AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES	
R	1	30

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0003	24-Jul-2003	W22W9K-3090-8448	

6. ISSUED BY CODE DACW27

USA ENGINEER DISTRICT, LOUISVILLE
ATTN: CELRL-CT
600 DR. MARTIN LUTHER KING PLACE
ROOM 821
LOUISVILLE KY 40202

7. ADMINISTERED BY (If other than item 6) CODE

See Item 6

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

X	9A. AMENDMENT OF SOLICITATION NO. DACW27-03-R-0003
X	9B. DATED (SEE ITEM 11) 05-May-2003
	10A. MOD. OF CONTRACT/ORDER NO.
	10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

Solicitation DACW27-03-R-0003, Construction of the Dam, Olmsted, Illinois is amended as follows:

a. The hour and date specified for receipt of offer is extended. Proposals are due on October 1, 2003 at 4:00 local time.

b. Replace the following sections in their entirety: 00115, 00130, 00800, 00810, 01320, 01525, 02464 and 03800.

c. Drawings F-50, F-51, F-53 and F-54 have been revised as indicated herein.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 24-Jul-2003

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION 00010 - SOLICITATION CONTRACT FORM

The following have been modified:
SPECIAL INSTRUCTIONS

This is a Cost Reimbursable Award Fee Type Contract. The award fee pool is the total of the available award fee dollars for each evaluation period for the life on the contract. The base fee amount is not earned and will be fixed at 3% of the estimated cost of the contract exclusive of the fee. The award fee amount is earned and the maximum award fee available is 14% (including the 3% base fee). The award fee will be evaluated in accordance with the Award Fee Plan (See Section 0810). The award fee amount and the award fee determination and the methodology for determining the award fee are unilateral decisions made solely at the discretion of the Government and are not subject to the Disputes clause.

The selected Contractor will not be reimbursed for proposal preparation costs.

Stipends – The Government will offer a stipend in the amount of $250,000 to each of the top four (4) satisfactory technical and reasonable cost proposals in accordance with Section 00115 –Procedures for Submittal of Offers and Section 00130 – Proposal evaluation Criteria. Proposals considered unsatisfactory will not receive a stipend. Proposals deemed to be non-responsive will be excluded from the stipend. The Government procures all ideas in the satisfactory proposal. Stipends are not to be paid to compensate contractors for proposal preparation costs. The contract awardee will not receive the stipend and no more than four (4) offers will receive stipends.

Accounting System - The contractor will be required to have an accounting system adequate for determining costs applicable to the contract in accordance with FAR 16.301. Government surveillance during performance will provide reasonable assurance that efficient methods and effective cost controls are used (See Section 00115). If the contractor proposes a cost reimbursable subcontract, the subcontractor will also be required to have an accounting system adequate for determining costs applicable to the contract.

Bonds – The requirement for Performance and Payment Bonds is waived for cost reimbursement contracts under DFAR 228.102. However, for cost type contracts with fixed price construction subcontracts, the prime contractor is required to obtain Performance and Payment Bonds. FAR Clauses 52.228-2, 52.228-11, 52.228-12 and 52.228-14 are applicable to fixed price subcontractors only. Payment Bonds are required as follows:

52.228-15 Payment Bonds- Construction (Modified)

As prescribed in 28.102-3(a), insert a clause substantially as follows:

Payment Bonds-Construction (July 2000)

(a) Definitions. As used in this clause-
"Original contract price" means the award price of the contract. Original contract price does not include the price of any options, except those options exercised at the time of contract award.
(b) Amount of required bonds. Unless the resulting contract price is $100,000 or less, the successful offeror shall furnish payment bonds to the Contracting Officer as follows:

(1) **Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be two percent of the original contract price**.

(2) Additional bond protection. (i) The Government may require payment bond protection if the contract price is increased. The increase in protection generally will equal two percent of the increase in contract price.
(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the:

U.S. Department of Treasury
Financial Management Service
Surety Bond Branch
401 14th Street, NW, 2nd Floor, West Wing
Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

*****NOTE***** All subcontracts for service and supply contracts shall be fixed price unless the subcontract is for river activities associated with constructing the dam. Cost reimbursable subcontractors are required to have an accounting system adequate for determining costs applicable to the contract in accordance with FAR 16.301. The prime contractor will require performance and payment bonds on fixed price construction subcontracts. Fixed priced subcontracts in excess of $1,000,000 will require to submit performance and payment bonds and the cost of the bonds will be passed through to the Government as part of the total contract price.

SECTION 00100 - BIDDING SCHEDULE/INSTRUCTIONS TO BIDDERS

The following have been modified:
SECTION 115

SECTION 00115

PROCEDURES FOR SUBMITTAL OF OFFERS

1. GENERAL REQUIREMENTS.

1.1. The intent of this solicitation is to select one contractor for the construction of the dam for the Olmsted Locks and Dam Project on the Ohio River near Olmsted, Illinois.

1.2. Offerors submitting proposals for this project should limit submissions to data essential for evaluation of proposals so that a minimum of time and monies will have been expended in preparing information required herein. However, in order to be effectively and equitably evaluated, the proposals must include information sufficiently detailed to clearly describe the offeror's experience, technical approach and management capabilities to successfully complete the project. Proposals should follow in the order of sequence set forth in the RFP. Information provided out of sequence may not be evaluated and may result in the offerors disqualification from award. Requirements stated in this RFP are minimums. The solicitation contain the design requirements for the completed Olmsted Dam. In general, the method of construction and equipment as defined in the "F" series drawings is conceptual in nature to demonstrate one way of constructing the designed Dam. Hydraulic and navigation modeling and environmental studies have been completed to support in-the-wet construction of the dam as designed in these documents in conjunction with work previously completed or planned for the Olmsted site. (Note: Phased cofferdam construction is not supported by these models and studies.) If the offeror chooses to propose alternate methods of construction, or equipment, they shall be clearly detailed in the proposal. Advantages/disadvantages and increased/decreased risk as compared to the construction methods outlined in the solicitation must be identified in Section III Technical Approach. If the offeror chooses to use the construction methods outlined in the solicitation , it should be clearly stated in the proposal. Any deviations from the construction requirements should be clearly noted and justified in the proposal. In addition any assumptions that the offeror makes shall be noted in the proposal.

1.3. Offerors shall submit their proposals to the US Army Corps of Engineers, 600 Dr. Martin Luther King, Jr. Place, Room 821, Louisville, KY 40202-2230 no later than the time and date specified in Block 13 of Standard Form 1442.

1.4. Offerors are required to submit a proposal made up of a Technical Proposal and a Price Proposal. All proposal materials shall be submitted in binders with a table of contents and tabbed section dividers. The sections should parallel the submission requirements identified below. Sections I, II, III, IV and V shall be submitted in original and 7 copies Sections VI, VII and VIII shall be submitted in original only and shall be placed in a separate envelope. There is a limit of 250 pages (excluding dividers) using a minimum font size of 11 and a minimum margin size of one half inch on all sides. If both sides of the pages are used, it will be counted as two (2) pages. A small type may be used on charts, graphs, figures, diagrams and schematics to accommodate a "make it fit" software capability, however, all text must be legible and easy to read. The schedule may be printed on a larger sheet (maximum size 36"x 48") and included in a pocket in the binder. Format restrictions will be adhered to and enforced. Information submitted which exceeds the specified limit may not be evaluated.

2. PROPOSAL SECTIONS

This solicitation requires no submission of formal drawings. However, offerors may submit drawings or sketches to demonstrate any required information. (Drawings are excluded from the 250 page limit.)

2.1 Section I. Experience

A. Prime Contractor and Subcontractor Experience.

For the following items provide descriptions of projects which are similar to this project in size and scope and dollar value. If the work is not being self-performed, also provide the same information for the proposed subcontractor in the respective area. Indicate which, if any, subcontracts will be cost reimbursable and provide documentation that the subcontractor meets the cost accounting requirements. Formats for Prime Contractor and Subcontractor Experience are included for your use. Use as many forms as necessary to meet the criteria. If you elect not to use the formats, all information identified on the formats is still required for evaluation of this item. Extra consideration may be given for subcontractors who have prior experience with and can demonstrate team continuity with the prime contractor. Work must have been self-performed to qualify as experience.

1. Construction and overall management of major marine facilities
2. Placing Large Precast Concrete Elements In-the-Wet

3. Fabrication of Large Precast Elements
4. Underwater inspection and Quality Control
5. Underwater pile installation
6. Dredging, Screeding, and Underwater Placement of Scour Stone Protection
7. Underwater vibrocompaction/Ground Improvement
8. Fabrication of Large Structural Steel Assemblies (tainter/wicket gates)
9. Operation and Maintenance of large concrete batch plant facilities
10. Placing Tremie and Structural Concrete and Reinforcement

B. Individual Personnel Experience.

Provide resumes for key personnel including:

1. Project Manager
2. Project Engineer(s)
3. Project Superintendent
4. Diving Superintendent
5. All CQC Personnel including Quality Control Manager
6. Project Safety Specialist
7. Superintendents for all major subcontractors
8. On-site Purchase Agent/Procurement Manager
9. Project Controls
10. Cost Engineer

NOTE: The identified personnel must be used on the project. Any substitution of these persons will not be permitted without prior approval of the Contracting Officer. Indicate if the experience of the key personnel includes work on Cost Reimbursable Contracts and indicate the position(s) held. A format for Personnel Resume is included for your use. If you elect not to use the format, all information identified on it is still required for evaluation of this item. Identification of two individuals proposed for a single position will result in the evaluation of only the least qualified person.

2.2 Section II. Management

A. Operational Management Plan

Management Information System (MIS). MIS requirement are specified in Section 00800, paragraph 1.85, of this solicitation. Offeror shall submit the following;

1. Program Management/Project Management.
   a. The offeror's experience in operating the Management Information System.
   b. Describe plans for providing the Corps with electronic access to MIS data.
   c. Describe how the estimate provided as a proposal, if accepted for award, will track actual cost to estimated cost . Describe MIS system lag times, success of managers to project estimates to complete.
   d. Include how long contractor has used these systems and any actual experience on previous cost reimbursable contracts.

2. Cost Control.
   a. Achievement of Cost. Explain how you achieve cost control and best value on purchases of materials, supplies, equipment and subcontracted work.
   b. Describe how cost control, including tracking subcontractor costs, is achieved.

c. Name of software, type and hardware compatibility. Name of the company that produces the software.
d. Measurement/Monitoring Productivity. Describe methods used for measuring and monitoring productivity and present your evaluation of the effectiveness of your methods and the supporting documentation
e. Describe how forecasting will be done.

B. Acquisition Management Plan

1. Procurement. Discuss your procurement system and procedures for acquisition and control of equipment, supplies, material, and labor resources. Assure that equipment; supplies material and personnel will be available when they are required. Describe your procurement system and procedures for acquisition of subcontractors. Discuss how competition and best value will be achieved. Discuss if your purchasing system is approved by the Government, if so, by which agency and contract.

2. Government Property Control – Describe your procedures for identification, tracking and control of Government property. Plan shall contain applicable parts of FAR Subpart 45.5 "Management of Government Property in the Possession of Contractors". Do not submit the actual plan at this time. Only a general description and the of tracking system is required at this time. Note after award this procedure will be negotiated and become a Contract Management Procedure (CMP).

C. Management Plan.

Provide a management and execution plan for the project that describes how your labor, resources, designers, and specialists, including subcontractors and material suppliers, will be coordinated and used to ensure successful completion of the project. Describe how you will manage, supervise and coordinate the subcontractors work. Plan shall include who in the organization will be responsible for this management and coordination. In addition, include how you will control and manage the test out of the equipment particularly, the mechanical, electrical, and controls systems. Discussion of the management of the MIS, cost and schedule control, reporting and change management shall be included. On-site personnel and equipment must be clearly distinguished from resources that are available but not present at the site.

Provide an organizational chart for this project showing home office support, on-site management and the responsible chain of command. Include names of assigned personnel and all subcontractors and their areas of responsibility. Joint venture offerers must show the respective areas of responsibility for each partner. Clearly delineate on-site from off-site personnel. Quality Control and Safety should be included in the chart. Also include in the organization chart all anticipated field office positions necessary to complete the project.

D. Labor Plan

Present a narrative showing how the personnel will be committed to this job. Discuss the staffing plan to accommodate normal fluctuating workloads in order to maintain an experienced work force during periods of work buildup and decline. Include information that demonstrates the Contractors knowledge in the local labor market. If the contractor is working multiple shifts the plan shall address how these shifts will be staffed. Included how many people will be relocated to the area and/or if you plan to hire locally.

2.3 Section III. Technical Approach

NOTE – As part of the discussion in each of the following sub-paragraphs, the offeror shall indicate their intent to use or not use the means outlined in the "F" Series Drawings.

A. Method of Transport, Positioning and Set-Down of Precast Elements
Provide a detailed plan describing the equipment and methodology for transport, lifting, controlled positioning and lowering of each of the types of precast concrete dam segments to ensure proper positioning on the foundation in variable river conditions.

B. Method of Maintaining Riverbed Stability
   a. Provide a detailed plan for methods and proposed equipment that will be used to prevent scour of the riverbed and damage to the dam foundation during construction.
   b. Provide a detailed plan (including proposed equipment) for sequence and methods that will be used to place the permanent scour protection.

C. Method of Fabrication and Installation of Dam Foundation Piles
   (a) Provide a plan for obtaining and fabricating the piling required for the dam foundation. This shall include:
      1) Tainter Gate Pipe Piles
      2) Navigable Pass Pipe Piles
      3) Boat Abutment Pipe Piles
      4) Isolation Joint Pipe Piles
      5) Cutoff wall Master and sheet piles

   (b) Provide a detailed plan for installation of the piles listed above in (a). Include templates, guides, pile hammers, methods for controlling the location and elevation of the piles, and methods for removal of misplaced piles.

D. Location and Method of Precast Element Construction.

(a). Provide the location of the facility that will be used to construct the precast concrete elements required for this project. Indicate if the precast elements will be fabricated by the prime contractor, a subcontractor, or a manufacturer. If an offsite facility will be used, indicate if this is an undeveloped site acquired for this project only or if this is a developed pre-existing facility. If it is a developed pre-existing facility, indicate what additional development is required for this project. Provide all applicable licenses, environmental permits, and proof of compliance with zoning requirements or the contractors plan and schedule for obtaining these permits.

(b). Provide detailed plans and descriptions of the Casting Facility site, including site development requirements. Describe and show locations of equipment and facilities to support the dam segment fabrication.

(c). Provide a detailed plan describing the construction methods that will be used for the precast elements.

(d). Submit a detailed plan for loadout of the precast segments.

E. Method of River Bottom Grading and Screeding

Provide a plan describing the proposed equipment and methods for accurately grading, monitoring and screeding the river bottom to the required tolerances.

F. Method of Concrete Production, Delivery, and Placement

Provide a detailed plan describing the proposed equipment and methods for production, delivery, and placement of all concrete for this project. This includes concrete for precast units, tremie

infill, and cast in place. Describe how batch plants will be designed with (backup components) to accomplish uninterrupted placements, and methods to be used to maintain concrete temperature and slump.

G. Method of Tainter Gates Installation

Provide a detailed plan for assembly and installation of the tainter gates required for this project. Include a plan stating how the dual tainter gate cylinders will be operated with the control system. This may include responsible players and there roles in coordinating this system to assure a timely working product.

H. Schedule and Sequence of Work

(a) Network Analysis
Submit a summary network analysis (utilizing software described in section 01320; For the proposal only the offeror may use P3 version 3.1 or later.) showing how the work will be performed and completed. The Government estimates that the work can be completed in 2,200 calendar days. The offeror will propose the contract duration for completing the work. The contract duration will be agreed to with the successful offeror and will be inserted into Special Clause 1.3. The analysis must acknowledge the conditions noted in Section 00800 Special Clauses 1.6, 1.11, 1.43 and 1.62. The schedule should be sufficiently detailed to show the Contractor has a complete understanding of the project's requirements. The schedule should contain between 250 and 400 activities.

(b) Sequence of Work

Submit a brief narrative description of how major milestones will be accomplished. Include the estimated manpower levels, number of shifts, and number of workdays per week to accomplish the work in the major milestone durations. The narrative shall be such detail that's its clear to the evaluator what will be accomplished in the river, each low water season.

(c) Connection to the MIS
Submit a narrative that states how the network analysis schedule will be tied to the MIS system proposed above. Include details of how the contractor would propose to adjust future activity budgets based on similar past experience to obtain the best possible forecast of future expenditures. This may include how budgeted costs in the schedule will be compared to and or linked with the actual costs from the cost accounting system.

I. Special Equipment Plan

Provide a description of all specialized major equipment required for this project. Include the design and fabrication requirements, current location, availability, and schedule for delivery.

2.4 Section IV. Past Performance/Quality:
Provide references for all of the experience identified in 2.1 A. Reference information should include project name, location, owner's name, point of contact and telephone number. Also include any ratings, letters, awards, etc which support past performance on these projects. The Government may also use other methods to obtain past performance information such as CCASS, contacting references, etc.

2.5 Section V. Safety.

A. Provide a detailed narrative describing the contractors plan for maintaining a safe work project. Identify all hazardous activities (including diving operations) and plans for mitigation. Describe the Managements commitment to safety and chain of authority on safety related items. Describe any safety incentive plans and special training that will be used.

B. Describe the safety performance and record of the prime contractor and subcontractor(s) listed in paragraph 2.1.A within the last five years. Provide the following information:

a. Workman's Compensation Experience Modification Insurance Rating over the last five year period. Submit the Prime Contractor's Experience Modification Rate (EMR), showing evidence that the EMR was calculated by a professional rate service organization such as the National Council of Compensation Insurance.
b. Provide OSHA Inspections or statements of no inspection over the last five (5) year period. Any fatalities, foreign or domestic must be documented.

2.6 Section VI. Sub-Contracting Information (Go, No-Go)

A. Past Performance on Utilization of Small, Small Disadvantaged, and Women-Owned Small Businesses. All firms must identify your efforts to comply with Clause 52.219-8, Utilization of Small, Small Disadvantaged, and Women-Owned Small Business Concerns. If you are a large business, provide copies of subcontracting plans, both initial and final, that clearly represent your efforts to comply with FAR Clause 52.219-9, Small, Small Disadvantaged, and Women-Owned Small Business Subcontracting Plan. If you are a small business, provide details of efforts on previous projects that clearly represent your efforts to comply with FAR Clause 52.219-8 Information is to be limited to projects identified under Section II, Experience.

B. Subcontracting Plan for Large Business. Large business offerors shall submit a subcontracting plan in accordance with the above numbered FAR Clauses. To be acceptable, plans must adequately address the six required statutory elements and provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix CC, Part 2, AFARS 19.705. You may use the attached sample subcontracting plan as a starting point. Percentage goals apply to the total amount being subcontracted. The current goals for the Louisville District are 71.1% to Small Business, 10.2% to Small Disadvantaged Business. 10.6% to Women-Owned Small Business, 3.0% for Hubzone Businesses, and 3.0% to Veteran Owned Small Business.

2.7 Section VII. Pro Forma Requirements

The Offeror shall submit a completed original of Section 00600, Representations and Certifications.

The Offeror shall submit the following company policies which will be used to help the Government and selected offeror to negotiate the Advance Agreements for the following:

1. **Personnel and Company policies;**
2. **Compensation for personal services, including but not limited to allowances for off-site pay, incentive pay, hardship pay, cost of living differential and termination of defined benefits pension plans.**
3. **Travel and relocation cost;**
4. **Overtime policy (management staff);**
5. **Hourly rates, overtime & benefits for skilled trades (including escalation).**

The above shall be submitted with the proposal in appendices. The firm selected for award should be prepared to negotiate these procedures immediately after award of the contract.

The following Advance Agreements are anticipated and will be negotiated with the firm selected for award. Do not submit them with your proposal in response to this RFP.

1. **Management Information System**
2. **Government property management plan;**
3. **Training and education cost;**
4. **Cost of automatic data processing equipment;**
5. **Procurement plan and procedures;**
6. **Manpower utilization;**
7. **Work allocation document (WAD) procedures;**
8. **General and administrative cost (e.g., corporate, division, or branch allocation) attributable to the general management, supervision, and conduct of the contractor's business as a whole.**
9. **Security Plan.**
10. **Contract closeout**

11. **Claims**
12. **Change Management**
13. **Equipment Cost and procedures (ownership rates, standy by rates, rental rates and decision making process for equipment).**

As Government and contractor identify procedures that require an agreement they will be negotiated and become a part of the process.

2.8 Section VIII. Cost Proposal.

The offeror shall submit their cost proposal in a separate envelope, Standard Form 1442 and Section 00010, Price Breakdown Schedule in original only. Both of these forms are included in Section 00010 of this solicitation. Include an expenditure curve by fiscal year based on your schedule.

The price evaluation team request the offeror submit their cost following the detailed break down schedule included at the end of this section.

The Cost Proposal will consist of:

A. A signed Standard Form 1442

B. Acknowledgement of all Amendments (if any) to the solicitation

C. A completed Section 00010 (Pricing Schedule) & Estimated Cost Breakdown (see instructions for the breakdown schedule later in this Section)

D. Data on Home and Field Office Indirect Cost Rates (Prime Contractor and all Team Subcontractors):

A recent (within the last 12 months) audit performed by the company's Federal cognizant audit agency showing ALL current indirect cost rates and their application to direct labor and other direct costs OR a current Forward Pricing Rate Agreement (FPRA) from the Federal cognizant audit agency giving the same information.

If no such audit or FPRA exists or if it is older than 12 months, provide a complete breakdown of all indirect costs rates to be applied during the life of this contract showing all expenses and the calculation (the base used to calculate the percentage), and the application of all indirect to both labor and all other direct costs.

All indirect cost rates means all multipliers on labor and other direct costs including but not limited to (depending on each offeror's accounting system) fringe benefits (labor burden), overhead, and general & administrative (G&A), mark-up to subcontractors' prices, etc. Provide the information for both home office and field office as applicable. The information is required from the prime and all team subcontractors. Other direct costs include but are not limited to (depending of each offeror's accounting system) such things as copies, faxes, telephone calls, computer usage, equipment, subcontractors' costs, travel, etc. Each offeror will provide a clear and concise description of how the indirects are applied and to what costs, showing the total multiplier formula on labor and all other direct costs.

If the prime or the team subcontractors, in preparing the Cost Proposal's Estimated Cost of the contract, used indirect costs rates above or below the rates supported by the current audit (or by the FPRA or supported by the breakdown of the (un-audited) indirect cost rates), the Cost Proposal will include a thorough discussion of the rates used and if the rates have been escalated from current rates, the prime and subcontractors will provide the justification (with support such as historical data, trends, etc.) for the indirect cost rates used.

PRIME CONTRACTOR EXPERIENCE

Your firm's name _____

Name of Project/Location _____

_____

General Scope of Project _____

_____

_____

_____

Your role (prime, joint venture, subcontractor) and work your company self-performed_____

_____

_____

_____

Construction Cost:

At Award: $_____

Final Cost $_____

Reason for the cost growth:

_____

_____

Award Date: _____

Schedule Completion: _____

Actual Completion: _____

Reason for the time growth:

_____

_____

Extent and type of work you subcontracted out _____

_____

_____

Owner's Point of Contact (POC) for reference (name and company and telephone number)

_____

_____

SUBCONTRACTOR EXPERIENCE

Name of your firm _____

Project Name/Location _____

General Scope of Project _____

_____

Your role (prime, joint venture, subcontractor) and the work your firm self-performed

_____

_____

_____

Description of work subcontracted to others _____

_____

Your subcontract amount:

At Award: $_____

Final Cost $_____

Reason for the cost growth:

_____

_____

Award Date: _____

Schedule Completion: _____

Actual Completion: _____

Reason for the time growth:

_____

_____

Your performance evaluation by Owner _____

_____

Your performance evaluation by Prime _____

_____

Owner's POC for reference (name and company and telephone number)

_____

Prime contractor's POC for reference (name and company and telephone number)

_____

Past Working History/Relationship with Prime (including joint ventures and partnering experience) _____

_____

_____

PERSONNEL RESUME

Name and Title _____

Name of your firm _____

No. of years: With this firm _____ With other firms _____

Education (Degree(s)/Year/Specialization):
_____

Active Registration: No. _____ State _____ Year _____

Your Assignment on this project
_____

Your specific experience and qualifications relevant to this project. Include a POC with phone number for the two most recent projects described:

Project Name and Location: _____

General Scope of Project: _____

_____

Your Role in the Project and a Description of the Duties You Performed: _____

_____

_____

_____

Owner's POC for reference (name and phone number): _____

_____

Project Name and Location: _____

General Scope of Project: _____

_____

Your Role in the Project and a Description of the Duties You Performed: _____

_____

_____

_____

Owner's POC for reference (name and phone number): _____

SUPPLIER EXPERIENCE

Name of your firm _____

Project Name/Location _____

General Scope of Project _____

_____

Your role (prime, subcontractor, supplier) and the work/products your firm self-performed

_____

_____

_____

Description of work subcontracted to others _____

_____

Your subcontract amount:

At Award: $_____

Final Cost $_____

Reason for the cost growth:

_____

_____

Award Date: _____

Schedule Completion: _____

Actual Completion: _____

Reason for the time growth:

_____

_____

Your performance evaluation by Owner _____

_____

Your performance evaluation by Prime _____

_____

Owner's POC for reference (name and company and telephone number)

_____

Prime contractor's POC for reference (name and company and telephone number)

_____

Past Working History/Relationship with Prime (including joint ventures and partnering experience) _____

_____

_____

_____

COST BREAKDOWN SCHEDULE

The contractor shall complete the price breakdown schedule to the level of detail requested as part of the minimum Work Breakdown Structure (WBS) and submit it as a part of his proposal. See Section 00115. This schedule is not intended to be a means of making payment. The quantities are for proposal preparation purposes only and to insure consistency of offers. The price breakdown will be evaluated by the PEB as one means to evaluate cost and to insure the scope of work is understood. All costs should be included in these items and distributed as appropriate. In the event it is unclear where to put a certain cost the contractor should include it in the item that seems most applicable. The descriptions provided with the item is not intended to be complete but rather provide some general guidance to aid in submitting the cost proposal in the hope of getting consistency amongst perspective offers.

Offeror's are only required to provide to the level of detailed indicated by an asterisk in the WBS below. Further breakdown information of the cost may be provided pursuant to other levels of the WBS if the offeror chooses.

If a offeror's approach to the project changes an of the given quantities the offeror shall revise the quantities to best represent any increase or decrease to best reflect the most realistic cost of the project.

The quantities shown are the final in place estimates by the Government. They do not include miscellaneous supports, scrap, waste, etc. The offeror needs to adjust his price or revise the quantity to reflect these other cost.

Operational costs are intended to include equipment, labor and material/supply costs paid on each voucher to assure that the contractor maintains his operational capabilities. It is not intended to include additional personnel necessary to operate plant/equipment during actual production, but only the minimum personnel required on site at all times to assure that the plant/equipment remain full operational.

	WBS - Feature/Subfeature	Special Project Indicator	WBS -Element	Special Indicator #1	Special Indicator #2	Special Indicator #3		Quantity	Unit	Unit Price	Total
	0401		Main Dam								
	0401	R	00	Reoccuring Costs							
*	0401	R	00	01	Field Overhead						
	0401	R	00	01	01	Labor					
	0401	R	00	01	01	01	Management	72	MO	_____	_____
	0401	R	00	01	01	02	Engineering	72	MO	_____	_____
	0401	R	00	01	01	03	Quality Control	72	MO	_____	_____
	0401	R	00	01	01	04	Administration	72	MO	_____	_____
	0401	R	00	01	01	05	Safety/Security	72	MO	_____	_____
	0401	R	00	01	01	06	Shop	72	MO	_____	_____
	0401	R	00	01	01	07	Other	72	MO	_____	_____
	0401	R	00	01	02	Plant/Equipment					

	0401	R	00	01	02	01	Office	72	MO	_____ _____
	0401	R	00	01	02	02	Storage	72	MO	_____ _____
	0401	R	00	01	02	03	Vehicles	72	MO	_____ _____
	0401	R	00	01	02	04	Equipment Shop			
	0401	R	00	01	02	05	Other	72	MO	_____ _____
	0401	R	00	01	03		Materials/Supplies			
	0401	R	00	01	03	01	Communications	72	MO	_____ _____
	0401	R	00	01	03	02	General Utilities	72	MO	_____ _____
	0401	R	00	01	03	03	Office Supplies	72	MO	_____ _____
	0401	R	00	01	03	04	Portable Toilet Facilities	72	MO	_____ _____
	0401	R	00	01	03	05	Other	72	MO	_____ _____
	0401	R	00	01	04		Miscellaneous Costs			
	0401	R	00	01	04	01	Relocation Costs	72	MO	_____ _____
	0401	R	00	01	04	02	Travel	72	MO	_____ _____
	0401	R	00	01	04	03	Insurance	72	MO	_____ _____
	0401	R	00	01	04	04	Winterize Operations	5	EA	_____
	0401	R	00	01	04	05	Subcontracts		LS	_____
	0401	R	00	01	04	06	Other	72	MO	_____ _____
*	0401	R	00	02			Operational Costs			
	0401	R	00	02	01		Land Based			_____ _____
	0401	R	00	02	01	01	Concrete Bactch Plant	72	MO	_____ _____
	0401	R	00	02	01	02	Precast Concrete Manufacturing Facilites	72	MO	_____ _____
	0401	R	00	02	01	03	Storage Facility	72	MO	_____ _____
	0401	R	00	02	01	04	Other	72	MO	_____ _____
	0401	R	00	02	02		River Based			
	0401	R	00	02	02	01	Concrete Bactch Plant	72	MO	_____ _____
	0401	R	00	02	02	02	Shell Intallation Barge	72	MO	_____ _____
	0401	R	00	02	02	03	Screed Barge	72	MO	_____ _____
	0401	R	00	02	02	04	Pile Installatio Barge	72	MO	_____ _____
	0401	R	00	02	02	05	Vibro-Compaction Barge	72	MO	_____ _____
	0401	R	00	02	02	06	Workboats	72	MO	_____ _____
	0401	R	00	02	02	07	Misc. Crane Barges	72	MO	_____ _____
	0401	R	00	02	02	08	Other	72	MO	_____ _____
	0401	M	00				Mobilization and Preparatory Work			
*	0401	M	00	01			Mobilization			
	0401	M	00	01	01		On-site			
	0401	M	00	01	01	01	Land Based Cranes & Equipment		LS	_____
	0401	M	00	01	01	02	Floating Cranes & Equipment		LS	_____
	0401	M	00	01	02		Off-site		LS	_____

	0401	M	00	01	03		Subcontractors	LS	_____
	0401	M	00	01	04		Other	LS	_____
	0401	M	00	02			Temporary Buildings		
	0401	M	00	02	01		On-site		
	0401	M	00	02	01	01	Office	LS	_____
	0401	M	00	02	01	02	Shops	LS	_____
	0401	M	00	02	01	03	Storage	LS	_____
	0401	M	00	02	01	04	Other	LS	_____
	0401	M	00	02	02		Offsite		
	0401	M	00	03			Mooring Points	LS	_____
	0401	M	00	04			Approach Roads	LS	_____
	0401	M	00	05			Precast Yard & Marine Skidway		
	0401	M	00	05	00	01	Clearing & Grubbing	LS	_____
	0401	M	00	05	00	02	Earthwork and Site Grading	LS	_____
	0401	M	00	05	00	03	Riprap/Bank Protection	LS	_____
	0401	M	00	05	00	04	Roadways	LS	_____
	0401	M	00	05	00	05	Material Storage Facilities	LS	_____
	0401	M	00	05	00	06	Fixed Batch Plant	LS	_____
	0401	M	00	05	00	06	Material Conveyors	LS	_____
	0401	M	00	05	00	08	Loaders	LS	_____
	0401	M	00	05	00	09	Skidway & Launching Facilities	LS	_____
	0401	M	00	05	00	10	Casting Beds	LS	_____
	0401	M	00	06			Specialty Construction Equipment		
	0401	M	00	06	00	01	Shell Intallation Barge	LS	_____
	0401	M	00	06	00	02	Screed Barge	LS	_____
	0401	M	00	06	00	03	Pile Installation Barge	LS	_____
	0401	M	00	06	00	04	Vibro-Compaction Barge	LS	_____
	0401	M	00	06	00	05	Workboats	LS	_____
	0401	M	00	06	00	06	Misc. Crane Barges	LS	_____
*	0401	D	00	07			Demobilization		
	0401	D	00	07	01		General Demobilization	LS	_____
	0401	D	00	07			Site Restoration		
	0401	D	00	07	02	01	Existing Haull Road Removal	LS	_____
	0401	D	00	07	02	02	Seeding	LS	_____
	0401	D	00	07	02	03	Access Roads	LS	_____
	0401	D	00	07	02	04	Parking Lots	LS	_____
	0401	D	00	07	02	05	Fill Over Precast Yrd Foundation	LS	_____
	0401	D	00	07	02	06	Cell"A" Removal	LS	_____
	0401	D	00	07	02	07	Erosion Control	LS	_____

	0401	E	10				Earthwork for Structures			
*	0401	E	10	01			Excavation			
	0401	E	10	01	00	01	Excavation - Tainter Gate Section	175600	CY	_____ _____
	0401	E	10	01	00	02	Excavation - Navigable Pass Section	232400	CY	_____ _____
*	0401	E	10	02			Deposite Sutible Material Back to the River			
	0401	E	10	02	00	01	Place Material in River - Tainter Gate Section	43000	CY	_____ _____
	0401	E	10	02	00	02	Place Material in River - Navigable Pass Section	43000	CY	_____ _____
*	0401	E	10	03			Disposal of Material to Shore			
	0401	E	10	03	00	01	Shore Disposal - Tainter Gate Section	132600	CY	_____ _____
	0401	E	10	03	00	02	Shore Disposal - Navigable Pass Section	175500	CY	_____ _____
*	0401	E	10	04			Matl. - Infill Zones of Dam			
	0401	E	10	04	00	01	General Backfill #6 -Tainter Gate Section	109990	CY	_____ _____
	0401	E	10	04	00	02	General Backfill #6 -Navigable Pass Section	250240	CY	_____ _____
*	0401	E	10	05			Maintenance Dredging Dam Footprint			
	0401	E	10	05	00	01	Maintenance Dredging - Total Project	100000	CY	_____ _____
*	0401	E	10	06			Erosion Control			
	0401	E	10	06	00	01	Purchase Articulated Mats	2000	SY	_____ _____
	0401	E	10	06	00	02	Install/Remove Articulated Mats	11000	SY	_____ _____
*	0401	E	10	07			Vibro-Compaction			
	0401	E	10	07	00	01	Tainter Gate Section	3500	LF	_____ _____
	0401	E	10	07	00	02	Navigable Pass	10000	LF	_____ _____

Tainter Gate Section

	0401	T	07				Bridges, Superstructure and Deck			
*	0401	T	07	01			Tainter Gate Bridge			
	0401	T	07	01	00	01	Concrete		LS	_____
	0401	T	07	01	00	02	Reinforcing Steel		LS	_____
	0401	T	07	01	00	03	Outfitting for Installation		LS	_____
	0401	T	07	01	00	04	Load Out		LS	_____
	0401	T	07	01	00	05	Transport to Position		LS	_____
	0401	T	07	01	00	06	Lift, Position & Install Shells		LS	_____

*	0401	T	11				Foundation Work			
	0401	T	11	02			Sitework			
	0401	T	11	02	00	01	Purchase/fabrication of frames	387	TN	_____ _____
	0401	T	11	02	00	02	General Handling of Frames	96	HR	_____ _____
	0401	T	11	02	00	03	Pile Materials	46737	VLF	_____ _____
	0401	T	11	02	00	04	Pile Driving	46737	VLF	_____
	0401	T	11	02	00	05	Pile Testing		LS	_____

	0401	T 11	02	00	06	Pile Anchorage at Shells	1	LS		
	0401	T 11	02	00	07	Fab and Install Geotextile Fabri	143335	SF		
*	0401	T 12	Seepage Control							
	0401	T 12	02	Sitework						
	0401	T 12	02	00	01	Temporary Cutoff Wall	22936	SF		
	0401	T 12	02	00	02	Handling of Reprocessed Sheets	2756	TN		
	0401	T 12	02	00	03	Sheet Pile Frames for Walls	36.6	TON		
	0401	T 12	02	00	04	Sheet Piling	42826	SF		
	0401	T 12	02	00	05	Master PIles	577	TN		
	0401	T 12	02	00	06	Pile Driving	24460	SF		
	0401	T 12	02	00	07	Drainage System (Piping, etc.)	6	EA		
	0401	T 12	02	00	08	Drainage Layer	32020	CY		
*	0401	T 25	Embedded Metal Work							
	0401	T 25	05	Metals						
	0401	T 25	05	00	01	Bulkhead Slot Beams	199500	LB		
	0401	T 25	05	00	02	Bulkhead Slot Corner Protection	104750	LB		
	0401	T 25	05	00	03	Tainter Gate Side Seals & Beams	201195	LB		
	0401	T 25	05	00	04	Lifting Frame Embeds	57	TON		
*	0401	T 32	Apron Stilling Basins Deflectors							
	0401	T 32	03	Concrete						
	0401	T 32	03	00	01	Concrete	10562	CY		
	0401	T 32	03	00	02	Reinforcing Steel	1570	TN		
	0401	T 32	03	00	03	Skirts				
	0401	T 32	03	00	04	Pintles				
	0401	T 32	03	00	05	Flat Jacks				
	0401	T 32	03	00	06	Outfitting Shells for Installation	6	EA		
	0401	T 32	03	00	07	Load Out Shells	6	EA		
	0401	T 32	03	00	08	Transport Shells to Position	6	EA		
	0401	T 32	03	00	09	Lift, Position & Install Shells	6	EA		
	0401	T 32	03	00	10	Stilling Basin Tremie Concrete	16735	CY		
*	0401	T 52	Concrete Dam Overflow Section							
	0401	T 52	03	Concrete						
*	0401	T 52	03	01	Sill Shell					
	0401	T 52	03	01	01	Concrete	9998	CY		
	0401	T 52	03	01	02	Reinforcing Steel	1625	TN		
	0401	T 52	03	01	03	Skirts	3233	SF		

	0401	T	52	03	01	04	Pintles	68	TON	_____	_____
	0401	T	52	03	01	05	Flat Jacks	158	EA	_____	_____
	0401	T	52	03	01	06	Outfitting Shells for Installation	6	EA	_____	_____
	0401	T	52	03	01	07	Load Out Shells	6	EA	_____	_____
	0401	T	52	03	01	08	Transport Shells to Position	6	EA	_____	_____
	0401	T	52	03	01	09	Lift, Position & Install Shells	6	EA	_____	_____
	0401	T	52	03	01	10	Tremie Concrete - Sill	26045	CY	_____	_____
*	0401	T	52	03	02		Lower Pier Shell				
	0401	T	52	03	02	01	Concrete	6100	CY	_____	_____
	0401	T	52	03	02	02	Reinforcing Steel	1363	TN	_____	_____
	0401	T	52	03	02	03	Pintles	58	TON	_____	_____
	0401	T	52	03	02	04	Flat Jacks	96	EA	_____	_____
	0401	T	52	03	02	05	Outfitting Shells for Installation	6	EA	_____	_____
	0401	T	52	03	02	06	Load Out Shells	6	EA	_____	_____
	0401	T	52	03	02	07	Transport Shells to Position	6	EA	_____	_____
	0401	T	52	03	02	08	Lift, Position & Install Shells	6	EA	_____	_____
	0401	T	52	03	02	09	Tremie Concrete - Lower Pier	10785	CY	_____	_____
*	0401	T	52	03	03		Upper Pier Shell				
	0401	T	52	03	03	01	Concrete	1760	CY	_____	_____
	0401	T	52	03	03	02	Reinforcing Steel	275	TN	_____	_____
	0401	T	52	03	03	03	Flat Jacks	48	EA	_____	_____
	0401	T	52	03	03	04	Maintenance Platform	16.25	TON	_____	_____
	0401	T	52	03	03	05	Outfitting Shells for Installation	6	EA	_____	_____
	0401	T	52	03	03	06	Load Out Shells	6	EA	_____	_____
	0401	T	52	03	03	07	Transport Shells to Position	6	EA	_____	_____
	0401	T	52	03	03	08	Lift, Position & Install Shells	6	EA	_____	_____
	0401	T	52	03	03	09	Concrete - Upper Pier Closure	207	CY	_____	_____
*	0401	T	52	05			Metals				
	0401	T	52	05	01		Tainter Gates				
	0401	T	52	05	01	01	Shop Fabrication	5	EA	_____	_____
	0401	T	52	05	01	02	Field Fabrication and Assembly	5	EA	_____	_____
	0401	T	52	05	01	03	Installation	5	EA	_____	_____
	0401	T	52	05	01	04	Install Gate Appurtenances	5	EA	_____	_____
	0401	T	52	05	01	05	Operating Machinery	5	EA	_____	_____
	0401	T	52	05	01	06	Hydraulic Cylinders	10	EA	_____	_____
	0401	T	52	05	01	07	Surface Prep and Painting	5	EA	_____	_____
	0401	T	52	05	01	08	Miscellaneous Metals -- Dam	15	TON	_____	_____
*	0401	T	52	15			Mechanical				
	0401	T	52	15	00	01	Compressed Air		LS		_____
	0401	T	52	15	00	02	Non-Potable Water		LS		_____

	0401	T	52	15	00	03	Hydraulic System		LS		_____
*	0401	T	52	16	Electrical						
	0401	T	52	16	00	01	Electrical Distribution		LS		_____
	0401	T	52	16	00	02	Power For Hydraulic Pumps		LS		_____
	0401	T	52	16	00	03	Power for Machine House HVAC		LS		_____
	0401	T	52	16	00	04	Branch Wiring and Devices		LS		_____
	0401	T	52	16	00	05	Grounding / Lightning Protection		LS		_____
	0401	T	52	16	00	06	Lighting Fixtures (Less Pier)		LS		_____
	0401	T	52	16	00	07	Signal and Comm. Systems		LS		_____
	0401	T	52	16	00	08	Control Panel Wiring		LS		_____
	0401	T	52	16	00	09	PLC and Programming		LS		_____
	0401	T	52	16	00	10	I/O, Field Devices and Wiring		LS		_____
	0401	T	52	16	00	11	Cathodic Protection System		LS		_____
	0401	T	52	16	00	12	Exterior (Pier) Lighting		LS		_____
*	0401	T	99	Associated General Items							
	0401	T	99	01	Machine Houses and Misc. Const.				LS		_____
	0401	T	99	02	Trunnion Girders						
	0401	T	99	02	00	01	Concrete	387	CY	_____	_____
	0401	T	99	02	00	02	Trunnion Gdr Erection and Stress	10	EA	_____	_____
	0401	T	99	02	00	03	Prestressing Steel Support Fram	76022	LBS	_____	_____
	0401	T	99	03	Structure/Foundation Instrumentation				LS		_____
	0401	T	99	04	Misc. Metals (Handrails, Stairs, Ladders..etc.)				LS		_____
	Navigable Pass										
	0401	N	11	Foundation Work							
*	0401	N	11	02	Sitework						
	0401	N	11	02	00	01	Reconfigure TG Frames	372	TON	_____	_____
	0401	N	11	02	00	02	General handling of frames	96	HR	_____	_____
	0401	N	11	02	00	03	Piling Materials	90284	VLF	_____	_____
	0401	N	11	02	00	04	Pile Driving	90284	VLF		_____
	0401	N	11	02	00	05	Pile Testing		LS		_____
	0401	N	11	02	00	06	Pile Anchorage at Shells	972	TON	_____	_____
	0401	N	11	02	00	07	Fab and Install Geotextile Fabric	160250	SF	_____	_____
*	0401	N	12	Seepage Control							
	0401	N	12	02	Sitework						
	0401	N	12	02	00	01	Sheet Piling	116418	SF	_____	_____
	0401	N	12	02	00	02	Master Piles	988	TN	_____	_____
	0401	N	12	02	00	03	Pile Driving	116418	SF	_____	_____

	0401	N 12	02	00	04	Drainage System (Piping, etc.)	12	EA	_____	_____
	0401	N 42	Fixed Weir (Weir and Abutm'ts)							
*	0401	N 42	01	Right Boat Abutment Shell						
	0401	N 42	01	00	01	Concrete	1169	CY	_____	_____
	0401	N 42	01	00	02	Reinforcing Steel	158	TN	_____	_____
	0401	N 42	01	00	03	Outfitting Shells for Installation	1	EA	_____	_____
	0401	N 42	01	00	04	Load Out Shells	1	EA	_____	_____
	0401	N 42	01	00	05	Transport Shells to Position	1	EA	_____	_____
	0401	N 42	01	00	06	Lift, Position & Install Shells	1	EA	_____	_____
	0401	N 42	01	00	07	Tremie Concrete	1359	CY	_____	_____
*	0401	N 42	02	Left Boat Abutment Shell						
	0401	N 42	02	00	01	Concrete	1791	CY	_____	_____
	0401	N 42	02	00	02	Reinforcing Steel	174	TN	_____	_____
	0401	N 42	02	00	03	Outfitting Shells for Installation	1	EA	_____	_____
	0401	N 42	02	00	04	Load Out Shells	1	EA	_____	_____
	0401	N 42	02	00	05	Transport Shells to Position	1	EA	_____	_____
	0401	N 42	02	00	06	Lift, Position & Install Shells	1	EA	_____	_____
	0401	N 42	02	00	07	Tremie Concrete	1208	CY	_____	_____
*	0401	N 42	03	Sheet Pile Cells/Fixed Wier Mods						
	0401	N 42	03	00	01	Cut Off - Establish T.O.P. Elev.	759	LF	_____	_____
	0401	N 42	03	00	02	Excavate Interior of Cells	7200	CY	_____	_____
	0401	N 42	03	00	03	Unload barge, haul to fill area	8384	CY	_____	_____
	0401	N 42	03	00	04	Spread at fill area	8384	CY	_____	_____
	0401	N 42	03	00	05	Concrete Caps - mat'l & inst	2255	CY	_____	_____
	0401	N 52	Concrete Dam Overflow Section							
*	0401	N 52	01	Paving Blocks - Nav. Pass						
	0401	N 52	01	00	01	Purchase/Fabrication of Frame	600	TON	_____	_____
	0401	N 52	01	00	02	Concrete	14473	CY	_____	_____
	0401	N 52	01	00	03	Reinforcing Steel	694	TN	_____	_____
	0401	N 52	01	00	04	Outfitting Shells for Installation	13	EA	_____	_____
	0401	N 52	01	00	05	Load Out Shells	13	EA	_____	_____
	0401	N 52	01	00	06	Transport Shells to Position	13	EA	_____	_____
	0401	N 52	01	00	07	Lift, Position & Install Shells	13	EA	_____	_____
*	0401	N 52	02	Shells - Nav. Pass						
	0401	N 52	02	00	01	Lifting and Tremie Frame		LS		_____

	0401	N 52	02	00	02	Concrete	20075	CY	_____	_____
	0401	N 52	02	00	03	Reinforcing Steel	3508	TN	_____	_____
	0401	N 52	02	00	04	Outfitting Shells for Installation	12	EA	_____	_____
	0401	N 52	02	00	05	Load Out Shells	12	EA	_____	_____
	0401	N 52	02	00	06	Transport Shells to Position	12	EA	_____	_____
	0401	N 52	02	00	07	Lift, Position & Install Shells	12	EA	_____	_____
	0401	N 52	02	00	08	Tremie Concrete - Nav. Pass	32168	CY	_____	_____
*	0401	N 52	03	Wicket Gates						
	0401	N 52	03	00	01	Wicket	141	EA	_____	_____
	0401	N 52	03	00	02	Hurter	141	EA	_____	_____
	0401	N 52	03	00	03	Castings	141	EA	_____	_____
	0401	N 52	03	00	04	Bushings	141	EA	_____	_____
	0401	N 52	03	00	05	Pins & Retainers (Stainless)	141	EA	_____	_____
	0401	N 52	03	00	06	Installation at Dam Site	141	EA	_____	_____
*	0401	N 99	Associated General Items							
	0401	N 99	00	00	01	Wicket Pit Display Pit		LS		_____
	0401	N 99	00	00	02	Maintenance Box	1	EA	_____	_____
	0401	N 99	00	00	03	Wicket Blanks	5	EA	_____	_____
	0401	N 99	00	00	04	Wicket Gate Needles	139	EA	_____	_____
	0401	N 99	00	00	05	Spare Wicket Gates	20	EA	_____	_____
	0401	N 99	00	00	06	TG Cylinder Pin Temp Platform	1	EA	_____	_____
	0401	N 99	00	00	07	Isolation Joint Lock and TG		LS		_____
	0401	N 99	00	00	08	Isolation Joint TG and NP		LS		_____
	0401	N 99	00	00	09	Isolation Joint LBA & Fixed weir		LS		_____
	0401	N 99	00	00	10	Isolation Joint Mono. 12 and LBA		LS		_____
	0401	N 99	03	Structure/Foundation Instrumentation				LS		_____
*	0401	G 99	Associated General Items							
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	0401	S	99	04	04	3,200-pound Riprap	40000	TON	_____	_____
	0401	S	99	04	05	2,333-pound Riprap	39000	TON	_____	_____
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*	0401	G	99	05		Hydrographic Surveys				_____
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*	0401	G	99	06		Miscellaneous Lock Work		LS	_____	_____

Sub-Total _____

Home Office Overhead_____

Sub-Total _____

3% Base Fee _____

Award Fee _____

Total Cost _____

SECTION 00130
PROPOSAL EVALUATION CRITERIA

1. **GENERAL**. A Source Selection Evaluation Board (SSEB), comprised of representatives of the Corps of Engineers, will evaluate the proposals. The Board will consist of two parts – a Technical Evaluation Board (TEB) and a Price Evaluation Board (PEB). The number and identities of offerors are not revealed to anyone who is not involved in the evaluation and award process or to other offerors. Proposals will be evaluated based on the factors described herein, and the basis of award is the Tradeoff Analysis Process.

2. **EVALUATION PROCESS**. The evaluation process essentially consists of four parts: proposal compliance review and responsibility determination, technical/quality evaluation, cost evaluation and cost/technical trade-off analysis.

2.1. Proposal Compliance Review: This is an initial review to ensure that all required forms and certifications are complete and that both a technical and cost proposal was received and are in separate binders.

2.2. Technical/Quality Evaluation: The TEB will evaluate and rate those proposals passing the first review, above. Proposals will be evaluated against the RFP requirements. Some factors will be rated using a adjectival -based system. Others will be rated on a “go, no-go” basis.

2.3. Cost Evaluation: The PEB will evaluate cost proposals independent of technical/quality evaluation. The cost proposal will be evaluated using a cost realism and reasonableness determination (FAR15.305 and 15.404.1). The TEB will not have access to cost information until completion of the technical/quality evaluation.

2.4. Cost/Technical Trade-off Analysis: After all above evaluations are complete, the SSA will compare the relative advantages and disadvantages of technical proposals and cost proposals. The Source Selection Authority (SSA) will then consider all factors using the tradeoff analysis procedure to determine the proposal offering the most advantage to the Government.

3. EVALUATION FACTORS. Proposals will be evaluated in accordance with the evaluation factors and sub-factors below, listed in descending order of importance. All evaluation factors, other than cost , when combined, are approximately equal to cost **.**

3.1. Experience

A. Prime Contractor, and Subcontractor, Experience.

The TEB will evaluate both the extent and quality of recent experience in the ten areas identified in Section 00115, paragraph 2.1.A, Prime Contractor and Subcontractor Experience. Experience within the last 5 years will be rated more favorably. Experience prior to ten years will not be given consideration unless key personnel proposed for this project played a significant role and the project can be shown to be similar to this project considering changes in technology, materials, equipment, codes, etc. Documentation of successful completion of projects similar in nature and scope to this project will be favorably considered in the evaluation. Conversely, proposals that do not include substantial evidence that the offeror has experience, qualifications and production capability to successfully prosecute the proposed project will be unfavorably considered. (Similar to this project or in nature is defined as marine projects involving piles, precast elements, excavation, heavy lifts, tremie concrete placements, tainter gates, and wicket gates.) The TEB may give additional credit for previous successful working relationships with any proposed subcontractors.

B. Individual Personnel Experience.

The TEB will evaluate the adequacy and strength of key personnel listed in Section 00115, paragraph 2.1.B, Individual Personnel Experience. The TEB will also evaluate for compliance with specified minimum requirements, degree of qualification and experience, familiarity with local conditions, etc. At a minimum the Project Manager shall have a minimum of five years experience as a project manager on heavy marine construction projects and have a degree in engineering or construction management. Project Engineer(s) at a minimum will have a degree in engineering, and a minimum five years heavy construction experience. If the Project Manager or Project Engineer has a professional registration the individual may be evaluated more favorably. The Project Superintendent shall have a minimum ten years of heavy and marine construction experience. The CQC System Manager and the other CQC Personnel will be evaluated using the qualification listed in Section 01451 paragraph 3.4. The Diving superintendent will be evaluated using the qualifications listed in Section 01353 paragraph 1.5. The Safety Specialist will be evaluated using the qualifications listed in Section 01525, paragraph 1.6.1. The Superintendents for all major subcontractors shall have a minimum of five years experience in the area work they are over seeing. The TEB may give additional credit for more experience, licenses, degrees beyond the minimum specified.

The Procurement Manager shall have a minimum four years experience in the areas of federal procurement/contracting. Experience with cost reimbursable contracts may be evaluated more favorably.

The Project Controls individual will possess at a minimum five years experience in the area of project management and controls, utilizing a CPM methodology. A working knowledge in the areas of scope, time, cost, resource, procurement, quality and risk management as outlined by PMI Body of Knowledge will be considered. An individual that demonstrates an understanding of the utilization of project

management metrics such as earned value analysis and risk analysis assessment may be evaluated more favorably. A project Management Professional certification is a plus, but is not required.

The Cost Engineer shall have a minimum of five years of experience as a cost engineer in heavy marine construction projects. If, the individual is recognized as a Certified Cost Engineer (CCE) by the Association for Advancement of Cost Engineering International or other nationally recognized cost engineering society they may be evaluated more favorably.

3.2. Management

A. Operational Management Plan

The TEB will evaluate the offeror's MIS and cost control, based on firms experience and ability to demonstrate sound management practices with the systems identified in Section 00800, paragraph 1.85 Management Information System. Firms with more than three years experience with the system will be considered more favorably than those with less than three years or someone with no experience. Offeror's with a DCAA approved accounting system may be considered more favorably than those that are not approved.

B. Acquisition Management Plan

The TEB will evaluate the offeror's procurement plan & property control plans. Plans will be evaluated based on the Contractor's level of understanding of the procedures required to order materials, contract with subcontractor and suppliers, take delivery, manage inventory and avoid waste.

C. Management Plan.

The TEB will evaluate the offeror's ability to demonstrate sound management practices, both at the home office as well as at the project site. Comprehensive plans that demonstrate a clear understanding of the work and an ability to coordinate resources to ensure successful pursuit of the work will be evaluated favorably. Plans that do not demonstrate a clear understanding of the work, that do not demonstrate a capability to coordinate resources, or that do not demonstrate appropriate excess capacity will be evaluated less favorably. Plans will be evaluated based on the level of involvement the contractor will have in the management, oversight, control, and coordination of the work performed by subcontractors. Plans with more involvement may be rated more favorably. The TEB will evaluate the clarity, adequacy, capabilities and strengths of the offeror's organizational chart for managing a successful project. An organizational chart that clearly depicts a highly qualified on-site team supported by appropriate resources off-site and that clearly defines responsibilities will be evaluated favorably. Charts that are confusing, cluttered with duplicative entries, or that do not clearly define responsibilities will be evaluated less favorably.

D. Labor Plan.

The TEB will evaluate the plan to assure that the contractor has adequate capacity to perform the work necessary to complete the project. If the contractor is working multiple shifts the plan shall address how these shifts will be staffed. Consideration will be given to those offerors who have knowledge of the local labor market.

3.3. Technical Approach

J. Method of Transport, Positioning and Set-Down of Precast Elements

Plans will be evaluated based on the Contractor's level of understanding of the procedures required to safely and efficiently transport, lift, position, and set-down the precast shells required for the dam. Procedures will be evaluated for impacts on the precast elements, the existing structures, and the river bottom. Plans that minimize these impacts will be evaluated more favorably.

K. Method of Maintaining Riverbed Stability

a. Plans will be evaluated based on the Contractor's level of understanding of the equipment and procedures required to prevent scour of the riverbed and damage to the dam

foundation during construction. Plans that identify conditions where the riverbed may be susceptible to scouring and the countermeasures that will be used in each situation will be evaluated more favorably. Plans that show a clear sequence of work that will minimize scour and loss of scour protection will also be rated more favorably. Plans that contain a quick response capability to scour problems will be evaluated more favorably.

b. The TEB will evaluate the Contractors plan for placing the permanent scour protection. Plans that show that the contractor has a clear understanding of the procedure and equipment required to place the scour protection and how the work will be preformed in the varying river conditions will be evaluated favorably.

L. Method of Fabrication and Installation of Dam Foundation Piles

Plans will be evaluated on Contractor's level of understanding of the procedures required to fabricate and install the tainter gate, navigable pass, boat abutment, isolation joint foundation piles and cutoff wall master and sheet piles. Plans that identify the suppliers, fabricators, their general fabrication methods, and method of delivery to the site will be evaluated favorably. Plans that identify the methods and equipment required to install the foundation piles to the required tolerances will also be evaluated favorably.

M. Location and Method of Precast Element Construction

(a) The location of the facility will be evaluated, the TEB may evaluate a site more favorably the closer it is to the Olmsted site. However the level of preparation of the proposed site, site equipment, documentation of required licenses, and permits for an existing or new off site facility will be considered. More favorable scoring may be awarded to a site which is currently zoned for the type of work to be performed under this contract and which has environmental permits from all jurisdictions versus a site which is otherwise equal but has not yet been permitted.

(b) The casting facility will be evaluated based on the proposed equipment, flow of work, capacity of the facility (the ability to produce the required segments for each season) and the proposed load out plan/facilities.

(c) The evaluation of the plan describing precast element construction methods will be based upon the offeror's understanding of the potential difficulties entailed at each step of the particular construction processes, and the offeror's proposed methods of successfully completing each of these key portions of the project.

(d) The construction method and load out will be evaluated against the criteria established in Section 01710 paragraph 3.2.

E. Method of River Bottom Grading and Screeding

Plans will be evaluated based on the Contractor's level of understanding of the procedures required to grade and screed the river bottom. Plans that identify the methods and equipment required to provide a stable bottom with the required tolerances will be evaluated favorably. The screeding barge depicted in the F series of drawings will be the TEB base line for evaluating the offerors equipment.

F. Method of Concrete Production, Delivery, and Placement

Plans will be evaluated based on the Contractor's level of understanding of the procedures required to produce, deliver, and place concrete. Plans that provide excess capacity, backup systems to allow uninterrupted placements, quick delivery, and high quality concrete will be evaluated favorably.

G. Method of Tainter Gates Installation

Plans will be evaluated based on the Contractor's level of understanding of the assembly, installation and painting of the tainter gates. The TEB will evaluate how the tainter gates are handled, lifted and secured during erection. The setting of the maintenance bulkheads, unwatering, installation of hydraulic cylinders, testing and rewatering of the tainter gate bays will also be evaluated. Plans will also be evaluated based on the contractor's level of understanding of the operation and controls for the tainter gates.

H. Schedule and Sequence of Work

a. Network Analysis - The TEB will evaluate the schedule to assess the strength of understanding of events associated with coordinating design submittals and incorporating design comments, fast-tracking and completion requirements. The TEB will also evaluate the offeror's capability to complete the schedule within his proposed contract duration and the realism of the schedule. Schedules offering durations less than the 2,200 Government estimated duration may receive a higher score if the schedule is shown to be realistic and achievable. The Government reserves the right to negotiate with the offeror the contract duration prior to the contract award. The agreed to contract completion will be stated in Section 00800 paragraph 1.3.

b. Sequence of Work - The TEB will evaluate the offeror's ability to meet major milestones. Included in this examination will be a review of the estimated manpower levels, number of shifts, and number of workdays per week to accomplish the work for a particular milestone. How the contractor proposes to deal the river conditions and his ability to perform the in river work will be evaluated. A major milestone is defined as the work scheduled to be preformed in each of the four in the river seasons as well as the initial season to mobilize and fabricate shells for the first in the river season.

c. Connection to the MIS – The TEB will evaluate the offeror's proposed plan to see how effective it would appear to be in capturing the data necessary for the Government to monitor expenditures during future time periods. Documented historical experience and use of Earned Value type reports will also be evaluated. The types, frequency and accuracy of reports the contractor would propose to supply to the government will also be evaluated with higher ratings being applied to plans that effectively report future expenditures.

