

00800.12

INDEX

Para. No.	CLAUSE TITLE	Page No.
00800 - SPECIAL CLAUSES		
00800-1	SURVEYS	00800-1
00800-2	PAY REQUESTS	00800-1
00800-3	PHYSICAL DATA	00800-1
00800-4	RIGHT-OF-WAY	00800-2
00800-5	PUBLIC UTILITIES AND PRIVATE IMPROVEMENTS	00800-2
00800-6	DAMAGE TO WORK	00800-3
00800-7	LAYOUT OF WORK	00800-3
00800-8	NOT USED	
00800-9	PARTIAL PAYMENT	00800-4
00800-10	CERTIFICATES OF COMPLIANCE	00800-4
00800-11	PURCHASE ORDERS	00800-4
00800-12	SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1	00800-4
00800-13	ACCIDENT INVESTIGATIONS AND REPORTING	00800-5
00800-14	ACCIDENT PREVENTION PROGRAM	00800-5
00800-15	DAILY INSPECTIONS	00800-5
00800-16	ENVIRONMENTAL LITIGATION	00800-5
00800-17	TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER	00800-6
00800-18	SUBCONTRACTS	00800-7
00800-19	REQUIRED INSURANCE - WORK ON A NON-GOVERNMENT INSTALLATION	00800-7
00800-20	PROTECTION OF MATERIAL AND WORK	00800-7
00800-21	CONTAMINATION OF WATER	00800-8
00800-22	COMMERCIAL WARRANTY	00800-8
00800-23	ORDER AND COORDINATION OF WORK	00800-8
00800-24	AS-BUILT DRAWINGS	00800-9
00800-25	THRU	
00800-31	NOT USED	
00800-32	IDENTIFICATION OF GOVERNMENT-FURNISHED PROPERTY	00800-13
00800-33	STONE SOURCES	00800-13
00800-34	NOT USED	
00800-35	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA	00800-14
00800-36	PARTNERING	00800-15

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SECTION 00800 - SPECIAL CLAUSES

1. SURVEYS. The work indicated on Drawing No. M-EMP-4\G-2, is determined from the latest available survey data. Surveys will be made before and/or during construction. If these surveys indicate any substantial changes which, in the opinion of the Contracting officer, require a revision in any design feature, drawings and supplementary specifications will be issued. They will include the location, azimuth, length, and top elevation of the dike, the grading and paving requirements, ground profiles, revised estimated quantities, and other pertinent detailed requirements and information.

2. PAY REQUESTS. Pay requests authorized in the Contract Clause entitled "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause entitled "Prompt Payment for Construction Contracts". Pay requests shall be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation", respectively. All information and substantiation required by the identified contract clauses shall be submitted with the ENG Form 93, and the required certification shall be included on the last page of the ENG Form 93a, signed by an authorized official of the Contractor and dated when signed. The designated billing office is the Office of the Area Engineer.

3. PHYSICAL DATA (APR 1984). FAR 52.236-4. Data and information furnished or referred to below is furnished for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. Physical Conditions. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. Information regarding these borings and additional information regarding shear, and other test results are available for inspection upon 48 hours notice at the Dept. of the Army, St. Louis District, Corps of Engineers, 1222 Spruce Street, St. Louis, Missouri. The Government has acquired permits pertaining specifically to this contract. After award a copy of each permit will be provided to the Contractor. A listing of permits acquired by the Government is as follows:

- (1) National Pollution Discharge Elimination System (NPDES)
- (2) Section 404 of the Clean Water Act
- (3) Section 401 Water Quality Certification

b. Weather Conditions. Information with respect to temperatures and precipitation may be obtained from the National Weather Service.

c. Transportation Facilities. Railroads and highways serve the general area of the work. Water transportation is available to the site of the work.

d. Delivery of Government-Furnished Property. The Government-furnished property specified in Clause 00800-32 will be made available to the Contractor upon request at the Ellis Island storage area. The Contractor shall give the Contracting Officer 5 days notice prior to taking delivery of the Government-furnished property.

e. Condition of River Channel. Data relating to river stages, soundings, and flow may be examined at the office of the Dept. of the Army, St. Louis District, Corps of Engineers St. Louis, Missouri.

f. Channel Traffic. There is moderate commercial and pleasure traffic operating in the Mississippi and Illinois Rivers adjacent to the site. The passage of large craft may delay operations in the channel.

g. Obstruction of Channel. The Government will not undertake to keep the channel free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act approved 8 August 1917. The Contractor will be required to conduct the work in such manner as to obstruct navigation as little as possible, and in case the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of vessels, said plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon completion of the work under this contract, all plant including ranges, buoys, piles, and other marks placed in navigable waters or on shore by the Contractor, shall be promptly removed.

4. RIGHT-OF-WAY.

a. Right-of-way for construction purposes will be furnished by the Government without cost to the Contractor. Where right-of-way for access to a work site is not available over existing public roads, access through private lands as shown on the contract drawings will be furnished by the Government without cost to the Contractor. If the right-of-way furnished for access is used, the Contractor will be required at its own expense, to do all work necessary to make such right-of-way suitable for traveling to and from the work site without interrupting the existing drainage. Upon completion of the contract work, any such access roadway and right-of-way furnished by the Government shall be left in a condition satisfactory to the Contracting Officer.

b. The Contractor shall procure without expense to the Government all additional lands, access roads, or right-of-way necessary for its use in the performance of the work. Any agreements or permits with levee boards, counties, or political subdivisions for moving material and equipment will also be the responsibility of the Contractor. Any delays to the Contractor resulting from delays in procuring such additional lands, access roads, right-of-way, or permits for moving material and equipment for its own use will not be made a basis of any claim for increases in the cost of performance of the work. The Contractor shall make its own investigations to determine the conditions, restrictions, and difficulties which may be encountered in the transportation of material and equipment to the work sites shown on the drawings.

5. PUBLIC UTILITIES AND PRIVATE IMPROVEMENTS.

a. Unless otherwise specified, shown on the drawings, or stated in writing by the Contracting Officer, the Contractor shall not move or disturb any public utilities or private improvements. Such removals, alterations, and/or relocations, where necessary, will be made by others. The locations shown on the drawings for underground utilities are approximate only. The exact locations of such utilities shall be determined by the Contractor in the field prior to commencing construction operations in their vicinity.

b. The attention of the Contractor is directed to the possibility that public utilities or private improvements may be encountered within the construction limits, some of which may be buried, and the existence of which is presently not known. Should any such utilities or improvements be encountered, the Contractor shall immediately notify the Contracting Officer so that a determination may be made as to whether they shall be removed, relocated, or altered. After such determination is made, the Contractor shall, if so directed by the Contracting Officer, remove, relocate, or alter them as required and an equitable adjustment will be made. In the event the Contracting Officer arranges for such removals, alterations, or relocations to be performed by others, the Contractor shall cooperate with such others during the latter's removal, alteration, or relocation operations.

6. DAMAGE TO WORK.

a. The responsibility for damage to any part of the work to be performed under this contract shall be as set forth in the clause of the contract entitled "Permits and Responsibilities". However, if the cofferdam(s) is constructed in accordance with plans and progress schedules approved by the Contracting Officer, but is overtopped by flood and such flood causes damage to the cofferdam or if any part of the permanent work is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precaution or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such damaged work, an equitable adjustment pursuant to the Contract Clause entitled, "Changes", will be made as full compensation therefor.

b. The Contractor may, subject to approval of the Contracting Officer, or the Contracting Officer may order the Contractor to, flood or breach the cofferdam during a rise prior to, and in anticipation of, natural flooding due to overtopping. Such flooding or breach will be considered the same as though the cofferdam, if constructed in accordance with plans and progress schedules approved by the Contracting Officer, had been overtopped, in which event an equitable adjustment will be made for damages to the cofferdam and/or any part of the permanent work, as provided in (a) above.

7. LAYOUT OF WORK.

a. The Government will establish the following horizontal and vertical control at the site of the work:

- 1) Two intervisible horizontal control points at each end and Sites 1, 2, and 6 of the berm along the Mississippi and Illinois Rivers.
- 2) Two intervisible horizontal control points near the borrow area, County Road HH and sites 7, 11, and 12.
- 3) Vertical control (bench marks) shall also be set at each end and middle of the exterior berm, at the borrow area and in the vicinity of sites 1, 2, 3, 6, 7, 11, 12 and County Road HH.

b. From the horizontal and vertical control established by the Government, the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings, subject to such modifications as the Contracting Officer may require to meet changed conditions or as a result of necessary modifications to the contract work.

c. The Contractor shall furnish at its own expense such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the horizontal and vertical control established by the Government. It shall be the responsibility of the Contractor to maintain and preserve all stakes and other marks established by the Contracting Officer until authorized to remove them, and if such marks are destroyed by the Contractor or through its negligence prior to their authorized removal, they may be replaced by and at the discretion of, the Contracting Officer, and the expense of replacement will be deducted from any amounts due or to become due the Contractor. The Contracting Officer may require that work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking of the work.

8. NOT USED.

9. PARTIAL PAYMENT. At the discretion of the Contracting Officer, partial payment will be made for equipment delivered and stored on site or off site providing such storage is in accordance with the provisions of these specifications and the Contractor furnishes satisfactory evidence that title to such equipment has been acquired and that it will be utilized on the work covered by these specifications. Partial payment is defined as the invoice amount plus shipping costs. If the equipment is stored off site, the Government shall have the right to inspect the equipment.

