 MH 25,462,742 127,209,653 46,222,519 35,472,913 65,749,217 300,117,045

Page 28

21:01

02/26/2013

Sub-

>>> indicates Non Additive Activity

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

\$300,117,044.87

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

Bid Date: Owner: Engineering Firm:

Estimator-In-Charge:

JOB NOTES

Estimate created on: 03/12/2008 by User#: 0 -

Source used: C:\HEAVYBID\BIANK\BLANK.zip (a backup) from 04/20/2006 4:40:12 PM

************Estimate created on: 03/20/2008 by User#: 0 -

Source used: R:\CURRENT DEVELOPMENT\HEAVYBID\INSTALLS\CURRENT INSTALL SOURCE\BACKUPS\BLANK.zip (a backup)

from 03/18/2008 11:43:18 AM

************Estimate created on: 03/21/2008 by User#: 0 -

Source used: C:\HEAVYBID\BACKUPS\BLANK.zip (a backup) from 03/20/2008 8:40:26 AM

CH2MHILL 13-008-5 Bob Wells

POA 15% CONCEPT OPTION 5

Direct Cost Report

Page 29 02/26/2013 21:01

Total

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract

BID ITEM = 30690 CLIENT# = 02-12 Land Item SCHEDULE: 1 100

Description = Other Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Source estimate used: Y:\TBG-ENGI\EST\ESTMAST

Source estimate used: Y:\TBG-ENGI\EST\13-008

**********Estimate created on: 02/07/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\13-008-1

510 5 days @ 10hrs/day

 $[\]ensuremath{^*}$ on units of MH indicate average labor unit cost was used rather than base rate.

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

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



PORT OF ANCHORAGE INTERMODAL EXPANSION PROJECT – OPTION 5H 15% CONCEPT DESIGN FOR ALASKA DISTRICT, JOINT BASE ELMENDORFRICHARDSON, ALASKA

Prepared for:

ALASKA DISTRICT U.S. ARMY CORPS OF ENGINEERS

Prepared by:

CH2M HILL

Date: February 2013

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EXECUTIVE SUMMARY

The purpose of this report is to inform the stakeholders of the cost and schedule risks and their resulting impacts on project cost and duration. The project is considering three options, developed to a 15% CONCEPT stage of design. The project includes Features 08 Roads, Railroads; 12 Navigation Ports & Harbors; 16 Bank Stabilization; and 19 Buildings, Grounds, & Utilities. The method used was a Cost and Schedule Risk Analysis as directed in W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE. The contingency results are shown in Table 1 with the relative confidence of cost under run. Recommended risk mitigation strategies are varied and summarized in Section 8 of this report.

Table 1. Executive Summary of Risk Analysis 5HA

Option 5HA – Early Section

Confidence Level	Value
60%	\$315,405,425
80%	\$327,362,767
100%	\$394,408,199

Table 2. Executive Summary of Risk Analysis 5HB

Option 5HB – Later Section

Confidence Level	Value
60%	\$263,632,918
80%	\$275,333,847
• 100%	\$341,691,846

1. PURPOSE

The purpose of this report is to present the cost and schedule forecasts of the Port of Anchorage Intermodal Expansion Project – Option 5H, 15% Concept design. The purpose for a Cost and Schedule Risk Analysis (CSRA) is to study elements related to cost and schedule to derive an outcome contingency calculation at the 80th percentile confidence level, for both cost and schedule, which are measured in terms of dollars and months, respectively.

2. BACKGROUND

This project, at the Concept design state (15%), was requested by Alaska District U.S. Army Corps of Engineers (USACE) after CH2M HILL completed for review the study on the halted design and construction of the Port of Anchorage Intermodal Expansion Project. The project currently is considering three options, all of which have design developed to the Concept stage (15%). Each option is considered independently and an estimate and CSRA have been developed for each.

3. REPORT SCOPE

The scope of the risk analysis report is to calculate and present the cost and schedule contingencies at the 80 percent confidence level using the risk analysis processes as mandated by USACE Engineer Regulation (ER) 1110-2-1150, Engineering and Design for Civil Works, ER 1110-2-1302, Civil Works Cost Engineering, and Engineer Technical Letter 1110-2-573, Construction Cost Estimating Guide for Civil Works. The report presents the contingency results for both cost and schedule risks for all project features. The study and presentation can include or exclude consideration for operation and maintenance or life cycle costs, depending upon the program or decision document intended for funding.

3.1 Project Scope

The report includes the project technical scope, estimates, and schedules as developed and presented by CH2M HILL. Consequently, these documents serve as the basis for the risk analysis. In general, the construction scope consists of the following:

- 08 Roads, Railroads, and Bridges (15% Concept Design Stage)
- 12 Navigation Ports & Harbors (15% Concept Design Stage)
- 16 Bank Stabilization (15% Concept Design Stage)
- 19 Buildings, Grounds, & Utilities (15% Concept Design Stage)

3.2 USACE Risk Analysis Process

The risk analysis process followed the contract stipulations and the USACE Headquarters requirements as well as the guidance provided by the Cost Engineering Directory of Expertise for Civil Works (Cost Engineering DX). The risk analysis process reflected within the risk analysis report uses probabilistic cost and schedule risk analysis

methods within the framework of the Crystal Ball software. The risk analysis results are intended to serve several functions, one being the establishment of reasonable contingencies reflective of an 80 percent confidence level to accomplish the project work successfully within that established contingency amount. Furthermore, the scope of the report includes the identification and communication of important steps, logic, key assumptions, limitations, and decisions to help ensure that risk analysis results can be appropriately interpreted.

Risk analysis results are also intended to provide project leadership with contingency information for scheduling, budgeting, and project control purposes, as well as provide tools to support decision-making and risk management as the project progresses through planning and implementation. To fully recognize its benefits, cost and schedule risk analyses should be considered as an ongoing process conducted concurrent to, and iteratively with, other important project processes such as scope and execution plan development, resource planning, procurement planning, cost estimating, budgeting, and scheduling.

In addition to broadly defined risk analysis standards and recommended practices, the risk analysis is performed to meet the requirements and recommendations of the following documents and sources:

- W912PP-09-D-0016, Task Order ZJ03 3.a. COST ESTIMATE
- ER 1110-2-1150, Engineering and Design for Civil Works Projects
- ER 1110-2-1302, Civil Works Cost Engineering
- ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works
- Cost and Schedule Risk Analysis Process guidance prepared by the USACE Cost Engineering DX

4. METHODOLOGY/PROCESS

The Project Delivery Team (PDT) was composed of members of Task 3 Concept Plan Charrette, as well as CH2M HILL personnel later executing the estimate and risk analysis.

The cost and schedule products under analysis have not been submitted for an Agency Technical Review (ATR), thus the risk analysis outcome is based upon an unapproved product and likely to change after an ATR is completed.

The Cost Engineering DX guidance for cost and schedule risk analysis generally focuses on the 80-percent level of confidence (P80) for cost contingency calculation. It should be noted that use of P80 as a decision criteria is a risk adverse approach.

The risk analysis process uses *Monte Carlo* techniques to determine probabilities and contingency. The *Monte Carlo* techniques are facilitated computationally by a commercially available risk analysis software package (Crystal Ball) that is an add-in to Microsoft Excel. Cost estimates are packaged into an Excel format and used directly for cost risk analysis purposes. Because Crystal Ball is an Excel add-in, the schedules for

each option are recreated in an Excel format from their native format. The level of detail recreated in the Excel-format schedule is sufficient for risk analysis purposes that reflect the established risk register, but generally less than that of the native format.

The primary steps, in functional terms, of the risk analysis process are described in the following subsections. Risk analysis results would be provided in Section 6.

4.1 Identify and Assess Risk Factors

Identifying the risk factors with the PDT is considered a qualitative process that results in establishing a risk register that serves as the document for the further study using the Crystal Ball risk software. Risk factors are events and conditions that may influence or drive uncertainty in project performance. They may be inherent characteristics or conditions of the project or external influences, events, or conditions such as weather or economic conditions. Risk factors may have either favorable or unfavorable impacts on project cost and schedule.

Checklists or historical databases of common risk factors are sometimes used to facilitate risk factor identification. However, key risk factors are often unique to a project and not readily derivable from historical information. Therefore, input from the entire PDT is obtained using creative processes such as brainstorming or other facilitated risk assessment meetings. In practice, a combination of professional judgment from the PDT and empirical data from similar projects is desirable and is considered.

Formal PDT meetings were held as a part of the Design Charrette for the purposes of identifying and assessing risk factors. The meetings held included capable and qualified representatives from multiple project team disciplines and functions:

- Project/program managers
- Environmental
- Civil, structural, geotechnical, and hydraulic design
- Cost and schedule engineers
- Key sponsors

Additionally, numerous conference calls and informal meetings are conducted throughout the risk analysis process on an as-needed basis to further facilitate risk factor identification, market analysis, and risk assessment.

4.2 Quantify Risk Factor Impacts

The quantitative impacts of risk factors on project plans are analyzed using a combination of professional judgment, empirical data, and analytical techniques. Risk factor impacts are quantified using probability distributions, because risk factors are entered into the Crystal Ball software in the form of probability density functions.

Similar to the identification and assessment process, risk factor quantification involves multiple project team disciplines and functions. However, the quantification process

used herein relied more extensively on collaboration between cost engineering, designers, and risk analysis team members with lesser inputs from other functions and disciplines.

The following is an example of the PDT quantifying risk factor impacts:

- Maximum possible value for the risk factor
- Minimum possible value for the risk factor
- Most likely value (the statistical mode), if applicable
- Nature of the probability density function used to approximate risk factor uncertainty
- Mathematical correlations between risk factors
- Affected cost estimate and schedule elements

In this study, the risk discussions focused on the various project features as presented within the USACE Civil Works Work Breakdown Structure for cost accounting purposes. It was recognized that the various features carry differing degrees of risk as related to cost, schedule, design complexity, and design progress. The project features under study are presented in Table 3:

Table 3. Work Breakdown Structure by Feature

08	Roads, Railroads, and Bridges
12	Navigation Ports & Harbors
16	Bank Stabilization
20	Buildings, Grounds, & Utilities

The resulting product from the PDT discussions is captured within a risk register as presented in Section 6 for both cost and schedule risk concerns. Note that the risk register records the PDT's risk concerns, and potential impacts to the current cost and schedule estimates. The concerns should support the team's decisions related to event likelihood, impact, and the resulting risk levels for each risk event.

4.3 Analyze Cost Estimate and Schedule Contingency

Contingency is analyzed using the Crystal Ball software, an add-in to the Microsoft Excel format of the cost estimate and schedule. *Monte Carlo* simulations are performed by applying the risk factors (quantified as probability density functions) to the appropriate estimated cost and schedule elements identified by the PDT. Contingencies are calculated by applying only the moderate and high level risks identified for each option (i.e., low-level risks are typically not considered, but remain within the risk register to serve historical purposes as well as support follow-on risk studies as the project and risks evolve).

For the cost estimate, the contingency is calculated as the difference between the P80 cost forecast and the base cost estimate. For schedule contingency analysis, the option schedule contingency is calculated as the difference between the P80 option duration forecast and the base schedule duration. These contingencies are then used to calculate the time value of money impact of project delays that are included in the presentation of total cost contingency in Section 6. The resulting time value of money, or added risk escalation, is then added into the contingency amount to reflect the USACE standard for presenting the "total project cost" for the fully funded project amount.

5. KEY ASSUMPTIONS

The following are key assumptions for the risk analysis identified by the PDT and risk analysts.

- Contract acquisition strategy assumed to be single prime contract DBB.
- ATR status: estimate has not been reviewed.
- Accuracy range of estimate is +30% to -15%.
- The contingency is determined after consideration of the project's exposure to the studied risks. The recommended level of 80% should be carefully examined.
- All impact levels, those with high, moderate, or low risk level ratings, were studied and applied within the risk analysis.

6. RISK ANALYSIS RESULTS

6.1 Risk Register

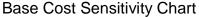
The risk register reflects the results of risk factor identification and assessment, risk factor quantification, and contingency analysis (provided in Attachment A). A risk register can be an effective tool for managing identified risks throughout the project life cycle. As such, it is generally recommended that risk registers be updated as the designs, cost estimates, and schedule are further refined, especially on large projects with extended schedules. Recommended uses of the risk register going forward include:

- Documenting risk mitigation strategies pursued in response to the identified risks and their assessment in terms of probability and impact.
- Providing project sponsors, stakeholders, and leadership/management with a
 documented framework from which risk status can be reported in the context
 of project controls.
- Communicating risk management issues.
- Providing a mechanism for eliciting risk analysis feedback and project control input.
- Identifying risk transfer, elimination, or mitigation actions required for implementation of risk management plans.

6.2 Cost Risk Analysis - Cost Contingency Results

Cost risk as studied by the PDT and developed through the register and *Monte Carlo* processes is presented here. This section does not include cost escalation risk, which is studied separately and reported below in Section 6.4.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register (and to the three-point estimate, see Attachment B for code references). Generally, the areas of high criticality are Market Conditions and Bidding Competition (PR-2), Poor construction quality/Hidden defects (CON-4), Historic Change Order Growth (CON-8), and Acts of God (PR-5), and Piling Concrete Wharf Phase II (50160 Three Point Range).



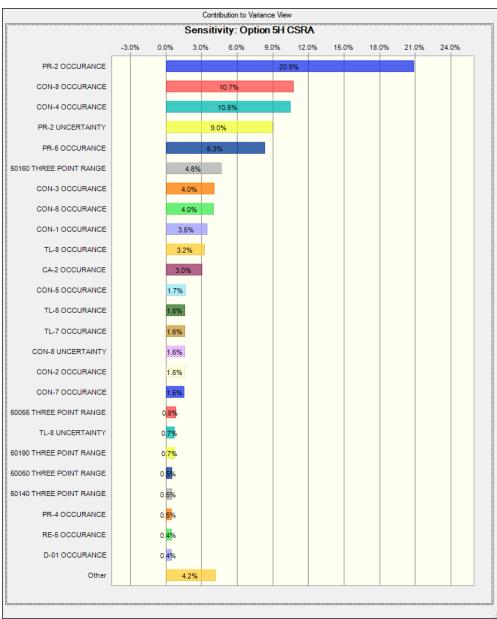


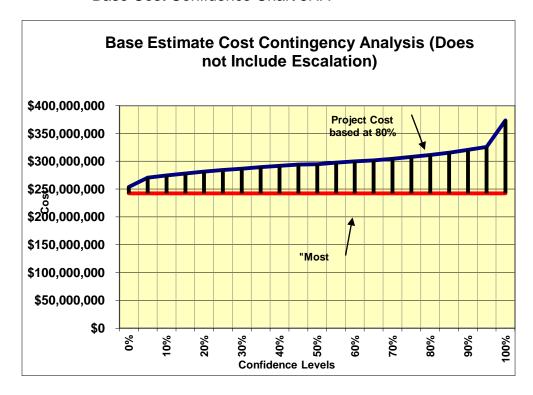
Table 4. Base Cost Confidence 5HA

Contingency Analysis					
Most Likely Cost Estimate	\$242,488,793				
Confidence					
Level	Value	Contingency			
0%	\$253,599,136	4.58%			
5%	\$270,408,123	11.51%			
10%	\$274,274,376	13.11%			
15%	\$277,869,181	14.59%			
20%	\$281,432,127	16.06%			
25%	\$284,195,795	17.20%			
30%	\$286,816,469	18.28%			
35%	\$289,384,591	19.34%			
40%	\$291,791,738	20.33%			
45%	\$294,066,125	21.27%			
50%	\$294,785,045	21.57%			
55%	\$297,317,988	22.61%			
60%	\$299,790,798	23.63%			
65%	\$301,752,908	24.44%			
70%	\$304,508,990	25.58%			
75%	\$307,674,584	26.88%			
80%	\$311,133,940	28.31%			
85%	\$315,224,513	30.00%			
90%	\$320,590,017	32.21%			
95%	\$325,692,434	34.31%			

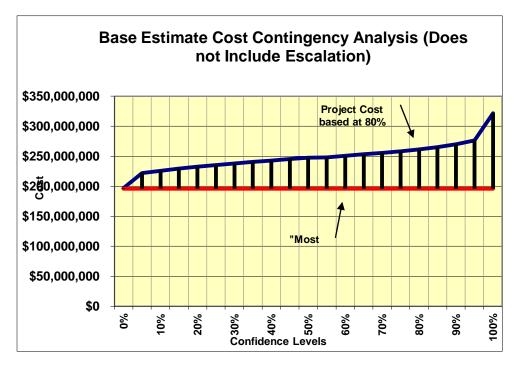
Table 5. Base Cost Confidence 5HB

Johnnigency Analysis					
Most Likely Cost Estimate	\$196,315,285				
Confidence					
Level	Value	Contingency			
0%	\$198,948,445	1.34%			
5%	\$222,784,681	13.48%			
10%	\$226,921,850	15.59%			
15%	\$230,024,960	17.17%			
20%	\$233,236,849	18.81%			
25%	\$235,833,603	20.13%			
30%	\$238,392,492	21.43%			
35%	\$240,923,349	22.72%			
40%	\$243,432,051	24.00%			
45%	\$245,533,105	25.07%			
50%	\$246,372,860	25.50%			
55%	\$248,695,240	26.68%			
60%	\$250,984,550	27.85%			
65%	\$252,920,661	28.83%			
70%	\$255,701,178	30.25%			
75%	\$258,654,182	31.75%			
80%	\$262,195,232	33.56%			
85%	\$265,804,233	35.40%			
90%	\$270,626,053	37.85%			
95%	\$277,094,916	41.15%			

Base Cost Confidence Chart 5HA



Base Cost Confidence Chart 5HB:



NOTE: These results reflect only those contingencies established from the cost risk analysis. For combined cost and schedule risk analysis, refer to Section 6.4.

6.3 Schedule Risk Analysis - Schedule Contingency Results

The base schedule was estimated at 54 months, and assumed a construction start in April 2015. Risks were analyzed for schedule impact, and the resulting uncertainty is expressed below.

The sensitivity chart below reflects the areas of greatest concern, rated in order of criticality, and referenced to risks as shown in the risk register. Generally, the areas of high criticality are Unpredictable Funding (PPM-1), Lack of a Master Plan (D-01), and Acts of God (PR-5).

Schedule Sensitivity Chart

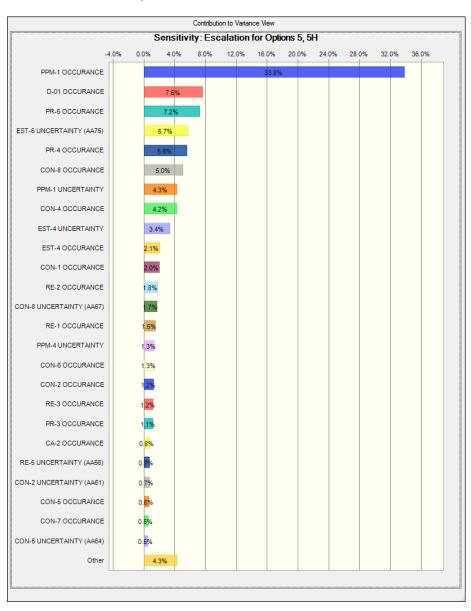


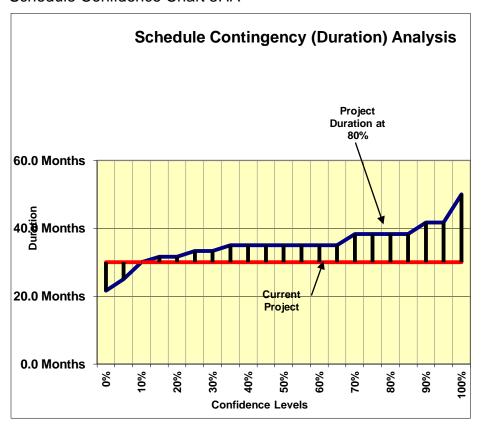
Table 6. Schedule Confidence 5HA

Contingency Analysis					
Most Likely Schedule	30.0 Months				
Confidence Level	Value	Contingency			
0%	21.7 Months	-27.78%			
5%	25.0 Months	-16.67%			
10%	30.0 Months	0.00%			
15%	31.7 Months	5.56%			
20%	31.7 Months	5.56%			
25%	33.3 Months	11.11%			
30%	33.3 Months	11.11%			
35%	35.0 Months	16.67%			
40%	35.0 Months	16.67%			
45%	35.0 Months	16.67%			
50%	35.0 Months	16.67%			
55%	35.0 Months	16.67%			
60%	35.0 Months	16.67%			
65%	35.0 Months	16.67%			
70%	38.3 Months	27.78%			
75%	38.3 Months	27.78%			
80%	38.3 Months	27.78%			
85%	38.3 Months	27.78%			
90%	41.7 Months	38.89%			
95%	41.7 Months	38.89%			
100%	50.0 Months	66.67%			

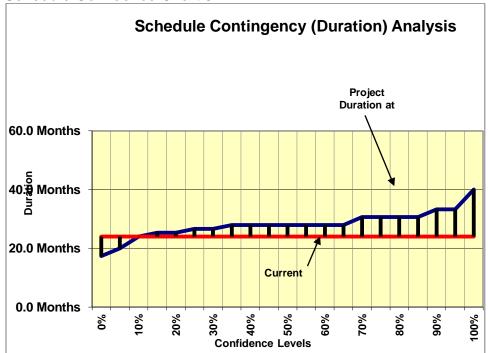
Table 7. Schedule Confidence 5HB

March Habra				
Most Likely Schedule	30.0 Months			
Confidence Level	Value	Contingency		
0%	17.3 Months	-27.78%		
5%	20.0 Months	-16.67%		
10%	24.0 Months	0.00%		
15%	25.3 Months	5.56%		
20%	25.3 Months	5.56%		
25%	26.7 Months	11.11%		
30%	26.7 Months	11.11%		
35%	28.0 Months	16.67%		
40%	28.0 Months	16.67%		
45%	28.0 Months	16.67%		
50%	28.0 Months	16.67%		
55%	28.0 Months	16.67%		
60%	28.0 Months	16.67%		
65%	28.0 Months	16.67%		
70%	30.7 Months	27.78%		
75%	30.7 Months	27.78%		
80%	30.7 Months	27.78%		
85%	30.7 Months	27.78%		
90%	33.3 Months	38.89%		
95%	33.3 Months	38.89%		
100%	40.0 Months	66.67%		

Schedule Confidence Chart 5HA



Schedule Confidence Chart 5HB



NOTE: These results reflect only those contingencies established from the schedule risk analysis.

6.4 Combined Cost and Schedule Contingency Results

The cost risk analysis and schedule risk analysis contribute to a total project cost risk analysis. The schedule risk creates exposure to delays and risk of cost escalation. The purpose of analyzing schedule risk allows the project uncertainty to comprehend both the cost elements and their risks, but also how those costs are affected by the time element of the project and its associated risks. Presented here are the combine cost and schedule contingency results:

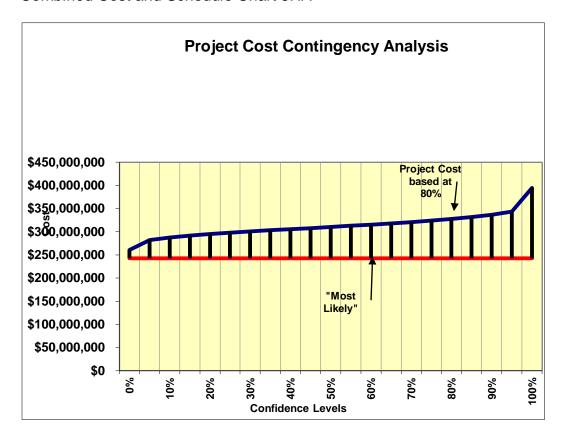
Table 8. Cost Confidence (Combined Cost and Schedule) 5HA

Johnnigenoy Analysis					
Most Likely Cost Estimate	\$242,488,793				
Confidence Level	Value	Contingency			
0%	\$260,360,406	7.37%			
5%	\$281,818,501	16.22%			
10%	\$287,468,602	18.55%			
15%	\$291,667,754	20.28%			
20%	\$295,230,700	21.75%			
25%	\$297,994,368	22.89%			
30%	\$300,615,042	23.97%			
35%	\$303,183,164	25.03%			
40%	\$305,590,311	26.02%			
45%	\$307,864,698	26.96%			
50%	\$310,399,673	28.01%			
55%	\$312,932,615	29.05%			
60%	\$315,405,425	30.07%			
65%	\$317,981,736	31.13%			
70%	\$320,737,817	32.27%			
75%	\$323,903,412	33.57%			
80%	\$327,362,767	35.00%			
85%	\$331,453,340	36.69%			
90%	\$336,818,844	38.90%			
95%	\$343,770,184	41.77%			
100%	\$394,408,199	62.65%			

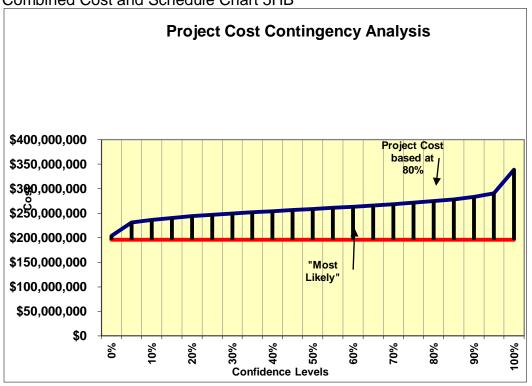
Table 9. Cost Confidence (Combined Cost and Schedule) 5HB

- John Joho / Maryolo					
Most Likely Cost Estimate	\$196,315,285				
Confidence Level	Value	Contingency			
0%	\$204,422,268	4.13%			
5%	\$232,022,352	18.19%			
10%	\$237,603,697	21.03%			
15%	\$241,196,078	22.86%			
20%	\$244,407,967	24.50%			
25%	\$247,004,720	25.82%			
30%	\$249,563,609	27.12%			
35%	\$252,094,466	28.41%			
40%	\$254,603,168	29.69%			
45%	\$256,704,222	30.76%			
50%	\$259,014,228	31.94%			
55%	\$261,336,608	33.12%			
60%	\$263,625,918	34.29%			
65%	\$266,059,276	35.53%			
70%	\$268,839,793	36.94%			
75%	\$271,792,796	38.45%			
80%	\$275,333,847	40.25%			
85%	\$278,942,848	42.09%			
90%	\$283,764,668	44.55%			
95%	\$291,730,391	48.60%			
100%	\$341,691,846	74.05%			

Combined Cost and Schedule Chart 5HA







7. MAJOR FINDINGS/OBSERVATIONS

CH2M HILL prepared an estimate as an input to the CSRA, which utilized contingencies typical for the project type and design stage, as well as those identified by the stakeholders as required. This estimate is considered a deterministic, point-value estimate, from which contingencies and escalation was removed in order to study the project's exposure to risk and their impacts on cost and schedule. The results find that these contingencies as used in the deterministic estimate are reasonable in providing a similar degree of confidence as resulted from the CSRA study. The benefits of the CSRA are the identification of risks for future mitigation and management effort, as well as to communicate the underlying contributors to project cost and schedule variance.

Tables 10 and 11 present project contingencies, which include base cost plus cost and schedule contingencies.

Table 10. Project Contingencies (Cost and Schedule Contingencies) 5HA

Confidence Level	Project Cost	Contingency (%)	Contingency (\$)
P0	\$260,360,406	7.37%	\$17,871,614
P10	\$287,468,602	18.55%	\$44,979,810
P20	\$295,230,700	21.75%	\$52,741,908
P30	\$300,615,042	23.97%	\$58,126,249
P40	\$305,590,311	26.02%	\$63,101,518
P50	\$310,399,673	28.01%	\$67,910,880
P60	\$315,405,425	30.07%	\$72,916,632
P70	\$320,737,817	32.27%	\$78,249,024
P80	\$327,362,767	35.00%	\$84,873,974
P90	\$336,818,844	38.90%	\$94,330,051
P100	\$394,408,199	62.65%	\$151,919,406

Table 11. Project Contingencies (Cost and Schedule Contingencies) 5HB

Confidence Level	Project Cost	Contingency (%)	Contingency (\$)
P0	\$204,422,268	4.13%	\$8,106,983
P10	\$237,603,697	21.03%	\$41,288,413
P20	\$244,407,967	24.50%	\$48,092,682
P30	\$249,563,609	27.12%	\$53,248,325
P40	\$254,603,168	29.69%	\$58,287,884
P50	\$259,014,228	31.94%	\$62,698,944
P60	\$263,625,918	34.29%	\$67,310,633
P70	\$268,839,793	36.94%	\$72,524,508
P80	\$275,333,847	40.25%	\$79,018,562
P90	\$283,764,668	44.55%	\$87,449,383
P100	\$341,691,846	74.05%	\$145,376,561

8. MITIGATION RECOMMENDATIONS

Risk mitigation recommendations and strategies are tabulated in the following risk register.

Risk No.	Risk/Opportunity Event	Concerns	Risk Level	Responsibility (POC)	Recommended Mitigation
PPM-1	Political considerations and pressures can impact funding	Incremental and unpredictable funding	High	Project Sponsor(s)	Coordinate decisions and/or contract and construction events to minimize impact of political pressures.
PPM-4	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk could become known and mitigated prior to construction. Construction risk can be negative or positive.	Low	Contracting	Have contractors discuss project delivery innovations and foreseeable planning difficulties during RFQ period.
CA-1	Misappropriation of risk to the contractor or owner	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: design-build, design-bid-build and general contractor/construction manager. Risk could be positive or negative.	Low	Contracting	Consider all contract types including recent innovations, as allowed by procurement constraints. Receive input from the construction community.
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the ongoing dredging contracts and the repair/construction contract can interfere or limit work.	Low	Contracting	Clearly delineate in the contract the method for contract coordination, and who has the right to occupy the work at various stages of construction and operation.
TL-1	Handling of groundwater/surface water from hill behind north extension (Safety)	Assumes a pile supported design	Low	Construction	Highlight this risk in ITB, specifications, Pre-bid meeting, Contract, schedule, and communicate to all controlling parties before and during construction. Secure contractor mitigation plan.
TL-6	Continuing port operations vs. construction phasing over extended time increments	Risk that some berths are unusable due to maneuvering or dredging requirements for extended times. Impact to construction progress and production because of complexities of sequencing	Moderate	Operations	Coordinate with stakeholder to optimize operations and construction impacts
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath Terminals 2 and 3, earthwork quantities for all options, and global stability for Option 5 at Terminals 2 and 3 are in question	Moderate	Geotechnical/ Civil Design	Perform new surveys
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Moderate	Geotechnical/ Civil Design	Normally done as design progresses
D-01	Master plan	Lack of a current Port Master Plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon Container Cargo terminal) or that could be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Low	Project Manager	Convene stakeholders to determine the ability and timeframe to develop a master plan.
D-08	Deferring TOTE terminal maintenance and planning because "we are moving the terminal"		Low	Operations	Examine ROI and other risks for optimal solution
D-09	Potential cost to Tote for the expansion/development e.g. new gatehouse, shop, yard reconfiguration		Low	Operations	Include this cost after any design and logistics study is done to mitigate it

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
RE-1	Permits in place	Risk of having a negative impact on the existing 404 permit because it is already in place for the North Extension assuming the design and construction methodology did not change	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-2	Permit modifications	High risk of having permit modifications (negative impact) later that may cost time and money due to whether or not the existing North Extension is the best plan	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-3	Permit exposure	Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Low	Environmental	Examine process for expediting permit if assumptions change from existing
RE-4	Excluding/including appropriate natural resource agency folks in the process early and often	Low risk of having negative environmental and regulatory issues late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Low	Environmental	Ensure buy-in/inclusion is pursued
RE-5	Beluga whale listing as a Threatened and Endangered species reduces the amount of work that can be performed during the day.	Stop and go operations also reduce productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well.	Moderate	Environmental	Design solutions as are warranted by ROI, assume risk.
CON-1	The construction should be allowed on both the ocean and land side of the new dock system	Over restrictive site limitations	Low	Construction	Verify and communicate the site limitations, consider all effect of such a limitation before making same required.
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule	Moderate	Contracting	Consider that any onerous risk transferred to the contractor comes at a premium, and the determination of that premium is influenced by other circumstances such as market demand and overall state of the economy
CON-3	Availability of experienced contractors/subcontractors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/contractor availability (i.e. pile/tussle supported docks vs. OCSP® system).		Low	Contracting	This can be addressed with an RFQ process that results in a bid go or no-go
CON-4	Poor construction quality/hidden defects	Weak or lack of QA/QC can result in rework, additional costs, and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Moderate	Project Manager	Use QA/QC best practices, examine others that were successful on other port projects

Risk				Responsibility	
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture? Where will material inspections be performed for acceptance? What are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs?	Moderate	Cost Engineering	Perform an analysis of impact of material availability when specifying material sources.
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring	Moderate	Operations	Coordinate these with operations in order to minimize
CON-7	Access and security issues	Changes in security protocols, impact of access requirements on available labor force, daily production, and morale	Moderate	Contracting	Consider what options the port has to make the project attractive to contractors and workers, and communicate those options in the ITB, contract, pre-bid, etc.
CON-8	Historical change order growth	Need to study market behavior for region and project type for historical changes - Walla Walla for reference	High	Cost Engineering	Investigate contractors during RFQ for propensity for change order growth. Consider contract type alternatives that minimize the exposure to both owner and contractor.
CON-9	Diesel fuel volatility	\$6M marine + \$2M civil	Low	Cost Engineering	Maintain awareness of fuel pricing at bid time. Consider master agreement with suppliers. To provide min max at an agreed price
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	High	Project Sponsor(s)	Create separable construction packages
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	High	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Low	Cost Engineering	This can be mitigated normally through design progress. An assessment of exposure to estimate accuracy can be included in future estimate preparations
PR-2	Market conditions and bidding competition	The base estimate is assuming 10% indirect costs and 20% overhead and profit markup structure, which favors a low demand market. Should there be little supply due to increased demand, the contractors are expected to add overhead and profit, up to 15% more than in the estimate	High	Contracting	Remain cognizant of the supply and demand for various contractor capabilities related to the project features. Select a contract type that leverages the market supply and demand forecast for the bid period

Risk	Bid (0	•	State of	Responsibility	December 1 and 1 a
No.	Risk/Opportunity Event	Concerns	Risk Level	(POC)	Recommended Mitigation
PR-3	Labor disruptions	This is covered in previously, but there is some related risk to the contractor that could affect schedule, and thus his escalation exposure	Low	Construction	Require labor resource identification, contingency plan and forecast from contractors during RFP period. Maintain contact with labor organizations. Consider low cost amenities that will attract skilled and qualified labor and supervision.
PR-4	Acts of God (seismic events: volcanic activity, earthquakes, tsunamis; or severe weather: freezing, flooding or hurricane)	Weather (snow, freezing - subarctic related) impacts on production - estimate does not include "act of God" level impacts	Low	Contracting	Refer to insurance and contracting general terms and conditions
PR-5	Acts of God (seismic events: volcanic activity, earthquakes, tsunamis; or severe weather: freezing, flooding or hurricane)	Seismic (earthquakes) impacts on production, labor availability, materials delivery, placed work damages - estimate does not include "act of God" level impacts	Low	Contracting	Refer to insurance and contracting general terms and conditions

ITB = invitation to bid

POC = point of contact

QA/QC = quality control/quality assurance

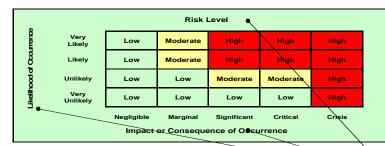
RFQ = request for quote

ROI = return on investment

TOTE = Totem Ocean Trailer Express, Inc.

ATTACHMENT A DETAILED RISK REGISTER

Port of Anchorage Intermodal Expansion Project 15% CONCEPT - Risk Register



Overall Project Scope
The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately one mile north of downtown Anchorage. The scope of the work is to demolish [existing wharf, trestle and] sheet pile wall, construct new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities and utilities.

Cost Impacts
500,000,000 scale of project, Crisis, 100,000,000; Critical 50,000,000; Significant \$20,000,000, Marginal \$10,000,000.

Schedule Impacts
4 year scale of project: Crisis 2 years; Critical 1 year; Significant 6 months; Marginal 3 months; Negligible <1 month. Event Likeliness
Very Unlikely 1 in 10, Unlikely 3 in 10, Likely 7 in 10, Very Likely 9 in 10.