I. Special Equipment Plan

The contractor is responsible for all equipment necessary to construct the project. The bid documents show conceptual plans for some of the specialized equipment for constructing the project. The SSEB will evaluate the offerors specialized equipment proposed for this project, including the design and fabrication requirements, availability and location of existing equipment, and the delivery schedule for all the specialized equipment.

3.4. Past Performance/Quality:

The TEB will evaluate the degree of successful completion of all experience identified. Documentation of successful completion of projects similar in size, scope, complexity and dollars will be favorably considered. Conversely, offers which do not include substantial evidence of successful completion will not be favorably considered. The Government reserves the right to check any or all cited references to verify supplied information and to assess owner satisfaction. The Government may also use other tools such as CCASS, ACASS, Dun & Bradstreet, etc. to gather information regarding an offeror's qualifications and past performance.

3.5. Safety.

A. The TEB will evaluate the offeror's plan for maintaining a safe project. His identified hazardous activities, proposed safety training and safety incentive plan based on the extent of coverage of the required safety information, the level of importance defined by management commitment, the proposed response to safety issues that arise, and proposed training and incentive methods.

B. The TEB will rate the past safety performance of the Contractor based on the following:

(a) The Workman's Compensation Experience Modification Insurance Rating number will be compared with the normal industry frequency rate of 1.0. If Workman's Compensation Experience Modification Insurance Rating number submitted with the proposal is equal to or lower than 1.0, the proposal may be scored more favorably than a proposal with a Workman's Compensation Experience Modification Insurance Rating number rating exceeding 1.0.

(b) Results of OSHA inspections in the previous five years identifying any willful or severe violations or citations, or fatalities, either foreign or domestic, may be scored less favorably than previous inspection results without willful or severe violations/citations or fatalities.

3.6. Subcontracting Information. This factor will be rated on a "go, no-go" basis.

A. Past Performance on Utilization of Small, Small Disadvantaged and Women-Owned Small Business. The TEB will evaluate the clarity, adequacy, capabilities and strengths of the offeror's past efforts to comply with FAR Clause 52.219-8, Utilization of Small, Small Disadvantaged, and Women-Owned Small Business Concerns. If a large business firm, the SSEB will evaluate the successes of meeting and/or exceeding the goals on previous projects containing subcontracting plans. If a small business firm, the SSEB will evaluate the efforts made on past projects to comply with FAR Clause 52.219-8, the submitted information will be rated Go.

B. Subcontracting Plan for Large Business. The plan will be evaluated for acceptability in accordance with AFARS 19.705. To be acceptable, subcontracting plans must:

(a) Adequately address the required statutory elements.
(b) Provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix DD (AFARS 19.705).
(c) To be acceptable, subcontracting plans must be rated 71 percent of higher under the AFARS evaluation system. Any subcontracting plan that is rated 70 percent or less will be carefully considered for acceptability. If discussions with offerors are necessary, those areas where the plan is deficient will be reviewed with the offeror with the goal of correcting deficiencies.

3.7. Pro Forma Requirements
The TEB will review the company policies that will lead to the Advance Agreements and will rate them on a "go, no-go basis. If discussions with offerors are necessary, those areas where the plan is deficient will be reviewed with the offeror with the goal of correcting deficiencies. The Government will negotiate the final advance agreements with the successful offeror.

3.8. Cost Proposal:
The cost will be evaluated by the PEB for reasonableness and realism through the use of cost analysis. Cost analysis will also be used to determine price reasonableness; wheteher the offeror's proposal reflects a through understanding of the project requirements and whether the labor rates and material rates build ups are consistent with the methods described in the offeror's proposal. The PEB will consider innovative construction methods, construction efficiencies and realistic cost assessments more favorably.

Offerors are cautioned to distribute costs appropriately. The funding of this contract is based on Congress making appropriations for future fiscal years. The expenditure curve will be evaluated on the offerors ability to

meet the FY04 expected anticipated amount of $40 million and his ability to maintain a relative even earnings over the years, with the exception of the initial and final fiscal year.

(End of Summary of Changes)

Amdt #0003

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1.60 DAMAGE TO WORK (ORL)
1.61 NOT USED *1
1.62 OBSTRUCTION OF NAVIGABLE WATERWAYS
1.63 SIGNAL LIGHTS
1.64 NOT USED.
1.65 NOT USED.
1.66 NOT USED.
1.67 NOT USED.
1.68 NOT USED.
1.69 KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS (17 AUGUST 1998)
1.70 NOT USED.

1.71 ORDER OF PRECEDENCE
1.72 NOT USED.
1.73 NOT USED.
1.74 POLLUTION PREVENTION PLAN
1.75 NOT USED
1.76 NOT USED
1.77 NOT USED
1.78 *3 NOT USED *3
1.79 INSPECTION FACILITIES, CORPS WORKBOAT AND FLOATING DOCK
1.80 SAFETY INCENTIVE CLAUSE
1.81 NOT USED
1.82 NOT USED *1
1.83 ALLOCATION OF STRUCTURAL DESIGN RESPONSIBLITY FOR THE HEAVY LIFT OF DAM SEGMENTS.
1.84 SUPPLEMENTAL DESIGN BY THE GOVERNMENT'S ARCHITECT-ENGINEER
1.85 MANAGEMENT INFORMATION SYSTEM
1.86 CONCRETE PLACEMENT DRAWINGS
1.87 WORK AUTHORIZATION DOCUMENT
1.88 CHANGE MANAGEMENT
1.89 *3 SCAFFOLDING *3

-- End of Document Table of Contents --

Amendment #0003
SECTION 00800

SPECIAL CLAUSES
11/01

PART 1 GENERAL

1.1 REFERENCES - NOT USED

1.2 SUBMITTALS

Government approval/acceptance is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Pollution Prevention Plan; G

Safety Specialist Qualifications; G

***1**
Accident Prevention Plan-including Activity Hazard Analysis (AHA)
Alt. I ***1**

Drug Free Work Place - See Section 0700 Clause 52.223.6; G

SD-05 Design Data

Equipment-in-Place List; G

Maintenance and Parts Data; G

Aggregate Sources; G

Purchase Orders;

Progress Photographs; G

Waste Test Results Manifest;

Site Plan; G

Dirt and Dust Control Plan; G

Construction and Demolition (C&D) Waste Management Plan; G

Activity Environmental Analysis;

SD-11 Closeout Submittals

As-Built Drawings; G

***1**

1.3 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK

The Contractor shall be required to commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, prosecute said work diligently, and complete the entire work ready for use not later than **[blank to be filled in at award]** calendar days after date of receipt of notice to proceed. The time stated for completion shall include as-built drawings, O&M manuals, operational tests/reports/training/instructions, equipment lists, and final cleanup of the premises. The work associated with the Locks **shall** be **scheduled to be** completed and ready for use no later than 550 calendar days after date of receipt of notice to proceed. ***1**

1.4 NOT USED

1.5 NOT USED

1.6 SCHEDULE FOR RIVER WORK

No work in the river will be required during the period between 01 December through 15 June inclusive. The Contractor may, however, perform work in the river during all or any part of this period upon giving prior written notice to and receiving approval from the Contracting Officer.

1.7 CONTRACT DRAWINGS AND SPECIFICATIONS

a. At award, the Government will furnish the Contractor a compact disk containing all technical contract documents. This disk will include a complete set of drawing files and technical specification files which have all amendments incorporated. The disk will contain drawing files in CALS Type 4 format and technical specifications in PDF format.

The CALS files and the PDF files are being provided for the Contractor's use in printing hard copies of contract documents.

In addition, native CADD files and Specsintact files are provided in accordance with "AS-BUILTS DOCUMENTS" paragraph for the Contractor's use in developing as-built plans and specifications.

b. The Contractor shall--

(1) Check all drawings furnished on the CD-ROM immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer in writing that the drawings have been checked and describe any of the discrepancies;

(4) Reproduce and print contract drawings and specifications as needed.

c. Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

d. The work shall conform to the specifications and the contract drawings identified on index of drawings **at the beginning of each volume of drawings (Sheet X-1, X-2, X-3, X-4 and X-4A.**

1.8 AS-BUILT DOCUMENTS

1.8.1 General.

This section covers the completion of as-built drawings and as-built specifications, as a requirement of the contract.

1.8.1.1 As-Built Drawings

An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project because of modifications, changes, corrections to the project design required during construction, submittals and extensions of design. The term "red line mark-ups" are field changes used to revise contract drawings to be used for the "RECORD DRAWING AS-BUILTS".

1.8.1.2 As-Built Specifications:

As-built specifications are the construction specifications as modified by changes (contract mods, and approved variations from the construction specifications which did not result in contract mods).

1.8.2 Maintenance of Working As-Built Drawings
***1**
The Contractor shall revise 2 sets of paper prints by red-line process to show the as-built conditions during the prosecution of the project. These as-built marked prints shall be kept current on a weekly basis and available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Changes must be reflected on all sheets affected by the change. The working as-built marked prints will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor before submission of each monthly **voucher**. The working as-built mark-ups shall show the following information, but not be limited thereto: ***1**

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be

determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Additional as-built information that exceeds the detail shown on the Contract Drawings. These as-built conditions include those that reflect structural details, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations and layouts, equipment, sizes, mechanical room layouts and other extensions of design, that were not shown in the original contract documents because the exact details were not known until after the time of approved shop drawings. It is recognized that these shop drawing submittals (revised showing as-built conditions) will serve as the as-built record without actual incorporation into the contract drawings. All such shop drawing submittals must include, along with the hard copy of the drawings, CADD files of the shop drawings in a commercially available digital format, compatible with the Using Agency System (see paragraph "Computer Aided Design and Drafting (CADD) Drawings"). All shop drawings which require submittal of CADD files are indicated in the submittal register located at the end of this section.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the red line mark-ups.

h. Since borrow material for this project is from sources on Government property, or since Government property is used as a spoil area, the Contractor shall furnish an aerial bathymetric map of the entire site to include the disposal area at the start of construction and at the completion.

i. If fire protection and fire detection related systems are included in this project, the as-built shop drawings will include detailed information for all aspects of the systems including wiring, piping, and equipment drawings.

The Contractor will be provided files at the beginning of construction for use during the construction phase which are to be maintained during construction and for the preparation of as-builts. The Contractor shall enter changes and corrections on blue line prints on a weekly basis in accordance with Paragraph "Maintenance of Working As-Built Drawings" and

provide to the contracting officer to use in updating the CADD as-built drawings on a monthly basis. The paper documents shall be available at all times and shall be provided promptly to the Contracting Officer when requested.

***1**

1.8.3 **Scheduling and Cost of Preparing As-Built Drawings**

The Contractor shall include in his schedule of values, the cost of as-built document preparation. This value shall include all requirements of this clause:

- maintenance of working as-built drawings (red-line mark-ups)
- maintenance of working as-built specifications
- conversion of submittals and other miscellaneous documents into electronic files
- creation of "Record As-Built Specifications" (MicroSoft Word specifications or by manually prepared documents as specified herein.)
- creation of a CD containing all required files.
- submittal of as-built documents in the required media forms and numbers of copies ***1**

1.8.4 Not used.

1.8.5 Preparation of Final As-Built Drawings.

In the event the Contractor accomplishes additional work which changes the as-built conditions of the facility, after final submission of the working as-built drawings, he shall be responsible for the addition of these changes to the working as-built red line mark-ups and also to the final as-built documents.

1.8.6 Markings and Indicators

Changes shall be annotated with a triangle and sequential number at the following locations:

a. bottom of the revised detail
b. right hand and bottom border aligned with the revised detail
c. the revision block of the title block.

Separate markings shall be made for each modification negotiated into the contract.

1.8.7 Preparation of Final As-Built Specifications

Final as-built specifications shall be prepared in Specsintact and the electronic files shall be placed on the same CD-ROM that contains the as-built CADD files, if applicable. The front sheet of the specifications shall contain an identification which clearly labels the specifications as representing as-built conditions and shall be dated with the date of the submittal.

1.8.8 Preparation of Other As-Built Documents

All other non-electronic documents which may include design analysis,

catalog cuts, certification documents that are not available in native electronic format shall be scanned and provided in an organized manner in Adobe .pdf format.

1.8.9 Submittal of Final As-Built Documents

At the time of Beneficial Occupancy of the project, Final As-Built documents shall be provided to the Contracting Officer in the formats described in paragraph "Computer Aided Design and Drafting (CADD)".

1.8.10 Not used

1.8.11 Not used

1.9 NOT USED.

1.10 EQUIPMENT DATA
***1**

Real Property Equipment.

Contractor shall be required to make an Equipment-in-Place list of all installed equipment furnished under this contract **in accordance with Clause 52.295-5**. This list shall include all information usually listed on manufacturer's name plate. The list shall also include the cost of each piece of installed property F.O.B. construction site. For each of the items which is specified herein to be guaranteed for a specified period from the date of acceptance thereof, the following information shall be given: The name, serial and model number address of equipment supplier, or manufacturer originating the guaranteed item. Furnish the list as one (1) reproducible and three (3) copies to the Contracting Officer thirty (30) calendar days before completion of any segment of the contract work which has an incremental completion date. ***1**

Maintenance and Parts Data.

The Contractor will be required to furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication which will show detailed parts data on all other equipment subject to repair and maintenance procedures not otherwise required in Operations and Maintenance Manuals specified elsewhere in this contract. Distribution of directives shall follow the same requirements as listed in paragraph above.

1.11 PHYSICAL DATA (APR 1984) FAR 52.236-4.
***1**

Data and information furnished or referred to below is furnished for the Contractor's information. ***1**

Physical Conditions indicated on the drawings and in the specifications are the result of site investigations by surveys, borings, test pits and probings. Driving records for cofferdam sheet piling and H-piling for the Locks, cores and soil samples from results of site investigations are available for inspection at various locations in the Louisville area, subject to prior arrangement at the Office of the District Engineer, Engineering Division, Jeff Schaefer, 600 Dr. Martin Luther King, Jr. Place,

Louisville, Kentucky 40201, (502) 315-6452.

Weather Conditions. The Contractor shall make his own investigations as to weather conditions at the site. Data may be obtained from various National Weather Service offices located generally at airports of principal cities, the nearest to this project being:

NWS Office NOAA
Airport Terminal Building
Paducah, KY 42001

Historical data for all areas may be obtained from:

U. S. Department of Commerce
National Climatic Center
Federal Building
Asheville, N. C. 28801

***1**

Transportation Facilities. Roads and railroads in the general area are shown on the drawings. Access ways shall be investigated by the Contractor to satisfy himself as to their existence and allowable use. The Contractor will be held responsible for any and all damages attributable to the actions of the Contractor, his subcontractors, and his suppliers outside the limits of construction shown on the drawings or designated by the Contracting Officer. This shall include damage to existing roads, drainage structures, electric or telephone facilities, pavement and other structures and facilities. All such damage shall be repaired to the satisfaction of the proper municipal or state authorities by the Contractor.

All hauling over roads to and from the project will be subject to the approval of the proper municipal or state authorities, and the Contractor shall make the necessary arrangements, with such authorities for the use of such roads and shall comply with their requirements in connection with such use. ***1**

The Contractor will not be allowed to bring any construction equipment and/or materials through the Village of Olmsted. The vehicle size limitation allowed to travel through Olmsted is a pickup truck or smaller. No truck traffic is allowed through the Village of Olmsted.

Current River Mapping. The existing hydrographic mapping shown on the drawings is 1997 river contours. Plan development utilized available hydrographic mapping at the time of plan preparation, and does not fully reflect all channel changes at the time of construction. Data from the most recent comprehensive hydrographic survey, conducted May 2002, is included in digital format with this package for the bidder's information. See Attachment 4 on the CD. Data from previous comprehensive surveys is available upon request. The contractor will be required to map the river prior to any excavation. See specification section 01351 for specific details.

Hydraulic studies. The effect of Olmsted Dam construction activities on river conditions and channel bed stability by monthly period (June to November) has been analyzed and the results are available from the Corps of

Engineer at the Office of the District Engineer, Engineering Division, Attn: Hydrology and Hydraulic Design Section, 600 Dr. Martin Luther King, Jr. Place, Louisville, Kentucky 40201, (502)315-6458

River Conditions. Computed flow, velocity, and water surface slope data for the Ohio river in the vicinity of Olmsted is available for the period of record (October 1966 to Present) from the Corps of Engineers at the Office of the District Engineer, Engineering Division, Attn: Hydrology and Hydraulic Design Section, 600 Dr. Martin Luther King, Jr. Place, Louisville, Kentucky, 40201, (502)315-6458

Hydrographs are provided in the drawings, and a table is included for your information showing river elevation exceedence percentages by month based upon the computed elevations. The elevation is computed by interpolating between the L&D 53 gage reading and the Cairo gage reading. The elevation of water surface at Olmsted is used to compute the cross-sectional area and cross-sectional averaged velocity of the water. Available slope data are the water surface slopes from L&D 53 to Cairo in feet per mile units. Available velocity data is the computed cross-sectional averaged velocity at the centerline of the future dam. The area/elevation tables used to calculate these velocities take into account the approximate condition of the cofferdam and locks on the date of the gage input. It was assumed that the lock miter gates were closed for these computations. The velocities are computed by dividing the flow by the cross-sectional area of the water. It should be noted that local velocities in deeper portions of the river and near structures will be higher than the cross-sectional averaged velocities.

In addition to the above river characteristics, the Contractor must be fully aware of the visibility characteristics of the river. The Contractor shall ensure that river visibility is taken into full account in planning and developing safe procedures and in carrying out all underwater construction activities and in monitoring and reporting of such.

The Contractor is responsible for taking all necessary preventative measures to protect completed in-the-river work. Construction activities will affect the river flow which may in turn cause some localized scouring or siltation. The Contractor shall be required to place articulated mats in such areas in order to prevent damage to permanent works and to protect work in progress.

In the reaches downstream of Smithland Lock & Dam, silt, sand and gravel movement is regularly experienced, especially during periods of high flows. Sediment dunes (also termed sand waves) have been observed downstream of Smithland Lock & Dam and have also been found at the Olmsted site. The dunes have been measured at approximately 10 - 20 feet high and move downstream over periods of several months.

Physical model experiments were performed at the US Army Engineer Research and Development Center to analyze localized river conditions and trends at the dam site. The experiments included testing of some general deflector arrangements prior to placement of tainter gate shells, and also analysis of localized flow conditions during tainter gate shell placement. The experimental data and reports on findings from these experiments are

included on the CD of this bid package for the Bidder's information. See Attachments 1, 2, and 3 for Reports.

ELEVATION-FREQUENCY TABLE ATTACHED AT THE END OF SECTION 00800

LOCKS AND APPROACH WALLS CONSTRUCTION PROGRESS PHOTOGRAPHS. Monthly Construction Progress Photographs of the Locks and Approach Walls contracts are available by reviewing the Olmsted website at the following specific web address. All available photos can be found by starting at this web page. http://www.lrl.usace.army.mil/olmsted/ceorlcdo.htm.
***1**
DESIGN MEMORANDUM: The complete index for, "Lower Ohio River Navigation System, Locks and Dam #52 & #53 Replacement Project, DM No. 8" is attached at the end of this section. These volumes serve as the design analysis and calculations to support this solicitation. Copies are available for viewing at the Louisville District Office. *1

AVAILABILITY OF LOCKS. The Contractor shall be permitted to utilize the lock chambers once Massman Construction Company has completed the Maintenance and Operating Bulkheads contract in the summer of 2004 and the upstream (river) side of Cells 1 through 5 for fleeting of his floating plant while at the Olmsted site except when the lock is being used for navigation purposes. The opening to the Mooring Area shall not be blocked by the Contractor's plant if he elects to utilize the upstream side of cells 1 thru 5. Locking will only occur when construction of the dam requires locking. Access to the lock chambers is subject to river conditions (see Hydrographs). Top of lock walls is at El. 310. Anytime the river elevation reaches El. 304 the contractor will be required to remove his floating plant from the lock unless otherwise directed by the Contracting Officer or unless the 3-day forecast indicates the river will not rise above El. 306. The floating approach walls will not be allowed to be used for mooring of the contractor's fleet. All loading and off loading of supplies shall be done on Cells 1 through 5 and Cells 47 through 50. Loading and off loading will not be allowed from the landwall of the lock or from any of the floating approach walls or within the fleet mooring area.

The Contractor will be responsible for repairing all damage to the locks resulting from his use of these areas for construction activities in a manner approved by the Contracting Officer prior to commencement of the repairs. The Contractor will also be responsible for cleaning the lock chamber floors of all material that may have fallen off of barges during his material loading and unloading construction activities. The Contractor is alerted to review the requirements and limitations indicated in Specification Section 1130, ENVIRONMENT PROTECTION, regarding fleeting, mooring and work in the area of the Chestnut Hills Nature Preserve, and in the areas of mussel beds located downstream of the project. Mooring of contractor's equipment will be allowed at the four new mooring cells locateddownstream of the locks.

During construction of the dam the existing lock structure and elevators are not needed for access to work areas for the dam will be off limits to construction personnel. This also includes the control center area.

1.12 UTILITIES (APR 1984) FAR 52.236-14 (PARA. 1.12.A.(1) & 1.12.A.(2)

ONLY).

a. Availability and Use of Utility Services
***1**

(1) The Contractor will have access to a 69 KV line built by AmerenCIPS for his electrical power service requirements for the Dam Construction. Power from the Locks will not be available to the Contractor. Any existing aerial lock lighting utilized by the contractor will be inspected by the Contracting Officer at the end of construction and replaced to the satisfaction of the Contracting Officer if needed. Currently adequate power (over 5,000 KW) exists at the site for most construction operations. Any additional power requirements needed by the Contractor will be his responsibility. This can be with generators or contacting AmerenCIPS. For service contract: AmerenCIPS, 334 North Illinois Avenue, Carbondale, Illinois 62901, Telephone 618-351-5501, POC Harry McLeod. The Contractor is responsible for his own water requirements for the Dam Construction. The Contractor will be allowed to connect on to the Corps of Engineers 4" waterline. Contact Village of Olmsted for water rates and connection fees; telephone 618-742-6487. ***1**

(2) The Contractor, in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

b. Alterations to Utilities

Where changes and relocations of utility lines are noted to be performed by others, the Contractor shall give the Contracting Officer at least thirty (30) days written notice in advance of the time that the change or relocation is required. In the event that, after the expiration of thirty (30) days after the receipt of such notice by the Contracting Officer, such utility lines have not been changed or relocated and delay is occasioned to the completion of the work under contract, the Contractor will be entitled to a time extension equal to the period of time lost by the Contractor after the expiration of said thirty (30) day period.

c. Interruptions of Utilities at Olmsted Site

(1) No utility services shall be interrupted by the Contractor to make connections, to relocate, or for any purpose without approval of the Contracting Officer.

(2) Request for Permission to shut down services shall be submitted in writing to the Contracting Officer not less than seventeen (17) days before date of proposed interruption. The request shall give the following information:

(a) Nature of Utility (Gas, L.P. or H.P., Water, etc.)

(b) Size of line and location of shutoff;

(c) Buildings and services affected.

(d) Hours and date of shutoff.

(e) Estimated length of time services will be interrupted.

(3) Services shall not be shutoff until receipt of approval of the proposed hours and date from the Contracting Officer.
***1**

(4) Shutoffs which will cause interruption of Government work operations as determined by the Contracting Officer shall be accomplished during regular non-work hours or on non-work days of the Using Agency. ***1**

(5) Operation of valves on water mains will be by Government personnel. Where shutoff of water lines interrupts service to fire hydrants or fire sprinkler systems, the Contractor shall arrange his operations and have sufficient material and personnel available to complete the work without undue delay or to restore service without delay in event of emergency.

1.13 NOT USED
***1**

1.14 LAYOUT OF WORK

The Contractor shall lay out its work from Government-established coordinates and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. ***1**

1.15 NOT USED

1.16 PERFORMANCE OF WORK BY THE CONTRACTOR

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 40 percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

a. For purposes of this paragraph "WORK BY THE CONTRACTOR" is defined as prime Contractor direct contract labor (including testing and layout personnel), exclusive of other general condition or field overhead personnel, material, equipment, or subcontractors. The "TOTAL AMOUNT OF WORK" is defined as total direct contract labor (including testing and layout personnel), exclusive of other general condition or field overhead personnel, material, or equipment.

b. Within 7 days after the award of any subcontract, either by

himself or a subcontractor, the Contractor shall deliver to the Contracting Officer a completed SF 1413, "Statement and Acknowledgment." The form shall include the subcontractor's acknowledgement of the inclusion in his subcontract of the clauses of this contract entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act-Overtime Compensation," "Apprentices and Trainees," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," "Contract Termination-Debarment," and "Payrolls and Basic Records." Nothing contained in this contract shall create any contractual relation between the subcontractor and the Government.

1.17 SUPERINTENDENCE OF SUBCONTRACTORS
***1**

a. The Contractor shall be required to furnish the following: ***1**

If more than 50 percent and less than 60 percent of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

b. If the Contracting Officer, at any time after 50 percent of the subcontracted work has been completed, finds that satisfactory progress is being made, he may waive all or part of the above requirements for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made.

1.18 ADDITIONAL SECURITY AND IDENTIFICATION OF EMPLOYEES.

A minimum of one guard will be required twenty-four (24) hours a day seven (7) days a week for the life of the project, to provide site security. The Contractor may be required at times to increase his security at the site to include the control of all personnel and deliveries to the site by the use of guards and check points, including the inspection of vehicles. Additional security may be required at various times based on terrorist threats.

The Contractor may be responsible for furnishing an identification badge/card to each employee prior to the employees work on-site, and for requiring each employee engaged on the work to display identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of the employee. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

1.19 NOT USED

1.20 WARRANTY OF CONSTRUCTION

a. General Requirements
***1**

(1) In addition to any other warranties in this contract, the Contractor warrants, that work performed under this contract conforms to the contract

requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(2) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(a) Obtain all warranties that would be given in normal commercial practice;

(b) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(c) Provide names, addresses, and telephone numbers of all subcontractors, equipment suppliers, or manufacturers with specific designation of their area of responsibilities if they are to be contacted directly on warranty corrections; and

(d) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(**3**) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(**4**) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(**5**) Defects in design or manufacture of equipment specified by the Government on a "brand name and model" basis, shall not be included in this warranty. In this event, the Contractor shall require any subcontractors, manufacturers, or suppliers thereof to execute their warranties, in writing, directly to the Government.

b. Equipment Warranty Identification Tags

(1) The Contractor shall provide warranty identification tags on all Contractor and Government furnished equipment which he has installed.

(a) The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

(b) Sample tags shall be submitted for Government review and approval. These tags shall be filled out representative of how the

Contractor will complete all other tags.

(c) Tags for Warrantied Equipment: The tag for this equipment shall be similar to the following. Exact format and size will be as approved.

EQUIPMENT WARRANTY
CONTRACTOR FURNISHED EQUIPMENT

MFG MODEL NO.

SERIAL NO.

CONTRACT NO.

CONTRACTOR NAME

CONTRACTOR WARRANTY EXPIRES

MFG WARRANTY(IES) EXPIRE

EQUIPMENT WARRANTY
GOVERNMENT FURNISHED EQUIPMENT

MFG MODEL NO.

SERIAL NO.

CONTRACT NO.

DATE EQUIP PLACED IN SERVICE

MFG WARRANTY(IES) EXPIRE

(d) If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag.

(2) Execution. The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment.

c. Contractor's Response to Warranty Service Requirements. Following oral or written notification by the Contracting Officer or an authorized representative of the installation designated in writing by the Contracting Officer, the Contractor shall respond to warranty service requirements in accordance with the "Warranty Service Priority List" and the three categories of priorities listed below. ***1**

First Priority Code 1 Perform on site inspection to evaluate situation, determine course of action, initiate work within 24 hours and work continuously to completion or relief.

Second Priority Code 2 Perform on site inspection to evaluate situation, determine course of action, initiate work within 48 hours and work continuously to completion or relief.

Third Priority Code 3 All other work to be initiated within 5 work days and work continuously to completion or relief.

The "Warranty Service Priority List" is as follows:

Code 1 Electrical
a. Power failure to any one of the dam piers
b. Closed Circuit Television
c. Public Address System

Code 2 Electrical
a. Receptacle and lights
b. Fire alarm systems
c. Telephone

Code 1 Heat

Code 1 Dam Operating, Control and Sensing Equipment (Electrical & Hydraulic)

Code 2 Plumbing

a. Water valves, drains, supply line or water pipe leaking

Code 1 Roof Leaks

Temporary repairs will be made where major damage to property is occurring

Code 2 Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis

Code 2 Air Exhaust System

Code 3 Dam Instrumentation System

Code 3 Cathodic Protection

(1) Should parts be required to complete the work and the parts are not immediately available, the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Contracting Officer or an authorized representative of the installation designated in writing by the

Contracting Officer, with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractors proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Contracting Officer or an authorized representative designated in writing by the Contracting Officer, will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Contracting Officer or an authorized representative designated in writing by the Contracting Officer will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.21 Not used

***1**

1.22 **PAYMENT FOR MOBILIZATION AND DEMOBILIZATION**

a. The Government will pay all costs for the mobilization and demobilization of all of the fixed price sub-contractor's plant and equipment at the contract lump sum price for this item.

(1) Eighty percent of the lump sum price upon completion of the Contractor's mobilization at the work site.

(2) The remaining percent upon completion of demobilization.

b. The Contracting Officer may require the sub-contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraph 1.22a(1) and (2)of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobiliztion; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph (1) above of this clause is not subject to appeal. *1

***3**

1.23 ***3 SALVAGE MATERIALS AND EQUIPMENT *3**

The Contractor shall maintain adequate property control records of all materials or equipment as specified in FAR Subpart 45.5 "Management of Government Property in Possession of the Contractor." An Advance Agreement is required for Government Property Management per Section 00115 paragraph 2.7.

See Section 02220 for the items to be salvaged. The Contractor shall be responsible for the adequate storage and protection of all salvaged materials and equipment. The Government will seek an equitable cost adjustment for all salvaged materials and equipment damaged during salvage operations or while in the contractor's care as a result of negligence.

All other Government property/equipment shall be removed/salvaged/scrapped as specified in FAR 45.6 "Reporting, Redistribution and Disposal of Contractor Inventory". FAR 45.610 "Sale of Surplus Contractor Inventory" will be followed with the proceeds from any sale being crdited to the cost of the work.

The details of this entire process will be developed in an Advance Agreement. *3

1.24 IDENTIFICATION OF GOVERNMENT-FURNISHED PROPERTY
***1**

a. The Government will furnish to the Contractor the property identified in the Schedule to be incorporated or installed into the work or used in performing the contract. The listed property will be furnished at the place specified below. When the property is delivered, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer. The Contractor shall also report in writing to the Contracting Officer within 24 hours of delivery any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work, unless otherwise indicated in this contract. ***1**

Sheet Pile from Storage Yard on Kentucky Bank See Sheet X-22 A ReferenceDrawings.

The cofferdam steel deflector frame is available for use by the contractor during the construction of the dam as a flow deflector. It is located in the Storage yard on the Kentucky Bank. Once the construction of the dam is complete the steel deflector frame shall be removed from the project site by the contractor.

The contractor will take possession from Massman Construction Company the maintenance bulkheads (2-38 ft (weight 243 tons each), 1-18 ft (weight 176 tons), 1-11 ft (weight 114 tons)) steel maintenance bulkheads, 110 feet long. These bulkheads are to be used for construction of the tainter gates. Once construction of the tainter gates is complete the contractor shall recondition (required structural repairs) and total repainting of these bulkheads which would entail removing/blasting off all existing paint and reapplying the entire paint system (5-E-Z) per Spec Section 09965 Painting: Hydraulic Structures, and store bulkheads at the Smithland Lock and Dam Gate Storage Facility. Lifting of the bulkheads off barges at

Smithland will be required. The Contractor shall also supply proper dunage material to place under and between the stored bulkheads as well as tie down cables and clamps.

1.25 AGGREGATE SOURCES

Aggregates may be furnished from any source designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated. Additionally, a list of aggregate sources from the region surrounding the Olmsted site was published in the Concrete Materials Design Memorandum No. 4 (DM No. 4), dated October 1990. DM No. 4 is available for review in the Louisville District Office; please contact Mr. David Kiefer at 502-315-6445. At the time when DM No. 4 was being prepared, these sources were capable of furnishing aggregate of the quality required for construction of the Olmsted Locks concrete, when suitably processed. No guarantee is given or implied that any of the sources listed in DM No. 4 are currently capable of producing aggregates that meet the required quality stated in the technical specifications. If the Contractor proposes to construct portions of the Dam at a site remote from the Olmsted site, no aggregate source information is available from the Government.

Source. Within 60 days after award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish aggregates. If the Contractor proposes to furnish aggregates from a source or from sources not listed above, he may designate only a single source or single combination of sources for aggregates. Samples for acceptance testing shall be provided as required by the technical portions of these specifications.

Listing of a concrete aggregate source in DM No. 4 is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for concrete aggregate as determined by the Contracting Officer. Materials produced from listed sources shall meet all requirements of the technical portions of these specifications.

1.26 PROJECT SIGN

The Contractor shall furnish and erect at the location directed one project sign.

Exact placement location will be designated by the Contracting Officer. The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood with dimensional lumber uprights and bracing.

All legends are to be painted in the sizes and styles as specified by the graphic formats shown at the end of this section. The signs (including back and edges), posts and braces shall be given two coats of Benjamin Moore No. 120-60 poly-silicone enamel or approved equal before lettering. The 4' x 4' right section of the project sign shall be white with black lettering. The 2' x 4' left section shall be Communication Red (CR) with

white lettering. Paint colors shall be as follow:

Black - Federal Standard 595a Color Number 27038
White - Federal Standard 595a Color Number 27875
Red - PANTONE 032

An example of the sign including mounting and fabrication details are also provided at the end of this section.

Name of the project shall be as follows:

OHIO RIVER LOCKS AND DAM 52 AND 53
REPLACEMENT PROJECT
(OLMSTED LOCKS AND DAM)
DAM CONSTRUCTION

Name of the designer shall be as follows:

JACOBS/GERWICK JOINT VENTURE
ST. LOUIS, MISSOURI

Erection and Maintenance.
***1**

a. The sign shall be erected at the designated location. The sign shall be plumb and backfill of post holes shall be well tamped to properly support the sign in position throughout the life of the contract. The sign shall be maintained in good condition until completion of the contract, and shall be removed from the site upon completion of work under the contract. ***1**

b. The Corps of Engineers logo and the Jacobs/Gerwick logo will be provided by the Contracting Officer.

1.27 NOT USED

1.28 WAGE RATES
***1**

A Project Wage Decision has been **provided by** the Department of Labor for this contract. The classifications and wage rates to be incorporated in the Project Wage Decision are applicable to this contract only, and reflect the minimum wages to be paid for work performed in Pulaski County, Illinois, Ballard County, Kentucky, and in the Ohio River between the extreme boundaries of the above listed counties.

Wage Decisions attached at the end of Section 00800 are: General Wage Decision IL030016 and Service Wage Determiantion 94-2309 Rev (26). *1

1.29 PURCHASE ORDERS
***1**

In addition to the advance notification/consent requirements on subcontracts discussed in FAR 52.244-4, Section 00700, the Contractor will also be required to provide five copies of all purchase orders, for items

requiring shop inspection, showing firm names and addresses, shall be submitted to the Contracting Officer when orders for materials are placed. Orders shall be so worded or marked that each item, piece or member can be definitely identified on the drawings. ***1**

1.30 INTERFERENCE WITH TRAFFIC AND PUBLIC AND PRIVATE PROPERTY.

a. The Contractor at all times shall dispose his plant and conduct the work in such manner as to cause as little interference as possible with private and public travel. Damage (other than that resulting from normal wear and tear) to roads, shall be repaired to as good a condition as they were prior to the beginning of work and to the satisfaction of the Contracting Officer.

b. The Contractor shall provide and maintain as may be required by the State of Illinois, Department of Transportation, proper barricades, fences, danger signals and lights, provide a sufficient number of watchmen, and take such other precautions as may be necessary to protect life, property and structures, and shall be liable for and hold the Government free and harmless from all damages occasioned in any way by his act or neglect, or that of his agents, employees, or workmen.

1.31 SEQUENCE OF WORK.

As many as three separate construction contracts will be concurrent with, or overlap the Dam Construction contract; the ongoing Approach Walls Contract, ongoing Operating and Maintenance Bulkhead Contract, and the future Buildings and Grounds contract. The Service Mound Area El. 345 will not be available for use by Dam contractor; this is the flat area that currently only has the ROSS Building on it. The contractor will be allowed to construct the wicket gate test section in this area but not to use the area for storage or parking. Therefore coordination and cooperation between contractors shall be required.

The Contractor is alerted to review the requirements and limitations indicated in the Specification Section 1130, ENVIRONMENTAL PROTECTION, regarding fleeting, mooring and work in the area of the Chestnut Hills Nature Preserve, and in the areas of mussel beds located downstream of the project.

The Contractor is alerted to review the requirements indicated in the Specification Section 01710 Execution Requirements For Construction. The Contractor shall pay particular attention to paragraph 1.12 Sequencing & Scheduling.

1.32 GOVERNMENT FIELD OFFICE FACILITIES AND SERVICES.

General. The Government Field Office Facilities are located as shown on the drawings. Beginning on the Notice To Proceed Date the Dam Construction Project Contractor will become responsible for maintenance of the Government Field Office Facilities. Maintenance shall include any normal repairs needed to keep the office functioning properly, including but not limited to cleaning and greasing equipment and replacing filters as needed on a regular basis. The Contractor shall set up a 24 hour repair

service phone number which can be called by Government personnel in order to have maintenance problems repaired by the next day, this includes the public restrooms and overlook area. The Floor Plan, Building Elevations, Laboratory Plan, and Site Plan, are in the Reference Drawings.

1.32.1 Janitor Service

The Contractor shall furnish daily janitorial services for the Government office, Laboratory, and overlook restrooms and perform normal maintenance of these facilities and grounds and weekly janitorial services for the control room including restrooms and lunch room located in the lock structure as deemed necessary by the Contracting Officer starting at Notice to Proceed and continuing for the life of the contract. The supply of all cleaning equipment and materials shall be the responsibility of the Contractor. Services need only be performed four hours a day, five days a week, which is sufficient to maintain a clean office. Toilet facilities shall be kept clean and sanitary at all times. Toilet paper, hand soap, paper towels, and other materials the Contracting Officer determines necessary to provide sanitary facilities shall be in such a manner to least interfere with the operations, but will be accomplished during normal working hours. Services shall be accomplished to the satisfaction of the Contracting Officer. The Contractor will include items such as furnace filters, paper towels, soap, toilet paper, cleaning supplies and light bulbs. (The Government estimates these items to cost approximately $3,200 per year.)

The Contractor shall also provide daily trash collection and clean-up of the Government buildings and adjacent outside areas, snow and ice removal from office and parking areas, and the access road from the county road. The Contractor shall dispose of all discarded debris, aggregate samples and concrete test samples, all in a manner approved by the Contracting Officer.

1.32.2 Maintenance of Established Turf Area

The Contractor shall provide personnel and equipment for mowing and trimming grass as scheduled below (drawing shown in "Remarks" are provided in Plans as Reference Drawings in Volume 7 of 7 unless noted otherwise):

LOCATION	TIME FRAME	REMARKS
Each side of access road from STA 10+00 to 30+00 to tree line; also the area designated as Storage Area for Government Salvage including lateral field along Access Road	4 times per season as directed by the Contracting Officer	See Drawing C-5, "PLAN DAM ACCESS ROAD" in VOL 7 of 7; See Drawing X-5, "LOCATION PLAN AND VICINITY MAP" in VOL 7 of 7
Slope and hill side between Resident Engineer's Office and Lock Structure, EL 420 and below including mound area.	2 times per season as directed by the Contracting Officer	See Drawing X-10, "CONCRETE TEST AREA" in VOL 7 of 7; areas to be mowed are roughly delineated

		by areas C2, C3, and C4 on drawing
Along entrance road and around Resident Engineers Office and Overlook	Twice a month between March & November	See Drawing C-2A, "SITE PLAN" in VOL 7 of 7

Mowing shall include the clean up of the grass from the hard surfaces and killing of weeds that grow in graveled areas under the fence and along the riprap ditch lines. Trimming around the office, sidewalks, signs, concrete security blocks, guardrails and roses will be required with each mowing. The roses will also be trimmed each fall. All debris will be discarded in a manner approved by the Contracting Officer.

1.32.3 Locks

Maintenance of the Olmsted Locks will be accomplished by Government forces with the exception of the control room as mentioned above in para. 1.32.2.

1.32.4 Overlook Area

In addition to the requirements mentioned above, the Contractor shall provide daily clean-up and trash collection of the overlook area.

1.32.5 Trash Pickup

The Contractor will be responsible for trash pick-up.

1.32.6 Field Office Located at Pre-Cast Yard (If Located Off Site)

The Contractor shall furnish a field office located at the Pre-Cast Yard (if the yard is located off site) with a minimum of 300 sq. ft. free office space for the exclusive use of the Government inspectors. It shall be watertight, lockable, with open/close windows, properly heated, with electrical hookup, adequately lighted, with wall receptacles, ventilated, air conditioned, and furnished with 2 lockable desks (30" x 60"), with swivel chairs, two filing cabinets, (with 4 drawers each), 2 (30" x 60") table, plan table with stool, 8 straight back chairs, small refrigerator, microwave oven, two connected telephones, an additional telephone line for a fax machine, one additional telephone line for data transmission, and one port-o-let.

The contractor shall provide a phone and desk space for the government inspector for inspection of the tainter gates at an off-site location.

The Contractor shall budget $5,000.00 to be used for computers, a fax machine, printers and other electronic devices to be used by the Government. The specifications for this equipment will be provided when the equipment is needed.

***1** ***1**

1.33 NOT USED

1.34 EQUIPMENT AND OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995) EFAR 52.231-5000.

a. This does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region II. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time of negotiations shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

d. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the Contracting Officer shall request the Contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Cover Sheet.

***3**

e. **T**he contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance with the requirements of SPECIAL CONTRACT REQUIREMENT: EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE. A copy of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule" is available for review at the office of the District Engineer, Room 821, 600 Dr. Martin Luther King, Jr. Place, Louisville, Kentucky, or a copy may be ordered from the Government Printing Office at a cost of $11.00 by calling telephone no. (301) 953-7974. ***3**

Address to Order: U.S. Government Printing Office
Document Warehouse
8160 Cherry Lane
Laurel, MD 20707

Vol No.	Stock No.
1	008-022-00254-5
2	008-022-00255-3
3	008-022-00256-1
4	008-022-00257-0
5	008-022-00258-8
6	008-022-00259-6
7	008-022-00260-0
8	008-022-00261-8
9	008-022-00262-6
10	008-022-00263-4
11	008-022-00264-2
12	008-022-00265-1

1.35 NOT USED

1.36 ILLINOIS RETAILER'S OCCUPATIONAL TAX AND USE TAX.

a. The contract to be awarded will be a construction contract between the construction Contractor and the United States Government. As contemplated by 86 Illinois Administrative Code, Section 130.2075, sales of materials to construction Contractors for incorporation into real estate owned by exclusively charitable, religious or educational institutions or organizations, or for incorporation into real estate owned by governmental bodies, are exempt from Retailers' Occupational Tax and Use Tax. However, sales, of tools, fuel, lumber for forms and other end use or consumption items to construction Contractors who do not incorporate these items into real estate are taxable sales. A supplier claiming exemption hereunder shall have among his records a certification from the purchasing Contractor stating that his purchases are for conversion into real estate under a contract with a church, charity, school, or governmental body, identifying the church, charity, school or governmental body that is involved by name and address and stating on what date his contract was entered into.

b. The person claiming the exemption has the burden of proving that the Contractor's customer qualifies as an exclusively charitable, religious or educational organization or institution, or as a governmental body. In case of doubt on this point, the Contractor's customer shall obtain a ruling from the Illinois Department of Revenue.
***1**
c. Prior to award of a contract, the successful **Offeror** shall furnish a break-out to be incorporated into the contract separately pricing (1) materials to be incorporated into the structure or improvement to real estate, (2) services and other obligations of the construction contract, and (3) total **estimated cost**. ***1**

1.37 NOT USED

1.38 NOT USED

1.39 PROGRESS PHOTOGRAPHS

PROGRESS PHOTOGRAPHS. The Contractor shall, during the progress of the

work, furnish the Contracting Officer Kodak Compatible Photo CD master disc, photographs, slides and negatives depicting construction progress. The photographic work furnished shall be commercial quality as determined by the Contracting Officer. The photography shall be performed between the first and fifth of each month and the photographs, slides and negatives delivered to the Contracting Officer no later than the 15th of each month taken. A maximum of twenty views from different positions shall be taken as directed to show, inasmuch as possible, work accomplished during the previous month. Where appropriate take pictures from the same locations as the previous month. If the work is occurring at multiple work sites, there shall be a minimum of six photos from each major site. At least, on (1) set of photographs, slides and negatives will be made at completion of the contract, after final inspection by the Contracting Officer. Additionally, aerial photographs shall be furnished quarterly (IE Mar., June., Sept. & Dec.) and shall cover both on site work and remote work sites. The photographs shall be 8"x10" color prints and the slides 35 mm color. Each photograph and slide shall be identified on the face of the picture or the border of the slide giving date made, contract title and number, location of work, as well as a brief description of work depicted. Each negative will be identified with the same information on a sheet of paper by cross-referencing to the number on the negative. The photo CD images shall be in *.PCD format and along with the CD, an electronic file shall be submitted containing the information below on each photo taken. One CD and two copies of photographs and slides, along with the original negatives of each view taken, shall be furnished to the Contracting Officer by the time stipulated above.

Electronic Photo CD Label File named for the month and year it applies shall contain the following for each photo.

Contract N. and description
Photo file name
Negative cross reference number
Photo date and time to the nearest hour minimum
Photographer
Description of the photo
Site Location
Location on site of the photo to include the direction of the view
Schedule activity ID of work being depicted

***3 *1**

1.40 **PAYMENT FOR MATERIALS DELIVERED AND PROGRESS PAYMENTS OFFSITE**

Materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions are fulfilled. Payment for items delivered to locations other than the worksite will be limited to:

(1) Materials required by the technical provisions.

(2) Materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

Progress payments and payments for materials delivered offsite will be made subject to FAR 52.216-7. *1

***3**

1.41 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (SEP 1989) FAR 52.228-5.
***1**

The Contractor shall provide and maintain during the entire performance of this contract at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract. ***1**

(1) Coverage complying with State laws governing insurance requirements, such as those requirements pertaining to Workman's Compensation and Occupational Disease Insurance. Employer's Liability Insurance shall be furnished in limits of not less than $100,000.00 except in states with exclusive or monopolistic funds.

(2) Comprehensive General Liability Insurance for bodily injury coverage shall be furnished in limits of not less than $500,000 per occurrence.

(3) Comprehensive Automobile Liability Insurance for both bodily injury and property damage, shall be furnished in limits of not less than $200,000.00 per person, $500,000.00 per accident for bodily injury, and $20,000.00 per accident for property damage. When the Financial Responsibility or Compulsory Insurance Law of the State, requires higher limits, the policy shall provide for coverage of at least those higher limits.

(4) Marine Liability Insurance furnished in a limit of not less than $1,000,000.00 per accident for property damage.

(5) Pollution Insurance (oil spills, etc.) furnished in a limit of not less than $1,000,000.00 per accident.

Before commencing work under this contract, the Contractor shall submit to the Contracting Officer in writing that the required insurance certification has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

The Contractor shall insert the substance of this clause, including this paragraph, in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

1.42 NOT USED

1.43 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER. ER 415-1-15

***1**

This provision specifies the procedure for the determination of time extensions for unusually severe weather. In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied: ***1**

The weather experienced at the project sites during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the Olmsted project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER CONDITION DELAY WORK DAYS BASED ON (7) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
11	10	9	8	7	6	6	5	5	5	8	11

MONTHLY ANTICIPATED ADVERSE WEATHER CONDITION DELAY WORK DAYS BASED ON (6) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9	9	8	7	6	5	5	4	4	4	7	9

MONTHLY ANTICIPATED ADVERSE WEATHER CONDITION DELAY WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
8	7	6	6	5	4	4	4	4	4	6	8

If the Contractor proposes to construct the Navigable Pass or Tainter Gate sections at a Prefabrication Yard at a location other than the Olmsted site he shall provide the proposed location of the remote Prefabrication Yard site to the Government in his proposal. An additional set of monthly anticipated weather condition delay work days, appropriate for the proposed site, will be provided by the Government after contract award.

***1**

Adverse river conditions can also affect the various construction activities in the river. The conditions will be evaluated against the following table which shows limiting river conditions for major in river construction activities. If the limiting criteria are exceeded during the period between 16 June and 30 November inclusive, and cumulative delays to the project occur exceeding 5% of the construction period, and the delay

effects 50% of the work on critical activities, then a time extension may be granted. This criteria provides no guarantee that construction can be accomplished in these conditions and additional protective measures may be needed. The Contractor will be required to compute the average velocity of the river in accordance with Section 01351, Underwater Survey, River Monitoring, And Scour Repair Section 3.5. ***1**

Conditions for Work In-the River	Limiting Criteria
Maximum Average River Velocity for Placing Shells	6 ft per sec (Approx. 4 MPH)
Maximum River Stage for Placing Shells (Other than Nav Pass Shells #3 through #11)	El 312
Maximum River Stage for Placing Nav Pass Shells #3 through #11 (due to closure of locks) for Unrestricted Navigation	El 306
Minimum River Stage for Placing Shells (Other than the Left Boat Abutment)	El 283
Minimum River Stage for Placing the Left Boat Abutment	El 285
Maximum River Stage for Installing Tainter Gate	El 301
Contractor is responsible for providing a 4'tall splash board at the top of the downstream maintenance bulkhead.	
Maximum River Stage for InstallingUpper Pier Wall Shells	El 306
Maximum Average River Velocity for Installing Tainter Gates	5 ft per sec (Approx. 3 MPH)
Maximum Average River Velocity for Pile Driving	6 ft per sec (Approx. 4 MPH)
Maximum Average River Elevation for Pile Driving	El 315
Maximum Average River Velocity for Backfill Placement	6 ft per sec (Approx. 4 MPH)
Maximum Average River Elevation for Backfill Placement	El 316
Maximum Average River Velocity for Dredging	6 ft per sec (Approx. 4 MPH)
Maximum River Stage for Dredging	El 316

Adverse river slope and stage can also affect the contractors operations in the river. If this occurs the conditions will be evaluated against the following table which shows abnormal high river elevations and slope gradients for each month; the data provided represents an approximation of the statistical second standard deviation above the mean. The data in the table therefore represent conditions which would be considered abnormal.

If either condition is met and a delay to the project occurs, then a time extension will be granted. The slope gradient is expressed in feet/mile where the slope is defined by the readings at Lock 53 lower gage and Cairo gage.

Month	Elev	Slope
Jan	323	0.36
Feb	325	0.36
Mar	325	0.33
Apr	325	0.25
May	325	0.22
Jun	320	0.20
Jul	310	0.19
Aug	305	0.22
Sep	305	0.22
Oct	305	0.28
Nov	310	0.27
Dec	320	0.34

***1**
Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more on the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days, If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b. above, the Contracting Officer will convert any qualifying delays to work days, giving full consideration for equivalent fair weather work days, and issue a **time extension.** ***1**

The anticipated adverse weather work days listed above are based on days with precipitation greater than 0.1 inch and/or maximum temperature below 32 degrees F. The numbers shown represent the number of work days normally expected to have these particular weather conditions based on historical data obtained from the "Climatography of the United States No. 20". The actual number of days will vary. This information is furnished for computation of possible time extensions due to weather delays and is not intended to imply that no work can be done on these days. The Contractor shall make his own determination of the effect of these conditions on his operations under this contract, and schedule his work accordingly.

1.44 USE OF INCLINOMETER FOR LONG BED DUMP TRUCKS (DACF BULLETIN 25 MARCH 1993)

The recommendation of EM 385-1-1, Section 16.B.15, is mandatory for this project.

1.45 AVAILABILITY OF SAFETY AND HEALTH REQUIREMENTS MANUAL (EM 385-1-1).

As covered by CONTRACT CLAUSE "ACCIDENT PREVENTION", compliance with EM 385-1-1 is a requirement for this contract. The plan shall include, but is

not limited to, each of the topic areas listed in Appendix A. Copies may be purchased for $31.00 each at the following address:

United States Government Bookstore
Room 118, Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222-4003
Telephone: (412) 395-5021 FAX: (412) 395-4547

Or downloaded from the following website:

http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm

The Activity Hazard Analysis, AHA, form contained in the Safety Manual EM 385-1-1 has been replaced with the form attached at the end of this section. A word document of the form can also be received from the Corps field office. The contractor will be required to use this latest version containing Risk Assessment.

In the AHA a detail listing of work and hazardous activities must be included. Detailed site specific hazards and controls shall be provided in the AHA for each phase of the operation.

1.46 FIRE PROTECTION DURING CONSTRUCTION (MIL-HDBK-1008B PARA. 2.9.2)(15 APRIL 1991)

The Contractor is alerted to the requirements of Contract Clause "CLEANING UP" and more specifically to the requirements for fire protection during construction spelled out in EM 385-1-1 and NFPA No. 241 Building Construction and Demolition Operations. This item must be covered in the submittal required under Contract Clause "ACCIDENT PREVENTION".

1.47 HAUL ROADS

Whenever practical, one-way haul roads shall be used on this contract. Haul roads built and maintained for this work shall comply with the following:

a. One-way haul roads for off-the road equipment; e.g., belly dumps, scrapers, and off-the-road trucks shall have a minimum usable width of 25 ft. One-way haul roads for over-the-road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15 ft. When the Contracting Officer determines that it is impractical to obtain the required width for one-way haul roads (e.g., a road on top of a levee), a usable width of not less than 10 ft. may be approved by the Contracting Officer, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalman and an effective means of speed control.

b. Two-way haul roads for off-the-road haulage equipment shall have a usable width of 60 ft. Two-way haul roads for over-the-road haulage equipment only may be reduced to a usable width of 30 ft.

c. Haul roads shall be graded and otherwise maintained to keep the

surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

d. Grades and curves shall allow a minimum sight distance of 200 ft. for one-way roads and 300 ft. for two-way roads. Sight distance is defined as the centerline distance an equipment operator (4.5 ft. above the road surface) can see an object 4.5 ft. above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), a positive means of traffic control shall be implemented.

e. Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 ft.

f. Haul roads shall have the edges of the usable portion marked with posts at intervals of 50 ft. on curves and 200 ft. maximum elsewhere. Such markers shall extend 6 ft. above the road surface and, for nighttime haulage, be provided with reflectors in both directions.

1.48 NOT USED

1.49 NOT USED

1.50 CONSTRUCTION HAZARD COMMUNICATION

The Contractor is required to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1926.59). This standard is designed to inform workers of safe and appropriate methods of working with hazardous substances in the workplace. The standard has five requirements, and every hazardous or potentially hazardous substance used or stored in the work area is subject to all five. They are:

(1) Hazard Evaluation. Any company that produces or imports a chemical or compound must conduct a hazard evaluation of the substance to determine its potential health or physical hazard. The hazard evaluation consists of an investigation of all the available scientific evidence about the substance. The Contractor is required to assure that all producers (manufacturer/distributors) have performed these evaluations and transmit the required information with any hazardous materials being used or stored on the project site. From the hazard evaluation, a substance may be classified as a health hazard, or a physical hazard. These classifications are then further broken down according to type:

Health Hazards	Physical Hazards
Carcinogens	Combustible liquids
Irritants	Compressed gases
Sensitizers	Explosives
Corrosives	Flammables
Toxic substances	Organic peroxides
Highly toxic substances	Unstable substances
Substances harmful to specific organs or parts of the body	Water-reactive substances

(2) Warning Labels. If a chemical is hazardous or potentially hazardous, the producer or importer must affix a warning label to every container of that chemical before it leaves his facility. The Contractor must assure these labels are attached and legible. The label must identify the chemical, state the hazard, and give the name and address of the producer or importer. If the hazardous substance is transferred to another container, that container must then be labeled, tagged, or marked with the name of the chemical and the appropriate hazard warning. Warning labels should be replaced immediately if they are defaced or removed.

(3) Material Safety Data Sheets. The producer or importer must also supply a material safety data sheet (MSDS). The Contractor must keep these available in the work area where the substance is used, so that the people using the substance can easily review important safety and health information, such as:

The hazard possible from misuse of the substance
Precautions necessary for use, handling, and storage
Emergency procedures for leaks, spills, fire and first aid
Useful facts about the substance's physical or chemical properties

(4) Work Area Specific Training. Because of hazardous substance may react differently depending on how it is used or the environment of the work area, the Contractor must conduct work area specific training; special training which takes the Contractor's operations, environment, and work policies into consideration. Work area training presents:

The hazardous substances which are present in the work place and the hazards they pose

Ways to protect against those hazards, such as protective equipment, emergency procedures, and safe handling

Where the MSDS's are kept, and an explanation of the labeling system
Where the Contractor's written Hazard Communication Program is located

(5) The Written Hazard Communication Program. In accordance with OSHA requirements, the Contractor must prepare a written Hazard Communication Program. This document will be included in the Contractor's Accident Prevention Plan. This document states how the Contractor plans to ensure that hazardous materials are appropriately labeled, how and where MSDS's will be maintained, and how employees will be provided with specific information and training.

1.51 NOT USED.

1.52 MECHANICAL ROOM LAYOUT (ORL).

Detailed mechanical room layout drawings shall be submitted for approval in accordance with SD-04 Section 01330. Layout drawings shall show location and maintenance clearances for all mechanical room equipment, and all utility runs/chases for mechanical, electrical, telephone and other similar systems. Drawings shall be submitted at the same time as the submittals

for the equipment to be located within the mechanical room. These rooms include 4-Machinery House Middle Piers, 2-Machinery House End Piers, and 2-Void Rooms (located in the locks).

1.53 RIGHTS IN TECHNICAL DATA--NONCOMMERCIAL ITEMS (NOV 1995)
252.227-7013

(a) Definitions. As used in this clause:

(1) "Computer data base" means a collection of data recorded in a form capable of being processed by a computer. The term does not include computer software.

(2) "Computer program" means a set of instructions, rules, or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

(3) "Computer software" means computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulas and related material that would enable the software to be reproduced, recreated, or recompiled. Computer software does not include computer data bases or computer software documentation.

(4) "Computer software documentation" means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

(5) "Detailed manufacturing or process data" means technical data that describe the steps, sequences, and conditions of manufacturing, processing or assembly used by the manufacturer to produce an item or component or to perform a process.

(6) "Developed" means that an item, component, or process exists and is workable. Thus, the item or component must have been constructed or the process practiced. Workability is generally established when the item, component, or process has been analyzed or tested sufficiently to demonstrate to reasonable people skilled in the applicable art that there is a high probability that it will operate as intended. Whether, how much, and what type of analysis or testing is required to establish workability depends on the nature of the item, component, or process, and the state of the art. To be considered "developed," the item, component, or process need not be at the stage where it could be offered for sale or sold on the commercial market, nor must the item, component, or process be actually reduced to practice within the meaning of Title 35 of the United States Code.

(7) "Developed exclusively at private expense" means development was accomplished entirely with costs charged to indirect cost pools, costs not allocated to a government contract, or any combination thereof.

(i) Private expense determinations should be made at the lowest practicable level.

(ii) Under fixed-priced contracts, when total costs are greater than the firm-fixed-price or ceiling price of the contract, the additional development costs necessary to complete development shall not be considered when determining whether development was at government, private, or mixed expense.