10. CERTIFICATES OF COMPLIANCE. Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 3 copies. Each certificate shall include the signature and title of an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from responsibility for furnishing satisfactory material if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

11. PURCHASE ORDERS. Two copies of all purchase orders for other than stock materials showing the firm names and addresses and list of material shall be furnished to the Contracting Officer or an authorized representative as soon as issued.

12. SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Safety and Health Requirements Manual EM 385-1-1 forms a part of these specifications. EM 385-1-1 and its changes are available at <http://www.hq.usace.army.mil> (at the HQ homepage, select Safety and Occupational Health). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation. EM 385-1-1 is provided on the CD-ROM and the St. Louis District web site for each

solicitation, however the Contractor shall be responsible for obtaining any changes to the manual which are available on the above web site.

13. ACCIDENT INVESTIGATIONS AND REPORTING. Refer to EM 385-1-1, Paragraph 01.D. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or an authorized representative within one working day after the accident occurs. The accident Investigation report shall be made on ENG Form 3394.

14. ACCIDENT PREVENTION PROGRAM. Refer to Contract Clause FAR 52.236-13 entitled, "Accident Prevention". Within 15 days after receipt of Notice of Award of the contract, and at least 7 days prior to the prework conference, the original and one copy of the Accident Prevention Program shall be submitted to the Contracting Officer for review. The program shall be prepared in the following format:

- a. An executed MVS Form 385-33, Administrative Plan.
- b. An executed MVS Form 385-359-R, Hazard Analysis.
- c. A copy of company policy statement of accident prevention and any other guidance statements normally provided new employees. Each company employee shall be required to sign the company policy statement of accident prevention to verify that all employees have been informed of the safety program, and such signed statements shall be maintained at the project site.
- d. When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be included on MVS Form 385-22, Fuel Oil Transfer (refer to 33 CFR 156).

The Contractor shall not commence physical work at the site until the program has been reviewed and found acceptable by the Contracting Officer, or an authorized representative. At the Contracting Officer's discretion, the Contractor may submit its Activity Hazard Analysis only for the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also refer to Section 1 of EM 385-1-1.

15. DAILY INSPECTIONS. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer.

Reports of daily inspections shall be maintained at the job site. The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

- a. Phase(s) of construction underway during the inspection.
- b. Locations of areas inspections were made.
- c. Results of inspection, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

16. ENVIRONMENTAL LITIGATION.

(a) If the performance of all or any part of the work is ordered by a court of competent jurisdiction to be suspended, delayed, or interrupted

as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the Contract Clause entitled "Suspension of Work".

(b) The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

17. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the Contract Clause entitled, "Default (Fixed-Price Construction)". 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 site 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.

(2) 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.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the 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 DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(6)	(6)	(10)	(10)	(11)	(6)	(5)	(6)	(4)	(6)	(9)	(7)

c. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor shall 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 of 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 calendar

days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract Clause entitled "Default (Fixed Price Construction)".

18. SUBCONTRACTS. In accordance with the Contract Clause entitled "Subcontracts", the Contractor shall, within seven days after the award of any subcontract by the Contractor or a Subcontractor, deliver to the Contracting Officer two copies of a completed Standard Form 1413. Both copies must contain the original signatures of both parties.

19. REQUIRED INSURANCE - WORK ON A NON-GOVERNMENT INSTALLATION.

a. The Contractor shall, at its own expense, provide and maintain during the entire performance period of this contract at least the kinds and minimum amounts of insurance required in the following schedule:

(1) Workmen's Compensation. Amounts required by applicable jurisdictional statutes.

(2) Employer's Liability Insurance. \$100,000

(3) Comprehensive General Liability Insurance.

Bodily Injury - \$500,000 per occurrence

(4) Comprehensive Automobile Insurance.

Bodily Injury - \$200,000 each person

\$500,000 each accident

Property Damage - \$ 20,000 each accident

b. Within 15 days after receipt of Notice of Award and before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance 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.

c. The Contractor shall insert the substance of this clause, including this paragraph c, in subcontracts under this contract and shall require subcontractors to provide and maintain the insurance required in paragraph a above. The Contractor shall maintain a copy of all subcontractor's proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

d. Statements of insurance should be submitted to the following address:

Department of the Army
St. Louis District, Corps of Engineers
Central Area Office; CEMVS-CO-CA
301 Riverlands Way
West Alton, Missouri 63386

20. PROTECTION OF MATERIAL AND WORK. The Contractor shall at all times protect and preserve all materials, supplies, and equipment of every

description (including property which may be Government-furnished or owned) and all work performed. All reasonable requests of the Contracting Officer to enclose or specially protect such property shall be complied with. If, as determined by the Contracting Officer, material, equipment, supplies, and work performed are not adequately protected by the Contractor, such property may be protected by the Government and the cost thereof may be charged to the Contractor or deducted from any payments due to the Contractor.

21. CONTAMINATION OF WATER. In addition to the requirements set forth in 01130-3.3, Protection of Water Resources, the Contractor shall take positive protective measures to prevent spillage of potential pollutant materials such as fuel, emulsion materials, chemicals etc., from storage containers or equipment, into lakes or tributary waters. Such positive protective measures may include, but not limited to, the following:

(1) A berm enclosure of sufficient capacity to contain such materials.

(2) Security measures to prevent acts of vandalism which could result in spillage of such materials (fences, guards, etc.).

(3) Storage of such materials in an area where the terrain would preclude leakage into lake or tributary waters.

(4) Utilization of secure Government storage areas if the Contracting Officer indicates such space is available. No storage past immediate needs (2 days) without the consent of the Contracting Officer.

The Contractor shall submit its proposals for implementing the above provisions in accordance with 01130-1.5, Environmental Protection Plan.

22. COMMERCIAL WARRANTY. The Contractor agrees that the standard commercial equipment furnished under this contract shall be covered by the most favorable commercial warranties the manufacturer gives to any customer for such equipment, and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the Government by any other clause of this contract. The Contractor shall furnish two copies of the warranties to the Contracting Officer.

23. ORDER AND COORDINATION OF WORK. The Contractor may start and complete the work in such order and sequence as desired subject to compliance with the following paragraphs:

a. Contractor Access.

(1) Pump Stations/Gravity Structures. Access to pump stations and gravity structures may be available by using the top of the existing levee, constructing haul roads at the toe of the levee, or by river access. The Contractor will be responsible for restoring levees and areas disturbed by access to pre-existing conditions. Existing top of levee is covered with approximately 6-inch crushed stone surfacing, and any damage to this surface will require reconstruction as directed by the Contracting Officer. Refer to paragraph 00800-23.d., for the U.S. Fish and Wildlife Service and Illinois Department of Natural Resources point-of-contact.

(2) Ellis Island Storage Area. Ellis Island storage area construction limits are located at MRM 202.2 near the Clark Bridge in West Alton, MO. Construction activities at the Ellis Island storage area shall be

coordinated through:

Mr. Stan Ebersohl, Area Manager
Rivers Project Office, CEMVS-CO-N
301 Riverlands Way
West Alton, Missouri 83386
Telephone: 314/899-2600

(3) River Access to Calhoun Point. The Contractor may elect to gain access for the movement of personnel, equipment and materials to Calhoun Point by using the Mississippi River and/or the Illinois River. Access channels, landings and other site work may require additional regulatory permitting and Government Approval. A river access plan should be submitted for approval prior to constructing river access facilities.

b. Environmental Limitations.

(1) Archaeological Monitoring. See SECTION 01130, Paragraph 3.2 for archaeological monitoring requirements.

(2) Indiana Bat Habitat. Clearing of trees greater than 9 inch diameter at breast height shall not be performed during the period between 1 April and 30 September unless otherwise approved by the Contracting Officer. Approval by the Contracting Officer may be granted after the completion of an Indiana Bat habitat survey is performed by a multi-agency environmental team and no bats or habitat are discovered. In the event bats or habitat are discovered, an equitable adjustment in performance time will be made for any increase in the time required for performance of any part of the work arising from Government mitigation of the presence of bats or habitat.

(3) Bald Eagle Roosts. Should any bald eagle night roost activity be noted in the project area, the Contracting Officer shall be immediately contacted to determine if any buffer zone restrictions will be required for construction operations. An equitable adjustment in performance time will be made for any increase in the time required for performance of any part of the work impacted by any restrictions.

(4) Duck Hunting. The Contractor is advised that duck hunting will occur within the project limits within the state prescribed season. During water fowl season, work can proceed at Sites 3, 7, 12, and County Road HH. Work at Site 1 can be performed provided that the original access road is not taken out of service and the adjacent parking area not used for a staging area.

(5) Deer Hunting. The contractor is advised that deer hunting by bow and arrow will be conducted adjacent to the construction limits within state proscribed season. During the Illinois firearm deer hunting season(s) the Contractor shall not be permitted to perform work on this project.

c. Flood Protection. The project is situated in a relatively low elevation flood plain and the potential exists for frequent flood events. The Contractor shall protect the construction area at each gravity structure site from flooding once construction has commenced by constructing cofferdams in accordance with SECTION 02140 - DEWATERING AND SURFACE WATER CONTROL. For additional information the Contractor should refer to the land elevations and hydrographs shown on the drawings. The hydrographs are from the pool gages, at Grafton, Illinois. The project area is at Mississippi River mile 218 and between Illinois River miles 2 and 7.

d. Calhoun Point and the surrounding lands are managed by the Illinois Department of Natural Resources. The Illinois Department of Natural Resources point of contact is Site Superintendent, Mississippi River Area, Grafton, IL, 618-376-3303. Swan Lake and the surrounding lands are managed by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service, point-of-contact is the Refuge Manager (618) 883-2524.

e. Coordination With Other Contracts. The Contractor is advised that other contracts may be ongoing at the Calhoun Point and Ellis Island sites during the life of this contract, and the Contractor shall coordinate its work so as not to interfere with other construction activities. The portions of the work identified in this contract as "work by others" may not necessarily be performed concurrently with this work.

f. The Contractor shall coordinate all work that may inhibit the public's use of the existing gravel road and boat ramps with the Illinois Department of Natural Resources (IDNR), Neil Booth (618) 376-3303 and the U.S. Fish and Wildlife Service Refuge Manager (618)883-2524. The Contractor shall make every effort to allow the public access to these facilities without compromising work site safety, security, or construction quality.

g. Construction Sequence for Cellular Structures. The Contractor may elect to construct the sheet pile cellular structures according to the procedures outlined below or may devise other alternative sequences. In either case the Contractor shall submit their plan for construction sequence for review and approval prior to beginning construction at Sites 1 and 7.