				Projec	t Cost			Project :	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
Contract F	Risks (Internal Risk Items are	e those that are generated, caused, or c	ontrolled within	the PDT's spl	nere of influen	ce.)								
	PROJECT & PROGRAM MGMT													
	Political considerations and pressures can impact funding	Incremental and unpredictable funding	Likely	Significant	HIGH	escalation related	Likely	Critical	HIGH	1 year	Triangular		Project Sponsor(s)	Project Cost & Schedule
	Regulatory Permitting	It is critical to have all permitting in place before awarding construction contracts. Possibly look at making the project management team responsible for obtaining permits.	Unlikely	Significant	MODERAT E	escalation related	Unlikely	Significant	MODERAT E	6 mo		RE-3	Project Manager	Project Cost & Schedule
PPM-3	Economic tradeoffs	Consumer price sensitivity will- impact support for the project	Likely	Significant	HIGH		Likely		0					
	Project planning and follow through	This is a concern for the design as well as the construction. Design related risk can become known and mitigated prior to construction. Construction risk can be neg or pos	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	CONTRACT ACQUISITION RISKS													

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CA-1	Misappropriation of risk to the contractor or owner.	The contract type will shift risk to either party through performance or prescriptive specifications. Three major types of contracts should be considered: designbuild, design-bid-build and General Contractor/Construction Manager (GC/CM). Risk could be pos or neg	Very Unlikely	Marginal	LOW	\$10M	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost
CA-2	Numerous separate contracts	Lack of coordination of multiple ongoing contracts, primarily the on-going dredging contracts and the repair/construction contract can interfere or limit work.	Very Unlikely	Significant	LOW	\$25M	Very Unlikely	Marginal	LOW	3 mo	Triangular		Contracting	Project Cost & Schedule
	TECHNICAL RISKS													
TL-1	Handling of groundwater/surface water from hill behind north extension. (Safety)	Assumes a pile supported design	Very Unlikely	Negligible	LOW	\$1M	Very Unlikely	Negligible	LOW	none	Triangular		Construction	Project Cost
TL-2	Port configuration that- shoals in during the- winter months when- dredging cannot occur- (interrupting vessel- operations in terms of- time and money	Positioning vessels	Unlikely	Significant	MODERAT		Unlikely		θ					
TL-3	Port layout that hampers current vessels to maneuver, dock, and moor with the current tugs.	(Higher horsepower tugs needed or ice sweeping vessels off dockand aground)	Unlikely	Significant	MODERAT		Unlikely		θ					
TL-4	Focusing on the North- dock completion rather- than the entire port- system as a whole-	(risk building the wrong project for today that may be incompatible- with future needs)	Unlikely	Marginal	LOW		Unlikely		0					
TL-5	Port configuration that cannot be dredged with existing hopper equipment	(Operations money is getting- tighter and the potential could exist to not be able to fully- dredge)	Very Unlikely	Significant	L OW		Very Unlikely		0					

				Projec	t Cost			Project	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
	Continuing port operations vs. construction phasing over extended time increments.	(Risk that some berths are unusable due to maneuvering or dredging requirements for extended times.) Impact to construction progress and production due to complexities of sequencing	Likely	Marginal	MODERAT E	\$10M	Likely	Marginal	MODERAT E	2 mo	Triangular		Operations	Project Cost & Schedule
TL-7	Surveys outdated	Entire bathymetric survey is in dated, especially underneath terminals #2 and #3, earthwork quantities for all options, and global stability for option 5 at terminals #2 and #3 are in question	Likely	Marginal	MODERAT E	\$10M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
TL-8	Excess/spoils disposition	Need to identify a location for excess material.	Likely	Marginal	MODERAT E	\$15M	Likely	Negligible	LOW	1 mo	Triangular		Geotechnical/Ci vil Design	Project Cost & Schedule
	DESIGN RISKS					7.0					g		= 55.51	
D-01 D-02	Master plan b. Fail to ID- requirements c. Time to develop- 100% design	Lack of a current Port Master Plan affects design. Requirements outside current application have not been fully analyzed, are only speculative, and not agreed on at all levels? Should time be spent on defining an undefined structure requirement or should focus be on a standard marine structure that meet current requirements (TOTE and Horizon) or that can be easily customized to meet future requirements? Changing a design later in the process can have a major impact to budget and timeline and create problems of trust when seeking additional funding.	Very Unlikely Very Unlikely Very Unlikely	Marginal Marginal	LOW	\$10M	Very Unlikely Very- Unlikely Very- Unlikely	Critical	LOW 9	1 year	Triangular		Project Manager	Project Cost & Schedule
	d. Impact to cost from changes		Unlikely Very Unlikely	Marginal Marginal	LOW		Unlikely Very Unlikely		θ					

				Projec	t Cost			Project	Schedule					
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	С	Component
	e. Location and													
	structure Impact to	What is the new structures impact	Very				Very							
D-05	Safe Navigation	to Safe Navigation and mooring?	Unlikely	Marginal	LOW		Unlikely		0					
	f. Impact from loss of	come management and management												
	acreage	Effects on operation with loss of	Very				Very							
D-06		acreage?	Unlikely	Significant	LOW		Unlikely		0					
	Continuing silting			3			,							
	issues at the stern of													
	Tote vessels													
D-07					θ		0		0					
	Deferring Tote terminal													
	maintenance and													
	planning because "we													
	are moving the													
	terminal"													
D-08			Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
	Potential cost to Tote													
	for the													
	expansion/developmen t e.g. new gatehouse,													
	shop, yard													
	reconfiguration													
D-09	J		Unlikely	Marginal	LOW	\$1M	Unlikely	Negligible	LOW	none	Triangular		Operations	Project Cost
			,	- J			,	- 5 5						,
	REGULATORY AND													
	ENVIRONMENTAL													
	RISKS								0					
		Risk of having a negative impact												
		on the existing 404 permit												
		because it is already in place for												
		the North Extension assuming the design and construction				escalation								Project Cost &
RE-1	Permits in place	methodology did not change	Unlikely	Marginal	LOW	related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Schedule
		High risk of having permit mods						3						
		(negative impact) later that may												
		cost time and money due to												
		whether or not the existing North												
		Extension is the best plan												Desired Ossi O
DE 2	Permit mods		Unlikely	Marginal	LOW	escalation	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-Z	remin mous		Uniikely	Marginal	LUW	related	Unikely	Marginal	LOW	S (110	mangular		Environmental	Scriedule

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-3		Completing North Extension prior to using a systems approach to determine present and future purpose and need: High risk of having future permit modifications or new permit requirements if North Extension does not meet the Port's present and future goals	Unlikely	Marginal	LOW	escalation related	Unlikely	Marginal	LOW	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-4	Excluding/Including appropriate natural resource agency folks in the process early and often:	Low risk of having environmental and regulatory issues that are negative late in the project. High risk of having successful "buy-in" (positive impact) upfront from agency folks and thus reducing project time and thus cost	Very Unlikely	Significant	LOW	escalation related	Very Unlikely	Marginal	LOW	-3 to +1 mo	Triangular		Environmental	Project Cost & Schedule
RE-5	Beluga whale listing as a Threatened and Endangered species reduces the amount of work that can be performed during the day. NEPA permits a. 404 (exp.	Stop and go operations also reduces productivity. Possible solutions include reducing the number of piles required in the new POA design, or increasing the construction duration. Any increases to construction duration will likely increase construction costs as well. Many of the permits expire in the near future. What new requirements will a new or hybrid structure entail? Will a new EA be	Very Likely	Marginal	MODERAT E	\$10M	Very Likely	Marginal	MODERAT E	3 mo	Triangular		Environmental	Project Cost & Schedule
RE-6	duantities remain) b. LOA c. What new permits will a new structure	required? Can the process be streamlined? How much time and effort will be required for submission and review? Impact to construction of not having permits in place?	Likely	Marginal	MODERAT E				0					

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
RE-7	Endangered species- (beluga whales) a. Impact to in-water- work- i. Low tide ii. Harassment and- takes b. Monitoring- i. Contractor ii. Scientific- iii. Cost associated-	Loss of 8 hours of in water work- daily around low times. Meeting- whale harassment and having- minimal takes. Monitoring requirement both from- contractor and scientific by permit- and the cost associated.	Likely	Marginal	MODERAT E				0					
	CONSTRUCTION RISKS								0					
CON-1	The construction should be allowed on both the ocean and land side of the new dock system.	Over restrictive site limitations	Very Unlikely	Significant	LOW	\$20M	Very Unlikely	Significant	LOW	6 MO	Triangular		Construction	Project Cost & Schedule
CON-2	Weather	Severe weather can affect the ability to perform work on the project site. Typically, weather delay risks are shared by both the owner and contractor. The contractor generally receives time but no additional compensation. Severe weather days should be anticipated in the schedule	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 mo	Triangular		Contracting	Project Cost & Schedule
CON-3	Availability of experienced contractors/subcontract ors and labor force in Anchorage. Selection of the repair and construction method can increase or decrease work force/contractor availability (i.e. pile/tussle supported docks vs. OCSP dock system).		Very Unlikely	Significant	LOW	\$25m	Very Unlikely	Negligible	LOW	none	Triangular		Contracting	Project Cost

				Projec	t Cost			Project \$	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
CON-4	Poor construction quality/Hidden defects	Weak or lack of Quality Control/Quality Assurance can result in rework, additional costs and extended durations. The selection of repair and construction method will also increase/decrease risk that work was performed correctly. For example, surface structures have a higher degree of assurance that the work was installed as designed verses piles driven below the ground surface have lower degree of assurance that work was installed as designed	Unlikely	Significant	MODERAT E	\$25m	Unlikely	Significant	MODERAT E	6 MO	Triangular		Project Manager	Project Cost & Schedule
CON-5	Material availability a. Local availability b. Material only available outside the region c. Special requirements after fabrication (galvanization) d. Material Inspections	Changes in design will likely require use of material not locally available. What are manufacturers' schedules of availability to manufacture, where will material inspections be performed for acceptance, and what are the planned and alternative methods of shipping to Anchorage? Are there unique dimension requirements? What is the impact when an unseen circumstances or event occurs to	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	3 MO	Triangular		Cost Engineering	Project Cost & Schedule
CON-6	Potential for vessel schedule disruptions during construction	Some alternatives may have higher likelihood of occurring Changes in security protocols, impact of access requirements on	Unlikely	Significant	MODERAT E	\$20M	Unlikely	Marginal	LOW	3 MO	Triangular		Operations	Project Cost & Schedule
CON-7	Access and Security Issues	available labor force, daily production, morale,	Likely	Marginal	MODERAT E	\$10m	Likely	Marginal	MODERAT E	2 mo	Triangular		Contracting	Project Cost & Schedule
CON-8	Historic Change Order Growth	Need to study market behavior for region and project type for historicals - Walla Walla for reference	Likely	Significant	HIGH	\$25m	Likely	Significant	HIGH	6 mo	Triangular		Cost Engineering Cost	Project Cost & Schedule
CON-9	Diesel Fuel Volatility ESTIMATE AND SCHEDULE RISKS	\$6M Marine + \$2M civil	Very Likely	Negligible	LOW	+6 TO -2m				none	Triangular		Engineering	Project Cost

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
EST-1	Insufficient funds, uncertain levels and frequency of future funds		Likely	Significant	HIGH	\$20M	Likely	Significant	HIGH	6 mo		PPM-1		
EST-2	Risk of reducing revenue from leasable Port property in the event reserved site needs of the Project contractor are- overestimated (a non- capital concern)		Likely	Marginal	MODERAT E				9					
EST-3	Interruption of normal- commercial shipping- and revenue stream- due to either- construction activity or- environmental- constraints (a non- capital concern)		Likely	Marginal	MODERAT E				θ					
EST-4	Project cost exceeds available budget	What if the minimal design exceeds construction budget?	Very Likely	Significant	HIGH		Very Likely	Significant	HIGH	6 mo	Triangular		Project Sponsor(s)	Project Cost & Schedule
EST-5	Estimate quality related to lesser designed features	The use of parametric area based estimates for the civil backlands scope has inherent variability. Especially, utilities are perhaps the least designed at this stage, and are subject to variations. The wharf decking design is the marine side least designed component, along with bulkhead flat sheet piles	Very Likely	Significant	нісн	+20 /-20% of those component s	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
EST-6	Estimate confidence in large and critical quantities	Dredging quantities are historically variable.	Very Likely	Negligible	LOW	\$5M	Very Likely	Marginal	MODERAT E	4 mo	Triangular		Cost Engineering	Project Cost & Schedule
EST-7	Estimate include waste / drop off quantities	Estimate and design both include these, however, some uncertainty as to the location for disposal exists	Very Likely	Negligible	LOW	+10% of waste	Very Likely	Negligible	LOW	none	Triangular		Cost Engineering	Project Cost
	O & M RISKS										J .			,

				Projec	t Cost			Project S	Schedule					
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)	Variance Distrib-ution	Correl-ation to Other(s)	Responsibility/PO C	Affected Project Component
FL-1	Potential negative risk to existing snow clearing and sanding/sweeping operations capacity	potential need for additional equipment and manpower to maintain response time and storage/disposal capacity	Likely	Marginal	MODERAT E				0					
FL-2	Potential negative risk of snow clearing, sanding, and sweeping operations on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-3	Potential negative risk of freeze-thaw cycles on at-grade specialty systems such as cable trench crane power systems		Likely	Marginal	MODERAT E				0					
FL-4	Potential negative risk to site circulation by above-grade bus bar crane power systems		Likely	Marginal	MODERAT E				0					
FL-5	Potential negative risk of additional site lighting on JBER nighttime aircraft operations		Very Unlikely	Significant	LOW				0					
FL-6	Potential negative risk of certain fender systems interfering and causing ship line damage during tide cycle		Likely	Marginal	MODERAT E				0					
FL-7	Potential negative risk to structures and appurtenances by aggressive corrosion environment	USING REINFORCED CONCRETE	Unlikely	Marginal	LOW									

				Projec	t Cost			Project \$	Schedule					
						Rough Order				Rough Order	Variance	Correl-ation	Responsibility/PO	Affected Project
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Impact (\$)	Likelihood*	Impact*	Risk Level*	Impact (mo)	Distrib-ution	to Other(s)	C C	Component
	Potential negative risk to structures and													
	appurtenances by ice													
FL-8	flows and large tide cycle range		Unlikely	Marginal	LOW									
120	cycle range		Offinicity	iviaigiilai	LOW									
	Potential negative risk													
	associated with existing condition of existing													
FL-9	structures and utilities		Unlikely	Marginal	LOW				0					
Program	matic Risks (External Ri	isk Items are those that are generat	ed, caused, c	or controlled e	exclusively or	utside the PD	T's sphere of	f influence.)	ı					
		The history of the project has created a problem with public												
		trust that has caused the budget												
		to be funded incrementally. How												
		can these challenges be overcome to attain funding												
		needed? Impact of incremental												
	Public trust	funding has to be addressed so-												
	a. Incremental funding b. Budget challenge	that public is fully aware of impacts i.e. increasing cost and												
PR-1	b. Budget challenge	delay in completion.	Likely	Significant	HIGH				θ					
			,											
		The base estimate is assuming a												
		10% indirects and 20% OH&P												
		markup structure, which favors a												
		low demand market. Should there be little supply due to												
		increased demand, the												
		contractors are expected to add												
PR-2	Market conditions and bidding competition	overhead and profit, up to 15% more than in the estimate	Likely	Critical	HIGH	0 to 15% more	Likely	Negligible	LOW	none	Triangular		Contracting	Project Cost
1 11-2	sidding competition	more than in the estimate	LINGIY	Ontical	111011	111016	LINGIY	. vegigible	LOVV	HOHE	mangulal		Contracting	i Tojout Oust
		This is covered in XX above, but												
		there is some related risk to the contractor that could affect												
		schedule, and thus his escalation				based on								Project Cost &
PR-3	Labor disruptions	exposure	Unlikely	Marginal	LOW	esc	Unlikely	Marginal	LOW	3 mo	Triangular		Construction	Schedule
	Acts of God (seismic													
	events: volcanic activity, earthquakes,	Weather (snow, freezing -												
	tsunamis; or severe	subarctic related) impacts on												
DE .	weather: freezing,	production - estimate does not		.	1.600	AC. 1		0: :::	MODERAT					Project Cost &
PR-4	flooding or hurricane)	include "act of God" level impacts	Unlikely	Marginal	LOW	\$3M	Unlikely	Significant	Е	6 mo	Triangular		Contracting	Schedule

				Projec	t Cost			Project S	Schedule				
Risk No	Risk/Opportunity Event	Concerns	Likelihood*	Impact*	Risk Level*	Rough Order Impact (\$)	Likelihood*	Impact*		Rough Order Impact (mo)		Responsibility/PO C	Affected Project Component
	Acts of God (seismic												
	events: volcanic	Seismic (earthquakes) impacts on											
	activity, earthquakes,	production, labor availability,											
	tsunamis; or severe	materials delivery, placed work											
	weather: freezing,	damages - estimate does not	Very				Very						Project Cost &
PR-5	flooding or hurricane)	include "act of God" level impacts	Unlikely	Critical	LOW	\$50M	Unlikely	Critical	LOW	1 yr	Triangular	Contracting	Schedule

*Likelihood, Impact, and Risk Level to be verified through market research and analysis (conducted by cost engineer).

- 1. Risk/Opportunity identified with reference to the Risk Identification Checklist and through deliberation and study of the PDT.
- 2. Discussions and Concerns elaborates on Risk/Opportunity Events and includes any assumptions or findings (should contain information pertinent to eventual study and analysis of event's impact to project).
- 3. Likelihood is a measure of the probability of the event occurring -- Very Unlikely, Unlikely, Moderately Likely, Likely, Very Likely. The likelihood of the event will be the same for both Cost and Schedule, regardless of impact.
- 4. Impact is a measure of the event's effect on project objectives with relation to scope, cost, and/or schedule -- Negligible, Marginal, Significant, Critical, or Crisis. Impacts on Project Cost may vary in severity from impacts on Project Schedule.
- 5. Risk Level is the resultant of Likelihood and Impact Low, Moderate, or High. Refer to the matrix located at top of page.
- 6. Variance Distribution refers to the behavior of the individual risk item with respect to its potential effects on Project Cost and Schedule. For example, an item with clearly defined parameters and a solid most likely scenario would probably follow a triangular or normal distribution.

 An risk item for which the PDT has little data or probability of modeling with respect to effects on cost or schedule (i.e. "anyone's guess") would probably follow a uniform or discrete uniform distribution.
- 7. The responsibility or POC is the entity responsible as the Subject Matter Expert (SME) for action, monitoring, or information on the PDT for the identified risk or opportunity.
- 8. Correlation recognizes those risk events that may be related to one another. Care should be given to ensure the risks are handled correctly without a "double counting."
- 9. Affected Project Component identifies the specific item of the project to which the risk directly or strongly correlates.
- 10. Project Implications identifies whether or not the risk item affects project cost, project schedule, or both. The PDT is responsible for conducting studies for both Project Cost and for Project Schedule.
- 11. Results of the risk identification process are studied and further developed by the Cost Engineer, then analyzed through the Monte Carlo Analysis Method for Cost (Contingency) and Schedule (Escalation) Growth.

ATTACHMENT B COST ESTIMATE (INPUT TO CSRA)

Cost Estimate

Port of Anchorage Intermodal Expansion Project 15% Concept Plans – Option 5H Contract No. W912PP-09-D-0016 Task Order ZJ03

Prepared for

Alaska District U.S. Army Corps of Engineers

February 26, 2013



2020 SW 4th Avenue 3rd Floor Portland, Oregon 97201

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Tables

Overall Costs

Cost Estimate

Executive Summary

The construction cost for the project is described herein and in Table 1:

TABLE 1
Overall Costs

Accuracy Range per ASTM E2516 - 11, Standard Classification for Cost Estimate Classification System, see Section 2.5

Description	Amount	Rounded
Option 5HA estimate (early section)	\$317,610,676	\$320,000,000
Hi range + 30%	\$412,893,879	\$410,000,000
Lo range – 15%	\$270,027,920	\$270,000,000
Option 5HB estimate (later section)	\$257,042,775	\$255,000,000
Hi range + 30%	\$334,155,607	\$335,000,000
Lo range – 15%	\$218,486,359	\$220,000,000

ASTM = American Society for Testing and Materials (formerly, now ASTM International)

The executive summary provides an overview of the Cost Estimate. Reliance on this information is advised to be in consideration of the full context of this report.

2. Estimate Information

2.1 Purpose of Estimate

The purpose of this Cost Estimate is to establish an Engineer's opinion of probable cost for design documents at 15% concept design, suitable for further development using U.S. Army Corps of Engineers (USACE) Cost and Schedule Risk Analysis (CSRA) Guidance (17 May 2009) to calculate total project costs.

2.2 Client

The Client is the Alaska District USACE.

2.3 Project Location and General Scope

The project is located on the Knik Arm, within the Municipality of Anchorage, Alaska, approximately 1 mile north of downtown Anchorage. The scope of the work is to demolish an existing wharf, trestle and sheet pile wall, construct a new wharf, trestle and sheet pile wall, complete with associated excavation, grading, paving, drainage, stevedore facilities and utilities.

2.4 Date and Preparation

The estimate was prepared January and February 2013, by CH2M HILL team members as listed:

- Jorge Abisambra/WPB (marine work)
- Robert Wells/PDX, (civil "*" scope) phone 503-872-4622 x24622
- Joe Taylor/ANC (civil quantities)
- John O'Reilly/SAC (quality assurance and quality control)

The estimate was requested by Doug Playter/SEA for project number 462130.

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2.5 Estimate Classification and Methodology

This cost estimate prepared is considered a Budget Level or Class 4 estimate per American Society for Testing and Materials (ASTM) E2516-11. It is considered accurate to +30% to -15%, based upon a design deliverable (15% Concept Plans).

The estimating effort did decompose the scope to a sufficient level to support an analysis of all major cost elements at the work package level, for purposes of performing risk analysis and identifying those critical items which might be expected to create cost variances of +0.5% in the bottom line estimate.

The individual scope items inclusions under Section 3.b.vi of the Task Order preceded by an asterisk were estimated by parametric estimating techniques. The estimated costs for these asterisked items were developed using the 11 April 2012 Port of Anchorage (POA) Intermodal Expansion Project Budgetary Cost Estimate Report and calculated as "blended costs" per unit of measure. Additionally, the estimated costs for the Marine Terminal Buildings (complete structures, including foundation, structure, shell, interior finishes, and all utilities) and Corrosion Protection were calculated by the same parametric technique.

This estimate was developed, as required by USACE CSRA Guidance (17 May 2009), as an input to the CSRA. The CSRA is a separate document prepared concurrently with this estimate. The CSRA then used three-point range estimates for each of the 15% Concept Plans to forecast costs for each scope element not otherwise identified for estimation by parametric techniques. Further, *Monte Carlo* assessment performed a sensitivity analysis of critical items and a simulation on the individual cost elements to provide a probabilistic evaluation of the reported estimated project costs (Cost Risk Analysis Model). A Quantitative Analysis was performed for those Project Risks identified for such analysis (Risk Register development and Qualitative Analysis from Task 3, Charrette). This information, along with further supplemental information derived from PDT members during the cost estimating phase, formed the basis of the Cost Risk Analysis and Schedule Risk Analysis under the CSRA effort.

The estimate is appended to this report as Appendix A.

3. Basis of Estimate

3.1 Basis Documents

The estimate is based on 15% drawings for Option 5H, developed by CH2M HILL, dated February 2013. Additionally, the estimate used portions of the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, as directed, for parametric cost estimating.

3.2 Key Assumptions

- Project is to be offered to bidders on a lowest responsive basis, in time to allow construction progress to begin April 2015.
- Permitting and regulatory agencies to have issued all permits, modifications, and amendments, so as not to impede the construction start and progress in any way.
- Project to be fully funded prior to the start of construction.

3.3 Project Delivery Schedule and Method

It is assumed that the environmental, permitting, and design phase will continue to early 2015, with a bid and award date that supports an April 2015 construction start. The scheduled duration for Option 5H is 54 months (5HA – 30 months, 5HB - 24 months), ending late 2019. The assumed delivery method is a single prime contract with the Municipality of Anchorage, Alaska.

3.4 Labor, Materials, Subcontracts and Other Direct Costs

3.4.1 Labor

Labor rates used are the national average as determined by R S Means, adjusted for Anchorage, Alaska.

3.4.2 Materials

Materials pricing is based on recent and historical vendor quotations, as well as pricing used in the POA Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjusted for inflation by 1.28%.

3.4.3 Subcontracts

It is assumed that the Prime Contractor may employ various specialty subcontractors, such as electrical, telecom, utility and earthwork subcontractors.

3.4.4 Equipment

Equipment pricing as used in the Port of Anchorage Intermodal Expansion Project Budgetary Cost Estimate Report estimate prepared 11 April 2012, adjust for inflation by 1.28%.

3.4.5 Long Lead Items

Galvanized steel sheet and cylinder piling, fender materials assumed to be 5 months lead-time.

3.4.6 Owner Supplied

Steel sheet pile in quantities assumed to supply the majority of bulkhead materials.

3.4.7 Allowances

Landscaping allowance for restoration of disturbed areas, \$150,000 subcontractor price.

3.5 Markups, Taxes and Other Indirect Costs

Detail on markups used, taxes included, contingencies, owner costs, or any other cost additions.

•	General requirements/site indirect costs	10%
•	Taxes on material and equipment	0%
•	Prime Overhead, Profit	20%
•	Bond	1%
•	Contingency	20%
•	PM, CM and Design (Owner's Costs)	18%
•	Owner's Contingency (Reserve)	8.5%

3.6 Market Conditions

Market conditions adjustments were not considered for this project; it remains market neutral. An adjustment is unwarranted because of market condition volatility and because the project will be executed in the future.

3.7 Escalation Costs

Escalation is based on USACE EM 1110-2-1304 (31 March 2012), TABLE A-1, QUARTERLY COST INDEX BY CWBS FEATURE CODE. Feature codes relevant to this project are:

- 08 Roads, Railroads, and Bridges (Cherry Hill Road, Rail extension)
- 12 Navigation Ports & Harbors (Wharf and bulkhead, including dredging and demo)
- 16 Bank Stabilization (Slope protection)
- 19 Buildings, Grounds, & Utilities (Landside work)

Escalation costs are estimate in two parts: The first part is to escalate the project costs prepared in February 2013 dollars to the assumed bid date of April 2015; the second part is the escalation of costs through the duration of the project, the mid-point of which is assumed to be mid 2014. The severing of escalation will allow the project to input

3

into CSRA, removing only the escalation for the project duration, which then will be modeled per the CSRA guidance. The use of costs, as directed, from the POA Intermodal Expansion Project Budgetary Cost Estimate Report, dated 11 April 2012, required the addition of 1.28% escalation to bring it current to the year and month of estimate, February 2013.

3.8 Detailed Scope, Clarifications, Inclusions and Exclusions

3.8.1 Civil Scope

Option 5 Hybrid would construct new pile-supported wharves and trestles in front of the existing wharfs and trestles at Terminals 2 and 3. A new sheet pile bulkhead would be required at the north extension. Approximately 32 acres of new paved upland area would be provided, along with a new Hybrid Berth. The Hybrid Berth would provide for temporary operations for TOTE and would provide for a future Wet Barge Berth.

The integrity and function of the existing Dry Barge Berth would be maintained, but removal of the existing OCSP® system, mass excavation of existing embankment, and construction dredging would be required. The remaining slopes would be protected with a layer of armor rock.

3.8.2 Demolition of Existing Infrastructure and Mass Excavation

At the southern end of the project, existing Terminals 2 and 3, including utilities, crane rail, wharf, and piling, would require demolition.

At the north extension portion of the project, the OCSP® system including tail walls would be demolished from the existing Dry Barge Berth south. The portions of traditional Z-pile walls previously installed at the north extension would also be removed. The OCSP® system installed for the Dry Barge Berth would remain in place.

Mass excavation of previously constructed embankment and construction dredging would be required. Salvage of existing armor stone would also be included. Concept excavation, dredging, and armor stone salvage quantities are shown in the civil partial site plans and typical sections in Appendix F. The existing Dry Barge Berth would be maintained in approximately its existing condition but some regrading at the interface between the Dry Barge Berth and new upland area would be required.

3.8.3 Civil Elements to be Constructed

Option 5 Hybrid includes the following specific civil scope:

- Water service and fire suppression lines
- Sanitary sewer lines
- Storm drain piping and inlets
- Electrical, communication, security, and crane power lines
- Cherry Hill Haul Road realignment and new rail spur
- Paved upland area
- Landscaped areas
- Site grading and drainage

3.8.4 Structural Scope

The main structural components of Option 5 Hybrid would consist of three pile-supported wharves, nine access trestles, a cellular steel sheet pile bulkhead, and five mooring dolphins. Other ancillary structural components to support port operations would include heavy-duty fenders, mooring bollards, and quick-release hooks along the wharf face, three stevedore buildings, and container-crane-supporting infrastructure. The pile-supported wharves would provide 2,405 linear feet of new dock face and three new berths: (1) a hybrid berth to support containerized, break bulk, bulk, and roll-on/roll-off (RO/RO) cargo operations; (2) an RO/RO berth to support containerized RO/RO operations; and (3) a container cargo berth to support lift-on/lift-off (LO/LO) container cargo operations.

3.8.5 Slope Protection

The embankment slopes at the Wet Barge Berth and north extension location would be protected by a 6-foot-thick layer of armor rock and riprap.

Micropile Slope Stabilization

A micropile slope stabilization wall would be constructed just outside of the existing rock embankment at Terminal 2 and 3.

3.8.6 Corrosion Protection

Corrosion Protection System for Pile-Supported Wharf

The steel casing in the top part of the hybrid piles would be sacrificial. The presence of the steel casing would delay onset of corrosion in the reinforced concrete core. A corrosion allowance is built into the design of the hollow steel pipe pile that would form the lower part of the hybrid pile. All steel reinforcing bar used in the pile-supported wharf, including deck, piles, and pile caps, would be epoxy-coated to increase corrosion resistance. High-Performance concrete water/cement ratio and air entrainment admixture would be in accordance with American Concrete Institute 201.2R, *Guide to Durable Concrete*, to establish a dense, low-permeability concrete.

Corrosion Protection System for Sheet Pile Bulkhead

All existing sheet piles in the POA stockpile were specified to be hot-dip galvanized with a minimum zinc thickness of 6 to 12 mils. Galvanization would be the sole corrosion protection element for sheet piles exposed to the atmospheric and splash zones. An impressed current cathodic protection system would protect structural components submerged in or in contact with soil. Cathodic protection anodes would be installed on the seaside of the sheet piling for protection of seaside surfaces, and additional anodes would be installed in drilled holes on the land side to protect surfaces exposed to soil and mud.

Corrosion Protection System for Fender Piles

A galvanic anode cathodic protection system would protect the portions of the fender piles that would be submerged in or in contact with soil. Based on the estimated surface area per fender pile, approximately 2,000 pounds of aluminum anode would be required for a 20-year service life. Eight or nine aluminum anodes could be fabricated into "bracelet" anodes that could be fastened or welded to the fender pile.

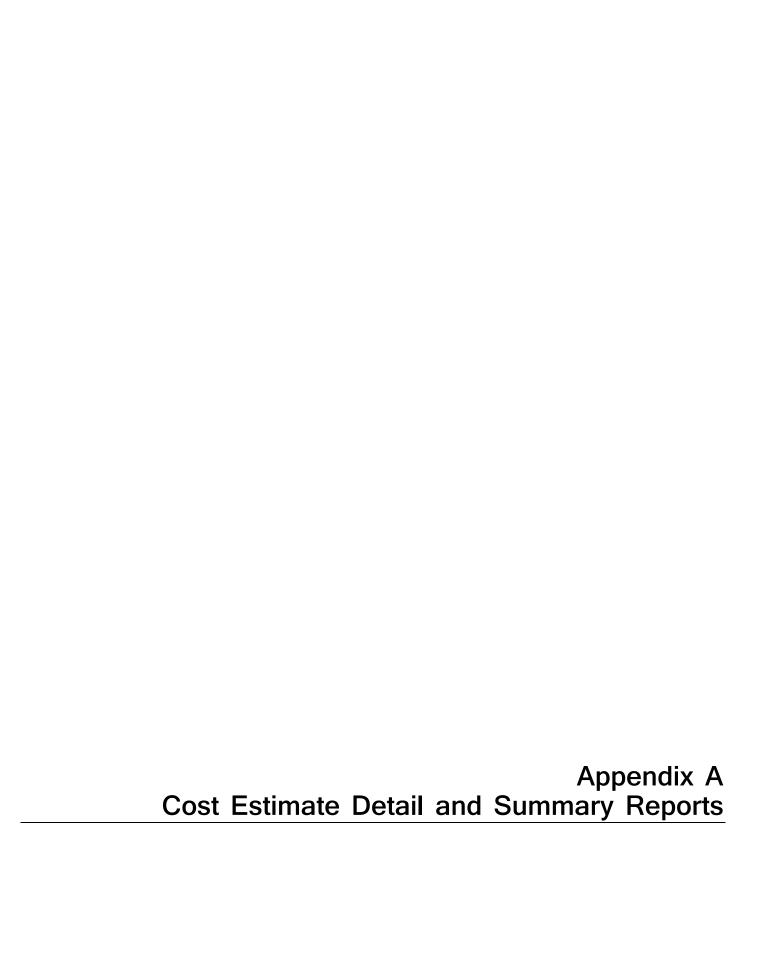
3.8.7 Exclusions

- Hazardous materials handling and disposal
- Natural gas utilities

3.9 Cost Resources

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

- 11 April 2012 POA Intermodal Expansion Project Budgetary Cost Estimate Report
- Vendor quotes on equipment and materials
- Estimator judgment



100.00 %

Labor 0 100.00 %	Burden 0 100.00%	Perm Matl 0 100.00 %	Const Matl 0 100.00 %	Co Eqp 0 100.00%	Rented Eqp 0 100.00 %	
				Co Eqp 0		
Labor	Burden	Perm Matl	Const Matl	Co Eqp	Rented Eqp	
% of Total 100.00		0.000%	100.000%			
otal Costs:	165,215,049.01		165,215,049.01	100.00	00%	
ther	15,114,110.41		15,114,110.41	9.14	18%	
				16.02		
onst Exp	354,289.40		354,289.40	0.21	4%	
erm Matl	35,410,749.50		35,410,749.50	21.43	33%	
ab+Bur	19,389,097.38		19,389,097.38	11.73	86%	
urden	7,877,321.51		7,877,321.51	4.76	58%	
abor	11,511,775.87		11,511,775.87	6.96	58%	
	DIRECT	INDIRECT	TOTAL	% OF TOT	CAL	
	urden ab+Bur erm Matl onst Exp quipment ubs ther	DIRECT abor 11,511,775.87 urden 7,877,321.51 ab+Bur 19,389,097.38 erm Matl 35,410,749.50 onst Exp 354,289.40 quipment 26,475,673.62 abs 68,471,128.70 ther 15,114,110.41 otal Costs: 165,215,049.01	DIRECT INDIRECT abor 11,511,775.87 urden 7,877,321.51 ab+Bur 19,389,097.38 erm Matl 35,410,749.50 onst Exp 354,289.40 quipment 26,475,673.62 abs 68,471,128.70 ther 15,114,110.41 otal Costs: 165,215,049.01	abor 11,511,775.87 urden 7,877,321.51 ab+Bur 19,389,097.38 erm Matl 35,410,749.50 onst Exp 354,289.40 quipment 26,475,673.62 abs 68,471,128.70 ther 15,114,110.41 otal Costs: 165,215,049.01 11,511,775.87 7,877,321.51 7,877,321.51 7,877,321.51 35,410,749.50 35,410,749.50 354,289.40 26,475,673.62 26,475,673.62 15,114,110.41 15,114,110.41	DIRECT INDIRECT TOTAL % OF TOTAL abor 11,511,775.87 11,511,775.87 6.96 arden 7,877,321.51 7,877,321.51 4.76 ab+Bur 19,389,097.38 19,389,097.38 11.73 arm Matl 35,410,749.50 35,410,749.50 21.43 anst Exp 354,289.40 354,289.40 0.21 quipment 26,475,673.62 26,475,673.62 16.02 abs 68,471,128.70 68,471,128.70 41.44 ther 15,114,110.41 15,114,110.41 9.14 and the first of the content of th	

^{*} Data Below here is dependent on the Summary Process. * The Summary Process was last run 02/27/2013 at 11:24 PM

100.00%

100.00%

100.00%

100.00%

100.00%

Markup on Resource Costs	27,393,563.25	16.5805%
MARKUP TOTALS ===> Cost Addons	27,393,563.25	16.5805%
Escalation to February 2015 3.4700 % of Cost, Mkup, & Prev	6,793,730.82	4.1121%
Escalation to Proj Midpoint 2.0500 % of Cost, Mkup, & Prev	4,152,858.85	
Contingency 20.0000 % of Cost, Mkup, & Prev Addons	41,346,267.91	25.0257%
PM, CM, Design 18.0000 % of Cost, Mkup, & Prev Addons	44,653,969.34	27.0278%
Owner's Contingency 8.5000 % of Cost, Mkup, & Prev Addon	24,882,184.03	15.0605%
Bond from Summary Table	3,176,137.60	1.9224%
MARKUP, ADDON & BOND TOTALS ===>	152,398,711.80	92.2426%
	=======================================	(% of costs)
COST + MARKUP>	\$317,613,760.81	
	(On Takeoff Quantity)	
There * ARE NOT * closing accounts for this bid.		
		-Effect on Bid-
Rounding difference:	-3,084.74	Adjusted
Unbalancing difference:		
From Cut&Add Sheet-costs:		(on Bid Quantity)
From Cut&Add Sheet-markup:		(on Bid Quantity)
Pass Through Adjustments:		None

02/27/2013

23:25

13-008-5HA-1

POA Option 5H Phase 1 (rev 1)

*** Bob Wells

BID TOTALS

Biditem	<u>Description</u>	Quantity	<u>Units</u>	Unit Price	Bid Total
50040	Construction Staging	1.000	LS	1,775,573.82	1,775,573.82
		***Subtotal Staging			\$1,775,573.82
	PHASE I				
50050	Demolition and Excavation	1.000	LS	24,831,190.04	24,831,190.04
50055	Dredging	1,171,000.000	CY		59,732,710.00
50060	Piling for Concrete Wharf Area I	35,280.000	LF	1,022.42	36,070,977.60
50080	Sheet Pile Bulkhead	2,300.000	LF	9,742.94	22,408,762.00
50081	Credit Free Issue Sheet Pile	1.000	LS-	-17,748,647.75	-17,748,647.7
50090	Concrete Superstructure	62,777.000	SF	194.17	12,189,410.09
50095	Walkways	4.000	EA	404,171.10	1,616,684.40
50100	Abutments	3.000	LS	294,914.53	884,743.59
50120	Fendering	1.000	LS	2,571,553.56	2,571,553.56
50130	Mooring Dolphins Piles	24.000	EA	182,500.19	4,380,004.56
50135	Pile Cap Mooring Dolphin	4.000	EA	112,222.33	448,889.32
50140	Slope Protection	174,800.000	CY	210.63	36,818,124.00
		***Subtotal Marine Work		\$1	84,204,401.41
	GENERAL CONSTRUCTION				
50500	Surface Pavements	1.000	LS	46,110,131.44	46,110,131.44
50510	Traffic Control Parking	1.000	LS	718,222.50	718,222.50
50520	Surface water control	1.000	LS	2,094,652.35	2,094,652.35
50530	Potable Water Utilities	1.000	LS	4,854,653.24	4,854,653.24
50540	Fire Suppression Utilities	1.000	LS	4,854,653.24	4,854,653.24
50550	Sanitary Sewer Utilities	1.000	LS	691,414.09	691,414.09
50560	Electrical Power Utilities	1.000	LS	17,761,442.99	17,761,442.99
50580	Telecommunications Utilities	1.000	LS	6,308,482.38	6,308,482.38
50590	Railroad Spur	1.000	LS	13,079,421.72	13,079,421.72
50600	Surface Restoration/Landscaping	1.000	LS	288,363.95	288,363.95
50610	Marine Terminal Buildings incl Crane Maint	1.000	LS	8,378,512.61	8,378,512.61
50620	Corrosion Control	1.000	LS	16,465,581.54	
50630	Cherry Hill Road Upgrades	1.000	LS	1,582,326.04	
50640	Other	1.000	LS	8,442,842.76	8,442,842.76

02/27/2013

23:25

13-008-5HA-1

POA Option 5H Phase 1 (rev 1)

*** Bob Wells

BID TOTALS

Biditem Description Quantity Units Unit Price Bid Total

Bid Total =====> \$317,610,676.08

**Notes:

Items in italics are Non-Additive.