(8) "Developed exclusively with government funds" means development was not accomplished exclusively or partially at private expense.

(9) "Developed with mixed funding" means development was accomplished partially with costs charged to indirect cost pools and/or costs not allocated to a government contract, and partially with costs charged directly to a government contract.

(10) "Form, fit, and function data" means technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.

(11) "Government purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.

(12) "Government purpose rights" means the right to--

(i) Use, modify, reproduce, release, perform, display, or disclose technical data within the Government without restrictions; and

(ii) Release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data for United States government purposes.

(13) "Limited rights" means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another part, except that the Government may reproduce, release or disclose such data or authorize the use or reproduction of the data by persons outside the Government if reproduction, release, disclosure, or use is--

(i) Necessary for emergency repair and overhaul; or

(ii) A release or disclosure of technical data (other than

detailed manufacturing or process data) to, or use of such data by, a foreign government that is in the interest of the Government and is required for evaluation or informational purposes;

(iii) Subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and

(iv) The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.

(14) "Technical data" means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such a financial and/or management information.

(15) "Unlimited rights" means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.

(b) Rights in technical data.

The Contractor grants or shall obtain for the Government the following royalty free, world-wide, nonexclusive, irrevocable license rights in technical data other than computer software documentation (see Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract for rights in computer software documentations):

(1) Unlimited rights.

The Government shall have unlimited rights in technical data that are--

(i) Data pertaining to an item, component, or process which has been or will be developed exclusively with Government funds;

(ii) Studies, analyses, test data, or similar data produced for this contract, when the study, analysis, test, or similar work was specified as an element of performance;

(iii) Created exclusively with Government funds in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes;

(iv) Form, fit, and function data;

(v) Necessary for installation, operation, maintenance, or training purposes (other than detailed manufacturing or process data);

(vi) Corrections or changes to technical data furnished to the Contractor by the Government;

(vii) Otherwise publicly available or have been released or disclosed by the Contractor or subcontractor without restrictions on further use, release or disclosure, other than a release or disclosure resulting from the sale, transfer, or other assignment of interest in the technical data to another party or the sale or transfer of some or all of a business entity or its assets to another party;

(viii) Data in which the Government has obtained unlimited rights under another Government contract or as a result of negotiations; or

(ix) Data furnished to the Government, under this or any other Government contract or subcontract thereunder, with--

(A) Government purpose license rights or limited rights and the restrictive condition(s) has/have expired; or

(B) Government purpose rights and the Contractor's exclusive right to use such data for commercial purposes has expired.

(2) Government purpose rights.

(i) The Government shall have government purpose rights for a five-year period, or such other period as may be negotiated, in technical data--

(A) That pertain to items, components, or processes developed with mixed funding except when the Government is entitled to unlimited rights in such data as provided in paragraphs (b)(ii) and (b)(iv) through (b)(ix) of this clause; or

(B) Created with mixed funding in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The five-year period, or such other period as may have been negotiated, shall commence upon execution of the contract, subcontract, letter contract (or similar contractual instrument), contract modification, or option exercise that required development of the items, components, or processes or creation of the data described in paragraph (b)(2)(i)(B) of this clause. Upon expiration of the five-year or other negotiated period, the Government shall have unlimited rights in the technical data.

(iii) The Government shall not release or disclose technical data in which it has government purpose rights unless--

(A) Prior to release or disclosure, the intended recipient is subject to the non-disclosure agreement at 227.7103-7 of the Defense Federal Acquisition Regulation Supplement (DFARS); or

(B) The recipient is a Government contractor receiving access to the data for performance of a Government contract that contains the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Market with Restrictive Legends.

(iv) The Contractor has the exclusive right, including the right to license others, to use technical data in which the Government has obtained government purpose rights under this contract for any commercial purpose during the time period specified in the government purpose rights legend prescribed in paragraph (f)(2) of this clause.

(3) Limited rights.

(i) Except as provided in paragraphs (b)(1)(ii) and (b)(1)(iv) through (b)(1)(ix) of this clause, the Government shall have limited rights in technical data--

(A) Pertaining to items, components, or processes developed exclusively at private expense and marked with the limited rights legend prescribed in paragraph (f) of this clause; or

(B) Created exclusively at private expense in the performance of a contract that does not require the development, manufacture, construction, or production of items, components, or processes.

(ii) The Government shall require a recipient of limited rights data for emergency repair or overhaul to destroy the data and all copies in its possession promptly following completion f the emergency repair/overhaul and to notify the Contractor that the data have been destroyed.

(iii) The Contractor, its subcontractors, and suppliers are not required to provide the Government additional rights to use, modify, reproduce, release, perform, display, or disclose technical furnished to the Government with limited rights. However, if the Government desires to obtain additional rights in technical data in which it has limited rights, the Contractor agrees to promptly enter into negotiations with the Contracting Officer to determine whether there are acceptable terms for transferring such rights. All technical data in which the Contractor has granted the Government additional rights shall be listed or described in a license agreement made part of the contract. the license shall enumerate the additional rights granted the Government in such data.

(4) Specifically negotiated license rights.

The standard license rights granted to the Government under paragraphs (b)(1) through (b)(3) of this clause, including the period during which the Government shall have government purpose rights in technical data, may be modified by mutual agreement to provide such rights as the parties consider appropriate but shall not provide the Government lesser rights than are enumerated in paragraph (a)(13) of this clause. Any rights so negotiated shall be identified in a license agreement made part of this contract.

(5) Prior government rights.

Technical data that will be delivered, furnished, or otherwise provided to the Government under this contract, in which the Government has

previously obtained rights shall be delivered, furnished, or provided with the pre-existing rights, unless--

(i) The parties have agreed otherwise; or

(ii) Any restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose the data have expired or no longer apply.

(6) Release from liability.

The Contractor agrees to release the Government from liability for any release or disclosure of technical data made in accordance with paragraph (a)(13) or (b)(2)(iii) of this clause, in accordance with the terms of a license negotiated under paragraph (b)(4) of this clause, or by others to whom the recipient has released or disclosed the data and to seek relief solely from the party who has improperly used, modified, reproduced, released, performed, displayed, or disclosed Contractor data marked with restrictive legends.

(c) Contractor rights in technical data.

All rights not granted to the Government are retained by the Contractor.

(d) Third party copyrighted data.

The Contractor shall not, without the written approval of the Contracting Officer, incorporate any copyrighted data in the technical data to be delivered under this contract unless the Contractor is the copyright owner or has obtained for the Government the license rights necessary to perfect a license or licenses in the deliverable data of the appropriate scope set forth in paragraph (b) of this clause, and has affixed a statement of the license or licenses obtained on behalf of the Government and other persons to the data transmittal document.

(e) Identification and delivery of data to be furnished with restrictions on use, release, or disclosure.

(1) This paragraph does not apply to restrictions based solely on copyright.

(2) Except as provided in paragraph (e)(3) of the clause, technical data that the Contractor assets should be furnished to the Government with restrictions on use, release, or disclosure are identified in an attachment to this contract (see Attachment). The Contractor shall not deliver any data with restrictive markings unless the data are listed on the Attachment.

(3) In addition to the assertions made in the Attachment, other assertions may be identified after award when based on new information or inadvertent omissions unless the inadvertent omissions would have materially affected the source selection decision. Such identification and assertion shall be submitted to the Contracting Officer as soon as

practicable prior to the scheduled date for delivery of the data, in the following format, and signed by an official authorized to contractually obligate the Contractor:

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data.

The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data should be restricted--

Technical Data to be Furnished With Restrictions*	Asserted Basis for Assertion**	Rights Category***	Name of Person Asserting Restrictions****
(LIST)	(LIST)	(LIST)	(LIST)

*If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process.

**Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such terms, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's right should be restricted.

***Enter asserted rights category (e.g. government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited or government purpose rights under this or a prior contract, or specifically negotiated licenses).

****Corporation, individual, or other person, as appropriate.

Date _____

Printed Name and Title _____

_____

Signature _____

_____

(End of identification and assertion)

(4) When requested by the Contracting Officer, the Contractor shall provide sufficient information to enable the Contracting Officer to evaluate the Contractor's assertions. The Contracting Officer reserves the right to add the Contractor's assertions to the Attachment and validate any listed assertion, at a later date, in accordance with the procedures of the Validation of Restrictive Markings on Technical Data clause of this contract.

(f) Marking requirements.

The Contractor, and its subcontractor or suppliers, may only assert restrictions on the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data to be delivered under this contract by marking the deliverable data subject to restriction. Except as provided in paragraph (f)(5) of this clause, only the following legends are authorized under this contract: the government purpose rights legend at paragraph (f)(2) of this clause: the limited rights legend at paragraph (f)(3) of this clause: or the special license rights legend at paragraph (f)(4) of this clause, and/or a notice of copyright as prescribed under 17 U.S.C. 401 or 402.

(1) General marking instructions.

The Contractor, or its subcontractors or suppliers, shall conspicuously and legibly mark the appropriate legend on all technical data that qualify for such markings. The authorized legends shall be placed on the transmittal document or storage container and, for printed material, each page of the printed material containing technical data for which restrictions are asserted. When only portions of a page of printed material are subject to the asserted restrictions, such portions shall be identified by circling, underscoring, with a note, or other appropriate identifier. Technical data transmitted directly from one computer or computer terminal to another shall contain a notice of asserted restrictions. Reproductions of technical data or any portions thereof subject to asserted restrictions shall also reproduce the asserted restrictions.

(2) Government purpose rights markings.

Data delivered or otherwise furnished to the Government with government purpose rights shall be marked as follows:

GOVERNMENT PURPOSE RIGHTS

Contract No. _____

Contractor Name _____

Contractor Address _____

_____

Expiration Date _____

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(2) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. No restrictions apply after the expiration date shown above. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(3) Limited rights markings.

Data delivered or otherwise furnished to the Government with limited rights shall be marked with the following legend:

LIMITED RIGHTS

Contract No. _____

Contractor Name _____

Contractor Address _____

_____

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(3) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such data must promptly notify the above name Contractor.

(End of legend)

(4) Special license rights markings.

(I) Data in which the Government's rights stem from a specifically negotiated license shall be marked with the following legend:

SPECIAL LICENSE RIGHTS

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these data are restricted by Contract No. _____)Insert contract number) _____, License No. _____ (Insert license identifier) _____. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

(ii) For purposes of this clause, special licenses do not include government purpose license rights acquired under a prior contract (see paragraph (b)(5) of this clause)_.

(5) Pre-existing data markings.

If the terms of a prior contract or license permitted the Contractor to restrict the Government's rights to use, modify, reproduce, release perform, display, or disclose technical data deliverable under this

contract, and those restrictions are still applicable, the Contractor may mark such data with the appropriate restrictive legend for which the data qualified under the prior contract or license. The marking procedures in paragraph (f)(1) of this clause shall be followed.

(g) Contractor procedures and records.

Throughout performance of this contract, the Contractor and its subcontractors or suppliers that will deliver technical data with other than unlimited rights, shall--

(1) Have, maintain, and follow written procedures sufficient to assure that restrictive markings are used only when authorized by the terms of this clause, and

(2) Maintain records sufficient to justify the validity of any restrictive markings on technical data delivered under this contract.

(h) Removal of unjustified and nonconforming markings.

(1) Unjustified technical data markings.

The rights and obligations of the parties regarding the validation of restrictive markings or technical data furnished or to be furnished under this contract are contained in the Validation of Restrictive Markings on Technical Data clause of this contract. Notwithstanding any provision of this contract concerning inspection and acceptance, the Government may ignore or, at the Contractor's expense, correct or strike a marking if, in accordance with the procedures in the Validation of Restrictive Markings on Technical Data clause of this contract, a restrictive marking is determined to be unjustified.

(2) Nonconforming technical data markings.

A nonconforming marking is a marking placed on technical data delivered or otherwise furnished to the Government under this contract that is not in the format authorized by this contract. Correction of nonconforming markings is not subject to the Validation of Restrictive Markings on Technical Data clause of this contract. If the Contracting Officer notifies the Contractor of a nonconforming marking and the Contractor fails to remove or correct such marking within sixty (60) days, the Government may ignore or, at the Contractor's expense, remove or correct any nonconforming marking.

(I) Relation to patents.

Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other with otherwise granted to the Government under any patent.

(j) Limitation on charges for rights in technical data.

(1) The Contractor shall not charge to this contract any cost, including, but not limited to, license fees, royalties, or similar charges, for rights in technical data to be delivered under this contract when--

(I) The Government has acquired, by any means, the same or greater rights in the data; or

(ii) The data are available to the public without restrictions.

(2) The limitation in paragraph (j)(1) of this clause--

(I) Includes costs charged by a subcontractor or supplier, at any tier, or costs incurred by the Contractor to acquire rights in subcontractor or supplier technical data, if the subcontractor or supplier has been paid for such rights under any other Government contract or under a license conveying the rights to the Government; and

(ii) Does not include the reasonable costs of reproducing, handling, or mailing the documents or other media in which the technical data will be delivered.

(k) Applicability to subcontractors or suppliers.

(1) The Contractor shall ensure that the rights afforded its subcontractors and suppliers under 10 U.S.C. 2320, 10 U.S.C. 2321, and the identification, assertion, and delivery processes of paragraph (e) of this clause are recognized and protected.

(2) Whenever any technical data for noncommercial items is to be obtained from a subcontractor or supplier for delivery to the Government under this contract, the Contractor shall use this same clause in the subcontract or other contractual instrument, and require its subcontractors or suppliers to do so, without alteration, except to identify the parties. No other clause shall be used to enlarge or diminish the Government's, the Contractor's, or a higher-tier subcontractor's or supplier's rights in a subcontractor's or supplier's technical data.

(3) Technical data required to be delivered by a subcontractor or supplier shall normally be delivered to the next higher-tier contractor, subcontractor, or supplier. However, when there is a requirement in the prime contract for data which may be submitted with other than unlimited rights by a subcontractor or supplier, then said subcontractor or supplier may fulfill its requirement by submitting such data directly to the Government, rather than through a higher-tier contractor, subcontractor, or supplier.

(4) The Contractor and higher-tier subcontractors or suppliers shall not use their power to award contracts as economic leverage to obtain rights in technical data from their subcontractors or suppliers.

(5) In no event shall the Contractor use its obligation to recognize and protect subcontractor or supplier rights in technical data as an excuse for failing to satisfy its contractual obligation to the Government.

1.54 LIMITATIONS ON THE USE OR DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION MARKED WITH RESTRICTIVE LEGEND DFARS 252.227-7025

(a)(1) For contracts requiring the delivery of technical data, the terms, "limited rights" and "Government purpose rights" are defined in the Rights in Technical Data--Noncommercial Items clause of this contract.

(2) For contracts that do not require the delivery of technical data, the terms "government purpose rights" and "restricted rights" are defined in the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract.

(3) For Small Business Innovative Research program contracts, the terms "limited rights" and "restricted rights" are defined in the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause of this contract.

(b) Technical data or computer software provided to the Contractor as Government furnished information (GFI) under this contract may be subject to restrictions on use, modification, reproduction, release, performance, display, or further disclosure.

(1) GFI marked with limited or restricted rights legends.

The Contractor shall use, modify, reproduce, perform, or display technical data received from the Government with limited rights legends or computer software received with restricted rights legends only in the performance of this contract. The Contractor shall not, without the express written permission of the party whose name appears in the legend, release or disclose such data or software to any person.

(2) GFI marked with government purpose rights legends.

The Contractor shall use technical data or computer software received from the Government with government purpose rights legends for government purposes only. The Contractor shall not, without the express written permission of the party whose name appears in the restrictive legend, use, modify, reproduce, release, perform, or display such data or software for any commercial purpose or disclose such data or software to a person other than its subcontractors, suppliers, or prospective subcontractors or suppliers, who require the data or software to submit offers for, or perform, contracts under this contract. Prior to disclosing the data or software, the Contractor shall require the persons to whom disclosure will be made to complete and sign the non-disclosure agreement at 227.7103-7 of the Defense Federal Acquisition Regulation Supplement (DFARS).

(3) GFI marked with specially negotiated license rights legends.

The Contractor shall use, modify, reproduce, release, perform, or display technical data or computer software received from the Government with specially negotiated license legends only as permitted in the license. Such data or software may not be release or disclosed to other persons unless permitted by the license and, prior to release or disclosure, the intended recipient has completed the non-disclosure agreement at DFARS 227.7103-7. The Contractor shall modify paragraph (1)(c) of the

non-disclosure agreement to reflect the recipient's obligations regarding use, modification, reproduction, release, performance, display, and disclosure of the data of software.

(c) Indemnification and creation of third party beneficiary rights.

The Contractor agrees--

(1) To indemnify and hold harmless the Government, its agents, and employees from every claim or liability, including attorneys fees, court costs, and expenses, arising out of, or in any way related to, the misuse or unauthorized modification, reproduction, release, performance, display, or disclosure of technical data or computer software received from the Government with restrictive legends by the Contractor or any person to whom the Contractor has released or disclosed such data or software; and

(2) That the party whose name appears on the restrictive legend, in addition to any other rights it may have, is a third party beneficiary who has the right of direct action against the Contractor, or any person to whom the Contractor has released or disclosed such data or software, for the unauthorized duplication, release, or disclosure of technical data or computer software subject to restrictive legends.

1.55 NOT USED.

1.56 NOT USED.

1.57 PARTNERING

***1**

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Corps of Engineers, the Contractor, primary subcontractors and the designers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. ***1**

1.58 ACTIVITY ENVIRONMENTAL ANALYSIS

Before starting any major phase of the work, an Activity Environmental Analysis shall be developed by the contractor and reviewed with the Government Representative. A major phase of the work is defined as an operation involving a type of work not previously experienced which presents possible sources of adverse environmental effects. This analysis will evaluate potential environmental consequences of the activity and the techniques which will be utilized to accomplish the work in an acceptable manner. This analysis includes: (1) the phase or activity of work; (2) the potential environmental consequences of the activity; (3) precautionary actions to prevent adverse environmental impacts; (4) actions in the event of an environmental incident; and (5) the appropriate reference to Federal, State, or Local standards, regulations, or laws.

1.59 NOT USED.

1.60 DAMAGE TO WORK (ORL)
***3**
The responsibility for damage to any part of the permanent work shall be as set forth in CONTRACT CLAUSE: See Section 0700 FAR 52.236 PERMITS AND RESPONSIBILITIES. However, if in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor will make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made. An equitable adjustment pursuant to CONTRACT CLAUSE: CHANGES, will be made as full compensation for the repairs of that part of the permanent work. ***3**

***1**
1.61 **NOT USED** ***1**

1.62 OBSTRUCTION OF NAVIGABLE WATERWAYS

a. The Contractor shall--

(1) Promptly recover and remove any material, plant, machinery, or appliance which the Contractor loses, dumps, throws overboard, sinks, or misplaces, and which, in the opinion of the Contracting Officer, may be dangerous to or obstruct navigation;

(2) Give immediate notice, with description and locations of any such obstructions until the same are removed.

(3) When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.
***1**
(4) River traffic shall not be stopped at any time during the construction period. ***1**

(5) The Contractor is responsible for ensuring that all floating equipment and mooring lines are located outside the nominated Traffic Navigation Area. The contractor is responsible for providing two buoys in the river prior to start of construction each year. The contractor will meet with the Contracting Officer, Coast Guard and Lockmaster prior to starting work each river season.

b. The Contracting Officer may--

(1) Remove the obstructions by contract or otherwise should the Contractor refuse, neglect, or delay compliance with paragraph a. above of this clause; and
***1**
(2) **In the case of negligence,** deduct the cost of removal from any monies due or to become due to the Contractor; or
***1**
c. The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence in limited to that provided in Sections

15, 19, and 20 of River and Harbor Act of March 3, 1899 (33 U.S.C. 410 et.seq.).

d. Working In The River By The Contractor. The Contractor will not disrupt navigation without formal approval from the Contracting Officer, and only then with a clear and coordinated plan identifying areas and duration of construction activities see para. 1 (4) above for conflict. The Contractor is solely responsible for conducting his operations in such a manner as to avoid any interference with the safe and uninterrupted passage of all established river traffic. He shall be responsible for any action in connection with his operations, which causes interference with or prevents the safe passage of traffic past the site of work. The contractor will be required to work in the river during the five phases of the construction.

Phase 1 During Phase 1 the only river work will be the installation of mooring anchors and test driving of piles. During this river work the contractor shall provide a plan showing where and when he will be working in the river. If the contractor's plan reduces the width of the navigable pass below 1800' he will be required to let the Contracting Officer know 7 days ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. Once the contractor has reduced the navigable pass width below 900' he will be required to have a helper boat and operators available 24 hours a day. The helper boat shall have a minimum of 800 horsepower. This boat shall have no other duties.

Phase 2 During Phase 2 all navigation traffic will pass through the 1400' navigable pass. If the contractor's plan reduces the width of the navigable pass below 1400' he will be required to let the Contracting Officer know 7 days ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. Once the contractor has reduced the navigable pass width below 900' he will be required to have a helper boat with operators available 24 hours a day. The helper boat shall have a minimum of 800 horsepower. This boat shall have no other duties.

If during Phase 2 construction; and navigation traffic is using the navigable pass and the contractor wishes to route traffic through the locks for a short period of time to eliminate the wakes by tows in the river for final grading, pile frames or for setting of a base shell the contractor needs to let the Contracting Officer know 72 hours ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. The river elevation cannot be any higher than El. 304 based on the three day forecast for the locks to be used.

Phase 3 During Phase 3 all navigation traffic will pass through the 1400' navigable pass. If the contractor's plan reduces the width of the navigable pass below 900' he will be required to let the Contracting Officer know 7 days ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. Once the contractor has reduced the navigable pass width below 900' he will be required to have his helper boat and operators available 24 hours a day. The helper boat shall have a minimum of 800 horsepower. This boat shall

have no other duties.

If during Phase 3 construction; and navigation traffic is using the navigable pass and the contractor wishes to route traffic through the locks for a short period of time to eliminate the wakes by tows in the river for final grading, pile frames or for setting of a base shell the contractor needs to let the Contracting Officer know 72 hours ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. The river elevation cannot be any higher than El. 304 based on the three day forecast.

***1**

Phase 4 During Phase 4 all navigation traffic will be required to pass through the lock chambers unless the contractor's plan provides a navigable pass width of at least 700'. The Contractor shall notify in writing the Contracting Officer of his plan for Phase 4 construction so that the Coast Guard can be notified 72 hours in advance as to how navigation traffic will need to pass the Olmsted site. Also during the time when the navigation traffic is using the navigable pass and the navigable pass width is less than 900' the contractor will be required to have a helper boat and operators available 24 hours a day. The helper boat shall have a minimum of 800 horsepower. This boat shall have no other duties. If during phase 4 and navigation traffic is using the lock chambers and the river reaches El. 304 and the three day forecast indicates that the river will exceed El. 306 then the contractor will be required to remove enough of his floating plant in the river in order to provide a navigable pass width of 700'. Also the contractor will be required to have a helper boat and operators available 24 hours a day during the time when the river is above El. 306 and locking cannot take place. The helper boat shall have a minimum of 800 horsepower. This boat shall have no other duties. Once the river goes below El. 304 and the three day forecast indicates that the river will not go above El. 306 the contractor can resume work in the river. ***1**

If during Phase 4 construction navigation traffic is using the navigable pass and the contractor wishes to route traffic through the locks for a short period of time to eliminate the wakes by tows in the river for final grading, pile frames or for setting of a base shell the contractor needs to let the Contracting Officer know 72 hours ahead of time so that the Coast Guard can be notified as to how navigation traffic will need to pass the Olmsted site. The river elevation cannot be any higher than El. 304 based on the three day forecast.

Phase 5 During Phase 5 all navigation traffic will be required to pass through the lock chambers. Therefore the contractor will be required to keep both lock chambers open during this time. Any shells that will be required to be launched from the Illinois bank during this time the Contracting Officer will need to be notified at least 3 days in advance so that the Coast Guard can be notified to inform river traffic that lock closures will be needed. If during phase 5 the river reaches El. 304 and the three day forecast indicates that the river will exceed El. 306 then the contractor will be required to remove enough of his floating plant in the river in order to provide a navigable pass width of 700'. Also the contractor will be required to have a helper boat and operators available 24 hours a day during the time when the river is above El. 306 and locking cannot take place. The helper boat shall have a minimum of 800 horsepower.

This boat shall have no other duties. Once the river goes below El. 304 and the three day forecast indicates that the river will not go above El. 306 the contractor can resume work in the river. Once the navigable pass is complete locking of all river traffic will be required once the river drops below EL. 293.

1.63 SIGNAL LIGHTS

The Contractor shall display signal lights and conduct his operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2, Navigation Rules: International-Inland (Comdtinst M16672.2), or 33 CFR81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable.

1.64 NOT USED.

1.65 NOT USED.

1.66 NOT USED.

1.67 NOT USED.

1.68 NOT USED.

1.69 KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS (17 AUGUST 1998)

In Connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associated or consultants will be limited to individuals or firms that were specifically identified and agreed to during source selection. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

1.70 NOT USED.

1.71 ORDER OF PRECEDENCE

a. The contract includes the standard contract clauses and schedules current at the time of contract award. It entails, (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted in any way bears upon the terms of that agreement.

b. In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

1. Betterments: Any portions of the accepted proposal which both conform to and exceed the provisions of the solicitation.
***1**
2. The provisions of the solicitations. ***1**

3. All other provisions of the accepted proposal.

4. Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract, in the order of precedence herein.

1.72 NOT USED.

1.73 NOT USED.

1.74 POLLUTION PREVENTION PLAN

In accordance with the National Pollutant Discharge Elimination System (NPDES) Permit, a Pollution Prevention Plan has been developed as part of this project. This plan has been developed to meet the erosion and sediment control requirements for the State of Illinois. The Contractor will implement the Pollution Prevention Plan (PPP) that was prepared by the U.S. Army Corps of Engineers as shown on the plans, and as directed in these specifications. This PPP will be provided to the contractor as part of these documents must be implemented in accordance with the NPDES permit. A Notice of Intent (NOI) has been prepared by the U.S. Army Corps of Engineers and submitted to the State of Illinois. Commencement of any construction activity (ground disturbing activity) by the contractor shall not begin until 48-hours after the NOI letter has been postmarked. The Contractor shall maintain a copy of the State compliance letter, NPDES Permit and PPP at the construction site. Any changes made to the PPP must be documented and approved by the Contracting Officer. See Specifications Section 01130 Paragraph 1.5 for additional requirements.

1.75 NOT USED

1.76 NOT USED

1.77 NOT USED
***3**
1.78 ***3 NOT USED *3**

1.79 INSPECTION FACILITIES, CORPS WORKBOAT AND FLOATING DOCK

In order to facilitate inspection, the Contractor will be required to furnish the following items:

A. To furnish, on the request of the Contracting Officer or Government

inspector, the use of such boats, boatmen, scales, equipment and crew of the plant as may be reasonably necessary in inspecting and supervising the work. This will be applicable at the Olmsted site and at the Prefabrication Yard site, if a remote Prefabrication Yard sit is used.

B. To furnish, on the request of the Contracting Officer or Government inspector, suitable transportation from all points on shore designated by the Contracting Officer to and from various pieces of the plant. This includes the storage area on the Kentucky bank of the river. This will be applicable at the Olmsted site and at the Prefabrication Yard site, if a remote Prefabrication Yard site is used.

***1**

C. The Contractor shall furnish to the Government a 23ft (or larger) modified 5086 aluminum V hull workboat. This boat shall be in new condition and include a trailer and be delivered to the Olmsted Resident Office prior to the start of construction in the river. The boat shall be of standard design and certified by the Cost Guard for marine use. The Contractor shall be responsible for all licensing of the boat and trailer. The purpose of this boat will be for transportation of Government personnel only. The boat will mainly be used by Government Inspectors for inspection of the dam construction but may also be used for inspection of other projects during the life of the contract. The Contractor shall be prepared to provide normal maintenance, fuel, service, and repair on the workboat during the life of the contract. Below are the minimum requirements for the workboat and the required options and accessories as listed by SeaArk Marine of Monticello, AR. The workboat and accessories shall be submitted and approved in writing by the Contracting Officer prior to purchase by the Contractor. The Government may wish to inspect the fabrication of the workboat during its construction and/or fit up. ***1**

Minimum Requirements for the Corps Workboat:

The workboat shall be similar in design to the Little Giant by SeaArk Marine and shall include similar standard equipment & construction details as listed by SeaArk Marine for their Little Giant Series. Include a 4-Man standard cabin with aft cabin bulkhead & door as well as front door with bow storage compartment and hatch.

Provide the workboat with 115 HP Dual Yamaha or equal 4 cycle outboard gas motors with platform and protection bar. Props shall turn in opposite directions of each other to reduce the cavitation effect.

Provide a custom fitted trailer w/ marine swivel jack and wheel, winch system, tie down cables and hooks, submersible tail lights, side load guides, spare tire and hydraulic surge breaks. The Contractor shall also install an adequate towing package to a Corps vehicle, which will adequately handle the workboat and trailer including all electrical, and hitch attachments needed.

20 OPTIONS & ACCESSORIES REQUIRED FOR THE WORKBOAT AS LISTED (BY SEAARK MARINE)

1. Six Stainless Steel 10" cleats.
2. Bench Seating/ Storage Boxes
11. Hydraulic Trim Tabs.
12. Level floatation when

(2 outside cabin, one inside)

3. Square Bow & Push Knees with high pattern bow rails.
4. Custom Paint & Lettering (U.S. Army Corps of Engineers w/ castle)
5. Running and Anchor Lights.
6. Dual battery system.
7. Minimum 30 gallon optional fuel tank.
8. Emergency lights
9. Engine installations w/ all gauges, & controls, wiring.
10. Hydraulic steering.
13. Lifting eyes flooded.
14. 6" Transducer well.
15. 30 Amp shore power outlet.
16. Two flood lights on cabin roof.
17. Anchor package.
18. Stern mounted flag pole.
19. 12V receptacle in cabin.
20. Replace Navigator seat w/ bench

Additional Required Options as listed by Overton of Greenville, NC or Equal

- Four Step Removable Gunwale Hook Ladder. Overton # 39993
- Eight Movable Polyform Fenders w/ Rail Fender Hangers. Overton #22269.
- Equip workboat with all necessary safety items as called for in EM385-1-1 including the following items:
  1. Fire Extinguisher, mounted to interior of cabin. Overton #29649
  2. Air Horn with refillable canister, holder mounted to interior of cabin ,Overton #31591
  3. Hand Held 12V Spot Light, mount light holder to cabin, Overton #34008
  4. Vest Storage Bag, Overton #37600
  5. First Aid Kit, mounted to interior of cabin.
  6. Telescoping Boat Hook and Paddle, mounted to outside of cabin, Overton #28653
  7. 24" Life Preserver Ring Buoy and S.S. Bracket installed to exterior of cabin. Overton #201071 & #25488
  8. 100' of 3/8" nylon rope in a vinyl bag.

The Contractor shall maintain fuel in the workboat fuel tank as needed for daily operation. The fuel tank shall be topped off once each week as a minimum.

***1**

Prior to acceptance and delivery of the workboat, the Contractor and appropriate Government personnel shall conduct a shakedown test. Any items needing correction during this time shall be corrected prior to delivery. ***1**

D FLOATING DOCK

Within 90 days of Notice to Proceed, the Contractor shall start his design (for approval), of a floating dock with fenders, cleats, handrail, and galvanized or aluminum metal gangway produced by a commercial dock manufacturer. The dock shall be complete prior to acceptance of the Corps workboat as described in the previous paragraph. The floating dock will be used to tie off the Corps workboat and skiffs when not in use. The dock shall be equipped with a 30 Amp shore power supply and security lighting. The location and access of this dock and power supply run shall be determined during the design review period for the dock but will be located

near Cells 1 thru 5 as seen in the attached sketches at the end of this section. The floating dock shall not be a barge but shall be designed and constructed as a floating dock for exclusive use by the Government. This dock shall remain the property of the Government. Final installation and access to the dock will also be the responsibility of the Contractor. This dock shall be properly maintained and repaired (if needed) by the Contractor for the life of the contract. The design shall take into account the overall river height fluctuation of 45ft, from elevation 330 down to elevation 285.

Floating Dock Design shall be consistent with requirements of "LAYOUT and DESIGN GUIDELINES FOR SMALL CRAFT BERTHING FACILITIES" published by the Department of Boating and Waterways, State of California, 1629 S Street, Sacramento, CA 95814.

The manufacturer/supplier of the dock and gangway shall have a minimum of 5 years continuous experience in commercial pier, dock or gangway fabrication and may be required to submit a list of pervious experience on similar projects.

The following items shall be submitted for review and approval prior to fabrication and erection: Dimensional layout of piers, docks, gangways and piles or anchorage systems to be furnished under this contract. Engineering calculations showing compliance with the design criteria specified above. All calculations will be stamped with the seal of a qualified licensed, professional engineer. Computations shall include as a minimum the following.

Compliance with combined live and dead load requirements considering both bending and deflection.
Compliance with freeboard requirements under normal load conditions.

Typical sections or details of the following:

Fixed piers, including pile connectors.
Floating docks, including flotation, and pile guides.
Finger dock or pier, including connection to main walkway.
Gangways, including connections to cells or fixed pier, handrails, and handicap ramps.
Anchorage system.
Utility hangar and access system for electrical form source to dock & lights.
Decking material and connection details.
Cleats-location and connection details Lighting details

E FLEET MOORING AREA SHORE POWER

In conjunction with the design of the floating dock the contractor shall start work on the fleet mooring area shore power. Provision for floating dock power requirements have been identified in the contract plans and specifications by which will allow both thefloating dock and fleet mooring area to be operational prior to June 2005.

F UNDERWATER SURVEY EQUIPMENT

The Contractor shall provide along with the workboat a Model 825 portable survey recorder and optional software from Ross Laboratories, Inc. of Seattle, Washington or approved equal. The Transducer well of the workboat shall be utilized for this instrument. This equipment will remain the property of the Government but will be properly calibrated and maintained as recommended by the manufacturer for the life of the contract by the Contractor. See the following webb address for additional information on the survey recorder by Ross, http://www.rosslaboratories.com/

1.80 SAFETY INCENTIVE CLAUSE

The Contractor shall provide a plan to encourage all employees to work safely. This plan shall be directed at the individual employee and shall be so designed such that it motivates all employees toward a safe work attitude. The plan shall be designed to be a positive incentive plan and must include a tangible reward and benefit to the individual employee during the physical, construction work on site. The reward frequency shall be at least once a month. This "Work Safety Incentive Plan" must be integrated into the overall "Accident Prevention Plan" which must be accepted prior to start of construction. The "Work Safety Incentive Plan" shall indicate who will administer the program and provide discrete details on how it will be administered. The Government will have final approval of the Work Safety Incentive Plan.

1.81 NOT USED
***1**
1.82 **NOT USED** ***1**

1.83 ALLOCATION OF STRUCTURAL DESIGN RESPONSIBLITY FOR THE HEAVY LIFT OF DAM SEGMENTS.

Responsibility- The equipment, devices and procedures indicated on the above "F" series drawings are noted as generally conceptual in nature. General Notes on Sheet F-1 and F-2 and on several F drawings indicated the nature of each drawing. It is intended that the contractor strictly comply with the designs on these drawings and details that are not conceptual. Where drawings are noted as conceptual, the contractor is required to provide design and procedural details to supplement or replace the guidance indicated on the conceptual drawings details. See also Section **0**0800 para. 1.84 Supplemental Design for Heavy Lift.

Government Responsibility - If the contractor elect**ed** in his proposal package to perform in accordance with the conceptual drawing indications, the conceptual design on the indicated drawings (See notes on sheet F-2), will be completed to 100% by the Corps of Engineers after award for the contractor's use. Information from the contractor concerning his lifting equipment will be required to complete the design by the Corps of Engineers. Based on contractor cooperation with the exchange of information, the Government will be 100% responsible for the overall structural design.

Contractor Responsibility - If the contractor does not propose to use the conceptual design of the above F Drawing(s), then the contractor shall

submit all necessary design details for Government review. The Government will retain Engineer of Record responsibility for the overall structural design intent of the applicable F drawings.

1.84 SUPPLEMENTAL DESIGN BY THE GOVERNMENT'S ARCHITECT-ENGINEER

As noted in Section 0800 paragraph 1.83, certain designs **may** be provided by the contractor. To accomplish such design, the Government's Architect-Engineer of Record may be utilized through the Government's contract with the A-E. All business processes and communication will be through the Government as apart of its administration of the A-E and construction contracts.

***1**

1.85 **MANAGEMENT INFORMATION SYSTEM**

Management Information System (MIS) - The Management Information System (MIS), will be used by both the Contractor and the Government for tracking and controlling schedule, cost, reports, and submittals. As a minimum the system must have the following capabilities.

a. Planning and scheduling
b. Cost estimating, budgeting and accounting reports
c. Technical reports
d. Submittals

The MIS is considered critical to the success of cost reimbursement contract. This MIS should integrate cost schedule information to provide a minimum: tracking of costs incurred, tracking of costs scheduled, projection of cost and schedules, and time phased budget and spending curves. The schedule portion of this MIS should include a network analysis system as described in Specification Section 01320. Automated information should be remotely accessible at the work site and other locations to allow for: cost tracking of all costs including but not limited to actual labor, equipment, purchases, subcontracts, and other commitments, obligations, and expenditures; and evaluation of the impact of changes to the contract cost schedule.

The Contractor shall provide MIS procedures anticipated for tracking all phases of costs, from subcontracting, material, labor and overheads, to invoice for cost. The cost tracking shall be performed in a Work Breakdown Structure (WBS) format, with various defined levels of control. The upper levels of the WBS shall be where the Contractor's cost roll-up to levels where the COR will manage costs, schedule and funding. The MIS and/or accounting system must be capable of recording and tracking costs by separate project funds in addition to work schedule items.

Cost and schedule control will be maintained through use of Earned Value Metric Process and the implementation and reporting of the critical path method for schedule control. As part of the earned value analysis the contractor shall prepare the following and include them in the monthly performance reports: Budget Cost of Work Scheduled (BCWS), Budget at Completion (BAC), Budget Cost of Work Performed (BCWP), Actual Cost of Work Performed (ACWP), Estimate to Completion (ETC) and Estimate at Completion (EAC).

Panning and Scheduling - The planning and scheduling system shall be based on a network analysis theory embodied in the critical path method (CPM) which shows the time needed for each step of the project and also the steps that must be taken in a logical sequence. For details on the project schedule see Section 01320 "Project Schedule".

Cost estimating, budgeting and accounting systems shall be required of the Contractor. The cost accounting system shall be in accordance with the cost accounting standards.

Reporting - The contractor shall provide reports to the Government as follows:

a. Bi-Weekly Reports - Bi-weekly reports will be prepared summarizing the work completed during the two-week period; work planned for upcoming two week period, and summary of work completed to date.

b. Monthly Performance Reports - A monthly cost and schedule report will be required. This report will include, a narrative summary of work performed, updated project schedule, and cost performance report (CPR). The CPR will contain the budgeted, earned value; actual cost of work performed for the period and project to date: and budgeted and estimated costs at completion. The report shall compare actual costs, accruals and estimates at completion to the budget at the required levels of the WBS. The contractor will notify the Government when they are within sixty days of funds exhaustion. Budget and accounting data contained in these reports will be available to the Government via electronic data file transfer. The monthly performance report shall also include a milestone report, and a six-month forecast by month and a 12-month look ahead by quarter.

c. Quarterly Reports - At the end of each quarter submit a contract funds status report. This report will include actual to date and quarterly amounts for: cost versus budget, estimate at completion, schedule and major milestone status and discussion of issues/problems.

Records Management - The MIS will support providing on-line query and search capability so that needed records and data can be located and status determined. A centralized records management system is required and must include a records management plan, document control procedures, system security and user training.

The details for the above processes will be negotiated as Advance Agreements after award. *1

1.86 CONCRETE PLACEMENT DRAWINGS
***1**

The following shall be submitted in accordance with specification Section C-0**3201**. ***1**

(a) Lift Key Drawings. At least 60 days prior to the submission of concrete lift drawings, the Contractor shall submit for approval, a master sequence of concrete placements. The applicable requirements of the specifications and drawings shall be incorporated. Each "LIFT KEY" drawing

will be to scale and contain one shell or one shell's concrete infill.

(b) Concrete Lift Drawings. A concrete lift drawing shall be furnished for each placement of concrete. Each drawing shall contain only one placement. These drawings shall be to scale and the scale used shall be consistent and adequate to clearly show the details fo placement. Reference to the appropriate drawings used in the preparation of the drawings shall be shown on each drawing. The appropriate reinforcement placement drawings numbers and fabricated embedded item submittal numbers shall be shown on the corresponding concrete placement drawings. The placement drawings shall not be less than 22 X 34 inches in size. The Contractor shall review each placement drawing for compliance with the contract and coordinate each placement drawing with related related shop drawings to assure completeness and accuracy.The Contractor will appoint someone in his CQC staff that will be responsible for this activity and indicate his approval on each drawing as evidence of such review. Any deviation from the plans, specifications or related shop drawings shall be marked appropriately on the ENG Form 4025 and explained in writing in sufficient detail to verify compliance with the intent of the contract. Drawing submittals shall be limited to no more than 20 individual placement drawings per calendar week. If the Contractor plans to submit more than 20 per week, the Government may require an additional 10 days for review for those over 20 a week. The Contractor shall submit four copies of each placement drawing for review at least 60 days prior to scheduling the placement. After review of the drawing by the Government, one copy will be returned and marked with an appropriate action code. This procedure will be repeated until all corrections have been made and the drawings approved. If drawings are repeatedly submitted with corrections needed, the Contractor's person responsible for their completeness will be removed from that position. After approval, the Contractor shall furnish three copies of each placement drawing to the Government marked "FOR CONSTRUCTION" and an electronic version on CD. Distribution of the FOR CONSTRUCTION drawings shall be made by the Contractor at least one week prior to the beginning of any construction on the placement. Lift drawings must be approved and distributed prior to holding the preparatory phase meeting for any lift's placement.

(c) Electrical/Mechanical Placement Drawings. Electrical placement drawings shall be submitted to show all electrical items to be embedded. All electrical placement information shall be furnished for each placement of concrete and only one placement shall be shown on a drawing. The placement drawing shall be part of the corresponding concrete placement drawing. Placements without electrical/mechanical items shall be noted on the corresponding concrete placement drawings. Each drawing shall show all dimensions for accurate placement and will include the location of all electrical, instrumentation, and mechanical embedded items such as grounding, conduit number, size, location and anchor bolts for each electrical/mechanical item, etc. After approval, the Contractor shall furnish three copies of each placement drawing to the Government marked "FOR CONSTRUCTION" and an electronic version on CD. Distribution of the FOR CONSTRUCTION drawings shall be made by the Contractor at least one week prior to the beginning of any construction on the placement.
***1**

(d) Reinforcing Placement Drawings. Placement drawings for reinforcing steel shall conform to the requirements set forth in **Spec** Section 03201 and

the drawings. Additional requirements and submittal procedures shall conform to paragraph (b) above and the following: ***1**

Placement drawings shall conform to the standards of ACI 315 with the following additional requirements. Drawings shall be drawn to scale with the scale shown on the drawings. These drawings will help identify congested areas and show adjustments in the steel to overcome identified areas. Concrete dimensions of the structure shall be shown along with the location of construction joints, and (typical) locations of all embedded items such as sheet pile walls, pintles, sill beams, side seals, master pile brackets, anchor bolts, structural steel, pre-stressing components, conduits, wall armor, piping, piling, flat jack piping, etc., the size, spacing, shape and location of the bars and bar supporting system in the structure; the location and type of all butt splices and location and length of all lap splices; and schedule/bar lists containing the quantity, shape, size, dimensions and bending detail for individual bars identified on a particular drawing. Schedule/bar lists shall be shown on the drawing and be separated and identified for each concrete lift. Only those bars shown and identified on a particular lift drawing shall be contained in the schedule/bar list on that particular drawing. Each placement drawing shall contain references to appropriate contract drawings used in the preparation of the placement drawing. Lettering scale selected shall be suitable for reduction to half-size and microfilming and shall not be smaller than 5/32 inches in height. Minimum scale selected for plan, elevation and section views or reinforcement details for elements of the structure shall be 1/4" = 1'-0" with larger scale used where appropriate. The modification and/or alteration of reproducible copies of contract drawings will not be acceptable for original placement drawings. After approval, the Contractor shall furnish three copies of each placement drawing to the Government marked "FOR CONSTRUCTION" and an electronic version on CD. Distribution of the FOR CONSTRUCTION drawings shall be made by the Contractor at least one week prior to the beginning of any construction on the placement.
***1**

1.87 **WORK AUTHORIZATION DOCUMENT**

The Work Allocation Document (WAD) is designed for management control of cost under cost-reimbursement construction contracts. The WAD system is designed to serve as the primary tool for management and control of costs. The WAD system is used to allocate obligated contract funds by the Government to the contractor and to further control the obligation or expenditures of funds for identified work.

The WAD system is a series of documents prepared by the Contracting Officer and issued to the contractor for each feature cost item, line item or work breakdown structure (WBS) item to be executed under this contract. The Government and the contractor will agree on the budget amount for each WAD. The contractor will not be given authority to proceed with any work or incur any costs, even though money is obligated on the contract, until a written document signed by the Contracting Officer or Contracting Officer's Representative, is received by the contractor authorizing the contractor to proceed.

Following the issuance of a WAD by the Contracting Officer, the contractor will prepare work items for execution of the work included in the WAD. The

contractor prepared work item will include the number of the WAD, a description of the work and resources to be used and a budget estimate of costs for the work item. The work items will be submitted to the Government for approval prior to the incurrence of costs. The cumulative budget cost estimate for work items included in a WAD shall not exceed the total budget estimate for the WAD without prior amendment and approval of the Government.

The contractor will provide monthly cumulative (actual against budget) cost incurrence reports against each WAD. The contractor will maintain backup data in the form of actual cumulative cost incurrence for each work item. This latter information will be prepared in sufficient detail to readily identify cost trends of actual against budget for joint Corps/contractor monthly cost management and control meetings.

1.88 **CHANGE MANAGEMENT**

The Government and the contractor will establish a procedure to be used that ensures that all changes are reported and tracked throughout the life of the contract. The procedure CHANGE MANAGEMENT will track any work item not anticipated in the total estimated cost that impacts cost or schedule. The contractor will provide prompt, written notification to the Contracting Officer any time a situation arises that the contractor considers to constitute a change to the contract. The written notice must include the information found in FAR 52.243-7 subparagraph (b) (1)-(6). This Advance Agreement will be negotiated after award. *1

***3**
1.89 ***3 SCAFFOLDING *3**
July 2003

The following requirements supplement EM 385-1-1. In the event of a conflict between these requirements and EM 385-1-1, the more strict requirement shall take precedence.

All scaffold systems shall be erected, inspected and disassembled under the direction of a competent person. The competent person must be present and on site during these operations. The qualifications and training of the competent person and the crew performing the work shall be submitted to the Contracting Officer and accepted prior to commencement of the work. All scaffold systems must be inspected daily and certified as usable prior to use each days use by the competent person. Scaffolds shall also be inspected and certified by the competent person upon completion of any changes to the scaffolding system i.e. adding or removing a level or etc. The competent person must be present and on site during these changes to the scaffold system. The contractor shall develop a system that notifies all parties of the certification status. The use a red/green tag system denoting the serviceability is an acceptable certification system.

A scaffold erection plan shall be submitted for all scaffold systems regardless of type scaffold to be used. This plan shall include erection and dismantling operations and all manufacture's details of the system and shall demonstrate compliance with EM 385-1-1. The plan shall be accepted by the Contracting Officer prior to the erection of the scaffold. This

plan shall be reviewed at the preparatory and initial meetings with all parties involved in the scaffolding operation and use thereof. In the event others crafts will be using the scaffolding system, they shall also be briefed on the proper use of the system.

Every level of conventional and masonry type scaffolding systems shall be fully planked and include handrails and toe boards. The contractor is advised that he must analyze the added weight of this requirement on the capacity of the scaffold system and adjust his operations accordingly. All personnel erecting and dismantling scaffolds must be protected by a personal fall protection system.

Access to any type scaffold system above 6 (six) feet shall be by stair tower. *3

-- End of Document --

OHIO RIVER AT OLMSTED SITE
ELEVATION DURATION TABLE
FOR PERIOD (OCT 1965 - SEP 2001)

*** Percentage OF DAYS WHEN ELEVATION IS >= CLASS ***

CLASSES (FEET)	FOR YEAR	FOR MONTHS OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
332.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
330.0	.10	.00	.00	.00	.00	.00	.82	.37	.00	.00	.00	.00	.00
328.0	.28	.00	.00	.00	.00	.00	2.17	1.03	.09	.00	.00	.00	.00
326.0	1.19	.00	.00	.09	1.26	.00	5.16	2.71	4.48	.19	.00	.00	.00
324.0	2.01	.00	.00	.38	2.78	.79	6.25	5.70	7.17	.56	.00	.00	.00
322.0	3.38	.00	.00	1.13	3.86	3.97	8.33	11.96	9.87	.94	.00	.00	.00
320.0	5.21	.00	.00	2.27	4.67	7.44	15.31	17.57	12.74	1.88	.00	.00	.00
318.0	7.24	.00	.00	5.39	6.28	11.71	19.93	21.21	17.40	4.23	.00	.00	.00
316.0	10.43	.00	.86	8.41	9.87	18.55	27.81	28.22	20.09	8.92	.65	1.03	.00
314.0	13.62	.00	1.72	14.74	14.09	23.71	33.88	33.55	24.93	12.21	1.76	1.97	.00
312.0	17.07	.65	2.87	20.42	18.49	30.26	42.57	38.60	29.87	15.40	2.40	2.15	.10
310.0	20.60	1.48	5.06	24.57	24.06	37.70	50.27	42.43	35.52	18.78	3.42	2.43	.29
308.0	24.02	1.94	6.21	29.49	29.89	43.65	56.61	47.76	40.54	22.54	4.81	2.62	.87
306.0	28.35	2.68	8.50	34.78	34.92	48.61	64.67	57.76	47.44	26.85	7.30	3.46	1.54
304.0	33.45	3.97	12.32	39.98	42.37	53.87	73.46	65.23	54.62	32.86	12.11	4.49	4.13
302.0	39.15	6.00	17.96	45.65	50.27	61.11	78.17	72.90	62.78	42.35	19.69	5.62	5.10
300.0	45.01	10.71	22.73	52.36	57.45	69.35	82.78	80.00	70.31	50.99	27.26	7.58	6.35
298.0	51.19	16.07	28.65	58.70	66.79	76.09	86.96	86.07	77.40	59.25	36.04	10.77	9.04
296.0	57.94	22.81	37.34	63.61	72.17	82.54	91.58	91.96	84.30	69.30	47.78	16.76	12.60
294.0	65.89	29.55	47.95	71.83	77.29	88.99	93.93	96.26	90.31	80.00	63.03	31.84	17.50
292.0	72.95	35.64	59.22	80.06	83.48	92.16	96.11	99.72	92.83	87.70	76.06	45.51	24.90
290.0	79.46	44.88	69.91	86.48	86.71	94.64	97.28	100.00	96.23	92.49	83.92	61.99	37.40
288.0	88.15	54.91	85.39	93.10	91.65	96.13	98.46	100.00	98.65	94.46	91.68	82.02	60.38
286.0	93.00	78.67	92.17	97.54	95.06	96.83	99.37	100.00	99.73	95.31	95.75	91.67	73.17
284.0	96.58	91.60	96.66	98.30	95.96	97.92	100.00	100.00	100.00	96.43	97.23	96.54	88.08
282.0	98.88	97.23	99.62	99.62	99.28	100.00	100.00	100.00	100.00	97.75	97.69	97.47	97.88
280.0	99.67	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.34	98.15	99.06	99.42
278.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*NOTE: 186 MISSING DAYS IN PERIOD

DE

ACTIVITY HAZARDS ANALYSIS

Date Prepared: _____

Risk Assessment Code (RAC):

Project: **Olmsted Dam** Job: _____

Prepared By: _____ Reviewed By: _____

Recommended Protective Clothing & Equipment:

E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Severity	Probability: Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

JOB STEPS	HAZARDS	ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS	EM 385-1-1 (PARA REF)

ACTIVITY HAZARDS ANALYSIS

Date Prepared: _____

Project: Olmsted Dam Job: _____

JOB STEPS	HAZARDS	ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS	EM 385-1-1 (PARA REF)

ACTIVITY HAZARDS ANALYSIS

Date Prepared: _____

Project: **Olmsted Dam** Job: _____

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS

US Army Corps of Engineers

Installed Property List

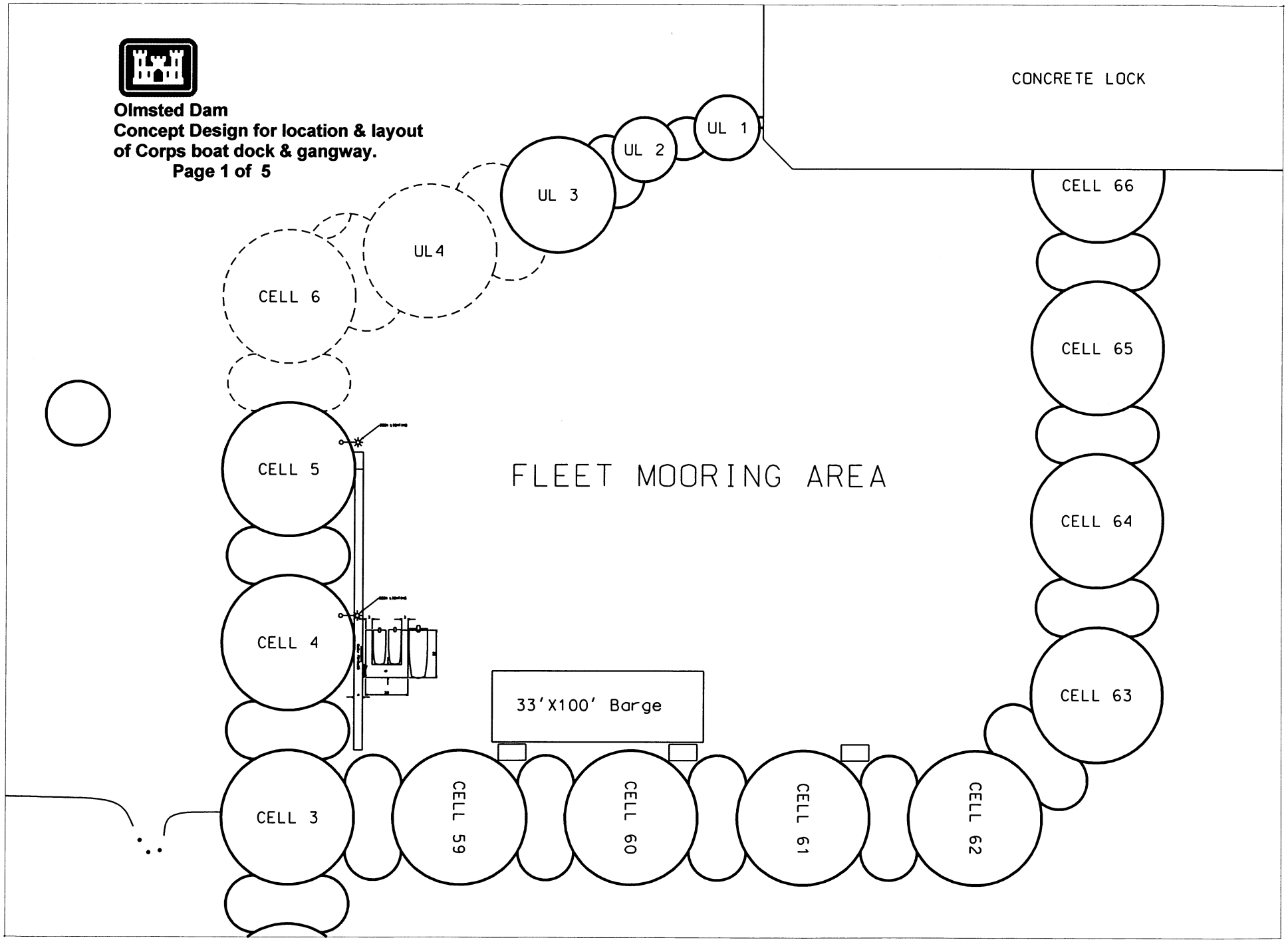
Olmsted Dam

Olmsted, Illinois

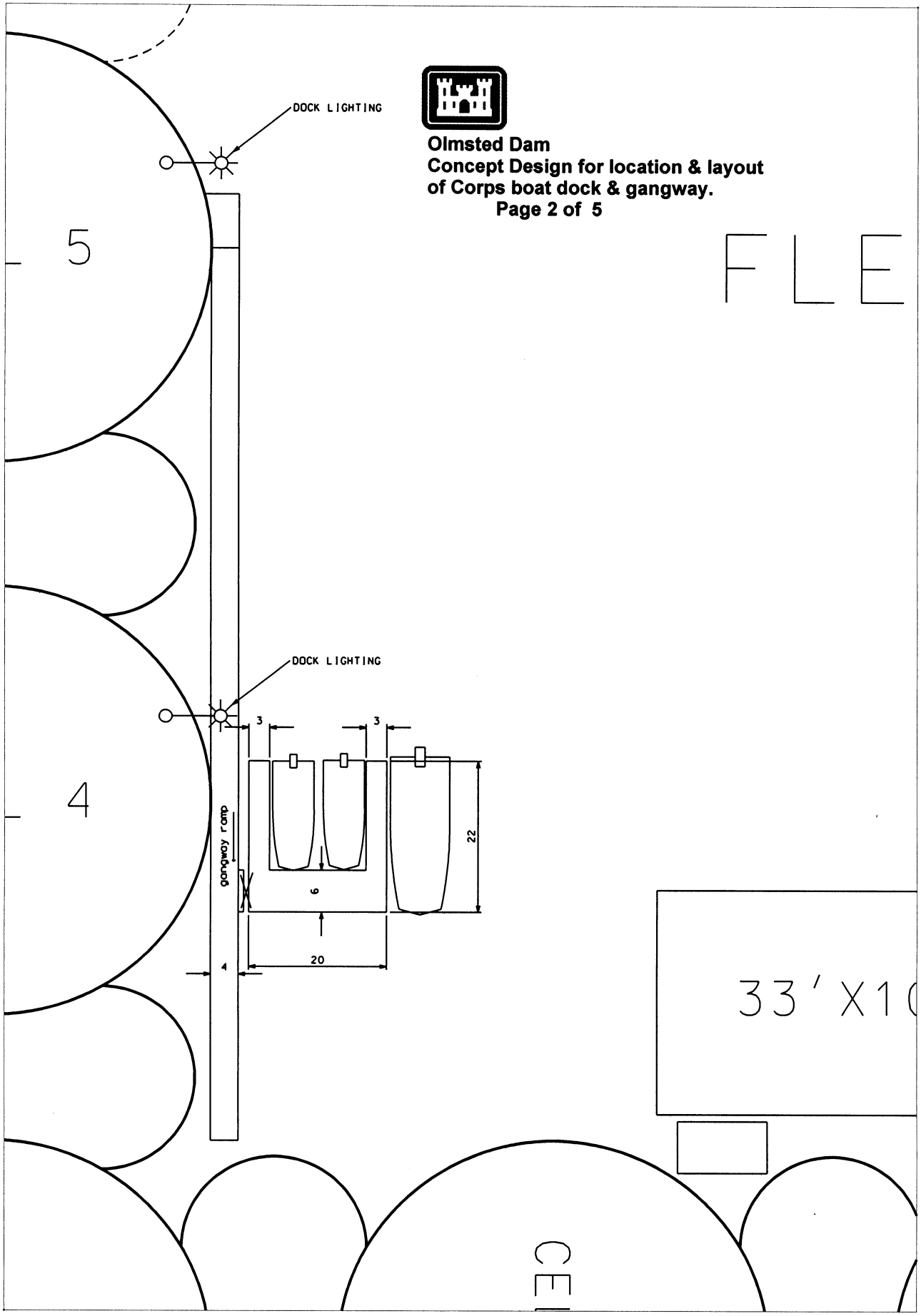
IP-00001	Paragraph: model xxxx --Capacity-- Capacity xxxx	Tainter Gate	$3,500.00 / EA		Outstanding

SAMPLE
CQS EQUIPMENT IN PLACE FORM

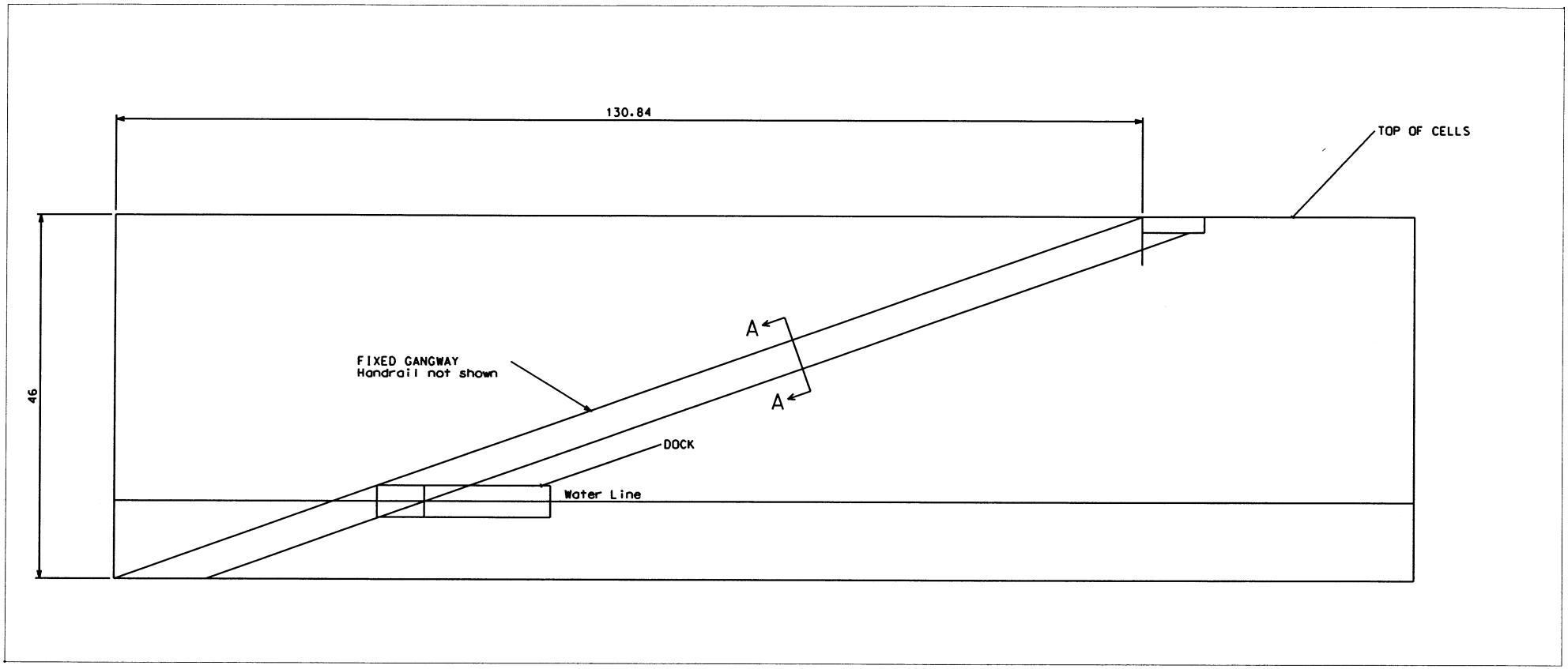
Olmsted Dam
Concept Design for location & layout of Corps boat dock & gangway.
Page 1 of 5



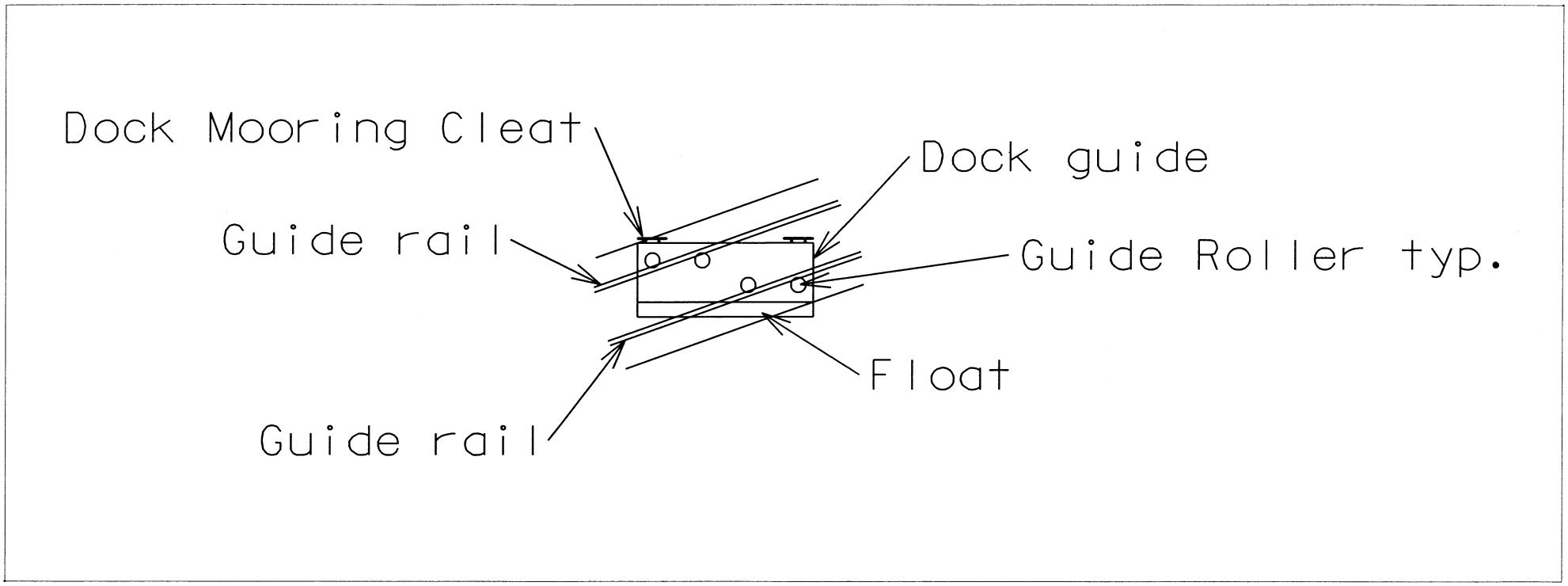
Olmsted Dam
Concept Design for location & layout of Corps boat dock & gangway.