Cellular Structures at Sites 1 and 7

(1) Prior to cell construction, pre-excavate the site to the sill elevation over the footprint of the structure in accordance with paragraph 02220-3.3.

(2) FIRST CELL CONSTRUCTION

(a) Set the template and place and drive the sheet piling for the first cell according to the contract drawings and specifications. The cell piling will include three fabricated connection piles. One connection pile provides an interface with the reaction wall beneath the sill beam and shall be fabricated as shown on the contract drawings. The other two connection piles provide an interface with the cofferdam walls between the cells and are Contractor-designed. Drive the PZ22 reaction wall sheet pile connecting to the cell as part of the first cell construction.

(b) Drive steel H piles for bridge abutments for cell under construction.

(c) Using a clamshell, fill the cell interior with sand, placed through water, to an elevation one foot higher than the water surface in the channel, in accordance with SECTION 02213 - PERVIOUS MATERIAL. Continue to fill the cell above this elevation with densified sand placed in eight-inch-thick lifts. The densified sand shall be placed to an average relative density of 85 percent, with no test less than 80 percent. Complete the Quality Control tests in accordance with SECTION 02213. When the sand reaches the top of the cell sheet piling, continue loading sand on the top of the cell, heaping this material to the greatest height that may be sustained without sloughing and within one foot of the perimeter of the cell. Inspect

the piling interlocks to insure all are tight.

(d) Measure the completed cell diameter in both principal directions (parallel and perpendicular to the levee centerline) at the sill elevation, the top of the cell, and halfway between these elevations. Determine the amount of cell expansion beyond the specified cell diameter of 49 feet 4 inches. Along the berm centerline, determine the relative horizontal movement between the top of the cell and the sill elevation (the bottom of the pre-excavation).

(3) SECOND CELL CONSTRUCTION

(a) Assuming the amount of expansion and relative movement measured in the first cell will also occur in the second cell, locate the center of the second cell such that the minimum distance between cells equals that shown on the drawings (± 2 inches) when the second cell is complete.

(b) Set the template and place and drive the piling for the second cell, including the PS32 sheet piling, the three fabricated connection piles, and the reaction wall PZ22 reaction wall pile connecting to the cell, according to the contract drawings and specifications.

(c) Drive steel H piles for bridge abutments for cell under construction.

(d) Backfill the interior of the second cell with sand, in accordance with SECTION 02213 and using the same procedure as the first cell. Complete Quality Control tests in accordance with SECTION 02213. When the sand reaches the top of the cell sheet piling, continue loading sand on the top of the cell, heaping this material to the greatest height that may be sustained without sloughing and within one foot of the perimeter of the cell. Inspect the piling interlocks to insure all are tight.

(e) Measure the completed cell diameter in both principal directions (parallel and perpendicular to the levee centerline) at the sill elevation and at the top of the cell. Determine the amount of cell expansion beyond the specified diameter of 49 feet 4 inches. Along the centerline of the berm, determine the relative horizontal movement between the top of the cell and the bottom of the cofferdam excavation.

(4) COMPLETION OF CELLULAR STRUCTURE CONSTRUCTION

(a) On each side of the cellular structure, place and drive a line of sheet piles between the remaining fabricated connection piles in the cells to form a cofferdam. If needed, place clay fill against the exterior of the sheet piles to seal the sides of the cofferdam, consistent with the Contractor's plan for dewatering.

(b) Install the dewatering system in accordance with the specifications and contract drawings. Dewater the area within the cofferdam in accordance with SECTION 02140 - DEWATERING AND SURFACE WATER CONTROL.

(c) Perform localized excavation within the cofferdam as required for installation of the sill beam.

(d) Measure the distance between the cells at the location of the centerline of the PZ22 reaction wall sheet piles. Take these measurements at the top of the cells and at the completed channel elevation.

(e) Set the templates and place and drive the remaining PZ22 reaction wall piles per the specifications, to the lines and elevations shown on the drawings. Set and drive the piles a pair at a time, adjusting the setting width of each pair to accommodate the distance between the PZ22 piles driven with the cells.

(f) Pour the sill beam with its embedded metals on top of the reaction wall piles as shown on the drawings. Allow time for adequate strength to develop in the sill beam prior to installation of the stoplog slot assemblies. Fabricate the cell side closure plates based on the distances between cells measured in step (4)(d) above. Install the vertical stoplog slot assemblies and cell side closure plates.

(g) Rewater the cofferdam. If fill material has been placed against the cofferdam walls for sealing, remove it as part of the rewatering process. Cut off the cofferdam walls between the cells, at an elevation six inches below the top of the stone protection. Pulling the piles is an option.

(h) At each end of the structure, install impervious fill between the outer surfaces of the cell and the excavation side slope, up to EL. 420.0 Place semicompacted fill above this elevation, up to the construction grade of the levee.

(i) Excavate the heaped material from the tops of the cells. Finish the top of the sand fill in each cell to the elevation and slope shown on drawings.

(j) Excavate the cell fill for construction of the bridge abutments.

(k) Construct the bridge abutments.

(l) Backfill around the bridge abutments to the grade indicated on the contract drawings in accordance with the drawings and Sections 02213 PERVIOUS MATERIAL, 02230 CRUSHED STONE SURFACING and 02270 STONE PROTECTION.

(m) Complete remaining work at the cellular structure. Perform trial installation of the stoplogs in each stoplog bay of each structure to the full height of protection in the bay.

(5) Unless otherwise specified, the above-described work shall be performed in accordance with the specifications and contract drawings.

h. Duration for performing the County Road HH work shall be limited to 15 work days.

i. The existing stoplogs and pick-up beam from Site 2, Swan Lake, shall remain property of the Government and shall be moved to USFWS project facilities. All other materials, stoplogs, hoist, pick-up beams from the work at Swan Lake shall become property of the Contractor and disposed of offsite.

j. At each of the tied back sheet pile structures, after the Contractor starts work on the structure, he/she shall complete the installation of the sheet piling and tie back system and place all fill to

final grade over the tie back system without a break in the construction procedure.

24. AS-BUILT DRAWINGS.

a. "As-Built" Contract Drawings. The Contractor shall maintain a separate set of full-size contract drawings, marked up in red, to indicate as-built conditions. Each as-built contract drawing shall include the Contract Number (W912P9-XX-C-XXX) associated with the contract. These drawings shall be maintained in a current condition at all times until completion of the work and shall be available for review by Government personnel at all times. All variations from the contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the contract drawings. Upon completion of the work, two (2) sets of the marked-up drawings shall be furnished to the Contracting Officer prior to acceptance of the work. The Government will withhold two percent of the total bid price of the items for which as-built contract drawings have not been submitted.

b. "As-Built" Shop Drawings. Upon completion of items of work, the Contractor shall revise the shop drawings to show "as-built" conditions. The notation "Revised to show 'as-built' conditions" shall be placed in red in the lower right corner of each drawing along with the initials of a responsible company representative. Each as-built shop drawing or catalog cut shall be identified by the Contract Number (W912P9-XX-C-XXX) associated with the contract, and corresponding transmittal number from ENG Form 4025. "As-built" shop drawings of each Contractor-prepared construction drawing should be prepared as soon as possible after the construction detailed on a given drawing has been completed. After the "as-built" shop drawings have been prepared as described above and within 15 days after the contract completion date, the Contractor shall submit four (4) complete sets of as-built shop drawings, including catalog cuts, to the Contracting Officer. The Government will withhold two percent of the total bid price of the item for which as-built shop drawings have not been submitted.

25 THRU 31. NOT USED.

32. IDENTIFICATION OF GOVERNMENT-FURNISHED PROPERTY. FAR 52.245-3 (APR 1984)

a. The Government will furnish to the Contractor the property identified in the Schedule, to be incorporated or installed in the work or used in performing the contract. The listed property will be furnished at the place specified in Special Clause 00800-3, Paragraph d. The Contractor is required to accept delivery, pay any demurrage or detention charges, and unload and transport the property to the job site at its own expense. 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 at the expense of the Contractor, unless otherwise indicated in this contract.

b. Each item of property to be furnished under this clause shall be identified in the Schedule by quantity, item and description.

QUANTITY ITEM

The value of the aforesaid property is estimated to be approximately \$ 56,000.