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13-008-5HA-1 POA Option 5H Phase 1 (rev 1) 02/27/2013 23:34 Bob Wells **Direct Cost Report**

Activity	Desc	Quantity	Unit	Perm Constr	Equip Sub-	
Resource		Pcs Unit	Cost	Labor Material Matl/Exp	Ment Contract	Total

PARENT ITEM =	50040	CLJENT# = 03-12
PARENT TENT =	50040	CLIEN1# = 03-12

Description = Construction Staging Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

LFORMN Laborer-Foreman 34.72 MH 8.16 18.73 STD

LPWR Laborer-Power Tools 34.72 MH 8.16 18.73 STD

M100 Foreman - Carpenter 34.72 MH 28 10.93 STD

M105 Foreman - General Marine 35.72 MH 28 10.93 STD

M150 M-Operator, Crane 39.19 MH 28 19 STD

M165 M-Piledriver 34.95 MH 28 18.73 STD

M170 M-Welder 41.05 MH 28 18.73 STD

M173 M-Lead Carpenter 35.49 MH 28 18.73 STD

M175 M-Carpenter 35.49 MH 28 18.73 STD

M180 M-Carpenter Helper 35.49 MH 28 18.73 STD

M190 M-Skilled Laborer 35.43 MH 28 18.73 STD

M195 M-Laborer 35.43 MH 28 18.73 STD

OPCR100 Op Eng 1A- Crane 100-200 39.19 MH 8.16 19 STD OPEXC3 Op Eng 3- Backhoe to 3Y 37.43 MH 8.16 19 STD

Listing of Sub-Biditems of Parent Item 50040:

PARENT ITEM = 50042 CLIENT# = 03-12

1.000 1.000 Description = Mobilization and Demobilization Unit = LS Takeoff Quan: Engr Quan:

Listing of Sub-Biditems of Parent Item 50042:

SCHEDULE: BID ITEM = 50043CLIENT# = 03-12Land Item 100

Description = Mobilization Unit = Takeoff Quan: 1.000 Engr Quan: 0.000

219000 Misc Hauling/Trucking 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Onan:

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20 loads x 1 = 20 hours

5TRKFB Trucking - Flat Bed 20.00 HR 100.000 2,000 2,000

540000 **Temporary Construction Fence** Quan: 750.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

a 6 feet link fence will cost \$9.00/ ft. then can be sold installed at \$15/ft

9,000 31CHAINFENCE Temporary Chainlinkfence 750.00 LF 9,000 12.000

Pile Crew Mobilization Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

***** Copied and adjusted from C:\HEAVYBID\EST\012-008A *****

Crew mobilized for Tacoma, Washington

MARPIL	Marine Piling & Demo Crev	v		20.00	CH Prod	: 2.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		2.00 DA		70.000		140			140
8211050	Fuel, Oil, Grease 50g/d		2.00 DA		200.000			400		400
8CRANEC200	Crane Manitowoc 777 20	1.00	20.00 HR		163.361			3,267		3,267
8DRILLR	***DRILLS - ROCK***	1.00	20.00 HR		17.500			350		350
8MAC-A-10	Compressor 185 CFM	1.00	20.00 HR		3.000			60		60
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	20.00 HR		10.000			200		200
8MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 HR		17.500			350		350
8MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 HR		20.000			400		400
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000			60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000			100		100
8MDH-A-7	DELMAG D19 HAMMER	1.00	20.00 HR		10.000			200		200

POA Option 5H Phase 1 (rev 1)

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Direct	Cost	Re	poi

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor M	Perm Iaterial	Constr Matl/Exp	Equip Ment	Sub- Contract	Total	_
BID ITEM =		IT# =	03-12	Land Item	SCHEDU			00	F	0	0.000	
Description =	Mobilization			Unit =	LS	Takeoff Qu	uan:	1.000	Engr	Quan:	0.000	
8MFD-A-1	FAIRLEADS	1.00	20.00 HR		0.100				2		2	
8MGN-Z-11	Generator 10 KW	1.00	20.00 HR		3.000				60		60	
8MLT-A-1	Light Tower, Genie	1.00	20.00 HR		3.500				70		70	
8MPE-A-11	Extractor Pile	1.00	20.00 HR		5.000				100		100	
8MVP-A-11	FORD F150 SUPERC 10	1.00	20.00 HR		6.500				130		130	
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	20.00 HR		10.000				200		200	
8MWM-C-1	Welder Diesel 400 AMP	1.00	20.00 HR		2.500				50		50	
8PILE26	Vibro Hammer 150 TN	1.00	20.00 HR		45.492				910		910	
9100000	Subsistance 5 workers		2.00 DA		500.000			1,000			1,000	
M105	Foreman - General Marine	1.00	20.00 MH		35.720	1,251					1,251	
M165	M-Piledriver	1.00	20.00 MH		34.950	1,385					1,385	
M170	M-Welder	1.00	20.00 MH		41.050	1,561					1,561	
M190	M-Skilled Laborer	1.00	20.00 MH		35.430	1,399					1,399	
M195	M-Laborer	1.00	20.00 MH		35.430	1,399					1,399	
OPCR100	Op Eng 1A- Crane 100-200		20.00 MH		39.190	1,342					1,342	
\$16,384.16	120.0000 MH/L	S	120.00 MH]	4878.94]	8,335		1,140	6,909		16,384	
890006	Carpenter Crew Mob			Quan:	1.00	LS Hrs/S	Shft:	10.00 Cal:	510 WC	: CCISP		
**** Conie	d and adjusted from !	סידי∖י.	-C-FNCT\ F9T\ 1	2_0607 **:	***							
MARWOO	Marine Carpenters Crew	(11		0.00 CH	Prod	: 2.000	2 00	Lab Pcs:	10.00	Eqp Pcs:	16.00	
8211050	Fuel, Oil, Grease 50g/d		2.00 DA	.0.00 CII	200.000	. 2.000	0 5	Luo I es.	400	Eqp 1 cs.	400	
8CRANEC100	Crane Manitowoc 222B 1	1.00	20.00 HR		106.961				2,139		2,139	
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	20.00 HR		3.000				60		60	
8MBC-Z-1	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130	
8MBC-Z-2	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130	
8MBS-Z-9	Spud Barge M-80x28'	1.00	20.00 HR		10.000				200		200	
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR		3.000				60		60	
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR		5.000				100		100	
8MCN-A-13	Container Steel 20'	1.00	20.00 HR		0.100				2		2	
8MFW-A-1	Work Float	1.00	20.00 HR		2.000				40		40	
8MFW-A-2	Work Float	1.00	20.00 HR		2.000				40		40	
8MGN-Z-17	Generator 8 KW	1.00	20.00 HR		2.000				40		40	
8MGN-Z-18	Generator 8 KW	1.00	20.00 HR		2.000				40		40	
8MLT-A-2	Light Tower, Genie	1.00	20.00 HR		3.500				70		70	
8MVP-A-2	FORD F150 SUPERC 2	1.00	20.00 HR		6.500				130		130	
8WELD400	Welder 400 AMP	2.00	40.00 HR		2.044				82		82	
M100	Foreman - Carpenter	1.00	20.00 MH		34.720	1,222					1,222	
M170	M-Welder	1.00	20.00 MH		41.050	1,561					1,561	
M173	M-Lead Carpenter	1.00	20.00 MH		35.490	1,400					1,400	
M175	M-Carpenter	3.00	60.00 MH		35.490	4,201					4,201	
M180	M-Carpenter Helper	3.00	60.00 MH		35.490	4,201					4,201	
OPCR100	Op Eng 1A- Crane 100-200		20.00 MH		39.190	1,342					1,342	
\$17,589.31	200.0000 MH/L	S	200.00 MH]	7994.58]	13,926			3,663		17,589	
960015	Rigging Supplies			Quan:	1.00	LS Hrs/S	Shft:	10.00 Cal:	510 WC	: CCISP		
++++		\m-	G ENGT\ DOT\ 1	0 0003 ++	+++							
	d and adjusted from ? d and adjusted from (
	Rigging Supplies	~ \uL						35,000			35,000	
31RIGGING	rigging supplies		1.00 LS	3:	5,000.000			35,000			33,000	
====> Item '	Γotals: 50043 -	Mobil	ization		_							—
\$79,973.47	320.0000 MH/LS		320.00 MH	ſ 1	2873.52]	22,261		47,140	10,572		79,973	
79,973.470	1 LS			•	_	22,261.43		47,140.00		79	9,973.47	
•								•				

POA Option 5H Phase 1 (rev 1)

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract

BID ITEM = 50044 CLIENT# = 03-12Land Item SCHEDULE: 100

Takeoff Quan: 1.000 0.000Description = Transportation Unit = LS Engr Quan:

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Total

746,600.00

219000 Misc Hauling/Trucking Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

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Miscelaneous trucking to mobilize equipment to the site and demob. smal cranes and loaders, traileres and containers.

20 loads x 4 hours = 80 hours

5TRKFB Trucking - Flat Bed 80.00 HR 100.000 8,000 8,000

1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 890007 **Marine Tugs** Quan:

rental tugging services to and from Tacoma, Washington State. Distance Tacoma to Anchorage: 1,472 N Miles

at 4.5 knots, 1,472/4.5= 327 hours ===> 13.62 days say 14 days

14 days in and 14 days back 2 days on stand by = 30 days

1 LS

then tug needs to go back and do it all over again for demobilization

so, say 60 days

746,600.000

5TUGSERVICE Tug Rental 60.00 DA 6,500.000 390,000 390,000 8211060 ==> Fuel, Oil, Grease 1400 60.00 DA 5,810.000 348,600 348,600 \$738,600.00 738,600 [] 390,000 348,600 **====> Item Totals:** 50044 - Transportation \$746,600.00 398,000 348,600 746,600 [] 398,000.00 348,600.00

BID ITEM = 50045 CLIENT# = 03-12Land Item SCHEDULE: 100

0.000 Demobilization Unit = LS Takeoff Quan: 1.000 Description = Engr Quan:

115000 Remove Fence (Chain Link) Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

Per drawings there are 750 ft of link fencing to limit the construction site

MARLAN	Demolition Crew on land			10.00	CH	Prod:	1.0000 S	Lab Pcs:	19.00	Eqp Pcs:	13.00	
8211050	Fuel, Oil, Grease 50g/d		1.00	DA		200.000			200		200	
8BHLD480	BHL Cat 450E 1.75CY	8.00	80.00	HR		45.473			3,638		3,638	
8CRANEC100	Crane Manitowoc 222B 1	1.00	10.00	HR		106.961			1,070		1,070	
8TRKPU10	Pickup 4x2 3/4 Ton Gas	4.00	40.00	HR		7.044			282		282	
9100010	Subistance 10 workerss		1.00	DA		1,000.000		1,000			1,000	
M105	Foreman - General Marine	1.00	10.00	MH		35.720	625				625	
M150	M-Operator, Crane	1.00	10.00	MH		39.190	756				756	
M195	M-Laborer	8.00	80.00	MH		35.430	5,594				5,594	
OPCR100	Op Eng 1A- Crane 100-200	1.00	10.00	MH		39.190	671				671	
OPEXC3	Op Eng 3- Backhoe to 3Y	8.00	80.00	MH		37.430	5,193				5,193	
\$19,029.26	190.0000 MH/LS	;	190.00	MH		[7666.78]	12,840	1,000	5,189		19,029	

890010	Subcontractor Pile Crew Demobilization			1.00 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP		
			_							
MARPIL	Marine Piling & Demo Crew	20.00	CH	Prod:	2.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00	
3WELD	Weld Supplies (1 man-Stick	2.00 DA		70.000		140			140	
8211050	Fuel Oil Grease 50g/d	2.00 DA		200 000			400		400	

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Direct Cost Report

Activity Resource	Desc	Pcs	Quantity	Unit		Unit Cost	Labor M	Perm Aaterial	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =		NT# = (03-12		Land Item	SCHEDU		10			0	0.000
Description =	Demobilization				Unit =	LS	Takeoff Qu	uan:	1.000	Engr	Quan:	0.000
CRANEC200	Crane Manitowoc 777 20	1.00	20.00			163.361				3,267		3,267
DRILLR	***DRILLS - ROCK***	1.00	20.00			17.500				350		350
MAC-A-10	Compressor 185 CFM	1.00	20.00	HR		3.000				60		60
MBM-Z-2	M.Barge2110 GRT OB-80-		20.00			10.000				200		200
MBS-Z-14	Spud Barge M-120x45'	1.00	20.00			17.500				350		350
MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00			20.000				400		400
MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00			3.000				60		60
MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00			5.000				100		100
MDH-A-7	DELMAG D19 HAMMER		20.00			10.000				200		200
MFD-A-1	FAIRLEADS	1.00	20.00			0.100				2		2
MGN-Z-11	Generator 10 KW	1.00	20.00			3.000				60		60
MLT-A-1 MPE-A-11	Light Tower, Genie	1.00	20.00 20.00			3.500				70 100		70
MPE-A-11 MVP-A-11	Extractor Pile FORD F150 SUPERC 10	1.00 1.00	20.00			5.000 6.500				100 130		100 130
MWH-A-1		1.00	20.00			10.000				200		200
иwн-A-1 ИWM-C-1	WINCH 3-DRUM RB-90 Welder Diesel 400 AMP	1.00	20.00			2.500				50		50
PILE26	Vibro Hammer 150 TN	1.00	20.00			45.492				910		910
00000	Subsistance 5 workers	1.00	20.00			500.000			1,000	910		1,000
105	Foreman - General Marine	1.00	20.00			35.720	1,251		1,000			1,251
165	M-Piledriver	1.00	20.00			34.950	1,385					1,385
170	M-Welder	1.00	20.00			41.050	1,561					1,561
190	M-Skilled Laborer	1.00	20.00			35.430	1,399					1,399
195	M-Laborer	1.00	20.00			35.430	1,399					1,399
	Op Eng 1A- Crane 100-200		20.00			39.190	1,342					1,342
PCR 100												
	120.0000 MH/L		120.00		[4878.94]	8,335		1,140	6,909		16,384
6,384.16		S	120.00		Quan:	4878.94]	8,335	Shft: 1	1,140 0.00 Cal:	,	: CCISP	
6,384.16 0011	120.0000 MH/L: Subcontractor Carpenter	S Crew D	120.00 Demob	МН	Quan:	4878.94] 1.00	8,335	Shft: 1		,	: CCISP	
6,384.16 0011 **** Copied	120.0000 MH/L. Subcontractor Carpenter of and adjusted from 2	S Crew D	120.00 Demob	MH	Quan:	4878.94] 1.00	8,335 LS Hrs/S			510 WC		
6,384.16 0011 **** Copied <u>1ARWOO</u>	120.0000 MH/L: Subcontractor Carpenter	S Crew D	120.00 Demob	MH GST\1 2	Quan: 2-060A ***	4878.94] 1.00	8,335 LS Hrs/S		0.00 Cal:	,	Eqp Pcs:	16,384
6,384.16 0011 **** Copied 11050	120.0000 MH/L. Subcontractor Carpenter d and adjusted from Marine Carpenters Crew	S Crew D	120.00 Demob G-ENGI\E	MH SST\1 2 DA	Quan: 2-060A ***	4878.94] 1.00 *** Prod	8,335 LS Hrs/S		0.00 Cal:	510 WC :		16,384 16.00
6,384.16 0011 **** Copied MARWOO 11050 CRANEC100	120.0000 MH/Li Subcontractor Carpenter d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d	S Crew D	120.00 Demob G-ENGI\E 2.00	MH SST\1 2 DA HR	Quan: 2-060A ***	1.00 *** Prod 200.000	8,335 LS Hrs/S		0.00 Cal:	510 WC:		16,384 16.00 400
6,384.16 0011 **** Copied 1ARWOO 11050 CRANEC100 MAC-A-17	120.0000 MH/L Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	Crew D Y:\TB0	120.00 Demob G-ENGI\E 2.00 20.00	MH CST\1 2 DA HR HR	Quan: 2-060A ***	1.00 * * * Prod 200.000 106.961	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139		16,384 16.00 400 2,139
6,384.16 0011 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1	120.0000 MH/Li Subcontractor Carpenter d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai	Crew D 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00	MH CST\1 2 DA HR HR HR	Quan: 2-060A ***	1.00 *** Prod 200.000 106.961 3.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60		16,384 16.00 400 2,139 60
6,384.16 0011 **** Copied 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2	120.0000 MH/Li Subcontractor Carpenter d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	S Crew L Y: \TBO 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00 20.00	MH CST\1 2 DA HR HR HR	Quan: 2-060A ***	1.00 *** Prod 200.000 106.961 3.000 6.500	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130		16,384 16.00 400 2,139 60 130
6,384.16 00011 **** Copied MARWOO 011050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9	120.0000 MH/Li Subcontractor Carpenter d and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40	1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00 20.00 20.00	MH CST\1 2 DA HR HR HR HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130		16,384 16.00 400 2,139 60 130 130
6,384.16 **** Copied *ARWOO 11050 CRANEC100 *AC-A-17 *MBC-Z-1 *MBC-Z-2 *MBS-Z-9 *MBW-Z-2	120.0000 MH/Li Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 1.00 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00	MH CST\1 2 DA HR HR HR HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200		16,384 16.00 400 2,139 60 130 200 60 100
6,384.16 0011 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13	120.0000 MH/Li Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/	1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH CST\1 2 DA HR HR HR HR HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2		16,384 16.00 400 2,139 60 130 200 60 100 2
6,384.16 *** Copied IARWOO 11050 RANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 ICE-A-40 ICN-A-13 IFW-A-1	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH 2 DA HR HR HR HR HR HR HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40		16,384 16.00 400 2,139 60 130 200 60 100 2 40
6,384.16 0011 **** Copied IARWOO 11050 CRANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 ICE-A-40 ICN-A-13 IFW-A-1 IFW-A-2	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH GST\1 2 DA HR HR HR HR HR HR HR HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40
6,384.16 **** Copied *ARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH GST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40
6,384.16 0011 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH 2 DA HR HR HR HR HR HR HR HR HR H	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 40
6,384.16 0011 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH 2 DA HR HR HR HR HR HR HR HR HR H	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40 70		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 70
6,384.16 0011 **** Copied ARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MEW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	MH 2SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500	8,335 LS Hrs/S		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130
6,384.16 0011 **** Copied IARWOO 11050 RANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VELD400	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 40.00	MH 2SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044	8,335 LS Hrs/S : 2.000		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40 70		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130 82
6,384.16 0011 *** Copied IARWOO 11050 PRANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 ICE-A-40 ICN-A-13 IFW-A-1 IFW-A-2 IGN-Z-17 IGN-Z-18 ILT-A-2 IVP-A-2 VELD400 I00	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 40.00 20.00	MH 2SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720	8,335 LS Hrs/S : 2.000		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 70 130 82 1,222
6,384.16 0011 **** Copied IARWOO 11050 PRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VELD400 100 170	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00	MH 2 SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 4.4050	8,335 LS Hrs/S : 2.000 1,222 1,561		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 130 200 60 100 2 40 40 70 130 82 1,222 1,561
6,384.16 0011 *** Copied IARWOO 11050 PRANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 ICE-A-40 ICN-A-13 IFW-A-1 IFW-A-2 IGN-Z-17 IGN-Z-18 ILT-A-2 IVP-A-2 VELD400 I00 I70 I73	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob G-ENGI\E 2.00 20.00	MH 2 SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 4.050 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 70 130 82 1,222 1,561 1,400
6,384.16 0011 **** Copied IARWOO 11050 RANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 ICE-A-40 ICN-A-13 IFW-A-1 IFW-A-2 IGN-Z-17 IGN-Z-18 ILT-A-2 IVP-A-2 VELD400 100 170 173 175	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 60.00	MH 2 SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 4.050 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500 6.500 3.500	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400 4,201		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 130 200 60 100 2 40 40 70 130 82 1,222 1,561 1,400 4,201
6,384.16 0011 **** Copied IARWOO 11050 RANEC100 IAC-A-17 IBC-Z-1 IBC-Z-2 IBS-Z-9 IBW-Z-2 IACE-A-40 IACN-A-13 IFW-A-1 IFW-A-2 IAGN-Z-17 IAGN-Z-18 IAT-A-2 IAT-A-2 IAT-A-2 IAT-A-2 IAT-A-1 IA	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 60.00 60.00	MH 2 SST\1 2 DA HR	Quan: 2-060A ***	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 35.490	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400 4,201 4,201		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201
MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VVP-A-2 VVP-A-1	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 60.00	MH 2 SST\1 2 DA HR	Quan: 2-060A *** 0.00 CH	*** Prod 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400 4,201 4,201 1,342		0.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		16,384 16.00 400 2,139 60 130 130 200 60 100 2 40 40 70 130 82 1,222 1,561 1,400 4,201
6,384.16 10011 11050 1	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/Ls	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00	MH 2 SST\1 2 DA HR	Quan: 2-060A *** 0.00 CH	*** Prod 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 35.490	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400 4,201 4,201		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130 82		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342
6,384.16 10011 11050 1	Subcontractor Carpenter of and adjusted from Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/Ls	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	120.00 Demob 3-ENGI\E 2.00 20.00	MH 2 SST\1 2 DA HR	Quan: 2-060A *** 0.00 CH	*** Prod 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190	8,335 LS Hrs/S : 2.000 1,222 1,561 1,400 4,201 4,201 1,342		0.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40 70 130 82		16,384 16.00 400 2,139 60 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342

430000

13-008-5HA-1 POA Option 5H Phase 1 (rev 1)

ion 5H Phase 1 (rev 1)

Direct Cost Report

Quantity Activity Desc Unit Perm Constr Equip Sub-Unit Pcs Resource Cost Labor Material Matl/Exp Ment Contract Total SCHEDULE: BID ITEM = 50045CLIENT# = 03-12Land Item 100 LS Takeoff Quan: 1.000 Engr Quan: 0.000 Description = Demobilization Unit =

Total of Above Sub-Biditems

Quan: 1,000.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Page 5

23:34

02/27/2013

====> | Item Totals: | 50042 | - Mobilization and Demobilization | \$879,576.20 | 830.0000 | MH/LS | 830.00 | MH | [33413.82] | 57,363 | 447,280 | 374,933 | 879,576.20 | 879,576.200 | 1 LS | 57,362.91 | 447,280.00 | 374,933.29 | 879,576.20

BID ITEM = **50046** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Environmental Protection & Turbidity Bar Unit = FT Takeoff Quan: 664.000 Engr Quan: 0.000

call on the plans D-101

Silt Fence - Install

LAB3	Foreman + 2 Laborers		10.00	CH	Prod:	100.0000 UH	Lab Pcs:	3.00	Eqp Pcs:	1.00
1ECSF	Silt Fence		1,000.00 LF		1.000		1,000			1,000
TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	10.00 HR		8.476			85		85
FORMN	Laborer-Foreman	1.00	10.00 MH		34.720	613				613
PWR	Laborer-Power Tools	2.00	20.00 MH		34.720	1,226				1,226
2,924.45	0.0300 MH/L	F	30.00 MH		[1.146]	1,840	1,000	85		2,924
32000	Turbidity Barrier			Quan	: 1,000.00 LI	F Hrs/Shft:	10.00 Cal:	510 WC:	: CCISP	
**** Copied	and adjusted from	Y:\TB0	G-ENGI\EST\12-0	50A **	***					
MARPIL	Marine Piling & Demo Cre		10.00		Prod:	1.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
TRUBIDITYBA	Turbidity Barrier		1,000.00 LF		14.000		14,000			14,000
WELD	Weld Supplies (1 man-Stick	ζ	1.00 DA		70.000		70			70
211050	Fuel, Oil, Grease 50g/d		1.00 DA		200.000			200		200
CRANEC200	Crane Manitowoc 777 20	1.00	10.00 HR		163.361			1,634		1,634
DRILLR	***DRILLS - ROCK***	1.00	10.00 HR		17.500			175		175
MAC-A-10	Compressor 185 CFM	1.00	10.00 HR		3.000			30		30
MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	10.00 HR		10.000			100		100
MBS-Z-14	Spud Barge M-120x45'	1.00	10.00 HR		17.500			175		175
MBT-Z-12	Tug Push Boat 200 HP	1.00	10.00 HR		20.000			200		200
MBW-Z-2	18' Aluminum Boat & O/	1.00	10.00 HR		3.000			30		30
MCE-A-40	Bucket Clamshell 3 CYD	1.00	10.00 HR		5.000			50		50
MDH-A-7	DELMAG D19 HAMMER	1.00	10.00 HR		10.000			100		100
MFD-A-1	FAIRLEADS	1.00	10.00 HR		0.100			1		1
MGN-Z-11	Generator 10 KW	1.00	10.00 HR		3.000			30		30
MLT-A-1	Light Tower, Genie	1.00	10.00 HR		3.500			35		35
MPE-A-11	Extractor Pile	1.00	10.00 HR		5.000			50		50
MVP-A-11	FORD F150 SUPERC 10	1.00	10.00 HR		6.500			65		65
MWH-A-1	WINCH 3-DRUM RB-90	1.00	10.00 HR		10.000			100		100
MWM-C-1	Welder Diesel 400 AMP	1.00	10.00 HR		2.500			25		25
PILE26	Vibro Hammer 150 TN	1.00	10.00 HR		45.492			455		455
100000	Subsistance 5 workers		1.00 DA		500.000		500			500
1105	Foreman - General Marine	1.00	10.00 MH		35.720	625				625
1165	M-Piledriver	1.00	10.00 MH		34.950	692				692
1170	M-Welder	1.00	10.00 MH		41.050	780				780
И190	M-Skilled Laborer	1.00	10.00 MH		35.430	699				699
И195	M-Laborer	1.00	10.00 MH		35.430	699				699
PCR100	Op Eng 1A- Crane 100-200		10.00 MH		39.190	671				671
22,192.08	0.0600 MH/L	F	60.00 MH		[2.439]	4,168	14,570	3,455		22,192

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13-008-5HA-1 Bob Wells

cost per cy= \$350/15cy= \$23.5/cy

Trucking - CY

737,000.00 CY

5TRKCY

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Un	it	Unit Cost		Perm Constr erial Matl/Exp	Equip Ment	Sub- Contract	Total
ID ITEM =	50046 Environmental Prote	CLIENT# =		Land Item Unit =	SCHEDU FT	LE: 1 Takeoff Quar	100 : 664.000) Engr	Quan:	0.000
32005	Erosion Control -	Hay Bales		Quan	: 400.00	EA Hrs/Shf	t: 10.00 Cal	: 510 WC	: CCISP	
A bale size nandle	d and adjusted of 14"x18"x22"	will weig	h about 37	\12-060A ** to 43 lbs.	**** This is	a safer b	ale weight	for many	people	to
if there are	e length is 22" e 600 ft =====>	· qty of ba			-					
LAB4 31ECHB	Foreman + 3 Labor	ers	400.00 EA	66.66 CH	Prod: 5.000	6.0000	UH Lab Pcs:	4.00	Eqp Pcs:	1.00
STRKPU70	Hay Bales Leased 4x2, 3/4 To	n Ga 1.00	66.67 HF		3.000 8.476		2,000	565		2,000 565
LFORMN	Laborer-Foreman	1.00	66.67 MI		34.720	4,088				4,088
.PWR	Laborer-Power Too	ols 3.00	200.00 MI	H	34.720	12,265				12,265
18,918.10	0.6666	6 MH/EA	266.67 MI	H	[25.462]	16,353	2,000	565		18,918
====> Item				ection & Turbio	•					
\$44,034.63 56.317	0.5371 MH/	FT 64 FT	356.67 MI	H	[20.738]	22,360 33.68	17,570 26.46	4,104 6.18		44,035 66.32
===> Item '	Totals: 50040	- Consti	uction Staging	Į.	_	f Above Sub-E				
====> Item 923,610.83 923,610.830	1,186.6700 MH/		ruction Staging 1,186.67 M	•	 47183.71]	79,723 9,723.18	464,850 464,850.00	,	92.	923,611 3,610.83
923,610.83 923,610.830 BID ITEM =	1,186.6700 MHz	LS LS CLIENT# =	1,186.67 M	•	47183.71] 7	79,723 9,723.18	464,850.00 100	379,037.65	92. Quan:	
923,610.83 23,610.830 BID ITEM = Description =	1,186.6700 MHz 1 50050 Demolition and Exca	CLIENT# = CLIENT# = CLIENT#	1,186.67 M	Marine Iten Unit =	47183.71] 7	79,723 9,723.18 JLE: 1 Takeoff Quan	464,850.00 100	379,037.65) Engr	Quan:	3,610.83
8923,610.83 923,610.830 BID ITEM = Description =	1,186.6700 MHz 1 50050 Demolition and Excess	CLIENT# = CLIENT# = CLIENT#	1,186.67 MD	Marine Iten Unit =	47183.71] 7 n SCHEDU : LS	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000	379,037.65) Engr	Quan:	3,610.83
923,610.83 23,610.830 BID ITEM = = 05025 excavate 3,0	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day:	CLIENT# = cavation	1,186.67 MI	Marine Iten Unit =	47183.71] 7 n SCHEDU LS: 737,000.00	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000 t: 10.00 Cal	379,037.65 Engr	Quan:	1.000
923,610.83 23,610.830 BID ITEM = = 05025 excavate 3,000 cy/30 MARLAN	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew o	CLIENT# = cavation	1,186.67 MI	Marine Iten Unit = rine Quan	47183.71] 7 n SCHEDU LS : 737,000.00 o	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000 t: 10.00 Cal	379,037.65 Engr : 510 WC	Quan:	1.000
923,610.83 23,610.830 SID ITEM = 05025 xcavate 3,0 97,000cy/30 MARLAN 211050	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 50	CLIENT# = cavation client# = days days n land Og/d	1,186.67 MI 03-12 Ma 2 246.16 DA	Marine Iten Unit = rine Quan	47183.71] 7 n SCHEDU LS : 737,000.00 6	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000 t: 10.00 Cal	379,037.65 Engr : 510 WC	Quan:	1.000 13.00 49,232
923,610.83 23,610.830 SID ITEM = 05025 xcavate 3,0 97,000cy/30 MARLAN 211050 BHLD480	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew o	CLIENT# = days avation days n land og/d 6CY 8.00	1,186.67 MI	Marine Iten Unit = rine Quan	47183.71] 7 n SCHEDU LS : 737,000.00 o	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000 t: 10.00 Cal	379,037.65 Engr : 510 WC	Quan:	1.000
923,610.83 23,610.830 EID ITEM = 0escription = 05025 xcavate 3,000cy/30 MARLAN 211050 BHLD480 CRANEC100	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 50 BHL Cat 450E 1.75	CLIENT# = days avation days n land og/d 5CY 8.00 222B 1 1.00	1,186.67 MI 03-12 Ma 2 246.16 DA 19,692.76 HF	Marine Iten Unit = rine Quan	47183.71] 7 n SCHEDULS 1: 737,000.00 6 Prod: 200.000 45.473	79,723 9,723.18 JLE: 1 Takeoff Quan	100 : 1.000 t: 10.00 Cal	379,037.65 Engr 19.00 49,232 895,489	Quan:	1.000 13.00 49,232 895,489
923,610.83 23,610.830 EID ITEM = 0escription = 05025 xcavate 3,0 97,000cy/30 MARLAN 211050 BHLD480 CRANEC100 TRKPU10 100010	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 56 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work	CLIENT# = days avation days n land og/d 5CY 8.00 222B 1 1.00 n Gas 4.00 derss	1,186.67 MI 03-12 Ma 246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 246.16 DA	Marine Iten Unit = rine Quan	47183.71] 7 n SCHEDULS 1 737,000.00 6 Prod: 200.000 45.473 106.961 7.044 1,000.000	79,723 9,723.18 JLE: 1 Takeoff Quan CY Hrs/Shf	100 : 1.000 t: 10.00 Cal	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan:	1.000 13.00 49,232 895,489 263,294 69,358 246,160
923,610.83 23,610.830 BID ITEM Description = 05025 EXCAVATE 3,0 97,000cy/30 MARLAN 211050 BHLD480 CRANEC100 TRKPU10 100010 4105	1,186.6700 MHz 1 50050 Demolition and Excapation to Was 000 cy per day: 000cy/day= 333 Demolition Crew or Fuel, Oil, Grease 50 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General	CLIENT# = days avation days n land 0g/d 5CY 8.00 222B 1 1.00 n Gas 4.00 terss Marine 1.00	1,186.67 MI 03-12 246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 246.16 DA 2,461.59 MI	Marine Iten Unit = rine Quan 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720	79,723 9,723.18 JLE: 1 Takeoff Quan CY Hrs/Shf : 246.1595	100 : 1.000 Cal-	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan:	1.000 13.00 49,232 895,489 263,294 69,358 246,160 153,961
923,610.83 23,610.830 BID ITEM = Description = 05025 excavate 3,0 197,000cy/30 MARLAN 211050 BHLD480 CRANEC100 TRKPU10 100010 4105 4150	1,186.6700 MHz 1 50050 Demolition and Exca Excavation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 56 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General M-Operator, Crane	CLIENT# = daystion clays in land or	1,186.67 MI 2 246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 246.16 DA 2,461.59 MI 2,461.59 MI	Marine Iten Unit = rine Quan 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190	79,723 9,723.18 JLE: 1 Takeoff Quan CY Hrs/Shf : 246.1595	100 : 1.000 Cal-	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan: : CCISP Eqp Pcs:	1.000 13.00 49,232 895,489 263,294 69,358 246,160 153,961 186,169
### 150 ### 15	1,186.6700 MH/ 1 50050 Demolition and Excapation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 56 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General M-Operator, Crane M-Laborer	CLIENT# = daystion ste days n land 0g/d 6CY 8.00 222B 1 1.00 n Gas 4.00 terss Marine 1.00 8.00	246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 2461.59 MI 2,461.59 MI 2,461.59 MI 19,692.76 MI	Marine Iten Unit = rine Quant 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1	79,723 9,723.18 JLE: 1 Takeoff Quar CY Hrs/Shf : 246.1595	100 : 1.000 Cal-	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan: : CCISP Eqp Pcs:	1.000 13.00 49,232 895,489 263,294 69,358 246,160 153,961 186,169 377,043
923,610.83 23,610.830 EDITEM = Description = 05025 xcavate 3,0 97,000cy/30 MARLAN 211050 BHLD480 CRANEC100 TRKPU10 100010 4105 4150 4195 DPCR100	1,186.6700 MH/ 1 50050 Demolition and Excapation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 50 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General M-Operator, Crane M-Laborer Op Eng 1A- Crane	CLIENT# = daystion ste days n land 0g/d 6CY 8.00 222B 1 1.00 n Gas 4.00 terss Marine 1.00 8.00 100-200 1.00	1,186.67 MI 03-12 246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 2461.6 DA 2,461.59 MI 2,461.59 MI 19,692.76 MI 2,461.59 MI 2,461.59 MI	Marine Iten Unit = rine Quant 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1 39.190	79,723 9,723.18 JLE: 1 Takeoff Quan CY Hrs/Shf : 246.1595 153,961 186,169 ,377,043 165,115	100 : 1.000 Cal-	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan: : CCISP Eqp Pcs:	1.000 13.00 49,232 895,489 263,294 69,358 246,160 153,961 186,169 377,043 165,115
923,610.83 23,610.830 BID ITEM = 05025 Excavate 3,0 97,000cy/30 MARLAN 211050 BHLD480 CRANEC100 TRKPU10 100010 4105 4150 4195 DPCR100 DPEXC3	1,186.6700 MH/ 1 50050 Demolition and Excapation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 56 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General M-Operator, Crane M-Laborer Op Eng 1A- Crane Op Eng 3- Backhoe	CLIENT# = daystion ste days n land 0g/d 6CY 8.00 222B 1 1.00 n Gas 4.00 terss Marine 1.00 8.00 100-200 1.00	246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 2461.59 MI 2,461.59 MI 2,461.59 MI 19,692.76 MI	Marine Iten Unit = rine Quant 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1	79,723 9,723.18 JLE: 1 Takeoff Quar CY Hrs/Shf : 246.1595 153,961 186,169 ,377,043 165,115 ,278,407	100 : 1.000 t: 10.00 Cal: S Lab Pes:	379,037.65 Engr 19.00 49,232 895,489 263,294	Quan: : CCISP Eqp Pcs:	1.000 13.00 49,232 895,489 263,294 69,358 246,160 153,961 186,169 377,043
### 100010 ### 100000 ### 100000 ### 100000 ### 100000 ### 100000 ### 100000 ### 100000 ### 1000000 ### 100000	1,186.6700 MH/ 1 50050 Demolition and Excapation to Was 000 cy per day: 000cy/day= 333 Demolition Crew of Fuel, Oil, Grease 56 BHL Cat 450E 1.75 Crane Manitowoc 2 Pickup 4x2 3/4 Tor Subistance 10 work Foreman - General M-Operator, Crane M-Laborer Op Eng 1A- Crane Op Eng 3- Backhoe	CLIENT# = days n land 0g/d 6CY 8.00 1.00 8.00 1.00 8.00 1.00 8.00 1.00 8.00 4 MH/CY	1,186.67 MI 03-12 246.16 DA 19,692.76 HF 2,461.59 HF 9,846.38 HF 246.16 DA 2,461.59 MI 2,461.59 MI 19,692.76 MI 2,461.59 MI 19,692.76 MI 19,692.76 MI	Marine Iten Unit = rine Quant 461.59 CH	Prod: 200.000 45.473 106.961 7.044 1,000.000 35.720 39.190 35.430 1 39.190 37.430 1	79,723 9,723.18 JLE: 1 Takeoff Quan CY Hrs/Shf : 246.1595 153,961 186,169 ,377,043 165,115 ,278,407 ,160,696	100 : 1.000 t: 10.00 Cal: S Lab Pes:	19.00 49,232 895,489 263,294 69,358	Quan: : CCISP Eqp Pcs:	1.000 13.00 49,232 895,489 269,358 246,160 153,961 186,169 ,377,043 165,115 ,278,407