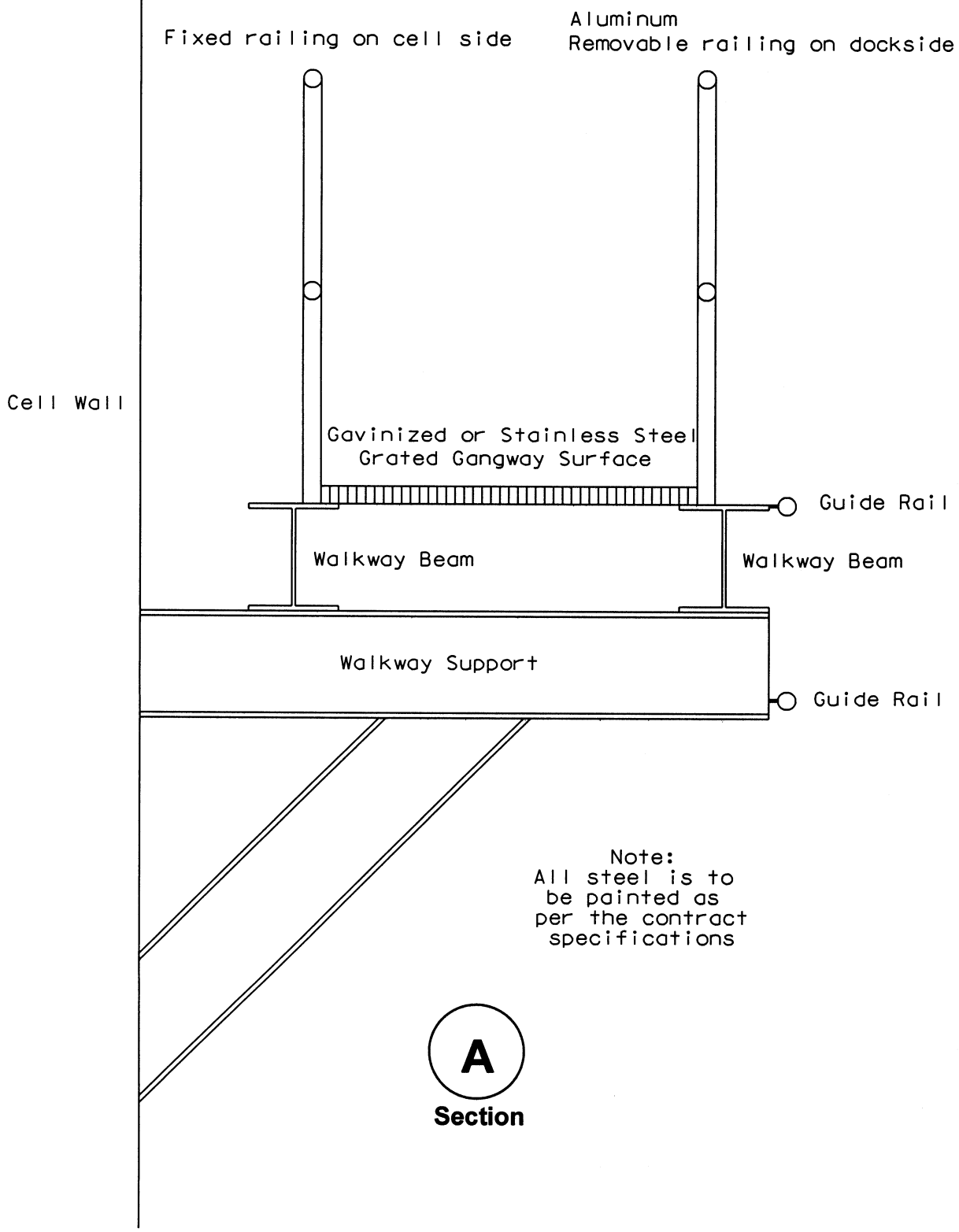
Olmsted Dam
Concept Design for location & layout
of Corps boat dock & gangway.



Olmsted Dam
Concept Design for location & layout of Corps boat dock & gangway.



Olmsted Dam
Concept Design for location & layout of Corps boat dock & gangway.



DOD PROPERTY IN THE CUSTODY OF CONTRACTORS

(DFARS 245.505-14)

(See Instructions on reverse before completing this form.)

REPORT AS OF 30 SEP 19____ OR _____

Form Approved OMB No 0704-0246 Expires Oct 31, 1991

REPORT CONTROL SYMBOL

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0246), Washington, DC 20503.

1. TO *(Enter name and address of property administrator)*

2. FROM *(Enter full name, address and CAGE code of contractor)*

3. IF GOVERNMENT-OWNED, CONTRACTOR-OPERATED PLANT, ENTER GOVERNMENT NAME OF PLANT

4. CONTRACT NO. *(PIIN)*	5. CONTRACT PURPOSE	6. BUSINESS TYPE *(L, S, or N)*	7. OFFICIAL NAME OF PARENT COMPANY

8. PROPERTY LOCATION(S)

9. PLANT EQUIPMENT PACKAGE *(PEP No. and use)*

a. PROPERTY *(Type or Account)*	b. BALANCE BEGINNING OF PERIOD (1) Acquisition Cost *(in dollars)*	(2) Quantity *(in units or acres)*	c. ADDITIONS *(in dollars)*	d. DELETIONS *(in dollars)*	e. BALANCE END OF PERIOD (1) Acquisition Cost *(in dollars)*	(2) Quantity *(in units or acres)*
10. LAND						
11. OTHER REAL PROPERTY						
12. OTHER PLANT EQUIPMENT						
13. INDUSTRIAL PLANT EQUIPMENT						
14. SPECIAL TEST EQUIPMENT						
15. SPECIAL TOOLING *(Government Title Only)*						
16. MILITARY PROPERTY *(Agency-Peculiar)*						
17. GOVERNMENT MATERIAL *(Government-Furnished)*						
18. GOVERNMENT MATERIAL *(Contractor-Acquired)*						

CERTIFICATION

I certify that this report was prepared under DoD requirements from records maintained under FAR 45.5 and DFARS 245.5.

19. CONTRACTOR REPRESENTATIVE

a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED *(YYMMDD)*

20. DOD PROPERTY REPRESENTATIVE

a. TYPED NAME *(Last, First, Middle Initial)*	c. SIGNATURE	d. DATE SIGNED *(YYMMDD)*
b. TELEPHONE NUMBERS *(Commercial and Autovon)*		

DD Form 1662, MAR 89

Previous editions are obsolete.

1180 079

STATEMENT AND ACKNOWLEDGMENT

FORM APPROVED OMB NO
9000-0014

Public reporting burden for this collection of information is estimated to average .15 hours per response, including the time for reviewing instructions. Searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the suggestions for reducing this burden, to the FAR Secretarial (VRS), Office of Federal Acquisition and Regulatory Policy, GSA Washington, D.C. 20405: and to the Office of Management and Budget, Paperwork Reduction Project (9000-0014), Washington, D.C. 20503

PART I - STATEMENT OF PRIME CONTRACTOR

1. PRIME CONTRACT NO.	2. DATE SUBCONTRACT AWARDED	3. SUBCONTRACT NUMBER

4. PRIME CONTRACTOR (Name, address and ZIP code)	5. SUBCONTRACTOR (Name, address and ZIP code)

6. The prime contractor states that under the contract shown in item 1, a subcontract was awarded on date shown in item 2 by (Name of Awarding Firm)

to the subcontractor identified in item 5, for the following work:

7. PROJECT	8. LOCATION	
9. NAME AND TITLE OF PERSON SIGNING	10. BY (Signature)	11. DATE SIGNED

PART II - ACKNOWLEDGMENT OF SUBCONTRACTOR

12. The subcontractor acknowledges that the following clauses of the contract shown in item 1 are included in this subcontract:

Contract Work Hours and Safety Standards Act - Overtime Compensation - Construction	David-Bacon Act
Payrolls and Basic Records	Apprentices and Trainees
Withholding of Funds	Compliance with Copeland Regulations
Disputes Concerning Labor Standards	Subcontracts
	Contract Termination-Debarment
	Certification of Eligibility

13. NAME(S) OF ANY INTERMEDIATE SUBCONTRACTORS, IF ANY

14. NAME AND TITTLE OF PERSON SIGNING	15. BY (Signature)	16 DATE SIGNED

All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown

The sign panels are to be fabricated from .75" High Density Overlay Plywood.

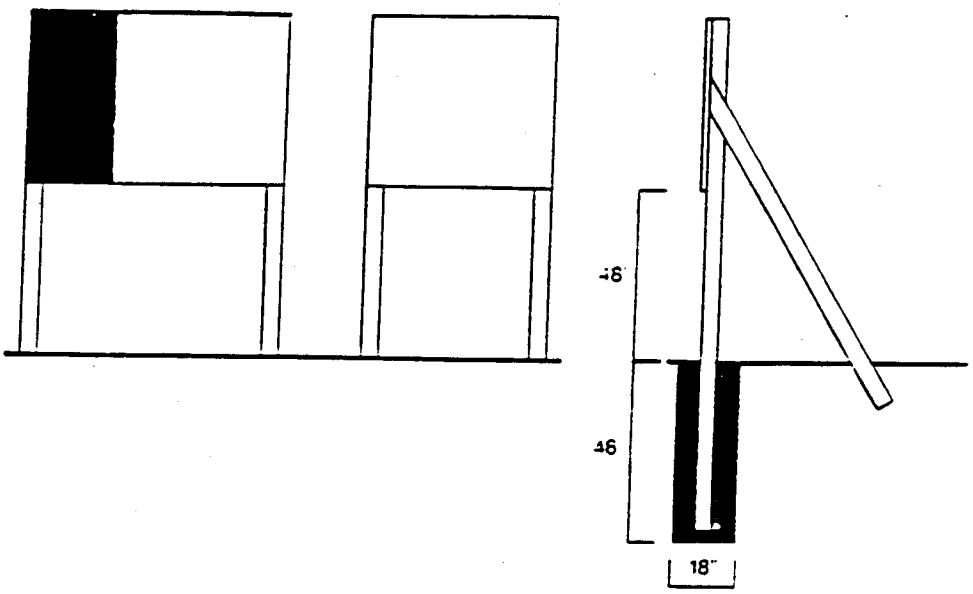
All graphics are to be applied to the background panel following the graphic formats as indicated.

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Flange of T-nut to be flush with sign face.

Apply lettering and logo to prepared HDO plywood panel.

Sign uprights to be structural grade 4"x4" treated Douglas Fir or Southern Yellow Pine, No. 1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Bolt additional 2"x4" struts on inside face of uprights to reinforce installation as shown.



Construction Project Sign

Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Corps Signature

1. U.S. Army Corps
2. of Engineers

Legend Group 2A: District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Designer

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor

1. _____
2. _____
3. _____
4. _____
5. _____

Introduction: Project Identification Sign

Below are two samples of the construction project identification sign showing how this panel is adaptable for use to identify either civil works projects with a local sponsor (top) or military (bottom). The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel on the right is to be white with black legend. For the top sign, the upper left 2' x 2' section of the sign with the full Corps signature is to be painted Communications Red with white lettering. The lower left 2' x 2' section of the sign shall match the local sponsor's colors with white lettering. For the bottom sign, the 2' x 4' left section of the sign with full Corps signature is to be painted Communications Red with white lettering. Mounting and fabrication details are provided.

Legend Group 1: One-to two-line description of Corps relationship to project.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Two-line Corps Signature (US Army Corps of Engineers). Placed below Corps Castle
Color: White
Typeface: 1.5" Helvetica Bold

Legend Group 2a: District Name. Placed below Signature (6" Castle).
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 3: Words "Local Sponsor"
Color: White
Typeface: 1.25" Helvetica Regular
Maximum length: 19"

Legend Group 4: One-to-three lines for name of local sponsor
Color: White
Typeface: 1.5" Helvetica Regular

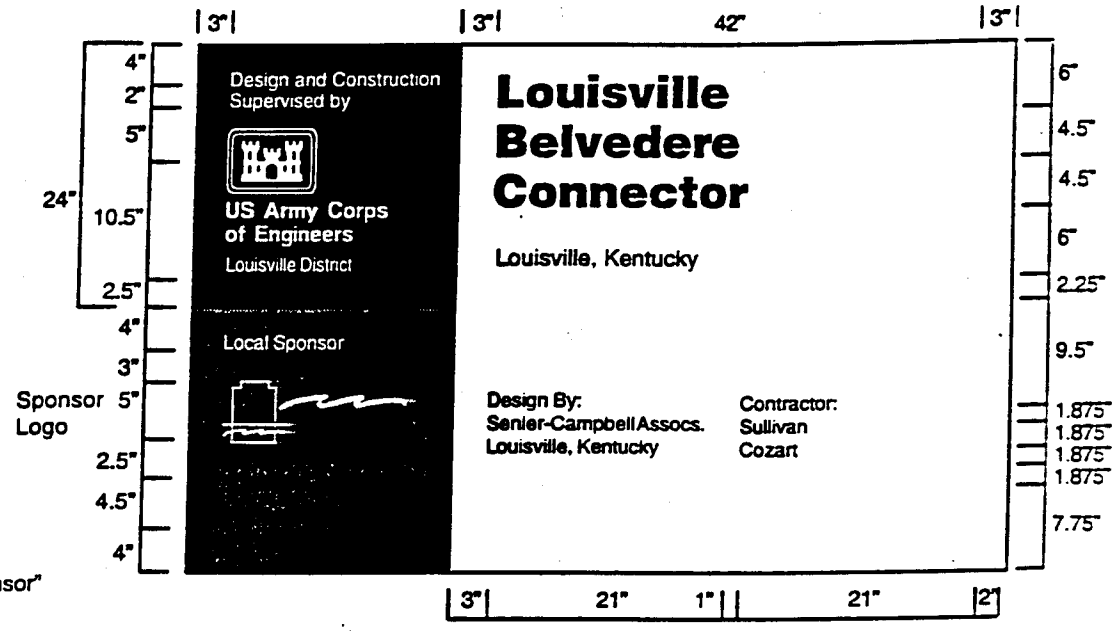
Legend Group 5: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

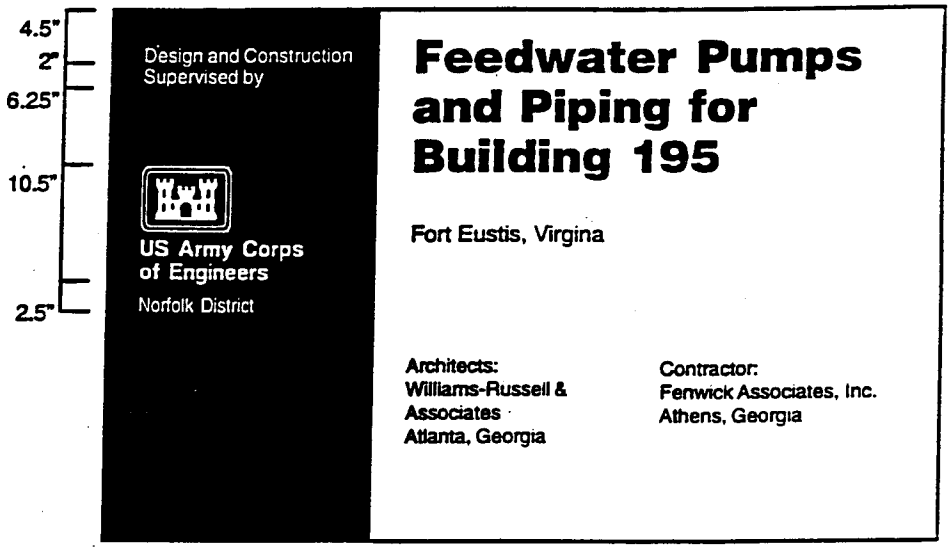
Legend Group 6: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 5 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 7a-b: One- to five-line identification of prime contractors including: type (general contractor, etc.) corporate or firm name, city, state.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown.





Legend Size	Panel Size	Post Size	Mounting Height	Color Bkg/Lgd
Various	4' x 6'	4" x 4"	48"	WH-RD/BK

SUBMITTAL REGISTER (ER 415-1-10)

TITLE AND LOCATION: Olmsted Dam Construction,Olmsted, Illinois

DATE: 23 Apr 2003

CONTRACTOR:

CONTRACT NUMBER: NA

ACTIVITY No.	TRANS-MITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSI-FICATION FIO or GA	REVIEWER OFFICE / NAME	CONTRACTOR SCHEDULE DATES: SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CONTRACTOR ACTION: CODE	SUBMIT TO CORPS	GOVERNMENT ACTION: CODE	DATE
SECTION- 00800			**Special Clauses**											
		1	00800 1.2	As-Built Drawings	CLOSEOUT SUBMTL	GA	R							
		2	00800 1.2	Activity Environmental Analysis	DESIGN DATA	FIO	R							
		3	00800 1.2	Constr. and Demo. Waste Man. Plan	DESIGN DATA	GA	R							
		4	00800 1.2	Dirt and Dust Control Plan	DESIGN DATA	FIO	R							
		5	00800 1.2	Site Plan	DESIGN DATA	GA	R							
		6	00800 1.2	Waste Test Results Manifest	DESIGN DATA	FIO	R							
		7	00800 1.2	Progress Photographs	DESIGN DATA	GA	R							
		8	00800 1.2	Purchase Orders	DESIGN DATA	FIO	R							
		9	00800 1.2	Aggregate Sources	DESIGN DATA	GA	R							
		10	00800 1.2	Maintenance and Parts Data	DESIGN DATA	GA	R							
		11	00800 1.2	Equipment-in-Place List	DESIGN DATA	GA	R							
		12	00800 1.2	Drug Free Work Place	PRECON SUBMTL	GA	R							
		13	00800 1.2	Accident Prevention Plan-incl. AHA	PRECON SUBMTL	GA	R							
		14	00800 1.2	Safety Specialist Qualifications	PRECON SUBMTL	GA	R							
		15	00800 1.2	Pollution Prevention Plan	PRECON SUBMTL	GA	R							
SECTION- 01130														
		1	01130 1.3	Transportation Management Plan	TEST REPORTS	GA	AR							
		2	01130 1.3	Waste Disposal Scheme	PRECON SUBMTL	GA	R							
		3	01130 1.3	Preconstruction Survey	PRECON SUBMTL	GA	R							
		4	01130 1.3	Environmental Protection Plan	PRECON SUBMTL	GA	R							
SECTION- 01320			**Project Schedule**											
		1	01320 1.1	Schedule Reports	TEST REPORTS	GA	R							
		2	01320 3.3.4.3	Narrative Report	TEST REPORTS	GA	R							
		3	01320 1.1	Nominated Project Scheduler	PRECON SUBMTL	GA	R							
		4	01320 3.3.3.4	Initial Project Schedule	PRECON SUBMTL	GA	R							
		5	01320 3.3.4.3	Preliminary Project Schedule	PRECON SUBMTL	GA	AR							
		6	01320 3.4.4	Periodic (Monthly) Schedule Updates	PRECON SUBMTL	GA	R							
SECTION- 01351			**Safety, Health & Emer Response-HTRW/UST**											
		1	01351 3.6	QC Hydrographic Survey Results	PRECON SUBMTL	GA	AR							
		2	01351 3.6	Scour Monitoring Surveys	PRECON SUBMTL	GA	AR							
		3	01351 3.8.1	Scour Monitoring and Scour Pro. Plan	PRECON SUBMTL	GA	AR							
		4	01351 3.2	River Monitoring Plan	PRECON SUBMTL	GA	AR							
		5	01351 3.2	Underwater Survey Plan	PRECON SUBMTL	GA	AR							
		6	01351 1.6	Qualifications and Experience	PRECON SUBMTL	FIO	R							

RANGE: ALL

SORT: SECTION & ITEM

SUBMITTAL REGISTER (ER 415-1-10)

TITLE AND LOCATION Olmsted Dam Construction,Olmsted, Illinois

DATE 23 Apr 2003

CONTRACTOR

CONTRACT NUMBER NA

ACTIVITY No.	TRANS-MITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSI-FICATION	REVIEWER		CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION	
						FIO or GA		OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	SUBMIT TO CORPS	CODE	DATE
SECTION- 01352															
		1	01352 1.7	Coast Guard Permit	PRECON SUBMTL	FIO		R							
		2	01352 1.7	Marine Surveyor Inspection Reports	PRECON SUBMTL	FIO		R							
		3	01352 1.7	Monitoring and Contingency Plan	PRECON SUBMTL	GA		AR							
		4	01352 1.7	Mooring Operations Plan	PRECON SUBMTL	GA		AR							
		5	01352 1.7	Marine Operations Plan	PRECON SUBMTL	GA		AR							
		6	01352 1.7	Transport Operations Plan	PRECON SUBMTL	GA		AR							
		7	01352 1.7	Lifting Operations Plan	PRECON SUBMTL	GA		AR							
		8	01352 1.7	Handling Operations Plan	PRECON SUBMTL	GA		AR							
SECTION- 01353															
		1	01353 1.2	Reports, Inspections and Tests	TEST REPORTS	FIO		R							
		2	01353 1.5	Qualifications	PRECON SUBMTL	GA		R							
		3	01353 1.2	Diving Submittals	PRECON SUBMTL	GA		AR							
SECTION- 01501															
		1	01501 1.7	Marine Surveyor Inspection Reports	SHOP DRAWINGS	FIO		R							
		2	01501 1.7	Storage Facilities	SHOP DRAWINGS	GA		AR							
		3	01501 1.7	Support and Load Distribution Structures	SHOP DRAWINGS	GA		AR							
		4	01501 1.7	Tow Plan	PRECON SUBMTL	GA		AR							
		5	01501 1.7	Qual. of Towboat Operators and Crews	PRECON SUBMTL	FIO		R							
		6	01501 1.7	Qualification of Marine Surveyor	PRECON SUBMTL	FIO		R							
SECTION- 01710															
		1	01710 1.4	Calcs for the Vibro-Compaction Vessel	DESIGN DATA	GA		AR							
		2	01710 1.4	Calculations for Adjustable Sheet Pile	DESIGN DATA	GA		AR							
		3	01710 1.4	Calculations for Nuts for Drill Collars	DESIGN DATA	GA		AR							
		4	01710 1.4	Calculations for Spreader Beams	DESIGN DATA	GA		AR							
		5	01710 1.4	Calcs for Underwater Forms - Monolith 12	DESIGN DATA	GA		AR							
		6	01710 1.4	Calcs for Tainter Gate Sill Guide Pintle	DESIGN DATA	GA		AR							
		7	01710 1.4	Calcs for Frames and Templates	DESIGN DATA	GA		AR							
		8	01710 1.4	Bond Breaker for Frame Shear Keys	SAMPLES	GA		AR							
		9	01710 1.4	Brushes for Tremie Containment	SAMPLES	GA		AR							
		10	01710 1.4	Sealants	SAMPLES	GA		AR							
		11	01710 1.4	SBS-1, Boat Abut. Shell Pos. Systems	SHOP DRAWINGS	GA		AR							
		12	01710 1.4	Reinforcing Steel Cage Assemblies	SHOP DRAWINGS	GA		AER							
		13	01710 1.4	Spreader Beams	SHOP DRAWINGS	GA		AR							
		14	01710 1.4	Underwater Forms for Monolith 12	SHOP DRAWINGS	GA		AR							

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		15	01710 1.4	Tainter Gate Sill Guide Pintles	SHOP DRAWINGS	GA		AER							
		16	01710 1.4	Lifting Frames and Templates	SHOP DRAWINGS	GA		AER							
		17	01710 1.4	Prototypes and Demonstrations	PRECON SUBMTL	GA		AR							
		18	01710 1.4	Qualification of Crane Operators	PRECON SUBMTL	FIO		R							
		19	01710 1.4	Qualification of Marine Surveyor	PRECON SUBMTL	FIO		R							
		20	01710 1.4	Hazard Plans	PRECON SUBMTL	FIO		R							
		21	01710 1.4	Constr. Apparatus Fab. Facilities Plan	PRECON SUBMTL	FIO		R							
		22	01710 1.4	Temporary Construction Facilities	PRECON SUBMTL	GA		AR							
		23	01710 1.4	Towboat and Crew Qualifications	PRECON SUBMTL	FIO		R							
		24	01710 1.4	Engineering Qualifications	PRECON SUBMTL	GA		AR							
		25	01710 1.4	Underwater Phys. Measurements Plan	PRECON SUBMTL	GA		AR							
		26	01710 1.4	Controlled Flooding Plan	PRECON SUBMTL	GA		AR							
		27	01710 1.4	High Pressure Water Jetting Plan	PRECON SUBMTL	GA		AR							
		28	01710 1.4	Corrective Grouting Plan	PRECON SUBMTL	GA		AR							
		29	01710 1.4	Test Pile Driving Plan	PRECON SUBMTL	GA		AR							
		30	01710 1.4	Heavy-lift Installation Plan	PRECON SUBMTL	GA		AR							
		31	01710 1.4	Shell Load-Out Plan	PRECON SUBMTL	GA		AR							
		32	01710 1.4	Weight Monitoring Plan	PRECON SUBMTL	GA		AR							
		33	01710 1.4	Lifting Frames and Template Safety Plans	PRECON SUBMTL	GA		AR							
SECTION- 01720															
		1	01720 1.5	Test Reports	TEST REPORTS	FIO		R							
		2	01720 1.5	Demonstration Facility Drawings	SHOP DRAWINGS	GA		AER							
		3	01720 3.2.1	Work Plan	PRECON SUBMTL	GA		AER							
		4	01720 3.1.4	Work Plan	PRECON SUBMTL	GA		AER							
		5	01720 3.1.3	Work Plan	PRECON SUBMTL	GA		AER							
SECTION- 01732															
		1	01732 1.3	Placement Plan	PRECON SUBMTL	GA		AR							
SECTION- 01800															
		1	01800 3.1.8	Equip. Op., Maint. and Repair Man.		GA		R							
SECTION- 02200															
		1	02200 1.5	Waybills and Delivery Tickets	CERTIFICATES	FIO		R							
		2	02200 1.5	Gradation Testing of Materials	TEST REPORTS	GA		R							
		3	02200 1.5	Sources of Materials	SHOP DRAWINGS	GA		R							
		4	02200 1.5	Earthwork Plan	PRECON SUBMTL	GA		AR							
		5	02200 1.5	Placement Plan	PRECON SUBMTL	GA		AR							

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SECTION- 02220			**Demolition**												
		1	02220 3.1	Sheet Pile Rem., Stor., and Mod. Plan	SHOP DRAWINGS	GA		R							
SECTION- 02240			**Lime-Stabilized Base, Subbase, Subgrade**												
		1	02240 1.5	Manufacturing QC Samp. and Testing	MFRS INSTR	FIO		R							
		2	02240 1.5	Geotextile Filter Fabric	MFRS INSTR	FIO		R							
		3	02240 1.5	Materials	SAMPLES	GA		AR							
		4	02240 1.5	Attachment Detail	SHOP DRAWINGS	GA		AR							
SECTION- 02241			**Aggregate Base Course**												
		1	02241 1.5	Articulating Cellular Conc. Block Sys.	MFRS INSTR	GA		AR							
		2	02241 1.5	Trial Placement	SHOP DRAWINGS	GA		AR							
		3	02241 1.5	Placement Plans	SHOP DRAWINGS	GA		AR							
SECTION- 02250															
		1	02250 1.5	Daily Logs	TEST REPORTS	FIO		R							
		2	02250 1.5	Activity Reports	TEST REPORTS	FIO		R							
		3	02250 1.5	Ground Improvement Report	TEST REPORTS	GA		AER							
		4	02250 1.5	Demonstration Program Report	TEST REPORTS	GA		AER							
		5	02250 1.6	Subcontractor Qualifications	SHOP DRAWINGS	GA		AER							
		6	02250 3.2	Ground Improvement Work Plan	SHOP DRAWINGS	GA		AER							
SECTION- 02315			**Excavation, Filling & Backfill-Buildings**												
		1	02315 3.14	Testing	TEST REPORTS	GA		AR							
		2	02315 2.5	Filter Fabric	MFRS FLD REPT	GA		AR							
SECTION- 02316															
		1	02316 3.4.3	Field Density Tests	TEST REPORTS	FIO									
		2	02316 3.4.2	Testing of Backfill Materials	TEST REPORTS	FIO									
SECTION- 02460															
		1	02460 1.3	Installation Record	TEST REPORTS	GA		AR							
		2	02460 1.3	Plate-Type Mooring Anchor Calcs	TEST REPORTS	GA		AR							
		3	02460 1.3	Placement Plan	SHOP DRAWINGS	GA		AR							
SECTION- 02462															
		1	02462 2.1.2	Pile Weld Testing Records	TEST REPORTS	FIO		R							
		2	02462 3.3.2	Dynamic Testing of Driving Test Piles	TEST REPORTS	FIO		R							
		3	02462 1.2	Pile Driving Analyzer Data	TEST REPORTS	GA		ER							
		4	02462 3.3.1	Pile Driving Tests	TEST REPORTS	GA		ER							
		5	02462 3.2.2	Pile Driving Records	TEST REPORTS	FIO		R							
		6	02462 3.2.2	Pile Driving Records	TEST REPORTS	FIO		R							

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		7	02462 3.3.2	Wave Equation Analyses	DESIGN DATA	FIO	R							
		8	02462 3.1	WEAP ANALYSES	DESIGN DATA	GA	AER							
		9	02462 1.2	Pile Driving Analyzer	SHOP DRAWINGS	GA	ER							
		10	02462 3.2.3	Pile Placement	SHOP DRAWINGS	GA	AER							
		11	02462 1.2	Pile Driving Templates	SHOP DRAWINGS	GA	AER							
		12	02462 1.2	Pile Connectors	SHOP DRAWINGS	GA	AER							
		13	02462 1.3	Delivery, Storage, and Handling	SHOP DRAWINGS	GA	R							
		14	02462 3.1	Pile Driving Equipment	PRECON SUBMTL	GA	AER							
SECTION- 02464			**Metal Sheet Piling**											
		1	02464 2.4	Sheet Piling Sealants	MFRS INSTR	GA	ER							
		2	02464 1.2	Driving	TEST REPORTS	FIO	R							
		3	02464 2.3.1	Materials Tests	TEST REPORTS	FIO	R							
		4	02464 3.1.1.1	WEAP ANALYSES	DESIGN DATA	GA	AER							
		5	02464 1.2	Temporary Sheet Piling Design	DESIGN DATA	GA	AER							
		6	02464 3.1.1	Pile Driving Equipment	SHOP DRAWINGS	GA	AER							
		7	02464 1.2	Temporary Sheet Pile Plan	SHOP DRAWINGS	GA	AER							
		8	02464 1.2	Isolation Joints	SHOP DRAWINGS	GA	AR							
		9	02464 2.2.2	Master Piles	SHOP DRAWINGS	GA	AER							
		10	02464 2.1	Metal Sheet Piling	SHOP DRAWINGS	GA	AR							
		11	02464 1.2	Sheet Piling Load Sequence	SHOP DRAWINGS	GA	AER							
SECTION- 02482														
		1	02482 3.4.4	Dredging Demonstration Plan	SHOP DRAWINGS	GA	AER							
		2	02482 1.5	Earthwork Plan	SHOP DRAWINGS	GA	AER							
SECTION- 02621			**Foundation Drainage System**											
		1	02621 1.2	Manufacturer's Data	MFRS INSTR	GA	AR							
		2	02621 2.1	Materials	CERTIFICATES	FIO	R							
		3	02621 1.2	Fabrication and Erection Drawings	SHOP DRAWINGS	GA	AR							
SECTION- 02722			**Graded-Crushed-Aggregate Base Course**											
		1	02722 1.2	Screed Arrangement	SHOP DRAWINGS	GA	AR							
SECTION- 02920														
		1	02920 3.1	Site Restoration Plan	SHOP DRAWINGS	GA	R							
SECTION- 02921			**Seeding**											
		1	02921 3.7.3.5	Maintenance Report		FIO	R							
		2	02921 2.1	Seed	CERTIFICATES	GA	R							
		3	02921 1.2	Materials	CERTIFICATES	FIO	R							

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		4	02921 1.2	Manufacturer's Literature	SHOP DRAWINGS	FIO		R							
		5	02921 3.7	Turf Establishment Period	PRECON SUBMTL	FIO		R							
		6	02921 1.3.1	Delivery Schedule	PRECON SUBMTL	FIO		R							
		7	02921 1.2	Equipment List	PRECON SUBMTL	FIO		R							
SECTION- 03100			**Structural Concrete Formwork**												
		1	03100 2.1.3	Form Releasing Agents	MFRS INSTR	FIO		R							
		2	03100 1.3	Design	DESIGN DATA	FIO		R							
		3	03100 2.1	Form Materials	PRODUCT DATA	GA		R							
		4	03100 1.2	Concrete Formwork	SHOP DRAWINGS	GA		R							
SECTION- 03201			**Stl Bars/Welded Wire Fabric-Civil Works**												
		1	03201 3.2.1	Butt-Splices	MFRS INSTR	GA		AR							
		2	03201 3.1.4.2	Butt-Splices	MFRS INSTR	GA		AR							
		3	03201 2.2.2	Qualification of Steel Bar Butt-Splicers	CERTIFICATES	FIO		R							
		4	03201 2.2	Tests, Inspections, and Verifications	TEST REPORTS	GA		R							
		5	03201 2.1.4.3	Threaded Inserts	PRODUCT DATA	GA		AR							
		6	03201 3.1	Fabrication and Placement	SHOP DRAWINGS	GA		AR							
		7	03201 2.1	Materials	PRECON SUBMTL	GA		R							
SECTION- 03230			**Steel Stressing Tendons & Acc Prest Conc**												
		1	03230 3.3	Materials Disposition Records	CLOSEOUT SUBMTL	FIO		R							
		2	03230 3.1.9	Prestressing Operations Records	MFRS FLD REPT	FIO		R							
		3	03230 1.2	Anchorages and Couplers	CERTIFICATES	FIO		R							
		4	03230 1.3	Cert. for Prestressing Technicians	CERTIFICATES	FIO		R							
		5	03230 2.1	Stressing Tendons and Accessories	TEST REPORTS	FIO		R							
		6	03230 3.1.1	Prestressing Method and Equipment	PRODUCT DATA	GA		AER							
		7	03230 3.1.2	Inst. Dwgs. - Tendons and Accessories	SHOP DRAWINGS	GA		AER							
SECTION- 03240															
		1	03240 1.3	Grout Bag Demonstration Test	TEST REPORTS	GA		AR							
		2	03240 1.3	Grout Bag Fabric	SAMPLES	GA		AR							
		3	03240 1.3	Joint Material	SAMPLES	GA		AR							
		4	03240 1.3	Non-Metallic, Hydrophilic Waterstops	PRODUCT DATA	GA		AR							
		5	03240 1.3	Joint Material	PRODUCT DATA	FIO		R							
		6	03240 1.3	Grout Bag Proposal and Inst. Method	SHOP DRAWINGS	GA		AR							
		7	03240 1.3	Grout Bag Manufacturer	PRECON SUBMTL	GA		AR							
		8	03240 1.3	Grout Bag Demonstration Test Plan	PRECON SUBMTL	GA		AR							
		9	03240 1.3	Grout Bag Grout	PRECON SUBMTL	GA		AR							

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		10	03240 1.3	Polyurethane Resin Injection Sequence	PRECON SUBMTL	GA		AR							
SECTION- 03300			**Cast-In-Place Structural Concrete**												
		1	03300 1.4	Membrane-Forming Curing Compound	CERTIFICATES	FIO		R							
		2	03300 2.1.2.6	Expansive Admixture	CERTIFICATES	FIO		R							
		3	03300 2.1.9	Bonding Agents	CERTIFICATES	GA		AR							
		4	03300 2.1.7	Nonshrink Grout	CERTIFICATES	GA		AR							
		5	03300 2.1.3.1	Sheet Curing	CERTIFICATES	FIO		R							
		6	03300 2.1.2	Other Chemical Admixtures	CERTIFICATES	FIO		R							
		7	03300 1.5.2.7	Other Chemical Admixtures	CERTIFICATES	FIO		R							
		8	03300 1.4	Air-Entraining Admixture	CERTIFICATES	FIO		R							
		9	03300 2.1.1	Cementitious Materials	CERTIFICATES	GA		R							
		10	03300 1.4	Conc. Trans. Construction Inspector	CERTIFICATES	GA		R							
		11	03300 1.4	Testing Technicians	CERTIFICATES	GA		R							
		12	03300 1.4	Aggregate Production and Handling	CERTIFICATES	GA		R							
		13	03300 1.4	Tests and Inspections	TEST REPORTS	FIO		R							
		14	03300 1.4	Uniformity of Concrete Mixing	TEST REPORTS	FIO		R							
		15	03300 1.4	Aggregate Quality	TEST REPORTS	GA		R							
		16	03300 2.2	Concrete Mixture Proportioning	DESIGN DATA	GA		AR							
		17	03300 1.5.1.1	Aggregates	SAMPLES	GA		R							
		18	03300 1.4	Placing Equipment and Methods	PRODUCT DATA	GA		AR							
		19	03300 1.4	Conveying Equipment	PRODUCT DATA	GA		AR							
		20	03300 1.4	Batch Plant(s) and Mixers	PRODUCT DATA	GA		R							
		21	03300 1.4	Plant Layout Drawings	SHOP DRAWINGS	GA		R							
SECTION- 03301			**C-I-P Structural Concrete-Civil Works**												
		1	03301 1.4	Weight Control Records	MFRS FLD REPT	FIO		R							
		2	03301 3.4	Finishes	SAMPLES	GA		R							
		3	03301 1.4	Concrete Lifts	SHOP DRAWINGS	GA		ER							
		4	03301 3.2.3	Construction Joint Treatment	PRECON SUBMTL	GA		AR							
		5	03301 3.3.5	Hot-Weather Placing	PRECON SUBMTL	GA		ER							
		6	03301 3.3.4	Cold-Weather Placing	PRECON SUBMTL	GA		ER							
		7	03301 3.5	Curing and Protection	PRECON SUBMTL	GA		ER							
		8	03301 1.4	Concreting Plan	PRECON SUBMTL	GA		ER							
SECTION- 03410			**Precast/Prestressed Concrete Floor/Roof**												
		1	03410 1.7	Weight Control Records	MFRS FLD REPT	FIO		R							
		2	03410 1.7	Design Calculations	DESIGN DATA	GA		AER							

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		3	03410 1.7	Precast Concrete Panel	SAMPLES	GA	AR							
		4	03410 1.7	Inserts	PRODUCT DATA	GA	AR							
		5	03410 1.7	Concrete Precasting Facility	SHOP DRAWINGS	GA	AR							
		6	03410 3.9	Erection	SHOP DRAWINGS	GA	AER							
		7	03410 3.9.4	Erection Plan	PRECON SUBMTL	GA	AR							
		8	03410 1.7	Concreting Plan	PRECON SUBMTL	GA	AER							
		9	03410 3.10	Construction Records	PRECON SUBMTL	FIO	R							
SECTION- 03413			**Precast Architectural Concrete**											
		1	03413 1.4	Manufacturer's Qualifications	CERTIFICATES	GA	R							
		2	03413 2.1	Materials	TEST REPORTS	GA	ER							
		3	03413 1.4	Mix Design	DESIGN DATA	GA	ER							
		4	03413 1.3.5	Calculations	DESIGN DATA	GA	AR							
		5	03413 2.2	Precast Architectural Concrete Units	SAMPLES	GA	R							
		6	03413 1.4	Architectural Concrete System	SHOP DRAWINGS	GA	AR							
SECTION- 03414			**Precast Roof Decking**											
		1	03414 1.2	Roof Decking	SHOP DRAWINGS	GA	AR							
SECTION- 03800														
		1	03800 1.4	Qualifications	CERTIFICATES	GA	R							
		2	03800 1.4	Inspections and Tests	TEST REPORTS	FIO	R							
		3	03800 3.3.1	Conveying Equipment	PRODUCT DATA	GA	AER							
		4	03800 3.2.6	Mixers	PRODUCT DATA	GA	AER							
		5	03800 3.2.5	Batch Plant	PRODUCT DATA	GA	AER							
		6	03800 3.2.3	Batch Plant	PRODUCT DATA	GA	AER							
		7	03800 1.4	Batch Plant & Conc. Del. Sys. Layout	SHOP DRAWINGS	GA	AER							
		8	03800 1.4	Work Platform Drawings	SHOP DRAWINGS	GA	AR							
		9	03800 3.7.10	Concreting Plan	PRECON SUBMTL	GA	AER							
		10	03800 3.7.6	Concreting Plan	PRECON SUBMTL	GA	AER							
		11	03800 3.7.1	Concreting Plan	PRECON SUBMTL	GA	AER							
SECTION- 05055														
		1	05055 1.4	Detail Drawings	SHOP DRAWINGS	GA	AER							
		2	05055 2.1.1	Materials Orders	SHOP DRAWINGS	FIO								
		3	05055 2.1.2	Materials List	SHOP DRAWINGS	FIO								
		4	05055 2.1.3	Shipping Bill	SHOP DRAWINGS	FIO								
		5	05055 2.3	Tests, Inspections, and Verifications	TEST REPORTS	FIO								
		6	05055 2.2.2.1	Welding Procedures for Structural Steel	CERTIFICATES	GA	R							

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		7	05055 2.2.2.2	Welding Procedures for Stainless Steel	CERTIFICATES	GA		R							
		8	05055 2.3.4	Structural Steel Welding Repairs	CERTIFICATES	GA		AER							
		9	05055 1.3	Stainless Steel Welding Repairs	CERTIFICATES	GA		R							
		10	05055 1.5	Quals. of Welders and Welding Operators	CERTIFICATES	GA		R							
		11	05055 2.2.2.3	Application Quals. for Steel Studs	CERTIFICATES	GA		R							
		12	05055 2.2.3	Threaded Fastener Certifications	CERTIFICATES	FIO									
		13	05055 1.3	Bearing and Bushing Specifications	MFRS INSTR	GA		AER							
		14	05055 1.3	Materials Disposition Records	CLOSEOUT SUBMTL	FIO									
SECTION- 05090			**Welding, Structural**												
		1	05090 1.5.1	Previous Qualifications	CERTIFICATES	FIO		R							
		2	05090 1.4	Inspector Qualification	CERTIFICATES	GA		R							
		3	05090 1.6	Welder, Welding Op., & Tacker Qual.	CERTIFICATES	GA		R							
		4	05090 1.5.2	Prequalified Procedures	TEST REPORTS	FIO		R							
		5	05090 3.2	Quality Control	TEST REPORTS	GA		AER							
		6	05090 3.2	Quality Control	PRECON SUBMTL	GA		AER							
		7	05090 1.5	Welding Procedure Specs and Quals	PRECON SUBMTL	GA		AR							
SECTION- 05120			**Structural Steel**												
		1	05120 3.1	Fabrication	CERTIFICATES	GA		ER							
		2	05120 1.3	Mill Test Reports	CERTIFICATES	FIO		R							
		3	05120 1.3	Welding	CERTIFICATES	GA		AR							
		4	05120 2.7	Washers	SAMPLES	GA		R							
		5	05120 2.6	Nuts Dimensional Style	SAMPLES	GA		R							
		6	05120 2.5	Carbon Steel Bolts and Nuts	SAMPLES	GA		AR							
		7	05120 2.4	High Strength Bolts and Nuts	SAMPLES	GA		AR							
		8	05120 3.2	Erection	SHOP DRAWINGS	GA		AER							
		9	05120 3.2.1	Structural Connections	SHOP DRAWINGS	GA		AR							
		10	05120 1.3	Structural Steel System	SHOP DRAWINGS	GA		AR							
SECTION- 05300			**Steel Decking**												
		1	05300 3.2	Attachments	CERTIFICATES	FIO		R							
		2	05300 2.1	Deck Units	CERTIFICATES	FIO		R							
		3	05300 2.1	Deck Units	DESIGN DATA	GA		AR							
		4	05300 3.2	Attachments	SAMPLES	FIO		R							
		5	05300 3.3	Holes and Openings	SHOP DRAWINGS	GA		AR							
		6	05300 3.2	Attachments	SHOP DRAWINGS	GA		AR							
		7	05300 2.4	Accessories	SHOP DRAWINGS	GA		AR							

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		8	05300 2.1	Deck Units	SHOP DRAWINGS	GA	AR							
SECTION- 05400			**Cold Formed Steel Framing**											
		1	05400 1.2	Mill Certificates	TEST REPORTS	FIO	R							
		2	05400 2.1	Cold-Formed Steel Framing	SHOP DRAWINGS	GA	AR							
SECTION- 05500			**Miscellaneous Metal**											
		1	05500 1.2	Miscellaneous Metal Items	SHOP DRAWINGS	GA	AR							
SECTION- 07412			**Non-Structural Metal Roofing**											
		1	07412 1.7	Warranties	CERTIFICATES	FIO	R							
		2	07412 2.1	Roof Panels	CERTIFICATES	GA	R							
		3	07412 2.6	Insulation	CERTIFICATES	FIO	R							
		4	07412 1.2.3	Installer	CERTIFICATES	FIO	R							
		5	07412 3.1	Installation	CERTIFICATES	FIO	R							
		6	07412 2.2	Accessories	CERTIFICATES	FIO	R							
		7	07412 2.8	Sealant	SAMPLES	GA	R							
		8	07412 2.1	Roof Panels	SAMPLES	GA	R							
		9	07412 2.9	Gaskets and Insulating Compounds	SAMPLES	FIO	R							
		10	07412 2.3	Fasteners	SAMPLES	FIO	R							
		11	07412 2.2	Accessories	SAMPLES	FIO	R							
		12	07412 1.7.1	Metal Roofing	SHOP DRAWINGS	GA	AR							
SECTION- 07900			**Joint Sealing**											
		1	07900 2.5	Sealant	MFRS INSTR	GA	R							
		2	07900 2.3	Bond-Breaker	MFRS INSTR	GA	R							
		3	07900 2.2	Backing	MFRS INSTR	GA	R							
		4	07900 2.5	Sealant	CERTIFICATES	FIO	R							
		5	07900 2.4	Primer	SAMPLES	GA	R							
		6	07900 2.5	Sealant	SAMPLES	GA	R							
SECTION- 08110			**Steel Doors and Frames**											
		1	08110 2.1	Steel Doors and Frames	CERTIFICATES	FIO	R							
		2	08110 2.1	Steel Doors and Frames	SAMPLES	GA	R							
		3	08110 2.1	Steel Doors and Frames	SHOP DRAWINGS	GA	AR							
SECTION- 08520			**Aluminum/AL Environmental Control Window**											
		1	08520 3.1	Aluminum Windows	MFRS INSTR	FIO	R							
		2	08520 3.1	Aluminum Windows	CERTIFICATES	FIO	R							
		3	08520 3.1	Aluminum Windows	TEST REPORTS	FIO	R							
		4	08520 3.1	Aluminum Windows	SAMPLES	GA	R							

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		5	08520 3.1	Aluminum Windows	PRODUCT DATA	GA		R							
		6	08520 2.3	Insect Screens	SHOP DRAWINGS	GA		AR							
		7	08520 3.1	Aluminum Windows	SHOP DRAWINGS	GA		AR							
SECTION- 08700			**Builder's Hardware**												
		1	08700 1.2	Hardware and Accessories	CERTIFICATES	FIO		R							
		2	08700 2.5	Keying Schedule	PRODUCT DATA	GA		R							
		3	08700 1.3	Hardware Schedule	PRODUCT DATA	GA		AR							
		4	08700 1.2	Hardware and Accessories	PRODUCT DATA	GA		AR							
		5	08700 1.2	Hardware Devices	SHOP DRAWINGS	GA		AR							
SECTION- 09900			**Painting, General**												
		1	09900 3.4	Application	MFRS INSTR	FIO		R							
		2	09900 3.3	Mixing and Thinning	MFRS INSTR	FIO		R							
		3	09900 2.1.4	Volatile Organic Compound Content	CERTIFICATES	FIO		R							
		4	09900 1.2	Mildewcide and Insecticide	CERTIFICATES	FIO		R							
		5	09900 2.1.2	Lead	CERTIFICATES	FIO		R							
		6	09900 2.1	Paint	TEST REPORTS	FIO		R							
		7	09900 2.1	Paint	SAMPLES	FIO		R							
		8	09900 2.1	Paint	PRODUCT DATA	GA		R							
SECTION- 09965			**Painting: Hydraulic Structures**												
		1	09965 1.2	Inspection and Operation Records	MFRS FLD REPT	FIO		R							
		2	09965 1.2	Soil Quality Report	MFRS FLD REPT	FIO		R							
		3	09965 1.2	Airborne Sampling Report	MFRS FLD REPT	FIO		R							
		4	09965 1.2	Thinners	SAMPLES	GA		AR							
		5	09965 1.2	Specification and Proprietary Paints	SAMPLES	GA		AR							
		6	09965 1.2	Qualified Coating Thickness Gages	CERTIFICATES	GA		R							
		7	09965 1.3.3	Qualified Painting Contractor	CERTIFICATES	GA		R							
		8	09965 1.3	Qualifications and Experience	CERTIFICATES	GA		R							
		9	09965 1.2	Soil Quality Plan	PRECON SUBMTL	FIO		R							
		10	09965 1.2	Water Quality Plan	PRECON SUBMTL	FIO		R							
		11	09965 1.2	Visible Emissions Monitoring Plan	PRECON SUBMTL	FIO		R							
		12	09965 1.2	Containment Plan	PRECON SUBMTL	FIO		R							
		13	09965 1.2	Waste Class., Hand., and Disp. Plan	PRECON SUBMTL	FIO		R							
		14	09965 1.2	Environmental Compliance Plan	PRECON SUBMTL	FIO		R							
		15	09965 1.2	Medical Surveillance Plan	PRECON SUBMTL	FIO		R							
		16	09965 1.2	Ventilation Assessment	PRECON SUBMTL	FIO		R							

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		17	09965 1.2	Airborne Sampling Plan	PRECON SUBMTL	FIO		R							
		18	09965 1.2	Respiratory Protection Program	PRECON SUBMTL	FIO		R							
		19	09965 1.2	Confined Space Procedures	PRECON SUBMTL	FIO		R							
		20	09965 1.2	Accident Prevention Plan	PRECON SUBMTL	FIO		R							
		21	09965 3.1.2	Painting Plan	PRECON SUBMTL	FIO		R							
SECTION- 10150															
		1	10150 1.2	Material Certification	CERTIFICATES	FIO		R							
		2	10150 2.1.4	Neoprene Pads	SHOP DRAWINGS	GA		AR							
		3	10150 1.2	Bridge Bearings	SHOP DRAWINGS	GA		AR							
SECTION- 11001															
		1	11001 1.4	SONAR System		FIO		R							
		2	11001 1.4	List of Equipment	PRECON SUBMTL	FIO		R							
		3	11001 1.4	Instructions	MFRS INSTR	FIO		R							
		4	11001 3.2.3	Field Training	MFRS INSTR	FIO		R							
		5	11001 1.4	DIDSON (SONAR) unit	PRODUCT DATA	GA		ER							
SECTION- 11287			**Tainter Gates and Anchorages**												
		1	11287 3.4.1	Skinplate Watertightness Test	MFRS FLD REPT	FIO		R							
		2	11287 2.4.1	Testing of Rubber Seals	TEST REPORTS	FIO		R							
		3	11287 2.3.1	Detail Drawings	SHOP DRAWINGS	GA		AER							
		4	11287 1.4	Repair and Painting Plan for Bulkheads	SHOP DRAWINGS	GA		AER							
		5	11287 1.4	As-built Gate Weight	PRECON SUBMTL	FIO		R							
		6	11287 2.4	Material Tests, Insp. and Verifications	PRECON SUBMTL	FIO		R							
		7	11287 1.4	Prestressing Anchorages	PRECON SUBMTL	GA		AR							
		8	11287 2.3.3	Welding	PRECON SUBMTL	GA		AR							
		9	11287 3.1.4.3	Bulkhead Refurbishment Plan	PRECON SUBMTL	GA		R							
		10	11287 1.4	Tainter Gate Installation Plan	PRECON SUBMTL	GA		AR							
SECTION- 11290			**Hyd Pwr Systems for Civil Wks Structures**												
		1	11290 1.5	Fabrication Certification	CERTIFICATES	FIO		R							
		2	11290 3.1.1	Welding	CERTIFICATES	GA		AR							
		3	11290 1.5	Mill Test Reports	TEST REPORTS	FIO		R							
		4	11290 1.4	Drawings	SHOP DRAWINGS	GA		AER							
SECTION- 11291			**NA, Generic name, see www.ccb.org**												
		1	11291 1.5	Fabrication Certification	CERTIFICATES	FIO		R							
		2	11291 1.5	Mill Test Reports	TEST REPORTS	FIO		R							
		3	11291 1.5	Detail Drawings	SHOP DRAWINGS	GA		AR							