33. STONE SOURCES.

a. On the basis of information and data available to the Contracting Officer, stone meeting the quality requirements of these specifications has been produced from the sources listed at the end of these Special Clauses.

b. Stone may be furnished from any of the currently listed sources or, at the option of the Contractor, may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions hereinafter stated.

c. It is the Contractor's responsibility to determine that the stone source or combination of sources selected are capable of supplying the quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work.

d. After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which stone will be furnished. If the Contractor proposes to furnish stone from a source not currently listed, only a single additional source for stone may be designated. Samples for acceptance testing shall be provided as required by SECTION-02270. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed at no additional cost to the Government.

e. Acceptance of a source of stone is not to be construed as acceptance 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 stone as determined by the Contracting Officer. Materials produced from a listed or unlisted source shall meet all the requirements of SECTION 02270, of the Technical Provisions of these specifications.

34. NOT USED.

35. HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997). FAR 52.223-3

(a) "Hazardous material", as used in this clause, includes any material defined as hazardous under the latest version of 29 CFR 1910.1200(g) (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")

Identification No.

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with 29 CFR 1910.1200(g), whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsive and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to 29 CFR 1910.1200(g), which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

36. PARTNERING. In order to most effectively accomplish this contract, the Government is willing to form a cohesive partnership with the Contractor. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget, and on schedule. This partnership would be bilateral in make-up and partnership will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by all parties and will be shared equally with no change in contract price.

General Decision Number: MO030001 08/06/2004 MO1

Superseded General Decision Number: MO020001

State: Missouri

Construction Types: Heavy and Highway

Counties: Missouri Statewide.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	06/13/2003
1	04/02/2004
2	04/16/2004
3	06/04/2004
4	06/11/2004
5	07/23/2004
6	08/06/2004

CARP0007-008 04/01/2001

CASS (Richards-Gebauer AFB ONLY), CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Carpenters:		
CARPENTERS & PILEDRIVERS.....	\$ 25.50	6.88

CARP0008-003 05/01/2002

ST. LOUIS COUNTY AND CITY

	Rates	Fringes
Carpenter.....	\$ 28.64	6.83

CARP0011-001 05/01/2002

	Rates	Fringes
Carpenter and Piledriver		
ADAIR, KNOX, PUTNAM, SCHUYLER AND SULLIVAN COUNTIES.....	\$ 23.63	6.99
ATCHISON, ANDREW, BATES, CALDWELL, CARROLL, DAVISS, DEKALB, GENTRY, GRUNDY, HARRISON, HENRY, HOLT, LIVINGSTON, MERCER, NODAWAY, ST. CLAIR, SALINE AND WORTH COUNTIES.....	\$ 22.53	6.74
AUDRAIN (East of Hwy.19), RALLS, MARION, LEWIS, CLARK AND SCOTLAND COUNTIES..	\$ 24.03	7.56
AUDRAIN (West of Hwy 19), BOONE, COOPER, HOWARD.....	\$ 23.63	6.99
BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE,		

LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES.....\$ 22.18	6.74
BENTON, MORGAN AND PETTIS COUNTIES.....\$ 22.33	6.99
BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY, STE. GENEVIEVE, SCOTT, STODDARD AND WAYNE COUNTIES.....\$ 24.56	7.18
BUCHANAN, CLINTON, JOHNSON AND LAFAYETTE COUNTIES.....\$ 23.18	6.74
CALLAWAY, COLE, MILLER, MONITEAU, OSAGE.....\$ 23.63	6.99
CARTER, HOWELL, OREGON AND RIPLEY COUNTIES.....\$ 23.64	7.18
CHARITON, LINN, MACON, MONROE, RANDOLPH AND SHELBY COUNTIES.....\$ 23.63	6.99
CRAWFORD, DENT, GASCONADE, IRON, MADISON, MARIES, MONTGOMERY, PHELPS, PULASKI, REYNOLDS, SHANNON AND TEXAS COUNTIES.....\$ 23.88	7.56
FRANKLIN COUNTY.....\$ 25.93	7.56
JEFFERSON AND ST. CHARLES COUNTIES.....\$ 28.44	7.56
LINCOLN COUNTY.....\$ 25.54	7.56
PIKE, ST. FRANCOIS AND WASHINGTON COUNTIES.....\$ 24.59	7.56
WARREN COUNTY.....\$ 25.93	6.56

ELEC0001-002 06/01/2002

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, FRANKLIN,
IRON, JEFFERSON, LINCOLN, MADISON, MISSISSIPPI, NEW MADRID,
PEMISCOT, PERRY, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS,
ST. LOUIS (City and County), STE. GENEVIEVE, SCOTT, STODDARD,
WARREN, WASHINGTON AND WAYNE COUNTIES

	Rates	Fringes
Electrician.....\$ 29.20		15.64

ELEC0002-001 12/01/2002

ADAIR, AUDRAIN, BOONE, CALLAWAY, CAMDEN, CARTER, CHARITON,
CLARK, COLE, COOPER, CRAWFORD, DENT, FRANKLIN, GASCONADE,
HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCON, LINN,
MACON, MARIES, MARION, MILLER, MONITEAU, MONROE, MONTGOMERY,
MORGAN, OREGON, OSAGE, PERRY, PHELPS, PIKE, PULASKI, PUTNAM,
RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS,
ST. LOUIS (City and County), STE. GENEVIEVE, SCHUYLER,
SCOTLAND, SHANNON, SHELBY, SULLIVAN, TEXAS, WARREN AND
WASHINGTON COUNTIES

	Rates	Fringes
Line Construction:		
Groundman Equipment Operator\$ 25.32		3.25+41.30%
Groundman, Groundman Driver.\$ 20.04		3.25+41.30%

Groundman-Winch Driver.....	\$ 20.81	3.25+41.30%
Groundmen Equipment Operator	\$ 25.32	3.25+41.30%
Lineman and Cable Splicer...	\$ 28.28	3.25+41.30%

ELEC0053-004 08/27/2000

Rates Fringes

Line Construction:

ANDREW, ATCHINSON, BARRY,
 BARTON, BUCHANAN,
 CALDWELL, CEDAR, CHRISTIAN,
 CLINTON, DADE, DALLAS,
 DAVIESS, DE KALB, DOUGLAS,
 GENTRY, GREENE, GRUNDY,
 HARRISON, HICKORY, HOLT,
 JASPER, LACLEDE, LAWRENCE,
 LIVINGSTON, McDONALD,
 MERCER, NEWTON, NODAWAY,
 OZARK, POLK, ST. CLAIR,
 STONE, TANEY, VERNON,
 WEBSTER, WORTH, AND WRIGHT
 COUNTIES.

Groundman Powderman.....	\$ 18.69	7.37
Groundman.....	\$ 17.30	6.98
Lineman Operator.....	\$ 25.41	9.30
Lineman.....	\$ 26.75	9.69

BATES, BENTON, CARROLL,
 CASS, CLAY, HENRY,
 JACKSON, JOHNSON,
 LAFAYETTE, PETTIS, PLATTE,
 RAY, AND SALINE COUNTIES.

Groundman Powderman.....	\$ 19.45	7.59
Groundman.....	\$ 18.49	7.31
Lineman Operator.....	\$ 25.97	9.46
Lineman.....	\$ 27.80	9.99

ELEC0095-001 06/01/2001

BARRY, BARTON, CEDAR, CRAWFORD, DADE, JASPER, LAWRENCE,
 MCDONALD, NEWTON, ST CLAIR, AND VERNON COUNTIES

Rates Fringes

Electricians:

Cable Splicers.....	\$ 20.86	5.68
Electricians.....	\$ 20.51	5.68

ELEC0124-007 09/29/2003

BATES, BENTON, CARROLL, CASS, CLAY, COOPER, HENRY, JACKSON,
 JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY AND SALINE
 COUNTIES:

Rates Fringes

Electricians:.....	\$ 30.73	13.82
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ELEC0257-003 03/01/2003

AUDRAIN (Except Cuivre Township), BOONE, CALLAWAY, CAMDEN,
 CHARITON, COLE, CRAWFORD, DENT, GASCONADE, HOWARD, MARIES,
 MILLER, MONITEAU, OSAGE, PHELPS AND RANDOLPH COUNTIES

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 24.73	12.165
Electricians.....	\$ 23.73	12.165

ELEC0350-002 12/01/2003

ADAIR, AUDRAIN (East of Highway 19), CLARK, KNOX, LEWIS, LINN,
MACON, MARION, MONROE, MONTGOMERY, PIKE, PUTNAM, RALLS,
SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES

	Rates	Fringes
Electrician.....	\$ 25.05	10.715

ELEC0453-001 09/01/2001

	Rates	Fringes
Electricians:		
CHRISTIAN, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, LACLEDE, OREGON, OZARK, POLK, SHANNON, WEBSTER AND WRIGHT COUNTIES.....	\$ 20.85	5.37+10%
PULASKI AND TEXAS COUNTIES..	\$ 25.50	5.37+10%
STONE AND TANEY COUNTIES....	\$ 14.45	4.97+10%

ELEC0545-003 06/01/2002

ANDREW, BUCHANAN, CLINTON, DEKALB, ATCHISON, HOLT, MERCER,
GENTRY, HARRISON, DAVIESS, GRUNDY, WORTH, LIVINGSTON, NODAWAY,
AND CALDWELL COUNTIES

	Rates	Fringes
Electricians:.....	\$ 26.35	9.54

ELEC0702-004 01/01/2002

BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MADISON,
MISSISSIPPI, NEW MADRID, PEMISCOT, SCOTT, STODDARD AND WAYNE
COUNTIES

	Rates	Fringes
Line Construction:		
Groundman - Class A.....	\$ 17.07	2.45+25.5%
Groundman Equipment Operator (all crawler type equipment D-4 and larger)...	\$ 24.48	2.45+25.5%
Lineman.....	\$ 28.68	2.45+25.5%

ENGI0101-001 05/01/2004

ANDREW, ATCHISON, BATES, BENTON, BUCHANAN, CALDWELL, CARROLL,
CHARITON, CLINTON, COOPER, DAVIESS, DEKALB, GENTRY, GRUNDY,
HARRISON, HENRY, HOLT, HOWARD, JOHNSON, LAFAYETTE, LINN,
LIVINGSTON, MERCER, NODAWAY, PETTIS, SALINE, SULLIVAN AND WORTH
COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 23.85	9.90
GROUP 2.....	\$ 23.45	9.90
GROUP 3.....	\$ 21.45	9.90

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers - 2; booster pump on dredge; bulldozer operator; boring machine (truck or crane mounted); clamshell operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drill cat with compressor mounted (self-contained) or similar type self-propelled rotary drill (not air tract); drilling or boring machine (rotary-self-propelled); finishing machine operator; greaser; high loader-fork lift-skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); mechanics and welders (field and plants); mucking machine operator; pile drive operator; pitman crane or boom truck (all types); push cat; quad track; scraper operators (all types); shovel operator; sideboom cats; side discharge spreader; skimmer scoop operators; slip form paver operator (CMI, Rex, Gomeco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; wood and log chippers (all types).