8.000

5,896,000

5,896,000

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Activity Desc Quantity Unit Perm Constr Equip Sub-

Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

Direct Cost Report

BID ITEM = 50050 CLIENT# = 03-12 Marine Item SCHEDULE: 1 100

Description = Demolition and Excavation Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

500510 Removal of Open Cell Sheets Marine Quan: 15,300.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

consists of:

Open Cell wall #1: 28 back extensions of 230 ft= 6,440 ft and 27 semi circles of 3.14*30/2= 47ft*27=

1,267ft ===> 6,440+ 1,267= 7,707ft

Open Cell wall #2: 22 back extensions of 180 ft= 3,960ft + 47*21= 4,947 ft

Open Cell wall #3: 12 back extensions of 125 ft= 1,500+47*11= 2,017

Total cells: 7,707+4,947+2,017= 14,671 ft

Additional cicular cells #1= 3.1416*100= 314 ft

semicicle#2= 314/2*2= 314 ft

Grand total removal: 14,671+314+314=15,299 say 15,300 ft by 60 ft.. if removal is at a rate of 60 ft per day ==> 15,300/60=255 days.

it can be faster using 2 crews. yet, fo the sake of developing costs we will assume on single crew.

MARPIL	Marine Piling & Demo Crew	7	2,550.00	CH	Prod	1: 255.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		255.00 DA		70.000		17,850			17,850
8211050	Fuel, Oil, Grease 50g/d		255.00 DA		200.000			51,000		51,000
8CRANEC200	Crane Manitowoc 777 20	1.00	2,550.00 HR		163.361			416,571	4	416,571
8DRILLR	***DRILLS - ROCK***	1.00	2,550.00 HR		17.500			44,625		44,625
8MAC-A-10	Compressor 185 CFM	1.00	2,550.00 HR		3.000			7,650		7,650
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	2,550.00 HR		10.000			25,500		25,500
8MBS-Z-14	Spud Barge M-120x45'	1.00	2,550.00 HR		17.500			44,625		44,625
8MBT-Z-12	Tug Push Boat 200 HP	1.00	2,550.00 HR		20.000			51,000		51,000
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,550.00 HR		3.000			7,650		7,650
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,550.00 HR		5.000			12,750		12,750
8MDH-A-7	DELMAG D19 HAMMER	1.00	2,550.00 HR		10.000			25,500		25,500
8MFD-A-1	FAIRLEADS	1.00	2,550.00 HR		0.100			255		255
8MGN-Z-11	Generator 10 KW	1.00	2,550.00 HR		3.000			7,650		7,650
8MLT-A-1	Light Tower, Genie	1.00	2,550.00 HR		3.500			8,925		8,925
8MPE-A-11	Extractor Pile	1.00	2,550.00 HR		5.000			12,750		12,750
8MVP-A-11	FORD F150 SUPERC 10	1.00	2,550.00 HR		6.500			16,575		16,575
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	2,550.00 HR		10.000			25,500		25,500
8MWM-C-1	Welder Diesel 400 AMP	1.00	2,550.00 HR		2.500			6,375		6,375
8PILE26	Vibro Hammer 150 TN	1.00	2,550.00 HR		45.492			116,005		116,005
9100000	Subsistance 5 workers		255.00 DA		500.000		127,500			127,500
M105	Foreman - General Marine	1.00	2,550.00 MH		35.720	159,491				159,491
M165	M-Piledriver	1.00	2,550.00 MH		34.950	176,544				176,544
M170	M-Welder	1.00	2,550.00 MH		41.050	199,020				199,020
M190	M-Skilled Laborer	1.00	2,550.00 MH		35.430	178,312				178,312
M195	M-Laborer	1.00	2,550.00 MH		35.430	178,312				178,312
OPCR100	Op Eng 1A- Crane 100-200	1.00	2,550.00 MH		39.190	171,046				171,046
\$2,088,979.95	1.0000 MH/FT		15,300.00 MH		[40.658]	1,062,725	145,350	880,905	2,0	088,980

500530 Removal of Rip Rap Marine Quan: 14,700.00 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

remove 136,000 cy

remove 600 cy/day ===> 226 days

if remove 1200 cy/day===> 113 days

	2,2	2									
<u>MARLAN</u>	Demolition Crew on land		130.00	CH I	rod:	13.0000 S	Lab Pcs:	19.00	Eqp Pcs:	13.00	
8211050	Fuel, Oil, Grease 50g/d		13.00 DA	200.0	00			2,600		2,600	
8BHLD480	BHL Cat 450E 1.75CY	8.00	1,040.00 HR	45.4	73			47,292		47,292	
8CRANEC100	Crane Manitowoc 222B 1	1.00	130.00 HR	106.9	51			13,905		13,905	
8TRKPU10	Pickup 4x2 3/4 Ton Gas	4.00	520.00 HR	7.0	44			3,663		3,663	
9100010	Subistance 10 workerss		13.00 DA	1,000.0	00		13,000			13,000	
M105	Foreman - General Marine	1.00	130.00 MH	35.7	20	8.131				8.131	

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost		erm Constr	Equip Su Ment Contr	ıb- act Total
- Resource		1 03	Cint		Cost	Luoor Water	ilai Waaii Exp	Wiene Contr	
BID ITEM =	= 50050 CLIE	NT# =	03-12	Marine Item	SCHED	ULE: 1	100		
Description =	Demolition and Excavation			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
M150	M-Operator, Crane	1.00	130.00 MH		39.190	9,832			9,832
M195	M-Laborer	8.00	1,040.00 MH		35.430	72,723			72,723
OPCR100	Op Eng 1A- Crane 100-200	1.00	130.00 MH		39.190	8,720			8,720
OPEXC3	Op Eng 3- Backhoe to 3Y	8.00	1,040.00 MH		37.430	67,514			67,514
\$247,380.19	0.1680 MH/C	Ϋ́	2,470.00 MH		[6.78]	166,920	13,000	67,460	247,380
====> Item	Totals: 50050 -	Demol	lition and Excava	tion	-				
\$12,916,588.49	64,540.2900 MH/LS		64,540.29 MH	[2608	983.09]	4,390,341	6,300,510	, , , , , , , , , , , , , , , , , , ,	12,916,588
12,916,588.490	1 LS				4,3	90,340.80	6,300,510.00	2,225,737.69	12,916,588.49

BID ITEM = 50055 Land Item SCHEDULE: 1 100

Description = Dredging Unit = CY Takeoff Quan: 1,171,000.000 Engr Quan: 1,171,000.000

640000 Mechanical Dredging Quan: 1,170,999.99 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

one mechanical crew does 1000 cy/day

2 crews will do 2,000cy/day=

1,225,000/2,000= 615 days ===> say 615 days

DREDGE	Marine Piling & Demo Crev	v	5,878.89	CH Pro	d: 587.8898 S	Lab Pcs: 12.00	Eqp Pcs: 36.00
3WELD	Weld Supplies (1 man-Stick		1,469.72 DA	70.000		102,880	102,880
8211060	Fuel, Oil, Grease 1400g/d		734.86 DA	5,810.000		4,269,537	4,269,537
8CRANEC200	Crane Manitowoc 777 20	2.00	11,757.80 HR	163.361		1,920,766	1,920,766
8DRILLR	***DRILLS - ROCK***	2.00	11,757.80 HR	17.500		205,762	205,762
8MAC-A-10	Compressor 185 CFM	2.00	11,757.80 HR	3.000		35,273	35,273
8MBM-Z-2	M.Barge2110 GRT OB-80-	2.00	11,757.80 HR	10.000		117,578	117,578
8MBS-Z-10	Scow Barge	4.00	23,515.59 HR	227.000		5,338,039	5,338,039
8MBS-Z-14	Spud Barge M-120x45'	2.00	11,757.80 HR	17.500		205,762	205,762
8MBT-Z-12	Tug Push Boat 200 HP	2.00	11,757.80 HR	20.000		235,156	235,156
8MBW-Z-2	18' Aluminum Boat & O/	2.00	11,757.80 HR	3.000		35,273	35,273
8MCE-A-40	Bucket Clamshell 3 CYD	2.00	11,757.80 HR	5.000		58,789	58,789
8MDH-A-7	DELMAG D19 HAMMER	2.00	11,757.80 HR	10.000		117,578	117,578
8MFD-A-1	FAIRLEADS	2.00	11,757.80 HR	0.100		1,176	1,176
8MGN-Z-11	Generator 10 KW	2.00	11,757.80 HR	3.000		35,273	35,273
8MLT-A-1	Light Tower, Genie	2.00	11,757.80 HR	3.500		41,152	41,152
8MPE-A-11	Extractor Pile	2.00	11,757.80 HR	5.000		58,789	58,789
8MVP-A-11	FORD F150 SUPERC 10	2.00	11,757.80 HR	6.500		76,426	76,426
8MWH-A-1	WINCH 3-DRUM RB-90	2.00	11,757.80 HR	10.000		117,578	117,578
8MWM-C-1	Welder Diesel 400 AMP	2.00	11,757.80 HR	2.500		29,395	29,395
9100010	Subistance 10 workerss		734.86 DA	1,000.000		734,860	734,860
M105	Foreman - General Marine	2.00	11,757.80 MH	35.720	735,396		735,396
M165	M-Piledriver	2.00	11,757.80 MH	34.950	814,025		814,025
M170	M-Welder	2.00	11,757.80 MH	41.050	917,664		917,664
M190	M-Skilled Laborer	2.00	11,757.80 MH	35.430	822,180		822,180
M195	M-Laborer	2.00	11,757.80 MH	35.430	822,180		822,180
OPCR100	Op Eng 1A- Crane 100-200	2.00	11,757.80 MH	39.190	788,675		788,675
\$18,637,161.21	0.0602 MH/C	Y	70,546.80 MH	[2.449]	4,900,120	837,740 12,899,301	18,637,161

640010 Spoils Disposal Quan: 1,170,999.99 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

I believe that dredging spoils end up at a permitted disposal site farther south in Cook Inlet, typically transported by barge/dredging scow. Doug might know better, but I would not expect that muck to be trucked anywhere in the MOA.

- Joe

DDISPO	Dredge Disposal		5,878.89	CH	Prod:	587.8898 S	Lab Pcs:	10.00	Eqp Pcs:	15.00
8211060	Fuel, Oil, Grease 1400g/d		734.86 DA		5,810.000			4,269,537	4,2	269,537
8CRANEC100	Crane Manitowoc 222B 1	1.00	5,878.90 HR		106.961			628,813	(528,813

13-008-5HA-1 Bob Wells

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity	Unit		Unit Cost	Labor	Pern Materia	n Constr l Matl/Exp	Equip Ment	Sub- Contract		
BID ITEM =					Land Item	SCHED			100	-		171 000 000	
Description =	Dredging				Unit =	CY	Takeoff	Quan: 1	,171,000.000	Engr	Quan: 1	,171,000.000	
8DOZER	Bulldozer	2.00	11,757.80			50.000				587,890		587,890	
8EXCAV-Z-1	Excavator	2.00	11,757.80			45.000				529,101		529,101	
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	5,878.90			3.000				17,637		17,637	
8MBS-Z-14 8MBT-Z-12	Spud Barge M-120x45' Tug Push Boat 200 HP	1.00 1.00	5,878.90 5,878.90			17.500 20.000				102,881 117,578		102,881 117,578	
8MBW-Z-2	18' Aluminum Boat & O/	1.00	5,878.90			3.000				17,637		17,637	
8MCN-A-13	Container Steel 20'	1.00	5,878.90			0.100				588		588	
8MGN-Z-11	Generator 10 KW	1.00	5,878.90			3.000				17,637		17,637	
8MLT-A-1	Light Tower, Genie	1.00	5,878.90	HR		3.500				20,576		20,576	
8MWM-C-1	Welder Diesel 400 AMP	1.00	5,878.90			2.500				14,697		14,697	
8PMP-Z-1	Slurry Pump	2.00	11,757.80			150.000				1,763,670		1,763,670	
9100000	Subsistance 5 workers	4.00	734.86			500.000	2		367,430			367,430	
M105	Foreman - General Marine	1.00 1.00	5,878.90			35.720	367,698					367,698	
M170 M195	M-Welder M-Laborer		5,878.90 17,636.69			41.050	458,832 1,233,269					458,832 1,233,269	
OPCR100	Op Eng 1A- Crane 100-200		5,878.90			39.190						394,337	
OPEXC3	Op Eng 3- Backhoe to 3Y		23,515.59				1,526,576					1,526,576	
\$12,436,383.88	0.0502 MH/C		58,788.98				3,980,713		367,430	8,088,241		12,436,384	
905	MOBILIZATION-DEMO	RILIZ	ATION		Quan:	0.96	LS Hr	s/Shft:	10.00 Cal:	510 WC	· CCISP		
703					•	0.20	Lo III	5/51110	10.00 Car.	310 110	· ccisi		
	There are no	cost re	sources for	this a	ctivity.								
====> Item	Totals: 50055 -	Dredg	ing			_							
\$31,073,545.09	0.1104 MH/CY		129,335.78	MH		[4.504]	8,880,833		1,205,170			31,073,545	
26.536	1171000	CY					7.58		1.03	17.92		26.54	
BID ITEM =	50060 CLIE	NT# =	03-12		Marine Item	SCHEI	OULE:	1	100				
Description =	Piling for Concrete Wharf A		00 12		Unit =	LF	Takeoff		35,280.000	Engr	Quan:	35,280.000	
AREA 1 48 " O 1	" Thick Steel	Pipe :	Pile										
	Outside Diameter =	48 in	n										
				, ,			. 1 . 7 6 .	\ '.	' 1	11 (6.)		(22.)	
Tip Elet Weight (vation Top Elevation Ton)	n Le:	ngtn (it) Q	uantity To	tal Ler	igtn (it	:) Unit	: Weight (ID/IT)	weignt	(dl)	
	54 35,280.00 1 35	280 5	02.43 17	,725	,730.4 8,8	862.9							
Coating	tion Mon Mlossotio	. т.	(EL	١			Q	- (OE)					
	ration Top Elevation 34 117.6 1 48 295,		ngth (It) Q	uantity Di	ameter	Coating)(SF)					
Pir	pe Qty Piles Pile Le	nath '	Total Le	nath									
_	2 32 178 5,696.00	119 011	rocar no	119 011									
	32 178 5,696.00												
	2 32 173 5,536.00												
	2 32 173 5,536.00												
	.A 6 198 1,188.00 .A 6 193 1,158.00												
	A 6 188 1,128.00												
	.A 6 183 1,098.00												
	A 6 178 1,068.00												
	A 6 178 1,068.00												
	.A 6 173 1,038.00 .A 6 168 1,008.00												
	A 6 163 978.00												
N31	A 6 178 1,068.00												

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Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

 $BID\ ITEM = 50060$ CLIENT# = 03-12Marine Item SCHEDULE:

Description = Piling for Concrete Wharf Area I Unit =LF Takeoff Quan: 35,280.000 Engr Quan: 35,280.000

O31A 6 173 1,038.00 P31A 6 163 978.00 200 177.4 35,280.00 Average 176.4

303000 **Supply Pipe Piles** Marine Quan: 35,280.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

AREA 1

" Thick Steel Pipe Pile 48 " 0 1

> Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

-100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9

Coating

303035

8MBS-Z-14

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

-35 7.54 117.6 1 48 295,561.7

Pipe Qty Piles Pile Length Total Length

A32 32 178 5,696.00

B32 32 178 5,696.00

C32 32 173 5,536.00

D32 32 173 5,536.00

E31A 6 198 1,188.00

F31A 6 193 1,158.00

G31A 6 188 1,128.00 H31A 6 183 1,098.00

I31A 6 178 1,068.00

J31A 6 178 1,068.00

K31A 6 173 1,038.00

L31A 6 168 1,008.00

M31A 6 163 978.00

N31A 6 178 1,068.00 O31A 6 173 1,038.00

P31A 6 163 978.00

200 177.4 35,280.00

Spud Barge M-120x45'

1.00

Average 176.4

2PP48INCH 35,280.00 LF 430.000 15,170,400 15,170,400 48 In Diam Pipe Pile

303010 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Pile Painting & Wrapping Marine Quan:

2PP48COATING Pipe Pile Shop Coating 4.000 1,182,247 1,182,247 295,561,70 SF

303022 **Set Pile Template** Marine **Quan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Marine

500.00 HR

31PILETEMPLA Pipe Pile Template 1.00 LS 60,000.000 60,000 60,000

Quan:

200.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP

8,750

8,750

Piling - Pipe due to tides the efficiency will be assumed at 4 piles per day of 6 hours Marine Piling & Demo Crew 500.00 CH Prod: 50.0000 S Lab Pcs: Eqp Pcs: 17.00 MARPIL 6.00 Weld Supplies (1 man-Stick 50.00 DA 70.000 3WELD 3,500 3,500 8211050 Fuel, Oil, Grease 50g/d 50.00 DA 200.000 10,000 10,000 8CRANEC200 Crane Manitowoc 777 20 1.00 500.00 HR 163.361 81,681 81,681 ***DRILLS - ROCK*** 1.00 500.00 HR 8DRILLR 17.500 8,750 8.750 8MAC-A-10 Compressor 185 CFM 1.00 500.00 HR 3.000 1,500 1,500 8MBM-Z-2M.Barge2110 GRT OB-80-1.00 500.00 HR 10.000 5,000 5,000

17.500

CH2MHILL 13-008-5HA-1 Bob Wells

POA Option 5H Phase 1 (rev 1)

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Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total 50060 CLIENT# = 03-12Marine Item SCHEDULE: 100 **BID ITEM** Piling for Concrete Wharf Area I Unit = LF Takeoff Quan: 35,280.000 Engr Quan: 35,280.000 Description = 8MBT-Z-12 Tug Push Boat 200 HP 1.00 500.00 HR 20.000 10.000 10.000 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 500.00 HR 3.000 1,500 1,500 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 500.00 HR 5.000 2,500 2,500 8MDH-A-7 DELMAG D19 HAMMER 1.00 500.00 HR 10.000 5,000 5,000 **FAIRLEADS** 1.00 500.00 HR 8MFD-A-1 0.10050 50 8MGN-Z-11 Generator 10 KW 1.00 500.00 HR 3.000 1,500 1,500 8MLT-A-1 Light Tower, Genie 1.00 500.00 HR 3.500 1,750 1,750 8MPE-A-11 Extractor Pile 1.00 500.00 HR 5.000 2,500 2,500 FORD F150 SUPERC 10 8MVP-A-11 500.00 HR 3,250 1.00 6.500 3.250 8MWH-A-1 WINCH 3-DRUM RB-90 1.00 500.00 HR 10.000 5,000 5,000 500.00 HR 2.500 1,250 1,250 8MWM-C-1 Welder Diesel 400 AMP 1.00 8PILE26 Vibro Hammer 150 TN 1.00 500.00 HR 45.492 22,746 22,746 9100000 Subsistance 5 workers 50.00 DA 500.000 25,000 25,000 M105 Foreman - General Marine 1.00 500.00 MH 35.720 31,273 31.273 M-Piledriver 500.00 MH 34.950 34,616 M165 1.00 34,616 M170 M-Welder 1.00 500.00 MH 41.050 39,024 39,024 M-Skilled Laborer 1.00 500.00 MH 35.430 34,963 34,963 M1901.00 500.00 MH 35.430 34,963 34,963 M195 M-Laborer OPCR100 Op Eng 1A- Crane 100-200 1.00 500.00 MH 33,538 39.190 33.538 \$409,603.94 15.0000 MH/EA 3,000.00 MH [609.868] 208,377 28,500 172,727 409,604 303040 **Piling - Concrete Filling** Marine **Ouan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 50.0000 S 500.00 CH Prod: **MARWOO** Marine Carpenters Crew Lab Pcs: 10.00 Eqp Pcs: 16.00 200.000 8211050 Fuel, Oil, Grease 50g/d 50.00 DA 10,000 10,000 8CRANEC100 Crane Manitowoc 222B 1 1.00 500.00 HR 106.961 53,481 53,481 8MAC-A-17 Atlas Copco 185 CFM Ai 1.00 500.00 HR 3.000 1,500 1,500 8MBC-Z-1 6.500 3,250 1.00 500.00 HR Barge Carpenter 12'X40 3,250 8MBC-Z-2 Barge Carpenter 12'X40 1.00 500.00 HR 6.500 3,250 3,250 8MBS-Z-9 Spud Barge M-80x28' 1.00 500.00 HR 10.000 5,000 5,000 8MBW-Z-218' Aluminum Boat & O/ 1.00 500.00 HR 3.000 1,500 1,500 5.000 2,500 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 500.00 HR 2,500 8MCN-A-13 Container Steel 20' 1.00 500.00 HR 0.100 50 50 8MFW-A-1 Work Float 500.00 HR 1,000 1,000 1.00 2.000 8MFW-A-2 Work Float 1.00 500.00 HR 2.000 1,000 1,000 8MGN-Z-17 Generator 8 KW 1.00 500.00 HR 2.000 1,000 1,000 8MGN-Z-18 Generator 8 KW 1.00 500.00 HR 2.000 1.000 1,000 500.00 HR 1,750 8MLT-A-2 Light Tower, Genie 1.00 3.500 1,750 8MVP-A-2FORD F150 SUPERC 2 1.00 500.00 HR 6.500 3,250 3,250 8WELD400 Welder 400 AMP 2.00 1,000.00 HR 2.044 2,044 2,044 Foreman - Carpenter 1.00 500.00 MH 34.720 30,550 30,550 M100M170 M-Welder 1.00 500.00 MH 41.050 39.024 39,024 M173 M-Lead Carpenter 1.00 500.00 MH 35.490 35,007 35,007 3.00 1,500.00 MH 35.490 105,020 105,020 M175 M-Carpenter 3.00 1,500.00 MH 35.490 105,020 M180 M-Carpenter Helper 105,020 OPCR100 Op Eng 1A- Crane 100-200 1.00 500.00 MH 39.190 33,538 33,538 \$439,732.39 5,000.0000 MH/LS 5,000.00 MH [199864.5] 348,158 91,575 439,732 303042 Quan: 5,392.00 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Concrete Supply** Marine 2CR14 5000 PSI Concrete 1.10 5,931.20 CY 105.000 622,776 622,776 303043 **Concrete Pumping** Marine Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 30 days x 8 hours= 240 hours 5CONCP36M 250.00 HR 125.000 31,250 31,250 Concrete Concrete Pump 36 303045 Piling - Rebar Marine Quan: 707,500.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

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Resource	Desc	Pcs	Quantity	Unit		Unit Cost		rm Constr ial Matl/Exp	Equip Ment	Sub- Contract	Total
	50060 CLIEN		03-12	Ma	arine Item	SCHEDU		100	E	0	25 200 000
-	Piling for Concrete Wharf Ar	rea I			Unit =	LF	Takeoff Quan:	35,280.000	Engr	Quan: 3	35,280.000
200*16= 3200 2RR02	Gr 60 Rebar	1.10	778,250.00	IR		0.480	373,5	60			373,560
2RR10	Rebar Supports		778,250.00			0.050	38,9				38,913
2RS16	* *	16.00	3,200.00			13.000	41,6				41,600
5REBAR	Rebar Sub		707,500.00	LB		0.280		198,100			198,100
\$652,172.50						[]	454,0	73 198,100			652,173
304000	Pile Splices - Pipe pile		I	Marine	Quan:	200.00 1	EA Hrs/Shft:	10.00 Cal:	510 WC:	CCISP	
5SPLICES	Welding Subcontractor		300.00	EA		650.000		195,000			195,000
====> Item T \$18,763,181.63 531.836	Cotals: 50060 - 1 0.2267 MH/LF 35280 LF		for Concret 8,000.00		Area I	[9.122]	556,535 ^{17,429} , 15.77 494		264,301 7.49	1	1 8,763,182 531.84
	50080 CLIEN Sheet Pile Bulkhead	NT# =	03-12	M	arine Item Unit =	SCHEDU LF	JLE: 1 Takeoff Quan:	100 2,300.000	Engr (Quan:	2,300.000
301000	Supply Open Cell Flat Shee	ets	I	Marine	Quan:	7,751,523.73	LB Hrs/Shft:	8.00	WC:	NONE	
**** Copied	and adjusted from Y	Y:\TB	G-ENGI\E	ST\13-0	08-5HA-	-1 ****					
2FSZ	STEEL SHEET PILE		751,523.73			0.950	7,363,9	48			7,363,948
2SSPGALVANIZ	C Galvanization of SSP	7,	751,523.73	LB		0.350	2,713,0	33			2,713,033
2SSPGALVANIZ \$10,076,980.85	Z Galvanization of SSP	7,	751,523.73	LB		0.350	2,713,0 10,076,9				2,713,033 10,076,981
	Galvanization of SSP Sheeting Template	7,	_	LB Marine	Quan:		10,076,9	81	WC:		
\$10,076,980.85 301015 ***** Copied			I	Marine	08-5HA-	[] 1.00]	10,076,9	81	WC:	1	
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA	Sheeting Template and adjusted from Y Open Cell Template		I GG-ENGI\E 1.00	Marine ST\13-0 LS	008-5HA- 85	1.00 I 1.00 I -1 *****	10,076,9 LS Hrs/Shft:	8.00 8.00		: NONE	0,076,981
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020	Sheeting Template and adjusted from Y Open Cell Template Drive Sheeting Bulkhead	Y:\TB	G-ENGI\E 1.00	Marine SST\13-0 LS Marine	008-5HA- 85 Quan:	[] 1.00 I 1.1 ***** 3,000.000 2,300.00 I	10,076,9	8.00 8.00		1	0,076,981
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied	Sheeting Template and adjusted from Y Open Cell Template Drive Sheeting Bulkhead and adjusted from Y	Y:\TB	G-ENGI\E 1.00	Marine SST\13-0 LS Marine	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.00] 2,300.000 2,300.00]	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00	WC:	: NONE	85,000
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL	Sheeting Template and adjusted from Young Copen Cell Template Drive Sheeting Bulkhead and adjusted from Young Marine Piling & Demo Crew	Y:\TE Y:\TE V	G-ENGI\E 1.00 I G-ENGI\E	Marine SST\13-0 LS Marine SST\13-0 1,599.54	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.1 ***** 5,000.000 2,300.00] 1 ***** Prod:	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:		: NONE	85,000 :: 17.00
\$10,076,980.85 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick	Y:\TE Y:\TE V	G-ENGI\E 1.00 I G-ENGI\E 159.95	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.1 ***** 5,000.000 2,300.00] 1 ***** Prod: 70.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00	WC:	: NONE	85,000 8: 17.00 11,197
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d	Y:\TE Y:\TE V	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95	Marine LS Marine SST\13-0 1,599.54 DA DA	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.1 ***** 5,000.000 2,300.00] 1 ***** Prod: 70.000 200.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC: 6.00 31,990	: NONE	85,000 85,000 11,197 31,990
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick	Y:\TE Y:\TE V	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA DA HR	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.1 ***** 5,000.000 2,300.00] 1 ***** Prod: 70.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC:	: NONE	85,000 8: 17.00 11,197
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	Y:\TE Y:\TE 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA DA HR HR	008-5HA- 85 Quan:	[] 1.00] 1.00] 1.1 ***** 5,000.000 2,300.00] 1 ***** Prod: 70.000 200.000 163.361	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC: 6.00 31,990 261,304	: NONE	85,000 85,000 11,197 31,990 261,304
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK***	Y:\TE Y:\TE V 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA DA HR HR HR	008-5HA- 85 Quan:	[] 1.00 1 1.00 1 1.00 1 2,300.000 2,300.00 1 1 ***** Prod: 70.000 200.000 163.361 17.500	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC: 6.00 31,990 261,304 27,992	: NONE	85,000 85,000 11,197 31,990 261,304 27,992
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Y Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM	Y:\TE Y:\TE V 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55 1,599.55 1,599.55	Marine LS Marine SST\13-0 1,599.54 DA DA HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.1 ***** 7,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC: 6.00 31,990 261,304 27,992 4,799	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14	Sheeting Template and adjusted from Yat Open Cell Template Drive Sheeting Bulkhead and adjusted from Yat Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55 1,599.55 1,599.55	Marine LS Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.1 ***** 7,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	WC: 6.00 31,990 261,304 27,992 4,799 15,996	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12	Sheeting Template and adjusted from Yat Open Cell Template Drive Sheeting Bulkhead and adjusted from Yat Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45'	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55 1,599.55 1,599.55 1,599.55	Marine LS Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.1 ***** 7,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2	Sheeting Template and adjusted from Yat Open Cell Template Drive Sheeting Bulkhead and adjusted from Yat Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine LS Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.00 J 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBW-Z-2 8MGE-A-40 8MDH-A-7	A Open Cell Template and adjusted from Ya Open Cell Template Drive Sheeting Bulkhead and adjusted from Ya Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine LS Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.00 J 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBV-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1	A Open Cell Template and adjusted from Ya Open Cell Template Drive Sheeting Bulkhead and adjusted from Ya Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.00 J 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MGP-Z-18	A Open Cell Template and adjusted from Yell Open Cell Template Drive Sheeting Bulkhead and adjusted from Yell Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW	Y:\TE Y:\TE 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	1.00 IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799	: NONE	85,000 85,000 81,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MBY-Z-18 8MGN-Z-1 8MGN-Z-11 8MGN-Z-11	A Open Cell Template and adjusted from Yell Open Cell Template Drive Sheeting Bulkhead and adjusted from Yell Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.000 3.000 3.000 3.000 3.000 3.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 5.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MLT-A-1 8MPE-A-11	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80- Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 LS Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBY-Z-12 8MBY-Z-12 8MBY-Z-18 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MC-A-11 8MYP-A-11 8MYP-A-11 8MWH-A-1	A Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 IG-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55 1,599.55	Marine SST\13-0 1,599.54 DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500 10.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996	: NONE	85,000 85,000 17.00 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 33WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MC-A-11 8MYP-A-11 8MYP-A-11 8MWH-A-1 8MWH-A-1	A Open Cell Template and adjusted from Year Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\E 1.00 IG-ENGI\E 159.95 1,599.55	Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 1.000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500 10.000 2.500	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999	: NONE	85,000 85,000 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 33WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBF-Z-12 8MBF-Z-18 8MGN-Z-11 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MFD-A-1 8MFD-A-1 8MFD-A-11 8MVP-A-11 8MWH-A-1 8MWH-C-1 8PILE26	A Open Cell Template and adjusted from Year Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55	Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 6,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 3.500 5.000 6.500 10.000 2.500 45.492	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pes: 11,197	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996	: NONE	85,000 85,000 17.00 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999 72,767
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050 8CRANEC200 8DRILLR 8MAC-A-10 8MBM-Z-2 8MBS-Z-14 8MBT-Z-12 8MBY-Z-2 8MCE-A-40 8MDH-A-7 8MFD-A-1 8MGN-Z-11 8MC-A-11 8MYP-A-11 8MYP-A-11 8MWH-A-1 8PILE26 9100000	A Open Cell Template and adjusted from YA Open Cell Template Drive Sheeting Bulkhead and adjusted from YA Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN Subsistance 5 workers	Y:\TE Y:\TE V 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	G-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55	Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 6,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 5.000 10.000 0.100 3.500 5.000 10.000 45.492 500.000	10,076,9 LS Hrs/Shft: LF Hrs/Shft: 199.9432 S	8.00 85,000 8.00 Lab Pcs:	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999	: NONE	85,000 85,000 17.00 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999 72,767 79,975
\$10,076,980.85 301015 ***** Copied 31SHEETEMPLA 301020 ***** Copied MARPIL 3WELD 8211050	A Open Cell Template and adjusted from Year Open Cell Template Drive Sheeting Bulkhead and adjusted from Year Marine Piling & Demo Crew Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20 ***DRILLS - ROCK*** Compressor 185 CFM M.Barge 2110 GRT OB-80-Spud Barge M-120x45' Tug Push Boat 200 HP 18' Aluminum Boat & O/Bucket Clamshell 3 CYD DELMAG D19 HAMMER FAIRLEADS Generator 10 KW Light Tower, Genie Extractor Pile FORD F150 SUPERC 10 WINCH 3-DRUM RB-90 Welder Diesel 400 AMP Vibro Hammer 150 TN	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	G-ENGI\E 1.00 IG-ENGI\E 159.95 159.95 1,599.55	Marine SST\13-0 1,599.54 DA DA HR HR HR HR HR HR HR HR HR H	008-5HA- 85 Quan:	1.00 J 1.00 J 1.00 J 1.1 ***** 6,000.000 2,300.00 J 1.1 ***** Prod: 70.000 200.000 163.361 17.500 3.000 10.000 17.500 20.000 3.000 5.000 10.000 0.100 3.000 5.000 10.000 0.100 3.500 5.000 6.500 10.000 2.500 45.492 500.000 35.720	10,076,9 LS Hrs/Shft: LF Hrs/Shft:	8.00 85,000 8.00 Lab Pes: 11,197	6.00 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999	: NONE	85,000 85,000 17.00 11,197 31,990 261,304 27,992 4,799 15,996 27,992 31,991 4,799 7,998 15,996 160 4,799 5,598 7,998 10,397 15,996 3,999 72,767