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		4	11291 3.1.1	Welding	PRECON SUBMTL	GA		R							
SECTION- 11292															
		1	11292 1.4	Detail Drawings	SHOP DRAWINGS	GA		AER							
		2	11292 2.1	Metal Materials	SHOP DRAWINGS	FIO									
		3	11292 2.1	Materials Orders	SHOP DRAWINGS	FIO									
		4	11292 2.1	Materials List	SHOP DRAWINGS	FIO									
		5	11292 2.1	Shipping Bill	SHOP DRAWINGS	FIO									
		6	11292 3.2	Tests, Inspections, and Verifications	TEST REPORTS	FIO									
		7	11292 3.2.2.1	Weight Test	TEST REPORTS	GA		AER							
		8	11292 3.2.2.2	Pontoon Pressure Test	TEST REPORTS	GA		AER							
		9	11292 1.5	Polyethylene Pipe Manufacturer's Rep.	CERTIFICATES	GA		AER							
		10	11292 1.3	Calibration Certificate	CERTIFICATES	GA		AER							
		11	11292 3.1.2	Polyethylene Pipe Jointing Procedures	MFRS INSTR	FIO									
		12	11292 1.3	Materials Disposition Records	CLOSEOUT SUBMTL	FIO									
SECTION- 13080			**Seismic Protection for Misc Equipment**												
		1	13080 1.3	Design Calculations	DESIGN DATA	GA		AR							
		2	13080 1.3	Shop Drawings	SHOP DRAWINGS	GA		AR							
SECTION- 13100			**Lightning Protection System**												
		1	13100 1.3	Materials and Equipment	CERTIFICATES	GA		R							
		2	13100 3.1.1	Lightning Protection System	SHOP DRAWINGS	GA		AR							
SECTION- 13110			**Cathodic Prot System (Sacrificial Anode)**												
		1	13110 3.1	Training Course		GA		R							
		2	13110 1.2	Cathodic Protection System Manuals		GA		R							
		3	13110 1.3.1	Services of 'Corrosion Expert'	CERTIFICATES	GA		R							
		4	13110 3.3	Cathodic Protection System	CERTIFICATES	FIO		R							
		5	13110 1.3.2	Contractor's Modifications	TEST REPORTS	GA		AR							
		6	13110 1.3.4	Tests and Measurements	TEST REPORTS	GA		R							
		7	13110 3.2	Spare Parts	PRODUCT DATA	GA		R							
		8	13110 1.3.2	Contractor's Modifications	SHOP DRAWINGS	GA		AR							
		9	13110 1.3.3	Drawings	SHOP DRAWINGS	GA		AR							
SECTION- 13500															
		1	13500 1.4	Operation and Maintenance Report		GA		ER							
		2	13500 1.4	Warranty	PRECON SUBMTL	FIO		R							
		3	13500 1.4	Instrumentation Data Reports	PRECON SUBMTL	FIO		R							
		4	13500 1.4	Activity Reports	PRECON SUBMTL	FIO		R							

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		5	13500 1.4	Final Report	PRECON SUBMTL	FIO		R							
		6	13500 1.4	Installation Report	PRECON SUBMTL	GA		R							
		7	13500 1.5	Subcontractor Qualifications	PRECON SUBMTL	GA		ER							
		8	13500 2.5.2	Quality Control Documentation	PRECON SUBMTL	GA		R							
		9	13500 1.9.1	Instrumentation Plan	PRECON SUBMTL	GA		AER							
SECTION- 13503															
		1	13503 1.2	Inclinometer Installation Report	TEST REPORTS	FIO		R							
		2	13503 1.2	Instrumentation Plan	PRODUCT DATA	GA		AER							
SECTION- 13510															
		1	13510 1.1	Final Gauge Termination Report	TEST REPORTS	FIO		R							
		2	13510 1.1	Post-Installation Information Report	TEST REPORTS	FIO		R							
		3	13510 2.3	Pre-Installation Testing Report	TEST REPORTS	FIO		R							
		4	13510 1.1	Instrumentation Plan	PRECON SUBMTL	GA		AER							
SECTION- 13517															
		1	13517 1.1	Final Gauge Termination Report	TEST REPORTS	FIO		R							
		2	13517 1.1	Installation Information Report	TEST REPORTS	FIO		R							
		3	13517 1.1	Pre-Installation Testing Report	TEST REPORTS	FIO		R							
		4	13517 1.1	Manufacturer's Product Data	PRODUCT DATA	GA		AER							
SECTION- 13523															
		1	13523 1.1	Instrumentation Plan	PRODUCT DATA	GA		AER							
SECTION- 13526															
		1	13526 1.2	Instrumentation Plan	PRECON SUBMTL	GA		AER							
SECTION- 13527															
		1	13527 1.2	Maintenance Reports	TEST REPORTS	FIO		R							
		2	13527 1.2	Calibration Reports	TEST REPORTS	FIO		R							
		3	13527 1.2	Final Acceptance Report	TEST REPORTS	FIO		R							
		4	13527 1.2	Post-installation Testing Report	TEST REPORTS	FIO		R							
		5	13527 1.2	Pre-installation Testing Report	TEST REPORTS	FIO		R							
		6	13527 1.2	ADAS Plan	PRECON SUBMTL	GA		AER							
SECTION- 13530															
		1	13530 1.1	Installation Information	PRECON SUBMTL	FIO		R							
		2	13530 1.1	Splice Documentation	PRECON SUBMTL	FIO		R							
		3	13530 1.1	Instrumentation Plan	PRECON SUBMTL	FIO		R							
		4	13530 1.1	Manufacturer's Product Data	PRECON SUBMTL	GA		AER							
SECTION- 13850			**Fire Detection & Alarm System, DC Loop**												

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		1	13850 1.5	Technical Data and Computer Software		GA		R							
		2	13850 1.3.7	Qualifications	CERTIFICATES	GA		R							
		3	13850 3.4.1	Equipment	CERTIFICATES	FIO		R							
		4	13850 3.5	Testing	TEST REPORTS	FIO		R							
		5	13850 3.5	Testing	PRODUCT DATA	GA		R							
		6	13850 3.6	Training	PRODUCT DATA	GA		R							
		7	13850 1.5	Technical Data and Computer Software	PRODUCT DATA	GA		R							
		8	13850 2.7.3	Spare Parts	PRODUCT DATA	GA		R							
		9	13850 1.2	Voltage Drop	PRODUCT DATA	GA		AR							
		10	13850 2.2	Storage Batteries	PRODUCT DATA	GA		AR							
		11	13850 1.4.1	Fire Alarm Reporting System	SHOP DRAWINGS	GA		AR							
SECTION- 13854															
		1	13854 1.4	Unacceptable Concrete Record	TEST REPORTS	GA		AR							
SECTION- 13855															
		1	13855 1.3	Inspection Reports	TEST REPORTS	FIO		R							
		2	13855 1.3	Sounding Equipment and Methods	PRODUCT DATA	GA		AR							
SECTION- 15010			**Hyd Pwr Systems for Civil Wks Structures**												
		1	15010 1.10	Operation and Maintenance Manuals		GA		R							
		2	15010 3.1.2	Cleaning and Flushing The System	MFRS FLD REPT	GA		AR							
		3	15010 3.3.1	Field Testing	MFRS FLD REPT	GA		R							
		4	15010 1.7.2	Shipping, Preservation and Storage	MFRS INSTR	GA		R							
		5	15010 1.5	Mill Test Reports	TEST REPORTS	FIO		R							
		6	15010 2.1.3.4	Cylinder Rod	TEST REPORTS	GA		R							
		7	15010 2.5	Shop Assembly and Testing	TEST REPORTS	GA		R							
		8	15010 1.6	Design and Performance Requirements	DESIGN DATA	GA		AR							
		9	15010 1.3	System Description	DESIGN DATA	GA		AR							
		10	15010 2.2	Electrical Equipment	PRODUCT DATA	GA		AR							
		11	15010 2.1	Materials and Mechanical Equipment	PRODUCT DATA	GA		AR							
		12	15010 1.11	Schematics and Drawings	SHOP DRAWINGS	GA		AR							
		13	15010 3.4.1	Erecting Engineer Resume	PRECON SUBMTL	GA		R							
SECTION- 15400			**Plumbing, General Purpose**												
		1	15400 2.1	Materials	TEST REPORTS	GA		AR							
		2	15400 3.2	Tests, Flushing and Disinfection	TEST REPORTS	FIO		R							
		3	15400 3.1	Installation	TEST REPORTS	GA		AR							
SECTION- 15895			**Air Supply/Distribution/Vent/Exhaust Sys**												

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		1	15895 1.4	Air Supply and Exhaust Manuals		GA		R							
		2	15895 1.4	Air Supply and Exhaust Equipment	PRODUCT DATA	GA		AR							
		3	15895 1.4	Air Systems Equipment	PRODUCT DATA	FIO		R							
		4	15895 2.1	Components and Equipment	PRODUCT DATA	GA		AR							
SECTION- 16070			**Seismic Protect for Electrical Equipment**												
		1	16070 1.3	Contractor Designed Bracing	PRODUCT DATA	GA		AR							
		2	16070 1.3	Cable Trays	PRODUCT DATA	GA		AR							
		3	16070 1.3	Equipment Requirements	PRODUCT DATA	GA		AR							
		4	16070 3.2	Lighting Fixtures in Buildings	PRODUCT DATA	GA		AR							
		5	16070 1.3	Equipment Requirements	SHOP DRAWINGS	GA		AR							
		6	16070 3.2	Lighting Fixtures in Buildings	SHOP DRAWINGS	GA		AR							
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		1	16120 2.2	Installation Instructions	MFRS INSTR	GA		AR							
		2	16120 2.3	Tests, Inspections, and Verifications	TEST REPORTS	GA		AR							
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		1	16375 3.8.3	Electrical Distribution System	SHOP DRAWINGS	GA		R							
		2	16375 1.3	As-Built Drawings	SHOP DRAWINGS	FIO									
		3	16375 2.2	Nameplates	PRODUCT DATA	FIO									
		4	16375 2.1	Material and Equipement	PRODUCT DATA	GA		R							
		5	16375 3.1	General Installation Requirements	PRODUCT DATA	GA		R							
		6	16375 2.14	Factory Tests	TEST REPORTS	FIO									
		7	16375 3.8	Field Testing	TEST REPORTS	FIO									
		8	16375 3.8.8	Operating Tests	TEST REPORTS	FIO									
		9	16375 3.2.1.4	Cable Installation	TEST REPORTS	FIO									
		10	16375 2.1	Material and Equipment	CERTIFICATES	FIO									
		11	16375 3.3	Cable Joints	CERTIFICATES	FIO									
		12	16375 1.3	Cable Installer Qualifications	CERTIFICATES	FIO									
		13	16375 3.8.3	Electrical Distribution System	O&M DATA	FIO									
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		3	16415 1.3	Factory Test Reports	TEST REPORTS	FIO		R							
		4	16415 1.3	On-Site Tests	PRODUCT DATA	FIO		R							
		5	16415 1.3	As-Built Drawings	PRODUCT DATA	GA		R							
		6	16415 1.3	Installation Procedures	PRODUCT DATA	FIO		R							

RANGE: ALL

SORT: SECTION & ITEM

SUBMITTAL REGISTER (ER 415-1-10)

TITLE AND LOCATION Olmsted Dam Construction,Olmsted, Illinois

DATE 23 Apr 2003

CONTRACTOR

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ACTIVITY No.	TRANS-MITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSI-FICATION	REVIEWER		CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION	
						FIO or GA	OFFICE / NAME		SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	SUBMIT TO CORPS	CODE	DATE
		7	16415 1.3	Material, Equipment and Fixture Lists	PRODUCT DATA	GA		AR							
		8	16415 1.3	Manufacturer's Catalog	PRODUCT DATA	GA		AR							
		9	16415 1.3	Interior Electrical Equipment	SHOP DRAWINGS	GA		AR							
SECTION- 16710			**Premises Distribution System**												
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		2	16710 1.5	Materials and Equipment	CERTIFICATES	GA		AR							
		3	16710 1.5	Test Reports	TEST REPORTS	FIO		R							
		4	16710 1.5	Test Plan	TEST REPORTS	FIO		R							
		5	16710 1.5	Qualifications	PRODUCT DATA	FIO		R							
		6	16710 1.5	Manufacturer's Recommendations	PRODUCT DATA	FIO		R							
		7	16710 1.5	Spare Parts	PRODUCT DATA	FIO		R							
		8	16710 1.8	Record Keeping and Documentation	PRODUCT DATA	FIO		R							
		9	16710 1.5	Record Drawings	SHOP DRAWINGS	GA		R							
		10	16710 1.5	Premises Distribution System	SHOP DRAWINGS	GA		AR							
SECTION- 16751			**Closed Circuit Television Systems**												
		1	16751 1.3	Training	MFRS INSTR	GA		ER							
		2	16751 1.3	CCTV System	MFRS INSTR	GA		ER							
		3	16751 1.3	Installer	CERTIFICATES	GA		ER							
		4	16751 1.3	Test Procedures	TEST REPORTS	GA		R							
		5	16751 1.3	Testing	TEST REPORTS	GA		R							
		6	16751 1.3	CCTV System	PRODUCT DATA	GA		AER							
		7	16751 1.3	Spare Parts	PRODUCT DATA	GA		ER							
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		1	16768 1.2	Fiber Optic System	CERTIFICATES	GA		ER							
		2	16768 1.2	Test Reports	TEST REPORTS	FIO		R							
		3	16768 1.2	Operation and Maintenance Manuals		GA		ER							
		4	16768 1.2	Test Plans	PRODUCT DATA	GA		ER							
		5	16768 1.2	Manufacturers' Instructions	PRODUCT DATA	GA		ER							
		6	16768 1.2	Spare Parts	PRODUCT DATA	FIO		R							
		7	16768 1.2	Fiber Optic Systems	PRODUCT DATA	GA		AER							
		8	16768 1.2	Fiber Optic Systems	SHOP DRAWINGS	GA		AER							
SECTION- 16770			**Radio and Public Address Systems**												
		1	16770 1.3	Operational and Maintenance Manuals		GA		R							
		2	16770 3.3	Acceptance Tests	TEST REPORTS	FIO		R							
		3	16770 1.3	Test Plan	TEST REPORTS	FIO		R							

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		4	16770 1.3	Spare Parts	PRODUCT DATA	GA		R							
		5	16770 1.3	PA System	SHOP DRAWINGS	GA		AR							
SECTION- 16900															
		1	16900 1.3	Control and Inst. Systems Testing	TEST REPORTS	GA		R							
		2	16900 1.3	Control and Inst. Systems Training	PRODUCT DATA	GA		R							
		3	16900 1.3	Lever Operated Limit Switches	PRODUCT DATA	GA		AR							
		4	16900 1.3	Cam Operated Limit Switches	PRODUCT DATA	GA		AR							
		5	16900 1.3	Transmitters, Repeaters, Math. Modules	PRODUCT DATA	GA		AR							
		6	16900 1.3	Triad Instrumentation Cable	PRODUCT DATA	GA		AR							
		7	16900 1.3	Twisted Pair Instrumentation Cable	PRODUCT DATA	GA		AR							
		8	16900 1.3	Network Communication Cable	PRODUCT DATA	GA		AR							
		9	16900 1.3	Fiber-Optic Cable	PRODUCT DATA	GA		AR							
SECTION- 16910															
		1	16910 1.3	O&M Manuals for all PLC equipment		GA		R							
		2	16910 1.3	Programmable Logic Controller System Tra	TEST REPORTS	GA		R							
		3	16910 1.3	IEC 1131-3 Control Program	PRODUCT DATA	GA		AR							
		4	16910 1.3	Input/Output Address List	PRODUCT DATA	GA		AR							
		5	16910 1.3	Commo Data Line Surge Protectors	PRODUCT DATA	GA		AR							
		6	16910 1.3	IEC Control Program Software	PRODUCT DATA	GA		AR							
		7	16910 1.3	System Block Diagram	PRODUCT DATA	GA		AR							
		8	16910 1.3	Fiber Optic Converter Modules	PRODUCT DATA	GA		AR							
		9	16910 1.3	Cables and Connectors	PRODUCT DATA	GA		AR							
		10	16910 1.3	Power Supplies	PRODUCT DATA	GA		AR							
		11	16910 1.3	Network Communication Cards	PRODUCT DATA	GA		AR							
		12	16910 1.3	Analog Input and Output Cards	PRODUCT DATA	GA		AR							
		13	16910 1.3	Digital Input and Output Cards	PRODUCT DATA	GA		AR							
		14	16910 1.3	Input/Output Communication Cards	PRODUCT DATA	GA		AR							
		15	16910 1.3	Racks	PRODUCT DATA	GA		AR							
		16	16910 1.3	Processor	PRODUCT DATA	GA		AR							
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		2	16920 1.3	Personal Computer System Testing	TEST REPORTS	GA		R							
		3	16920 1.8	Systems Integrator Qualifications	PRODUCT DATA	GA		R							
		4	16920 1.3	Personal Computer System Testing	PRODUCT DATA	GA		R							
		5	16920 1.3	Computer System Training	PRODUCT DATA	GA		R							

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SORT: SECTION & ITEM

SUBMITTAL REGISTER (ER 415-1-10)

TITLE AND LOCATION: Olmsted Dam Construction,Olmsted, Illinois

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		6	16920 1.3	HMI Operator Screens	PRODUCT DATA	GA		AR							
		7	16920 2.3.2.5	Tag Database	PRODUCT DATA	GA		AR							
		8	16920 1.3	Operating System Parameters	PRODUCT DATA	GA		AR							
		9	16920 2.3	HMI Programming Software	PRODUCT DATA	GA		AR							
		10	16920 2.2.3	PLC Programming Software	PRODUCT DATA	GA		AR							
		11	16920 2.2.2	Operating System Software	PRODUCT DATA	GA		AR							
		12	16920 1.3	Cable	PRODUCT DATA	GA		AR							
		13	16920 1.3	Media Converters	PRODUCT DATA	GA		AR							
		14	16920 2.1.8.3	Transceivers	PRODUCT DATA	GA		AR							
		15	16920 2.1.8.2	Network Interface Card	PRODUCT DATA	GA		AR							
		16	16920 2.1.8.1	Network Hub	PRODUCT DATA	GA		AR							
		17	16920 2.1.6	Speakers	PRODUCT DATA	GA		AR							
		18	16920 2.1.5	Sound Card	PRODUCT DATA	GA		AR							
		19	16920 2.1.4.1	Video Adapter	PRODUCT DATA	GA		AR							
		20	16920 2.1.4	Video Display	PRODUCT DATA	GA		AR							
		21	16920 2.1.3	Storage Devices	PRODUCT DATA	GA		AR							
		22	16920 2.1.2.2	Passive Backplane	PRODUCT DATA	GA		AR							
		23	16920 2.1.2.2	CPU Controller	PRODUCT DATA	GA		AR							
		24	16920 1.3	PC Chassis	PRODUCT DATA	GA		AR							

RANGE: ALL

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LOWER OHIO RIVER NAVIGATION SYSTEM
LOCKS AND DAMS 52 AND 53 REPLACEMENT PROJECT

OLMSTED LOCKS AND DAM

DESIGN MEMORANDUM NO. 8

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LOWER OHIO RIVER NAVIGATION SYSTEM
OLMSTED LOCKS AND DAM

SYLLABUS

In April 1985, the Louisville District completed work on the Lower Ohio River Navigation Feasibility Study. The objective of this Study was to determine the most appropriate method to provide long-term, reliable navigation throughout the Lower Ohio River System. The Feasibility Study recommended the replacement of Locks and Dams 52 and 53 with a single project consisting of a new set of locks and a new dam. An announcement of a May 1985 public meeting indicating the District's findings and inviting public comment was issued. In August 1985, the Feasibility Study was finalized.

The Ohio River Division Commander agreed with the District Commander's recommendation and on 22 August 1985 issued a Public Notice. The Feasibility Report was presented to the Board of Engineers for Rivers and Harbors for consideration in October 1985. On 23 December 1985, the Board provided a favorable recommendation to the Chief of Engineers, who subsequently transmitted the Report to the States and various agencies for a 90-day review. All issues resulting from the review were resolved, and the States and agencies concurred in the Report. After being reviewed favorably by the Office of the Chief, the Feasibility Report was sent to the Assistant Secretary of the Army for approval on 20 August 1986. In August 1987, the Assistant Secretary transmitted the Report to the Office of Management and Budget, who, after reviewing it, advised the Assistant Secretary on 25 September 1987 that there was no objection to its submission to the Congress. It was further stated that the project as recommended in the Report was consistent with the program of the President. On 26 October 1987, the Assistant Secretary of the Army signed the Record of Decision and forwarded the Feasibility Report with his approval to Congress for their consideration for authorization.

The project was authorized for construction by the Water Resources Development Act of 1988 (Public Law 100-676), which was approved on 17 November 1988. Preconstruction Engineering and Design (PED) studies were authorized by HQUSACE following completion of the Feasibility Report, with initial funding provided in Fiscal Year 1986.

Existing L&D 52 is located at Ohio River Mile 938.9. The original project was completed in 1928 and consisted of a single 110-foot by 600-foot lock; a 1,958-foot wide, manually-operated wicket dam; three bear traps for pool control; and a fixed weir section. An austere 110-foot by 1,200-foot lock was completed during 1969 as a temporary measure to reduce excessive traffic delays. The sheet pile structure was never intended for long-term use. The filling and emptying system is considerably less efficient than those of the modernized locks on the Ohio River.

Existing L&D 53, located at Ohio River Mile 962.6, is very similar to L&D 52. The original project, completed in 1929, consisted of a 110-foot by 600-foot lock; a 1,880-foot wide, manually-operated

wicket dam; two bear traps, and a fixed weir. A temporary 110-foot by 1,200-foot lock was completed in 1980. Approximately 45 percent of the wicket assemblies were replaced. The navigable pass section is now 932 feet wide.

The wicket dams of these projects can be lowered when river flows are sufficient to provide the required navigable depth. This creates a navigable pass for towboats and eliminates lockages. This open river condition exists at L&D 52 about 60 percent of the time and at L&D 53 about 90 percent of the time. There are two major concerns associated with these existing projects and their capability to provide reliable navigation service throughout the Lower Ohio River System. First, there is insufficient lock capacity, which increases tow delays. This situation will continue to degrade as traffic demands grow. Second, because the projects are almost 70 years old and the temporary lock chambers were not designed for long-term use, deterioration is significant. Additionally, the projects do not meet current structural stability criteria.

The Olmsted Locks and Dam Project will replace existing L&D 52 and 53 and will be located at Ohio River Mile 964.4, approximately 1.8 miles downstream of L&D 53, near Olmsted, Illinois.

The project will consist of two 110-foot by 1,200-foot locks adjacent to the Illinois bank, a 634-foot tainter gate regulatory dam section composed of five 110-foot wide by 37-foot high tainter gates, a 1,400-foot wide navigable pass controlled by 140 10-foot wide boat-operated wickets, and a 594.68-foot wide fixed weir extending to the Kentucky bank.

Design Memorandum No. 1, General Design Memorandum (GDM), for the Replacement of L&D 52 and 53, Olmsted Site, was the initial effort under the PED authority. It was submitted for review and approval on 30 March 1989. The Ohio River Division forwarded the Olmsted GDM to HQUSACE by the 1st Endorsement, dated 8 June 1989. The GDM was approved by HQUSACE in the 2nd Endorsement, dated 20 September 1989, subject to the satisfactory resolution of Division and HQUSACE comments contained in the 1st and 2nd Endorsements, respectively. HQUSACE approval of the Olmsted GDM was noted by the Division in the 3rd Endorsement, dated 26 September 1989. The 4th Endorsement, dated 12 January 1990, contained resolutions of the comments. The Division forwarded the resolutions of the comments to HQUSACE by the 5th Endorsement, dated 4 May 1990. The comment resolutions were approved by HQUSACE in the 6th Endorsement, dated 10 July 1990. The information was transmitted by the Division in the 7th Endorsement, dated 23 July 1990.

Modifications to the design of Olmsted Locks and Dam resulting from comments on the GDM and from changes in the dam configuration and project scope as presented in the GDM were featured in a GDM Supplement. Supplement No. 1 to Design Memorandum No. 1 was submitted for review and approval on 30 April 1990. The Ohio River Division forwarded the Olmsted GDM Supplement to HQUSACE by the 1st Endorsement, dated 29 June 1990. The GDM Supplement was approved by HQUSACE in the 2nd Endorsement, dated 22 August 1990, subject to the satisfactory resolution of Division and HQUSACE comments contained in the 1st and 2nd Endorsements, respectively. HQUSACE approval of the Olmsted GDM Supplement was noted by the Division in the 3rd Endorsement, dated 4 September 1990. The 4th Endorsement, dated 31 January 1991, contained resolutions of the comments. The Division forwarded

the resolutions of the comments to HQUSACE by the 5th Endorsement, dated 22 April 1991. The comment resolutions were approved by HQUSACE in the 6th Endorsement, dated 26 July 1991. The information was transmitted and concurrence with additional comments was requested by the Division in the 7th Endorsement, dated 6 August 1991.

Design Memorandum No. 2, Real Estate Interests and Requirements, Dam Site and Access Road Segments 1 & 2, was submitted for review and approval on 14 April 1989. The Ohio River Division forwarded the Real Estate Design Memorandum (REDM) to HQUSACE by the 1st Endorsement, dated 1 August 1989. The REDM could not be approved by HQUSACE in the 2nd Endorsement, dated 21 December 1989, and was returned by the Division in the 3rd Endorsement, dated 17 January 1990, for the resolution of HQUSACE comments contained in the 2nd Endorsement. The 4th Endorsement, dated 20 June 1990, contained resolutions of the comments. The Division forwarded the REDM and comment resolutions to HQUSACE by the 5th Endorsement, dated 8 August 1990. The REDM was approved by HQUSACE in the 6th Endorsement, dated 24 October 1990. HQUSACE approval of the REDM was noted by the Division in the 7th Endorsement, dated 1 November 1990. The 8th Endorsement, dated 25 March 1991, provided additional information regarding the comments in the 2nd Endorsement. The Division forwarded this information to HQUSACE by the 9th Endorsement, dated 8 May 1991. HQUSACE concurred with the information in the 10th Endorsement, dated 26 September 1991.

Design Memorandum No. 2A, Real Estate Interests and Requirements, Spoil Area, was submitted for review and approval on 15 March 1991. This REDM was approved by the Ohio River Division in the 1st Endorsement, dated 9 May 1991.

Design Memorandum No. 3, Letter Report, Access Road, was submitted for review and approval on 28 September 1990. The Letter Report was approved by the Ohio River Division in the 1st Endorsement, dated 19 November 1990, subject to the satisfactory resolution of comments. The Access Road Letter Report was revised, retitled, and resubmitted for review and approval as a Relocations Feature Design Memorandum (FDM) by the 2nd Endorsement, dated 26 April 1991. The Relocations FDM was approved by the Division in the 3rd Endorsement, dated 9 August 1991.

Design Memorandum No. 4, Concrete Materials, was submitted for review and approval on 24 October 1990. The Concrete Materials FDM was approved by the Ohio River Division in the 1st Endorsement, dated 18 December 1990, subject to the satisfactory resolution of comments. The 2nd Endorsement, dated 26 June 1991, contained resolutions of the comments. Additional information was requested by the Division in the 3rd Endorsement, dated 1 August 1991. The 4th Endorsement, dated 28 October 1991, provided this information. The Division concurred with the information in the 5th Endorsement, dated 7 November 1991.

Design Memorandum No. 5, Foundation, was submitted for review and approval on 30 November 1990. The Foundation FDM was approved by the Ohio River Division in the 1st Endorsement, dated 4 March 1991, subject to the satisfactory resolution of comments. The 2nd Endorsement, dated 25 April 1991, contained resolutions of the comments.

A Supplement to Design Memorandum No. 5 was submitted for review and approval on 30 September 1991. The Foundation FDM Supplement was approved by the Ohio River Division in the 1st Endorsement, dated 20 December 1991, subject to the satisfactory resolution of comments. The 2nd Endorsement, dated 18 February 1992, contained resolutions of the comments. Additional information was requested by the Division in the 3rd Endorsement, dated 21 May 1992. The 4th Endorsement, dated 15 June 1992, provided this information.

Design Memorandum No. 6, Structural Properties and Special Design Considerations, was submitted for review and approval on 28 June 1991. Approval of this FDM was held in abeyance by the Ohio River Division in the 1st Endorsement, dated 3 October 1991, pending the satisfactory resolution of comments. The Structural Properties and Special Design Considerations FDM was revised and resubmitted for review and approval by the 2nd Endorsement, dated 22 April 1992. The FDM was approved by the Division in the 3rd Endorsement, dated 22 May 1992.

Design Memorandum No. 7, Locks, Feature Design Memorandum (FDM), Locks, was submitted for review and approval on 16 March 1992. Based on comments contained in the 1st Endorsement, dated 15 July 1992, it was decided to resubmit the FDM and provide a Supplement to the FDM for those comments requiring additional studies and analyses. The FDM was revised in accordance with the comments contained in the 1st Endorsement and subsequent discussions and was resubmitted on 5 February 1993. The 2nd Endorsement, dated 15 March 1993, transmitted responses to those comments. The FDM was approved in the 3rd Endorsement, dated 8 July 1993, subject to the resolution of comments on the 2nd Endorsement responses and on the Supplement.

The Supplement to Design Memorandum No. 7 was submitted for review and approval in January 1994.

Appendix A of DM No. 8, Tainter Gate Optimization Study, and Appendix B, Method of Construction Study were submitted by the Joint Venture to the Louisville District during 1997 and approved by the District Commander after satisfactory resolution of comments.

LOWER OHIO RIVER NAVIGATION SYSTEM
OLMSTED LOCKS AND DAM

PERTINENT DATA

LOCATION OF PROJECT

The project is located on the Ohio River in Illinois and Kentucky, approximately 964.4 river miles downstream from the city of Pittsburgh, Pennsylvania and about 16.6 miles upstream from the confluence of the Ohio and the Mississippi Rivers at Cairo, Illinois.

TYPE OF PROJECT

The project consists of a dam (which includes a non-navigable tainter-gated section for upper pool control, a wicket-gated navigable pass section, and a fixed weir section) and two 110-foot by 1,200-foot locks (usable chamber length).

PURPOSE

The purpose of the project is to provide improved, long-term, reliable navigation in the Lower Ohio River System.

AUTHORITY

The project was authorized for construction by the Water Resources Development Act of 1988 (Public Law 100-676) on 17 November 1988.

GENERAL DATA

All elevations in this memorandum are referenced to Ohio River Datum (ORD)

Project location (right descending bank)	964.4 mi.
Drainage area upstream from site	203,000 sq. mi.
Elevation, design upper pool	300.0
Elevation, maximum upper pool (controlled)	302.0
Elevation, minimum upper pool (hinge pool operation)	295.0
Elevation, minimum lower pool	Uncontrolled
Elevation, minimum design tailwater (lock design)	279.0
Elevation, extreme minimum design tailwater (dam design)	278.0

STREAM FLOW

Due to the proximity of the project site to the mouth of the Ohio, tailwater characteristics will be strongly influenced by the Mississippi River. As such, flows and river elevations for a given recurrence interval may not be directly related.

Average flow (1966-1996, Metropolis, IL)	293,000 c.f.s.
Maximum flow of record (February 1937, Metropolis, IL)	1,850,000 c.f.s.
100-yr frequency flow	1,275,000 c.f.s.
Navigation design flood flow (10-yr)	925,000 c.f.s.
2 Percent duration flow (1966-1996)	850,000 c.f.s.
Minimum flow of record (July 1930, Metropolis, IL)	15,000 c.f.s.
Estimated flow exceeded 98% of time, project conditions (1966-1996)	53,000 c.f.s.
Elevation of flood of record (February 1937, Metropolis, IL) and Project Flood	336.4 ft.
100-yr frequency elevation	334.5 ft.
Elevation of 10-yr frequency flow (headwater)	327.6 ft.
Elevation of 10-yr frequency flow (tailwater)	326.6 ft.
Estimated elevation exceeded 98% of time, project conditions	284.0 ft.

LOCK

Location	Adjacent to dam on right descending bank
Number of locks	2
Type of lock structure	W-Frame
Foundation	Piles driven into McNairy Formation
Size of lock (usable length)	110 x 1,200 ft.
Distance center to center of pintles	1,270.0 ft.
Maximum extreme operating lift (El. 278 to 301.5)	23.5 ft.
Maximum normal operating lift (El. 285 to 300)	15.0 ft.

	261.0 ft.
Elevation of lower sill	261.0 ft.
Lock floor elevation	256.0 ft.
Lock filling and emptying system	Twin culvert side port system controlled by reverse tainter valves for each lock chamber
Elevation of intake manifold inverts	261.0 ft.
Culvert invert elevation between culvert valves	256.0 ft.
Elevation of chamber port inverts	256.0 ft.
Elevation of outlet bucket inverts	235.0 ft.
Elevation of top of lock walls	310.0 ft.
Elevation of top of upper and lower miter gates	310.0 ft.
Elevation of top of upstream riverside approach wall and middle approach wall	Varies with river stage
Elevation of top of downstream riverside approach wall and middle approach wall	Varies with river stage
Elevation of top of upstream landside approach wall	310.0 ft.
Elevation of top of downstream landside approach wall	310.0 ft.
Freeboard on lock walls above project flood	Submerged
Height of miter gates (top of sill to top of gate)	49.0 ft.
Size of culvert valves (cross-sections of culverts vary)	14 x 18 ft.
Design depth of submergence of side port inverts	23 ft.
Type of temporary maintenance closure	Float-in Steel Bulkheads
Type of lock operating machinery	Hydraulic
Time lock is inoperative	58.4 %
Minimum depth over upper miter gate sill, normal operations headwater = Elev. 295 (hinge pool operation)	34.0 ft.
Minimum depth over upper sill, loss of pool, assumed headwater = Elev. 279	18.0 ft.
Minimum depth over lower sill, minimum tailwater assumed Elev. 279	18.0 ft.

TAINTER GATED SPILLWAY

Foundation	Piles driven into McNairy Formation
Total length (6 piers and 5 gatebays)	634.0 ft.
Net length of opening (gated portion of dam)	550.0 ft.
Elevation of sill	265.0 ft.
Elevation of stilling basin	247.5 ft.
Length of stilling basin (from base of ogee section to end of end sill)	143.0 ft.
Elevation of end sill	253.5 ft.
Type of gates	Tainter
Number of gates	5
Width and height of gates	110 x 37 ft.
Radius to inside face of skinplate	54'-0"
Method of operating gates	Hydraulic cylinder
Elevation of gate low steel when fully raised (50 yr frequency)	332.0 ft.
Type of temporary maintenance closure	Aluminum and Float-in Steel Bulkheads
Swellhead at dam for design flow (100 yr)	0.5 ft.

NAVIGABLE PASS

Foundation	Piles driven into McNairy Formation
Elevation of sill	278.0 ft.
Elevation top of wicket gates	302.0 ft.
Elevation of stilling basin	267.0 ft.
Length of stilling basin (from base of ogee section to end of end sill)	89.25 ft.
Net length of opening (gated portion of spillway)	1,400 ft.
Number of gates	140
Width and projected height of gates (nominal dimensions)	10 x 24

FIXED WEIR

Elevation of top of fixed weir	303.5 ft.
Freeboard above 100-year flood	Submerged

OLMSTED DAM PROJECT
PHASE II – PLANS AND SPECIFICATIONS

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(Note: For Volumes 1-29, see Feature Design Memorandum Appendices, June 1999)

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35	Right Abutment Sill Shell and Miscellaneous Shell Design Mods
36	Right Abutment Stilling Basin Shell & Training Wall Shells
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55	Piles and Shear Keys
56	Barge Impact Analysis
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CONSTRUCTION CALCULATIONS/ EVALUATIONS

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60 Installation Related Appurtenances (Encl 1)
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WAGE RATES
GENERAL DECISION IL020016 04/18/03 IL16
General Decision Number IL020016

Superseded General Decision No. IL010016

State: Illinois

Construction Type:
HEAVY
HIGHWAY

County(ies):

ALEXANDER	JACKSON	RANDOLPH
CLAY	JASPER	RICHLAND
CRAWFORD	JEFFERSON	SALINE
EDWARDS	JOHNSON	UNION
EFFINGHAM	LAWRENCE	WABASH
FAYETTE	MARION	WAYNE
FRANKLIN	MASSAC	WHITE
GALLATIN	PERRY	WILLIAMSON
HAMILTON	POPE	
HARDIN	PULASKI	

HEAVY CONSTRUCTION PROJECTS (including Sewer & Water Line Construction & Drainage Projects) & HIGHWAY CONSTRUCTION PROJECT (excluding tunnels, building structures in rest areas projects, and railroad construction; bascule, suspension & spandrel arch bridges; bridges designed for commercial navigation; bridges involving marine construction, other major bridges)

Modification Number	Publication Date
0	03/01/2002
1	03/08/2002
2	03/15/2002
3	04/19/2002
4	05/03/2002
5	06/07/2002
6	06/28/2002
7	07/05/2002
8	08/09/2002
9	08/16/2002
10	10/04/2002
11	01/03/2003
12	01/10/2003
13	01/17/2003
14	01/31/2003
15	03/07/2003
16	03/14/2003
17	04/11/2003
18	04/18/2003

COUNTY(ies):

ALEXANDER	JACKSON	RANDOLPH
CLAY	JASPER	RICHLAND
CRAWFORD	JEFFERSON	SALINE
EDWARDS	JOHNSON	UNION
EFFINGHAM	LAWRENCE	WABASH
FAYETTE	MARION	WAYNE
FRANKLIN	MASSAC	WHITE
GALLATIN	PERRY	WILLIAMSON
HAMILTON	POPE	
HARDIN	PULASKI	

CARP0347G 08/01/2002

	Rates	Fringes
CRAWFORD, EFFINGHAM & JASPER COUNTIES:		
CARPENTERS	23.17	8.66
MILLWRIGHTS	19.23	5.99

PILEDRIVERMEN	23.67	8.66

CARP0634B 08/01/2002

	Rates	Fringes
CLAY, EDWARDS, FAYETTE, LAWRENCE, MARION, RICHLAND, & WABASH COUNTIES:		
CARPENTERS	22.19	9.64
MILLWRIGHTS & PILEDRIVERS	22.69	9.64

CARP0636A 08/01/2002

	Rates	Fringes
HAMILTON, JEFFERSON, WAYNE, & WHITE COUNTIES:		
CARPENTERS	22.19	9.64
PILEDRIVERMEN & MILLWRIGHTS	22.69	9.64
DIVERS (receive 1 1/2 times carpenter rate plus fringes and $25 per day for equipment)		

CARP0640G 08/01/2002

	Rates	Fringes
ALEXANDER, FRANKLIN, HARDIN, MASSAC, JACKSON, PERRY, POPE, JOHNSON, GALLATIN, PULASKI, SALINE, UNION, & WILLIAMSON COUNTIES		
CARPENTERS	21.76	10.07
DIVERS (Receive 1 1/2 times Carpenter's rate plus fringe benefits and $25.00 per day for equipment)		

CARP1361A 08/01/2002

	Rates	Fringes
RANDOLPH COUNTY		
CARPENTERS, PILEDRIVERMEN, AND MILLWRIGHTS	24.56	9.96
DIVERS (receive 1 1/2 times carpenter rate plus fringes and $25 per day for equipment)		

ELEC0016B 04/01/2002

	Rates	Fringes
WABASH COUNTY		
ELECTRICIANS	25.86	9.79

ELEC0051E 03/01/1998

	Rates	Fringes
FAYETTE COUNTY (North of Avena, Bear Grove, Sefton, and Sharon TWPS)		
LINE CONSTRUCTION:		
Lineman	24.96	2.00+24.75%
Equipment Operator (All crawler type equipment larger than D-4, 15 ton crane or larger)	23.20	2.00+24.75%
Groundman-Truck Driver w/winch, may operate diggers, 5th wheel type trucks, crawler-type equipment, D-4 & smaller backhoe 3/4 yard & under, & may drive		

bucket truck & live boom type line trucks)	17.50	2.00+24.75%
Groundman-Truck Driver w/o winch	16.45	2.00+24.75%
Groundman	15.63	2.00+24.75%

ELEC0146D 12/01/2000

	Rates	Fringes
EFFINGHAM (Banner, Bishop, Douglas, Liberty, Lucas, Moccasin, St. Francis, Summit, & Teulopolis TWPS), & FAYETTE (Hurricane, S. Hurricane, Ramsey, Bowling Green, Carson, & Loudon TWPS) COUNTIES:		
ELECTRICIANS	25.45	6.43+3%

ELEC0309D 12/01/1997

	Rates	Fringes
RANDOLPH COUNTY (Red Bud Twp)		
ELECTRICIANS	26.51	41.5%

ELEC0309I 11/29/1999

	Rates	Fringes
RANDOLPH (Red Bud Township) COUNTY:		
LINE CONSTRUCTION:		
Lineman	28.21	41.82%
Groundman Equipment Operator	24.55	41.82%
Groundman Truck Driver	20.03	41.82%
Groundman	18.33	41.82%

ELEC0702A 06/01/2002

	Rates	Fringes
ALEXANDER, CLAY, EDWARDS, EFFINGHAM (Excluding Banner, Bishop, Douglas, Liberty, Lucas, Moccasin, St. Francis, Summit and Teulopolis TWPS), FAYETTE (Excluding Hurricane, S. Hurricane, Ramsey, Bowling Green, Carson and Loudon TWPS), FRANKLIN, GALLATIN, HAMILTON, HARDIN, JACKSON, JEFFERSON, JOHNSON, MARION, MASSAC, PERRY, POPE, PULASKI, SALINE, UNION, WAYNE, WHITE, AND WILLIAMSON COUNTIES		
ELECTRICIANS	27.85	3.89+19.5%

ELEC0702B 01/01/2002

	Rates	Fringes
ALEXANDER, CLAY, CRAWFORD, EDWARDS, EFFINGHAM, FRANKLIN, FAYETTE (Excludes portion N. Avena), GALLATIN, HAMILTON, HARDIN, JACKSON, JASPER, JEFFERSON, JOHNSON, LAWRENCE, MARION, MASSAC, PERRY, POPE, PULASKI, RANDOLPH (Except Red Bud Twps), RICHLAND, SALINE, UNION, WABASH, WAYNE, WHITE, & WILLIAMSON COUNTIES:		
LINE CONSTRUCTION:		
Lineman	29.87	2.30+25.5%
Groundman Equipment Operator (All crawler type equipment D-4 and larger)	24.63	2.30+25.5%
Groundman Equipment Operator (All other equipment)	22.02	2.30+25.5%
Groundman	18.20	2.30+25.5%

ELEC0725D 06/01/1993

	Rates	Fringes
CRAWFORD, JASPER, LAWRENCE, & RICHLAND COUNTIES		

ELECTRICIANS	18.77	2.26+3%

ENGI0318A 01/01/2003

	Rates	Fringes
ALEXANDER, FRANKLIN, GALLATIN, HAMILTON, HARDIN, JACKSON, JOHNSON, MASSAC, POPE, PULASKI, SALINE, UNION, WHITE, & WILLIAMSON COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	24.00	10.13+a
GROUP 2	22.10	10.13+a
GROUP 3	21.35	10.13+a
GROUP 4	20.00	10.13+a
RIVER WORK ONLY:		
GROUP 5	24.10	10.13+a
GROUP 6	20.65	10.13+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: All Off Road Material Hauling Equipment, All Terrain Crane, Articulated Dump Truck, Asphalt Machine Spreader, Asphalt Plant Operator, Asphalt Widener, Autograder, Automatic Slipform Pavers, Backhoes, Barrel Grappler Devices (All), Blacksmith, Blade Operators (All), Boat Operators (all) Bridges, Dams & Waterways, Boilers, Boom or Winch Cat, Boom or Winch Type Trucks, Boring Machines-Horizontal, Clamshell, Orange Peel Operator, Concrete Breaker, Concrete Groover, Concrete Grinder, Concrete Curb Machine, Concrete Finish Machine or Spreader Operator, Concrete Mixer Paver, Concrete Pump Truck, Concrete Plant Operator, Concrete Wheel Saw Operators, Cranes(All) Truck/Track/Rubber, Crane (Overhead) Operator, Derrick Guy or Derrick Trucks,Ditching Machines (All), Dozer Operators, Dragline or Shovel Operators, Dredge Booster Pump, Dredge Engineman, Dredge Operator/Leverman, Drill Cat w/Compressor Mounted, Drilling or Boring Machine Rotary-Self-Propelled, Endloaders (All) Track/Rubber Elevating Grader, Flexplane, Forklifts (All), Gradall; Greasers, Heavy Equipment Robotics Operator, Hi-Lift, Hoists, Hosting Engine, Horizontal Directional Drill Operator, Incinerators (Haz-Mat only), Laser Screed, Locomotive/Operator, Master Mechanic, Mixers 21 cu. ft. or over, Motor Patrol, Pile driver operator, Pulls & Scrapers, Power Pac & Controls (Pile Driving), Pug mill, Pulverizer or Tillers, Push Cats, Quad Trac, Rotomills, Rubber Tired Farm Tractor with Attachments over 1/2 yd., Self-Propelled Chip Spreader, Self-Propelled Roller w/Attachments, Short Blaster/Bridge Deck, Shuttle Buggie, Side booms, Skid loader (Skid steers), Skimmer Scoop, Stationary Rock Slinger, Trench Machine Opeator, Tuggers, Ultra High Pressure Water Jet Cutting Machine, Vacuum, Vacuum Blasting Machine Operator, Vac Jet, Well or Caisson Drills, Well Point Pumps-2 or more, Wood Chipper w/Tractor

GROUP 2: Air Track Drill/Compressor, All Machines used to Sweep, Clean, Broom or remove debris or snow, Any type tractor pulling Roller or Disc, Asphalt Plant Assistant Operators, Assistant Operators on Rotomills, Automatic Bins or Scales W/Compressor or Generator, Back-End man on Asphalt Machine, Bulk Cement Plant W/Separate Compressor, Concrete Curb Machine requiring Electronics, Concrete Plant Assistant Operators, Concrete or Pump crete Pumps, Deck Hand on Boats, Dredge Assistant Operator/Mate, Power Broom, Self-Propelled Roller/Compactor, Straw Mulcher Blower, Stump Cutter Machine, Two Air Compressors (220 CFM or over), Two Air Track Drills

GROUP 3: Air Compressor w/value driving piling, Assistant Operator, Boom or Winch Type Truck, Elevator Operator, Form Grader, Man Lift (Scissor Lift) when lifting materials, Mechanic, Pile driver activating air or hydraulic value, Rubber-Tired Farm Type Tractor w/Blade/Bullozer/Auger/Hi-Lift of 1/2 yd or less, Self-Propelled Concrete Saw, Self-Propelled Robotics roller,

Self-Propelled Vibrator; Truck Crane assistant operator; Two Conveyors

GROUP 4: Air Compressor (220 CFM or over) One, Air Track Drill (one), Automatic Bin, Belt Drag Machine, Bulk Cement Plant w/Built-in Compressor running off same motor or electric motor, Fireman or Switchman, Mechanical plasterer applicator, Pipeline Tract Jack, Power Broom, Self-Propelled Form Taper, Trac-Air, Mixers-less than 21 cu. ft. Mortar Mixer w/ski or pump, Mud Jacks, One Well Point Pump, Wood Chipper

GROUP 5: All Off Road Material Hauling Equipment, All Terrain Crane, All Power Boat Operators, Articulated Dump Truck, Asphalt Machine Spreader, Asphalt Plant Operator, Asphalt Widener, Autograder, Automatic Slipform Pavers, Backhoes, Barrell Grappler Devices (All), Blacksmith, Blade Operators (All), Boat Operators (All) Bridges, Dams & Waterways, Boilers, Boom or Winch Cat, Boom or Winch Type Trucks, Boring Machines-Horizontal, Clamshell, Orange Peel Operator, Concrete Breaker, Concrete Curb Machine, Concrete Finish Machine or Spreader Operator, Concrete Mixer Paver, Concrete Pump Truck, Concrete Plant Operator, Concrete Wheel Saw Operators, Cranes (All) Truck/Track/Rubber, Crane (Overhead) Operator, Derrick Guy or Derrick Trucks, Ditching Machines (All), Dozer Operators, Dragline or Shovel Operators, Dredge Booster Pump, Dredge Engineman, Dredge Operator/Leverman, Drill Cat w/Compressor Mounted, Drilling or Boring Machine Rotary-Self-Propelled, Endloaders (All)Track/Rubber Elevating Grader; Flexplane, Forklifts (All), Gradell, Greasers, Heavy Equipment Robotics Operator, Hi-Lift, Hoist, Hoisting Engine, Horizontal Directional Drill Operator, Incinerator (Haz-Mat only), Laser-Screed, Locomotive/Operator, Master Mechanic, Mixers 21 cu. ft. or over, Motor Patrol, Piledriver Operator, Pulls & Scrapers, Power Pac & Controls (Pile Driving), Pugmill, Pulverizer or Tillers, Push Cats, Quad Trac, Rotomill, Rubber Tired Farm Tractor with Attachments over 1/2 yd., Self-Propelled Chip Spreader; Self-Propelled Roller w/Attachments, Shuttle Buggie, Sidebooms, Skidloader (Skidsteers), Skimmer Scoop, Trench Machine Operator, Tuggers, Ultra High Pressure Water Jet Cutting Machine, Vacuum, Vacuum Blasting Machine Operator, Vac Jet, Well or Caisson Drills, Well Point Pumps - 2 or more, Wood Chipper w/Tractor

GROUP 6: All Terrain Cherry Picker w/over 40 ton Lifting Capacity, Crane, Deckhand on all rivers, lakes and tributaries, Dinky or Standard Locomotive, Ditching Machine (80 H.P. and over), Dragline, Dredge, Gradall, Guy Derrick, Assistant Operators or Fireman on Crane, Pile Driver, Shovel, Trenching Machine, Truck Crane

Footnote:a-Hazardous Waste Premium:

Level (A)-recieve $1.00 above rate.
Level (B)-receive $.75 above rate.
Level (C)-receive $.50 above rate.
Level (D)-receive $.25 above rate.

ENGI0520B 08/01/2002

	Rates	Fringes
FAYETTE, JEFFERSON, MARION, PERRY, RANDOLPH COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	24.30	13.80
GROUP 2	18.64	13.80
GROUP 3	18.75	13.80
GROUP 4	18.42	13.80
GROUP 5	24.85	13.80
GROUP 6	25.15	13.80
GROUP 7	25.43	13.80

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes; Draglines; Shovels; Skimmer Scoops; Clamshells or Derrick Boats; Piledrivers; Crane type Backhoes; Asphalt Plant Operator; Concrete Plant Operator; Dredges; Asphalt Spreading Machines; Locomotives; Cableways or Tower Machines; Hoists; Hydraulic Backhoes; Ditching Machines or Backfiller; Cherry Pickers; Overhead Crane; Roller; Concrete Paver; Concrete Breakers and Pumps; Bulk Cement Plants; Cement Pumps; Derrick type Drills; Boat Operators; Motor Graders or Pushcats; Scoops or Tournapulls; Bulldozers; End Loaders or Forklifts; Power Blade or Elevating Grader; Winch Cats; Boom or Winch Trucks or Boom Tractor; Pipewrapping or Painting Machines; Drills (other than Derrick type); Mud Jacks; Well Drilling Machines; Mixers; Conveyors (two); Air Compressors two; Water Pumps regardless of size; Welding Machines Two; Siphons or Jets Two; Winch Heads or Apparatus Two; Light Plants Two; Tractors regardless of size straight (tractor only); Firemen on Stationary Boilers; Automatic Elevators; Form Grading Machines; Finishing Machines; Power Sub-Grader or Ribbon Machine; Longitudinal Floats; Distribution operator on trucks; Winch Heads or apparatuses (1); Excavators; Mobile Track Air and Heater (2 to 5); Heavy Equipment Greaser and all other operators not listed below.

GROUP 2: Air Compressor One; Water Pump regardless of size One; Welding Machine One; 1-Bag Mixer One; Conveyor One; Siphon or Jet; Light Plant One; Heater One; Immobile Track Air One

GROUP 3: Firemen on Whirlies and Asphalt Spreader Oiler; Heavy Equipment Oilers; Truck Cranes; Monigans; Large over 65 tons capacity; Concrete Plant OIler and Black Top Plant Oiler

GROUP 4: Oilers

GROUP 5: Master Mechanic; Operators on equipment with Booms, including Jibs, 100 ft and over, but less than 150 ft

GROUP 6: Operators on equipment with Booms, including Jibs, 150 ft and over, but less than 200 ft

GROUP 7: Operators on equipment with Boomns, including Jibs, 200 ft and over; Tower Cranes, and Whirley Cranes

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ENGI0841E 04/01/2002

	Rates	Fringes
CLAY, CRAWFORD, EDWARDS, EFFINGHAM, JASPER, LAWRENCE, RICHLAND, WABASH, & WAYNE COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	24.10	9.85
GROUP 2	15.85	9.85

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Power Cranes, Draglines, Derricks, Shovels, Gradalls, Mechanics, Tractor Highlift, Tournadozer, Concrete Mixers with Skip, Tournamixer, Two-Drum Machine, One-Drum Hoist with Tower or Boom, Cableways, Tower Machines, Motor Patrol, Boom Tractor, Boom or Winch Truck, Winch or Hydraulic Boom Truck, Truck Crane, Tournapull, Tractor Operating Scoops, Bulldozer, Push Tractor, Asphalt Planer, Finishing Machine on Asphalt, Large Rollers on Earth, Rollers on Asphalt Mix, Ross Carrier or Similar Machine, Gravel Processing Machine, Asphalt Plant Engineer, Paver Operator, Farm Tractor with Half Yard Bucket and/or Backhoe Attachments, Dredge Engineer, or Dredge Operator, Central Mix Plant Engineer, CMI or Similar Type Machine, Truck or Skid Mounted Concrete Pump, Tower Crane, Engine or Rock Crusher Plant, Concrete Plant Engineer, Ditching Machine with Dual Attachment, Tractor Mounted Loaders, Cherry Picker, Hydro Crane, Standard or

Dinkey Locomotives, Scoopmobiles, Euclid Loader, Soil Cement Machine, Back Filler, Elevating Machine, Power Blade, Drilling Machines Including Well Testing, Caissons, Shaft or Any Similar Type Drilling Machines, Motor Driven Paint Machine, Pipe Cleaning Machine, Pipe Wrapping Machine, Pipe Bending Machine, Apsco Paver, Boring Machine, (Equipment Greased), Barber- Greene Loaders, Formless Paver, (Well Point System), Concrete Spreader, Hydra Ax, Span Saw and Similar types, Marine Scoops, Brush Mulcher, Brush Burner, Mesh Placer, Tree Mover, Helicopter Crew (3), Piledriver - Skid or Crawler, Stump Remover, Root Rake, Tug Boat Operator, Refrigerating Machine, Freezing Operator, Chair Cart-Self Propelled, Hydra Seeder, Straw Blower, Power Sub Grader, Bull Float, Finishing Machine, Self-Propelled Pavement Breaker (Backhoe Attached), Lull (or Similar Type Machine), Two Air Compressors, Compressors Hooked in Manifold, Overhead Crane, Chip Spreader, Mud Cat, Sull-Air Fork Lifts (Except When Used For Landscaping Work), Soil Stabilazer (Seaman Tiller, Bo Mag, Rago Gator and Similar Types or Equipment), Tube Float, Spray Machine, Curing Machine, Concrete or Asphalt Milling Machine, Snooper Truck Operator.

GROUP 2: Concrete Mixers Without Skips, Rock Crusher, Ditching Machine Under 6', Curbing Machine, one Drum Machines without Tower or Boom, Air Tugger, Self-Propelled Concrete Saw, Machine-Mounted Post Hole Digger, Two to Four Generators, Water Pumps, or Welding Machines, within 400 ft, Air Compressor 600 cu. ft. and Under, Rollers on Aggregate and Seal Coat Surfaces, Fork Lifts (When Used For Landscaping Work, Concrete and Blacktop Curb Machine, Farm Tractor with less than Half Yard Bucket, One Water Pump, Oilers, Air Valves or Steam Valves, One Welding Machine, Truck Jack, Mud Jack, Gunnite Machine, House Elevators when used for Hoisting Material, Engine Tenders, Wagon Drill, Flex Plane, Conveyor, Siphons and Pulsometer, Switchman, Fireman on Paint Pots, Fireman on Asphalt Plants, Distributor Operators on Trucks, Tampers, Self- Propelled Power Broom, Striping Machine (Motor Driven), Form Tamper, Bulk Cement Plant Equipment Greaser, Deck Hands, Truck Crane Oiler_Driver, Cement Blimps, Form Grader, Temporary Heat, Throttle Valve, Farm Tractor, Super Sucker (And Similar Type of Equipment).

IRON0046G 05/01/2002

	Rates	Fringes
EFFINGHAM (Excluding Dexter & East thereof), FAYETTE (Avena & North thereof) COUNTIES		
IRONWORKERS	22.88	10.82

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* IRON0103G 04/01/2003

	Rates	Fringes
CLAY (Louisville & South thereof), EDWARDS, FRANKLIN (Northeast corner), GALLATIN, HAMILTON, JEFFERSON (East of Mt. Vernon), LAWRENCE (Southern 1/2 including Lawrenceville), MARION (Southeast), RICHLAND (Southern 1/2), SALINE (Northeastern 1/3), WABASH, WAYNE, & WHITE COUNTIES		
IRONWORKERS	23.50	10.40

IRON0392B 03/01/2003

	Rates	Fringes
FAYETTE (Southern 1/2 below Brownstown), JACKSON (Remainder), JEFFERSON (Mt. Vernon & area West thereof), MARION, PERRY, & RANDOLPH COUNTIES		
IRONWORKERS	23.65	12.10

IRON0439C 06/01/2002

	Rates	Fringes
CLAY (Except Louisville & South thereof), CRAWFORD, EFFINGHAM (Dexter & East thereof), JASPER, LAWRENCE (Northern half excluding Lawrenceville), & RICHLAND COUNTIES		
IRONWORKERS	22.82	11.04

IRON0782F 05/01/2002

	Rates	Fringes
ALEXANDER, FRANKLIN, GALLATIN, HARDIN, JACKSON (Except Ava and Elkville TWPS), JOHNSON, MASSAC, PERRY, POPE, PULASKI, SALINE (Except vicinity of El Dorado and area Northeast thereof), UNION, & WILLIAMSON COUNTIES:		
IRONWORKERS	20.85	9.46

LABO0459D 08/01/2002

	Rates	Fringes
RANDOLPH (SPARTA & VIC.) COUNTY:		
LABORERS:		
HEAVY CONSTRUCTION:		
GROUP 1-	21.10	9.65
GROUP 2-	21.35	9.65
GROUP 3-	21.60	9.65
GROUP 4-	22.625	9.65

GROUP 1 - General Laborers

GROUP 2 - Work in septic tanks, cess pools, or dry wells (old or new); All feeders, mixers and nozzles men on gunnite or sandblasting work; When handling creosoted material; Raking or luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of perferformed sectional sewer pipe; High time (20 feet or over), where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulf-seal and/or other coal derivatives

GROUP 3 - Brick masons and plasterer tenders

GROUP 4 - Dynamite and Powder men

LABO0738A 04/01/2002

	Rates	Fringes
FRANKLIN, GALLATIN, HARDIN, JACKSON, JOHNSON, PERRY, POPE, SALINE, WILLAIMSON COUNTIES:		
LABORERS	19.05	8.45
Asbestos abatement and removal of hazardous materials from non-mechanical systems; and hazardous and toxic waste clean up	19.05	8.45

LABO0773B 04/01/2002

	Rates	Fringes
ALEXANDER, MASSAC, PULASKI(Southern 2/3) COUNTIES:		
LABORERS	19.05	8.45
Asbestos abatement and removal of hazardous materials from non-mechanical systems; and hazardous and toxic waste		

clean up	19.05	8.45

LABO0925B 08/01/2002

RANDOLPH COUNTY (Chester and vicinity)	Rates	Fringes
LABORERS (HEAVY CONSTRUCTION):		
GROUP 1	21.00	9.75
GROUP 2	21.25	9.75
GROUP 3	21.50	9.75
GROUP 4	22.525	9.75

LABORERS CLASSFICATIONS

GROUP 1: General Laborers

GROUP 2: Work in septic tanks, cess-pools, or dry wells (old or new); All feeders, mixer and nozzle men on gunnite or sandblasting work; When handling creosoted material; Raking of luting asphalt; Burning or cutting with torch; Working on bottom of sewer trenches on the final grading, laying or caulking of performed sectional sewer pipe; High time (20 feet or over) where exposed to an open fall; Operator of motor buggies; Any work performed in or on all types of cased wells; Cooking, mixing and applying of mastic such as sulfa-seal and/or other coal derivatives

GROUP 3: Brick mason tenders, and plasterer tenders

GROUP 4: Dynamite and powder men

LABO1280A 04/01/2000

CLAY, CRAWFORD, EDWARDS, EFFINGHAM, FAYETTE, HAMILTON, JASPER, JEFFERSON, LAWRENCE, MARION, RICHLAND, WABASH, WAYNE, & WHITE COUNTIES	Rates	Fringes
LABORERS	18.10	7.50
Asbestos Abatement and Removal of Hazardous Materials from Non-Mechanical Systems; and Hazardous and Toxic Waste Clean up	18.10	7.65

LABO1330A 04/01/2002

PULASKI(Northern 1/3)& UNION COUNTIES:	Rates	Fringes
LABORERS	19.05	8.45
Asbestos abatement and removal of hazardous materials from non-mechanical systems; and hazardous and toxic waste clean up	19.05	8.45

PAIN0058F 05/01/2000

FAYETTE COUNTY	Rates	Fringes
INDUSTRIAL PAINTERS:		
Brush	23.02	6.60
Spraying, Blasting, and Steam Cleaning	25.02	6.60

PAIN0058G 05/01/2000

FAYETTE COUNTY	Rates	Fringes
BRIDGE PAINTERS:		
Brush	23.02	6.60
Spray and Blast	25.02	6.60

PAIN0058R 05/01/1999

ALEXANDER, FRANKLIN, GALLATIN, HARDIN, JACKSON, JOHNSON, PERRY, POPE, PULASKI, RANDOLPH, SALINE, UNION, & WILLIAMSON COUNTIES:	Rates	Fringes
PAINTERS	20.77	6.03
PAINTERS (BRIDGES & DAMS)	23.07	6.03

PAIN0124B 05/01/2000

CLAY, HAMILTON, JEFFERSON, MARION, & WAYNE COUNTIES	Rates	Fringes
INDUSTRIAL PAINTERS:		
Brush	18.05	4.40
Bridges, Spray, and Sandblasting	21.15	4.40

PAIN0156I 04/01/2003

EDWARDS, WABASH , & WHITE COUNTIES:	Rates	Fringes
PAINTERS:		
Brush, Roller, & Paperhangers	21.25	7.98
Drywall Finishers,Plasterers	21.50	7.98
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	22.25	7.98
Brush, & Roller of Mastics,Creosotes Kwinch Koate, Coal Tar Epoxy	22.25	7.98
Spray for Mastics, Creosotes, Kwinch Koate, Coal Tar Epoxy	23.25	7.98

PAIN0500E 05/01/2002

MASSAC COUNTY:	Rates	Fringes
PAINTERS:		
Commercial	16.00	5.50
Industrial	18.25	5.50
Bridges & Dams	22.25	5.50

Spray, Sandblasting and water blast units with 3500 PSI receive a $.50 per hour premimum.