GROUP 2: A-frame truck operator; articulated dump truck; back filler operator; boilers (1); chip spreader; churn drill operator; compressor; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grade operator; hoisting engine (one drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra-hammer (or similar type); paymill operator; power shield; pumps; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; siphons and jets; straw blower; stump cutting machine; siphons and jets; tank car heater operator (combination boiler and booster); welding machine; vibrating machine operator (not hand held); welding machine.

GROUP 3: Oiler; oiler driver; mechanic.

HOURLY PREMIUMS:

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.25) ABOVE GROUP 1 RATE: Dragline operator - 3 yds. & over; shovel 3 yds. & over; clamshell 3 yds. & over; Crane, rigs or piledrivers, 100' of boom or over (incl. jib.), hoist - each additional active drum over 2 drums

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.50) ABOVE GROUP 1 RATE: Tandem scoop operator; crane, rigs or piledrivers 150' to 200' of boom (incl. jib.)

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.75) ABOVE

GROUP 1 RATE: Crane rigs, or piledrivers 200 ft. of boom
or over (including jib.)

* ENGI0101-005 04/01/2004

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 25.59	10.17
GROUP 2.....	\$ 24.55	10.17
GROUP 3.....	\$ 20.08	10.17
GROUP 4.....	\$ 23.43	10.17

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers-2; booster pump on dredge; boring machine (truck or crane mounted); bulldozer operator; clamshell operator; concrete cleaning decontamination machine operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drillcat with compressor mounted (self-contained) or similar type self propelled rotary drill (not air tract); drilling or boring machine (rotary - self-propelled); finishing machine operator; greaser; heavy equipment robotics operator/mechanic; horizontal directional drill operator; horizontal directional drill locator; loader-forklift - skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); master environmental maintenance mechanic; mechanics and welders (field and plants); mucking machine operator; piledrive operator; pitman crane or boom truck (all types); push cat; quad-track; scraper operators (all types); shovel operator; side discharge spreader; sideboom cats; skimmer scoop operator; slip-form paver (CMI, REX, Gomaco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; ultra high perssure waterjet cutting tool system operator/mechanic; vacuum blasting machine operator/mechanic; wood and log chippers (all types)

GROUP 2: "A" Frame truck operator; articulated dump truck; back filler operator; boilers (1); chip spreader; churn drill operator; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grader operator; hoisting engine (1 drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra- hammer (or similar type); power shield; paymill operator; pumps; siphons and jets; stump cutting machine; tank car heater operator (combination boiler and booster); compressor; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; straw blower; tank car heater operator (combination boiler and booster); vibrating machine operator (not hand held)

GROUP 3: Oilers

GROUP 4: Oiler Driver (All Types)

FOOTNOTE:

HOURLY PREMIUMS FOLLOWING CLASSIFICATIONS SHALL RECEIVE
(\$.25) ABOVE GROUP 1 RATE:

Clamshells - 3 yd. capacity or over; Cranes or rigs, 80 ft.
of boom or over (including jib); Draglines, 3 yd. capacity
or over;

Piledrivers 80 ft. of boom or over (including jib);

Shovels & backhoes, 3 yd. capacity or over.

ENGI0101-022 05/01/2004

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS,
GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON,
OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER AND
WRIGHT COUNTIES and CITY OF SPRINGFIELD

	Rates	Fringes
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Power equipment operators:

GROUP 1.....	\$ 20.82	8.70
GROUP 2.....	\$ 20.47	8.70
GROUP 3.....	\$ 20.27	8.70
GROUP 4.....	\$ 18.22	8.70

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening
spreader; asphalt plant console operator; autograder;
automatic slipform paver; backhoe; blade operator - all
types; boat operator - tow; boilers-2; central mix concrete
plant operator; clamshell operator; concrete mixer paver;
crane operator; derrick or derrick trucks; ditching
machine; dozer operator; dragline operator; dredge booster
pump; dredge engineman; dredge operator; drill cat with
compressor mounted on cat; drilling or boring machine
rotary self-propelled; highloader; hoisting engine - 2
active drums; launch hammer wheel; locomotive operator; -
standard gauge; mechanic and welders; mucking machine;
off-road trucks; piledriver operator; pitman crane
operator; push cat operator; quad trac; scoop operator -
all types; shovel operator; sideboom cats; skimmer scoop
operators; trenching machine operator; truck crane.

GROUP 2: A-frame; asphalt hot-mix silo; asphalt plant
fireman (drum or boiler); asphalt plant man; asphalt plant
man; asphalt plant mixer operator; asphalt roller operator;
backfiller operator; barber-greene loader; boat operator
(bridges and dams); chip spreader; concrete mixer operator
- skip loader; concrete plant operator; concrete pump
operator; crusher operator; dredge oiler; elevating grader
operator; fork lift; greaser-fleet; hoisting engine - 1;
locomotive operator - narrow gauge; multiple compactor;
pavement breaker; powerbroom - self-propelled; power
shield; rooter; side discharge concrete spreader; slip form
finishing machine; stumpcutter machine; throttle man;
tractor operator (over 50 h.p.); winch truck.

GROUP 3: Boilers - 1; chip spreader (front man); churn drill
operator; clef plane operator; concrete saw operator (self-

propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; roller operator, other than high type asphalt; screening & washing plant operator; siphons & jets; sub-grading machine operator; spreader box operator, self-propelled (not asphalt); tank car heater operator (combination boiler & booster); tractor operator (50 h.p. or less); Ulmac, Ulric or similar spreader; vibrating machine operator, not hand;

GROUP 4: Grade checker; Oiler; Oiler-Driver

HOURLY PREMIUMS:

The following classifications shall receive \$.25 above GROUP 1 rate:

Clamshells - 3 yds. or over; Cranes - Rigs or Piledrivers, 100 ft. of boom or over (including jib); Draglines - 3 yds. or over; Hoists - each additional active drum over 2 drums; Shovels - 3 yds. or over;

The following classifications shall receive \$.50 above GROUP 1 rate:

Tandem scoop operator; Cranes - Rigs or Piledrivers, 150 ft. to 200 ft. of boom (including jib); Tandem scoop.

The following classifications shall receive \$.75 above GROUP 1 rate:

Cranes - Rigs or Piledrivers, 200 ft. of boom or over (including jib.).

ENGI0513-004 05/01/2004

FRANKLIN, JEFFERSON, LINCOLN, ST CHARLES, AND WARREN COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 26.02	13.77
GROUP 2.....	\$ 24.12	13.77
GROUP 3.....	\$ 21.12	13.77
GROUP 4.....	\$ 20.66	13.77

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, Cable; Backhoe, Hydraulic (2 cu yds bucket and under regardless of attachment, one oiler for 2 or 3, two oilers for 4 through 6); Backhoe, Hydraulic over 2 cu yds; Cableway; Crane, Crawler or Truck; Crane, Hydraulic - Truck or Cruiser mounted, 16 tons and over; Crane, Locomotive; crane with boom including jib over 100 ft from pin to pin; Crane using rock socket tool; Derrick, Steam; Derrick Car and Derrick Boat; Dragline, 7 cu yds and over; Dredge; Gradall, Crawler or tire mounted; Locomotive, Gas, Steam & other powers; Pile Driver, Land or Floating; Scoop, Skimmer; Shovel, Power (Electric, Gas, Steam or other powers); Shovel, Power (7 cu yds and over); Switch Boat; Whirley; Air Tugger with air compressor; Anchor Placing Barge; Asphalt Spreaker; Athey Force Feeder Loader, self-propelled; Backfilling Machine; Boat Operator - Push Boat or Tow Boat (job site); Boiler, High Pressure Breaking in Period; Boom Truck, Placing or Erecting; Boring Machine, Footing Foundation; Bullfloat; Cherry Picker; Combination