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 POA Option 5H Phase 1 (rev 1)
 02/27/2013
 23:34

13-008-5HA-1 POA Option 5H Phase 1 (rev Bob Wells

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Un: Cos		erm Constr rial Matl/Exp	Equip Sub Ment Contrac	
BID ITEM = Description =	= 50080 Sheet Pile Bulkhead	CLIENT# = 0	03-12	Marine Item SCHI	DULE: 1 Takeoff Quan:	100 2.300.000	Engr Quan:	2,300.000
		4.00	4 500 55 157			2,300.000	Eligi Quali.	*
M190	M-Skilled Laborer	1.00	1,599.55 MH	35.43	102,500			102,500
M195	M-Laborer	1.00	1,599.55 MH	35.43	102,500			102,500
OPCR100	Op Eng 1A- Crane 1	00-200 1.00	1,599.55 MH	39.19	98,193			98,193
\$1,253,072.85	4.1727	MH/LF	9,597.30 MH	[154.231	609,333	91,172	552,568	1,253,073
201020	Pullshood Congrete	Dila Con	Manin	o Oueni 015	OIF Ung/Shft.	9.00	WC. NONE	

801030 Bulkhead Concrete Pile Cap Marine Quan: 915.00 LF Hrs/Shft: 8.00 WC: NON

STEEL SHEET PILE BULKHEAD

5.0 STEEL PS PILING GR. 50 L.B. 8,789,005

RETAINING WALLS

6.0 STEEL PIPE PILE 10INCH DIA. L.B. 3,191,244 11,980,248 lbs

7.0 CIP CONCRETE CLASS 4000 - PILE CAP C.Y. 915

2CR14 5000 PSI Concrete 1,006.00 CY 240.000 241,440 241,440

====> Item Totals: 50080 - Sheet Pile Bulkhead

BID ITEM = 50081 Land Item SCHEDULE: 1 100

Description = Credit Free Issue Sheet Pile Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

301000	Supply Open Cell Flat Sheets	Marine Qua	an: ^{7,101,861.70} LB	Hrs/Shft: 8.00	WC: NONE
**** Copied	l and adjusted from Y:\TBG	-ENGI\EST\13-008-5	HA-1 ****		
2FSZ	STEEL SHEET PILE -7,10	01,861.70 LB	0.950	-6,746,769	-6,746,769
2SSPGALVANIZ	Z Galvanization of SSP -7,1	01,861.70 LB	0.350	-2,485,652	-2,485,652
\$-9,232,420.22			[]	-9,232,420	-9,232,420
====> Item 7 \$-9,232,420.22 -9,232,420.219	Totals: 50081 - Credit I	ree Issue Sheet Pile	[]	-9,232,420 -9,232,420.21	-9,232,420 -9,232,420.21

BID ITEM = **50090** CLIENT# = 03-12 Marine Item SCHEDULE: 1 100

Description = Concrete Superstructure Unit = SF Takeoff Quan: 62,777.000 Engr Quan: 62,777.000

deck and trestle area: 640*60+235*30*3=59,550 sf

322005 Final Deck Product Marine Quan: 62,777.00 SF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Images/Docs Attached

Reference from previous projects as attached; slabs and superstructures with all the fittings and ancillary structures: \$84/sf price in 2010. now escalated at 6% annually for 3 years yields \$101.00/sf

AREA 1

48 " O 1 " Thick Steel Pipe Pile

Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton) 35,280.00 1 35280 502.43 17,725,730.4 8,862.9

8MGN-Z-11

8MLT-A-1

8MPE-A-11

8MVP-A-11

8MWH-A-1

8MWM-C-1

8PILE26

9100000

Generator 10 KW

Extractor Pile

Light Tower, Genie

FORD F150 SUPERC 10

WINCH 3-DRUM RB-90

Welder Diesel 400 AMP

Vibro Hammer 150 TN

Subsistance 5 workers

1.00

1.00

1.00

1.00

1.00

1.00

1.00

50.00 HR

5.00 DA

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Bob Wells					Direct	Cost Repor	t					
Activity Resource	Desc	Pcs	Quantity U	nit		Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
		NT# = (03-12	Ma	rine Item				.00	_		
Description =	Concrete Superstructure				Unit =	SF	Takeoff	Quan:	62,777.000	Engr	Quan: 62	2,777.000
Coating												
_	on Top Elevation Lo	ength	(ft) Qua	antity	Diame	ter Coat:	ing(SF)					
117.6	200 48 295,561.7											
A32 32 B32 32 C32 32 D32 32 E31A 6 F31A 6 G31A 6 H31A 6 K31A 6 M31A 6 M31A 6 N31A 6 N31A 6	ty Piles Pile Length 178 5,696.00 85.00 178 5,696.00 85.00 173 5,536.00 85.00 173 5,536.00 85.00 198 1,188.00 85.00 193 1,158.00 85.00 188 1,128.00 85.00 188 1,098.00 85.00 178 1,068.00 85.00 178 1,068.00 85.00 173 1,038.00 50.00 163 978.00 50.00 173 1,038.00	34,18 34,18 34,18 34,18 6,408 6,408 6,408 6,408 6,408 6,408 3,769 769.9 769.9 769.9	0.6 45,56 0.6 45,56 0.6 45,56 0.6 45,56 9 8,544 9 8,544 9 8,544 9 8,544 9 8,544 9 5,184 9 5,184 5,184 CF 264,64	58 58 58 58 58	ete Fi		e Concr	ete (C		(Ft)		
2SUPERSTRU	C Concrete Superstructure		62,777.00 S	F		101.000			6,340,477		6	6,340,477
====> Item	Totals: 50090 -	Concre	ete Superstru	cture		_						
6,340,477.00			•			[]			6,340,477		(6,340,477
01.000	62777 SF								101.00			101.00
SID ITEM = Description = 31910	= 50095 CLIEN Walkways	NT# = (03-12	Lan	d Item Unit = Ouan:		Takeoff	Quan:	00 4.000 10.00 Cal:		Quan:	4.000
	•											
MARPIL	125*4= 1,000 ft Marine Piling & Demo Crev	X 7		50.00	СН	Prod:	5.0	000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
WALKWAYS	Aluminum Walways	N	1,000.00 F		CII	800.000	3.0	800,000		0.00	Eqp i cs.	800,000
WELD	Weld Supplies (1 man-Stick		5.00 D			70.000		000,000	350			350
211050	Fuel, Oil, Grease 50g/d		5.00 D			200.000			330	1,000		1,000
	-	1.00										
CRANEC200	Crane Manitowoc 777 20	1.00	50.00 H			163.361				8,168		8,168
ORILLR	***DRILLS - ROCK***	1.00	50.00 H			17.500				875		875
MAC-A-10	Compressor 185 CFM	1.00	50.00 H			3.000				150		150
MBM-Z-2	M.Barge2110 GRT OB-80-		50.00 H			10.000				500		500
MBS-Z-14	Spud Barge M-120x45'	1.00	50.00 H			17.500				875		875
MBT-Z-12	Tug Push Boat 200 HP	1.00	50.00 H			20.000				1,000		1,000
MBW-Z-2	18' Aluminum Boat & O/	1.00	50.00 H			3.000				150		150
MCE-A-40	Bucket Clamshell 3 CYD	1.00	50.00 H			5.000				250		250
MDH-A-7	DELMAG D19 HAMMER		50.00 H			10.000				500		500
MFD-A-1 MGN 7-11	FAIRLEADS Generator 10 KW	1.00	50.00 H			0.100				5 150		5 150
VII ÷N=Z=11	Lienerator III K W	1 (1()	50.00 11	K.		3 000				(50)		150

3.000

3.500

5.000

6.500

10.000

2.500

45.492

500.000

150

175

250

325

500

125

2,275

2,500

150

175

250

325

500

125

2,275

2,500

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Direct Cost Report

35.430

35.430

39.190

3,496

3,496

3,354

3,496

3,496

3,354

Bob Wells

M-Skilled Laborer

Op Eng 1A- Crane 100-200 1.00

M-Laborer

Activity Resource	Desc	Quantity Pcs Unit		Unit Cost	Perm Constr Labor Material Matl/Exp	Equip Sub- Ment Contract	Total
BID ITEM = Description =	= 50095 CLIEN Walkways	NT# = 03-12	Land Item Unit =	SCHEDU EA	JLE: 1 100 Takeoff Quan: 4.000	Engr Quan:	4.000
M105	Foreman - General Marine	1.00 50.00 MH		35.720	3,127		3,127
M165	M-Piledriver	1.00 50.00 MH		34.950	3,462		3,462
M170	M-Welder	1.00 50.00 MH		41.050	3,902		3,902

\$840,960.39 75.0000 MH/EA 300.00 MH [3049.338] 20,838 800,000 2,850 17,273 840,960 50095 ====> Item Totals: - Walkways \$840,960.39 75.0000 MH/EA 300.00 MH [3049.338] 20,838 800,000 2,850 17,273 840,960 210,240.098 4 EA 5,209.44 200,000.00 712.50 4,318.16 210,240.10

 $BID\ ITEM = 50100$ CLIENT# = 03-12Marine Item SCHEDULE:

50.00 MH

50.00 MH

50.00 MH

1.00

1.00

Description = Abutments Unit =LS Takeoff Quan: 3.000 Engr Quan: 3.000

Supply Pipe Piles 303000 Marine 529.20 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Quan:**

AREA 1

48 " 0 1 " Thick Steel Pipe Pile

> Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

-100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9

Coating

M190

M195

OPCR100

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

-35 7.54 117.6 1 48 295,561.7

Pipe Qty Piles Pile Length Total Length

A32 32 178 5,696.00

B32 32 178 5,696.00

C32 32 173 5,536.00

D32 32 173 5,536.00

E31A 6 198 1,188.00

F31A 6 193 1,158.00

G31A 6 188 1,128.00

H31A 6 183 1,098.00

I31A 6 178 1,068.00 J31A 6 178 1,068.00

K31A 6 173 1,038.00

L31A 6 168 1,008.00

M31A 6 163 978.00

N31A 6 178 1,068.00

O31A 6 173 1,038.00

P31A 6 163 978.00

200 177.4 35,280.00 Average 176.4

2PP48INCH 529.20 LF 430.000 227,556 227,556 48 In Diam Pipe Pile

303010	Pile Painting & Wrapping	Marine	Quan:	0.02 LS	Hrs/Shft:	10.00	Cal: 510	WC: CCISP	
2PP48COATING	G Pipe Pile Shop Coating	4,433.43 SF		4.000	17,73	4			17,734
303022	Set Pile Template	Marine	Quan:	0.02 LS	Hrs/Shft:	10.00	Cal: 510	WC: CCISP	
31PILETEMPL	A Pipe Pile Template	0.02 LS	60,0	000.000		1	,200		1,200

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit			Unit Cost l	Per Labor Materi		Equip Ment	Sub- Contract	Total
BID ITEM = Description =	50100 CLIEN Abutments	NT# = (03-12	Mari	ne Item Unit =	SCHEDULE LS Ta	E: 1 akeoff Quan:	100 3.000	Engr	Quan:	3.000
303035	Piling - Pipe		Marin	ie	Quan:	3.00 EA	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP	
due to tides	the efficiency will	l be a	assumed at 4	pile	es per	day of 6	hours				
MARPIL	Marine Piling & Demo Crev			7.50	_	Prod:	0.7500 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		0.75 DA			70.000		53			53
8211050	Fuel, Oil, Grease 50g/d		0.75 DA			200.000			150		150
8CRANEC200	Crane Manitowoc 777 20	1.00	7.50 HR			163.361			1,225		1,225
8DRILLR	***DRILLS - ROCK***	1.00	7.50 HR			17.500			131		131
8MAC-A-10	Compressor 185 CFM	1.00	7.50 HR			3.000			23		23
8MBM-Z-2	M.Barge2110 GRT OB-80-		7.50 HR			10.000			75		75
8MBS-Z-14	Spud Barge M-120x45'	1.00	7.50 HR			17.500			131		131
8MBT-Z-12	Tug Push Boat 200 HP	1.00	7.50 HR			20.000			150		150
8MBW-Z-2	18' Aluminum Boat & O/	1.00	7.50 HR			3.000			23		23
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	7.50 HR			5.000			38		38
8MDH-A-7		1.00	7.50 HR			10.000			75		75
8MFD-A-1	FAIRLEADS	1.00	7.50 HR			0.100			1		1
8MGN-Z-11	Generator 10 KW	1.00	7.50 HR			3.000			23		23
8MLT-A-1	Light Tower, Genie	1.00	7.50 HR			3.500			26		26
8MPE-A-11	Extractor Pile	1.00	7.50 HR			5.000			38		38
8MVP-A-11 8MWH-A-1	FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00 1.00	7.50 HR 7.50 HR			6.500			49 75		49 75
8MWM-C-1	Welder Diesel 400 AMP	1.00	7.50 HR 7.50 HR			10.000 2.500			19		73 19
8PILE26	Vibro Hammer 150 TN	1.00	7.50 HR 7.50 HR			45.492			341		341
9100000	Subsistance 5 workers	1.00	0.75 DA			500.000		375	341		375
M105	Foreman - General Marine	1.00	7.50 MH			35.720	469	373			469
M165	M-Piledriver	1.00	7.50 MH			34.950	519				519
M170	M-Welder	1.00	7.50 MH			41.050	585				585
M190	M-Skilled Laborer	1.00	7.50 MH			35.430	524				524
M195	M-Laborer	1.00	7.50 MH			35.430	524				524
OPCR100	Op Eng 1A- Crane 100-200		7.50 MH			39.190	503				503
\$6,144.06	15.0000 MH/E		45.00 MH		[3,126	428	2,591		6,144
303040	Piling - Concrete Filling		Marin	ne	Quan:	0.02 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP	
											16.00
MARWOO 8211050	Marine Carpenters Crew Fuel, Oil, Grease 50g/d		0.75 DA	7.50	CH	Prod: 200.000	0.7500 S	Lab Pcs:	10.00 150	Eqp Pcs:	16.00 150
8CRANEC100	Crane Manitowoc 222B 1	1.00	7.50 HR			106.961			802		802
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	7.50 HR 7.50 HR			3.000			23		23
8MBC-Z-1	Barge Carpenter 12'X40	1.00	7.50 HR			6.500			49		49
8MBC-Z-2	Barge Carpenter 12'X40	1.00	7.50 HR			6.500			49		49
8MBS-Z-9	Spud Barge M-80x28'	1.00	7.50 HR			10.000			75		75
8MBW-Z-2	18' Aluminum Boat & O/	1.00	7.50 HR			3.000			23		23
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	7.50 HR			5.000			38		38
8MCN-A-13	Container Steel 20'	1.00	7.50 HR			0.100			1		1
8MFW-A-1	Work Float	1.00	7.50 HR			2.000			15		15
8MFW-A-2	Work Float	1.00	7.50 HR			2.000			15		15
8MGN-Z-17	Generator 8 KW	1.00	7.50 HR			2.000			15		15
8MGN-Z-18	Generator 8 KW	1.00	7.50 HR			2.000			15		15
8MLT-A-2	Light Tower, Genie	1.00	7.50 HR			3.500			26		26
8MVP-A-2	FORD F150 SUPERC 2	1.00	7.50 HR			6.500			49		49
8WELD400	Welder 400 AMP	2.00	15.00 HR			2.044			31		31
M100	Foreman - Carpenter	1.00	7.50 MH			34.720	458				458
M170	M-Welder	1.00	7.50 MH			41.050	585				585
M173	M-Lead Carpenter	1.00	7.50 MH			35.490	525				525
M175	M-Carpenter	3.00	22.50 MH				1,575				1,575
M180	M-Carpenter Helper	3.00	22.50 MH				1,575				1,575
OPCR100	Op Eng 1A- Crane 100-200	1.00	7.50 MH			39.190	503				503

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Direct Cost Report

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Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 50100 CLIENT# = 03-12Marine Item SCHEDULE: 100 Description = Unit = LS Takeoff Quan: 3.000 Engr Quan: 3.000 Abutments \$6,596.01 3,750.0000 MH/LS 75.00 MH [149898.5] 5,222 1,374 6.596 303042 **Concrete Supply** Marine 109.88 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP 2CR14 5000 PSI Concrete 120.86 CY 105.000 12,690 12,690 1.10 303043 **Concrete Pumping** Marine 0.02 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Onan: 30 days x 8 hours= 240 hours 5CONCP36M 3.75 HR 125.000 469 469 Concrete Concrete Pump 36 303045 Piling - Rebar Quan: 10,612.50 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine 200*16= 3200 couplers 11,673.75 LB 0.480 5,603 5,603 2RR02 Gr 60 Rebar 1.10 2RR10 Rebar Supports 11,673.75 LB 0.050 584 584 16.00 48.00 EA 13.000 624 2RS16 Coupler T-25 (#8) 624 5REBAR Rebar Sub 10.612.00 LB 0.280 2.971 2.971 \$9,782.45 6,811 2,971 9,782 [] 304000 Marine Pile Splices - Pipe pile 3.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan: 5SPLICES Welding Subcontractor 4.50 EA 650.000 2,925 2,925 322910 **Concrete Cap Dolphins** Quan: 3.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP size: 15.5 ft* 13.2 ft* 5 ft= 1,023 cf ===> 38 cy 4 caps: 38*4= 152 cy 160 lbs/cy ===> rebar: 152*160= 24,320 lbs Marine Piling & Demo Crew 180.00 CH 18.0000 S **MARPIL Prod:** Lab Pcs: 6.00 Eqp Pcs: 17.00 2CR14 5000 PSI Concrete 1.10 125.40 CY 105.000 13,167 13,167 2RR02 Gr 60 Rebar 1.05 19,081.13 LB 0.480 9.159 9,159 3WELD Weld Supplies (1 man-Stick 18.00 DA 70.000 1.260 1.260 5REBAR Rebar Sub 19,081.00 LB 0.280 5,343 5,343 8211050 Fuel, Oil, Grease 50g/d 18.00 DA 200.000 3,600 3,600 180.00 HR 8CRANEC200 1.00 Crane Manitowoc 777 20 163.361 29,405 29,405 8DRILLR ***DRILLS - ROCK*** 1.00 180.00 HR 17.500 3,150 3,150 8MAC-A-10 Compressor 185 CFM 1.00 180.00 HR 3.000 540 540 8MBM-Z-2M.Barge2110 GRT OB-80- 1.00 180.00 HR 10.000 1,800 1,800 180.00 HR 8MBS-Z-14 Spud Barge M-120x45' 1.00 17.500 3,150 3,150 8MBT-Z-12 Tug Push Boat 200 HP 180.00 HR 3,600 1.00 20.000 3,600 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 180.00 HR 3.000 540 540 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 180.00 HR 5.000 900 900 8MDH-A-7 **DELMAG D19 HAMMER** 1.00 180.00 HR 10.000 1,800 1,800 180.00 HR 8MFD-A-1 **FAIRLEADS** 1.00 0.100 18 18 8MGN-Z-11 Generator 10 KW 1.00 180.00 HR 3.000 540 540 Light Tower, Genie 180.00 HR 3.500 630 630 8MLT-A-1 1.00 8MPE-A-11 Extractor Pile 1.00 180.00 HR 5.000 900 900 8MVP-A-11 FORD F150 SUPERC 10 1.00 180.00 HR 6.500 1.170 1.170 8MWH-A-1 WINCH 3-DRUM RB-90 1.00 180.00 HR 10.000 1,800 1,800 8MWM-C-1 180.00 HR 450 Welder Diesel 400 AMP 1.00 2.500 450 8PILE26 Vibro Hammer 150 TN 1.00 180.00 HR 45.492 8,189 8,189 9,000 9100000 Subsistance 5 workers 18.00 DA 500,000 9.000 M105 Foreman - General Marine 1.00 180.00 MH 35.720 11,258 11,258 M-Piledriver 1.00 180.00 MH 34.950 12,462 12,462 M165 M170 M-Welder 1.00 180.00 MH 41.050 14,049 14,049 M-Skilled Laborer 1.00 180.00 MH 12.587 12.587 M190 35.430 35.430 M-Laborer 180.00 MH 12,587 M195 1.00 12.587

Description = Mooring Dolphins Piles

AREA 1

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ments Eng 1A- Crane 100-200 1 360.0000 MH/EA S: 50100 - Alt 400.0000 MH/LS 3 LS L20 CLIENTS ering dering and bollard System all Fenders and Bollards der system all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d me Manitowoc 777 20 1 DRILLS - ROCK*** 1 mpressor 185 CFM 1 garge2110 GRT OB-80- 1	1,080.0 1,080.0 1,080.0 1,200.0 1,200.0 1,200.0 1,000.1 1,0	00 MH 00 MH 00 MH 00 MH Marine 00 LS 00 LS	[162] Marine Item Unit = Quan: 22 1,27	39.190 4636.82] ————————————————————————————————————	Takeoff 12,074 75,016 83,364 7,787.99 ULE: 1 Takeoff 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Quan: 22,326 287,117 95,705.68 1	23,595	62,182 66,146 22,048.67 Engr 510 WC 6.00 1,000 8,168	Quan:	3.000 12,074 175,126 460,222 (3,407.44 1.000 22,700 ,274,000 ,296,700 1,000 8,168 875
Eng 1A- Crane 100-200 1 360.0000 MH/EA S: 50100 - Alt 400.0000 MH/LS 3 LS 120 CLIENTS ering dering and bollard System all Fenders and Bollards der system all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d me Manitowoc 777 20 1 DRILLS - ROCK*** 1 mpressor 185 CFM 1 garge2110 GRT OB-80- 1	1,080.0 1,080.0 1,080.0 1,200.0 1,200.0 1,200.0 1,000.1 1,0	00 MH 00 MH 00 MH Marine 00 LS 00 LS Marine 50. 00 DA 00 DA 00 HR 00 HR	[162 Marine Item Unit = Quan: 22 1,27	39.190 4636.82] ————————————————————————————————————	12,074 75,016 83,364 7,787.99 JLE: 1 Takeoff LS Hrs	22,326 287,117 95,705.68 1	15,603 23,595 7,865.10 00 1.000 10.00 Cal: Lab Pcs:	62,182 66,146 22,048.67 Engr 510 WC 6.00 1,000 8,168	Quan: 2: CCISP 1 2: CCISP	12,074 175,126 460,222 33,407.44 1.000 222,700 ,274,000 ,296,700 17.00 350 1,000 8,168
360.0000 MH/EA S: 50100 - Alt 400.0000 MH/LS 3 LS 120 CLIENT: ering dering and bollard System all Fenders and Bollards der system all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 Barge2110 GRT OB-80- 1	1,080.0 1,080.0 1,080.0 1,200.0 1,200.0 1,200.0 1,000.1 1,0	00 MH 00 MH 00 MH Marine 00 LS 00 LS Marine 50. 00 DA 00 DA 00 HR 00 HR	Marine Item Unit = Quan: 22 1,27	4636.82] 246.013] 27 SCHEDU LS 1.00 I 2,700.000 74,000.000 [] Prod: 70.000 200.000 163.361 17.500	75,016 83,364 7,787.99 JLE: 1 Takeoff LS Hrs	287,117 95,705.68 I 1 1 Quan: s/Shft: 22,700 1,274,000 1,296,700	23,595 7,865.10 00 1.000 10.00 Cal: 10.00 Cal:	66,146 22,048.67 Engr 510 WC 6.00 1,000 8,168	Quan: 2: CCISP 1 1: CCISP	175,126 460,222 63,407.44 1.000 22,700 ,274,000 ,296,700 17.00 350 1,000 8,168
dering and bollard System all Fenders and Bollards der Supplies (1 man-Stick der Oil, Grease 50g/d der Manitowoc 777 20 1 der Manitowoc	1,200.0 E# = 03-12 Em 1.0 5.0 1.00 50.0 1.00 50.0 1.00 50.0	Marine 00 LS 00 LS Marine 50. 00 DA 00 DA 00 DA 00 HR 00 HR	Marine Item Unit = Quan: 22 1,27	SCHEDU LS 1.00 I 2,700.000 [] 1.00 I Prod: 70.000 200.000 163.361 17.500	JLE: 1 Takeoff LS Hrs	95,705.68 Quan: 22,700 1,274,000 1,296,700	7,865.10 00 1.000 10.00 Cal: Lab Pcs:	Engr 510 WC 6.00 1,000 8,168	Quan: 2: CCISP 1 1: CCISP	1.000 22,700 ,274,000 ,296,700 17.00 350 1,000 8,168
dering and bollard System ards der system all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 garge2110 GRT OB-80- 1	1.0 1.0 5. 5.0 1.00 50.0 1.00 50.0	Marine 00 LS 00 LS Marine 50. 00 DA 00 DA 00 DA 00 HR 00 HR	Unit = Quan: 22 1,27 Quan:	LS 1.00 I 2,700.000 [] 1.00 I Prod: 70.000 200.000 163.361 17.500	Takeoff LS Hrs 1 1 LS Hrs	Quan: 22,700 1,274,000 1,296,700 s/Shft:	1.000 10.00 Cal: 10.00 Cal: Lab Pcs:	510 WC 510 WC 6.00 1,000 8,168	: CCISP	22,700 ,274,000 ,296,700 17.00 350 1,000 8,168
ards der system all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 sarge2110 GRT OB-80- 1	1.0 1.0 5.0 5.0 1.00 50.0 1.00 50.0	00 LS 00 LS Marine 50. 00 DA 00 DA 00 HR 00 HR	22 1,27 Quan:	2,700.000 74,000.000 [] 1.00 I Prod: 70.000 200.000 163.361 17.500	1 1 LS Hrs	22,700 1,274,000 1,296,700 s/Shft:	10.00 Cal: Lab Pcs:	6.00 1,000 8,168	1 1 2: CCISP	,274,000 ,296,700 17.00 350 1,000 8,168
all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 sarge2110 GRT OB-80- 1	5.0 5.0 1.00 50.0 1.00 50.0	Marine 50. 00 DA 00 DA 00 DA 00 HR 00 HR	1,27 Quan:	74,000.000 [] 1.00 I Prod: 70.000 200.000 163.361 17.500	LS Hrs	1,274,000 1,296,700 s/Shft:	Lab Pcs:	6.00 1,000 8,168	: CCISP	,274,000 ,296,700 17.00 350 1,000 8,168
all Fenders and Bollards ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 sarge2110 GRT OB-80- 1	5.0 5.0 1.00 50.0 1.00 50.0 1.00 50.0	Marine 50. 00 DA 00 DA 00 HR 00 HR	Quan:	[] 1.00 I Prod: 70.000 200.000 163.361 17.500	LS Hrs	1,296,700 s/ Shft:	Lab Pcs:	6.00 1,000 8,168	: CCISP	17.00 350 1,000 8,168
ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 sarge2110 GRT OB-80- 1	5.0 5.0 1.00 50.0 1.00 50.0 1.00 50.0	50. 00 DA 00 DA 00 HR 00 HR	_	1.00 I Prod: 70.000 200.000 163.361 17.500	LS Hrs	s/Shft:	Lab Pcs:	6.00 1,000 8,168	: CCISP	17.00 350 1,000 8,168
ine Piling & Demo Crew d Supplies (1 man-Stick l, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 sarge2110 GRT OB-80- 1	5.0 5.0 1.00 50.0 1.00 50.0 1.00 50.0	50. 00 DA 00 DA 00 HR 00 HR	_	Prod: 70.000 200.000 163.361 17.500			Lab Pcs:	6.00 1,000 8,168		350 1,000 8,168
d Supplies (1 man-Stick d, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 garge2110 GRT OB-80- 1	5.0 1.00 50.0 1.00 50.0 1.00 50.0	00 DA 00 DA 00 HR 00 HR	.00 CH	70.000 200.000 163.361 17.500	5.0	000 S		1,000 8,168	Eqp Pcs:	350 1,000 8,168
d, Oil, Grease 50g/d ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 Garge2110 GRT OB-80- 1	5.0 1.00 50.0 1.00 50.0 1.00 50.0	00 DA 00 HR 00 HR		200.000 163.361 17.500			350	8,168		1,000 8,168
ne Manitowoc 777 20 1 DRILLS - ROCK*** 1 npressor 185 CFM 1 targe2110 GRT OB-80- 1	1.00 50.0 1.00 50.0 1.00 50.0	00 HR 00 HR		163.361 17.500				8,168		8,168
DRILLS - ROCK*** 1 ppressor 185 CFM 1 sarge2110 GRT OB-80- 1	1.00 50.0 1.00 50.0	00 HR		17.500						
npressor 185 CFM 1 Barge2110 GRT OB-80- 1	1.00 50.0									0/3
Sarge2110 GRT OB-80- 1		OU FIX		3.000				875 150		150
C		00 HR		10.000				500		500
d Barge M-120x45' 1		00 HR		17.500				875		875
•		00 HR		20.000				1,000		1,000
				3.000				150		1,000
										250
										500
										5
										150
										175
,										250
										325
										500
										125
										2,275
sistance 5 workers				500.000			2,500			2,500
eman - General Marine 1	1.00 50.0	00 MH		35.720	3,127		•			3,127
				34.950	3,462					3,462
Velder 1	1.00 50.0	00 MH		41.050	3,902					3,902
skilled Laborer 1	1.00 50.0	00 MH		35.430	3,496					3,496
		00 MH		35.430	3,496					3,496
•				39.190	3,354					3,354
300.0000 MH/LS	300.0	00 MH	[12	2197.35]	20,838		2,850	17,273		40,960
	8	00 1411	F 44	2107.253	20.020	1.207.700	2.050	17.070		227 ((2
	300.0	UU MH	[12	-						1 ,337,660 87,660.39
k Fen a River State Financial State Financia State Financia State Financia State Financia Stat	tet Clamshell 3 CYD MAG D19 HAMMER RLEADS Perator 10 KW It Tower, Genie Pactor Pile D F150 SUPERC 10 CH 3-DRUM RB-90 D Hammer 150 TN D Hammer	tet Clamshell 3 CYD 1.00 50. MAG D19 HAMMER 1.00 50. RLEADS 1.00 50. Tower, Genie 1.00 5	tet Clamshell 3 CYD 1.00 50.00 HR MAG D19 HAMMER 1.00 50.00 HR RLEADS 1.00 50.00 HR RT Tower, Genie 1.00 50.00 HR RT TOWER TOW	tet Clamshell 3 CYD 1.00 50.00 HR MAG D19 HAMMER 1.00 50.00 HR RLEADS 1.00 50.00 HR RT Tower, Genie 1.00 50.00 HR RT TOWER TOW	tet Clamshell 3 CYD	tet Clamshell 3 CYD	tet Clamshell 3 CYD	tet Clamshell 3 CYD	Ret Clamshell 3 CYD 1.00 50.00 HR 5.000 250 MAG D19 HAMMER 1.00 50.00 HR 10.000 500 RLEADS 1.00 50.00 HR 0.100 5 erator 10 KW 1.00 50.00 HR 3.000 150 t Tower, Genie 1.00 50.00 HR 3.500 175 actor Pile 1.00 50.00 HR 5.000 250 D F150 SUPERC 10 1.00 50.00 HR 6.500 325 CH 3-DRUM RB-90 1.00 50.00 HR 10.000 500 der Diesel 400 AMP 1.00 50.00 HR 2.500 125 o Hammer 150 TN 1.00 50.00 HR 45.492 2,275 istance 5 workers 5.00 DA 500.000 2,500 man - General Marine 1.00 50.00 MH 34.950 3,462 Velder 1.00 50.00 MH 35.430 3,496 aborer 1.00 50.00 MH 35.430 3,496 delder or 1.00	tet Clamshell 3 CYD

Unit =

EA Takeoff Quan:

24.000

Engr Quan:

24.000

K31A 6 173 1,038.00 L31A 6 168 1,008.00

Direct Cost Report

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Activity
               Desc
                                       Quantity
                                                               Unit
                                                                             Perm
                                                                                    Constr
                                                                                            Equip
                                                                                                    Sub-
                                             Unit
   Resource
                                  Pcs
                                                               Cost
                                                                     Labor Material Matl/Exp
                                                                                            Ment Contract
                                                                                                           Total
BID ITEM = 50130
                            CLIENT# = 03-12
                                                  Marine Item SCHEDULE: 1
Description = Mooring Dolphins Piles
                                                      Unit =
                                                               EA Takeoff Quan:
                                                                                    24.000
                                                                                             Engr Quan:
                                                                                                          24.000
                 " Thick Steel Pipe Pile
    48 " 0 1
           Outside Diameter = 48 in
           Wall Thickness = 1.000 in
    Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb)
    Weight (Ton)
    -100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9
   Coating
    Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)
    -35 7.54 117.6 1 48 295,561.7
         Pipe Qty Piles Pile Length Total Length
         A32 32 178 5,696.00
         B32 32 178 5,696.00
         C32 32 173 5,536.00
         D32 32 173 5,536.00
         E31A 6 198 1,188.00
         F31A 6 193 1,158.00
         G31A 6 188 1,128.00
         H31A 6 183 1,098.00
         I31A 6 178 1,068.00
         J31A 6 178 1,068.00
         K31A 6 173 1,038.00
         L31A 6 168 1,008.00
        M31A 6 163 978.00
         N31A 6 178 1,068.00
         O31A 6 173 1,038.00
         P31A 6 163 978.00
          200 177.4 35,280.00
          Average 176.4
303000
             Supply Pipe Piles
                                             Marine
                                                      Quan: 4,233.60 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP
AREA 1
48 " 0 1
             " Thick Steel Pipe Pile
       Outside Diameter = 48 in
       Wall Thickness = 1.000 in
Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb)
Weight (Ton)
-100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9
Coating
Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)
-35 7.54 117.6 1 48 295,561.7
     Pipe Qty Piles Pile Length Total Length
     A32 32 178 5,696.00
     B32 32 178 5,696.00
     C32 32 173 5,536.00
     D32 32 173 5,536.00
     E31A 6 198 1,188.00
     F31A 6 193 1,158.00
     G31A 6 188 1,128.00
     H31A 6 183 1,098.00
     I31A 6 178 1,068.00
     J31A 6 178 1,068.00
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Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Per Labor Materi		Equip Ment	Sub- Contract	Total
Description = 1 M31A 6	50130 CLIEN Mooring Dolphins Piles 163 978.00 178 1,068.00 173 1,038.00	IT# =	03-12 M	Iarine Item Unit =	SCHEDU EA	LE: 1 Takeoff Quan:	100 24.000	Engr (Quan:	24.000
200 17	163 978.00 7.4 35,280.00 e 176.4									
2PP48INCH	48 In Diam Pipe Pile		4,233.60 LF		430.000	1,820,44	18		1	,820,448
303010	Pile Painting & Wrapping		Marine	Quan:	0.12 I		8.00	WC:	NONE	
2PP48COATING	Pipe Pile Shop Coating		35,467.40 SF		4.000	141,87	70			141,870
303022	Set Pile Template		Marine	Quan:	0.12 I	S Hrs/Shft:	8.00	WC:	NONE	
31PILETEMPLA	Pipe Pile Template		0.12 LS	60	0,000.000		7,200			7,200
303035	Piling - Pipe		Marine	Quan:	24.00 H	EA Hrs/Shft:	10.00 Cal:	510 WC:	CCISP	
due to tides MARPIL	the efficiency will Marine Piling & Demo Crew		_	iles per 0 CH	day of Prod:	6 hours 6.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD 8211050	Weld Supplies (1 man-Stick Fuel, Oil, Grease 50g/d		6.00 DA 6.00 DA		70.000 200.000		420	1,200		420 1,200
8CRANEC200	Crane Manitowoc 777 20	1.00	60.00 HR		163.361			9,802		9,802
8DRILLR	***DRILLS - ROCK***	1.00	60.00 HR		17.500			1,050		1,050
8MAC-A-10	Compressor 185 CFM	1.00	60.00 HR		3.000			180		180
8MBM-Z-2 8MBS-Z-14	M.Barge2110 GRT OB-80-	1.00	60.00 HR		10.000 17.500			600		600
8MBT-Z-12	Spud Barge M-120x45' Tug Push Boat 200 HP	1.00	60.00 HR 60.00 HR		20.000			1,050 1,200		1,050 1,200
8MBW-Z-2	18' Aluminum Boat & O/	1.00	60.00 HR		3.000			180		180
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	60.00 HR		5.000			300		300
8MDH-A-7	DELMAG D19 HAMMER	1.00	60.00 HR		10.000			600		600
8MFD-A-1	FAIRLEADS	1.00	60.00 HR		0.100			6		6
8MGN-Z-11 8MLT-A-1	Generator 10 KW	1.00 1.00	60.00 HR 60.00 HR		3.000			180 210		180 210
8MPE-A-11	Light Tower, Genie Extractor Pile	1.00	60.00 HR		3.500 5.000			300		300
8MVP-A-11	FORD F150 SUPERC 10	1.00	60.00 HR		6.500			390		390
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	60.00 HR		10.000			600		600
8MWM-C-1	Welder Diesel 400 AMP	1.00	60.00 HR		2.500			150		150
8PILE26	Vibro Hammer 150 TN	1.00	60.00 HR		45.492		2.000	2,730		2,730
9100000 M105	Subsistance 5 workers Foreman - General Marine	1.00	6.00 DA		500.000	2.752	3,000			3,000
M105 M165	M-Piledriver	1.00	60.00 MH 60.00 MH		35.720 34.950	3,753 4,154				3,753 4,154
M170	M-Welder	1.00	60.00 MH		41.050	4,683				4,683
M190	M-Skilled Laborer	1.00	60.00 MH		35.430	4,196				4,196
M195	M-Laborer	1.00	60.00 MH		35.430	4,196				4,196
OPCR100	Op Eng 1A- Crane 100-200		60.00 MH		39.190	4,025	2.420	20.525		4,025
\$49,152.47	15.0000 MH/EA	4	360.00 MH	[(509.868]	25,005	3,420	20,727		49,152
303040	Piling - Concrete Filling		Marine	Quan:	1.00 I	LS Hrs/Shft:	10.00 Cal:	510 WC:	CCISP	
MARWOO	Marine Carpenters Crew			0 CH	Prod:	6.0000 S	Lab Pcs:	10.00	Eqp Pcs:	16.00
8211050	Fuel, Oil, Grease 50g/d	1.00	6.00 DA		200.000			1,200		1,200
8CRANEC100	Crane Manitowoc 222B 1	1.00	60.00 HR		106.961			6,418		6,418
8MAC-A-17 8MBC-Z-1	Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	1.00	60.00 HR 60.00 HR		3.000 6.500			180 390		180 390
	Daige Carpenter 12 ATO	1.00	00.00 111							
	Barge Carpenter 12'X40	1.00	60.00 HR		6.500			390		390
8MBC-Z-2	Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 1.00	60.00 HR 60.00 HR		6.500 10.000			600		390 600
	Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/									