All work forty feet and above receive a $1.00 per hour premimum.

PAIN1705E 04/01/2000

CRAWFORD, EFFINGHAM, JASPER, LAWRENCE, & RICHLAND, COUNTIES	Rates	Fringes
PAINTERS:		
BRUSH & ROLLER		
0-30 ft	20.90	6.63
Over 30 ft	21.70	6.63
Over 100 ft	22.70	6.63

BLASTING, SPRAYING, PRESSURE WASHING		
0-30 FT	21.90	6.63
Over 30 ft	24.20	6.63
oVer 100 ft	25.20	6.63

PLAS0018Q 05/01/2001

	Rates	Fringes
DE WITT (Clinton and South thereof), EFFINGHAM (Northern half North from an East-west line drawn approximately 3 miles south of Effingham), MACON, MOULTRIE (Northeastern corner including Lovington, Bethany), PIATT (South of Monticello), & SHELBY (Excludes the towns of Cowden, Herrick, Lakewood, Moweaqua, Oconee, Shelbyville, Tower Hill, & Westervelt) COUNTIES:		
CEMENT MASONS	21.175	9.10

PLAS0143D 04/01/2001

	Rates	Fringes
CRAWFORD,LAWRENCE, & WABASH COUNTIES		
CEMENT MASONS	20.10	6.40

PLAS0143J 01/01/2003

	Rates	Fringes
ALEXANDER,FRANKLIN,GALLATIN,HARDIN,JACKSON,JOHNSON.MASSAC, PERRY,POPE,PULASKI,RANDOLPH,SALINE,UNION,& WILLIAMSON COUNTIES:		
CEMENT MASONS	23.35	5.45

PLAS0143L 04/01/2001

	Rates	Fringes
CLAY,EDWARDS,FAYETTE,HAMILTON,JASPER,JEFFERSON,MARION,RICHLAND WAYNE AND WHITE COUNTIES:		
CEMENT MASONS	21.75	4.75

PLAS0143M 04/01/2001

	Rates	Fringes
EFFINGHAM (Southern half, South from an East-West line drawn approximately 3 miles North of Effingham) COUNTY:		
CEMENT MASONS	21.75	4.75

TEAM0001F 05/01/2002

	Rates	Fringes
ALEXANDER, CHAMPAIGN, CHRISTIAN, CLARK, CLAY, COLES, CRAWFORD, CUMBERLAND, DE WITT, DOUGLAS, EDGAR, EDWARDS, EFFINGHAM, FAYETTE, FORD (Southern 1/2), FRANKLIN, GALLATIN, HAMILTON, HARDIN, IROQUOIS (Southern & Northwestern parts), JACKSON, JASPER, JEFFERSON, JOHNSON, LAWRENCE, MARION, MASSAC, MOULTRIE, PERRY, PIATT, POPE, PULASKI, RICHLAND, SALINE, SHELBY, UNION, VERMILION, WABASH, WAYNE, WHITE, & WILLIAMSON COUNTIES		
TRUCK DRIVERS:		
GROUP 1	23.62	5.00+a
GROUP 2	24.02	5.00+a
GROUP 3	24.22	5.00+a
GROUP 4	24.47	5.00+a
GROUP 5	25.22	5.00+a

FOOTNOTE:
a. $91.00 per week

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Drivers on 2 Axle Trucks Hauling Less Than 9 Tons. Air Compressor and Welding Machines & Brooms, Including Those Pulled by Separate Units, Warehousemen, Greasers & Tiremen, Pickup

Trucks When Hauling Material, Tools, or Men to and From & on the Job Site, & Fork Lifts up to 6,000 LB. Capacity.

GROUP 2: Two or Three Axle Trucks Hauling more than 9 Ton But Hauling less than 16 Ton, A-Frame Winch Trucks, Hydrolift Trucks, or Similar Equipment When Used For Transportation Purposes. Fork Lifts Over 6,000 LB. Capacity, Winch Trucks, & Four Axle Combination Units.

GROUP 3: Two, Three or Four Axle Trucks Hauling 16 Ton or more, Drivers on Water Pulls, Mechanics, Five Axle or more Combination Units.

GROUP 4: Lowboy & Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.)

and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.

Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

BRS Document Viewer
WAGE DETERMINATION NO: 94-2309 REV (27) AREA: MO,ST. LOUIS

WAGE DETERMINATION NO: 94-2309 REV (27) AREA: MO,ST. LOUIS

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REGISTER OF WAGE DETERMINATIONS UNDER  |        U.S. DEPARTMENT OF LABOR
***FOR OFFICIAL USE ONLY BY FEDERAL AGENCIES PARTICIPATING IN MOU WITH DOL***
                                       |         WASHINGTON D.C.  20210
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                                       | Wage Determination No.: 1994-2309
William W.Gross          Division of   |           Revision No.: 27
Director            Wage Determinations|  Date Of Last Revision: 05/30/2003
_______________________________________|_____________________________________
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States: Illinois, Missouri
Area: Illinois Counties of Alexander, Bond, Calhoun, Clay, Clinton, Effingham, Fayette, Franklin, Hamilton, Jackson, Jefferson, Jersey, Johnson, Madison, Marion, Massac, Monroe, Perry, Pope, Pulaski, Randolph, Saline, St Clair, Union, Washington, Wayne, Williamson
Missouri Counties of Audrain, Boone, Callaway, Clark, Cole, Crawford, Franklin, Gasconade, Jefferson, Knox, Lewis, Lincoln, Marion, Monroe, Montgomery, Osage, Pike, Ralls, Randolph, Scotland, Shelby, St Charles, St Francois, St Louis, Ste Genevieve, Warren, Washington

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	MINIMUM WAGE RATE
01000 - Administrative Support and Clerical Occupations	
01011 - Accounting Clerk I	11.22
01012 - Accounting Clerk II	12.21
01013 - Accounting Clerk III	14.49
01014 - Accounting Clerk IV	18.57
01030 - Court Reporter	14.22
01050 - Dispatcher, Motor Vehicle	12.79
01060 - Document Preparation Clerk	11.36
01070 - Messenger (Courier)	9.14
01090 - Duplicating Machine Operator	11.36
01110 - Film/Tape Librarian	10.89
01115 - General Clerk I	8.29
01116 - General Clerk II	9.95
01117 - General Clerk III	11.34
01118 - General Clerk IV	14.03
01120 - Housing Referral Assistant	15.51
01131 - Key Entry Operator I	9.04
01132 - Key Entry Operator II	10.52
01191 - Order Clerk I	9.07
01192 - Order Clerk II	11.68
01261 - Personnel Assistant (Employment) I	11.50
01262 - Personnel Assistant (Employment) II	12.92
01263 - Personnel Assistant (Employment) III	15.37
01264 - Personnel Assistant (Employment) IV	17.06
01270 - Production Control Clerk	15.85
01290 - Rental Clerk	12.25
01300 - Scheduler, Maintenance	12.33
01311 - Secretary I	12.43
01312 - Secretary II	14.39
01313 - Secretary III	15.64
01314 - Secretary IV	19.44
01315 - Secretary V	23.75
01320 - Service Order Dispatcher	12.17
01341 - Stenographer I	12.03
01342 - Stenographer II	13.41
01400 - Supply Technician	19.28
01420 - Survey Worker (Interviewer)	12.60
01460 - Switchboard Operator-Receptionist	10.37
01510 - Test Examiner	14.27
01520 - Test Proctor	14.27
01531 - Travel Clerk I	9.10
01532 - Travel Clerk II	9.80

01533 - Travel Clerk III	10.45
01611 - Word Processor I	11.65
01612 - Word Processor II	13.44
01613 - Word Processor III	17.17
03000 - Automatic Data Processing Occupations	
03010 - Computer Data Librarian	10.67
03041 - Computer Operator I	10.95
03042 - Computer Operator II	13.63
03043 - Computer Operator III	18.25
03044 - Computer Operator IV	20.64
03045 - Computer Operator V	22.47
03071 - Computer Programmer I (1)	18.57
03072 - Computer Programmer II (1)	18.71
03073 - Computer Programmer III (1)	22.06
03074 - Computer Programmer IV (1)	27.62
03101 - Computer Systems Analyst I (1)	25.26
03102 - Computer Systems Analyst II (1)	27.62
03103 - Computer Systems Analyst III (1)	27.62
03160 - Peripheral Equipment Operator	12.28
05000 - Automotive Service Occupations	
05005 - Automotive Body Repairer, Fiberglass	20.33
05010 - Automotive Glass Installer	17.92
05040 - Automotive Worker	17.92
05070 - Electrician, Automotive	18.69
05100 - Mobile Equipment Servicer	16.35
05130 - Motor Equipment Metal Mechanic	19.47
05160 - Motor Equipment Metal Worker	17.92
05190 - Motor Vehicle Mechanic	18.29
05220 - Motor Vehicle Mechanic Helper	15.18
05250 - Motor Vehicle Upholstery Worker	17.13
05280 - Motor Vehicle Wrecker	17.92
05310 - Painter, Automotive	18.69
05340 - Radiator Repair Specialist	17.92
05370 - Tire Repairer	15.80
05400 - Transmission Repair Specialist	19.47
07000 - Food Preparation and Service Occupations	
(not set) - Food Service Worker	7.80
07010 - Baker	10.97
07041 - Cook I	10.02
07042 - Cook II	10.97
07070 - Dishwasher	7.97
07130 - Meat Cutter	11.37
07250 - Waiter/Waitress	7.85
09000 - Furniture Maintenance and Repair Occupations	
09010 - Electrostatic Spray Painter	18.69
09040 - Furniture Handler	12.84
09070 - Furniture Refinisher	18.69
09100 - Furniture Refinisher Helper	15.18
09110 - Furniture Repairer, Minor	17.13
09130 - Upholsterer	18.69
11030 - General Services and Support Occupations	
11030 - Cleaner, Vehicles	8.59
11060 - Elevator Operator	9.60
11090 - Gardener	13.11
11121 - House Keeping Aid I	7.89
11122 - House Keeping Aid II	9.60
11150 - Janitor	9.31
11210 - Laborer, Grounds Maintenance	10.27
11240 - Maid or Houseman	7.89
11270 - Pest Controller	13.71
11300 - Refuse Collector	10.31
11330 - Tractor Operator	12.29
11360 - Window Cleaner	10.31
12000 - Health Occupations	
12020 - Dental Assistant	11.81
12040 - Emergency Medical Technician (EMT)/Paramedic/Ambulance Driver	13.80
12071 - Licensed Practical Nurse I	12.06
12072 - Licensed Practical Nurse II	13.51
12073 - Licensed Practical Nurse III	15.12
12100 - Medical Assistant	10.23

12130 - Medical Laboratory Technician	13.35
12160 - Medical Record Clerk	11.84
12190 - Medical Record Technician	13.08
12221 - Nursing Assistant I	7.95
12222 - Nursing Assistant II	8.73
12223 - Nursing Assistant III	9.29
12224 - Nursing Assistant IV	10.76
12250 - Pharmacy Technician	11.66
12280 - Phlebotomist	10.17
12311 - Registered Nurse I	18.94
12312 - Registered Nurse II	23.07
12313 - Registered Nurse II, Specialist	23.07
12314 - Registered Nurse III	27.91
12315 - Registered Nurse III, Anesthetist	27.91
12316 - Registered Nurse IV	33.45
13000 - Information and Arts Occupations	
13002 - Audiovisual Librarian	18.85
13011 - Exhibits Specialist I	16.67
13012 - Exhibits Specialist II	20.39
13013 - Exhibits Specialist III	21.97
13041 - Illustrator I	17.19
13042 - Illustrator II	21.02
13043 - Illustrator III	22.65
13047 - Librarian	21.34
13050 - Library Technician	11.45
13071 - Photographer I	14.61
13072 - Photographer II	16.39
13073 - Photographer III	20.04
13074 - Photographer IV	21.59
13075 - Photographer V	26.11
15000 - Laundry, Dry Cleaning, Pressing and Related Occupations	
15010 - Assembler	7.45
15030 - Counter Attendant	7.45
15040 - Dry Cleaner	8.86
15070 - Finisher, Flatwork, Machine	7.45
15090 - Presser, Hand	7.45
15100 - Presser, Machine, Drycleaning	7.45
15130 - Presser, Machine, Shirts	7.45
15160 - Presser, Machine, Wearing Apparel, Laundry	7.45
15190 - Sewing Machine Operator	9.42
15220 - Tailor	9.97
15250 - Washer, Machine	8.20
19000 - Machine Tool Operation and Repair Occupations	
19010 - Machine-Tool Operator (Toolroom)	20.91
19040 - Tool and Die Maker	24.58
21000 - Material Handling and Packing Occupations	
21010 - Fuel Distribution System Operator	16.35
21020 - Material Coordinator	17.81
21030 - Material Expediter	17.81
21040 - Material Handling Laborer	18.89
21050 - Order Filler	11.74
21071 - Forklift Operator	14.38
21080 - Production Line Worker (Food Processing)	14.36
21100 - Shipping/Receiving Clerk	13.96
21130 - Shipping Packer	13.44
21140 - Store Worker I	9.55
21150 - Stock Clerk (Shelf Stocker; Store Worker II)	13.54
21210 - Tools and Parts Attendant	14.36
21400 - Warehouse Specialist	13.38
23000 - Mechanics and Maintenance and Repair Occupations	
23010 - Aircraft Mechanic	20.36
23040 - Aircraft Mechanic Helper	15.46
23050 - Aircraft Quality Control Inspector	20.61
23060 - Aircraft Servicer	17.45
23070 - Aircraft Worker	18.25
23100 - Appliance Mechanic	18.69
23120 - Bicycle Repairer	15.80
23125 - Cable Splicer	21.83
23130 - Carpenter, Maintenance	24.11
23140 - Carpet Layer	21.82

23160 - Electrician, Maintenance	22.88
23181 - Electronics Technician, Maintenance I	19.67
23182 - Electronics Technician, Maintenance II	23.36
23183 - Electronics Technician, Maintenance III	23.54
23260 - Fabric Worker	17.13
23290 - Fire Alarm System Mechanic	19.74
23310 - Fire Extinguisher Repairer	16.35
23340 - Fuel Distribution System Mechanic	19.74
23370 - General Maintenance Worker	17.33
23400 - Heating, Refrigeration and Air Conditioning Mechanic	19.74
23430 - Heavy Equipment Mechanic	19.74
23440 - Heavy Equipment Operator	21.59
23460 - Instrument Mechanic	19.74
23470 - Laborer	11.52
23500 - Locksmith	18.69
23530 - Machinery Maintenance Mechanic	19.34
23550 - Machinist, Maintenance	21.31
23580 - Maintenance Trades Helper	15.18
23640 - Millwright	19.74
23700 - Office Appliance Repairer	18.69
23740 - Painter, Aircraft	20.07
23760 - Painter, Maintenance	20.18
23790 - Pipefitter, Maintenance	24.16
23800 - Plumber, Maintenance	23.43
23820 - Pneudraulic Systems Mechanic	19.47
23850 - Rigger	19.47
23870 - Scale Mechanic	17.92
23890 - Sheet-Metal Worker, Maintenance	22.10
23910 - Small Engine Mechanic	17.92
23930 - Telecommunication Mechanic I	19.47
23931 - Telecommunication Mechanic II	20.24
23950 - Telephone Lineman	19.47
23960 - Welder, Combination, Maintenance	19.47
23965 - Well Driller	19.47
23970 - Woodcraft Worker	19.47
23980 - Woodworker	16.35
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	8.12
24580 - Child Care Center Clerk	11.30
24600 - Chore Aid	7.26
24630 - Homemaker	10.84
25000 - Plant and System Operation Occupations	
25010 - Boiler Tender	20.55
25040 - Sewage Plant Operator	19.15
25070 - Stationary Engineer	20.55
25190 - Ventilation Equipment Tender	15.18
25210 - Water Treatment Plant Operator	18.69
27000 - Protective Service Occupations	
(not set) - Police Officer	18.31
27004 - Alarm Monitor	13.68
27006 - Corrections Officer	15.94
27010 - Court Security Officer	16.90
27040 - Detention Officer	15.94
27070 - Firefighter	18.37
27101 - Guard I	9.78
27102 - Guard II	15.47
28000 - Stevedoring/Longshoremen Occupations	
28010 - Blocker and Bracer	16.40
28020 - Hatch Tender	15.69
28030 - Line Handler	15.69
28040 - Stevedore I	14.61
28050 - Stevedore II	15.94
29000 - Technical Occupations	
21150 - Graphic Artist	20.73
29010 - Air Traffic Control Specialist, Center (2)	28.21
29011 - Air Traffic Control Specialist, Station (2)	19.46
29012 - Air Traffic Control Specialist, Terminal (2)	21.43
29023 - Archeological Technician I	14.72
29024 - Archeological Technician II	16.46
29025 - Archeological Technician III	20.39

29030 - Cartographic Technician	23.04
29035 - Computer Based Training (CBT) Specialist/ Instructor	25.26
29040 - Civil Engineering Technician	18.85
29061 - Drafter I	15.11
29062 - Drafter II	17.08
29063 - Drafter III	20.75
29064 - Drafter IV	23.45
29081 - Engineering Technician I	14.58
29082 - Engineering Technician II	16.38
29083 - Engineering Technician III	19.32
29084 - Engineering Technician IV	25.62
29085 - Engineering Technician V	30.55
29086 - Engineering Technician VI	37.91
29090 - Environmental Technician	19.51
29100 - Flight Simulator/Instructor (Pilot)	27.62
29160 - Instructor	20.94
29210 - Laboratory Technician	18.96
29240 - Mathematical Technician	19.41
29361 - Paralegal/Legal Assistant I	13.96
29362 - Paralegal/Legal Assistant II	18.41
29363 - Paralegal/Legal Assistant III	21.78
29364 - Paralegal/Legal Assistant IV	26.36
29390 - Photooptics Technician	22.45
29480 - Technical Writer	24.52
29491 - Unexploded Ordnance (UXO) Technician I	17.93
29492 - Unexploded Ordnance (UXO) Technician II	21.70
29493 - Unexploded Ordnance (UXO) Technician III	26.01
29494 - Unexploded (UXO) Safety Escort	17.93
29495 - Unexploded (UXO) Sweep Personnel	17.93
29620 - Weather Observer, Senior (3)	19.10
29621 - Weather Observer, Combined Upper Air and Surface Programs (3)	17.46
29622 - Weather Observer, Upper Air (3)	17.46
31000 - Transportation/ Mobile Equipment Operation Occupations	
31030 - Bus Driver	14.40
31260 - Parking and Lot Attendant	9.69
31290 - Shuttle Bus Driver	15.04
31300 - Taxi Driver	10.06
31361 - Truckdriver, Light Truck	14.83
31362 - Truckdriver, Medium Truck	15.62
31363 - Truckdriver, Heavy Truck	19.88
31364 - Truckdriver, Tractor-Trailer	19.88
99000 - Miscellaneous Occupations	
99020 - Animal Caretaker	9.51
99030 - Cashier	7.73
99041 - Carnival Equipment Operator	11.69
99042 - Carnival Equipment Repairer	12.47
99043 - Carnival Worker	8.25
99050 - Desk Clerk	7.84
99095 - Embalmer	20.08
99300 - Lifeguard	8.82
99310 - Mortician	20.08
99350 - Park Attendant (Aide)	11.07
99400 - Photofinishing Worker (Photo Lab Tech., Darkroom Tech)	8.82
99500 - Recreation Specialist	12.33
99510 - Recycling Worker	13.66
99610 - Sales Clerk	8.82
99620 - School Crossing Guard (Crosswalk Attendant)	8.05
99630 - Sport Official	8.82
99658 - Survey Party Chief (Chief of Party)	12.18
99659 - Surveying Technician (Instr. Person/Surveyor Asst./Instr.)	11.07
99660 - Surveying Aide	8.07
99690 - Swimming Pool Operator	12.12
99720 - Vending Machine Attendant	10.33
99730 - Vending Machine Repairer	12.07
99740 - Vending Machine Repairer Helper	10.33

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:
HEALTH & WELFARE: $2.36 an hour or $94.40 a week or $409.07 a month
VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 8 years, and 4 weeks after 15 years. Length of service

includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)
HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)
THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):
1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)
2) APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.
3) WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).
HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordinance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.
A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordance, explosives, and incendiary material differential pay.
** UNIFORM ALLOWANCE **
If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:
The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $3.35 per week (or $.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.
** NOTES APPLYING TO THIS WAGE DETERMINATION **
Source of Occupational Title and Descriptions:
The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Third Supplement, dated March 1997, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238,

or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)}

When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).

2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

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06/03

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1.3.2 Defense Federal Acquisition Regulation Supplement
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1.4.2 Award Fee Determining Official (AFDO)
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-- End of Document Table of Contents --

Amendment #0003
SECTION 00810

AWARD FEE PLAN
06/03

PART 1 GENERAL

1.1 Introduction

This Award Fee Plan sets forth procedures and guidelines that the Louisville District, U.S. Army Corps of Engineers will use to evaluate contractor performance. This award fee evaluation plan is established to determine award fees payable under this contract for the Olmsted Dam construction. The payment of any award fee is contingent upon the contractor's performance and its compliance with contractual requirements. Award fee performance evaluation determinations will be made two (2) times per year.

The purpose of the award fee is to motivate the contractor to superior contract performance in the categories described in this plan. The contractor may earn all or part of the award fee. The amount shall be based on a subjective evaluation by the government of the contractor's performance. The government will continually monitor all aspects of the contractor's performance. The standards by which the contractor's performance is gauged may not be susceptible to precise definition; therefore, general areas on which particular emphasis will be placed when evaluating the contractor's performance are set forth in this plan. The period of evaluation is the segment of the contractor's period of performance specified in the award fee plan to be evaluated for purposes of establishing the period's award fee.

1.2 Award Fee Pool

The award fee pool is that portion of the contract fee available to be awarded for contractor performance in accordance with the criteria contained in this plan. The maximum award fee available for the contractor to earn during any evaluation period is that award fee based on the estimated dollar amount of the work to be performed during that period. In no case will the amount of award fee available during an evaluation period exceed the total award fee amount available for the contract period.

1.3 Regulatory Requirements

1.3.1 Federal Acquisition Regulation

Requirements for an award-fee plan are contained in the Federal Acquisition Regulation (FAR) and its supplements. FAR 16.405-2 specifies that "A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of (1) a base amount fixed at inception of the contract and (2) an award amount that the contractor may earn in whole or

in part during performance and that is sufficient to provide motivation for excellence in such areas as cost, schedule, quality, management, technical ingenuity, and safety. The amount of the award fee to be paid is determined by the Government's judgmental evaluation of the contractor's performance in terms of the criteria stated in the contract. This determination and the methodology for determining the award fee are unilateral decisions made solely at the discretion of the Government." The FAR specifies that an award fee project is appropriate when "the likelihood of meeting acquisition objectives will be enhanced by using a contract that effectively motivates the contractor toward exceptional performance and provides the Government with the flexibility to evaluate both actual performance and the conditions under which it was achieved; and any additional administrative effort and cost required to monitor and evaluate performance are justified by the expected benefits." FAR notes that the number of evaluation criteria and the requirements they represent will differ widely among contracts. The criteria and rating plan should motivate the contractor to improve performance in the areas rated, but not at the expense of at least minimum acceptable performance in all other areas. Cost-plus-award-fee contracts must provide for evaluation at stated intervals during performance, so that the contractor will periodically be informed of the quality of its performance and the areas in which improvement is expected. Payment of fee earned during a period of evaluation shall be paid within 30 days after the Award Fee Determining Official (AFDO) issues their decision. This makes effective the incentive, which the award fee can create, by inducing the contractor to improve poor performance or to continue good performance.

1.3.2 Defense Federal Acquisition Regulation Supplement

The Defense Federal Acquisition Regulation Supplement (DFARS) part 216.405-2 further specifies that award fee is not earned when the fee-determining official has determined that contractor performance has been sub-marginal or unsatisfactory. Also, it requires that the basis for all award fee determinations be documented in the contract file. The DFARS allows the contracting activity to establish a board to evaluate the contractor's performance. In addition, it allows the contractor an opportunity to present information on its own behalf.

1.3.3 Army Federal Acquisition Regulation Supplement

The Army Federal Acquisition Regulation Supplement (AFARS) Subpart 5116.4 contains requirements for cost-plus-award-fee contracts in Subpart 5116.4052. AFARS notes that properly used award fees motivate contractors to improve performance with an opportunity for close monitoring of the contractor's performance. The intended goal of award fee contracting is to motivate the contractor's performance in areas critical to program success that are susceptible to measurement and evaluation. An award fee arrangement provides an incentive for the contractor to improve performance and provides a process for the government to assess the contractor's performance. Once the decision has been made to use an award fee contract, the evaluation plan and organizational structure must be tailored to meet the needs of the particular acquisition. The award fee plan must clearly identify the specific evaluation criteria for assessing contractor performance. The criteria should take into account program risk, as well as

be appropriate for the designated period.
The AFARS specifies that the award fee pool should be the total of the available award fee dollars for each evaluation period for the life of the contract. The base fee is not earned and is, therefore, paid on a regular basis without the contractor's performance being evaluated. Since the available award fee during the evaluation period must be earned, the contractor begins each evaluation period with 0% of the available fee pool and works up to the evaluated fee for each evaluation period. Contractors do not begin with 100% of the available pool and have deductions withdrawn to arrive at the evaluated fee for each evaluation period. Earning of award fee will be in accordance with this award fee plan, and should be directly commensurate with the level of performance under the contract. A contractor should not receive the maximum amount of award fee under a contract without a demonstrated superior level of performance, as provided for in the award fee plan.

The AFARS includes specific requirements for use of evaluation boards. The contracting officer must appoint an Award Fee Determining Official (AFDO) in writing. The AFDO will appoint in writing the Award Fee Evaluation Board (AFEB) and its chairperson. Such appointment letters will clearly outline the responsibilities and limitations of the AFEB and its chairperson. AFEB membership should consist of those personnel most knowledgeable of the requirements and contractor performance in the areas to be evaluated. Selection of board members must be coordinated with management responsible for technical requirements. The AFEB chairperson is responsible for ensuring that all AFEB evaluators are sufficiently trained in their responsibilities. AFEBs and AFDOs must document the rationale for their decision(s). The AFDO may alter the AFEB's recommended award fee; however, it must be documented in sufficient detail to show that the integrity of the award fee determination process has been maintained.

1.4 Roles and Responsibilities

1.4.1 Contracting Officer(CO)

The contracting officer will appoint an Award Fee Determining Official (AFDO) in writing.

1.4.2 Award Fee Determining Official (AFDO)

The AFDO shall be the designated official who determines the fee to be awarded to the Contractor based on the findings and recommendations submitted by the Award Fee Evaluation Board (AFEB). The AFDO will appoint in writing the Award Fee Evaluation Board and its chairperson. The Louisville District's, District Engineer is the proposed AFDO. The appointment letters will clearly outline the responsibilities and limitations of the AFEB and its chairperson.

1.4.3 Award Fee Evaluation Board

AFEB members review the monitors' evaluation of the contractor's performance, considering all information from pertinent sources, and arriving at an earned award fee recommendation to be presented to the AFDO. The AFEB may also recommend changes to this plan. In general, the AFEB

will be selected from individuals familiar with, but not directly involved in the project. The Olmsted Locks & Dam Project Manager has been tentatively appointed as the Chairperson. The Board shall assure that their findings and recommendations are consistent with available data. The Chairperson for the Board will be responsible for assuring the AFEB are properly trained. The AFDO may alter the AFEB recommended award fee, however it must be documented in sufficient detail to show that the integrity of the award fee determination process has been maintained.
The AFEB is comprised of USACE and possibly customer representatives who perform the in-depth review of all aspects of contractor performance as reported to the board by the Government monitors and other pertinent sources. The AFEB will also take into consideration any input from the contractor. The AFEB determines to what degree performance measures have been met by the contractor and based on their review and analysis, will prepare an Award Fee Evaluation Board Report and submit the report and recommendation as to the appropriate award fee to the AFDO.
AFDO should provide timely feedback to the contractor regarding its performance. Feedback should be provided for both positive and negative contractor performance, and should be provided promptly to the contractor such that corrections can be made. Monitors should also provide feedback to contractor (i.e. monthly).

The AFEB chairperson distributes, when received, the contractor's self-evaluations to the entire AFEB. Note: The contractor is not required to submit a self-evaluation. The AFEB should review the contractor's self-evaluations and respond quickly with comments or corrections. The AFEB Chairperson should speedily return comments to the contractor. The AFEB should evaluate the contractor's performance against objectives specified in this award fee plan.

1.4.4 AFEB Recorder

The AFEB recorder is responsible for coordinating the administrative actions required by the Performance Monitors, the AFEB and the AFDO, including:

(1) receipt, processing and distribution of evaluation reports from all required sources;
(2) scheduling and assisting with internal evaluation milestones, such as briefings; and;
(3) accomplishing other actions required to ensure the smooth operation of the Award Fee Evaluation Board.
(4) Documenting the actions of the AFEB.

1.4.5 Award Fee Monitors

The AFEB chairman will select individuals as performance monitors as needed. The monitors, usually comprised of the PDT or project field personnel are selected to provide input to the AFEB. Performance monitors will be comprised of individuals knowledgeable and involved in the routine oversight of the project or project aspects. In order to provide a fair and reasonable evaluation, monitors must observe, assess, and document the performance of the contractor on a close, continual basis. The monitors review documentation of performance; i.e. field logs, daily reports, cost

performance reports, schedules, performance metrics, etc., in their respective areas of knowledge and expertise, and develop interim and end-of-period evaluation reports as directed by the AFEB. Monitors maintain written records of the contractor's performance so that a fair and accurate evaluation is obtained. Prepare interim and end-of-year evaluation reports as directed by the AFEB.
Monitors will need to discuss performance perspectives on a regularly scheduled basis either in person, by conference, or electronically, as the situation dictates. For ease of evaluations, interim reporting will be required from the monitors on a monthly basis.

1.5 Available Award-Fee Amount

The award fee earned will be based on the contractor's performance during each evaluation period, and will be determined at the completion of evaluation periods. The percentage shown in the tables is the maximum available weighting of the award-fee score that can be earned during that period.
The contractor may be allowed to voucher some portion of the award fee at the determination of the Contracting Officer. This may be granted with the understanding that once the award fee amount is determined, the contractor will voucher for the balance of the award fee due, or in situations of poor performance, may owe the government all or part of the award fee portion prepaid.

1.6 Evaluations

Evaluations will be performed consistent with this Award Fee Plan. Specific timeframes for changes to the grading criteria, notification to the contractor, briefings from monitors, etc., are detailed in the "End of Period Evaluations" and "Award Fee Plan Change Procedures" Sections of the this Award Fee Plan.

1.7 End-of-Period Evaluations

AFEB Recorder notifies each AFEB member and performance monitor 30 calendar days prior to the end of the evaluation period regarding the end of period evaluations. Performance monitors prepare and submit their evaluation reports to the AFEB 10 work days following the end of the evaluation period. The AFEB may request individual briefings from Performance Monitors on an area requiring clarification. The Board will consider all monitors' reports and information from all sources and make their recommendations . The Board's determination and recommendation will be submitted, in writing, in the form of an Award Fee Recommendation Report. The AFEB report will be retained as a part of the project contract files. The AFEB prepares its evaluation report and recommendation to the AFDO. The AFDO will determine the final amount for the evaluation period based on the AFEB report and their own perception of the Contractor's performance.

The tentative timeline for the review process is as follows:

5 months into the evaluation period, the AFEB Recorder sends notification to the AFEB regarding the end of the evaluation period and triggers the review period.

Following the performance period, the monitors have 10 working days to submit their monitoring reports to the AFEB. Any Contractor self-evaluations are also due within 5 working days following the performance period.

AFEB has 10 working days to deliver fee evaluation report to AFDO.

AFDO has 5 working days to make decision and issue fee determination.

If the award fee funds are not obligated the Contracting Officer (CO) has 5 days following the AFDO's decision to issue a modification to obligate the funds for the fee.

1.8 Contractor's Self-Evaluation

The contractor will be allowed five (5) working days following the period, in which to present any data or information in its behalf. This written evaluation may be taken into consideration by the AFDO during the evaluation.

1.9 Evaluation Process

The AFEB Chairperson will begin and manage the evaluation process each evaluation period such that the final determination of the fee earned will be accomplished within 25 working days after the end of the evaluation period.

The AFEB Chairperson will compile the AFEB members' scores and comments in each category and lead the meeting to develop consensus scores in each of the categories. The AFEB Chairperson will prepare a summary report of the team's evaluations to document the overall evaluation. The final report will contain a matrix showing numerical ratings and the dollar value of the task order's fee pool for the evaluation period, and by evaluation category. The matrix will show an overall contract evaluation based upon the scores in the matrix weighted by appropriate factors. The AFEB's report will summarize significant issues in each category and discuss the monitors reports, where the Board agreed and why and where the Board didn't agree and why. The AFEB will identify significant differences between the government's and the contractor's ratings (if submitted) for the same work, and will make every reasonable effort to ensure that the statements are supported by facts before presentation to the AFDO.

The AFEB Chairperson will forward the final report through the Contracting Officer to the AFDO for review, approval and signature. The Contracting Officer will prepare a letter that informs the contractor's general management of the amount and basis of the fee awarded.
Upon receipt of the AFDO's letter, the contractor will submit a public voucher for payment of the earned award fee, . Unearned award fee amounts earned do not carry over to subsequent periods.

The Contracting Officer may offer or the contractor may request a debriefing meeting with the AFEB. The AFEB may conduct such a debriefing session with the contractor to discuss the evaluation, to highlight

strengths and weaknesses of contractor performance. The contractor may be required to prepare and present action plans to address weaknesses identified during the evaluation period, and to report on the progress of the action plans.

1.10 Control of Documents

The contents of the criteria, inputs from the Monitors, reports to the AFEB, and AFDO and documentation supporting the award fee determination are procurement sensitive and shall not be released outside of USACE. USACE will maintain only the minimum number of copies of all award fee documentation and reports prepared in accordance with this criteria. All working papers of the of the AFEB members and the AFDO shall be retained for "Government Use Only".

1.11 Evaluation Periods

The Contractor will be evaluated not less than twice per year. In general, two six-month evaluation periods will be used. One period will extend from 1 January to 30 June and the second evaluation period will be from 1 July to 31 December. The evaluation periods can be structured on a six-month calendar basis, as described above, or may be based on project specific milestones or activities, as agreed upon by the USACE and Contractor.

1.12 Performance Criteria

The following evaluation criteria define the relative importance to the Government of each of contract performance indicators. Details of the criteria are contained in Table 1.
***3**
A. Management - Includes the evaluation of developing, updating, and executing the project within the award fee period. This category includes use of best-value analysis, compliance and improvement in contracting and subcontracting methods and goals, resource tracking and reporting, management of subcontractors, coordination with the government, use of management tools, efficient procurement, effectiveness of property control system and invoice completeness and timeliness and monthly Cost Performance Reports. The AFEB will evaluate the Contractor's technical ingenuity in performing/implementing the planned activities. Use and effectivenss of innovative work technologies to solve a problem or increase work production. Technical activities include innovative approaches to site challenges, in-the-wet construction methodology, effective use of technical ideas suggested by the governemnt and effective use of interactive planning. Analyze contractor's labor techniques, selection and effective utilization of materials and tools, equipment and subcontractors and technical decision making.

B. Cost - Assesses the contractor's efforts to control costs through effective cost accounting, manpower utilization, forward budgeting procedures and programming techniques. The contractor must be able to track and report costs at the lowest Work Breakdown Structure (WBS) level. This requires the contractor to quantify and demonstrate cost performance on the project including variance analysis and information on cost trends. Cost performance will be evaluated based on performance against the projected

cost agreed to at award, including any increases that are a result of a contract modification, providing cost variance analysis and implementing corrective actions to control costs.

C. Schedule - Will be evaluated based on the timeliness in preparing a usable, detailed project schedule, adhering to scheduled dates for activities and milestones, providing schedule variance analysis, and communicating and implementing corrective actions to meet critical schedule items. This requires the contractor to provide appropriate logic and networking of technical activities. The quality and timeliness of the contractor to maintain and update the schedule will be evaluated.

D. Quality - Will be accessed by reviewing the effectiveness and adherence to the quality control and quality assurance plan, quality of work plans, shop drawings, reports and designs.

E. Safety & Environmental Compliance - Assesses the contractor's compliance with safety and health plans, maintenance of an excellent safety record, as well as compliance with the USACE Health and Safety Manual and other sahety requirements. Accuracy, appropriateness and quality of any employee monitoring data and safety reporting will be evaluated. The protection of the environment through prudent work practices will be reviewed. *3

1.13 Weighting Factors

The performance criteria is weighted as shown on the "Contractor's Performance Evaluation Report" attached to this Award Fee Plan. The Government has weighted the performance criteria in accordance criteria in accordance with the importance placed on the criteria. These weights will be factored into the score assigned to the contractor.

1.14 Evaluation Scale
***3**

Excellent (100 - 90) Exceeds expectation , high quality output. Of exceptional merit; exemplary performance in a timely manner; very minor (if any) deficiencies with no adverse effect on overall performance. Performance is uniformly well above standards. Self-initiated, innovative management techniques have resulted in superior quality, timeliness, and effective operations.

Very Good (89 - 70) Very effective performance, fully responsive to contract requirements; contract requirements accomplished in a timely, efficient and economical manner for the most part; only minor deficiencies. Performance in most areas is well above standards while the remaining efforts meet task order requirements.

Good (69 - **50**) Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance. Performance in some areas is above standard while some areas meet task order requirements.

Satisfactory (**49**-**30**) Meets minimum acceptable standards; adequate results; reportable deficiencies with identifiable but not substantial,

effects on overall performance. Performance in most areas meets standards, is satisfactory and is equivalent to that expected of an average qualified contractor.

Unsatisfactory (0) Does not meet minimum acceptable standards in one or more areas, which adversely affect overall performance. Poor performance. The contractor will receive no award fee for the portion of the available pool designated for the performance evaluation criteria on which performance is unsatisfactory.

The government will evaluate the contractor in each performance category, and will assign a numerical rating to each. The weighted sum of the numerical scores given for each category will be applied to the available award fee pool (e.g., an overall numerical rating of 89 will yield an award fee equal to 89% of the award fee available**)** for the evaluation period. **See Table 2. Contractor Performance Evaluation Report for a sample evaluation report. *3**

1.15 Award-Fee Plan Change Procedure

All significant changes will be approved by the Contracting Officer. The AFEB Chairperson can approve all other changes. Examples of significant changes include changing evaluation criteria, and adjusting weights to redirect contractor's emphasis to areas needing improvement.
The contractor may recommend changes to the Contracting Officer (CO) no later than fourteen (14) days prior to the beginning of the new evaluation period. After approval, the CO shall notify the contractor in writing of any change(s).

USACE may elect to unilaterally change these performance categories or weight of any category to encourage performance in specific areas. Unilateral changes may be made to the award-fee plan if the contractor is provided written notification by the CO thirty (30) days before the start of the upcoming evaluation period. Changes effecting the current evaluation period must be by mutual agreement of both parties.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION NOT USED

-- End of Section --

24-Jul-03

Amdt #0003 ***3 TABLE 1 *3**

PERFORMANCE EVALUATION CRITERIA

		Unsatisfactory	Satisfactory	Good	Very Good	Excellent
Management 30%	Subcontractor & Supplier Management	Poor control, knowledge of subcontractors & suppliers. Excessive schedule/cost overruns.	Some control of subs & suppliers with average overruns.	Adequate management of key subcontractor & supplier activities with minimal overruns.	Effective management of subcontractor & supplier activities with no overruns.	Reduces cost and/or schedule of subcontractors & suppliers.
	Technical Ingenuity & Implementation of innovative construction	Doesn't recognize the problem until after the fact & lacks initiative to resolve constructibility issues.	Identifies constructibility issues & general requires assistance to resolve the issues.	Identifies & resolves most of the constructibility issues with minimal assistance.	Resolves constructibility issues as soon as identified without assistance.	Anticipates & resolves constructibility issues early & avoids delays.
	Documentation & Reporting	Poor & ineffective file management; inaccurate & missing documents.	Minimal inaccuracies or misrepresentati on of information.	Little to no inaccuracies or misrepresentati on of information.	Accurate, appropriate & timely levels of documentation,	Detailed, accurate, timely, documentation and done cost effectively.
	Acquisition Management (procurement) & Property Control.	Poor management resulting in excessive damage to Government.	Some management effort, results are marginal.	Expectable control with continual improvements when short coming found.	Good control system with minimal damage to Government.	Very proactive with exceptional control.
	Communication & coordination.	Poor communication with USACE, poor coordination with numerous last minute actions.	Fair communication with USACE, fair coordination with some last minute actions.	Good open lines of communication between Contractor & Government.	Fully & open communication actions are coordinated, timely & effective.	Proactively communicates with USACE on all issues with exception coordination.
Cost 25%	Performance to cost estimate.	Cost overrun is greater than 25%.	Cost overrun between 10% and 25%.	Cost overrun less than 10%.	Meets cost schedule.	Under budget.
	Control of direct charges	Expenditures uncontrolled.	Expenditures reviewed occasionally by upper management.	Charges set & accounted for on each work package.	Proactively reviews expenditures & takes action to control cost.	Anticipates & proactively works to control expenditures & reduce cost.

Schedule 20%	Adherence to the NAS	Consistently late on 25% of activities.	Late on 10% of task w/o agreement.	Occasionally late on activities w/o justification.	Meets Schedule.	Project is ahead of schedule.
	Actions on delays.	Does not recognize nor take action to resolve delays.	Recognizes delays is dilatory in resolution.	Anticipates changes/delays but is late occasionally.	Resolves independently & takes action to reduce delays.	Anticipates in good time, resolves independently & meets schedule.
	Schedule maintenance.	Consistently late with many errors.	Occasionally late, some errors & omissions.	Rarely late with few omissions or errors.	Always on time & correct.	Completed early & with exceptional quality.
Quality 15%	Accuracy of constructed work.	Re-work is required on a regular basis.	Minimal re-work required or less than 10 non-compliance reports received.	Occasional re-work is required and less than 5 non-compliance reports..	No re-work is required, no non-compliance reports.	Work is of the highest caliber.
	Engineering competence & contractor quality control.	Tendency to follow past practices with no variation to meets requirements.	Adequate support for routine work.	Engineered & managed to satisfy plans & specifications.	Displays excellent knowledge of construction requirements & proactive CQC system.	Exceptional knowledge & ability to integrate the design & construction elements.
	Submittal process	Less than 50% of submittals receive at least a B Code the first time.	50% to 65% of submittals receive at least a B Code the first time.	66% to 75% of submittals receive at least a B Code the first time.	76% to 85% of submittals receive at least a B Code the first time.	More than 85% of submittals receive at least a B Code the first time.
Safety & Environmental 10%	Safety & Health performance record	Little regard for employees safety & health.	Complies with USACE Health & Safety Manual.	Complies with USACE Health & Safety Manual with no serious loss time accidents.	Complies with USACE Health & Safety Manual with no loss time accidents.	Superior safety record, minimal first aide actions. Exceptionally proactive with safety program.
	AHA's	Poorly done plans & submitted at the last minute.	Bare minimum plans submitted.	Plans exceed minimum requirements, submitted timely to allow proper USACE review.	Thorough prepared plans that foresee all normal & many unforeseen hazards.	Timely & superiorly prepared plans that avoids all hazards.
	Environmental compliance.	Disregard for environmental requirements.	No violations of contract or regulation.	Actions taken with minimal USACE oversight.	Actions taken without USACE oversight.	Proactive with all environmental requirements.

***3 Table** 2 ***3**

CONTRACTOR'S PERFORMANCE EVALUATION REPORT

Period of _____ thru _____
Contract Number _____
Contractor _____
Date of Report _____

Category	Criteria	Scale		Item Factor		Evaluation Rating		Category Factor		Efficiency Rating
A. Management										
	a. Subcontractor & supplier management		x	0.30	=	0.000				
	b. Technical Ingenuity & Implementation of innovative construction		x	0.25	=	0.000				
	c. Documentation & reporting		x	0.15	=	0.000				
	d. Acquisition management & property control		x	0.15	=	0.000				
	e. Communication & coordination		x	0.15	=	0.000				
		Total Item Weighted Rating				0.000	x	30	=	0.00
B. Cost										
	a. Performance to cost estimate.		x	0.75	=	0.000				
	b. Control of Direct Cost		x	0.25	=	0.000				
		Total Item Weighted Rating				0.000	x	25	=	0.00
C. Schedule										
	a. Adherence to NAS		x	0.50	=	0.000				
	b. Actions on delays		x	0.30	=	0.000				
	c. Schedule Maintenance		x	0.20	=	0.000				
		Total Item Weighted Rating				0.000	x	20	=	0.00
D. Quality										
	a. Accuracy of construction		x	0.50	=	0.000				
	b. Engineering competence		x	0.30	=	0.000				
	c. Submittal process		x	0.20	=	0.000				
		Total Item Weighted Rating				0.000	x	15	=	0.00

E. Safety & Environmental							
a. Safety & health performance record	x	0.35	= 0.000				
b. AHA's	x	0.35	= 0.000				
c. Environmental compliance	x	0.30	= 0.000				
Total Item Weighted Rating			0.000	x	10	=	0.00

TOTAL WEIGHTED RATING	=	0.00%

Fee pool for the period	X	Rating	= Fee earned for the period
$0.00	X	0.00%	= **$0.00**

Rated by: _____

Signature(s): _____

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03/05/2001

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Amendment #0003
SECTION 01320

PROJECT SCHEDULE
03/05/2001

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the approving authority who will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Periodic (Monthly) Schedule Updates; G R

Preliminary Project Schedule; G AR

Initial Project Schedule; G R

Four copies of the schedules showing codes, values, categories, numbers, items, etc., as required.

Nominated Project Scheduler; G R

Name, qualifications and nominated work location of the Contractor's authorized representative responsible for preparation of project schedule reports.

SD-06 Test Reports

Narrative Report; G R

Schedule Reports; G R

Four copies of the reports showing numbers, descriptions, dates, float, starts, finishes, durations, sequences, etc., as required.

1.2 QUALIFICATIONS

The Contractor shall designate a Project Scheduler, an authorized representative, who shall be responsible for the preparation of all required project schedule reports. This person must have significant major project scheduling qualifications and experience and be thoroughly familiar with the specified scheduling software.

PART 2 PRODUCTS

(Not Applicable.)

PART 3 EXECUTION

3.1 GENERAL
***1**

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be principally used as the basis for planning and execution of the work, **forecasting future earnings** and as a secondary use to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments. ***1**

3.2 **PROGRESS MEASUREMENT**
***1 *3**

The schedule shall be the basis for measuring Contractor progress **and earned value.** Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting Officer to evaluate Contractor progress. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress. ***1 *3**

3.3 PROJECT SCHEDULE
***1**

The computer software system utilized by the Contractor to produce the Project Schedule shall be Primavera's **P3e/c** for Construction software **(version 3.5 or later running with an Oracle database engine)**. The scheduling software package shall contain site license and all user manuals normally provided by the software distributor. The network analysis software shall be capable of running on a Government owned personal computer running the Windows 2000 Operating System. All necessary software and cables will be provided to make the system a complete and useable package. The contractor provided network analysis software will remain the property of the government.
***1**

Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Exclusion of Periods in Computing Completion Schedules

River construction work is seasonal and the Project Schedule must be developed with the shutdown period clearly included. Refer to Section 00700 CONTRACT CLAUSES for river work shutdown period calendar dates.

3.3.3 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate minimum level of detail to be used in the Project Schedule.

3.3.3.1 Activity Durations
***3**
Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between **updates**. Rules of thumb, that the Contractor should use are as follows: ***3**

Less than 2 percent of all non-procurement activities' Original Durations shall be greater than 20 days.

Less than 2 percent of all lump sum payable activities shall have Original Values greater than $100,000.

3.3.3.2 Procurement and Completion Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing.

3.3.3.3 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and notice to proceed for phasing requirements.

3.3.3.4 Manpower and Equipment Resource Loading of Schedule

All activities shall have an estimate of the average number of workers identified per day by craft and the critical equipment that are expected to be used during the execution of the activity. This information shall be set up so that the schedule can be resource balanced/leveled. the Contractor may use manpower or equipment restraints to optimize and level

manpower and equipment requirements. However, when this levelling technique is used in establishing the initial project schedule, it shall be reflected in the logic with restraints identified as "restraint - - for manpower or equipment levelling purposes only." Critical or near-critical paths resulting from the use of manpower restraints shall be kept to a minimum. Near-critical paths shall be defined as those paths having 14 days or less of float at the time of initial submission.

3.3.3.5 Manpower Loading

If no workers are required for an activity, in the case of activities related to procurement, for example, then the activity shall be identified as using zero workers per day. The workers per day information for each activity shall be identifiable by the resources that the Contractor has assigned to the activity. If multiple crafts are required, the Contractor shall set up individual resources to cover each craft or set up and define a standard work crew. If a standard work crew is utilized, its definition shall be entered into the system as a custom resource item for the activity.

3.3.3.6 Equipment Loading

Equipment loading shall be done so that the major items (such as a crane, excavator or trucks) of equipment or groups (such as the batch plant and associated concrete delivery system or a barge mounted clam with its associated material barges) needed for the activity are identified. If an equipment group is utilized, its definition shall be entered into the system as a custom resource for the activity.

3.3.3.7 Production Rates and Quantities

For durations that are based on the production rates of the manpower or equipment loading resource, the Contractor shall include in his schedule the production rate and quantity to which the production rate is applied to arrive at the duration. If there are multiple resources such as this, the Contractor shall so identify the driving resource.

3.3.3.8 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.3.9 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Activity ID as identified in the clause, Coordination Meeting.

3.3.3.10 Coordination Meeting

The Project Manager and Resident Engineer will meet with the Contractor after award to define uniform activity coding. However, if the Contractor gets started with his schedule prior to this meeting, the Contractor shall incorporate the following list of requirements into the Activity ID and Activity Codes in his schedule to maintain compatibility with the Corps.

1) The first two characters of the activity ID shall be left blank to allow the Contractor's schedule to be incorporated into the overall Olmsted Locks and Dam Project as a sub-project.

2) Activity numbers, duration, descriptions and work breakdown structure costs shall be coordinated with information used in the RMS software package as discussed in Section 00700 CONTRACT CLAUSES.

3) The Contractor shall use the third, fourth, fifth, and sixth (only in some cases) characters of the Activity ID to designate major different work phases to be used as filters or summary views. The following is a minimum listing of the codes required:

Code:

Site Development Features	SMOB	Mobilization
	SDOB	Demobilization
	STBC	Temporary Building Construction
	STCO	Temporary Construction
	SMPC	Mooring Point Construction
	STRC	Temporary Road Construction
Prefabrication Yard Development Features		
	PYCL	Clearing
	PYGR	Grading
	PYRR	Rip-rap and Bank Protection
	PYRD	Roadways
	PYMS	Raw Material Storage
	PYMC	Raw Material Conveyors
	PYML	Motorized Loaders
Specialty Items- Marine Construction		
	MCBP	Floating Batch Plant
	MCTC	Tremie Concrete Supply System
	MCCA	Heavy Lift Crane Barge
	MCSB	Screed System
	MCCB	Medium Lift Crane Barge
	MCVB	Vibrocompaction Barge
Permanent Equipment Items	PEWGLB	Wicket Gate Lift Barge
	PEMB	Maintenance Box
	PEWB	Wicket Blanks
	PEMB	Maintenance Bulkheads
	PEWGN	Wicket Gate Needles
Tainter Gated Dam Features	TF???	Foundation Prep Work

Code:

TX???	Excavation
TP????	Foundation (Pipe) Piling
TV???	Vibrocompaction
TZ????	Sheet piling
TS????	Art. Mats/Temp Scour Protection
TU????	Underdrain System
TD????	Landing Pad
TR????	Bedding and Rip-rap
TB????	Levelling and Screeding
TF????	Formwork
TA????	Precast Concrete Construction
TQ????	Load out
TK????	Outfitting for Installation
TT????	Transport
TL????	Lift and Position
TC????	Tremie Concrete
TI????	Instrumentation
TG????	Cast in Place Concrete
TH????	System Commissioning
TM????	Embedded Metal Work
TY????	Surface Preparation and Painting

1st and 2nd "??" - represents the Tainter Gate designator.

IJ	Isolation Joint
SI	Sill Shell
SB	Stilling Basin Shell
GA	Gates
BR	Bridges
MH	Machine Houses
TW	Training Wall
OC	Gates Operating Cylinder
UP	Upper Pier Wall
LP	Lower Pier Wall
MB	Maintenance Bulkhead
TG	Trunnion Girder
HC	Hydraulic Cylinder

3rd "?" - represents the segment number (1, 2, 3, 4, 5 or 6)

4th "?" - represents codes for procurement (P), form erection (F), concrete placement (C), reinforcing steel (R), delivery (D) and erection (E)

Navigable Pass Section Features	NF???	Foundation Prep Work
	NE???	Excavation
	NP????	Foundation Pipe Piling
	NV??	Vibrocompaction
	NZ???	Sheet piling
	NS???	Art. Mats/Temp Scour Protection.
	NL???	Landing Pad
	NR????	Bedding and Rip-rap
	NW????	Wicket Gates

Code:
1st and 2nd "??" - represents the Navigable Pass segment number (01 to 12).

3rd "?" will be Right Boat Abutment (A), Left Boat Abutment (B), Monolith (M), Paving block (P), Wicket Gate (W)

4th"?" - represents codes for procurement (P), form erection (F), concrete placement (C), reinforcing steel (R), delivery (D) and erection (E)

Fixed Weir Features	WD??	Demolition
	WE??	Excavation
	WC???	Concrete Cap

1st and 2nd "??" - represents the Fixed Weir designator.

67	-	Fixed Weir #67
68	-	Fixed Weir #68
69	-	Fixed Weir #69

3rd"?" - represents codes for procurement (P), form erection (F), concrete placement (C), reinforcing steel (R),and delivery (D)

Miscellaneous	MELS	Electrical, Secondary
Corps Activities	COEA	Activities for which the Corps is responsible

3) Pursuant to the above, the Contractor will not be allowed to use the following codes in the third, fourth, and fifth characters of the activity code as they have been reserved for Corps use:

CNT	Contracting Activities
P&S	Contract Document Preparation
DM	Design Memorandum Preparation
ER	Evaluation Report Preparation

4) The Contractor shall reserve the activity codes 10 through 16 to be for the Corps use and shall include the following information to be entered by the Contractor.

AC-10	-	The contract bid item shall be entered here
AC-11	-	The contract cost code for the bid item
AC-12	-	The responsibility code
AC-13	-	The feature of work code
AC-14	-	The category of work code
AC-15	-	The modification of claim number code
AC-16	-	TBA

3.3.3.11 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number.

3.3.3.12 Bid Item and Cost Code

All activities shall be identified in the project schedule by the Bid Item and Cost Code and Cost Code to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.3.13 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.3.14 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.3.15 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3.16 Submittal Requirements
***1**

All submittals required in the specifications **will be handled in the Corps RMS and contractors QCS systems and not required to be shown in the schedule unless it is sufficiently critical. All submittals included in RMS shall be tied to appropriate activitied with in the schedule so that RMS/QCS can generate an appropriate submittal register with appropriate schedule dates filled out. RMS/QCS automatically generates submittal dates by using the linked activity schedule date and backing up days for Government review, material procurement time and a lag lead factor all of which must be included in the submittal register in RMS/QCS. If inclueded in the schedule submittal activities shall include the time required for: mailing, review by the designated person(s) and return mailing. Refer to Section 01330 of the specifications for additional submittal requirements.**

3.3.3.17 **Work Breakdown Structure (WBS)**

The contractor will be required to define and implement a WBS for all activities. A WBS is the hierarchy of work you must accomplish to complete a project. The WBS is structured in levels of work detail, beginning with the end result or product, and then divided into identifiable work elements. Each WBS level is indented, and the levels within each code are separated by characters. The purpose of the WBS is so the Government and Contractor can

define groups of activities at a variety of levels for the purpose issuing Work Authoization Documents (WADS). For the purpose of estimating, proposal presentation and comparison, the following WBS is initially required. However, it is anticipated that this WBS will be expanded upon or altered upon award of a contract and start of work.

WBS Definition and structure is as follows:

Description	Width	Column
WBS - Feature/Subfeature	4	1
Special Project Indicator	1	2
WBS -Element	2	3
Special Indicatior #1	2	4
Special Indicatior #2	2	5
Special Indicatior #3	2	6

WBS to be used in proposal preparation.