Concrete Hoist and Mixer (such as Mixermobile); Compressor, Two 125 CFM and under; Compressor, Two through Four over 125 CFM; Compressor when operator runs throttle; Concrete Breaker (Truck or Tractor mounted); Concrete Pump (such as Pumpcrete machine); Concrete Saw (self-propelled); Concrete Spreader; Conveyor, Large (not selfpropelled) hoisting or moving brick and concrete into, or into and on floor level, one or both; Crane, Climbing (such as Linden); Crane, Hydraulic - Rough Terrain, self-propelled; Crane, Hydraulic - Truck or Cruiser mounted - under 16 tons; Drilling machine - Self-powered, used for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other sources including concrete breakers, jackhammers and Barco equipment no engineer required); Elevating Grader; Engine Man, Dredge; Excavator or Powerbelt Machine; Finishing Machine, self-propelled oscillating screed; Forklift; Generators, Two through Six 30 KW or over; Grader, Road with power blade; Greaser; Highlift; Hoist, Concrete and Brick (Brick cages or concrete skips operating or on tower, Towermobile, or similar equipment); Hoist, Three or more drums in use; Hoist, Stack; Hydro-Hammer; Lad-A-Vator, hoisting brick or concrete; Loading Machine such as Barber-Greene; Mechanic on job site

GROUP 2: Air Tugger with plant air; Boiler (for power or heating shell of building or temporary enclosures in connection with construction work); Boiler, Temporary; Compressor, One over 125 CFM; Compressor, truck mounted; Conveyor, Large (not self-propelled); Conveyor, Large (not self-propelled) moving brick and concrete (distributing) on floor level; Curb Finishing Machine; Ditch Paving Machine; Elevator (outside); Endless Chain Hoist; Fireman (as required); Form Grader; Hoist, One Drum regardless of size (except brick or concrete); Lad-A-Vator, other hoisting; Manlift; Mixer, Asphalt, over 8 cu ft capacity; Mixer, one bag capacity or less; Mixer, without side loader, two bag capacity or more; Mixer, with side loader, regardless of size, not Paver; Mud Jack (where mud jack is used in conjunction with an air compressor, operator shall be paid \$.55 per hour in addition to his basic hourly rate for covering both operations); Pug Mill operator; Pump, Sump - self powered, automatic controlled over 2"; Scissor Lift (used for hoisting); Skid Steer Loader; Sweeper, Street; Tractor, small wheel type 50 HP and under with grader blade and similar equipment; Welding Machine, One over 400 amp; Winch, operating from truck

GROUP 3: Boat operator - outboard motor, job site; Conveyors (such as Con-Vay-It) regardless of how used; Elevator (inside); Heater operator, 2 through 6; Sweeper, Floor

GROUP 4: Crane type

HOURLY PREMIUMS:

Backhoe, Hydraulic 2 cu yds or less without oiler - \$2.00;
 Certified Crane Operator - \$1.50;
 Certified Hazardous Material Operator \$1.50;
 Crane, climbing (such as Linden) - \$.50;
 Crane, Pile Driving and Extracting - \$.50
 Crane with boom (including job) over
 100 ft from pin to pin - add \$.01 per foot
 to maximum of \$4.00);

Crane, using rock socket tool - \$.50;
 Derrick, diesel, gas or electric hoisting material
 and erecting steel (150 ft or more above ground) - \$.50;
 Dragline, 7 cu yds and over - \$.50;
 Hoist, Three or more drums in use - \$.50;
 Scoop, Tandem - \$.50;
 Shovel, Power - 7 cu yds and over - \$.50;
 Tractor, Tandem Crawler - \$.50;
 Tunnel, man assigned to work in tunnel or
 tunnel shaft - \$.50;
 Wrecking, when machines are working on
 second floor or higher - \$.50

 ENGI0513-006 05/01/2004

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE
 GIRARDEAU, CARTER, CLARK, COLE, CRAWFORD, DENT, DUNKLIN,
 GASCONADE, HOWELL, IRON, KNOX, LEWIS, MACON, MADISON, MARIES,
 MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY,
 MORGAN, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS,
 PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST.
 FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON,
 SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 22.45	13.77
GROUP 2.....	\$ 22.10	13.77
GROUP 3.....	\$ 21.90	13.77
GROUP 4.....	\$ 18.25	13.77

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening
 spreader, asphalt plant console operator; autograder;
 automatic slipform paver; back hoe; blade operator - all
 types; boat operator tow; boiler two; central mix concrete
 plant operator; clam shell operator; concrete mixer paver;
 crane operator; derrick or derrick trucks; ditching
 machine; dozer operator; dragline operator; dredge booster
 pump; dredge engineman; dredge operator; drill cat with
 compressor mounted on cat; drilling or boring machine
 rotary self-propelled; highloader; hoisting engine 2 active
 drums; launchhammer wheel; locomotive operator standrad
 gauge; mechanics and welders; mucking machine; piledriver
 operator; pitman crane operator; push cat operator;
 quad-trac; scoop operator; sideboom cats; skimmer scoop
 operator; trenching machine operator; truck crane, shovel
 operator.

GROUP 2: A-Frame; asphalt hot-mix silo; asphalt roller
 operator asphalt plant fireman (drum or boiler); asphalt
 plant man; asphalt plant mixer operator; backfiller
 operator; barber-greene loader; boat operator (bridge &
 dams); chip spreader; concrete mixer operator skip loader;
 concrete plant operator; concrete pump operator; dredge
 oiler; elevating graded operator; fork lift; grease fleet;
 hoisting engine one; locomotive operator narrow gauge;
 multiple compactor; pavement breaker; powerbroom
 self-propelled; power shield; roter; slip-form finishing
 machine; stumpcutter machine; side discharge concrete
 spreader; throttleman; tractor operator (over 50 hp); winch

truck; asphalt roller operator; crusher operator.

GROUP 3: Spreader box operator, self-propelled not asphalt; tractor operator (50 h.p. or less); boilers one; chip spreader (front man); churn drill operator; compressor over 105 CFM 2-3 pumps 4" & over; 2-3 light plant 7.5 KWA or any combination thereof; clef plane operator; compressor maintenance operator 2 or 3; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; riller operator other than high type asphalt; screening & washing plant operator; siphons & jets; subgrading machine operator; tank car heater (combination boiler & booster); ulmac, ulric or similar spreader; vibrating machine operator; hydrobroom.

GROUP 4: Oiler; grout machine; oiler driver; compressor over 105 CFM one; conveyor operator one; maintenance operator; pump 4" & over one.

FOOTNOTE: HOURLY PREMIUMS

- Backhoe hydraulic, 2 cu. yds. or under Without oiler - \$2.00
- Certified Crane Operator - \$1.50;
- Certified Hazardous Material Operator \$1.50;
- Crane, climbing (such as Linden) - \$0.50;
- Crane, pile driving and extracting - \$0.50;
- Crane, with boom (including jib) over 100' from pin to pin add \$0.01 per foot to maximum of \$4.00;
- Crane, using rock socket tool - \$0.50;
- Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above the ground) - \$0.50;
- Dragline, 7 cu. yds, and over - \$0.50;
- Hoist, three or more drums in use - \$0.50; Scoop, Tandem - \$0.50;
- Shovel, power - 7 cu. yds. or more - \$0.50;
- Tractor, tandem crawler - \$0.50;
- Tunnel, man assigned to work in tunnel or tunnel shaft - \$0.50;
- Wrecking, when machine is working on second floor or higher - \$0

 ENGI0513-007 05/01/2004

ST. LOUIS CITY AND COUNTY

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 26.02	13.77
GROUP 2.....	\$ 26.02	13.77
GROUP 3.....	\$ 24.12	13.77
GROUP 4.....	\$ 21.12	13.77
GROUP 5.....	\$ 20.66	13.77

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, cable or hydraulic; cableway; crane crawler or truck; crane, hydraulic-truck or cruiser mounted 16 tons & over; crane locomotive; derrick, steam; derrick car & derrick boat; dragline; dredge; gradall, crawler or tire mounted; locomotive, gas, steam & other powers; pile driver, land or floating; scoop, skimmer; shovel, power (steam, gas, electric or other powers); switch boat;

whirley.

GROUP 2: Air tugger w/air compressor; anchor-placing barge; asphalt spreader; atthey force feeder loader (self-propelled); backfilling machine; backhoe-loader; boat operator-push boat or tow boat (job site); boiler, high pressure breaking in period; boom truck, placing or erecting; boring machine, footing foundation; bull- float; cherry picker; combination concrete hoist & mixer (such as mixer mobile); compressor (when operator runs throttle); concrete breaker (truck or tractor mounted); concrete pump, such as pump-crete machine; concrete saw (self-propelled), concrete spreader; conveyor, large (not self-propelled), hoisting or moving brick and concrete into, or into and on floor level, one or both; crane, hydraulic-rough terrain, self-propelled; crane hydraulic-truck or cruiser mounted-under 16 tons; drilling machines, self-powered use for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other sources including concrete breakers, jackhammers and barco equipment-no engineer required); elevating grader; engineman, dredge; excavator or powerbelt machine; finishing machine, self-propelled oscillating screed; forklift; grader, road with power blade; highlift. greaser; hoist, stack, hydro-hammer; loading machine (such as barber-greene); machanic, on job site; mixer, pipe wrapping machines; plant asphalt; plant, concrete producing or ready-mix job site; plant heating-job site; plant mixing-job site; plant power, generating-job site; pumps, two through six self-powered over 2"; pumps, electric submersible, two through six, over 4"; quad-track; roller, asphalt, top or sub-grade; scoop, tractor drawn; spreader box; sub-grader; tie tamper; tractor-crawler, or wheel type with or without power unit, power take-offs and attachments regardless of size; trenching machine; tunnel boring machine; vibrating machine automatic, automatic propelled; welding machines (gasoline or diesel) two through six; well drilling machine

GROUP 3: Conveyor, large (not self-propelled); conveyor, large (not self-propelled) moving brick and concrete distributing) on floor level; mixer two or more mixers of one bag capacity or less; air tugger w/plant air; boiler, for power or heating on construction projects; boiler, temporary; compressor (mounted on truck; curb finishing machine; ditch paving machine; elevator; endless chain hoist; form grader; hoist, one drum regardless of size; lad-a-vator; manlift; mixer, asphalt, over 8 cu. ft. capacity, without side loader, 2 bag capacity or more; mixer, with side loader, regardless of size; pug mill operator; pump, sump-self-powered, automatic controlled over 2" during use in connection with construction work; sweeper, street; welding machine, one over 400 amp.; winch operating from truck; scissor lift (used for hoisting); tractor, small wheel type 50 h.p. & under with grader blade & similar equipment

GROUP 4: Boat operator-outboard motor (job site); conveyor (such as con-vay-it) regardless of how used; sweeper, floor

GROUP 5: Oiler on dredge and on truck crane.