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Direct	Cost	Repo
Direct	Cost	керс

SMCN-A-13	Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Pern Materia		Constr l/Exp	Equip Ment C	Sub- ontract	Total
SMCN-A-1			ENT# =	03-12				_					
MSM-W-A-1 Work Float	Description =	Mooring Dolphins Piles			Unit =	EA	Takeoff	Quan:	- 2	24.000	Engr Q	ıan:	24.000
MFWA-2	BMCN-A-13	Container Steel 20'	1.00	60.00 HR		0.100					6		6
MGNZ-17 Generator 8 KW	MFW-A-1	Work Float	1.00	60.00 HR		2.000					120		120
MGN3-2-18 Generator R KW 1.00 60.00 HR 2.000 120 MVP-A-2 FORD F150 SUPERC 2 1.00 60.00 HR 6.500 390 MVP-A-2 FORD F150 SUPERC 2 1.00 60.00 HR 6.500 390 MVP-A-2 FORD F150 SUPERC 2 1.00 60.00 HR 2.500 HR 2.45 ### MVELD400 Foreman - Carpenter 1.00 60.00 MH 34.720 3.666 3 34 ### MVELD4100 Foreman - Carpenter 1.00 60.00 MH 34.720 3.666 3 4 ### MVELD4100 MV Meder 400 AMP 2.00 1.00 60.00 MH 35.490 42.01 4.483 4 ### MVELD410 MV McSerpenter 1.00 60.00 MH 35.490 42.01 4.4173 McSerpenter 1.00 60.00 MH 35.490 12.602 12.14180 McSerpenter 1.00 60.00 MH 12.5983.74] 41.779 10.989 52 ### MACHAEL Crane 100.200 1.00 60.00 MH 12.5983.74] 41.779 10.989 52 ### MACHAEL Crane 100.200 1.00 60.00 MH 12.5983.74] 41.779 10.989 52 ### MACHAEL Crane 100.200 1.00 60.00 MH 12.5983.74] 41.779 10.989 52 ### MACHAEL Crane 100.200 1.00 60.00 MH 12.5983.74] 41.779 10.00 Cal: 510 WC: CCISP 10.000 MC:	MFW-A-2	Work Float	1.00	60.00 HR		2.000					120		120
MILT-A-2 Light Tower. Genie	BMGN-Z-17	Generator 8 KW	1.00	60.00 HR		2.000					120		120
MVPR-A-2 FORD F150 SUPERC 2	3MGN-Z-18	Generator 8 KW	1.00	60.00 HR		2.000					120		120
SWELD-00 Welder 400 AMF 2.00 12.00.0 HR 2.044 24.5 3.3	3MLT-A-2	Light Tower, Genie	1.00	60.00 HR		3.500					210		210
MIDO	3MVP-A-2	FORD F150 SUPERC 2		60.00 HR		6.500							390
M. Welder 1.00 60.00 MH 31.590 4.683 4.4	3WELD400	Welder 400 AMP	2.00	120.00 HR		2.044					245		245
MI73		•											3,666
MITS													4,683
MISO M-Carpenter Helper 3.00 18.000 MH 35.490 12.602 12.00													4,201
OPER		•											12,602
S52,767.89 G00.0000 MH/LS G00.00 MH [23983.74] 41,779 10,989 52													12,602
CR14 5000 PSI Concrete 1.10 966.90 CY 105.000 101.525 10.00 Cal: 510 WC; CCISP		1 0											4,025
Marine Quan; 1.00 LS Hrs/Shft; 10.00 Cal; 510 WC; CCISP	552,767.89	600.0000 MH/I	LS	600.00 MH	[2	3983.74]	41,779				10,989		52,768
Odays x 8 hours = 240 hours Concrete Pumping Marine Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP	03042	Concrete Supply		Marin	e Quan:	879.00	CY Hı	rs/Shft:	10.00	Cal:	510 WC: 0	CCISP	
10 days x 8 Nours	CR14	5000 PSI Concrete	1.10	966.90 CY		105.000		101,525	5				101,525
SCONCP36M Concrete Concrete Pump 36 30.00 HR 125.000 3,750 3	303043	Concrete Pumping		Marin	e Quan:	1.00	LS Hr	s/Shft:	10.00	Cal:	510 WC: 0	CCISP	
Marine Quan: 84,900.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP	30 days x 8	hours= 240 hours											
1.10 3,390.00 LB 0,480 44,827 44	CONCP36M	Concrete Concrete Pump 3	16	30.00 HR		125.000			:	3,750			3,750
RR02	303045	Piling - Rebar		Marin	e Quan:	84,900.00	LS Hr	s/Shft:	10.00	Cal:	510 WC: 0	CCISP	
### 1.10 93,390.00 LB 0.480 44,827 44 44,828 44,828 44,828 44,828 44,828 44,828 46,828 46,000	200*16= 3200) couplers											
RR10 Rebar Supports 93,390.00 LB 0.050 4,670 4 2RS16 Coupler T-25 (#8) 16.00 384.00 EA 13.000 4,992 4 8RSEBAR Rebar Sub 84,900.00 LB 0.280 23,772 23 8RSEBAR Rebar Sub 84,900.00 LB 0.280 23,772 78 804000 Pile Splices - Pipe pile Marine Quan: 24.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP SSPLICES Welding Subcontractor 36.00 EA 650.000 23,400 23		-	1.10	93.390.00 LB		0.480		44.827	7				44,827
RES16 Coupler T-25 (#8) 16.00 384.00 EA 13.000 4,992 23,772 23 23 2578.260.70 [] 54,489 23,772 23 78 23,772 23 23 23,772 23 23 23,772 23 23 23 23,772 23 23 23 23 23 23 23													4,670
SERBAR Rebar Sub 84,900.00 LB 0.280 23,772 23 78 78 78 78 78 78 78 7			16.00										4,992
1 54,489 23,772 78 304000 Pile Splices - Pipe pile Marine Quan: 24.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP	SREBAR	=		84,900.00 LB		0.280			2:	3,772			23,772
SPLICES Welding Subcontractor 36.00 EA 650.000 23,400 23	578,260.70							54,489					78,261
Item Totals: 50130 - Mooring Dolphins Piles 502,278,373.16 40.0000 MH/EA 960.00 MH [1609.19] 66,784 2,118,331 61,542 31,716 2,278 2,782.68 88,263.78 2,564.25 1,321.51 94,93 2,782.68 2,782.68 88,263.78 2,564.25 1,321.51 2,782.68 2,782.68 88,263.78 2,564.25 1,321.51 2,782.68 2,782	304000	Pile Splices - Pipe pile		Marin	e Quan:	24.00	EA Hı	rs/Shft:	10.00	Cal:	510 WC: 0	CCISP	
\$2,278,373.16	SPLICES	Welding Subcontractor		36.00 EA		650.000			2:	3,400			23,400
\$2,278,373.16	Ttom '	Fotolo. 50120	Maani	ing Dolphing Biles		_							
BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = 50135 CLIENT# = 03-12 Land Item Unit = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID ITEM = EA Takeoff Quan: 4.000 Engr Quan: 4 BID	\$2,278,373.16	40.0000 MH/EA	MIOOII										2,278,373
Description	4,932.213						2,762.06	00,203.70			1,321.31		94,932.22
## caps: 38*4= 152 cy ## caps: 38*4= 152 cy ## caps: 38*4= 152 cy ## Marine Piling & Demo Crew			NT# =	03-12					100	4.000	Engr Q	ıan:	4.000
### Size: 15.5 ft* 13.2 ft* 5 ft= 1,023 cf ===> 38 cy ### caps: 38*4= 152 cy 160 lbs/cy ===> rebar: 152*160= 24,320 lbs ### MARPIL Marine Piling & Demo Crew 240.00 CH Prod: 24.0000 S Lab Pcs: 6.00 Eqp Pcs: 17.2	322910	Concrete Cap Dolphins			Quan:	4.00	EA Hr	rs/Shft:	10.00	Cal:	510 WC: 0	CCISP	
4 caps: 38*4= 152 cy 160 lbs/cy ===> rebar: 152*160= 24,320 lbs MARPIL Marine Piling & Demo Crew 240.00 CH Prod: 24.0000 S Lab Pcs: 6.00 Eqp Pcs: 17 2CR14 5000 PSI Concrete 1.10 167.20 CY 105.000 17,556 17 2RR02 Gr 60 Rebar 1.05 25,441.50 LB 0.480 12,212 12 3WELD Weld Supplies (1 man-Stick 24.00 DA 70.000 1,680 1		• •	1,023	cf ===> 38 c	v								
Mary Fig. 24 Marine Piling & Demo Crew 240.00 CH Prod: 24.0000 S Lab Pcs: 6.00 Eqp Pcs: 17.000 17.556 17.000 17.			·		•								
2CR14 5000 PSI Concrete 1.10 167.20 CY 105.000 17,556 17 2RR02 Gr 60 Rebar 1.05 25,441.50 LB 0.480 12,212 12 3WELD Weld Supplies (1 man-Stick 24.00 DA 70.000 1,680 1			= 24,3	320 lbs									
2RR02 Gr 60 Rebar 1.05 25,441.50 LB 0.480 12,212 12 3WELD Weld Supplies (1 man-Stick 24.00 DA 70.000 1,680 1	MARPIL	Marine Piling & Demo Cre	ew	24	0.00 CH	Prod	24.0	0000 S	Lab	Pcs:	6.00	Eqp Pcs:	17.00
3WELD Weld Supplies (1 man-Stick 24.00 DA 70.000 1,680 1		5000 PSI Concrete	1.10	167.20 CY		105.000		17,556	5				17,556
	2RR02	Gr 60 Rebar	1.05	25,441.50 LB		0.480		12,212	2				12,212
	WELD	W-14 C1: (1 C4:-	٠ŀ	24 00 DA		70.000				1 680			1,680
		weid Supplies (1 man-Stic	-K			70.000							1,000
3211050 Fuel, Oil, Grease 50g/d 24.00 DA 200.000 4,800 4	REBAR	**	.K										7,124

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Direct Cost Report

Activity	Desc		Quantity	Unit		Perm	Constr	Equip Sub-	
Resource		Pcs	Unit	Cost	Labor	Material	Matl/Exp	Ment Contract	Total
BID ITEM =	= 50135 CLIEN	JT#= 0	3-12	Land Item SCHED	ULE:	1 10	00		
Description =	Pile Cap Mooring Dolphin			Unit = EA	Takeoff	Quan:	4.000) Engr Quan:	4.000
8CRANEC200	Crane Manitowoc 777 20	1.00	240.00 HR	163.361				39,207	39,207
BDRILLR	***DRILLS - ROCK***	1.00	240.00 HR	17.500				4,200	4,200
BMAC-A-10	Compressor 185 CFM	1.00	240.00 HR	3.000				720	720
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	240.00 HR	10.000				2,400	2,400
BMBS-Z-14	Spud Barge M-120x45'	1.00	240.00 HR	17.500				4,200	4,200
BMBT-Z-12	Tug Push Boat 200 HP	1.00	240.00 HR	20.000				4,800	4,800
BMBW-Z-2	18' Aluminum Boat & O/	1.00	240.00 HR	3.000				720	720
BMCE-A-40	Bucket Clamshell 3 CYD	1.00	240.00 HR	5.000				1,200	1,200
BMDH-A-7	DELMAG D19 HAMMER	1.00	240.00 HR	10.000				2,400	2,400
BMFD-A-1	FAIRLEADS	1.00	240.00 HR	0.100				24	24
BMGN-Z-11	Generator 10 KW	1.00	240.00 HR	3.000				720	720
BMLT-A-1	Light Tower, Genie	1.00	240.00 HR	3.500				840	840
BMPE-A-11	Extractor Pile	1.00	240.00 HR	5.000				1,200	1,200
BMVP-A-11	FORD F150 SUPERC 10	1.00	240.00 HR	6.500				1,560	1,560
BMWH-A-1	WINCH 3-DRUM RB-90	1.00	240.00 HR	10.000				2,400	2,400
MWM-C-1	Welder Diesel 400 AMP	1.00	240.00 HR	2.500				600	600
PILE26	Vibro Hammer 150 TN	1.00	240.00 HR	45.492				10,918	10,918
100000	Subsistance 5 workers		24.00 DA	500.000			12,000		12,000
И105	Foreman - General Marine	1.00	240.00 MH	35.720	15,011				15,011
M165	M-Piledriver	1.00	240.00 MH	34.950	16,616				16,616
<i>I</i> 170	M-Welder	1.00	240.00 MH	41.050	18,731				18,731
И190	M-Skilled Laborer	1.00	240.00 MH	35.430	16,782				16,782
И195	M-Laborer	1.00	240.00 MH	35.430	16,782				16,782
OPCR100	Op Eng 1A- Crane 100-200	1.00	240.00 MH	39.190	16,098				16,098
233,501.43	360.0000 MH/E	A	1,440.00 MH	[14636.82]	100,021	29,768	20,804	82,909	233,501
		Pile Ca	p Mooring Dolpl						
233,501.43	360.0000 MH/EA		1,440.00 MH	[14636.82]	100,021	29,768	20,804	82,909	233,501
88,375.358	4 EA				25,005.29	7,441.98	5,200.91	20,727.18	58,375.36

BID ITEM = **50140** CLIENT# = 03-12 Marine Item SCHEDULE: 1 100

Description = Slope Protection Unit = CY Takeoff Quan: 174,800.000 Engr Quan: 174,800.000

203900 Supply Armor Rock Quan: 157,783.05 CY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Armor stone 2600 lb/cy

2600/2000= 1.3 ton/cy

136,300 cy *1.3 ton/cy= 178,000 tn

2ARMOR Armor Stone 206,055.63 TN 60.000 12,363,338 12,363,338

209900	Install Slope Protection		Marine	Quan: 174,800.00 (CY Hrs/Shft:	10.00 Cal: 51	10 WC:	CCISP
MARLAN	Demolition Crew on land		3,567.34	CH Prod:	356.7347 S	Lab Pcs: 1	9.00	Eqp Pcs: 13.00
8211050	Fuel, Oil, Grease 50g/d		356.73 DA	200.000			71,346	71,346
8BHLD480	BHL Cat 450E 1.75CY	8.00	28,538.78 HR	45.473		1,2	97,744	1,297,744
8CRANEC100	Crane Manitowoc 222B 1	1.00	3,567.35 HR	106.961		3	81,567	381,567
8TRKPU10	Pickup 4x2 3/4 Ton Gas	4.00	14,269.39 HR	7.044		1	00,514	100,514
9100010	Subistance 10 workerss		356.73 DA	1,000.000		356,730		356,730
M105	Foreman - General Marine	1.00	3,567.35 MH	35.720	223,121			223,121
M150	M-Operator, Crane	1.00	3,567.35 MH	39.190	269,797			269,797
M195	M-Laborer	8.00	28,538.78 MH	35.430 1,	995,613			1,995,613
OPCR100	Op Eng 1A- Crane 100-200	1.00	3,567.35 MH	39.190	239,286			239,286
OPEXC3	Op Eng 3- Backhoe to 3Y	8.00	28,538.78 MH	37.430 1,	852,670			1,852,670
\$6,788,387.92	0.3877 MH/CY	•	67,779.61 MH	[15.646] 4,	580,487	356,730 1,8	51,171	6,788,388

CH2MHILL

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Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 50140CLIENT# = 03-12Marine Item SCHEDULE: 100

CY Takeoff Quan: 174,800.000 Description = Slope Protection Unit =Engr Quan: 174,800.000

====> Item Totals: 50140 - Slope Protection

\$19,151,725.72 0.3877 MH/CY 67,779.61 MH [15.646] 4,580,487 12,363,338 356,730 1,851,171 19,151,726

109.564 174800 CY 26.20 70.73 2.04 10.59 109.56

BID ITEM = 50500CLIENT# = 03-19Land Item SCHEDULE:

Surface Pavements Takeoff Quan: Description = Unit = LS 1.000 Engr Quan: 1.000

ASPHALT PAVING Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

This is the parametric cost from ICRC estimate site prep, earthwork and paving, per SY

23,985,383 23,985,383 154,881.00 SY 4SUB Subcontract 154.863

BID ITEM = 50510CLIENT# = 03-19Land Item SCHEDULE: 1 100

Takeoff Quan: 1.000 1.000 Description = Traffic Control Parking Unit = LS Engr Quan:

TRAFFIC CONTROL/ACCESS Quan: 150,041.00 SY Hrs/Shft: 10.00 Cal: 510 WC: CCISP

This is the parametric cost from ICRC estimate for striping and signage, per SY

150,041.00 SY 4SUB Subcontract 373,602 373,602

BID ITEM = 50520 CLIENT# = 03-19Land Item SCHEDULE: 1 100

Description = Surface water control Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Quan: 154,881.00 SY Hrs/Shft: 10.00 Cal: 510 WC: CCISP DRAINAGE

This is the parametric cost from ICRC estimate for lump sum surface drainage, costed per SY

4SUB Subcontract 154,881.00 SY 7.035 1,089,588 1,089,588

BID ITEM = 50530CLIENT# = 03-19Land Item SCHEDULE: 100

1.000 Description = Potable Water Utilities Takeoff Quan: 1.000 Unit = LS Engr Quan:

WATER MAINS Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Potable water as lump sum from ICRC estimate

2,525,274.000 4SUB Subcontract 1.00 LS 2,525,274 2,525,274

CLIENT# = 03-19 SCHEDULE: BID ITEM = 50540 Land Item 1 100

1.000 1.000 Description = Fire Suppression Utilities Unit = Takeoff Quan: Engr Quan: LS

411 WATER MAINS Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Estimating Fire suppression water as Potable water lump sum from ICRC estimate (assumes the ICRC estimate only had Potable water).

2,525,274.000 4SUB Subcontract 1.00 LS 2,525,274 2,525,274 CH2MHILL

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

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BID ITEM = 50550 CLIENT# = 03-19 Land Item SCHEDULE: 100

Sanitary Sewer Utilities Takeoff Quan: 1.000 1.000 Description = Unit = LS Engr Quan:

SANITARY SEWER Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

San Sewer as lump sum from ICRC estimate

4SUB Subcontract 1.00 LS 359,657.000 359,657 359,657

BID ITEM = 50560 CLIENT# = 03-19Land Item SCHEDULE: 1 100

Description = **Electrical Power Utilities** Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

419 **ELEC. UTILITIES** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

Electrical Utilities as lump sum from ICRC estimate

9,239,076.000 4SUB Subcontract 1.00 LS 9,239,076 9,239,076

CLIENT# = 03-19SCHEDULE: BID ITEM = 50580 Land Item 1 100

Description = Telecommunications Utilities Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

TEL/COM. UTILITIES 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP 419 **Ouan:**

Telecomm utilities cost taken as lump sum from ICRC estimate

3,281,521.000 4SUB Subcontract 1.00 LS 3,281,521 3,281,521

BID ITEM = 50590 CLIENT# = 03-08Land Item SCHEDULE: 100

Description = Railroad Spur Takeoff Quan: 1.000 1.000 Unit = LS Engr Quan:

RAIL SPUR 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

Rail and appurtenances taken as lump sum from ICRC estimate

4SUB 1.00 LS 6,803,601.000 6,803,601 6,803,601 Subcontract

BID ITEM CLIENT# = 03-19Land Item SCHEDULE: = 50600 1 100

Description = Surface Restoration/Landscaping Unit = Takeoff Quan: 1.000 1.000 Engr Quan:

209000 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Restorations Quan:

No restoration was identified in ICRC estimate. Assuming a nominal amount for landscape and plants. 1.00 LS 150,000.000 4SUB Subcontract 150,000 150,000

BID ITEM = 50610 CLIENT# = 03-19Land Item SCHEDULE:

Description = Marine Terminal Buildings incl Crane Mai Unit = Takeoff Quan: 1.000 Engr Quan: 1.000 LS

Tote Marine and AWWU Meeting Buildings 3.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Quan:**

Parametric cost taken as lump sum from ICRC estimate - used for stevedore facilities

1,452,767.000 4SUB Subcontract 3.00 EA 4,358,301 4,358,301 CH2MHILL

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Activity Desc Quantity Unit Perm Constr Equip Sub-

Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = **50620** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Corrosion Control Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

859 CATHODIC PROTECTION Quan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 *****

4SUB Subcontract 1.00 LS 8,565,000.000 8,565,000 8,565,000

BID ITEM = **50630** CLIENT# = 03-08 Land Item SCHEDULE: 1 100

Description = Cherry Hill Road Upgrades Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

2 EARTHWORK/BASE/PAVING Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Road upgrade cost from ICRC estimate

4SUB Subcontract 1.00 LS 823,088.000 823,088 823,088

BID ITEM = **50640** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Other Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

89 MARINE MAMMAL MONITORING Quan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

4SUB Subcontract 1.00 LS 3,624,482.000 3,624,482 3,624,482

890000 KABATA WORK Quan: 1.00 LS Hrs/Shft: 8.00 WC: NONE

4SUB Subcontract 1.00 LS 767,282.000 767,282 767,282

====> Item Totals: 50640 - Other

\$4,391,764.00 [] 4,391,764 **4,391,764** 4,391,764.00 1 LS 4,391,764.00

19,389,097 35,410,750 15,468,400 26,475,673 68,471,129 165,215,049

>>> indicates Non Additive Activity

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

\$165,215,048.63

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

Bid Date: Owner: Engineering Firm:

Estimator-In-Charge:

JOB NOTES

Estimate created on: 03/12/2008 by User#: 0 -

*** Report Totals ***

Source used: C:\HEAVYBID\BIN\BLANK\zip (a backup) from 04/20/2006 4:40:12 PM

284,639.65 MH

*************Estimate created on: 03/20/2008 by User#: 0 -

Source used: R:\CURRENT DEVELOPMENT\HEAVYBID\INSTALLS\CURRENT INSTALL SOURCE\BACKUPS\BLANK.zip (a backup)

from 03/18/2008 11:43:18 AM

************Estimate created on: 03/21/2008 by User#: 0 -

Source used: C:\HEAVYBID\BACKUPS\BLANK.zip (a backup) from 03/20/2008 8:40:26 AM

*************Estimate created on: 01/24/2013 by User#: 609 - Bob Wells

CH2MHILL 13-008-5HA-1

Bob Wells

POA Option 5H Phase 1 (rev 1)

Direct Cost Report

02/27/2013 23:34

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Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 50640CLIENT# = 03-12Land Item SCHEDULE: 100 Description = Other Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 Source estimate used: Y:\TBG-ENGI\EST\ESTMAST Source estimate used: Y:\TBG-ENGI\EST\13-008 Source estimate used: Y:\TBG-ENGI\EST\13-008-1 *************Estimate created on: 02/07/2013 by User#: 609 - Bob Wells Source estimate used: Y:\TBG-ENGI\EST\13-008-5 ***********Estimate created on: 02/25/2013 by User#: 657 - Jorge Abisambra Source estimate used: Y:\TBG-ENGI\EST\13-008-5H Source estimate used: Y:\TBG-ENGI\EST\13-008-5HA

 $[\]ensuremath{^*}$ on units of MH indicate average labor unit cost was used rather than base rate.

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

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

^{510 5} days @ 10hrs/day

		ESTIMATE 1	RECAP - BID Q	UANTITIES		
		DIRECT	INDIRECT	TOTAL	% OF TO	ΓAL
	Labor	1,884,423.05		1,884,423.05	1.64	40%
	Burden	1,364,775.04		1,364,775.04	1.18	87%
	Lab+Bur	3,249,198.09		3,249,198.09	2.82	27%
	Perm Matl	83,075,055.38		83,075,055.38	72.28	82%
	Const Exp	363,237.30		363,237.30	0.3	16%
	Equipment	2,105,321.66		2,105,321.66	1.83	32%
	Subs	35,000.00		35,000.00	0.03	30%
	Other	26,103,429.77		26,103,429.77	22.7	12%
	Total Costs:	114,931,242.20		114,931,242.20	99.99	99%
	% of Total	100.000%	0.000%	100.000%		
Escalation on:	Labor	Burden	Perm Matl	Const Matl	Co Eqp	Rented Eqp
	0	0	0	0	0	0
	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
	Eq Op Exp	Sub	Misc1	Misc2	Misc3 To	tal Escalation
	0	0	0	0	0	0
	100.00 %	100.00%	100.00 %	100.00 %	100.00%	100.00 %

^{*} Data Below here is dependent on the Summary Process. * The Summary Process was last run 02/27/2013 at 11:38 PM

Markup on Resource Costs	34,468,039.66	29.9901%
MARKUP TOTALS ===> Cost Addons	34,468,039.66	29.9901%
Escalation to February 2015 3.4700 % of Cost, Mkup, & Prev	5,273,442.87	4.5883%
Escalation to Proj Midpoint 6.5100 % of Cost, Mkup, & Prev	10,236,705.48	8.9068%
Contingency 20.0000 % of Cost, Mkup, & Prev Addons	33,496,513.07	29.1448%
PM, CM, Design 18.0000 % of Cost, Mkup, & Prev Addons	36,176,234.12	31.4764%
Owner's Contingency 8.5000 % of Cost, Mkup, & Prev Addon	20,158,201.57	17.5394%
Bond from Summary Table	2,573,135.14	2.2388%
MARKUP, ADDON & BOND TOTALS ===>	142,382,271.91	
COOT MARKED	######################################	(% of costs)
COST + MARKUP>	\$257,313,514.11	
	(On Takeoff Quantity)	
There * ARE NOT * closing accounts for this bid.		
		-Effect on Bid-
Rounding difference:	-1,229.06	Adjusted
Unbalancing difference:		
From Cut&Add Sheet-costs:		(on Bid Quantity)
From Cut&Add Sheet-markup:		(on Bid Quantity)
Pass Through Adjustments:		None

23:39

13-008-5HB

POA Option 5H- Phases 2 & 3

*** Bob Wells

BID TOTALS

<u>Biditem</u>	Description	Quantity	<u>Units</u>	Unit Price	Bid Total
50040	Construction Staging	1.000	LS	2,067,823.76	2,067,823.76
		***Subtotal Staging			\$2,067,823.76
	PHASES II &III				
50150	Demolition	1.000		2,992,684,85	2,992,684.85
50160	Piling Concrete Wharf Area II	159,348.000	LF		190,081,448.7
50190	Concrete Superstructure	222,573.000	SF		50,328,206.76
50200	Abutments	6.000	EA		2,436,862.14
50210	100-gage Crain Rail and suptg foundation system	1,900.000	LF	465.01	883,519.00
50220	Fendering	1.000	LS	8,232,186.36	8,232,186.36
50221	Mooring Dolphin	1.000	EA	289,553.43	289,553.43
	***	Subtotal Marine Work		\$2	55,244,461.30
		Bid Total ====	:===>	\$2	57,312,285.06

^{**}Notes:

Items in italics are Non-Additive.

POA Option 5H- Phases 2 & 3

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

PARENT ITEM = **50040** CLIENT# = 03-12

Description = Construction Staging Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

LFORMN Laborer-Foreman 34.72 MH 8.16 18.73 STD

LPWR Laborer-Power Tools 34.72 MH 8.16 18.73 STD

M100 Foreman - Carpenter 34.72 MH 28 10.93 STD

M105 Foreman - General Marine 35.72 MH 28 10.93 STD

M150 M-Operator, Crane 39.19 MH 28 19 STD

M165 M-Piledriver 34.95 MH 28 18.73 STD

M170 M-Welder 41.05 MH 28 18.73 STD

M173 M-Lead Carpenter 35.49 MH 28 18.73 STD

M175 M-Carpenter 35.49 MH 28 18.73 STD M180 M-Carpenter Helper 35.49 MH 28 18.73 STD

M190 M-Skilled Laborer 35.43 MH 28 18.73 STD

M195 M-Laborer 35.43 MH 28 18.73 STD

OPCR100 Op Eng 1A- Crane 100-200 39.19 MH 8.16 19 STD

OPEXC3 Op Eng 3- Backhoe to 3Y 37.43 MH 8.16 19 STD

Listing of Sub-Biditems of Parent Item 50040:

PARENT ITEM = 50042 CLIENT# = 03-12

Description = Mobilization and Demobilization Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Listing of Sub-Biditems of Parent Item 50042:

BID ITEM = **50043** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Mobilization Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000

219000 Misc Hauling/Trucking Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

20 loads x 1 = 20 hours

5TRKFB Trucking - Flat Bed 20.00 HR 100.000 2,000 2,000

540000 Temporary Construction Fence Quan: 750.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

a 6 feet link fence will cost 9.00/ ft. then can be sold installed at 15/ft

31CHAINFENCE Temporary Chainlinkfence 750.00 LF 12.000 9,000 9,000

890005 Pile Crew Mobilization Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

***** Copied and adjusted from C:\HEAVYBID\EST\012-008A *****

Crew mobilized for Tacoma, Washington

MARPIL	Marine Piling & Demo Crev	7		20.00	CH	Prod:	2.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick		2.00 DA			70.000		140			140
8211050	Fuel, Oil, Grease 50g/d		2.00 DA			200.000			400		400
8CRANEC200	Crane Manitowoc 777 20	1.00	20.00 HR			163.361			3,267		3,267
8DRILLR	***DRILLS - ROCK***	1.00	20.00 HR			17.500			350		350
8MAC-A-10	Compressor 185 CFM	1.00	20.00 HR			3.000			60		60
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	20.00 HR			10.000			200		200
8MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 HR			17.500			350		350
8MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 HR			20.000			400		400
8MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 HR			3.000			60		60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR			5.000			100		100
8MDH-A-7	DELMAG D19 HAMMER	1.00	20.00 HR			10.000			200		200

02/27/2013

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor M	Perm Aateria	n Constr l Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM = Description =	50043 CLIENT Mobilization	NT# =	03-12	Land Item Unit =	SCHEDU LS	LE: 1 Takeoff Qu		100	Engr	Quan:	0.000
Description –				Oint =		Takeon Qu	uan.	1.000	_	Quaii.	
8MFD-A-1	FAIRLEADS	1.00	20.00 HR		0.100				2		2
8MGN-Z-11	Generator 10 KW	1.00	20.00 HR		3.000				60		60
8MLT-A-1	Light Tower, Genie	1.00	20.00 HR		3.500				70		70
8MPE-A-11	Extractor Pile	1.00	20.00 HR		5.000				100		100
8MVP-A-11	FORD F150 SUPERC 10	1.00	20.00 HR		6.500				130		130
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	20.00 HR		10.000				200		200
8MWM-C-1	Welder Diesel 400 AMP	1.00	20.00 HR		2.500				50		50
8PILE26 9100000	Vibro Hammer 150 TN Subsistance 5 workers	1.00	20.00 HR 2.00 DA		45.492			1,000	910		910 1,000
M105	Foreman - General Marine	1.00	20.00 MH		500.000 35.720	1,251		1,000			1,000
M165	M-Piledriver	1.00	20.00 MH 20.00 MH		34.950	1,385					1,385
M170	M-Welder	1.00	20.00 MH 20.00 MH		41.050	1,561					1,561
M190	M-Skilled Laborer	1.00	20.00 MH		35.430	1,399					1,399
M195	M-Laborer	1.00	20.00 MH		35.430	1,399					1,399
OPCR100	Op Eng 1A- Crane 100-200		20.00 MH		39.190	1,342					1,342
\$16,384.16	120.0000 MH/L		120.00 MH	1.	4878.94]	8,335		1,140	6,909		16,384
_			120.00 1/111	-	-		77.0.			aaran	10,501
890006	Carpenter Crew Mob			Quan:	1.00	LS Hrs/S	Shft:	10.00 Cal:	510 WC	: CCISP	
-	d and adjusted from	Y:\TB									
MARWOO	Marine Carpenters Crew			0.00 CH	Prod:	2.000	00 S	Lab Pcs:	10.00	Eqp Pcs:	16.00
8211050	Fuel, Oil, Grease 50g/d		2.00 DA		200.000				400		400
8CRANEC100	Crane Manitowoc 222B 1	1.00	20.00 HR		106.961				2,139		2,139
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	20.00 HR		3.000				60		60
8MBC-Z-1	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBC-Z-2	Barge Carpenter 12'X40	1.00	20.00 HR		6.500				130		130
8MBS-Z-9 8MBW-Z-2	Spud Barge M-80x28' 18' Aluminum Boat & O/	1.00 1.00	20.00 HR 20.00 HR		10.000 3.000				200 60		200 60
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 HR 20.00 HR		5.000				100		100
8MCN-A-13	Container Steel 20'	1.00	20.00 HR 20.00 HR		0.100				2		2
8MFW-A-1	Work Float	1.00	20.00 HR		2.000				40		40
8MFW-A-2	Work Float	1.00	20.00 HR 20.00 HR		2.000				40		40
8MGN-Z-17	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MGN-Z-18	Generator 8 KW	1.00	20.00 HR		2.000				40		40
8MLT-A-2	Light Tower, Genie	1.00	20.00 HR		3.500				70		70
8MVP-A-2	FORD F150 SUPERC 2	1.00	20.00 HR		6.500				130		130
8WELD400	Welder 400 AMP	2.00	40.00 HR		2.044				82		82
M100	Foreman - Carpenter	1.00	20.00 MH		34.720	1,222					1,222
M170	M-Welder	1.00	20.00 MH		41.050	1,561					1,561
M173	M-Lead Carpenter	1.00	20.00 MH		35.490	1,400					1,400
M175	M-Carpenter	3.00	60.00 MH		35.490	4,201					4,201
M180	M-Carpenter Helper	3.00	60.00 MH		35.490	4,201					4,201
OPCR100	Op Eng 1A- Crane 100-200	1.00	20.00 MH		39.190	1,342					1,342
\$17,589.31	200.0000 MH/L	S	200.00 MH	[]	7994.58]	13,926			3,663		17,589
960015	Rigging Supplies			Quan:	1.00	LS Hrs/S	Shft:	10.00 Cal:	510 WC	: CCISP	
**** Conied	d and adjusted from										
	d and adducted from	C:\HE	AVYBID\EST\0	12-008A **	***						
***** Copied											25 000
	Rigging Supplies		1.00 LS	35	5,000.000			35,000			35,000
***** Copied	Rigging Supplies	Mobili		35	5,000.000			35,000			35,000
***** Copied	Rigging Supplies				5,000.000 — 2873.52]	22,261		35,000 47,140	10,572		79,973

POA Option 5H- Phases 2 & 3

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Total

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract

BID ITEM = **50044** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Transportation Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000

219000 Misc Hauling/Trucking Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

***** Copied and adjusted from C:\HEAVYBID\EST\012-008A *****

Miscelaneous trucking to mobilize equipment to the site and demob. smal cranes and loaders, traileres and containers.