0401		Main Dam				
0401	R	00	Reoccuring Costs			
0401	R	00	01	Field Overhead		
0401	R	00	01	01	Labor	
0401	R	00	01	01	01	Management
0401	R	00	01	01	02	Engineering
0401	R	00	01	01	03	Quality Control
0401	R	00	01	01	04	Administration
0401	R	00	01	01	05	Safety/Security
0401	R	00	01	01	06	Shop
0401	R	00	01	01	07	Other
0401	R	00	01	02	Plant/Equipment	
0401	R	00	01	02	01	Office
0401	R	00	01	02	02	Storage
0401	R	00	01	02	03	Vehicles
0401	R	00	01	02	04	Equipment Shop
0401	R	00	01	02	05	Other
0401	R	00	01	03	Materials/Supplies	
0401	R	00	01	03	01	Communications
0401	R	00	01	03	02	General Utilities
0401	R	00	01	03	03	Office Supplies
0401	R	00	01	03	04	Portable Toilet Facilities
0401	R	00	01	03	05	Other
0401	R	00	01	04	Miscellaneous Costs	
0401	R	00	01	04	01	Relocation Costs
0401	R	00	01	04	02	Travel
0401	R	00	01	04	03	Insurance
0401	R	00	01	04	04	Winterize Operations
0401	R	00	01	04	05	Subcontracts
0401	R	00	01	04	06	Other
0401	R	00	02	Operational Costs		
0401	R	00	02	01	Land Based	
0401	R	00	02	01	01	Concrete Bactch Plant
0401	R	00	02	01	02	Precast Concrete Manufacturing Facilites
0401	R	00	02	01	03	Storage Facility
0401	R	00	02	01	04	Other

0401	R	00	02	02		River Based
0401	R	00	02	02	01	Concrete Bactch Plant
0401	R	00	02	02	02	Shell Intallation Barge
0401	R	00	02	02	03	Screed Barge
0401	R	00	02	02	04	Pile Installatio Barge
0401	R	00	02	02	05	Vibro-Compaction Barge
0401	R	00	02	02	06	Workboats
0401	R	00	02	02	07	Misc. Crane Barges
0401	R	00	02	02	08	Other
0401	M	00	Mobilization and Preparatory Work			
0401	M	00	01	Mobilization		
0401	M	00	01	01	On-site	
0401	M	00	01	01	01	Land Based Cranes & Equipment
0401	M	00	01	01	02	Floating Cranes & Equipment
0401	M	00	01	02	Off-site	
0401	M	00	01	03	Subcontractors	
0401	M	00	01	04	Other	
0401	M	00	02	Temporary Buildings		
0401	M	00	02	01	On-site	
0401	M	00	02	01	01	Office
0401	M	00	02	01	02	Shops
0401	M	00	02	01	03	Storage
0401	M	00	02	01	04	Other
0401	M	00	02	02	Offsite	
0401	M	00	03	Mooring Points		
0401	M	00	04	Approach Roads		
0401	M	00	05	Precast Yard & Marine Skidway		
0401	M	00	05	00	01	Clearing & Grubbing
0401	M	00	05	00	02	Earthwork and Site Grading
0401	M	00	05	00	03	Riprap/Bank Protection
0401	M	00	05	00	04	Roadways
0401	M	00	05	00	05	Material Storage Facilities
0401	M	00	05	00	06	Fixed Batch Plant
0401	M	00	05	00	06	Material Conveyors
0401	M	00	05	00	08	Loaders
0401	M	00	05	00	09	Skidway & Launching Facilities
0401	M	00	05	00	10	Casting Beds
0401	M	00	06	Specialty Construction Equipment		
0401	M	00	06	00	01	Shell Intallation Barge
0401	M	00	06	00	02	Screed Barge
0401	M	00	06	00	03	Pile Installation Barge
0401	M	00	06	00	04	Vibro-Compaction Barge
0401	M	00	06	00	05	Workboats
0401	M	00	06	00	06	Misc. Crane Barges
0401	D	00	07	Demobilization		
0401	D	00	07	01	General Demobilization	
0401	D	00	07	Site Restoration		
0401	D	00	07	02	01	Existing Haull Road Removal
0401	D	00	07	02	02	Seeding
0401	D	00	07	02	03	Access Roads
0401	D	00	07	02	04	Parking Lots
0401	D	00	07	02	05	Fill Over Precast Yrd Foundation

0401 D 00 07 02 06 Cell"A" Removal
0401 D 00 07 02 07 Erosion Control

0401 E 10 Earthwork for Structures
0401 E 10 01 Excavation
0401 E 10 01 00 01 Excavation - Tainter Gate Section
0401 E 10 01 00 02 Excavation - Navigable Pass Section
0401 E 10 02 Deposite Sutible Material Back to the River
0401 E 10 02 00 01 Place Material in River - Tainter Gate Section
0401 E 10 02 00 02 Place Material in River - Navigable Pass Section
0401 E 10 03 Disposal of Material to Shore
0401 E 10 03 00 01 Shore Disposal - Tainter Gate Section
0401 E 10 03 00 02 Shore Disposal - Navigable Pass Section
0401 E 10 04 Matl. - Infill Zones of Dam
0401 E 10 04 00 01 General Backfill #6 -Tainter Gate Section
0401 E 10 04 00 02 General Backfill #6 -Navigable Pass Section
0401 E 10 05 Maintenance Dredging Dam Footprint
0401 E 10 05 00 01 Maintenance Dredging - Total Project
0401 E 10 06 Erosion Control
0401 E 10 06 00 01 Purchase Articulated Mats
0401 E 10 06 00 02 Install/Remove Articulated Mats
0401 E 10 07 Vibro-Compaction
0401 E 10 07 00 01 Tainter Gate Section
0401 E 10 07 00 02 Navigable Pass

Tainter Gate Section
0401 T 07 Bridges, Superstructure and Deck
0401 T 07 01 Tainter Gate Bridge
0401 T 07 01 00 01 Concrete
0401 T 07 01 00 02 Reinforcing Steel
0401 T 07 01 00 03 Outfitting for Installation
0401 T 07 01 00 04 Load Out
0401 T 07 01 00 05 Transport to Position
0401 T 07 01 00 06 Lift, Position & Install Shells

0401 T 11 Foundation Work
0401 T 11 02 Sitework
0401 T 11 02 00 01 Purchase/fabrication of frames
0401 T 11 02 00 02 General Handling of Frames
0401 T 11 02 00 03 Pile Materials
0401 T 11 02 00 04 Pile Driving
0401 T 11 02 00 05 Pile Testing
0401 T 11 02 00 06 Pile Anchorage at Shells
0401 T 11 02 00 07 Fab and Install Geotextile Fabri

0401 T 12 Seepage Control
0401 T 12 02 Sitework
0401 T 12 02 00 01 Temporary Cutoff Wall
0401 T 12 02 00 02 Handling of Reprocessed Sheets
0401 T 12 02 00 03 Sheet Pile Frames for Walls
0401 T 12 02 00 04 Sheet Piling
0401 T 12 02 00 05 Master PIles

0401	T	12	02	00	06	Pile Driving
0401	T	12	02	00	07	Drainage System (Piping, etc.)
0401	T	12	02	00	08	Drainage Layer
0401	T	25	Embedded Metal Work			
0401	T	25	05	Metals		
0401	T	25	05	00	01	Bulkhead Slot Beams
0401	T	25	05	00	02	Bulkhead Slot Corner Protection
0401	T	25	05	00	03	Tainter Gate Side Seals & Beams
0401	T	25	05	00	04	Lifting Frame Embeds
0401	T	32	Apron Stilling Basins Deflectors			
0401	T	32	03	Concrete		
0401	T	32	03	00	01	Concrete
0401	T	32	03	00	02	Reinforcing Steel
0401	T	32	03	00	03	Skirts
0401	T	32	03	00	04	Pintles
0401	T	32	03	00	05	Flat Jacks
0401	T	32	03	00	06	Outfitting Shells for Installation
0401	T	32	03	00	07	Load Out Shells
0401	T	32	03	00	08	Transport Shells to Position
0401	T	32	03	00	09	Lift, Position & Install Shells
0401	T	32	03	00	10	Stilling Basin Tremie Concrete
0401	T	52	Concrete Dam Overflow Section			
0401	T	52	03	Concrete		
0401	T	52	03	01	Sill Shell	
0401	T	52	03	01	01	Concrete
0401	T	52	03	01	02	Reinforcing Steel
0401	T	52	03	01	03	Skirts
0401	T	52	03	01	04	Pintles
0401	T	52	03	01	05	Flat Jacks
0401	T	52	03	01	06	Outfitting Shells for Installation
0401	T	52	03	01	07	Load Out Shells
0401	T	52	03	01	08	Transport Shells to Position
0401	T	52	03	01	09	Lift, Position & Install Shells
0401	T	52	03	01	10	Tremie Concrete - Sill
0401	T	52	03	02	Lower Pier Shell	
0401	T	52	03	02	01	Concrete
0401	T	52	03	02	02	Reinforcing Steel
0401	T	52	03	02	03	Pintles
0401	T	52	03	02	04	Flat Jacks
0401	T	52	03	02	05	Outfitting Shells for Installation
0401	T	52	03	02	06	Load Out Shells
0401	T	52	03	02	07	Transport Shells to Position
0401	T	52	03	02	08	Lift, Position & Install Shells
0401	T	52	03	02	09	Tremie Concrete - Lower Pier
0401	T	52	03	03	Upper Pier Shell	
0401	T	52	03	03	01	Concrete
0401	T	52	03	03	02	Reinforcing Steel
0401	T	52	03	03	03	Flat Jacks
0401	T	52	03	03	04	Maintenance Platform
0401	T	52	03	03	05	Outfitting Shells for Installation
0401	T	52	03	03	06	Load Out Shells

0401	T	52	03	03	07	Transport Shells to Position
0401	T	52	03	03	08	Lift, Position & Install Shells
0401	T	52	03	03	09	Concrete - Upper Pier Closure
0401	T	52	05	Metals		
0401	T	52	05	01	Tainter Gates	
0401	T	52	05	01	01	Shop Fabrication
0401	T	52	05	01	02	Field Fabrication and Assembly
0401	T	52	05	01	03	Installation
0401	T	52	05	01	04	Install Gate Appurtenances
0401	T	52	05	01	05	Operating Machinery
0401	T	52	05	01	06	Hydraulic Cylinders
0401	T	52	05	01	07	Surface Prep and Painting
0401	T	52	05	01	08	Miscellaneous Metals -- Dam
0401	T	52	15	Mechanical		
0401	T	52	15	00	01	Compressed Air
0401	T	52	15	00	02	Non-Potable Water
0401	T	52	15	00	03	Hydraulic System
0401	T	52	16	Electrical		
0401	T	52	16	00	01	Electrical Distribution
0401	T	52	16	00	02	Power For Hydraulic Pumps
0401	T	52	16	00	03	Power for Machine House HVAC
0401	T	52	16	00	04	Branch Wiring and Devices
0401	T	52	16	00	05	Grounding / Lightning Protection
0401	T	52	16	00	06	Lighting Fixtures (Less Pier)
0401	T	52	16	00	07	Signal and Comm. Systems
0401	T	52	16	00	08	Control Panel Wiring
0401	T	52	16	00	09	PLC and Programming
0401	T	52	16	00	10	I/O, Field Devices and Wiring
0401	T	52	16	00	11	Cathodic Protection System
0401	T	52	16	00	12	Exterior (Pier) Lighting
0401	T	99	Associated General Items			
0401	T	99	01	Machine Houses and Misc. Const.		
0401	T	99	02	Trunnion Girders		
0401	T	99	02	00	01	Concrete
0401	T	99	02	00	02	Trunnion Gdr Erection and Stress
0401	T	99	02	00	03	Prestressing Steel Support Fram
0401	T	99	03	Structure/Foundation Instrumentation		
0401	T	99	04	Misc. Metals (Handrails, Stairs, Ladders..etc.)		
Navigable Pass						
0401	N	11	Foundation Work			
0401	N	11	02	Sitework		
0401	N	11	02	00	01	Reconfigure TG Frames
0401	N	11	02	00	02	General handling of frames
0401	N	11	02	00	03	Piling Materials
0401	N	11	02	00	04	Pile Driving
0401	N	11	02	00	05	Pile Testing
0401	N	11	02	00	06	Pile Anchorage at Shells
0401	N	11	02	00	07	Fab and Install Geotextile Fabric
0401	N	12	Seepage Control			
0401	N	12	02	Sitework		
0401	N	12	02	00	01	Sheet Piling

0401	N	12	02	00	02	Master Piles
0401	N	12	02	00	03	Pile Driving
0401	N	12	02	00	04	Drainage System (Piping, etc.)
0401	N	42	Fixed Weir (Weir and Abutm'ts)			
0401	N	42	01	Right Boat Abutment Shell		
0401	N	42	01	00	01	Concrete
0401	N	42	01	00	02	Reinforcing Steel
0401	N	42	01	00	03	Outfitting Shells for Installation
0401	N	42	01	00	04	Load Out Shells
0401	N	42	01	00	05	Transport Shells to Position
0401	N	42	01	00	06	Lift, Position & Install Shells
0401	N	42	01	00	07	Tremie Concrete
0401	N	42	02	Left Boat Abutment Shell		
0401	N	42	02	00	01	Concrete
0401	N	42	02	00	02	Reinforcing Steel
0401	N	42	02	00	03	Outfitting Shells for Installation
0401	N	42	02	00	04	Load Out Shells
0401	N	42	02	00	05	Transport Shells to Position
0401	N	42	02	00	06	Lift, Position & Install Shells
0401	N	42	02	00	07	Tremie Concrete
0401	N	42	03	Sheet Pile Cells/Fixed Wier Mods		
0401	N	42	03	00	01	Cut Off - Establish T.O.P. Elev.
0401	N	42	03	00	02	Excavate Interior of Cells
0401	N	42	03	00	03	Unload barge, haul to fill area
0401	N	42	03	00	04	Spread at fill area
0401	N	42	03	00	05	Concrete Caps - mat'l & inst
0401	N	52	Concrete Dam Overflow Section			
0401	N	52	01	Paving Blocks - Nav. Pass		
0401	N	52	01	00	01	Purchase/Fabrication of Frame
0401	N	52	01	00	02	Concrete
0401	N	52	01	00	03	Reinforcing Steel
0401	N	52	01	00	04	Outfitting Shells for Installation
0401	N	52	01	00	05	Load Out Shells
0401	N	52	01	00	06	Transport Shells to Position
0401	N	52	01	00	07	Lift, Position & Install Shells
0401	N	52	02	Shells - Nav. Pass		
0401	N	52	02	00	01	Lifting and Tremie Frame
0401	N	52	02	00	02	Concrete
0401	N	52	02	00	03	Reinforcing Steel
0401	N	52	02	00	04	Outfitting Shells for Installation
0401	N	52	02	00	05	Load Out Shells
0401	N	52	02	00	06	Transport Shells to Position
0401	N	52	02	00	07	Lift, Position & Install Shells
0401	N	52	02	00	08	Tremie Concrete - Nav. Pass
0401	N	52	03	Wicket Gates		
0401	N	52	03	00	01	Wicket
0401	N	52	03	00	02	Hurter
0401	N	52	03	00	03	Castings

0401	**N**	**52**	**03**	**00**	**04**	**Bushings**
0401	**N**	**52**	**03**	**00**	**05**	**Pins & Retainers (Stainless)**
0401	**N**	**52**	**03**	**00**	**06**	**Installation at Dam Site**
0401	**N**	**99**	**Associated General Items**			
0401	**N**	**99**	**00**	**00**	**01**	**Wicket Pit Display Pit**
0401	**N**	**99**	**00**	**00**	**02**	**Maintenance Box**
0401	**N**	**99**	**00**	**00**	**03**	**Wicket Blanks**
0401	**N**	**99**	**00**	**00**	**04**	**Wicket Gate Needles**
0401	**N**	**99**	**00**	**00**	**05**	**Spare Wicket Gates**
0401	**N**	**99**	**00**	**00**	**06**	**TG Cylinder Pin Temp Platform**
0401	**N**	**99**	**00**	**00**	**07**	**Isolation Joint Lock and TG**
0401	**N**	**99**	**00**	**00**	**08**	**Isolation Joint TG and NP**
0401	**N**	**99**	**00**	**00**	**09**	**Isolation Joint LBA & Fixed weir**
0401	**N**	**99**	**00**	**00**	**10**	**Isolation Joint Mono. 12 and LBA**
0401	**N**	**99**	**03**	**Structure/Foundation Instrumentation**		
0401	**G**	**99**	**Associated General Items**			
0401	**G**	**99**	**01**	**Tremie Concrete Test Pit**		
0401	**G**	**99**	**02**	**Maint. and Ops. of the Resident Engr's Office**		
0401	**G**	**99**	**03**	**Mowing**		
0401	**G**	**99**	**03**	**01**	**Mow Acess Road**	
0401	**G**	**99**	**03**	**02**	**Mow Hillside**	
0401	**G**	**99**	**03**	**03**	**Mow Entrace Road**	
0401	**S**	**99**	**04**	**Stone Protection**		
0401	**S**	**99**	**04**	**01**	**15,720-pound Riprap**	
0401	**S**	**99**	**04**	**02**	**10,799-pound Riprap**	
0401	**S**	**99**	**04**	**03**	**5,529-pound Riprap**	
0401	**S**	**99**	**04**	**04**	**3,200-pound Riprap**	
0401	**S**	**99**	**04**	**05**	**2,333-pound Riprap**	
0401	**S**	**99**	**04**	**06**	**1,638-pound Riprap**	
0401	**S**	**99**	**04**	**07**	**691-pound Riprap**	
0401	**S**	**99**	**04**	**08**	**Selected Fill Aggregate #6**	
0401	**S**	**99**	**04**	**09**	**Drainage Stone Aggregate #1**	
0401	**S**	**99**	**04**	**10**	**Leveling Aggregate #7**	
0401	**G**	**99**	**05**	**Hydrographic Surveys**		
0401	**G**	**99**	**05**	**01**	**Mobilization for Scour Monitoring Surveys**	
0401	**G**	**99**	**05**	**02**	**Scour Monitoring Surveys**	
0401	**G**	**99**	**06**	**Miscellaneous Lock Work**		***1**

3.3.4 Scheduled Project Completion

The schedule interval shall extend from notice-to-proceed to the contract completion date.

3.3.4.1 Project Start Date

The schedule shall start no earlier than the date that the Notice to Proceed (NTP) was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.4.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity call "End Project". The "End Project" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date or required duration, the Contractor shall identify this in his preliminary project schedule submitted with his bid documents. The Contractor shall also provide a written narrative report to the Government explaining why and how he has chosen to complete this project early. The "why" narrative shall address why he considers the Government's duration to be too long in addition to all other advantages he is using to finish early. In the "how" narrative, he should identify activities that have been accelerated (if any), those activities that are scheduled in parallel to support the Contractor's "early" completion and/or additional resources he will be utilizing to achieve the "early" completion. The completion date / duration will be a consideration in the review of the bids and the Contractor shall indicate his willingness to allow the Government to revise the actual contract duration to his proposed length.

3.3.5 Interim Completion dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.5.1 Start Phase

The Contractor shall include as the first activity for the project phase an activity called "Start Phase X" where "X" refers to the phase of the work. The "Start Phase X" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.5.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of the work. The "End Phase X"activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration

3.3.6 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided

from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity and ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes.

3.3.7 Out-of-Sequence Progress

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contracting Officer may direct that changes in schedule logic be made to correct any or all out-of-sequence work.

3.3.8 Extended Non-Work Periods

Designation of Holidays to account for non-work periods of over 5 days will not be allowed. Non-work periods of over 5 days shall be identified by addition of activities that represent the delays. Modifications to the logic of the project schedule shall be made to link those activities that may have been impacted by the delays to the newly added delay activities.

3.3.9 Calendars

Because it is anticipated that the Contractor will be working different activities for multiple shifts each day and longer than standard 5 day work weeks and with different weather dependencies, the Contractor shall identify different calendars in his schedule that will be in addition to the global calendar. These different calendars shall represent all the possible different working scenarios. All activities will then be assigned to the appropriate calendar for that activity thereby giving the Government an indication of the Contractor's intended work days and hours for each activity.

5 day work week - 1 shift work operation /w &/wo weather
5 day work week - 2 shift work operation /w &/wo weather
5 day work week - 3 shift work operation /w &/wo weather
6 day work week - 1 shift work operation /w &/wo weather
6 day work week - 2 shift work operation /w &/wo weather
6 day work week - 3 shift work operation /w &/wo weather
7 day work week - 1 shift work operation /w &/wo weather
7 day work week - 2 shift work operation /w &/wo weather
7 day work week - 3 shift work operation /w &/wo weather

3.3.10 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data

disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Pre award / Request for Proposal Submission

The Pre award Project Schedule, defining the Contractor's general approach for the entire Dam Construction Project and reflecting the means and methods of his bid shall be submitted with the Contractor's proposal on this project. This schedule shall be sufficiently detailed to show the Contractor has a complete understanding of the project's requirements; it shall be generated utilizing the guidance of this specification; it shall indicate planned work hours / shifts / days by the use of different calendars. A minimum of 50 activities should be included with this schedule. Because of the time constraints of the proposal evaluation period, it will be required that the Contractor submit paper printouts of all Primavera data used in generating the schedule such as calendar definitions, activity code structures, etc., Primavera backup disks along with the paper printout shall be required for this submission.

3.4.2 Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 120 calendar days plus incorporating the Contractor's general approach for the balance of the project as submitted with his proposal shall be indicated. Cost of activities expected to be completed before submission and approval of the whole schedule should be included. This preliminary schedule shall be submitted for approval within 10 calendar days after Notice to Proceed is acknowledged. The approved preliminary schedule shall be used for payment purposes for a period not to exceed 120 calendar days after Notice to Proceed.

3.4.3 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 45 calendar days after Notice to Proceed. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.4 Periodic (Monthly) Schedule Updates

Based on the result of progress meetings, specified in paragraph "PERIODIC PROGRESS MEETINGS," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer or to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative, is necessary for verifying the contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.5 Summary Project Schedule

A summary project schedule shall generally have the same schedule form as the final submitted Project Schedule. The summary project schedule will contain a minimal number of activities that represent the general approach

of work sequence. It will be a time-scaled logical sequence of work phases, classifications and areas. It will not be necessary to cost load the summary project schedule or show responsibility codes. The Contractor shall submit a summary project schedule immediately after approval of the complete schedule. A complete update shall be submitted every 6 months during the contract duration and immediately following approval of each major schedule change. Submit the following:

a) Three copies of the summary project schedule.

b) Three copies of the summary report.

c) Three copies of the summary Total Float Report.

d) Three copies of the Cash Flow Report indicating the cash flow for the current complete (not summary) project schedule based upon both the early and late start schedules.

3.4.6 Standard Activity Coding Dictionary

The Contractor shall submit, with the Initial Project Schedule, a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, "ELE", may be identified as "Electrical Subcontractor." Activity code values shall represent the same information throughout the duration of the contract. Once approved with the Initial Project Schedule submission, changes to the activity coding scheme must be approved by the Contracting Officer.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Three data disks containing the project schedule shall be provided. Data on the disks shall be in the format of a data backup and the Standard Data Exchange Format specified in the Resident Management system specification. backup data shall include the standard specified reports, graphics, sorts and filters or summary codes specified.

3.5.1.1 File Medium

Required data shall be submitted via electronic mail in zip format on a monthly basis and on a CD-ROM on an annual basis to include all schedules for the period. CD-ROM and zip files shall be compatible with latest versions of MS-DOS/Windows.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule and the MS-DOS version used to format the disk.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall describe the physical progress during the report period and plans for continuing work during the forthcoming report period. The Narrative Report shall also include: a description of activities along all major (float less than the reporting period) critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or planned. In addition, alternatives for possible schedule recovery to mitigate any potential delay and/or cost increases should be included for consideration by the owner.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number and then sorted according to Early Start

Date. For completed activities the Actual Start Date shall be used as the secondary sort.

3.5.4.3 Total Float Report

A list of all activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on quarterly schedule update submissions. The network diagram shall consist of two separate diagrams to include a full schedule and a summary schedule as defined below.

Summary Network. Since this project is of such a size that the entire network cannot be readily shown on a single sheet, a summary network diagram shall be provided. The summary network diagram shall consist of a minimum of 100 activities and a maximum of 200 activities, and shall be based on and supported by detailed diagrams.

The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity or event number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates. The network shall include monthly meetings between the Contractor and the

Government to review As Built Drawings per Section 00800, Paragraph 1.8.2 Maintenance of Working As-Built Drawings. Said meetings are tied to, and dependent on the Contractor submitting his pay estimates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

Miscellaneous

The network diagrams shall be submitted on a minimum of D or E paper and at least 2 of the copies shall be full color. The critical path shall be plotted generally along the center of the sheet with channels with increasing float placed towards the top or bottom. The summary network shall be time scaled using units appropriate to the size of paper. Non-working periods including weekends and holidays shall be necked down. Where slack exists, the activities shall be shown at the time when they are scheduled to be accomplished.

3.5.5.5 Cash Flow Projections and S-Curves

Using the cost assigned to each activity of the Detailed Project Schedule, the Contractor shall develop a cash flow analysis illustrated by a computer listing and graphic display, both of which shall depict the estimated cash drawdown in aggregate by month over the life of the project. The cash flow projection shall be updated each month to show actual cash drawdown and a forecast of the remaining payments to be made over the remaining life of the project. Earnings curves shall be plotted based on the cash flow projection, based on all activities being completed within the projected early finish time frame and based on all activities being completed within the late finish time frame. earnings curves shall have a percentage (0-100) scale in addition to a total cost scale.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. The Contractor shall come to the updating meetings with the data required by paragraph 3.6.3 prepared in advance for each meeting to provide, as of the end of the updating period, a complete and accurate report of current procurement and construction progress and a depiction of how the Contractor plans to continue the work of this project to meet all contract completion dates. All network changes and status data agreed to during each update shall be considered as acceptable by both parties unless written notice of any exceptions is given by an objecting party within ten (10) calendar days after receipt of the Contractor's update submission. For major network changes that cannot be agreed to during an update meeting, the Contractor shall submit, in writing, such revisions for the

owners approval prior to inserting such changes into the network. Submissions may be in the form of marked-up networks, fragments, or schedule abstracts, provided they are submitted with a letter of transmittal. The submission and approval procedures for this information shall follow the same timetable described for Change Orders, Delays, and time Extensions noted below.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting but must be submitted before an invoice is submitted to the Government.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations / Percent Complete, and Cost-to-Date shall be subject to the approval of the Contracting Officer. The following minimum set of items which the Contractor shall address, on an activity by activity basis, during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed activities.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to Notice to Proceed on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities are those delays beyond the Contractor's control, such as strikes and unusual weather. Also included are delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary, and when the schedule does not represent the actual prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, he shall furnish such justification, project schedule data and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the Notice to Proceed or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a) A list of affected activities, with their associated project schedule activity number;

b) A brief explanation of the causes of the change;

c) An analysis of the overall impact of the changes proposed; and

d) A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change

request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

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SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z359.1	(1999) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ASME INTERNATIONAL (ASME)

ASME B30.22	(2000) Articulating Boom Cranes
ASME B30.5	(2000) Mobile and Locomotive Cranes
ASME B30.8	(2000) Floating Cranes and Floating Derricks

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926.65	Hazardous Waste Operations and Emergency Response

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1998) Portable Fire Extinguishers
NFPA 241	(1996) Safeguarding Construction, Alteration and Demolition Operations
NFPA 70	(1990) National Electric Code

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910	Safety and Health Regulation in General Industry
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1910.146	Permit-required Confined Spaces

29 CFR 1910.94	Ventilation
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection

U. S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) Safety and Health Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G

Crane Critical Lift Plan; G

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Regulatory Citations and Violations

Crane Reports

Certificate of Compliance (Crane)

SD-07 Certificates

Confined Space Entry Permit

Submit one copy of each permit attached to each Daily Quality Control Report.

1.3 DEFINITIONS

a. Associate Safety Professional (ASP). An individual who is currently certified by the Board of Certified Safety Professionals.

b. Certified Construction Health & Safety Technician (CHST). An individual who is currently certified by the Board of Certified Safety Professionals.

c. Certified Industrial Hygienist (CIH). An individual who is currently certified by the American Board of Industrial Hygiene.

d. Certified Safety Professional (CSP). An individual who is currently certified by the Board of Certified Safety Professionals.

e. Certified Safety Trained Supervisor (STS). An individual who is currently certified by the Board of Certified Safety Professionals.

f. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.

g. Low-slope roof. A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

h. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

i. Multi-Employer Work Site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

j. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

k. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;

(2) Days away from work;

(3) Restricted work;

(4) Transfer to another job;

(5) Medical treatment beyond first aid;

(6) Loss of consciousness; or

(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

l. Site Safety and Health Officer (SSHO). The superintendent or other qualified or competent person who is responsible for the on-site safety and health required for the project. The Contractor quality control (QC) person cannot be the SSHO, even though the QC has safety inspection responsibilities as part of the QC duties.

m. Steep roof. A roof having a slope greater than 4 in 12 (vertical to horizontal).

n. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

o. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.4 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and the following federal, state, and local, host nation laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.5 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A

copy of the test shall be made available to the Contracting Officer upon request.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The SSHO shall meet the following requirements:

***3**

Level 4:

A minimum of 10 years safety work of a progressive nature with at least 5 years of experience on similar projects.
30-hour OSHA construction safety class or equivalent within the last 5 years.
An average of at least 24 hours of formal safety training each year for the past 5 years with training for competent person status for at least the following areas of competency:
Excavation; Scaffolding; Fall protection; Confined space *3

1.6.1.2 Certified Safety Professional (CSP) and/or Certified Industrial Hygienist (CIH)

Provide a Certified Safety Professional (CSP) at the work site to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The CSP shall be the safety and occupational health "competent person" as defined by USACE EM 385-1-1.

1.6.1.3 Competent Person for Confined Space Entry

Provide a competent person meeting the requirements of EM 385-1-1 who is assigned in writing by the Designated Authority to assess confined spaces and who possesses demonstrated knowledge, skill and ability to:

a. Identify the structure, location, and designation of confined and permit-required confined spaces where work is done;

b. Calibrate and use testing equipment including but not limited to, oxygen indicators, combustible gas indicators, carbon monoxide indicators, and carbon dioxide indicators, and to interpret accurately the test results of that equipment;

c. Perform all required tests and inspections specified in 29 CFR 1910.146 and 29 CFR 1915 Subpart B;

d. Assess hazardous conditions including atmospheric hazards in confined space and adjacent spaces and specify the necessary protection and precautions to be taken;

e. Determine ventilation requirements for confined space entries and

operations;

f. Assess hazards associated with hot work in confined and adjacent space and determine fire watch requirements; and,

g. Maintain records required.

1.6.1.4 Competent Person for the Health Hazard Control and Respiratory Protection Program

Provide a competent person meeting the requirements of EM 385-1-1 who is:

a. Capable by education, specialized training and/or experience of anticipating, recognizing, and evaluating employee exposure to hazardous chemical, physical and biological agents in accordance with USACE EM 385-1-1, Section 6.

b. Capable of specifying necessary controls and protective actions to ensure worker health.

1.6.1.5 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Appendix G.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.

b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.

c. Maintain applicable safety reference material on the job site.

d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.

e. Implement and enforce accepted APPS and AHAs.

f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.

g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.2.2 Certified Safety Professional (CSP)

a. Perform safety surveillance, inspections, and safety enforcement for the project.

b. Perform as the safety as defined by USACE EM 385-1-1.

c. Be on site at least weekly whenever work or testing is being performed.

d. Conduct and document safety inspections.

e. Shall have no other duties other than safety inspections, and enforcement on this contract.

If the CSP is appointed as the SSHO all duties of that position shall also be preformed.

1.6.3 Meetings

1.6.3.1 Preconstruction Conference

a. The Contractor will be informed, in writing, of the date of the preconstruction conference. The purpose of the preconstruction conference is for the Contractor and the Contracting Officer's representatives to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project's APP before the initiation of work.

b. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the AHAs and special plans, program and procedures associated with it).

c. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated activity hazard analyses (AHAs) that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.

d. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor

shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

1.6.3.2 Weekly Safety Meetings

Conduct weekly safety meetings at the project site for all employees. The Contracting Officer will be informed of the meeting in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.6.3.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

1.7 TRAINING

1.7.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.7.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

1.7.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

1.8 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan". Where a paragraph or subparagraph element is not applicable to the work to be performed indicate "Not Applicable" next to the heading. Specific requirements for some of the APP elements are described below at paragraph 1.8.1. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the

subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. The Contracting Officer reviews and comments on the Contractor's submitted APP and accepts it when it meets the requirements of the contract provisions.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any unforeseen hazard become evident during the performance of work, the project superintendent shall inform the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.8.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs. The duties of each position shall be specified.

b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: excavation; scaffolding; fall protection; confined space; personal protective equipment and clothing to include selection, use and maintenance.

c. Confined Space Entry Plan. Develop a confined space entry plan in accordance with USACE EM 385-1-1, applicable OSHA standards 29 CFR 1910, 29 CFR 1915, and 29 CFR 1926, and any other federal, state and local regulatory requirements identified in this contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

d. Health Hazard Control Program. The Contractor shall designate a competent and qualified person to establish and oversee a Health Hazard Control Program in accordance with USACE EM 385-1-1, Section 6. The program shall ensure that employees, on-site Government representatives, and others, are not adversely exposed to chemical, physical and biological agents and that necessary controls and protective actions are instituted to ensure health.

e. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of crane hoist's maximum load limit; lifts involving more than one crane or hoist; lifts of personnel; and technically difficult lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks in accordance with USACE EM 385-1-1, paragraph 16.c.18. and submit 15 calendar days prior to on-site work.

f. Alcohol and Drug Abuse Plan

(1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."

(2) Description of the on-site prevention program

g. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised [every six months] for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project.

h. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220, "Demolition Cell "A" Removal and Fixed Weir Modifications.

i. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 15calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. An AHA will be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measures (to include personal protective equipment) to eliminate or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations. An activity requiring an AHA shall not proceed until the AHA has been accepted by the Contracting Officer's representative and a meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activity, including on-site Government representatives. The Contractor shall document meeting attendance at the preparatory, initial, and follow-up phases of quality control inspection. The AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Activity hazard analyses shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, site safety and health officer and competent persons used to develop the AHAs, including updates, shall sign and date the AHAs before they are implemented.

1.10 DISPLAY OF SAFETY INFORMATION

Within 10 calendar days after commencement of work, erect a safety bulletin board at the job site. The following information shall be displayed on the safety bulletin board in clear view of the on-site construction personnel,

maintained current, and protected against the elements and unauthorized removal:

a. Map denoting the route to the nearest emergency care facility.

b. Emergency phone numbers.

c. Copy of the most up-to-date APP.

d. AHA(s).

e. OSHA 300A Form.

f. Confined space entry permit.

g. OSHA Safety and Health Protection-On-The-Job Poster.

1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.12 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.13 REPORTS

1.13.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 3 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide the report to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a blank copy of the accident report form.

1.13.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident involving a overturned crane, collapsed boom, or any other major damage to

the crane or adjacent property. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on site and Government investigation is conducted.

1.13.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.13.4 Regulatory Citations and Violations

Contact the Contracting Officer immediately of any OSHA or other regulatory agency inspection or visit, and provide the Contracting Officer with a copy of each citation, report, and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.13.5 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

PART 2 PRODUCTS

2.1 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, will be left in place and so identified for continued customer use.

2.2 CONFINED SPACE SIGNAGE

The Contractor shall provide permanent signs integral to or securely attached to access covers for new permit-required confined spaces. Signs wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER -" in bold letters a minimum of 25 mm(one inch) in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m(5 feet).

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Use

Each hazardous material must receive approval prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.3 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 FALL HAZARD PROTECTION AND PREVENTION

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and escape procedures.

3.3.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

3.3.2 Fall Protection Equipment

The Contractor shall enforce use of the fall protection equipment designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is on a surface 1.8 m(6 feet) or more above lower levels. Fall protection systems such as guardrails, personnel fall arrest system, safety nets, etc., are required when working within 1.8m (6 feet) of any leading edge. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.I. and 05.J. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems may be required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. Fall protection must comply with 29 CFR 1926.500, Subpart M and USACE EM 385-1-1.

3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance shall always be taken into consideration when attaching a person to a fall arrest system.

3.3.3 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed

shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

(1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. A safety monitoring system is not adequate fall protection and is not authorized.

(2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.500 and USACE EM 385-1-1.

b. Steep Roofs: Work on steep roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.3.4 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work. Safety nets shall be tested immediately after installation with a drop test of 181.4 kg (400 pounds) and every six months thereafter.

3.3.5 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person in accordance with ANSI Z359.1.

3.3.6 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person as part of a complete fall arrest system (29 CFR 1926.500).

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m (20 feet) in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m (20 feet) in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward.

Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.5.2 Weight Handling Equipment

a. Cranes must be equipped with:

(1) Load indicating devices (LIDs) and a boom angle or radius indicator,

(2) or load moment indicating devices (LMIs).

(3) Anti-two block prevention devices.

(4) Boom hoist hydraulic relief valve, disconnect, or shutoff (stops hoist when boom reaches a predetermined high angle).

(5) Boom length indicator (for telescoping booms).

(6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.

(7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.

b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.

c. The Contractor shall comply with the crane manufacturer's

specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

d. The Contractor shall comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes and ASME B30.8 for floating cranes and floating derricks.

e. The presence of Government personnel does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

g. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

h. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

i. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

j. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or crane cabs. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

k. All employees shall be kept clear of loads about to be lifted and of suspended loads.

l. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

m. Only Contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.500, USACE EM 385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.

n. The Contractor shall use cribbing when performing lifts on outriggers.

o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

p. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.

r. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

s. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

t. The Contractor shall certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

3.5.3 Equipment and Mechanized Equipment

a. Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Such additional safety precautions or requirements shall be incorporated into the AHAs.

c. Equipment and mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operation by a competent person prior to being placed into use.

d. Daily checks or tests shall be conducted and documented on equipment and mechanized equipment by designated competent persons.

3.6 EXCAVATIONS

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect, and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

3.6.1 Utility Locations

Prior to digging, the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.

3.6.2 Utility Location Verification

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within .061 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

3.6.3 Utilities with Concrete Slabs

Utilities located within concrete slabs or pier decks, bridges, and the like are extremely difficult to identify. The location must be coordinated with station utility departments in addition to a private locating service. Outages on system utilities shall be used in circumstances where concrete chipping, saw cutting, or core drilling is required and utilities are unable to be completely identified.

3.6.4 Shoring Systems

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

3.6.5 Trenching Machinery

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for

electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor's AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

3.8 WORK IN CONFINED SPACES

The Contractor shall comply with the requirements in Section 06.I of USACE EM 385-1-1 and OSHA 29 CFR 1910.146. Any potential for a hazard in the confined space requires a permit system to be used.

a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of USACE EM 385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.

c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m (5 feet) in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of USACE EM 385-1-1.

d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

e. Include training information for employees who will be involved as

entrants and attendants for the work. Conform to Section 06.I.06 of USACE EM 385-1-1.

f. Daily Entry Permit. Post the permit in a conspicuous place close to the confined space entrance.

3.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.10 HOUSEKEEPING

3.10.1 Clean-Up

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.10.2 Dust control

In addition to the dust control measures required elsewhere in the contract documents, dry cutting of brick or masonry shall be prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to this prohibition on a case-by-case basis. Wet cutting must address control of water run off.

-- End of Section --

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DIVISION 02 - SITE WORK

SECTION 02200

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SECTION 02200

Amendment #0003

EARTHWORK, FILL, AND STONE PROTECTION

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations in connection with the construction of landside and riverside grading and fills, foundation preparation, dam foundation materials, stone protection and bedding as shown on the drawings and as specified herein. See Section 02482 Dredging for dredging excavation operations and Section 02315 for earthwork for the wicket gate display pit.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section 02482 DREDGING
Section 02315 EXCAVATION, FILLING AND BACKFILLING FOR BUILDINGS

1.3 REFERENCES

The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto or as required.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 33	(2002) Standard Specification for Concrete Aggregates
ASTM C 127	(2001) Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C 136	(2001) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM E 11	(2001) Standard Specification for Wire-Cloth and Sieves for Testing Purposes

CORPS OF ENGINEERS (COE)

COE CRD-C 144	(1992) Resistance of Rock to Freezing and Thawing

1.4 NOT USED

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the approving authority who will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Placement Plan; G AR

The Contractor shall submit no later than 60 days prior to placement of material, a placement plan that indicates how the material will be delivered to the site and the plan for placing all materials.

Earthwork Plan; G AR

The Contractor shall submit no later than 60 days prior to the start earthwork of operations an earthwork plan that indicates the procedure for excavating, filling, placing foundation materials for the dam and the scour protection system. It shall address sequencing of cut and fill as it pertains to the cut off sheet pile walls, walers to protect the reverse loading of fill or tremie concrete placement. Plan shall also include the contractors proposed borrow material (source of river alluvium) site, and the disposal of excess and unsatisfactory material. As part of the disposal, the plan shall indicate layout of disposal area, heights, slopes, compaction methods, and the means to transport material from barge to trucks and haul roads to the disposal areas. Plan shall also include plan for maintenance dredging of work site.

SD-02 Shop Drawings

Sources of Materials; G R

The sources of materials from which the Contractor proposes to obtain the material shall be submitted to the Contracting Officer at least 210 days in advance of the time when the material will be required in the work.

SD-06 Test Reports

Gradation Testing of Materials; G R

Gradation Testing of Materials reports showing the results of testing the proposed materials. The Government reserves the right to sample and test all materials proposed for use.

SD-07 Certificates

Waybills and Delivery Tickets

Certified waybills and delivery tickets for materials.

1.6 TERMINOLOGY

1.6.1 Foundation Stone

In this specification Section, the term "Foundation Stone" will include Select Fill, Drainage Stone and Leveling Course stone material. Also in this section the term "Scour Stone" shall include the Riprap and Bedding Stone for the scour protection system and the Graded Stone B for the river dikes and the Graded Stone C for the bank paving for the river dikes.

1.6.2 Suitable Material

Suitable material for disposal back into the river shall meet the gradation requirements as specified in Paragraph 2.5 - River Alluvium Fill. Suitable material to be placed in the river shall be placed as specified in Paragraph 3.3.1 - Placement of River Alluvium, Select Backfill, Drainage Stone.PART 2 PRODUCTS

2.1 GENERAL

All stone for stone protection, & bedding shall be durable stone as approved by the Contracting Officer. The sources from which the Contractor proposes to obtain the material shall be selected well in advance of the time when the material will be required in the work. Unless otherwise specified, all test samples shall be obtained by the Contractor and witnessed by a representative of the Contracting Officer, and delivered, at the Contractor's expense to the Materials Testing Center, Engineer Research and Development Center (ERDC), 3909 Halls Ferry Road, Vicksburg, MS, 39180-6199, no later than 180 days in advance of the time when the placing of the stone protection is expected to begin. Fill materials, graded stone/bedding, and stone protection shall meet all gradation and quality requirements provided in this section.

2.2 MATERIALS

2.2.1 Foundation Stone (Select Fill, Drainage Stone, and Leveling Course)

Select Fill material shall consist of hard, durable, crushed gravel, or crushed stone material meeting the gradation requirements of ASTM C 33, coarse aggregate size 6 (3/4 to 3/8 inch). Drainage Stone and Leveling Course shall consist of hard, durable, gravel, crushed gravel, or crushed stone material meeting the gradation requirements of ASTM C 33, coarse aggregate size 1 (3-1/2 to 1-1/2 inch)for Drainage Stone and coarse aggregate size 7 (1/2 inch to No. 4) for Leveling Course. ASTM C 33 shall be used for gradation requirements. Quality requirements shall be in accordance with Paragraph 2.3 - QUALITY.

2.2.1 Scour Stone (Stone Protection) Riprap, and Bedding Stone

Scour Stone shall be durable limestone and of a suitable quality to ensure permanence in the structure and climate in which it is to be used. It shall be free from cracks, seams, and other defects that would tend to increase unduly its deterioration from natural causes. The inclusion of quantities of dirt, sand, clay, and rock fines will not be permitted.

Either boulders or quarried rock may be used for Scour Stone if conforming to the applicable requirements of paragraph 2.3 as to quality. Neither the breadth nor the thickness of any piece of stone shall be less than one-third of its length. The material shall be reasonably well graded from the minimum size stone permitted to the maximum size stone permitted, shown in the tables below.

2.2.2 Gradation

SCOUR STONE GRADATION TABLES:

TABLE 1
(FOR RIPRAP 15,720#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	15720 - 6288
50	4653 - 3144
15	2329 - 983

TABLE 2
(FOR RIPRAP 10,799#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	10799 - 4320
50	3197 - 2160
15	1600 - 675

TABLE 3
(FOR RIPRAP 5,529#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	5529 - 2212
50	1637 - 1106
15	819 - 346

TABLE 4
(FOR RIPRAP 3,200#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	3200 - 1280
50	947 - 640
15	474 - 200

TABLE 5
(FOR RIPRAP 2,333#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	2333 - 933
50	691 - 467

TABLE 5
(FOR RIPRAP 2,333#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
15	346 - 146

TABLE 6
(FOR RIPRAP 1,638#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	1638 - 655
50	485 - 328
15	243 - 102

TABLE 7
(FOR RIPRAP 691#)

PERCENT LIGHTER BY WEIGHT (SSD)	LIMITS OF STONE WEIGHT, LB.
100	691 - 276
50	205 - 138
15	102 - 43

TABLE 8
BEDDING STONE

STONE WEIGHT (Pounds)	CUMMULATIVE PERCENT (Finer by Weight)
400	100
250	70 - 100
100	50 - 80
30	32 - 58
5	15 - 34
1	2 - 20
< 1/2-inch	0 - 5

2.3 QUALITY

One hundred and eighty (180) days will be required for the Materials Testing Center at Engineer Research and Development Center (ERDC) to evaluate stone sources. The quality of Foundation Stone and Scour Stone material shall meet or exceed the following standards:

Test	Test Value or Finding
Specific Gravity (ASTM C 127)	> 2.5
Freeze-Thaw (COE CRD-C 144)	< 5.0 %
Wet-Dry (ASTM C 127)	< 1.0 %
Unit Weight (ASTM C 127)	> 155 lb/ft3

These tests are required for all Foundation and Scour Stone material in the contract regardless of its source. Sources selected for testing shall be

ledge sampled by the Contractor under the supervision of the Contracting Officer. The Contractor shall provide no less than 2,500 pounds of 3,200# and 2,333# and 1,638#, and no less than 1,000 pounds of 691#, and bedding stone to the Materials Testing Center, Engineer Research and Development Center (ERDC), 3909 Halls Ferry Road, Vicksburg, MS, 39180-6199, no later than 180 days in advance of the time when the placing of the stone protection is expected to begin. For larger size stone provide testing samples shall be determined from shot or muck pile. Acceptance testing will require 180 days to evaluate the material. The initial acceptance testing will be performed at ERDC utilizing funds set up in Bid Item "MATERIAL TESTING CORPS QA". Additional acceptance tests will be conducted at the expense of the Contractor. Supply and shipment of the samples shall be at the expense of the Contractor. Testing will be performed by the government in accordance with the applicable COE CRD-C or ASTM test methods. The material from the proposed source shall meet the quality requirements of this paragraph. Previous test data and other information on stone quality are included in the Concrete Materials Design Memorandum and are available for review in the District Office. A total of four(4) sets of tests shall be performed for each gradation over the life of the contract. Quality assurance testing of stone material by the Government does not relieve the contractor of quality control requirements.

2.4 GRADATION TESTING

The Foundation Stone and Scour Stone material shall be tested at the quarry prior to use of materials. The tests shall be performed once for each stone size prior to placement, and as requested by the Contracting Officer to guarantee continuing uniformity of the material. A total of four (4) sets of Tests shall be performed periodically during the life of the contract. Sieve analyses of the Foundation Stone materials shall be made in conformance with ASTM C 117 and ASTM C 136. Sieves shall conform to ASTM E 11. The gradation for all Scour Stone materials shall be in accordance with the "Louisville District Method" attached at the end of this specification.

2.5 RIVER ALLUVIUM FILL

River alluvium fill material shall generally consist of hard, durable, cohesionless, granular materials. The granular materials shall consist of sand or sand and gravel, shall be free of concentrations of clay/silt lenses and balls, and debris, and shall meet the following gradation requirements:

Sieve Designations U.S. Standard Square Mesh	Percentage by Weight Passing
4-inch	100
No. 4	30 - 100
No. 200	0 - 10

The quality of the river alluvium fill shall be subject to approval by the Contracting Officer or his authorized representative. This fill material will require procurement from an off-site source or dredging of material from the riverbed. No dredging for fill will be permitted within 500-feet

of the dam construction site, in the navigation channel, between river miles 961.0 and 963.5, 965.5 and 971, or between miles 947 and 958 (except any existing commercial sand and gravel dredging permitted between 947 and 958). The Contractor shall at his expense, perform sieve analyses and gradation tests to demonstrate that the material is in conformance with these specifications. Tests, except where modified, shall be made as indicated below in the presence of the Contracting Officer, unless otherwise authorized. The Contractor shall furnish the Contracting Officer reports of all required analyses and tests in duplicate. The required gradation of river alluvium fill material shall be checked by the Contractor by performing a sieve analysis prior to delivery of the material to the site of placement. The sieve analysis shall be made in accordance with ASTM C 136. One sieve analysis will be required for every 1,000 cubic yards of material placed.

2.6 LANDSIDE FILL

Fill material for landside work shall be satisfactory material as specified in Section 02315.

PART 3 EXECUTION

3.1 GENERAL

Select Fill, Drainage Stone and Levelling Course for the structure, and Riprap and Bedding Stone for stone protection shall be placed to the lines and grades shown on the drawings. Excavation and fill shall conform to the lines and grades required for the dam structures and scour protection, as indicated on the drawings.

3.2 EXCAVATION/BEDDING PREPARATION (DREDGING)

Areas which require excavation or fill for foundation preparation or stone protection bedding placement shall be dredged in accordance with Section 02482 DREDGING. Stone protection shall be placed in conjunction with dredging operations where practical.

3.3 PLACEMENT

3.3.1 Placement of River Alluvium, Select Backfill, Drainage Stone

Material shall be spread uniformly, in a satisfactory manner, to the slope lines and grade indicated on the drawings or as directed. Placing of material by methods that will tend to segregate the particle sizes will not be permitted. Material shall be finished to present a reasonably even surface free from mounds or wind rows. Underwater placement shall be by clamshell only. The material shall be lowered to within 5-feet of the riverbed before the material is released. Under no circumstances shall the material be allowed to freefall more than 5-feet to the riverbed.

3.3.2 Placement of Riprap and Bedding Stone for Stone Protection

Filter stone, leveling course, stone protection and bedding shall be placed within the limits shown on the drawings or otherwise required by the

Contracting Officer. Placement of stone protection shall commence within 48 hours after the bedding layer has been approved by the Contracting Officer. Stones shall be placed on the bedding in such a manner as to produce a reasonably well-graded mass of rock with the minimum practicable percentage of voids, and shall be constructed within the specified tolerances as shown below, to the lines and grades shown on the drawings. Stone protection shall be placed to its full course thickness in one operation and in such a manner as to avoid displacing the bedding material. Stone protection placed underwater shall be verified for thickness and location by a hydrographic survey as specified in Section 01351. The larger stones shall be well distributed and the entire mass of stones in their final position shall be roughly graded to conform to the gradation specified in Section 2 above. The finished stone protection shall be free from objectionable pockets of small stones and clusters of larger stones. Placing stone protection in layers will not be permitted. Placing stone protection by dumping into chutes or by similar methods likely to cause segregation of the various sizes will not be permitted. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during final placing, or by other methods of placement which will produce the specified results. Rearranging of individual stones by mechanical equipment may be required to the extent necessary to obtain a reasonably well graded distribution of stone sizes as specified above. Underwater placement shall be by clamshell only. The material shall be lowered to within 5-feet of the riverbed before the material is released. Under no circumstances shall the material be allowed to freefall more than 5-feet to the riverbed.

3.3.3 Placement of Landside Fills

Placement of landside fill shall be as specified in Section 02315.

3.3.4 Placement of Disposable Material

Excess suitable material may be placed in the approved areas of the river or into landside disposal areas. All unsuitable material shall be placed in landside disposal areas. Landside placement shall be in accordance with Section 02315 and river placement in accordance with Paragraph 3.3.1 - Placement of River Alluvium, Select Backfill, Drainage Stone.

3.3.5 Tolerances for Placement of Materials

Select fill, filter stone, levelling course, and stone protection and bedding shall have the minimum (nominal) layer thickness shown on the drawings. The top surfaces of the materials shall be permitted to deviate from the lines shown on the drawings within the following limits.

MATERIAL PLACEMENT TOLERANCES

Surface Type	Plus	Minus
Riprap 3,200 lb. to 15,720 lb.	24"	-12"
Riprap 205 lb to 1,638 lb.	12"	-12"
Bedding Stone for Riprap	12"	-12"

MATERIAL PLACEMENT TOLERANCES

Surface Type	Plus	Minus	
Earthwork Grading	6"	- 6"	
Select Fill	6"	- 6"	
Drainage Stone	6"	- 6"	
Leveling Course (see Section 02722)	0"	- 6"	
***3 Drainage Stone beneath Paving Blocks**	**0"**	**- 6"**	***3**

Either extreme of such tolerance shall not be continuous over an area greater than 300 square feet.

3.4 CONTRACTOR QUALITY CONTROL

The General Contractor shall provide an experienced project management and quality control staff, secure the services of independent testing agencies as required, and shall establish and maintain a quality control system for all construction in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

LOUISVILLE DISTRICT TEST METHOD

STONE GRADATION TESTS

GENERAL: The following test methods shall be used to determine the gradation of all stone protection specified in the contract.

An initial gradation test for approval shall be performed from a stockpile at the stone source by the Contractor at the direction of the Contracting Officer.

The method consists of selecting a random load prior to the leaving the source. Care should be taken to prevent contamination of the sample or loss of material by dumping the sample on a tarp or plywood. These size/quantity requirements are shown below. This sample should reflect all production, processing and loading methods in effect at the time to produce the material for the final specified product sample size.

STONE SIZE	SAMPLE SIZE
205 lb., 691 lb. Graded Stone C / Bedding Stone	15 Ton
1638 lb., 2333 lb., 3200 lb.	40 Ton
5529 lb., 10799 lb., 15720 lb.	160 Ton

The materials shall be tested as follows:

a) Determine the weight of the entire sample.
b) Pass the sample through the appropriate screen sizes.
c) Weigh portions of the sample retained by each screen.
d) Plot the gradation curve.

The results of this test will be recorded and calculated in the form presented below.

STONE GRADATION TEST

Material_____ Total Weight of Sample_____

Location (source)_____

Screen Size % Passing Specification Req.

Engineering Form 4055 and 4056, or similar, will be used to plot resultant curves.

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SECTION 02464

METAL SHEET PILING

05/92

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SECTION 02464

Amendment #0003
METAL SHEET PILING
05/92

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 6/A 6M	(2001b) Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
ASTM A 328/A 328M	(2000) Standard Specification for Steel Sheet Piling
ASTM A 572/A 572M	(2001) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the approving authority who will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Sheet Piling Load Sequence; G AER

The Contractor shall submit a sheet piling load sequence for each sheet piling wall shown on the drawings. The load sequence shall depict anticipated loads on each wall from the various construction activities that the Contractor proposes to conduct in the vicinity of the wall. The load sequence shall also indicate potential loading from siltation or scour and from current and any measures the Contractor proposes to minimize these loads. Based on the load sequence, the Contractor's submittal shall clearly indicate if and when wales are required to support the sheet piling arcs, as required herein, during the Contractor's activities.

Metal Sheet Piling; G AR

Master Piles; G AER

Detail drawings for sheet piling including fabricated master pile and corner sections and skirts shall show complete piling dimensions and details, driving sequence and location of installed piling. Detail drawings shall include details and dimensions of templates and other temporary guide structures for installing piling. Detail drawings shall provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

Isolation Joints; G AR

Detail drawings for sheet piling components of the isolation joints, including bent sheets and fabricated connection assemblies shall show complete piling dimensions and details, driving sequence and location of installed piling. Detail drawings shall include details and dimensions of templates and other temporary guide structures for installing piling. Detail drawings shall provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

Temporary Sheet Pile Plan; G AER

The Contractor shall submit detailed drawings for all temporary sheet piling used to retain fill or to shore excavations including the sheeting required at the end of each construction phase to retain fill and/or protect completed works from scour. Drawings shall show complete piling dimensions and details, driving sequence, location of installed piling and interfaces with completed and/or future work. Detail drawings shall include details and dimensions of templates and other temporary guide structures for installing piling.

Pile Driving Equipment; G AER

Complete descriptions of sheet piling, sheet piling associated with the various isolation joints and master piling driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

SD-05 Design Data

Temporary Sheet Piling Design; G AER

The Contractor shall submit detailed design calculations for all temporary sheet piling that he intends to use to retain fill or excavations and as required at the end of each construction phase to protect the existing work. Design calculations to determine required depth of penetration and required sheeting properties shall be based on recognized methods such as those set forth in "Steel Sheet Piling Design Manual" excluding the Danish Rules Method published by U.S. Steel Corp.; the "Pile Buck Inc.TM Steel Sheet Pile Design Manual"; or the Free Earth or Fixed Earth methods in the Virginia Tech Department of Civil Engineering paper "An Engineering Manual for Sheet Pile Walls" dated November 1987 or Chapter 4 of the U.S. Army Corps of Engineers Engineering Manual EM 1110-2-2504 "Design of Sheet Pile Walls", excluding the Danish Rules Method. The calculations shall clearly

indicate computed safety factors and piling stresses. The design calculations shall give due consideration to the effects of stream velocity and the potential effects of sedimentation and scour. Deviations from the construction plan will require resubmittal of the temporary sheeting design.

WEAP ANALYSES; G AER

Analyses for the sheet piling, master piles, 24-inch isolation joint connector pipe for the isolation joints to demonstrate that the equipment proposed will drive the piles required.

SD-06 Test Reports

Materials Tests

Certified materials tests reports showing that master piling, fabricated isolation joint connection assemblies and appurtenant metal materials meet the specified requirements shall be submitted for each shipment and identified with specific lots prior to installing materials. Material test reports shall meet the requirements of ASTM A 6/A 6M.

Driving

Records of the sheet piling, isolation joint connection assemblies and cut-offs and master pile driving operations shall be submitted after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations of installed piling. The format for driving records shall be as directed.

SD-08 Manufacturer's Instructions

Sheet Piling Sealants; G ER

The Contractor shall submit detailed product information for the sheet piling interlock sealant, including his proposed application methods and sequence.

1.3 DELIVERY, STORAGE AND HANDLING

Materials delivered to the site for fabricated corners, connection assemblies for the isolation joints and master piles shall be new and undamaged and shall be accompanied by certified test reports. The manufacturer's logo and mill identification mark shall be provided on the sheet piling as required by the referenced specifications. Sheet piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of sheet piling, fabricated corners and master piles shall also facilitate required inspection activities. Sheet piling over 80 feet in length shall be handled using a minimum of two pickup points.

PART 2 PRODUCTS

2.1 GOVERNMENT FURNISHED METAL SHEET PILING

Government furnished metal sheet piling is previously used, hot-rolled steel sections originally manufactured to the requirements of ASTM A 328/A 328M, Type PS-27.5. The Government furnished sheet piling will require cleaning by the Contractor prior to its use. The Contractor shall utilize Government furnished PS-27.5 steel sheet piling at all locations where this type of sheet is specified on the drawings. Sheet piling including special fabricated sections shall be sections cut to the dimensions shown. All cutoff portions of sheet piling less than 10 feet long shall become the property of the Contractor. Cutoff pieces longer than 10 feet shall remain the property of the Government and shall be re-stacked in the same manner as the sheet piling which is not used. Metalwork fabrication for sheet piling shall be as specified and in Section 05120 STRUCTURAL STEEL.

2.2 METALS

2.2.1 Appurtenant Metal Material

Metal plates, plates required for walers and plates for fabricated corners shall conform to ASTM A 572/A 572M, Grade 50. Bolts, nuts, rivets and other appurtenant fabrication and installation materials shall conform to manufacturer's standards and to the requirements specified in the respective sheet piling standards and in Section 05120 STRUCTURAL STEEL. All welding shall conform to the requirements of Section 05090 WELDING, STRUCTURAL, as applicable.

2.2.2 Master Piles and Wales

Beams for master piles and wales shall conform to ASTM A 572/A 572M, Grade 50. The master piles shall be spliced, using full penetration welds, to achieve the lengths required to allow the master pile to be driven from above the water. Welded master pile splices shall conform to the requirements in Section 05090 WELDING, STRUCTURAL and shall be so located such that a maximum one splice, located near the bottom of the pile, after driving and cutting of the pile at the proper elevation has been completed.

2.3 TESTS, INSPECTIONS, AND VERIFICATIONS

Requirements for material tests, workmanship and other measures for quality assurance shall be as specified and in Section 05120 STRUCTURAL STEEL and Section 05090 WELDING, STRUCTURAL.