HOURLY PREMIUMS:

Backhoe, hydraulic

2 cu. yds. or under without oiler	\$2.00
Certified Crane Operator	1.50
Certified Hazardous Material Operator	1.50
Crane, climbing (such as Linden)	.50
Crane, pile driving and extracting	.50
Crane, with boom (including jib) over 100' (from pin to pin) add \$.01 per foot to maximum of	4.00
Crane, using rock socket tool	.50
Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above ground)	.50
Dragline, 7 cu. yds. and over	.50
Hoist, three (3) or more drums in use	.50
Scoop, Tandem	.50
Shovel, power - 7 cu. yds. or more	.50
Tractor, tandem crawler	.50
Tunnel, man assigned to work in tunnel or tunnel shaft	.50
Wrecking, when machine is working on second floor or higher	.50

IRON0010-012 04/01/2003

Rates Fringes

Ironworkers:

ANDREW, ATCHISON, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDER CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DE KALB, GENTRY, GREENE, GRUNDY, HARRISON, HENRY, HICKORY, HOLT, HOWARD, LACLEDE, LINN, LIVINGSTON, MERCER, MONITEAU, MORGAN, NODAWAY, PETTIS, POLK, PUTNAM, RANDOLPH, ST. CLAIR, SALINE, SULLIVAN, TANEY, VERNON, WEBSTER, WRIGHT and WORTH Counties; and portions of ADAIR, BOONE, MACON, MILLER, and RANDOLPH Counties.....	\$ 21.10	13.73
BUCHANAN, CASS, CLAY, JACKSON, JOHNSON, LAFAYETTE, PLATTE AND RAY Counties.....	\$ 24.10	13.73

IRON0321-002 12/31/2002

DOUGLAS, HOWELL and OZARK COUNTIES

Rates Fringes

Ironworker.....	\$ 18.00	8.06
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IRON0396-004 07/31/2002

ST. LOUIS (City and County), ST. CHARLES, JEFFERSON, IRON,
FRANKLIN, LINCOLN, WARREN, WASHINGTON, ST. FRANCOIS, STE.

GENEVIEVE, and REYNOLDS Counties; and portions of MADISON, PERRY, BOLLINGER, WAYNE, and CARTER Counties

	Rates	Fringes
Ironworker.....	\$ 26.54	11.73

IRON0396-009 08/01/2003

AUDRAIN, CALLAWAY, COLE, CRAWFORD, DENT, GASCONADE, MARIES, MONTGOMERY, OSAGE, PHELPS, PIKE, PULASKI, TEXAS, and WRIGHT Counties; and portions of CAMDEN, DOUGLAS, HOWELL, MILLER, OREGON, BOONE, SHANNON, LACLEDE, MONROE, and RALLS Counties

	Rates	Fringes
Ironworker.....	\$ 21.87	13.00

IRON0577-005 06/01/2002

ADAIR, CLARK, KNOX, LEWIS, MACON, MARION, MONROE, RALLS, SCHUYLER, SCOTLAND, AND SHELBY COUNTIES

	Rates	Fringes
Ironworker.....	\$ 20.85	9.16

IRON0584-004 06/01/2004

BARRY, JASPER, LAWRENCE, MCDONALD, NEWTON AND STONE Counties

	Rates	Fringes
Ironworkers:.....	\$ 19.50	8.47

IRON0782-003 09/01/2003

CAPE GIRARDEAU, MISSISSIPPI, NEW MADRID, SCOTT, & STODDARD Counties; and portions of BOLLINGER, BUTLER, CARTER, DUNKLIN, MADISON, PEMISCOT, PERRY, RIPLEY, and WAYNE Counties

	Rates	Fringes
Ironworkers:		
All Major River Work (Dams, Bridges): Projects \$20 million or more.....	\$ 20.65	9.88
All Other Work.....	\$ 21.95	9.73

LABO0042-003 03/03/2003

ST. LOUIS (City and County)

	Rates	Fringes
Laborers:		
Plumber Laborers.....	\$ 23.97	7.43

LABO0042-005 03/03/2003

ST. LOUIS (City and County)

	Rates	Fringes
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Laborers:

Dynamiter, Powderman.....	\$ 24.28	7.43
Laborers, Flagperson.....	\$ 23.78	7.43
Wrecking.....	\$ 23.66	7.43

LABO0424-002 05/01/2003

	Rates	Fringes
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Laborers:

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE GIRARDEAU, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWARD, HOWELL, IRON, KNOX, LEWIS, LINN, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WASHINGTON, AND WAYNE COUNTIES		
GROUP 1.....	\$ 20.32	7.03
GROUP 2.....	\$ 20.92	7.03
FRANKLIN COUNTY		
GROUP 1.....	\$ 21.77	7.03
GROUP 2.....	\$ 22.37	7.03
JEFFERSON COUNTY		
GROUP 1.....	\$ 21.82	7.03
GROUP 2.....	\$ 22.42	7.03
LINCOLN, MONTGOMERY AND WARREN COUNTIES		
GROUP 1.....	\$ 20.57	7.03
GROUP 2.....	\$ 21.17	7.03

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men

handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LABO0579-005 05/01/2004

Rates Fringes

Laborers: (ANDREW, ATCHISON, BARRY, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIESS, DEKALB, DOUGLAS, GREENE, GENTRY, GRUNDY, HARRISON, HENRY, HICKORY, HOLT, JASPER, JOHNSON, LACLEDE, LAWRENCE, LIVINGSTON, MCDONALD, MERCER, MORGAN, NEWTON, NODAWAY, OZARK, PETTIS, POLK, ST. CLAIR, SALINE, STONE, TANEY, VERNON, WEBSTER, WORTH AND WRIGHT COUNTIES.)

GROUP 1.....	\$ 17.69	7.74
GROUP 2.....	\$ 18.24	7.74

Laborers: (BUCHANAN AND LAFAYETTE COUNTIES)

GROUP 1.....	\$ 19.19	7.99
GROUP 2.....	\$ 19.54	7.99

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers - Carpenter tenders; salamander tenders; loading trucks under bins; hoppers & conveyors; track men & all other general laborers; air tool operator; cement handler-bulk or sack; dump man on earth fill;

georgie buggy man; material batch hopper man; material mixer man (except on manholes); coffer dams; riprap pavers - rock, block or brick; signal man; scaffolds over ten feet not self-supported from ground up; skipman on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator, all work in connection with hydraulic or general dredging operations; puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material or materials (where special protection is required); rubbing concrete; topper of standing trees; batter board man on pipe and ditch work; feeder man on wood pulverizers; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 feet where compressed air is not used; abutment and pier hole men working six (6) feet or more below ground; men working in coffer dams for bridge piers and footings in the river; ditchliners; pressure groutmen; caulker; chain or concrete saw; cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground; mortarmen on brick or block manholes; toxic and hazardous waste work.

GROUP 2: Skilled Laborers - Head pipe layer on sewer work; laser beam man; Jackson or any other similar tamp; cutting torch man; form setters; liners and stringline men on concrete paving, curb, gutters; hot mastic kettleman; hot tar applicator; sandblasting and gunite nozzle men; air tool operator in tunnels; screed man on asphalt machine; asphalt raker; barco tamper; churn drills; air track drills and all similar drills; vibrator man; stringline man for electronic grade control; manhole builders-brick or block; dynamite and powder men; grade checker.

LABO0660-006 03/05/2003

ST. CHARLES COUNTY

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 22.69	7.10
GROUP 2.....	\$ 23.19	7.10

LABORERS CLASSIFICATIONS

GROUP 1: General laborer; carpenter tender; salamander tender; dump man; ticket takers; flagman; loading trucks under bins, hoppers, and conveyors; track men; cement handler; dump man on earth fill; Georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap paver - rock, block, or brick; signal man; scaffolds over 10 ft not self-supported from ground up; skipman on concrete paving; wire mech setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations;

form setters; puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizer; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft where compressed air is not used; abutment and pier hole men working 6 ft or more below ground; men working in coffer dams for bridge piers and footings in the river; Barco tamper, Jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditchliners; hot mastic kettleman; hot tar applicator; hand blade operators; mortar men on brick or block manholes; rubbing concrete; air tool operator under 65 pounds; caulker and lead man; chain saw under 15 hp; guard rail and sign erectors

GROUP 2: Vibrator man; asphalt raker; hand pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from Bosun's chairs, scaffolds or platforms on dams or power plants over 10 ft high; air tool operator over 65 pounds; stringline man on concrete paving etc.; sand blast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills; gunnite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 hp and over; grade checker; stringline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi and over; asbestos and/or hazardous waste removal and or disposal;

LABO0663-002 04/01/2004

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 22.12	8.09
GROUP 2.....	\$ 23.29	8.09

LABORERS CLASSIFICATIONS

GROUP 1: General laborers, Carpenter tenders, salamander tenders, loading trucks under bins, hoppers and conveyors, track men and all other general laborers, air tool operator, cement handler (bulk or sack), chain or concrete saw, deck hands, dump man on earth fill, Georgie Buggies man, material batch hopper man, scale man, material mixer man (except on manholes), coffer dams, abutments and pier hole men working below ground, riprap pavers rock, black or brick, signal man, scaffolds over ten feet not self-supported from ground up, skipman on concrete paving, wire mesh setters on concrete paving, all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipelines, power tool operator, all work in connection with hydraulic or general dredging operations, straw blower nozzle man, asphalt plant platform man, chuck tender, crusher feeder, men handling creosote ties on creosote materials, men working with and handling epoxy material or materials (where special protection is required), topper of standing

trees, batter board man on pipe and ditch work, feeder man on wood pulverizers, board and willow mat weavers and cable tiers on river work, deck hands, pile dike and revetment work, all laborers working on underground tunnels less than 25 feet where compressed air is not used, abutment and pier hole men working six (6) feet or more below ground, men working in coffer dams for bridge piers and footings in the river, ditchliners, pressure groutmen, caulker and chain or concrete saw, cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground, mortarmen on brick or block manholes, signal man.