20 loads x 4 hours = 80 hours

5TRKFB Trucking - Flat Bed 80.00 HR 100.000 8,000 8,000

890007 Marine Tugs Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP

rental tugging services to and from Tacoma, Washington State. Distance Tacoma to Anchorage: 1,472 N Miles

at 4.5 knots, 1,472/4.5= 327 hours ===> 13.62 days say 14 days

14 days in and 14 days back 2 days on stand by = 30 days

190.0000 MH/LS

then tug needs to go back and do it all over again for demobilization

so, say 60 days

\$19,029.26

5TUGSERVICE Tug Rental 60.00 DA 6,500.000 390,000 390,000 8211060 ==> Fuel, Oil, Grease 1400 60.00 DA 5,810.000 348,600 348,600 \$738,600.00 390,000 738,600 [] 348,600 **====> Item Totals:** 50044 - Transportation \$746,600.00 398,000 348,600 746,600 [] 398,000.00 348,600.00 746,600.00 746,600.000 1 LS

BID ITEM = **50045** CLIENT#= 03-12 Land Item SCHEDULE: 1 100

190.00 MH

Description = Demobilization Unit = LS Takeoff Quan: 1.000 Engr Quan: 0.000

115000 Remove Fence (Chain Link) **Quan:** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP ***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A ***** Per drawings there are 750 ft of link fencing to limit the construction site **MARLAN** Demolition Crew on land 10.00 CH **Prod:** 1.0000 S Lab Pcs: 19.00 Eqp Pcs: 13.00 1.00 DA Fuel, Oil, Grease 50g/d 200.000 8211050 200 200 BHL Cat 450E 1.75CY 8BHLD480 8.00 80.00 HR 45.473 3,638 3,638 8CRANEC100 Crane Manitowoc 222B 1 1.00 10.00 HR 106.961 1,070 1,070 8TRKPU10 Pickup 4x2 3/4 Ton Gas 4.00 40.00 HR 7.044 282 282 Subistance 10 workerss 1.00 DA 1,000.000 1,000 1,000 9100010 M105 Foreman - General Marine 1.00 10.00 MH 35.720 625 625 M150 M-Operator, Crane 1.00 10.00 MH 39.190 756 756 M195 M-Laborer 8.00 80.00 MH 35.430 5,594 5,594 Op Eng 1A- Crane 100-200 1.00 39.190 OPCR100 10.00 MH 671 671 Op Eng 3- Backhoe to 3Y OPEXC3 80.00 MH 37.430 5,193 5,193 8.00

[7666.78]

12,840

1,000

5,189

19,029

890010	Subcontractor Pile Crew Demobilizat	tion	Quan:	1.00 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP	
MARPIL	Marine Piling & Demo Crew	20.00	CH	Prod:	2.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
3WELD	Weld Supplies (1 man-Stick	2.00 DA		70.000		140			140
8211050	Fuel, Oil, Grease 50g/d	2.00 DA		200.000			400		400

02/27/2013 Direct Cost Report

Activity Resource	Desc	Pcs	Quantity U	nit	Unit Cost	Labor	Perm Material	Constr Matl/Exp	Equip Ment	Sub- Contract	Total
BID ITEM =	50045 CLIEN	T# = 0	03-12	Land	Item SCHED	ULE:	1 1	.00			
Description =	Demobilization				Unit = LS	Takeoff	Quan:	1.000	Engr	Quan:	0.000
CRANEC200	Crane Manitowoc 777 20	1.00	20.00 H	R	163.361				3,267		3,267
BDRILLR	***DRILLS - ROCK***	1.00	20.00 H	R	17.500				350		350
BMAC-A-10	Compressor 185 CFM	1.00	20.00 H	R	3.000				60		60
MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	20.00 H	R	10.000				200		200
MBS-Z-14	Spud Barge M-120x45'	1.00	20.00 H		17.500				350		350
MBT-Z-12	Tug Push Boat 200 HP	1.00	20.00 H		20.000				400		400
MBW-Z-2	18' Aluminum Boat & O/	1.00	20.00 H		3.000				60		60
MCE-A-40	Bucket Clamshell 3 CYD	1.00	20.00 H		5.000				100		100
MDH-A-7 MFD-A-1	DELMAG D19 HAMMER	1.00	20.00 H 20.00 H		10.000 0.100				200		200
MGN-Z-11	FAIRLEADS Generator 10 KW	1.00	20.00 H		3.000				60		60
MLT-A-1	Light Tower, Genie	1.00	20.00 H		3.500				70		70
MPE-A-11	Extractor Pile	1.00	20.00 H		5.000				100		100
MVP-A-11	FORD F150 SUPERC 10	1.00	20.00 H		6.500				130		130
MWH-A-1	WINCH 3-DRUM RB-90	1.00	20.00 H		10.000				200		200
MWM-C-1	Welder Diesel 400 AMP	1.00	20.00 H		2.500				50		50
PILE26	Vibro Hammer 150 TN	1.00	20.00 H		45.492				910		910
00000	Subsistance 5 workers		2.00 D	A	500.000			1,000			1,000
105	Foreman - General Marine	1.00	20.00 M	IH	35.720	1,251					1,251
165	M-Piledriver	1.00	20.00 M		34.950	1,385					1,385
170	M-Welder	1.00	20.00 M		41.050	1,561					1,561
190	M-Skilled Laborer	1.00	20.00 M	IH	35.430	1,399					1,399
	M-Laborer	1.00	20.00 M		35.430	1,399					1,399
PCR100	Op Eng 1A- Crane 100-200	1.00	20.00 M	IH	39.190	1,342		1 140	6 000		1,342
1195 PPCR100 16,384.16		1.00		IH				1,140	6,909		
PCR100	Op Eng 1A- Crane 100-200	1.00	20.00 M 120.00 M	IH IH	39.190 [4878.94]	1,342 8,335	s/Shft:	1,140 10.00 Cal:		: CCISP	1,342
PCR100 16,384.16 20011	Op Eng 1A- Crane 100-200 120.0000 MH/LS	1.00 Crew L	20.00 M 120.00 M	IH IH	39.190 [4878.94] Quan: 1.00	1,342 8,335	s/Shft:			: CCISP	1,342
PCR100 16,384.16 20011	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew	1.00 Crew L	20.00 M 120.00 M Demob	IH IH Γ\12-060 20.00	39.190 [4878.94] Quan: 1.00 (A *****	1,342 8,335 • LS Hr	s/Shft:		510 WC 10.00	: CCISP Eqp Pcs:	1,342 16,384 16.00
PCR100 6,384.16 90011 ***** Copied MARWOO 211050	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d	1.00 Crew I	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D	T\12-060 20.00	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000	1,342 8,335 • LS Hr		10.00 Cal:	510 WC		1,342 16,384 16.00 400
PCR100 6,384.16 10011 ***** Copied MARWOO 11050 CRANEC100	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	1.00 S Crew I 7:\TB0	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H	IH IH Γ\12-060 20.00 A R	39.190 [4878.94] Quan: 1.00 ()A ***** CH Pro 200.000 106.961	1,342 8,335 • LS Hr		10.00 Cal:	10.00 400 2,139		1,342 16,384 16.00 400 2,139
PCR100 6,384.16 POO11 **** Copied MARWOO 11050 CRANEC100 MAC-A-17	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai	1.00 Grew I 7:\TB0 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H	IH IH Γ\12-060 20.00 A R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000	1,342 8,335 • LS Hr		10.00 Cal:	10.00 400 2,139 60		1,342 16,384 16.00 400 2,139 60
PCR100 6,384.16 POO11 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40	1.00 Crew I 7:\TB6 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H	T\12-060 20.00 α A R R R	39.190 [4878.94] Quan: 1.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130		1,342 16,384 16.00 400 2,139 60 130
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40	1.00 3 Crew I 7:\TB0 1.00 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Proc 200.000 106.961 3.000 6.500 6.500	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130		1,342 16,384 16,00 400 2,139 60 130 130
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 Crew I 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R	39.190 [4878.94] Quan: 1.00 DA ***** CH Proc 200.000 106.961 3.000 6.500 6.500 10.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200		1,342 16,384 16,00 400 2,139 60 130 130 200
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R R R	39.190 [4878.94] Quan: 1.00 (A ***** CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200 60		1,342 16,384 16,00 400 2,139 60 130 130 200 60
PCR100 6,384.16 POO11 **** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 Crew I 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R R R R	39.190 [4878.94] Quan: 1.00 (A ***** CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200		1,342 16,384 16,00 400 2,139 60 130 130 200
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00 Crew I 7: \TB0 1.00 1.00 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M Demob G-ENGI\EST 2.00 D 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R R R R R	39.190 [4878.94] Quan: 1.00 (A ***** CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200 60 100		1,342 16,384 16,384 16,00 400 2,139 60 130 200 60 100
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20'	1.00 3 Crew I 7: \TB0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M 120.00 M 20.00 D 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R R R R R	39.190 [4878.94] Quan: 1.00 (A ***** CH Proc 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2		1,342 16,384 16,384 16,00 400 2,139 60 130 200 60 100 2
PCR100 6,384.16 POO11 ***** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter C d and adjusted from Y Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	20.00 M 120.00 M 120.00 M 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H 20.00 H	T\12-060 20.00 A R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 A ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40		1,342 16,384 16,384 16,00 400 2,139 60 130 200 60 100 2 40
PCR100 6,384.16 POO11 **** Copied MARWOO 111050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Code and adjusted from Yamarine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H	T\12-060 20.00 A R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 A ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 130 200 60 100 2 40 40 40 40		1,342 16,384 16,384 16,384 16,00 400 2,139 60 130 200 60 100 2 40 40 40 40 40
PCR100 6,384.16 POO11 ***** Copied MARWOO 111050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Code and adjusted from Yamine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie	1.00 S Crew I 7: \TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 2.00 D 20.00 H	T\12-060 20.00 A R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70		1,342 16,384 16,384 16,384 16,00 400 2,139 60 130 200 60 100 2 40 40 40 40 40 70
PCR100 6,384.16 POO11 ***** Copied MARWOO 111050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Code and adjusted from Yamine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2	1.00 S Crew I 7: \TB6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H	T\12-060 20.00 A R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500	1,342 8,335 •• LS Hr		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 130 130 200 60 100 2 40 40 40 40 70 130
PCR100 6,384.16 POO11 ***** Copied MARWOO 111050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VELD400	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Color and adjusted from Yamarine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP	1.00 S Crew I 7: \TBG 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H	T 12-060 20.00 A A R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044	1,342 8,335 LS Hr d: 2.0		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70		1,342 16,384 16,384 16,384 16,384 130 130 200 60 100 2 40 40 40 40 70 130 82
PCR100 6,384.16 POO11 ***** Copied MARWOO D11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 100	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Cold and adjusted from Yamarine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter	1.00 S Crew I 7: \TB6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H	T 12-060 20.00 A A R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044 34.720	1,342 8,335 LS Hr d: 2.0		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 40 70 130 82 1,222
PCR100 6,384.16 0011 ***** Copied MARWOO 11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VELD400 100 170	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Cold and adjusted from Yamarine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder	1.00 S Crew I 7: \TB6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H	T\12-060 20.00 A A R R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ***** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 6.500 2.044 34.720 41.050	1,342 8,335 1.222 1,561		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 40 70 130 82 1,222 1,561
PCR100 .6,384.16 POO11 **** Copied MARWOO 211050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MCE-A-40 MCN-A-13 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 100 170 173	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Contractor Carpenter (Contractor Carpenter (Contractor Carpenter Contractor Carpenter Contractor Carpenter Contractor Contractor Carpenter Contractor Carpenter 12 (Contractor Carpenter Carpenter 12 (Contractor Carpenter	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H 20.00 M 20.00 M	T\12-060 20.00 A A R R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490	1,342 8,335 1.222 1,561 1,400		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 16,00 130 130 130 200 60 100 2 40 40 40 40 70 130 82 1,222 1,561 1,400
PCR100 6,384.16 POO11 **** Copied MARWOO P11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 100 170 173 175	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Color of the Color of the Colo	1.00 S Crew I 7: \TB6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 D 20.00 H 20.00 M 20.00 M 20.00 M 20.00 M	T\12-060 20.00 A A R R R R R R R R R R R R R R R R R I H	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490	1,342 8,335 1.22 1,222 1,561 1,400 4,201		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201
PCR100 6,384.16 POO11 **** Copies MARWOO P11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 100 170 173 175 180	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Contractor) d and adjusted from Yamine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper	1.00 S Crew L 7: \TB6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H 20.00 M 20.00 M 60.00 M 60.00 M	T\12-060 20.00 A A R R R R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 35.490	1,342 8,335 1.222 1,561 1,400 4,201 4,201		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 16,384 17,000 18,
PCR100 6,384.16 POO11 **** Copied MARWOO P11050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 WELD400 100 170 173 175	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Color of the Color of the Colo	1.00 S Crew L 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	20.00 M 120.00 M 120.00 M 120.00 M 20.00 D 20.00 H 20.00 M 20.00 M 20.00 M 20.00 M	T\12-060 20.00 A R R R R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490	1,342 8,335 1.22 1,222 1,561 1,400 4,201		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 70 130 82 1,222 1,561 1,400 4,201
PCR100 6,384.16 0011 **** Copied MARWOO 11050 PRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 VP-A-2 VELD400 100 170 173 175 180 PCR100 7,589.31	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Contractor) d and adjusted from Yamine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/LS	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	20.00 M 120.00 M 120.00 M 120.00 M 20.00 H 20.00 M 20.00 M 20.00 M 20.00 M	T\12-060 20.00 A R R R R R R R R R R R R R R R R R R	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190	1,342 8,335 1,222 1,561 1,400 4,201 4,201 1,342		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130 82		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342
PCR100 6,384.16 POO11 ***** Copied MARWOO PL1050 CRANEC100 MAC-A-17 MBC-Z-1 MBC-Z-2 MBS-Z-9 MBW-Z-2 MCN-A-13 MFW-A-1 MFW-A-1 MFW-A-2 MGN-Z-17 MGN-Z-18 MLT-A-2 MVP-A-2 VELD400 100 170 173 175 180 PCR100	Op Eng 1A- Crane 100-200 120.0000 MH/LS Subcontractor Carpenter (Contractor) d and adjusted from Yamine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter M-Carpenter Helper Op Eng 1A- Crane 100-200 200.0000 MH/LS	1.00 S Crew I 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	20.00 M 120.00 M 120.00 M 120.00 M 20.00 D 20.00 H 20.00 M 20.00 M 20.00 M	T\12-060 20.00 / AA R R R R R R R R R R R R R R R R R H I H I	39.190 [4878.94] Quan: 1.00 OA ****** CH Pro 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490 35.490 39.190	1,342 8,335 1,222 1,561 1,400 4,201 4,201 1,342		10.00 Cal:	10.00 400 2,139 60 130 200 60 100 2 40 40 40 40 70 130 82		1,342 16,384 16,384 16,384 16,384 130 200 60 100 2 40 40 40 40 40 70 130 82 1,222 1,561 1,400 4,201 4,201 1,342

430000

02/27/2013

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Direct Cost Report

Activity Resource	Desc	Quantity Pcs Ur		Unit Cost	Labor M	Perm Iaterial	Constr Matl/Exp	Equip Ment (Sub- Contract	Total
BID ITEM = Description =	= 50045 Demobilization	CLIENT# = 03-12	Unit =	HEDU LS 'otal o	JLE: 1 Takeoff Qu f Above Sul	uan:	00 1.000 ems) Engr Q	Quan:	0.000
====> Item \$879,576.20 879,576.200	Totals: 50042 830.0000 MH/ 1	- Mobilization and De LS 830.00 M LS			57,363 57,362.91	4	447,280 147,280.00	374,933 374,933.29	87	879,576 79,576.20

BID ITEM = 50046CLIENT# = 03-12 Land Item SCHEDULE: 1 100

664.000 0.000 Description = Environmental Protection & Turbidity Bar Unit = FT Takeoff Quan: Engr Quan:

Quan: 1,000.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

call on the plans D-101

Silt Fence - Install

**** Copied	d and adjusted from Y	Y:\TBO	G-ENGI\EST\12-06	50A **	***					
LAB3	Foreman + 2 Laborers		10.00	CH	Prod:	100.0000 UH	Lab Pcs:	3.00	Eqp Pcs:	1.00
31ECSF	Silt Fence		1,000.00 LF		1.000		1,000			1,000
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	10.00 HR		8.476			85		85
LFORMN	Laborer-Foreman	1.00	10.00 MH		34.720	613				613
LPWR	Laborer-Power Tools	2.00	20.00 MH		34.720	1,226				1,226
\$2,924.45	0.0300 MH/LI	F	30.00 MH		[1.146]	1,840	1,000	85		2,924
432000	Turbidity Barrier			Quan	: 1,000.00 L	F Hrs/Shft:	10.00 Cal:	510 WC:	: CCISP	
**** Conied	d and adjusted from Y	√•\π¤α		5∩n **	***					
MARPIL	Marine Piling & Demo Crev		10.00		Prod:	1.0000 S	Lab Pcs:	6.00	Eqp Pcs:	17.00
	A Turbidity Barrier	v	1,000.00 LF	CII	14.000	1.0000 5	14,000	0.00	Eqp i cs.	14,000
3WELD	Weld Supplies (1 man-Stick		1.00 DA		70.000		70			70
8211050	Fuel, Oil, Grease 50g/d		1.00 DA 1.00 DA		200.000		70	200		200
8CRANEC200	Crane Manitowoc 777 20	1.00	10.00 HR		163.361			1,634		1,634
8DRILLR	***DRILLS - ROCK***	1.00	10.00 HR		17.500			175		175
8MAC-A-10	Compressor 185 CFM	1.00	10.00 HR 10.00 HR		3.000			30		30
8MBM-Z-2			10.00 HR		10.000			100		100
8MBS-Z-14	Spud Barge M-120x45'	1.00	10.00 HR		17.500			175		175
8MBT-Z-12	Tug Push Boat 200 HP	1.00	10.00 HR		20.000			200		200
8MBW-Z-2	18' Aluminum Boat & O/	1.00	10.00 HR		3.000			30		30
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	10.00 HR		5.000			50		50
8MDH-A-7	DELMAG D19 HAMMER		10.00 HR		10.000			100		100
8MFD-A-1	FAIRLEADS	1.00	10.00 HR		0.100			1		1
8MGN-Z-11	Generator 10 KW	1.00	10.00 HR		3.000			30		30
8MLT-A-1	Light Tower, Genie	1.00	10.00 HR		3.500			35		35
8MPE-A-11	Extractor Pile	1.00	10.00 HR		5.000			50		50
8MVP-A-11	FORD F150 SUPERC 10	1.00	10.00 HR		6.500			65		65
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	10.00 HR		10.000			100		100
8MWM-C-1	Welder Diesel 400 AMP	1.00	10.00 HR		2.500			25		25
8PILE26	Vibro Hammer 150 TN	1.00	10.00 HR		45.492			455		455
9100000	Subsistance 5 workers		1.00 DA		500.000		500			500
M105	Foreman - General Marine	1.00	10.00 MH		35.720	625				625
M165	M-Piledriver	1.00	10.00 MH		34.950	692				692
M170	M-Welder	1.00	10.00 MH		41.050	780				780
M190	M-Skilled Laborer	1.00	10.00 MH		35.430	699				699
M195	M-Laborer	1.00	10.00 MH		35.430	699				699
OPCR100	Op Eng 1A- Crane 100-200	1.00	10.00 MH		39.190	671				671
\$22,192.08	0.0600 MH/LI	F	60.00 MH		[2.439]	4,168	14,570	3,455		22,192

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13-008-5HB POA Option 5H- Phases 2 & 3 Bob Wells Direct Cost Report 23:38

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = **50046** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Environmental Protection & Turbidity Bar Unit = FT Takeoff Quan: 664.000 Engr Quan: 0.000

432005 Erosion Control - Hay Bales Quan: 400.00 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP

***** Copied and adjusted from Y:\TBG-ENGI\EST\12-060A *****

A bale size of 14"x18"x22" will weigh about 37 to 43 lbs. This is a safer bale weight for many people to handle

it means the length is 22"/12=1.83 ft

if there are 600 ft =====> qty of bales are: 600/1.83=327 say 400 bales

LAB4	Foreman + 3 Laborers		66.6	6 CH	Prod:	6.0000 UH	Lab Pcs:	4.00	Eqp Pcs:	1.00	
31ECHB	Hay Bales		400.00 EA		5.000		2,000			2,000	
8TRKPU70	Leased 4x2, 3/4 Ton Ga	1.00	66.67 HR		8.476			565		565	
LFORMN	Laborer-Foreman	1.00	66.67 MH		34.720	4,088				4,088	
LPWR	Laborer-Power Tools	3.00	200.00 MH		34.720	12,265			1	2,265	
\$18,918.10	0.6666 MH/	EA	266.67 MH	[:	25.462]	16,353	2,000	565	1	8,918	
====> Item	Totals: 50046	 Enviror 	mental Protection	& Turbidit	y Bar						
\$44,034.63	0.5371 MH/FT		356.67 MH	[:	20.738]	22,360	17,570	4,104	4	4,035	
66.317	664 FT					33.68	26.46	6.18		66.32	

Total of Above Sub-Biditems

BID ITEM = 50150 CLIENT#= 03-12 Land Item SCHEDULE: 1 100

Description = Demolition Unit = Takeoff Quan: 1.000 Engr Quan: 1.000

REmove 15 piles per day then 100 days duration Marine Piling & Demo Crew 1,000.00 CH Lab Pcs: 17.00 **MARPIL Prod:** 100.0000 S 6.00 Eqp Pcs: 100.00 DA 70.000 3WELD Weld Supplies (1 man-Stick 7,000 7,000 8211050 Fuel, Oil, Grease 50g/d 100.00 DA 200.000 20,000 20,000 8CRANEC200 Crane Manitowoc 777 20 1.00 1,000.00 HR 163.361 163,361 163,361 ***DRILLS - ROCK*** 8DRILLR 1.00 1.000.00 HR 17.500 17,500 17,500 8MAC-A-10 Compressor 185 CFM 1.00 1.000.00 HR 3.000 3,000 3,000 M.Barge2110 GRT OB-80-8MBM-Z-2 1.00 1,000.00 HR 10.000 10,000 10,000 8MBS-Z-14 Spud Barge M-120x45' 1.00 1,000.00 HR 17.500 17,500 17,500 8MBT-Z-12 Tug Push Boat 200 HP 1.00 1,000.00 HR 20.000 20,000 20,000 8MBW-Z-2 18' Aluminum Boat & O/ 1.00 1,000.00 HR 3.000 3,000 3,000 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 1,000.00 HR 5.000 5,000 5,000 8MDH-A-7 DELMAG D19 HAMMER 1.00 1,000.00 HR 10.000 10,000 10,000 8MFD-A-1 **FAIRLEADS** 1.00 1,000.00 HR 0.100 100 100 8MGN-Z-11 Generator 10 KW 1.00 1,000.00 HR 3.000 3,000 3,000 8MLT-A-1 Light Tower, Genie 1.00 1,000.00 HR 3.500 3,500 3,500 1,000.00 HR 5.000 5,000 8MPE-A-11 Extractor Pile 1.00 5,000 8MVP-A-11 FORD F150 SUPERC 10 1.00 1,000.00 HR 6.500 6,500 6,500 WINCH 3-DRUM RB-90 10.000 10,000 8MWH-A-1 1.00 1.000.00 HR 10,000 8MWM-C-1 Welder Diesel 400 AMP 1.00 1,000.00 HR 2.500 2,500 2,500 Vibro Hammer 150 TN 1,000.00 HR 45.492 45,492 8PILE26 1.00 45,492 9100000 Subsistance 5 workers 100.00 DA 500.000 50,000 50,000 Bob Wells

Direct Cost Report

Activity Resource	Desc	Quantity Pcs U	nit	Unit Cost	Per Labor Materi		Equip Sub- Ment Contract	
BID ITEM = Description =	= 50150 CLIEN Demolition	NT# = 03-12	Land Item Unit =	SCHEDU	JLE: 1 Takeoff Quan:	100	Engr Quan:	1.000
M105 M165 M170 M190 M195 OPCR100	Foreman - General Marine M-Piledriver M-Welder M-Skilled Laborer M-Laborer Op Eng 1A- Crane 100-200		11H 11H 11H 11H 11H	35.720 34.950 41.050 35.430 35.430 39.190	62,545 69,233 78,047 69,926 69,926 67,077			62,545 69,233 78,047 69,926 69,926 67,077
\$819,207.82 133030	0.0341 MH/SI	.,	Ouan:	[1.389]	416,755 Hrs/Shft:	,	345,453 510 WC: CCISP	819,208
	rete debri: 175,600 : = 650 truck loads Trucking-FlatBed	650.00 H		450.000	<u> </u>	292,500		292,500
135010	Rem Exist Piling		Quan:	1.00	Hrs/Shft:	10.00 Cal:	510 WC: CCISP	
52REMOVEPIL	E Remove Piles	500.00 E	Α	450.000		225,000		225,000
====> Item \$1,336,707.82 1,336,707.820	Totals: 50150 - 6,000.0000 MH/	Demolition 6,000.00 N	IH [243947] 4	416,755 16,754.82	574,500 574,500.00	345,453 345,453.00 1,	1,336,708 336,707.82
BID ITEM = Description = AREA 1 48 " O	Piling Concrete Wharf Area		Land Item Unit =	SCHEDU LF	JLE: 1 Takeoff Quan:	100 159,348.000	Engr Quan: 1	59,348.000

Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

-100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF) -35 7.54 117.6 1 48 295,561.7

Pipe Qty Piles Pile Length Total Length A32 32 178 5,696.00 B32 32 178 5,696.00 C32 32 173 5,536.00 D32 32 173 5,536.00 E31A 6 198 1,188.00 F31A 6 193 1,158.00 G31A 6 188 1,128.00 H31A 6 183 1,098.00 I31A 6 178 1,068.00 J31A 6 178 1,068.00 K31A 6 173 1,038.00 L31A 6 168 1,008.00 M31A 6 163 978.00 N31A 6 178 1,068.00 O31A 6 173 1,038.00 P31A 6 163 978.00 200 177.4 35,280.00 Average 176.4

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5.339.815

13-008-5HB Bob Wells **Direct Cost Report**

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = 50160CLIENT# = 03-12Land Item SCHEDULE: 100

Takeoff Quan: Description = Piling Concrete Wharf Area II Unit =LF 159,348.000 Engr Quan: 159,348.000

303000 **Supply Pipe Piles** Marine Ouan: 159,348.00 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP

AREA 1

48 " 0 1 " Thick Steel Pipe Pile

> Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

-100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF)

-35 7.54 117.6 1 48 295,561.7

Pipe Qty Piles Pile Length Total Length

A32 32 178 5,696.00

B32 32 178 5,696.00

C32 32 173 5,536.00

D32 32 173 5,536.00

E31A 6 198 1,188.00

F31A 6 193 1,158.00

G31A 6 188 1,128.00 H31A 6 183 1,098.00

I31A 6 178 1,068.00

J31A 6 178 1,068.00

K31A 6 173 1,038.00

L31A 6 168 1,008.00

M31A 6 163 978.00

N31A 6 178 1,068.00

O31A 6 173 1,038.00

P31A 6 163 978.00 200 177.4 35,280.00

2PP48COATING Pipe Pile Shop Coating

Average 176.4

2PP48INCH 430.000 68,519,640 48 In Diam Pipe Pile 159,348.00 LF 68,519,640

303010 Pile Painting & Wrapping Marine 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Quan:

4.000

5.339.815

303022 **Set Pile Template** 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP Marine Quan:

31PILETEMPLA Pipe Pile Template 4.52 LS 60,000.000 271,200 271,200

303035 Marine Quan: 903.33 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP Piling - Pipe

due to tides the efficiency will be assumed at 4 niles per day of 6 hours

1.334.953.68 SF

due to tides	the efficiency will	be a	assumed	at 4 pi	es per	day of 6	nours					
MARPIL	Marine Piling & Demo Crew	,		2,258.33	CH	Prod:	225.8333 S	Lab Pcs:	6.00	Eqp Pcs:	17.00	
3WELD	Weld Supplies (1 man-Stick		225.83	DA		70.000		15,808			15,808	
8211050	Fuel, Oil, Grease 50g/d		225.83	DA		200.000			45,166		45,166	
8CRANEC200	Crane Manitowoc 777 20	1.00	2,258.33	HR		163.361			368,923		368,923	
8DRILLR	***DRILLS - ROCK***	1.00	2,258.33	HR		17.500			39,521		39,521	
8MAC-A-10	Compressor 185 CFM	1.00	2,258.33	HR		3.000			6,775		6,775	
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	2,258.33	HR		10.000			22,583		22,583	
8MBS-Z-14	Spud Barge M-120x45'	1.00	2,258.33	HR		17.500			39,521		39,521	
8MBT-Z-12	Tug Push Boat 200 HP	1.00	2,258.33	HR		20.000			45,167		45,167	
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,258.33	HR		3.000			6,775		6,775	
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,258.33	HR		5.000			11,292		11,292	
8MDH-A-7	DELMAG D19 HAMMER	1.00	2,258.33	HR		10.000			22,583		22,583	
8MFD-A-1	FAIRLEADS	1.00	2,258.33	HR		0.100			226		226	

02/27/2013

Direct Cost Report

Activity Resource	Desc	Pcs	Quantity Unit	Un Co		Perm bor Material		Equip Ment	Sub- Contract Total
	50160 CLIEN		03-12 L		DULE:		00	-	4.50.240.000
Description =	Piling Concrete Wharf Area I	.1		Unit = L	F Take	off Quan:	159,348.000	Engr	Quan: 159,348.000
8MGN-Z-11	Generator 10 KW	1.00	2,258.33 HR	3.00				6,775	6,775
8MLT-A-1	Light Tower, Genie	1.00	2,258.33 HR	3.50				7,904	7,904
8MPE-A-11	Extractor Pile	1.00	2,258.33 HR	5.00				11,292	11,292
8MVP-A-11	FORD F150 SUPERC 10	1.00	2,258.33 HR	6.50				14,679	14,679
8MWH-A-1 8MWM-C-1	WINCH 3-DRUM RB-90 Welder Diesel 400 AMP	1.00	2,258.33 HR 2,258.33 HR	10.00 2.50				22,583 5,646	22,583 5,646
8PILE26	Vibro Hammer 150 TN	1.00	2,258.33 HR 2,258.33 HR	45.49				102,736	102,736
9100000	Subsistance 5 workers	1.00	225.83 DA	500.00			112,915	102,730	112,915
M105	Foreman - General Marine	1.00	2,258.33 MH	35.72		248	112,713		141,248
M165	M-Piledriver	1.00	2,258.33 MH	34.95					156,350
M170	M-Welder	1.00	2,258.33 MH	41.05					176,256
M190	M-Skilled Laborer	1.00	2,258.33 MH	35.43					157,917
M195	M-Laborer	1.00	2,258.33 MH	35.43					157,917
OPCR100	Op Eng 1A- Crane 100-200	1.00	2,258.33 MH	39.19	0 151,4	181			151,481
\$1,850,039.24	15.0000 MH/E	A	13,549.98 MH	[609.869] 941,1	170	128,723	780,146	1,850,039
303040	Piling - Concrete Filling		Marine	Quan: 1	00 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
MARWOO	Marine Carpenters Crew		2,258.3	3 CH P	od: 22	25.8333 S	Lab Pcs:	10.00	Eqp Pcs: 16.00
8211050	Fuel, Oil, Grease 50g/d		225.83 DA	200.00	0			45,166	45,166
8CRANEC100	Crane Manitowoc 222B 1	1.00	2,258.33 HR	106.96	1			241,553	241,553
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	2,258.33 HR	3.00	0			6,775	6,775
8MBC-Z-1	Barge Carpenter 12'X40	1.00	2,258.33 HR	6.50	0			14,679	14,679
8MBC-Z-2	Barge Carpenter 12'X40	1.00	2,258.33 HR	6.50				14,679	14,679
8MBS-Z-9	Spud Barge M-80x28'	1.00	2,258.33 HR	10.00				22,583	22,583
8MBW-Z-2	18' Aluminum Boat & O/	1.00	2,258.33 HR	3.00				6,775	6,775
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	2,258.33 HR	5.00				11,292	11,292
8MCN-A-13	Container Steel 20'	1.00	2,258.33 HR	0.10				226	226
8MFW-A-1 8MFW-A-2	Work Float Work Float	1.00	2,258.33 HR 2,258.33 HR	2.00 2.00				4,517 4,517	4,517 4,517
8MGN-Z-17	Generator 8 KW	1.00	2,258.33 HR 2,258.33 HR	2.00				4,517	4,517
8MGN-Z-17	Generator 8 KW	1.00	2,258.33 HR 2,258.33 HR	2.00				4,517	4,517
8MLT-A-2	Light Tower, Genie	1.00	2,258.33 HR	3.50				7,904	7,904
8MVP-A-2	FORD F150 SUPERC 2	1.00	2,258.33 HR	6.50				14,679	14,679
8WELD400	Welder 400 AMP	2.00	4,516.67 HR	2.04				9,232	9,232
M100	Foreman - Carpenter	1.00	2,258.33 MH	34.72		985			137,985
M170	M-Welder	1.00	2,258.33 MH	41.05	0 176,2	256			176,256
M173	M-Lead Carpenter	1.00	2,258.33 MH	35.49	0 158,1	113			158,113
M175	M-Carpenter	3.00	6,775.00 MH	35.49		338			474,338
M180	M-Carpenter Helper	3.00	6,775.00 MH	35.49					474,338
OPCR100	Op Eng 1A- Crane 100-200		2,258.33 MH	39.19					151,481
\$1,986,122.33	22,583.3200 MH/LS	S	22,583.32 MH	[902720.78] 1,572,5	512		413,610	1,986,122
303042	Concrete Supply		Marine	Quan: 25,691.	00 CY	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
2CR14	5000 PSI Concrete	1.10	28,260.10 CY	105.00	0	2,967,311			2,967,311
303043	Concrete Pumping		Marine	Quan: 1.	00 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
30 days x 8 5 5CONCP36M	hours= 240 hours Concrete Concrete Pump 36		1,129.17 HR	125.00	0		141,146		141,146
303045	Piling - Rebar		Marine	Quan: 3,195,541	.66 LS	Hrs/Shft:	10.00 Cal:	510 WC	: CCISP
200*16= 3200 2RR02 2RR10 2RS16 5REBAR	Gr 60 Rebar Rebar Supports	3,: 16.00	3,515,095.83 LB 515,095.83 LB 14,453.33 EA 195,541.66 LB	0.48 0.05 13.00 0.28	0	1,687,246 175,755 187,893			1,687,246 175,755 187,893 894,752

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13-008-5HB POA Option 5H- Phases 2 & 3
Bob Wells Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-

Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total

BID ITEM = **50160** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Piling Concrete Wharf Area II Unit = LF Takeoff Quan: 159,348.000 Engr Quan: 159,348.000 \$2,945,645.74

304000 Pile Splices - Pipe pile Marine Quan: 903.33 EA Hrs/Shft: 10.00 Cal: 510 WC: CCISP

5SPLICES Welding Subcontractor 1,355.00 EA 650.000 880,750 880,750

====> Item Totals: 50160 - Piling Concrete Wharf Area II

BID ITEM = **50190** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Concrete Superstructure Unit = SF Takeoff Quan: 222,573.000 Engr Quan: 222,573.000

deck and trestle area: 640*60+235*30*3=59,550 sf

322005 Final Deck Product Marine Quan: 222,573.00 SF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

Images/Docs Attached

Reference from previous projects as attached; slabs and superstructures with all the fittings and ancillary structures: \$84/sf price in 2010. now escalated at 6% annually for 3 years yields \$101.00/sf

AREA 2

48 " 0 1 " Thick Steel Pipe Pile

Outside Diameter = 48 in Wall Thickness = 1.000 in

Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton)

159,348.00 1 159,348.00 502.43 80,061,215.6 40,030.6

Coating

Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF) 130.19 816 48 1,334,953.8

Pipe Qty Piles Pile Length Total Length Concrete Fill Volume Concrete (CF) Rebar (Ft)