2.3.1 Materials Tests

Materials tests shall conform to the following requirements. Beams for master piles, walers and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property requirements prior to delivery to the site. Testing of master piles, walers, fabricated corner plates and isolation joint connection assemblies for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of master piles, walers and plates for fabricated corners and connection assemblies

shall meet the requirements of ASTM A 6/A 6M.

2.4 SHEET PILING SEALANTS

The sheet piling interlocks on the upstream side of the dam shall be sealed, prior to driving, with ADEKA P201 paste or approved equal. Sealants and application methods shall be submitted for review and approval by the Contracting Officer.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Pile Driving Equipment

Pile driving equipment shall conform to the following requirements.

3.1.1.1 Driving Hammers

Hammers shall be steam, air, or diesel drop, single-acting, double-acting, differential-acting, hydraulic, or vibratory type. All hammers used to drive the various sheet piling and isolation joint piling shall be as recommended by the hammer manufacturer for the piling weights and subsurface materials encountered. Sheet piling shall be driven with a hammer that can drive piles under water. The driving energy of the hammers for sheet piling and the connector piles shall be between 12,000 and 16,000 foot-pounds. The minimum driving energy of the hammer used to drive the master piles and the 24-inch diameter connector pipes for the isolation joints shall be 150,000 foot-pounds. The driving energy of the hammer used to drive the 96-inch pipe piles shall be as specified in Section 02462 STEEL PIPE PILES. The Contractor shall demonstrate that his proposed equipment to drive the various piles required by submitting WEAP ANALYSES for the sheet piling, master piles, 24-inch isolation joint connector pipe for the isolation joints.

3.1.2 Sealing, Placing and Driving

3.1.2.1 Sealing

The interlocks of all sheet piling on the upstream side of all dam and boat abutment structures, including all sheeting on the sides of the dam and upstream of the isolation joints, shall be sealed. The sealant shall be applied, prior to threading the sheets for driving, using an air-operated caulking gun or by other methods in accordance with the manufacturer's recommendations.

3.1.2.2 Placing

Any excavation required within the area where sheet pilings and isolation joint elements are to be installed shall be completed prior to placing sheet pilings. Pilings shall be picked up and completely threaded to demonstrate that they slide freely in interlock. Pilings shall be carefully located as shown. Temporary wales, templates, master pilings, current deflectors or guide structures shall be provided to insure that the

pilings are placed and driven to the correct alignment. Templates and guide frames shall be used in placing each pile. Pilings properly placed and driven shall be interlocked throughout their length with adjacent pilings to form a continuous diaphragm throughout the length or run of piling wall.

3.1.2.3 Driving
***1**

Pilings shall be driven with the proper size and type of hammer and by approved methods so as not to subject the pilings to damage and to ensure proper interlocking throughout their lengths. Driving hammers shall be maintained in proper alignment during driving operations by use of leads or guides attached to the hammer. Caution shall be taken in the sustained use of vibratory hammers when a hard driving condition is encountered to avoid interlock-melt or damages. The use of vibratory hammers should be discontinued and impact hammers employed when the penetration rate due to vibratory loading is one foot or less per minute. A protecting cap shall be employed in driving when using impact hammers to prevent damage to the tops of pilings. Pilings damaged during driving or driven out of ***3** interlock shall be removed and replaced. The Contractor should be ***3** aware that there may be significant soil set-up if driving of the piles is interrupted for any period of time. Government furnished pilings damaged during driving shall be stored at the site as directed. Pilings shall be driven without the aid of a water jet. Adequate precautions shall be taken to insure that pilings are driven plumb. Sheet piling and master piles shall be placed plumb and true to line, with out-of-plumbness not to exceed 1/8-inch in four feet of length. If at any time the forward or leading edge of the piling wall is found to be out-of-plumb in the plane of the wall approved corrective measures shall be taken to insure the plumbness of succeeding pilings. Pilings in each run or continuous length of piling wall shall be driven alternately in increments of depth to the required depth or elevation. No piling shall be driven to a lower elevation than those behind it in the same run except when the pilings behind it cannot be driven deeper. If the piling next to the one being driven tends to follow below final elevation it may be pinned to the next adjacent piling. If obstructions restrict driving a piling to the specified penetration the obstructions shall be removed or penetrated with a chisel beam. If the Contractor demonstrates that removal or penetration is impractical the Contractor shall make changes in the design alignment of the piling structure as directed to insure the adequacy and stability of the structure. Pilings shall be driven to depths shown and shall extend up to the elevation indicated for the top of pilings. Pilings shall not be driven or pulled within 1**25** feet of fresh concrete until it has attained a compressive strength of at least 1000 psi. ***1**

3.1.2.4 Driving Tolerances

Pilings shall be placed plumb with out-of-plumbness not exceeding 1/8- inch in four feet of length and true to line. A horizontal tolerance of +/- 3 inches from the theoretical location will be allowed for the master piles. In addition, the horizontal distance between master piles, at the cutoff elevation, shall not vary from the theoretical distance by more than +/- 3/4-inch. A vertical tolerance of 0 inches above and 4 inches below the indicated top elevation will be permitted for the master piles. A

tolerance of 0 inches above and 6 inches below the indicated top elevation will be permitted for the sheet piles. A vertical tolerance of 1-inch above and 1 inch below the indicated top elevation will be permitted for the isolation joint sheet piles. The Contractor shall be responsible for changes to the isolation joint connection piles and cut-off wall that result from changes to the alignment of the isolation joints.

3.1.3 Cutting-Off

Pilings driven to refusal or to the point where additional penetration cannot be attained and are extending above the required top elevation in excess of the specified tolerance shall be cut off to the required elevation. The tops of pilings excessively battered during driving shall be trimmed when directed at no cost to the Government. Piles that are damaged beyond use during driving or other construction activities shall be pulled and replaced, when directed, at no cost to the Government. Piling cut-offs shall become the property of the Contractor and shall be removed from the site. The Contractor shall cut holes in pilings for bolts, rods, drains or utilities as shown or as directed. All cutting shall be done in a neat and workmanlike manner. A straight edge shall be used in cuts made by burning to avoid abrupt nicks. Bolt holes in steel piling shall be drilled or may be burned and reamed by approved methods which will not damage the surrounding metal. Holes other than bolt holes shall be reasonably smooth and the proper size for rods and other items to be inserted.

3.1.4 Inspection of Driven Piling

The Contractor shall inspect the interlocked joints of driven pilings. Pilings found to be out of interlock shall be removed and replaced at the Contractor's expense. Government divers may also inspect the interlocked joints. The inspection shall be performed after driving is completed.

3.1.5 Pulling and Redriving

In the pulling and redriving of piles as directed, the Contractor shall pull selected pilings after driving to determine the condition of the underground portions of pilings. Any piling so pulled and found to be damaged to the extent that its usefulness in the structure is impaired shall be removed and replaced at the Contractor's expense. Pilings pulled and found to be in satisfactory condition shall be redriven when directed. Government furnished pilings pulled and not redriven shall be stored as directed. Government furnished piling that are pulled and not redriven will be paid for under the contract clause "CHANGES". Government furnished pilings that are pulled and redriven will be paid for under the contract clause "CHANGES".

3.2 SORTING, CLEANING, INVENTORYING AND STORING

Pulled pilings shall be sorted, cleaned, inventoried and stored by type into groups as specified in Section 02220 DEMOLITION, CELL A REMOVAL AND FIXED WEIR MODIFICATIONS.>

3.3 WALE INSTALLATION

The sheet piling layout and orientation shown on the drawings depicts the design required for the sheeting by the method and sequence of construction shown in the F-series of the plans. The sheet pile arcs are oriented such that the arcs will be loaded, from fill and/or current, so as to cause tension in the sheeting interlocks. The design depicted also considered such factors as overexcavation, scour, silt deposition and high current velocities. During placement of the tremie concrete, in some locations, the tremie loading may cause compression in the arcs. At these locations the drawings require that the Contractor install a steel wale system to support the sheeting. The Contractor shall consider the need to install wales to brace the sheeting at all locations where any of his proposed activities may cause compression in the sheeting arcs. The Contractor's evaluation of the need for the wales shall also consider the detrimental effects of overexcavation, scour, silt deposition and high current velocities caused by changing river conditions. The Contractor's submittals for excavation and fill activities shall clearly address the need for wales.

-- End of Section --

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SECTION 03800

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SECTION 03800

TREMIE MASS CONCRETE AND UNDERWATER GROUT

PART 1 GENERAL

1.1 SUMMARY

This section addresses the basic requirements for mass tremie concrete which is to be placed underwater by the tremie method and grout to be placed underwater in order to seal and plug the tremie holes in the precast dam shells, including the precast elements for the tainter gate sill, stilling basin, navigable pass, and boat abutment.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section 01130	ENVIRONMENTAL PROTECTION
Section 01720	UNDERWATER CONCRETE FIELD DEMONSTRATIONS
Section 03201	STEEL BARS AND WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT
Section 03300	GENERAL CONCRETE REQUIREMENTS
Section 13500	INSTRUMENTATION PROGRAM
Section 13517	THERMISTER
Section 13530	INSTRUMENTATION CABLE, SPLICES, AND CONDUITS
Section 13854	UNDERWATER CORING
Section 13855	SOUNDING EQUIPMENT FOR TREMIE PLACEMENT

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

ACI 211.1	(1991; R 1997) Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 214.3R	(1997) Simplified Version of the Recommended Practice for Evaluation of Strength Test Results of Concrete

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 31/C 31M	(2000e1) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 39	(1996) Compressive Strength of Cylindrical

	Concrete Specimens
ASTM C 78	(2002) Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
ASTM C 94/C 94M	(2000e2) Standard Specification for Ready-Mixed Concrete
ASTM C 117	(1995) Standard Test Method for Materials Finer Than 75 mm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	(2001) Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C 128	(2001) Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Fine Aggregate
ASTM C 138	(1992) Unit Weight, Yield, and Air-Content (Gravimetric) of Concrete
ASTM C 143	(1990a) Slump of Hydraulic Cement Concrete
ASTM C 172	(1999) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 232	(1999) Standard Test Methods for Bleeding of Concrete
ASTM C 289	(1994) Potential Alkali-Silica Reactivity of Aggregates
ASTM C 295	(1998) Standard Guide for Petrographic Examination of Aggregates for Concrete
ASTM C 403	(1999) Standard Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory
ASTM C 942	(1999) Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance
ASTM C 1064	(1986; R 1993) Temperature of Freshly Mixed Portland Cement Concrete
ASTM C 1077	(2002) Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

ASTM C 1240	(2001) Standard Specification for Silica Fume for Use as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar, and Grout

CORPS OF ENGINEERS CONCRETE AND CEMENT HANDBOOK (COE CRD-C)

CRD C61-89A	(1989) Test Method for Determining the Resistance of Freshly Mixed Concrete to Washing Out in Water
CRD-C 100	(1975) Method of Sampling Concrete Aggregate and Aggregate Sources, and Selection of Material for Testing
EC 1110-2-6052	(2001) Structural Design of Precast and Prestressed Concrete for Offsite Prefabricated Construction of Hydraulic Structures

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)

NRMCA TMMB-01	(1992) Truck Mixer Agitator and Front Discharge Concrete Carrier Standards of the Truck Mixer Manufacturers Bureau
NRMCA CPMB 100	(1996) Concrete Plant Standards

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the approving authority who will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Concreting Plan; G ARE

A plan shall be submitted to the Contracting Officer for comment and approval at least 60 days prior to the start of placement of any tremie concrete. The plan shall describe the equipment and methods proposed for each area of placement, including, but not limited to:

1) Tremie Mass Concrete within the Tainter gate sill segments;

2) Tremie Mass Concrete within the stilling basin segments;

3) Tremie Mass Concrete within the wicket gate dam segments;

4) Tremie Mass Concrete within the pier wall segments;

5) Tremie Mass Concrete within the fixed crest weir.

A single plan for all areas of placement may be submitted or a separate plan may be submitted for each placement. The content of the plan(s) shall show and describe the equipment and methods proposed and shall include, but not be limited to, the following:

1) Preparation of foundations and construction joints prior to tremie concrete placement.

2) Concrete production plan (batching and mixing), including the timing and sequence of the introduction of the concrete constituents, and temperature and moisture control of the concrete constituents, mixing speed and duration.

3) Transportation and conveyance from the mixer to the point of placement.

4) Sampling and testing of concrete.

5) Placement procedure, sequence, schedule, and monitoring of tremie placement progress, including the sounding method and frequency, and diving inspection plan.

6) A contingency plan for dealing with unanticipated interruption to concrete placements.

7) Means and methods for removal of the tremie work platform and finish of any exposed tremie concrete surface.

8) Protection of fresh concrete.

9) Identification of defective concrete (NDT Testing).

10) Repair of defective concrete, if any.

The timing and sequence of the various steps shall also be described in the plan. The plan shall be of sufficient detail to demonstrate that equipment and methods are appropriate for the tremie concrete of structural grade, and that the work conforms to the general requirements of Division 3 - CONCRETE, and the specific requirements specified herein. The plan will be subject to review and approval by the Contracting Officer. Once approved, the Contractor shall follow all procedures set forth in the plan. Any revisions to the plan shall be submitted to the Contracting Officer for approval.

SD-02 Shop Drawings

Work Platform Drawings; G AR

The Contractor shall furnish and install a tremie work platform for each shell from which tremie concrete operations will be conducted. The tremie

work platform may be the same as the lift frame as shown on the plans. The Contractor shall develop a complete tabulation of expected load cases and structural analyses for review by the Contracting Officer. Drawings shall identify all necessary materials for construction of the platform and shall indicate the weight of these materials. The extent of the work platforms as shown may be expanded during the progress of the work to accommodate the various construction operations. Additions/revisions to the work platform during later phases of the work shall also be supported with detailed drawings and computations. If the Contractor select to use tremie work platforms that are the lift frames, the Contractor shall submit detailed drawings and supporting structural calculations for these platforms.

Batch Plant and Concrete Delivery System Layout; G AER

The Contractor shall prepare and submit complete drawings that show the layout of the batch plant, concrete delivery system, and details of the equipment. These drawings shall be submitted along with the Concreting Plan.

SD-03 Product Data

Batch Plant; G AER

The Contractor shall submit the design, details, and manufacturer's data on the batch plant to the Government for review and approval. These data shall be submitted along with the Concreting Plan. The batch plant shall conform with the requirements of paragraph "Batch Plant, Mixer And Delivery System".

Mixers; G AER

The make, type, capacity, and number of the concrete mixer(s) proposed for use shall be submitted with the Concreting Plan. The mixer(s) shall conform with the requirements of paragraph "Batch Plant, Mixer And Delivery System".

Conveying Equipment; G AER

The methods and description of the equipment proposed for transporting, handling, and depositing the concrete shall be submitted for review 60 days before concrete placement begins. The data submitted shall include site drawings or sketches with locations of equipment and placement site.

SD-06 Test Reports

Inspections and Tests

Inspection and test of daily concrete production shall be reported daily, and shall include test results and control charts.

SD-07 Certificates

Qualifications; G R

Written documentations on qualification of the Contractor's Quality Control Manager and superintendents who will oversee the concrete production and placement operations. The qualification statements shall meet the general requirements in Section 03300 GENERAL CONCRETE REQUIREMENTS, and shall include recent project experience related to underwater concrete construction and marine operations.

1.5 GENERAL REQUIREMENTS FOR TREMIE MASS CONCRETE

1.5.1 Tolerance

Except as otherwise specified herein, tolerances for concrete batching and mixture properties as well as definition of terms and application practices shall be in accordance with Section 03300 GENERAL CONCRETE REQUIREMENTS and NRMCA CPMB 100.

1.5.2 Strength Requirements

Specified compressive strength (f'c) of the tremie concrete shall be 5000 psi in 90-day.

Compressive strength of tremie concrete shall be determined in accordance with ASTM C 39 and the test procedure shall conform with the requirements as specified in Section 03300 GENERAL CONCRETE REQUIREMENTS. Investigation of low-strength compressive test results and load tests shall follow the procedures as specified in Section 03300 GENERAL CONCRETE REQUIREMENTS.

1.5.3 Water-Cement Ratio

Maximum water-cementitious materials ratio (w/c) for the tremie concrete shall be 0.38. The w/c may cause higher compressive strength than that as specified in Paragraph "Strength Requirements". The maximum w/c required will be the equivalent w/c as determined by conversion from the weight ratio of water to cement plus pozzolan, silica fume, and ground granulated blast furnace slag (GGBF slag) by the weight equivalency method as described in ACI 211.1. In the case where silica fume or GGBF slag or fly ash is used, the weight of the silica fume, GGBF slag, and fly ash shall be included in the equations of ACI 211.1 for the term P which is used to denote the weight of pozzolan. The total weight of water shall be used to calculate w/c, and shall include the water batched, ice, aggregate moisture, and the water in admixtures and silica fume slurry, if used.

1.5.4 Slump and Slump Flow

Slump of the tremie concrete, as delivered to the point of placement, shall be within the limits of 8 to 10 inches. Slump shall be determined in accordance with ASTM C 143.

Slump flow of the concrete, as delivered to the point of placement, shall be within the limits 16 to 20 inches. Slump flow of the concrete shall be determined as follows: After performing the slump test, the diameter of the concrete spread is measured in the direction of maximum spread and in the direction perpendicular to the maximum spread to an accuracy of 0.25 inch. The average value of the two measurements is reported as the slump

flow. If an anti-washout admixture is used in the concrete, the measurements should be taken approximately 30 seconds after removal of the slump cone.

1.5.5 Slump and Slump Flow Retention

Adequate slump and slump flow shall be maintained over time to accommodate the potential time delay in mixing, transport, and placement of the concrete. As a minimum, the tremie concrete shall retain 7 inches slump and 14 inches slump flow within 60 minutes after mixing.

1.5.6 Washout

Washout of the tremie concrete shall be tested in accordance with CRD C61-89A. The acceptable test results for the concrete mixture is five (5) percent washout by mass or less.

1.5.7 Bleed Water

Bleeding of concrete placed underwater shall be tested in accordance with ASTM C 232, Method A. Bleed water for the tremie concrete shall be restricted to a maximum of 0.5 percent when tested over a period of 8-hours.

1.5.8 Time of Set

Setting of concrete placed underwater shall be tested in accordance with ASTM C 403. Initial time of set for tremie mass concrete shall be restricted to a range of 6 hours to 24 hours. Final set shall be achieved in less than 30 hours. In addition, the time of set shall be appropriate to accommodate mixing, transport, and placement of the concrete.

1.5.9 Concrete Temperature

The temperature of the concrete as delivered to the point of placement shall be between 40 degrees F and 65 degrees F, when tested in accordance with ASTM C 1064.

1.5.10 Technical Service for Specialized Concrete

The services of a factory trained technical representative shall be obtained to oversee batching and mixing of the tremie concrete containing a anti-washout admixture and/or silica fume. The technical representative from the manufacturer of the admixtures shall be on the job full time until the Contracting Officer is satisfied that field controls indicate concrete of specified quality is consistently furnished and that the Contractor's crews are capable of performing satisfactory work on their own.

1.6 GENERAL REQUIREMENTS FOR GROUT

The Contractor shall be responsible of proportioning the grout mix that meets the specified requirements. Proportions of the grout shall be based on trial batch tests to meet the requirements specified hereafter. The Contractor shall be responsible for adjusting the grout mix on site to meet the requirements specified hereafter.

The compressive strength of grout samples per ASTM C 942 shall attain 7,000 psi at 28 days.

The water-to-cement ratio shall not exceed 0.36.

The grout mixture shall contain at least 8% silica fume and Type F - fly ash in the range of 10 to 25 percent by weight of the cementitious materials.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 General

Materials for the tremie concrete shall comply with Section 03300 GENERAL CONCRETE REQUIREMENTS and the requirements specified in this section.

2.1.2 Aggregates

The minimum saturated surface dry bulk specific gravity of course aggregates shall not be less than 2.6, and the maximum absorption shall be exceed 2.0 percent per ASTM C 127.

The minimum saturated surface dry bulk specific gravity of fine aggregates shall not be less than 2.6, and the maximum absorption shall be exceed 2.0 percent per ASTM C 128.

2.1.3 Limestone Powder

Limestone powder in the concrete shall contain at least 75% calcium carbonate by mass. The clay content of the limestone shall not be more than 1.2% by mass. The organics in the limestone shall not exceed 0.2% by mass. Limestone powder shall contain less than 3% dolomite ($MgCO_3$). If the limestone powder has no previous record for use in concrete mixtures, the Contractor shall conduct petrographic analysis in accordance with ASTM C 295 and alkali reactivity analysis in accordance with ASTM C 289. Limestone powder may be obtained from Mississippi Lime, Co. P.O. Box 2247, Alton IL.

2.1.4 Silica Fume

Silica fume shall conform to ASTM C 1240. Available alkalies in silica fume shall conform to the optional limit as defined in Table 2, "Optional Chemical Requirements", of ASTM C 1240. The specific surface area, uniformity requirements, and reactivity with cement alkalies shall conform to the optional limits as defined in Table 4, "Optional Physical Requirements", of ASTM C 1240.

2.1.5 Anti-Washout Admixture

Anti-washout admixture shall be effective in prevention of cement washout and laitance formation when concrete containing the admixture is placed

underwater by the tremie method. When the admixture is used at the manufacturer's recommended dosage, the concrete shall meet the washout test requirement as specified in this Section.

2.2 CONCRETE MIXTURE PROPORTIONS

The Government will provide the tremie concrete mixture proportions. The Contractor shall be responsible for all the necessary field adjustments of the mixture to account for various field factors such as changes in moisture content of the aggregates or ambient temperatures in order to meet the requirements as specified in this section. The Contractor shall also make necessary field adjustments as directed by the Contracting Officer.

2.2.1 Concrete Mixture

Concretes shall be composed of cementitious materials, limestone powder, fine and coarse aggregate, and chemical admixtures. Estimated mix proportions for the tremie concrete are shown in Table 1. The estimated concrete mixture proportions are based on preliminary mixture design and initial trial batch testing. The mixture proportions are for information only. The tremie concrete mixture used in construction will be provided to the Contractor by the Government after the Contractor identifies the concrete material sources, sends representative material samples to Government, and receives Government's approval for these materials. During concrete production, no substitution shall be made in the source or type of materials without additional testing and approval.

2.2.2 Field Trial Batching

After all material sources have been approved and the mixture proportions have been developed by the Government, the Contractor shall conduct two (2) field demonstration tests of tremie concrete placement as described in Section 01720, UNDERWATER CONCRETE FIELD DEMONSTRATIONS. The mixture proportions provided by the study are the concrete mixture designs. The purpose of the field demonstration test is to verify that the mixture proportions complies with the specification requirements under the field conditions with the same materials and equipment as planned for construction. Test placements of tremie concrete shall be examined for bond to the precast concrete top slabs and side walls, amount of voids and laitance present, quality of the concrete in general and especially at the extreme end of the concrete flow, and concrete flow around embedded items. Cores shall be taken to test the compressive strength of the underwater concrete and the bond strength between the underwater concrete and the precast concrete forms. The Contractor shall follow the Contracting Officer's direction and make as many adjustments as necessary to ensure the final mixture proportions complying with the specifications before the field tests. All of the test results from the field demonstrations shall be submitted to the Contracting Officer. The Contracting Officer will review any and all adjustments to the final mixture prior to implementation.

2.2.3 MATERIALS FOR MIXTURE PROPORTIONING STUDY

The sources of concrete constitute materials proposed by the Contractor shall be submitted to the Contracting Officer for acceptance. Within 2

months after the Contractor receives the Notice to Proceed, samples of materials proposed by the Contractor for this project shall be delivered at the Contractor's expense to:

U.S. Army Corps of Engineers
Engineering Research Development Center (WES)
Structural Laboratory
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Samples of materials shall be representative of those proposed for the project. It is the contractor's responsibility to select aggregates that meet the quality requirements of the specifications. The Contractor shall submit to the Government relevant material certifications, test reports and manufacturer literature to demonstrate that the selected sources have been capable of meeting the required specifications in the past and are anticipated to conform with the specified quality requirements.

Aggregates shall be taken under the supervision of the Contracting Officer in accordance with CRD-C 100. All other materials shall be obtained directly from the proposed sources. Quantities of materials required shall be as follows:

Coarse Aggregate, Size Designation #67 ..... 15,000 pounds
Fine Aggregate ..... 15,000 pounds
Cement ..... 2,000 pounds
fly ash ..... 1,000 pounds
GGBFS ..... 5,000 pounds
Limestone Powder ..... 3,000 pounds
Silica Fume ..... 800 pounds
Chemical Admixtures (per Table 1)..... 7 gallons (Each)

If materials approval testing shows that a material used in the mixture proportioning study has failed to meet the requirements of the specifications, the Contractor shall resubmit a different source. Additional materials approval testing shall be performed at the contractor's expense. The Contractor shall submit different material to replace the material that was not approved for additional material approval testing.

PART 3 EXECUTION

3.1 CONCRETE REQUIREMENTS

3.1.1 Tremie Concrete Requirements

The tremie mass concrete as placed in the dam segments shall be a highly flowable, non-segregating and self-compacting mixture. The concrete shall be placed by a gravity feed system and shall possess the ability to flow readily through the tremie pipe, and flow laterally through and around steel reinforcement, pile heads and other embedded items. Pumping the concrete to a tremie hopper may be used. Pumping the concrete directly into water will not be permitted.

3.1.2 Additional Concrete Criteria

The slump, slump flow, bleed water, washout, set time, and temperature requirements for tremie concrete at the point of placement shall be in compliance with the specifications in this section. Contractor shall be responsible for all the necessary field adjustments of the mixture to account for various field factors such as changes in moisture content of the aggregates and ambient temperatures. Any Contractor's field adjustment to the tremie concrete mixture shall be approved or directed by the Contracting Officer.

3.2 PRODUCTION OF CONCRETE

3.2.1 General

Production of tremie concrete shall be in accordance with Section 03300 GENERAL CONCRETE REQUIREMENTS except for the requirements as specified in this section.

The Contractor may select to use a floating batch plant. Alternatively, The Contractor may select to use transit mixers to produce tremie concrete on barge near the placement site. However, delivery of the tremie mass concrete that is mixed onshore and transported to the dam site for placement through either transit mixer(s) or pumpline(s) will not be permitted.

The Contractor shall develop and submit for the Government approval a concrete production plan for the production method selected. The proposed production plan shall include proper means and methods for preventing loss of cementitious materials, such as installation of dust seals, and for controlling the effects of moisture variations in aggregates. At least 120 days prior to the actual concrete production, the Contractor shall conduct a trial run using the concrete production method and equipment to prove that the concrete meets all the requirements specified in this section.

The batching sequence and required minimum mixing time for tremie concrete shall be established in the field demonstration tests and uniformity tests, and approved by the Contracting Officer. The Contractor shall anticipate an increase in the required mixing time for production of tremie concrete containing an Anti-washout admixture.

3.2.2 Storage and Delivery of Aggregates

Fine aggregates and coarse aggregates shall be stored separately and in such a manner as to prevent degradation, intrusion of foreign materials, and to control moisture.

All aggregates shall be thoroughly washed on shore prior to being delivered to the supply barge or to transit mixers. No washing of aggregates will be permitted on barge. The cleanliness of the aggregates shall be determined by tests in accordance with ASTM C 117. The amount of fine materials passing No. 200 sieve on surfaces of the aggregates by washing shall be less than 1 percent per ASTM C 117.

During concrete production, aggregates shall be sampled and tested by the Contractor as delivered to the mixer in accordance with Section 03300 GENERAL CONCRETE REQUIREMENTS. In addition, surface cleanliness shall be tested per ASTM C 117 at the start of the production and once every week.

3.2.3 Batch Plant, Mixer And Delivery System

Concrete shall be batched using an automatic or semi-automatic concrete batch plant. The batch plant shall conform to NRMCA CPMB 100, the requirements in Section 03300 GENERAL CONCRETE REQUIREMENTS, and as specified herein.

The capacity of the batching and mixing equipment shall be sufficient for completion of tremie concrete placement within each dam shell in one continuous operation. As a minimum, the batching, mixing, conveying and placing system shall have a peak production capacity of 150 cubic yards per hour. If the Contractor uses multiple crews, the plant capacity shall be increased accordingly.

3.2.4 Time Interval Between Mixing and Placing

Tremie concrete shall be placed within 60 minutes after introduction of the cement to water. The concrete shall be discharged to tremie pipes within 30 minutes after mixing or agitating has ceased.

3.2.5 Requirements for Floating Batch Plant

If the Contractor selects to use a floating batch plant, the plant shall conform to the requirements in Section 03300 GENERAL CONCRETE REQUIREMENTS, and the requirements as specified herein.

***3**

The plant shall be capable of ready adjustment of mixing water to compensate for the varying moisture contents of the aggregates, and to change the weights of the materials being batched. The plant shall also have a minimum drum size of 10 cubic yards. The floating plant shall be arranged so as to facilitate the inspection of all operations. Suitable facilities shall be provided for obtaining representative samples of aggregates from each bin or compartment for inspection or testing. **Automatic sampling and gradation testing of the aggregate will not be required for the floating batch plant, manual sampling and testing is acceptable. *3**

The plant shall be equipped with a weight compensator to accurately compensate for the effects of list and trim of the barge on which the batch plant is being mounted. The weighing equipment and controls shall conform to the applicable CPMB Concrete Plant Standard requirements in NRMCA CPMB 100, except that the accuracy shall be within 0.2 percent of the scale capacity. The Contractor shall provide standard test weights and any other auxiliary equipment required for checking the operating performance of each scale or other measuring devices. Tests shall be made in the presence of a Government inspector. Each weighing unit shall include a visible indicator that shall indicate the scale load at all stages of the weighing operation and shall show the scale in balance at zero load. The weighing equipment shall be arranged so that the concrete plant operator can conveniently

observe the indicators.

Fine aggregates, coarse aggregates, cement, GGBF slag, and silica fume shall be stored separately and in such a manner as to prevent degradation, intrusion of foreign materials, and to control moisture and temperature. These bins shall have a dust seal between the bin and the weight hopper. Power-operated gates shall be used to charge the cementitious materials and have a suitable "dribble" control to obtain the desired weighing accuracy.
***3**
Fine and coarse aggregates shall be weighed either in separate weigh batchers with individual scales or cumulatively in one weigh batcher on one scale. Aggregates shall not be weighed in the batcher with cement, fly ash, GGBF slag, and silica fume. Cement, fly ash, and GGBF slag may be batched cumulatively provided that cement is batched first. Water shall be batched separately from other concrete ingredients. **Silica fume shall also be batched separately from all other concrete ingredients. *3**

An accurate mechanical device for measuring and dispensing each chemical admixture shall be provided. Each dispenser shall be interlocked with the batching and discharging operation of the water so that each admixture is separately batched and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Admixtures shall not be combined prior to introduction to the mixers.

3.2.6 Requirements for Use of Transit Mixers

The Contractor may select to dry-batch materials on shore and deliver the materials to one or more mixers on barge near the point of placement. The Contractor shall not mix the concrete on shore and use transit mixers or other conveyance equipment to deliver it to the dam site for placement. Mixing of the concrete must be performed near the point of tremie placement.

If the Contractor selects to use transit mixers to produce the tremie concrete, the materials, equipment, and procedure shall conform with the requirements of ASTM C 94/C 94M and as specified herein. Each transit mixer shall conform to NRMCA TMMB-01 and shall have a minimum drum size of 10 cubic yards.

At the Contractor's discretion, all concrete ingredients except for cementitious materials (Portland cement, GGBF slag, fly ash, and silica fume), chemical admixtures, and water may be delivered to the dam site by transit mixers. Portland cement, GGBF slag, and fly ash shall be stored in separate bins or compartments on barge near the mixers. These bins shall have a dust seal between the bin and the weight hopper. Power-operated gates shall be used to charge the cementitious materials and have a suitable "dribble" control to obtain the desired weighing accuracy. Cement, fly ash, and GGBF slag may be batched cumulatively provided that cement is batched first. Water shall be batched separately from other concrete ingredients.

Cementitious materials, admixtures, and water shall be introduced to the mixers immediately prior to mixing operations. The time period between completion of concrete mixing and placing shall conform with the requirements in Paragraph "Time Interval Between Mixing and Placing".

Tolerance limits for measuring materials for concrete production shall conform to Section 03300 GENERAL CONCRETE REQUIREMENTS and ASTM C 94/C 94M, except that the requirements for "Total Water" shall be revised from plus-or-minus 3.0 percent to plus-or-minus 2.0 percent. Water batcher filling and discharging valves shall be so interlocked that the discharge valve cannot be opened before the filling valve is fully closed. Water batcher shall be checked and calibrated at least once per every 8-hour shift.

The required minimum mixing time shall be established in accordance with the paragraph 3.2.1 "General". The Contractor shall anticipate a possible increase in the required mixing time due to difference in mixing efficiency between transit mixers and a stationary mixer for production of mass tremie concrete.

An accurate mechanical device for measuring and dispensing each chemical admixture shall be provided. Each dispenser for chemical admixtures shall be interlocked with the batching and discharging operation of the water so that each admixture is separately batched and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Admixtures shall be added into the stream of mixing water being batched into the mix. Admixtures shall not be combined prior to introduction to the mixers.

3.2.7 Trial Production

At least 120 days prior to concrete production, a test of the batching plant and mixing and delivery systems shall be made in the presence of the Contracting Officer to check the adequacy of the systems and operating procedures. At least 12 cubic yards of concrete shall be produced and delivered to the dam site under conditions and in time periods similar to those expected during the tremie placement construction. The slump and slump flow of the concrete mixture shall be measured at the point where the tremie placement will take place in construction. The concrete produced in the test shall be either wasted or, after approved by the Contracting Officer, used for the field demonstration test as described in Section 01720 UNDERWATER CONCRETE FIELD DEMONSTRATIONS. All deficiencies found in plant operation, mixing operation, and delivery operation shall be corrected prior to the start of concrete placing operations. No separate payment will be made to the Contractor for labor or materials required by provisions of this paragraph. The Contractor shall notify the Contracting Officer of the trial operation not less than 7 days prior to the start of the trial operation.

3.2.8 Laboratory Area

The Contractor shall establish a on-site test laboratory on a barge for testing fresh tremie concrete and for fabricating and initial curing of concrete test specimens at the point of placement. The Contractor shall also establish a test laboratory on barge to house the moisture testing equipment for aggregates and to provide working space. The size, arrangement, and location of these rooms will be subject to approval. The Contractor shall provide electricity, air conditioning, heat, and water as

required for use in these laboratory areas.

3.2.9 Environmental Protection

The Contractor shall establish and maintain quality control for prevention of environmental pollution as the result of concrete production and placement operations. The Contractor shall not discharge into the river fuels, oils, bitumens, garbage, or other waste materials that may be harmful to plants, fish and wildlife. All aggregates used for production of concrete shall be washed on shore. No washing of aggregates or other concrete materials will be permitted on barge. Water used to wash and clean equipment used to mix, contain, produce and convey tremie concrete at the work areas shall not be discharged overboard or to the river, nor shall the equipment be washed in locations which would permit wash water to flow overboard or into the river. Wash water contaminated by cement, concrete, oil, or other pollutants shall be retained in suitable containers, transported off the work area and discharged to the designated disposal area. In addition, the concreting operations shall comply with the requirements in Section 01130ENVIRONMENTAL PROTECTION.

3.3 TRANSPORT OF CONCRETE

3.3.1 General

Tremie concrete shall be conveyed from the batch plant to the point of placement by methods that will prevent segregation or loss of concrete, excessive delay, loss of concrete workability, and excessive temperature change. When a transit mixer is used for mixing and transporting concrete, concrete shall be discharged to tremie pipes within 60 minutes after the cement is in contact with mixing water or before the mixer drum has revolved 300 revolutions, whichever comes first after the introduction of the cement to the mixing water. In addition, concrete shall be placed within 30 minutes after it has been discharged from a mixer to a non-agitating container. Conveying equipment shall be thoroughly cleaned after each operation and prior to initiation of a operation.

3.3.2 Transporting by Buckets or Hoppers

The tremie concrete may be delivered to other conveying devices by means of a bucket or a gated hopper. Concrete shall not be held in a non-agitating transfer hoppers or bucket for more than 30 minutes.

3.3.3 Transporting by Belt Conveyor
***1**
Transportation of mass tremie concrete by belt conveyor **from the Illinois bank to river placements will not be permitted. Local use of short conveyors or telescoping conveyors at the placement site will be allowed provided they do not exceed a 20 degree incline and do not cause segregation, and do not cause any degradation of fresh concrete properties. *1**

3.3.4 Transporting by Pump

The tremie concrete may be delivered to a hopper over a tremie pipe by

pumping. Pumping concrete directly down into water will not be permitted. Pump lines for delivery of concrete shall be insulated and, in hot climate, painted with reflective paint.

3.4 REINFORCEMENT AND EMBEDDED ITEMS

Steel reinforcement and other embedded items shall be in accordance with the applicable requirements of Section 03201 STEEL BARS AND WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT. Steel and embedded items shall be installed as indicated on the drawings.

3.5 EQUIPMENT

3.5.1 Work Platforms

Work platforms for placement of tremie concrete will generally be the lift frames and be configured as shown on the contract drawings. These platforms shall be erected on each dam shell at the outfitting location prior to transport of the shell to the project site. Alternatively, the Contractor may select to design tremie work platforms other than the lift frames. The alternative design shall be submitted to the Contracting Officer for approval. The platform shall be designed to support all loads imposed by the tremie equipment and all other load conditions expected during construction. The Contractor shall develop a complete tabulation of expected loads and analyses for review by the Contracting Officer. The Contractor shall also select all necessary materials for construction of the platform. A complete set of detailed drawings of the work platform shall be submitted for the Contracting Officer's review. The extent and configuration of the platform may be expanded during the progress of the work to accommodate the construction. Additions/revisions to the work platform during later phases of the work shall also be supported with detailed drawings and computations and be approved by the Contracting Officer.

3.5.2 Tremie Equipment

The tremie pipe shall be of heavy-gauge steel pipe (minimum 1/2 inch thick) with an inside diameter greater than eight (8) times the nominal maximum aggregates size or 8 inches, whichever is larger. The tremie shall have a uniform diameter and smooth internal wall surface. All splices and joints shall be flush on the inside. Joints between tremie pipe sections shall be gasketed and bolted or by other method as approved by the Contracting Officer so as to be watertight throughout the tremie placement. Under no circumstance shall the tremie pipe be sharply bent to accommodate concrete placement. Aluminum pipe or equipment shall not be used for placing concrete.

Funnel-shaped hoppers at the top of all tremie pipes shall be of sufficient size and not be less than 2 cubic yards. Hoppers shall be of a size capable of receiving and passing the concrete into the tremie pipe at the capacity rate of the batching, mixing, and conveying equipment.

Each section of tremie pipe shall be suitably secured together and a gasket used at each joint to prevent leakage. The tremie pipe shall be marked to

allow quick determination of the distance from the surface of the water to the mouth of the tremie.

Tremie pipes shall be spaced and arranged as shown on the contract drawings. The tremie pipes and hoppers shall be supported on a stable frame or platform to keep its vertical position and to prevent horizontal movement during concrete placement. The platform shall be capable of supporting the tremie pipe while sections are being removed from the upper end of the tremie.

A power hoist shall be provided to raise the tremie pipe in a controlled manner. Hoisting equipment for raising and lowering tremie pipes as the concrete is placed and tools for connecting the pipe sections shall be continuously available and on hand.

A crane or other lift equipment shall be available at the site for complete removal of tremie pipes for the purpose of re-sealing or relocation.

3.5.3 Pumps

The pumping equipment shall be piston or squeeze-pressure positive displacement type. Pneumatic placing equipment shall not be used, unless otherwise approved. The pipeline shall be rigid-steel pipe or heavy-duty flexible hose. Aluminum pipe shall not be used. The inside diameter of the pipe shall be at least four (4) times the nominal maximum size of the coarse aggregate and not less than 4 inches. The nominal maximum size coarse aggregates shall not be reduced to accommodate the pumps. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned. Flushing water shall be wasted in one or more holding containers without spilling to the barge deck, the river, or the concrete that has already been placed.

3.5.4 Hoppers and Buckets

Hoppers on the top of tremie pipes shall have a size of at least 2 cubic yards capacity, and the interior hopper slope shall not be less than 58 degrees from the horizontal. The bucket gates shall be essentially grout tight when closed and shall be hydraulically operated in order to provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position. The minimum dimension of the clear gate opening shall be at least five times the nominal maximum size aggregate and the area of the gate opening shall not be less than two square feet. The maximum dimension of the gate opening shall not be greater than twice the minimum dimension.

3.5.5 Chutes

When concrete can not be placed in hoppers directly from a transporting vehicles, chutes attached to this equipment may be used. A discharge deflector shall be used when required by the Contracting Officer. Separate chutes and other similar equipment will not be permitted for conveying

concrete.

3.6 PREPARATION FOR PLACEMENTS

The Contractor shall ensure that the bottom reinforcing steel does not obstruct the bottom of the tremie concrete placement pipe from resting on the geotextile fabric beneath the bottom reinforcing steel. All platforms, tremie pipes, ramps and walkways, as required, shall be completed prior to any tremie placement in order to allow safe and expeditious access for concrete and workmen. Snow, ice, flowing water, loose particles, debris and foreign matter shall have been removed. Reinforcement shall be secured in place; anchors and other embedded items shall have been positioned and anchored. The entire preparation shall be accepted by the Contracting Officer prior to preceding to tremie concrete placement. Concrete placements shall commence immediately after final inspection of the area of placement, reinforcing steel and embedded items.

3.7 PLACING REQUIREMENTS

3.7.1 General

Underwater concrete shall be placed by gravity feed using the tremie method. All procedures for placement of tremie concrete shall be included in the Contractor's Concreting Plan. The proposed concrete placement method will be subject to review and approval of the Contracting Officer. Concrete placements will not be permitted when, in the opinion of the Contracting Officer, weather conditions prevent proper transport and placement.

The tremie concrete placement shall ensure that the concrete flows out in a continuous and smooth manner that ensures against detrimental turbulence, water dilution, and segregation of the concrete. The tremie concrete shall be placed in a continuous operation until the concrete completely fills each dam shell and laitance on the top surface of the concrete flows out of the shell through vent holes.

The tremie concrete shall be conveyed from the mixer to the placing equipment as rapidly as practicable and by methods which prevent segregation or loss of concrete. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of horizontal cold joints while concrete is being placed.

Throughout tremie placement, the tip of the tremie pipe shall remain embedded in the fresh concrete at all times. At no time shall concrete be allowed to fall through water. The tremie pipe shall not be moved horizontally. To relocate, the tremie shall be lifted from the water, resealed, relocated and restarted. If the tremie pipe loses the seal during concrete placement, the placement shall be halted immediately, the tremie pipe be removed, resealed, and the placement restarted.

Sampling of fresh concrete shall be performed at the point of placement or as directed by the Contracting Officer.

3.7.2 Prerequisite of Work

Coordination meetings will be held prior to all major phases of the work during construction of dam segments. A pre-construction meeting with the Contracting Officer will be required at least 14 days prior to beginning the tremie concrete placement. The Contractor shall be responsible for calling the meeting; the Contractor's management staff, superintendent(s), and active quality control and installation personnel shall be present.

Weekly progress meetings with the Contracting Officer will be required as the tremie concrete placement progresses. The Contractor shall be responsible for calling the meeting; the Project Engineer, Concrete Superintendent and active installation personnel shall be present.

3.7.3 Concrete Placement Temperatures

Tremie concrete at the point of placement shall have a temperature of neither less than 40 degrees F nor more than 65 degrees F. Heating of the mixing water or aggregates shall not be permitted until the temperature of the concrete has decreased to 45 degrees F, and the heated concrete temperature shall not exceed 60 degrees F. The materials shall be free from ice, snow, and frozen lumps before entering the mixer. All placing equipment and methods shall be subject to review and inspection by the Contracting Officer. The temperature of concrete shall not exceed 65 degrees F. In hot weather, cooling of the mixing water and aggregates, and adding ice or Nitrogen may be required to obtain an adequate placing temperature. The Contractor shall make provisions with the concrete equipment to accommodate the temperature-control cooling method as planned to use.

3.7.4 Concrete Workability at the Point of Placement

The point of placement is defined as the location of the tremie hopper. If the concrete at the point of placement does not have the required slump and slump flow, the concrete will be rejected at no cost to the Government. Retempering of the concrete with water to achieve the required slump will not be permitted. Addition of water-reducing admixture for re-mixing concrete at the point of placement may be permitted upon approval of the Contracting Officer.

3.7.5 Initiation of Tremie Concrete Placement

Before initiation of tremie concrete placement, the prepared foundation bottom directly beneath the tremie hole on the precast dam shell shall be sounded and any obstruction shall be removed to accommodate insertion of a tremie pipe. The tremie pipe shall be a "dry" pipe and have an end plate at its tip with gaskets to completely seal the pipe and and prevent water from running into the pipe. If there is no concrete at the location of the tremie pipe, the pipe shall be inserted through the tremie holes and seated onto the prepared foundation. Then, the dry pipe shall be filled with concrete up to 60 percent of the water depth. The pipe shall then be raised 6 to 8 to inches to allow concrete to flow out of the pipe. Meantime, concrete shall be continuously fed into the hopper above the tremie pipe at the placement rate as specified in the paragraph 3.7.8 "Placement Sequence and Rate".

If there is fresh concrete beneath the tremie pipe insertion, a dry tremie pipe with an end plate shall be inserted through the tremie pipe into the fresh concrete to a depth of at least 5 feet and no more than 10 feet. The tremie pipe shall then be supported on a tremie frame and concrete shall be continuously fed into the pipe. Go-devils or similar devices will not be permitted.

3.7.6 Weather Conditions for Placements

Concrete placement shall not be permitted when weather conditions prevent proper placement and consolidation, or when conditions will adversely affect the quality of the concrete. Unless otherwise specified or approved, the ambient temperature of the placement area shall be above 32 degreesF and the water temperature shall be above 36 degrees F.

When the ambient temperature during concrete placing is expected to exceed 85 degrees F, the concrete shall be responsible of taking special hot weather concrete placement measures to control the concrete temperature within the limit as specified in the paragraph 3.7.3 "Concrete Placement Temperature". Cooling of the mixing water or aggregates or placing concrete in the cooler part of the day may be required to obtain an adequate placing temperature. Nitrogen may be used to control concrete placing temperature. If necessary, conveying and placing equipment shall be cooled to maintain proper concrete placing temperature.

The Contractor shall include in his/her Concreting Plan submittal the means and methods for controlling the concrete placing temperature in hot weather. If ice will be used to control the concrete temperature in hot weather, the Contractor shall demonstrate that his/her ability to produce and provide ice to the mix in a consistent and reliable manner. If Nitrogen is used to control the concrete temperature, the mixer shall be equipped with Nitrogen injection ports.

3.7.7 Consolidation

Tremie concretes shall be self-compacting by gravity without segregation or excessive bleeding and laitance.

3.7.8 Placement Sequence and Rate

The Contractor shall place tremie mass concrete to completely fill each dam shell following the general sequences as required in the contract drawings. These placing sequences have been checked for each precast dam shell for its structural strength and its stability against lateral and uplift movements under hydrostatic pressure of tremie concrete and other loads simultaneously acting upon it. The Contractor may propose alternative placing sequences for Government approval. The Contractor-proposed alternative placing sequences shall be supported with engineering calculations for all the critical load cases throughout the placement process. The calculation methods shall be in accordance with EC 1110-2-6052. The calculations shall show that each precast dam shell will have adequate strength and, after set-down, adequate stability against lateral and uplift movement under expected load combinations.

Tremie concrete placement within each shell shall be continuous, but divided into a series of stages as defined in the contract drawings. Concrete will be fed into tremie pipes in different locations in different stages. The tremie placement is allowed to proceed to an adjacent tremie pipe only after the adjacent tremie pipe has immersed in concrete by at least 2 feet.

The rate of tremie concrete placement shall be controlled within the range of 0.50 to 1.5 foot of concrete rise per hour. The placement rate shall be controlled by the rate of concrete delivered to the tremie hopper. The rate of delivering concrete to each individual tremie pipe shall not exceed 90 cubic yards per hour. The Contractor may select use of multiple pumps to deliver concrete to several tremie pipes.

3.7.9 Placement Operations

Throughout placement, the tip of the tremie pipe shall remain embedded in the fresh concrete at least 2 feet at all times. At no time shall concrete be allowed to fall through the water.

During the placement, the tremie shall be relocated in accordance with the placement plan and on the basis of the concrete flow as indicated by soundings. When soundings dictate that the concrete has arisen to the required elevation as shown on the contract drawings, or when good quality concrete flows out of adjacent vent holes, the tremie concrete placement may proceed to the next stage. The tremie pipes shall be withdrawn from the lift frame, resealed with end plates and gaskets, and relocated to new locations for the next stage of tremie placement.

Restarting the tremie placement shall follow the standard procedure for initiation of the tremie placement as specified in paragraph 3.7.5 "Initiation of Tremie Concrete Placement".

3.7.10 Preparation of Cold Joints

Tremie placement shall continue uninterrupted until the entire portion of each placement is completed. If tremie concrete placement is interrupted, the interruption of placement shall not exceed 30 minutes without removal of the tremie pipe and carrying out the restarting procedure. If the concrete placement is halted for a period more than 3 hours, the entire placement shall be suspended. The Contractor shall wait until the concrete sets, prepare a construction joint with high pressure underwater jetting, and then re-initiate the tremie placement. The Contractor shall development the contingency procedures for preparation of cold joints underwater in the Concreting Plan. The Contracting Officer will review and approve all proposed procedures for making construction joints.

3.7.11 Completion of Placement and Finishing

Immediately after withdrawal of the tremie pipes, the Contractor shall proceed with bailing out the concrete left in the lift frame legs. During the tremie concrete placement, concrete in the lift frame legs shall never be allowed to be more than 3 feet above the top surface of the precast dam

shell, as measured with a +/- 2-foot tolerance. Concrete in the lift frame legs shall be completely bailed out before it sets.

The concrete surfaces at the tremie holes shall be constructed to smooth and dense surfaces, flush with the surrounding concrete surfaces, by means of precast concrete plugs and grout in accordance with the contract drawings and the procedure specified herein. Before the lift frame is removed from the precast shell, the tremie concrete inside the tremie hole shall be removed to a depth of eight (8) inches or more with a bailing tool. The space in the tremie hole shall be filled with neat cement grout. The cement grout shall be placed to displace water in the hole without dilution. The grout mixture shall conform to the requirements as specified Paragraph 1.6 of this section. A 11-1/4" diameter precast concrete plug, with two dowel bars, shall be pushed into the grout filled hole as shown on sheet S-357.

3.8 CONTINGENCY PLAN

3.8.1 Contingency Planning and Reaction

The Contractor shall prepare a Contingency Plan for tremie placement operations. The plan shall be submitted for review by the Contracting Officer. The plan shall be followed during all underwater concrete placements. As a minimum, the plan shall address the following minimum potential interruptions with proposed actions:

1) Breakdown of Batch Plant and/or Concrete Materials Supplies.

2) Breakdown of Tremie Equipment.

3) Plugging of the Tremie Pipe.

4) Breakdown of Concrete Conveying Systems.

3.8.2 Void Detection Between Top Slab and Tremie Mass Concrete

The Contractor shall use sonic or other approved non-destructive testing methods to detect voids or anomalies between the tremie mass concrete and the top slab of the precast dam segments in the Tainter gate bays. Any voids or anomalies detected shall be repaired using pressure grouting or other approved methods. Maximum pressure for pressure grouting or other similar methods shall be set to assure that no damage results to the dam shell or tremie mass concrete. Detection and repair methods shall be included in the concreting plan for tremie mass concrete, and shall be subject to approval by the Contracting Officer. Testing shall be conducted when the top slab is exposed after dewatering of individual Tainter Gate bay, but no sooner than 28 days following placement of the tremie mass concrete. As directed by the Contracting Officer, the Contractor shall conduct underwater coring in accordance with the requirements specified in Section 13854 UNDERWATER CORING.

3.9 QUALITY CONTROL

3.9.1 CONTRACTOR QUALITY CONTROL, TESTING AND INSPECTIONS

The Contractor shall perform the inspection and tests described below and, based upon the results of these inspections and tests, shall take the action required and shall submit specified reports. When, in the opinion of the Contracting Officer, the concreting operation is out of control, concrete placement shall halt and the operation shall be corrected. The laboratory performing the tests shall be on site and shall conform with ASTM C 1077. Materials may be subjected to check testing by the Government from samples obtained at the manufacturer's site, at transfer points, or at the project site. The Government will inspect the laboratory, equipment, and test procedures prior to start of concreting operations and may also inspect them during the construction for conformance with ASTM C 1077.

3.9.1.1 Concrete Mixture

a) Slump and Slump Flow Testing. Slump and slump flow tests in accordance with ASTM C 143 shall be made when strength test specimens are fabricated. At least three slump and slump flow tests shall be made on randomly selected batches for concrete produced during each 8-hour shift. Also, additional tests shall be made when excessive variation in workability/flowability is reported by the placing foreman or inspector. Concrete for the tests shall be sampled in accordance with ASTM C 172. Test results shall be plotted on control charts which shall at all times be readily available to the Government and shall be submitted weekly. Copies of the current control charts shall be kept in the field by testing crews and results plotted as tests are made. When a single slump or slump flow test reaches or goes beyond either the upper or lower limit as specified in this section, a second test shall immediately be made. The results of the two tests shall be averaged and this average used as the slump/slump flow of the batch to plot on both the control charts for slump/slump flow and the chart for range, and for determining need for any remedial action. Limits shall be set on separate control charts for slump/slump flow for each type of mixture. The upper warning limit shall be set at 1/2 inch below the maximum allowable slump/slump flow specified in paragraph "Slump" in PART 1 for each type of concrete and an upper action limit line and lower action limit line shall be set at the maximum and minimum allowable slumps/slump flows, respectively, as specified in the same paragraph. The range between each consecutive slump and slump flow test for the mixture shall be plotted on a single control chart for range on which an upper action limit is set at 2 inches. Samples for slump and slump flow shall be taken at the mixer. However, the Contractor is responsible for delivering the concrete to the placement site at the stipulated slump and slump flow. If the Contractor's materials or transportation methods cause slump and slump flow loss between the mixer and the placement, correlation samples shall be taken at the placement site as required by the Contracting Officer, and the slump and slump flow at the mixer controlled as directed.

b) Slump/Slump Flow Corrective Action. Whenever points on the control charts for slump or slump flow reach the upper or lower

warning limit, an adjustment shall immediately be made in the admixture doses. The adjustments are to be made so that the total water content does not exceed that amount allowed by the maximum w/c ratio specified in this section. If the adjustments to the admixture doses do not satisfactorily produce the required slump/slump flow, the Contracting Officer may require adjustment of the mixture proportions if the fine-aggregate moisture content is stable and within the required limits. When a single slump or slump flow reaches the upper or lower action limit, no further concrete shall be delivered to the placing site until proper adjustments have been made. Immediately after each adjustment, another slump/slump flow test shall be made to verify the correctness of the adjustment. Whenever two consecutive individual slump or slump flow tests, made during a period when there was no adjustment of batch weights, produce a point on the control chart for range at or above the upper, or below the lower action limit, the Contractor shall immediately take appropriate steps to bring the slump under control. Additional slump and slump flow tests shall be made as directed.

c) Temperature. The temperature of the concrete shall be measured in accordance with ASTM C 1064 when concrete specimens for strength tests are fabricated. Additional tests shall be made when excessive variation in workability/flowability is reported by the placing foreman or inspector or as directed by the Contracting Officer. The temperature shall be reported along with the compressive strength data.

d) Strength Specimens. At least one set of test specimens shall be made for compressive strengths for every 300 cubic yards of tremie concrete produced. At least three sets of test specimens shall be made on randomly selected batches for concrete produced during each 8-hour shift. Additional sets of test specimens shall be made, as directed by the Contracting Officer, when the mixture proportions are changed or when property variations have been detected. Concrete for the tests shall be sampled in accordance with ASTM C 172. A truly random (not haphazard) sampling plan shall be developed by the Contractor and approved by the Contracting Officer prior to the start of construction. The plan shall assure that sampling is done in a completely random and unbiased manner. A set of test specimens shall consist of seven (7) specimens, two tested at 7 days, two at 28 days, two at 90 days, and one held in reserve. Test specimens shall be molded and cured in accordance with ASTM C 31/C 31M and tested in accordance with ASTM C 39 for test cylinders and ASTM C 78 for test beams. Results of all strength tests shall be reported immediately to the Contracting Officer. Quality control charts shall be kept for individual strength "tests", ("test" as defined in paragraph "Strength Requirements" in PART 1) moving average of last 3 "tests" for strength, and moving average for range for the last 3 "tests" for each mixture. The charts shall be similar to those found in ACI 214.3R.

e) Unit Weight Testing. The unit weight of the concrete shall be

measured in accordance with ASTM C 138 when strength test specimens are fabricated.

f) Bleed Water Testing. The amount of bleed water in the tremie concrete shall be tested in accordance with ASTM C 232, Method A at least once per 5 work days. Additional test may be required as directed by the Contracting Officer.

g) Bleed Water Corrective Action. Whenever the amount of bleed water is determined to be in excess of the maximum limit of 1 percent, mixture proportions shall be immediately adjusted to reduce the amount of bleed water by increasing the amount of limestone powder, silica fume, and/or anti-washout admixture. Any changes to the concrete mixture design shall be approved by the Contracting Officer.

h) Set Time Testing. The set time of the concrete shall be tested in accordance with ASTM C 403 at least once per 8-hour shift. Additional test may be required as directed by the Contracting Officer.

i) Set Time Corrective Action. Whenever the set times are out of compliance with the required range required for the concrete as specified in this section, the mixture proportions shall be adjusted to bring the set times into compliance. Any changes to the concrete mixture design shall be approved by the Contracting Officer.

j) Washout Testing. The amount of concrete lost due to washout shall be tested for the first batch of concrete produced on each shift and, afterwards, at a frequency of at least one test for every 600 cubic yards of tremie concrete produced. Additional tests shall be made, as directed by the Contracting Officer, when the mixture proportions are changed or when property variations have been detected. The Contractor shall conduct the test in accordance with CRD C61-89A. Only with the Contracting Officer's approval, the Contractor may conduct the test in accordance with CRD C61-89A with the following modifications: the mass of the concrete sample is not weighed and recorded between the three consecutive drops through the washout tube; and the concrete sample container is held still above water for only 15 seconds between the three consecutive drops rather than 2 minutes specified in CRD C61-89A.

k) Washout Corrective Action. Whenever the amount of washout is determined to be in excess of the maximum limit of five (5) percent as required in the specifications, mixture proportions shall be adjusted to reduce the amount of washout by increasing the amount of anti-washout admixture, silica fume, and/or limestone powder. Any changes to the concrete mixture design shall be approved by the Contracting Officer.

3.9.2 GOVERNMENT QUALITY ASSURANCE, INSPECTION AND TESTING

The Government will sample and test concrete during construction as

considered appropriate to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary for procurement of representative test samples. Representative test samples may be sent to a private laboratory, by the Contractor, for testing, with payment made in accordance with Section 01270 MEASUREMENT AND PAYMENT. Samples may be taken at the mixer or at the point of placement in accordance with ASTM C 31/C 31M.

TABLE 1: CONCRETE MIXTURE PROPORTIONS

Material	Proportions per cubic yard (SSD weight)
Type II Cement	128 lb
Class F Fly Ash	86 lb
GGBF Slag	438 lb
Silica Fume	37 lb
Fine Aggregate	1273 lb
Coarse Aggregate	1530 lb
Limestone Powder	202 lb
HRWRA (Sikament 300)	0.43 gal
WRA (Plastiment)	0.11 gal
Antiwashout (Sikament 100SC)	0.75 gal
Total Yield	3988 lb

NOTE: The estimated concrete mixture proportions presented in the table are based on preliminary mixture design and initial trial batch testing. The mixture proportions are information only for estimating the bid price of the contract. The actual tremie concrete design will be provided to the Contractor by the Government based on materials selected for the project and a subsequent mixture proportioning study.

-- End of Section --