A1 41 203 8,323.00 85.00 43,793.9 58,384

A42 95 223 21,185.00 85.00 101,473.7 135,280

B1 41 198 8,118.00 85.00 43,793.9 58,384 B42 48 213 10,224.00 85.00 51,270.9 68,352

C1 41 198 8,118.00 85.00 43,793.9 58,384

C42 48 203 9,744.00 85.00 51,270.9 68,352

D1 41 193 7,913.00 85.00 43,793.9 58,384

D42 48 198 9,504.00 85.00 51,270.9 68,352

E6A 12 208 2,496.00 85.00 12,817.7 17,088

E42 48 193 9,264.00 85.00 51,270.9 68,352

F6A 12 203 2,436.00 85.00 12,817.7 17,088

F42 48 193 9,264.00 85.00 51,270.9 68,352

F42 48 193 9,264.00 85.00 51,270.9 68,352 G6A 8 198 1,584.00 85.00 8,545.2 11,392

G42 95 203 19,285.00 85.00 101,473.7 135,280

H6A 8 193 1,544.00 85.00 8,545.2 11,392

H43A 8 198 1,584.00 85.00 8,545.2 11,392

I6A 8 188 1,504.00 85.00 8,545.2 11,392

I43 8 193 1,544.00 85.00 8,545.2 11,392

J6A 8 183 1,464.00 85.00 8,545.2 11,392

J43A 4 188 752.00 85.00 4,272.6 5,696 K6A 8 178 1,424.00 85.00 8,545.2 11,392

E31A 6 198 1,188.00

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Resource Pcs Unit Cost Labor Material Matl/Exp Ment Contract Total $BID\ ITEM = 50190$ CLIENT# = 03-12Land Item SCHEDULE: Description = Concrete Superstructure Unit = SF Takeoff Quan: 222,573.000 Engr Quan: 222,573.000 K43A 4 183 732.00 85.00 4,272.6 5,696 L6A 8 173 1,384.00 85.00 8,545.2 11,392 L43A 4 178 712.00 85.00 4,272.6 5,696 M6A 8 168 1,344.00 85.00 8,545.2 11,392 M43A 4 173 692.00 85.00 4,272.6 5,696 N6A 8 163 1,304.00 85.00 8,545.2 11,392 N43A 4 168 672.00 85.00 4,272.6 5,696 O6A 8 158.0 1,264.00 85.00 8,545.2 11,392 O43A 4 163 652.00 85.00 4,272.6 5,696 P6A 8 168 1,344.00 85.00 8,545.2 11,392 P43A 4 158 632.00 85.00 4,272.6 5,696 Q6A 8 163 1,304.00 85.00 8,545.2 11,392 O43A 4 173 692.00 85.00 4,272.6 5,696 R6A 8 158 1,264.00 85.00 8,545.2 11,392 R43A 4 168 672.00 85.00 4,272.6 5,696 S6A 8 153 1,224.00 85.00 8,545.2 11,392 S43A 4 163 652.00 85.00 4,272.6 5,696 T6A 8 148 1,184.00 85.00 8,545.2 11,392 T43A 4 158 632.00 85.00 4,272.6 5,696 U14A 6 143 858.00 85.00 6,408.9 8,544 U43A 4 153 612.00 85.00 4,272.6 5,696 V14A 6 138 828.00 85.00 6,408.9 8,544 V43A 148 296.00 85.00 2,136.3 6,408.9 W14A 6 138 828.00 85.00 8,544 W43A 2 148 296.00 85.00 2,136.3 2,848 177.2 871,605.5 816 159,348.00 cf 1,161,984 Average 195.3 32,281.7 СУ 52SUPERSTRUC Concrete Superstructure 222,573.00 SF 22,479,873 22,479,873 101.000 **====> Item Totals:** 50190 - Concrete Superstructure \$22,479,873.00 22,479,873 22,479,873 [] 222573 SF 101.000 101.00 101.00 $BID\ ITEM = 50200$ CLIENT# = 03-12SCHEDULE: Land Item 100 Description = Abutments Unit = EA Takeoff Quan: 6.000 Engr Quan: 6.000 303000 Marine Ouan: 1,058.40 FT Hrs/Shft: 10.00 Cal: 510 WC: CCISP **Supply Pipe Piles** AREA 1 48 " 0 1 " Thick Steel Pipe Pile Outside Diameter = 48 in Wall Thickness = 1.000 in Tip Elevation Top Elevation Length (ft) Quantity Total Length (ft) Unit Weight (lb/ft) Weight (lb) Weight (Ton) -100 7.54 35,280.00 1 35280 502.43 17,725,730.4 8,862.9 Coating Tip Elevation Top Elevation Length (ft) Quantity Diameter Coating(SF) -35 7.54 117.6 1 48 295,561.7 Pipe Qty Piles Pile Length Total Length A32 32 178 5,696.00 B32 32 178 5,696.00 C32 32 173 5,536.00 D32 32 173 5,536.00

POA Option 5H- Phases 2 & 3

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Activity Resource	Desc	Qu Pcs	uantity Unit		Unit Cost I	Peri Labor Materi		Equip Sub- Ment Contract	Total
BID ITEM = Description =	50200 CLIE	NT# = 03-12	2 La	and Item Unit =	SCHEDULE EA Ta	: 1 akeoff Quan:	100 6.000	Engr Quan:	6.000
-	193 1,158.00								
G31A 6	188 1,128.00								
	183 1,098.00 178 1,068.00								
	178 1,068.00								
K31A 6	173 1,038.00								
	168 1,008.00 163 978.00								
	178 1,068.00								
O31A 6	173 1,038.00								
	163 978.00								
	77.4 35,280.00 ge 176.4								
2PP48INCH	48 In Diam Pipe Pile	1,0	058.40 LF		430.000	455,11	2		455,112
303010	Pile Painting & Wrapping	<u> </u>	Marine	Quan:	1.00 LS	Hrs/Shft:	10.00 Cal:	510 WC: CCISP	
2PP48COATING	Pipe Pile Shop Coating	8,8	866.86 SF		4.000	35,46	7		35,467
303022	Set Pile Template		Marine	Quan:	1.00 LS	Hrs/Shft:	10.00 Cal:	510 WC: CCISP	
31PILETEMPLA	Pipe Pile Template		0.04 LS	60	,000.000		2,400		2,400
303035	Piling - Pipe		Marine	Quan:	6.00 EA	Hrs/Shft:	10.00 Cal:	510 WC: CCISP	
	the efficiency wil		_	_	_				
MARPIL 3WELD	Marine Piling & Demo Cre) CH	Prod: 70.000	1.5000 S	Lab Pcs:	6.00 Eqp Pcs:	
8211050	Weld Supplies (1 man-Sticl Fuel, Oil, Grease 50g/d		1.50 DA 1.50 DA		200.000		105	300	105 300
8CRANEC200	Crane Manitowoc 777 20	1.00	15.00 HR		163.361			2,450	2,450
8DRILLR	***DRILLS - ROCK***	1.00	15.00 HR		17.500			263	263
8MAC-A-10	Compressor 185 CFM	1.00	15.00 HR		3.000			45	45
8MBM-Z-2 8MBS-Z-14	M.Barge2110 GRT OB-80- Spud Barge M-120x45'	1.00	15.00 HR 15.00 HR		10.000 17.500			150 263	150 263
8MBT-Z-12	Tug Push Boat 200 HP	1.00	15.00 HR		20.000			300	300
8MBW-Z-2	18' Aluminum Boat & O/	1.00	15.00 HR		3.000			45	45
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	15.00 HR		5.000			75	75 150
8MDH-A-7 8MFD-A-1	DELMAG D19 HAMMER FAIRLEADS	1.00	15.00 HR 15.00 HR		10.000 0.100			150 2	150 2
8MGN-Z-11	Generator 10 KW	1.00	15.00 HR		3.000			45	45
8MLT-A-1	Light Tower, Genie	1.00	15.00 HR		3.500			53	53
8MPE-A-11	Extractor Pile	1.00	15.00 HR		5.000			75	75
8MVP-A-11 8MWH-A-1	FORD F150 SUPERC 10 WINCH 3-DRUM RB-90	1.00 1.00	15.00 HR 15.00 HR		6.500 10.000			98 150	98 150
8MWM-C-1	Welder Diesel 400 AMP	1.00	15.00 HR		2.500			38	38
8PILE26	Vibro Hammer 150 TN	1.00	15.00 HR		45.492			682	682
9100000	Subsistance 5 workers		1.50 DA		500.000		750		750
M105 M165	Foreman - General Marine M-Piledriver	1.00 1.00	15.00 MH 15.00 MH		35.720 34.950	938 1,039			938 1,039
M170	M-Welder	1.00	15.00 MH 15.00 MH			1,039			1,039
M190	M-Skilled Laborer	1.00	15.00 MH			1,049			1,049
M195	M-Laborer	1.00	15.00 MH			1,049			1,049
OPCR100	Op Eng 1A- Crane 100-200		15.00 MH	F /		1,006	055	5 192	1,006
\$12,288.13	15.0000 MH/E	A	90.00 MH			6,251	855	5,182	12,288
303040	Piling - Concrete Filling		Marine	Quan:	1.00 LS	Hrs/Shft:		510 WC: CCISP	4.5.00
MARWOO 8211050	Marine Carpenters Crew		15.00) CH	Prod: 200.000	1.5000 S	Lab Pcs:	10.00 Eqp Pcs: 300	16.00 300
8211050 8CRANEC100	Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	1.00	1.50 DA 15.00 HR		106.961			1,604	1,604
	1							-,	-,

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Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost	Labor	Perm Material		onstr Æxp	Equip Ment	Sub- Contract	Total	
BID ITEM =		NT# =	03-12	Land Item	SCHEDUL			00	c 000	E	0	6,000	
1	Abutments			Unit =	EA '	Takeoff	Quan:		6.000	Engr	Quan:	6.000	
8MAC-A-17	Atlas Copco 185 CFM Ai	1.00	15.00 HR		3.000					45		45	
8MBC-Z-1	Barge Carpenter 12'X40	1.00	15.00 HR		6.500					98		98	
8MBC-Z-2	Barge Carpenter 12'X40	1.00	15.00 HR		6.500					98		98	
8MBS-Z-9	Spud Barge M-80x28'	1.00	15.00 HR		10.000					150		150	
8MBW-Z-2	18' Aluminum Boat & O/	1.00	15.00 HR		3.000					45		45	
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	15.00 HR		5.000					75		75	
8MCN-A-13	Container Steel 20'	1.00	15.00 HR		0.100					2		2	
8MFW-A-1	Work Float	1.00	15.00 HR		2.000					30		30	
8MFW-A-2	Work Float	1.00 1.00	15.00 HR		2.000 2.000					30 30		30 30	
8MGN-Z-17	Generator 8 KW		15.00 HR							30		30	
8MGN-Z-18 8MLT-A-2	Generator 8 KW Light Tower, Genie	1.00 1.00	15.00 HR 15.00 HR		2.000 3.500					53		50 53	
8MVP-A-2	FORD F150 SUPERC 2	1.00	15.00 HR 15.00 HR		6.500					98		98	
8WELD400	Welder 400 AMP	2.00	30.00 HR		2.044					98 61		98 61	
M100	Foreman - Carpenter	1.00	15.00 MH		34.720	917				01		917	
M170	M-Welder	1.00	15.00 MH		41.050	1,171						1,171	
M173	M-Lead Carpenter	1.00	15.00 MH		35.490	1,050						1,050	
M175	M-Carpenter	3.00	45.00 MH		35.490	3,151						3,151	
M180	M-Carpenter Helper	3.00	45.00 MH		35.490	3,151						3,151	
OPCR100	Op Eng 1A- Crane 100-200		15.00 MH		39.190	1,006						1,006	
\$13,191.99	150.0000 MH/L		150.00 MH	[:	5995.96]	10,445				2,747		13,192	
					-		103. 0		~		~~~	<u>, </u>	
303042	Concrete Supply		Marine	Quan:	219.76 C	CY Hrs	s/Shft:	10.00	Cal: 5	510 WC:	: CCISP		
2CR14	5000 PSI Concrete	1.10	241.72 CY		105.000		25,381					25,381	
303043	Concrete Pumping		Marine	Quan:	1.00 L	C Hr	Shft.	10.00	Cal:	510 WC:	CCISP		
202012	concrete 1 umping		Marine	Quan.	1.00 1	13 III;	5/SIII.	10.00	- Cuizi i	010 110.	0 0 0 0 0 0		
	• 0		Warme	Quan.	1,00 1	265 1117	5/SIII	10.00					
	hours= 240 hours Concrete Concrete Pump 36	5	7.50 HR	Quan.	125.000	<u> </u>	5/SIII	10.00	938			938	
30 days x 8 5CONCP36M	hours= 240 hours Concrete Concrete Pump 36	5	7.50 HR		125.000				938			938	
30 days x 8	hours= 240 hours	5							938	510 WC:		938	
30 days x 8 5CONCP36M	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar	í	7.50 HR		125.000				938			938	
30 days x 8 5CONCP36M	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar		7.50 HR		125.000				938			938	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB		125.000 21,225.00 L 0.480 0.050		s/ Shft: 11,207 1,167		938			11,207 1,167	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8)		7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA		125.000 21,225.00 L 0.480 0.050 13.000		s/ Shft: 11,207	10.00	938 Cal: :			11,207 1,167 1,248	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB		125.000 21,225.00 L 0.480 0.050 13.000 0.280		11,207 1,167 1,248	10.00	938 Cal: 4			11,207 1,167 1,248 5,943	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8)	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA		125.000 21,225.00 L 0.480 0.050 13.000		s/ Shft: 11,207 1,167	10.00	938 Cal: :			11,207 1,167 1,248	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8)	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA		125.000 21,225.00 L 0.480 0.050 13.000 0.280 []	.S Hr:	11,207 1,167 1,248 13,622	10.00 5 5	938 Cal: 4		: CCISP	11,207 1,167 1,248 5,943	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB	Quan:	125.000 21,225.00 L 0.480 0.050 13.000 0.280 []	.S Hr:	11,207 1,167 1,248 13,622	10.00 5 5	938 Cal: 4	510 WC:	: CCISP	11,207 1,167 1,248 5,943	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine	Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E	.S Hr:	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 10.00 5	938 Cal: 4 ,943 ,943 Cal: 4 ,850	510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA	Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E	.S Hr:	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 10.00 5	938 Cal: 4 ,943 ,943 Cal: 4 ,850	510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA	Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E	.S Hr:	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 10.00 5	938 Cal: 4 ,943 ,943 Cal: 4 ,850	510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy	1.10	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA	Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E	.S Hr:	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 10.00 5	938 Cal: 4 ,943 ,943 Cal: 4 ,850	510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy =	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160=	1.10 16.00 ,023	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy	Quan: Quan: Quan:	125.000 21,225.00 L 0.480 0.050 13.000 0.280 [] 6.00 E	EA Hrs	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 5 110.00 5 110.00	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev	1.10 16.00 ,023 24,3	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 1bs 360.	Quan: Quan:	125.000 21,225.00 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000	EA Hrs	11,207 1,167 1,248 13,622 s/Shft:	5 5 5 10.00 5	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete	1.10 16.00 ,023 24,3 w	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY	Quan: Quan: Quan:	125.000 21,225.00 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 Prod: 105.000	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 5 5 110.00 5 110.00	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 F 105.000 0.480	EA Hrs	11,207 1,167 1,248 13,622 s/Shft:	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02 3WELD	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB 36.00 DA	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 F 105.000 0.480 70.000	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC:	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318 2,520	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02 3WELD 5REBAR	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB 36.00 DA 638,162.00 LB	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 Prod: 105.000 0.480 70.000 0.280	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC: 6.00	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318 2,520 178,685	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB 36.00 DA 638,162.00 LB 36.00 DA	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 Prod: 105.000 0.480 70.000 0.280 200.000	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC: 6.00	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318 2,520 178,685 7,200	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050 8CRANEC200	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d Crane Manitowoc 777 20	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA Cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB 36.00 DA 638,162.00 LB 36.00 DA 360.00 HR	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 Prod: 105.000 0.480 70.000 0.280 200.000 163.361	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC: 6.00	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318 2,520 178,685 7,200 58,810	
30 days x 8 5CONCP36M 303045 200*16= 3200 2RR02 2RR10 2RS16 5REBAR \$19,565.18 304000 5SPLICES 322910 size: 15.5 f 4 caps: 38*4 160 lbs/cy = MARPIL 2CR14 2RR02 3WELD 5REBAR 8211050	hours= 240 hours Concrete Concrete Pump 36 Piling - Rebar couplers Gr 60 Rebar Rebar Supports Coupler T-25 (#8) Rebar Sub Pile Splices - Pipe pile Welding Subcontractor Concrete Cap Dolphins t* 13.2 ft* 5 ft= 1 = 152 cy ==> rebar: 152*160= Marine Piling & Demo Crev 5000 PSI Concrete Gr 60 Rebar Weld Supplies (1 man-Stick Rebar Sub Fuel, Oil, Grease 50g/d	1.10 16.00 ,023 24,3 w 1.10 1.05	7.50 HR Marine 23,347.50 LB 23,347.50 LB 96.00 EA 21,225.00 LB Marine 9.00 EA cf ===> 38 cy 20 lbs 360. 250.80 CY 38,162.26 LB 36.00 DA 638,162.00 LB 36.00 DA	Quan: Quan: Quan:	125.000 L 0.480 0.050 13.000 0.280 [] 6.00 E 650.000 Prod: 105.000 0.480 70.000 0.280 200.000	EA Hrs	11,207 1,167 1,248 13,622 s/Shft: 000 S 26,334	5 5 110.00 5 Lab	938 Cal: 4 ,943 ,943 Cal: 4 ,850 Cal: 4	510 WC: 510 WC: 6.00	: CCISP	11,207 1,167 1,248 5,943 19,565 5,850 17.00 26,334 18,318 2,520 178,685 7,200	

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 50200 CLIENT# = 03-12Land Item SCHEDULE: 100 Takeoff Quan: Description = Abutments Unit =EA 6.000 Engr Quan: 6.000 8MBM-Z-2 M.Barge2110 GRT OB-80- 1.00 360.00 HR 10.000 3,600 3,600 8MBS-Z-14 Spud Barge M-120x45' 360.00 HR 17.500 6,300 6,300 8MBT-Z-12 Tug Push Boat 200 HP 1.00 360.00 HR 20.000 7,200 7,200 8MBW-Z-2 18' Aluminum Boat & O/ 360.00 HR 1.00 3.000 1,080 1,080 360.00 HR Bucket Clamshell 3 CYD 8MCE-A-40 1.00 5.000 1,800 1,800 DELMAG D19 HAMMER 1.00 360.00 HR 8MDH-A-7 10.000 3,600 3,600 8MFD-A-1 **FAIRLEADS** 1.00 360.00 HR 0.100 36 36 Generator 10 KW 360.00 HR 8MGN-Z-11 1.00 3.000 1,080 1,080 Light Tower, Genie 360.00 HR 8MLT-A-1 1.00 3.500 1,260 1,260 360.00 HR 8MPE-A-11 Extractor Pile 1.00 5.000 1,800 1,800 8MVP-A-11 FORD F150 SUPERC 10 1.00 360.00 HR 6.500 2,340 2,340 WINCH 3-DRUM RB-90 360.00 HR 8MWH-A-1 1.00 10.000 3,600 3,600 8MWM-C-1 Welder Diesel 400 AMP 1.00 360.00 HR 2.500 900 900 8PILE26 Vibro Hammer 150 TN 1.00 360.00 HR 45.492 16,377 16,377 9100000 Subsistance 5 workers 36.00 DA 500.000 18,000 18,000 M105 Foreman - General Marine 1.00 360.00 MH 35.720 22,516 22,516 M-Piledriver 360.00 MH 24,924 1.00 34.950 24,924 M165 M170 M-Welder 1.00 360.00 MH 41.050 28.097 28.097 M190 M-Skilled Laborer 1.00 360.00 MH 35.430 25,173 25,173 M195 M-Laborer 1.00 360.00 MH 35.430 25,173 25,173 360.00 MH OPCR100 Op Eng 1A- Crane 100-200 1.00 39.190 24,148 24,148 \$518,252.06 360.0000 MH/EA 2,160.00 MH [14636.82] 150,032 518,252 44,652 199,205 124.363 ====> Item Totals: 50200 - Abutments \$1,088,444.90 2,400.00 MH [16246.018] 1,088,445 400.0000 MH/EA 166,728 574,234 215,191 132,292 181,407.483 27,787.98 95,705.68 35,865.14 22,048.68 181,407.48 6 EA

BID ITEM = **50210** CLIENT# = 03-20 Land Item SCHEDULE: 1 100

Description = 100-gage Crain Rail and suptg foundation Unit = LF Takeoff Quan: 1,900.000 Engr Quan: 1,900.000

Images/Docs Attached

Steel Railing grantry cranes

387000

20,000	Steel Italian & Stanta J Crames		Quant. 1900000 21	1115/511100 1000 Car C10 1	
cost per	Rail Installation 340 N linear feet: \$572/m*/3.2	28ft/m= \$174\ft	00		
	n for 3 years at 6%= \$20 AIL Crane Rail Installation	1,900.00 FT	207.700	394,630	394,630
====> It e \$394,630.00	em Totals: 50210 - 10	00-gage Crain Rail and supt	tg foundation	394,630	394,630

Ouan: 1,900.00 LF Hrs/Shft: 10.00 Cal: 510 WC: CCISP

207.700 1900 LF 207.70 207.70

BID ITEM = **50220** CLIENT# = 03-12 Land Item SCHEDULE: 1 100

Description = Fendering Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000

Images/Docs Attached

620010	Fendering and bollard System	Marine	Quan:	1.00 LS	Hrs/Shft:	10.00	Cal: 510	WC: CCISP	
- /-	2 1 1								
Images/Docs	Attached								
2BOLLARD	Bollards	1.00 LS	68,079.	000	68,07	9			68,079
2FENDER	Fender system	1.00 LS	3,486,015	.000	3,486,01	5			3,486,015

Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total 50220 CLIENT# = 03-12Land Item SCHEDULE: 100 BID ITEM Fendering Unit = LS Takeoff Quan: 1.000 Engr Quan: 1.000 Description = \$3,554,094.00 3,554,094 3,554,094 [] 620020 **Install Fenders and Bollards** Marine Quan: 1.00 LS Hrs/Shft: 10.00 Cal: 510 WC: CCISP **MARPIL** Marine Piling & Demo Crew 150.00 CH 15.0000 S Lab Pcs: 17.00 **Prod:** 6.00 Eqp Pcs: 3WELD Weld Supplies (1 man-Stick 15.00 DA 70.000 1,050 1,050 Fuel, Oil, Grease 50g/d 15.00 DA 200.000 8211050 3,000 3,000 8CRANEC200 Crane Manitowoc 777 20 1.00 150.00 HR 163.361 24,504 24,504 8DRILLR ***DRILLS - ROCK*** 1.00 150.00 HR 17.500 2,625 2,625 8MAC-A-10 Compressor 185 CFM 1.00 150.00 HR 3.000 450 450 8MBM-Z-2 M.Barge2110 GRT OB-80- 1.00 150.00 HR 10.000 1,500 1,500 8MBS-Z-14 Spud Barge M-120x45' 1.00 150.00 HR 17.500 2,625 2,625 8MBT-Z-12 Tug Push Boat 200 HP 20.000 3,000 1.00 150.00 HR 3,000 8MBW-Z-218' Aluminum Boat & O/ 1.00 150.00 HR 3.000 450 450 8MCE-A-40 Bucket Clamshell 3 CYD 1.00 150.00 HR 5.000 750 750 8MDH-A-7 DELMAG D19 HAMMER 150.00 HR 10.000 1.00 1.500 1,500 150.00 HR 8MFD-A-1 **FAIRLEADS** 1.00 0.100 15 15 8MGN-Z-11 Generator 10 KW 1.00 150.00 HR 3.000 450 450 150.00 HR 8MLT-A-1 Light Tower, Genie 1.00 3.500 525 525 150.00 HR 8MPE-A-11 Extractor Pile 1.00 5.000 750 750 FORD F150 SUPERC 10 8MVP-A-11 1.00 150.00 HR 6.500 975 975 8MWH-A-1 WINCH 3-DRUM RB-90 1.00 150.00 HR 10.000 1,500 1,500 Welder Diesel 400 AMP 150.00 HR 8MWM-C-1 1.00 2.500 375 375 8PILE26 Vibro Hammer 150 TN 1.00 150.00 HR 45.492 6,824 6,824 9100000 Subsistance 5 workers 15.00 DA 500.000 7,500 7,500 M105 Foreman - General Marine 1.00 150.00 MH 35.720 9,382 9,382 M165 M-Piledriver 1.00 150.00 MH 34.950 10,385 10,385 M-Welder 1.00 41.050 11,707 11,707 M170 150.00 MH M190 M-Skilled Laborer 1.00 150.00 MH 35.430 10,489 10,489 M195 1.00 150.00 MH 35.430 10,489 10,489 M-Laborer Op Eng 1A- Crane 100-200 1.00 OPCR100 150.00 MH 39.190 10,062 10,062 \$122,881.18 900.0000 MH/LS 900.00 MH [36592.05] 62,513 8.550 51.818 122,881 50220 ====> Item Totals: - Fendering 3,676,975 \$3,676,975.18 900.0000 MH/LS 900.00 MH [36592.05] 62,513 3,554,094 8,550 51,818 62,513.23 3,554,094.00 3,676,975.180 1 LS 8,550.00 51,817.95 3,676,975.18 BID ITEM = 50221 Land Item SCHEDULE: 100 Takeoff Quan: 1.000 1.000 Description = Mooring Dolphin Unit = EA Engr Quan: 303000 **Supply Pipe Piles** 44.00 FT Hrs/Shft: 8.00 WC: NONE Marine Quan: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 2PP48INCH 18,920 48 In Diam Pipe Pile 44.00 LF 430.000 18,920 303010 Pile Painting & Wrapping Marine Quan: 0.03 LS Hrs/Shft: 8.00 WC: NONE ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 2PP48COATING Pipe Pile Shop Coating 8,866.85 SF 4.000 35,467 35,467 303022 **Set Pile Template** Marine Quan: 0.03 LS Hrs/Shft: 8.00 WC: NONE ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 31PILETEMPLA Pipe Pile Template 0.03 LS 60,000.000 1,800 1,800

Activity Resource	Desc	Pcs	Quantity Unit		Unit Cost I	Peri Labor Materia		Equip Ment	Sub- Contract	Total
BID ITEM = Description =	50221 Mooring Dolphin		Ī	Land Item Unit =	SCHEDULE: EA Ta	: 1 akeoff Quan:	1.000	Engr (Quan:	1.000
303035	Piling - Pipe		Marine	Quan:	0.25 EA	Hrs/Shft:	8.00	WC:	NONE	
	d and adjusted from N									
<u>MARPIL</u> 3WELD	Marine Piling & Demo Crev Weld Supplies (1 man-Stick		0.06 DA	62 CH	Prod: 70.000	0.0781 S	Lab Pcs:	6.00	Eqp Pcs:	17.00 4
8211050	Fuel, Oil, Grease 50g/d		0.06 DA 0.06 DA		200.000		4	12		12
8CRANEC200	Crane Manitowoc 777 20	1.00	0.63 HR		163.361			103		103
8DRILLR	***DRILLS - ROCK***	1.00	0.63 HR		17.500			11		11
8MAC-A-10	Compressor 185 CFM	1.00	0.63 HR		3.000			2		2
8MBM-Z-2	M.Barge2110 GRT OB-80-	1.00	0.63 HR		10.000			6		6
8MBS-Z-14	Spud Barge M-120x45'	1.00	0.63 HR		17.500			11		11
8MBT-Z-12	Tug Push Boat 200 HP	1.00	0.63 HR		20.000			13		13
8MBW-Z-2	18' Aluminum Boat & O/	1.00	0.63 HR		3.000			2		2
8MCE-A-40	Bucket Clamshell 3 CYD	1.00	0.63 HR		5.000			3		3
8MDH-A-7 8MFD-A-1	DELMAG D19 HAMMER FAIRLEADS	1.00 1.00	0.63 HR 0.63 HR		10.000 0.100			6		6
8MGN-Z-11	Generator 10 KW	1.00	0.63 HR		3.000			2		2
8MLT-A-1	Light Tower, Genie	1.00	0.63 HR		3.500			2		2
8MPE-A-11	Extractor Pile	1.00	0.63 HR		5.000			3		3
8MVP-A-11	FORD F150 SUPERC 10	1.00	0.63 HR		6.500			4		4
8MWH-A-1	WINCH 3-DRUM RB-90	1.00	0.63 HR		10.000			6		6
8MWM-C-1	Welder Diesel 400 AMP	1.00	0.63 HR		2.500			2		2
8PILE26	Vibro Hammer 150 TN	1.00	0.63 HR		45.492			29		29
9100000	Subsistance 5 workers		0.06 DA		500.000		30			30
M105	Foreman - General Marine	1.00	0.63 MH		35.720	36				36
M165	M-Piledriver	1.00	0.63 MH		34.950	40				40
M170	M-Welder	1.00	0.63 MH		41.050	45				45
M190	M-Skilled Laborer	1.00 1.00	0.63 MH		35.430	40 40				40
M195 OPCR100	M-Laborer Op Eng 1A- Crane 100-200		0.63 MH 0.63 MH		35.430 39.190	39				40 39
\$491.16	15.1200 MH/E		3.78 MH]	558.84]	240	34	217		491
303040	Piling - Concrete Filling		Marine	Quan:	0.25 LS	Hrs/Shft:	8.00	wc.	NONE	
	I ming Concrete I ming			Zumii.	0.20 20					
	aaaa 3	\ mp.a		000 5113	1 ++++			,, ,,		
_	d and adjusted from N	ζ:∖TBG	-ENGI\EST\13-			1 8750 S			Fan Pes	16.00
MARWOO	Marine Carpenters Crew	ζ∶∖TBG	-ENGI\EST\13-	00 CH	Prod:	1.8750 S	Lab Pcs:	10.00	Eqp Pcs:	16.00 300
_			-ENGI\EST\13- 15. 1.50 DA	00 CH	-	1.8750 S		10.00	Eqp Pcs:	300
MARWOO 8211050	Marine Carpenters Crew Fuel, Oil, Grease 50g/d	Y:\TBG 1.00 1.00	-ENGI\EST\13-	00 CH	Prod: 200.000	1.8750 S		10.00	Eqp Pcs:	
MARWOO 8211050 8CRANEC100	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1	1.00	-ENGI\EST\13- 15. 1.50 DA 15.00 HR	00 CH	Prod: 200.000 106.961	1.8750 S		10.00 300 1,604	Eqp Pcs:	300 1,604
MARWOO 8211050 8CRANEC100 8MAC-A-17	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai	1.00 1.00	-ENGI\EST\13- 15. 1.50 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000	1.8750 S		10.00 300 1,604 45	Eqp Pcs:	300 1,604 45
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28'	1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000	1.8750 S		10.00 300 1,604 45 98 98 150	Eqp Pcs:	300 1,604 45 98 98 150
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/	1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000	1.8750 S		10.00 300 1,604 45 98 98 150 45	Eqp Pcs:	300 1,604 45 98 98 150 45
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD	1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75	Eqp Pcs:	300 1,604 45 98 98 150 45 75
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20'	1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.00 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.00 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.00 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30 30	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.00 DA 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30 30	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Light Tower, Genie	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500	1.8750 S		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13 15.00 HR 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500	1.8750 S 831		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WVP-A-2	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720			10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98 61
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13-15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490	831 1,069 962		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98 61 831 1,069 962
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173 M175	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter M-Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13- 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490	831 1,069 962 2,887		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98 61 831 1,069 962 2,887
MARWOO 8211050 8CRANEC100 8MAC-A-17 8MBC-Z-1 8MBC-Z-2 8MBS-Z-9 8MBW-Z-2 8MCE-A-40 8MCN-A-13 8MFW-A-1 8MFW-A-2 8MGN-Z-17 8MGN-Z-18 8MLT-A-2 8MVP-A-2 8WVP-A-2 8WELD400 M100 M170 M173	Marine Carpenters Crew Fuel, Oil, Grease 50g/d Crane Manitowoc 222B 1 Atlas Copco 185 CFM Ai Barge Carpenter 12'X40 Barge Carpenter 12'X40 Spud Barge M-80x28' 18' Aluminum Boat & O/ Bucket Clamshell 3 CYD Container Steel 20' Work Float Work Float Generator 8 KW Generator 8 KW Light Tower, Genie FORD F150 SUPERC 2 Welder 400 AMP Foreman - Carpenter M-Welder M-Lead Carpenter	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	-ENGI\EST\13-15.0 DA 15.00 HR	00 CH	Prod: 200.000 106.961 3.000 6.500 6.500 10.000 3.000 5.000 0.100 2.000 2.000 2.000 2.000 3.500 6.500 2.044 34.720 41.050 35.490	831 1,069 962		10.00 300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98	Eqp Pcs:	300 1,604 45 98 98 150 45 75 2 30 30 30 30 53 98 61 831 1,069 962

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Direct Cost Report

Activity Desc Quantity Unit Perm Constr Equip Sub-Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract Total BID ITEM = 50221 Land Item SCHEDULE: 100 Mooring Dolphin Unit = Takeoff Quan: 1.000 Engr Quan: 1.000 Description = EΑ \$12,304.23 600.0000 MH/LS 150.00 MH [21803.4] 9,557 2,747 12,304 303042 **Concrete Supply** Marine 9.16 CY Hrs/Shft: WC: NONE ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 5000 PSI Concrete 1,058 2CR14 1.10 10.08 CY 105.000 1,058 303043 **Concrete Pumping** WC: NONE Marine Quan: 1.00 LS Hrs/Shft: ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 5CONCP36M 30.00 HR 125.000 3,750 3,750 Concrete Concrete Pump 36 303045 Piling - Rebar Quan: 21,225.00 LS Hrs/Shft: WC: NONE Marine ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** Gr 60 Rebar 11,207 11,207 2RR02 1.10 23,347.50 LB 0.480 Rebar Supports 2RR10 23.347.50 LB 0.050 1,167 1.167 2RS16 Coupler T-25 (#8) 96.00 EA 1,248 1,248 16.00 13.000 5REBAR Rebar Sub 21,225.00 LB 0.280 5,943 5,943 19,565 \$19,565.18 [] 13,622 5,943 304000 Pile Splices - Pipe pile Marine Quan: 1.00 EA Hrs/Shft: 8.00 WC: NONE ***** Copied and adjusted from Y:\TBG-ENGI\EST\13-008-5HA-1 ***** 975 Welding Subcontractor 1.50 EA 650,000 975 5SPLICES 630020 Gangway 1.00 LS Hrs/Shft: 8.00 WC: NONE Quan: 4SUB Subcontract 1.00 LS 35,000.000 35,000 35,000 **====> Item Totals:** 50221 - Mooring Dolphin 35,000 129,331 \$129,331.37 153.7800 MH/EA 12,502 153.78 MH [5590.56] 9,797 69,068 2.964 2,964.20 35,000.00 129,331.37 129,331.370 9,796.99 69,067.98 12,502.20 1 EA \$114,931,241.88 *** Report Totals *** 46,773.75 MH 3,249,198 83,075,055 26,466,667 2,105,321 35,000 114,931,242

>>> indicates Non Additive Activity

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

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

Bid Date: Owner: Engineering Firm:

Estimator-In-Charge:

JOB NOTES

Estimate created on: 03/12/2008 by User#: 0 -

Source used: C:\HEAVYBID\BIANK\BLANK.zip (a backup) from 04/20/2006 4:40:12 PM

*************Estimate created on: 03/20/2008 by User#: 0 -

Source used: R:\CURRENT DEVELOPMENT\HEAVYBID\INSTALLS\CURRENT INSTALL SOURCE\BACKUPS\BLANK.zip (a backup) from 03/18/2008 11:43:18 AM

Source used: C:\HEAVYBID\BACKUPS\BLANK.zip (a backup) from 03/20/2008 8:40:26 AM

************Estimate created on: 01/24/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\ESTMAST

CH2MHILL 13-008-5HB

Activity

POA Option 5H- Phases 2 & 3

Direct Cost Report

Unit

Perm

Constr

Equip

Sub-

Page 18 02/27/2013 23:38

Total

Bob Wells

Unit Resource Pcs Cost Labor Material Matl/Exp Ment Contract

BID ITEM = 50221Land Item SCHEDULE: 100

Quantity

Description = Mooring Dolphin Unit = EA Takeoff Quan: 1.000 Engr Quan: 1.000

********Estimate created on: 02/07/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\13-008

Desc

*************Estimate created on: 02/07/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\13-008-1

*******Estimate created on: 02/07/2013 by User#: 609 - Bob Wells

Source estimate used: Y:\TBG-ENGI\EST\13-008-5

**********Estimate created on: 02/25/2013 by User#: 657 - Jorge Abisambra

Source estimate used: $Y:\TBG-ENGI\setminus EST\setminus 13-008-5H$

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

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

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

⁵¹⁰ 5 days @ 10hrs/day