GROUP 2: Skilled Laborer - spreader or screed man on asphalt machine, asphalt raker, grade checker, vibrator man, concrete saw over 5 hp., laser beam man, barco tamper, jackson or any other similar tamp, wagon driller, churn drills, air track drills and other similar drills, cutting torch man, form setters, liners and stringline men on concrete paving, curb, gutters and etc., hot mastic kettleman, hot tar applicator, hand blade operators, mortar men on brick or block manholes, sand blasting and gunnite nozzle men, rubbing concrete, air tool operator in tunnels, head pipe layer on sewer work, manhole builder (brick or block), dynamite and powder men.

 PAIN0002-002 09/01/2003

CLARK, FRANKLIN, JEFFERSON, LEWIS, LINCOLN, MARION, PIKE, RALLS, ST. CHARLES, ST. LOUIS (CITY & COUNTY), AND WARREN COUNTIES

	Rates	Fringes
Painters:		
Brush.....	\$ 24.93	8.65
Spray.....	\$ 26.93	8.65

 PAIN0002-006 02/01/2003

ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, COLE, GASCONADE, HOWARD, KNOX, LINN, MACON, MONROE, MONTGOMERY, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES and the City of Booneville.

	Rates	Fringes
Painters:		
Bridges, Dams, Locks or Powerhouses.....	\$ 20.44	5.33
Brush, Roller, Paperhanger, Tapers.....	\$ 18.44	5.33
Sandblasting; Epoxy or Any Two Part Coating; Stage or Other Aerial Work Platforms Over 50 ft. high; Lead Abatement.....	\$ 19.44	5.33
Spray; Water Base Epoxy; Stage Under 50 ft.; Structural Steel (except for stairs and railings)....	\$ 18.94	5.33
Tapers using Ames or comparable tools (bazooks,		

etc.).....\$ 18.69 5.33

 PAIN0003-004 04/01/2000

BATES, BENTON, CALDWELL, CARROLL, CASS, CLAY, CLINTON, COOPER,
 DAVIESS, GRUNDY, HARRISON, HENRY, JACKSON, JOHNSON, LAFAYETTE,
 LIVINGSTON, MERCER, MONITEAU, MORGAN, PETTIS, PLATTE, RAY AND
 SALINE COUNTIES

	Rates	Fringes
Painters:		
Bazooka; Paperhanger.....	\$ 22.60	6.01
Brush & Roller; Taper.....	\$ 22.10	6.01
Lead Abatement; Sprayman....	\$ 23.10	6.01
Sandblast (Bridge, Stage, Erected Steel and Storage Bin and Tanks).....	\$ 23.60	6.01
Sprayman (Storage Bin & Tanks, Elevated Tanks); Stageman (Spray); Bridgeman (Spray); Steelman (Spray).....	\$ 23.85	6.01
Steeplejack - Spray or Sandblast (other than Elevated Tanks).....	\$ 27.79	6.01
Steeplejack (other than Elevated Tanks).....	\$ 26.79	6.01
Storage Bin & Tanks (Roller or Brush); Elevated Tanks (Roller or Brush); Stageman; Beltman; Bridgeman; Steelman; Sand Blast (Base); Elevator Shaft	\$ 22.85	6.01

 PAIN0098-002 05/01/2000

ANDREW, ATCHISON, BUCHANAN, DE KALB, GENTRY, HOLT, NODAWAY &
 WORTH COUNTIES

	Rates	Fringes
Painters:		
Brush & Roller.....	\$ 20.50	4.40
Sandblasters.....	\$ 21.50	4.40
Steeple Jack.....	\$ 23.50	4.40

 PAIN0203-001 04/01/2004

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
 HICKORY, HOWELL, JASPER, LAWRENCE, MCDONALD, NEWTON, OZARK,
 POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER and WRIGHT
 COUNTIES

	Rates	Fringes
Painters:		
Painters.....	\$ 16.88	7.14
Sandblasters and Highman (over 40').....	\$ 18.63	7.14
Tapers.....	\$ 17.65	6.35

 PAIN1265-003 07/01/2004

CAMDEN, CRAWFORD, DENT, LACLEDE, MARIES, MILLER, PHELPS,
PULASKI AND TEXAS COUNTIES

Rates Fringes

Painters:

Brush and Roller.....	\$ 19.54	8.37
Lead Abatement.....	\$ 21.79	8.37
Spray.....	\$ 21.04	8.37
Structural Steel, Sandblasting and All Tank Work.....	\$ 20.79	8.37

PAIN1292-002 07/01/2001

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN,
MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, REYNOLDS,
RIPLEY, SCOTT, SHANNON, STODDARD and WAYNE COUNTIES

Rates Fringes

Painters:

Bridges, Stacks & Tanks.....	\$ 22.89	5.97
Commercial.....	\$ 15.44	5.97
Industrial.....	\$ 17.94	5.97
Spray & Abrasive Blasting...	\$ 17.44	5.97
Taper (Tools).....	\$ 15.69	5.97
Waterblasting.....	\$ 17.44	5.97

Height Rates (All Areas):
Over 60 ft. \$0.50 per hour.
Under 60 ft. \$0.25 per hour.

PAIN1292-003 07/01/2001

IRON, MADISON, ST. FRANCOIS, STE. GENEVIEVE and WASHINGTON
COUNTIES

Rates Fringes

Painters:

Bridges, Stacks & Tanks.....	\$ 22.89	5.97
Commercial.....	\$ 17.54	5.97
Industrial.....	\$ 18.54	5.97
Lead Abatement.....	\$ 18.29	5.97
Spray & Abrasive Blasting...	\$ 19.54	5.97
Tapers (Tools).....	\$ 17.79	5.97
Waterblasting.....	\$ 19.54	5.97

Height Rates (All Areas):
Over 60 ft. \$0.50 per hour
Under 60 ft. \$0.25 per hour.

PLAS0518-006 04/01/2002

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK,
POLK, STONE, TANEY, VERNON, WEBSTER, AND WRIGHT COUNTIES

Rates Fringes

Cement Masons:.....\$ 17.31 3.84

 PLAS0518-007 03/22/2004

CASS (Richards-Gebaur AFB only), CLAY, JACKSON, PLATTE AND RAY
 COUNTIES

Rates Fringes

Cement Masons:.....\$ 21.25 11.45

 PLAS0518-011 05/01/2001

ANDREW, ATCHISON, BUCHANAN, BATES, CALDWELL, CARROLL, CASS
 (Except Richards-Gebaur AFB) CLINTON, DAVIESS, DEKALB, GENTRY,
 GRUNDY, HARRISON, HOLT, JACKSON, LAFAYETTE, LIVINGSTON, MACON,
 MERCER, NODAWAY AND WORTH COUNTIES

Rates Fringes

Cement Masons:.....\$ 23.13 7.15

 PLAS0527-001 05/01/2003

Rates Fringes

Cement Masons:

FRANKLIN, LINCOLN, AND
 WARREN COUNTIES.....\$ 25.01 9.36

JEFFERSON, ST. CHARLES
 COUNTIES AND ST. LOUIS
 (City and County).....\$ 26.18 9.36

 PLAS0527-004 05/01/2003

CRAWFORD, DENT, IRON, MADISON, MARION, PHELPS, PIKE, PULASKI,
 RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SHANNON, TEXAS,
 WASHINGTON COUNTIES

Rates Fringes

Cement Mason.....\$ 23.70 9.28

 PLAS0908-001 05/01/2002

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN,
 MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, RIPLEY,
 SCOTT, STODDARD, AND WAYNE COUNTIES

Rates Fringes

Cement Mason.....\$ 17.40 8.95

 PLAS0908-005 03/01/2002

BENTON, CALLAWAY, CAMDEN, COLE, GASCONADE, HENRY, HICKORY,
 JOHNSON, MARIES, MILLER, MONTGOMERY, MORGAN, OSAGE, PETTIS,
 SALINE & ST. CLAIR COUNTIES

Rates Fringes

Cement Mason.....\$ 17.81 7.65

PLUM0008-003 06/01/2003

	Rates	Fringes
Plumber		
BATES, BENTON, CARROLL, HENRY, LAFAYETTE, MORGAN, PETTIS, RAY, ST. CLAIR, SALINE and VERNON COUNTIES..	\$ 26.00	11.61
CASS, CLAY, JACKSON, JOHNSON and PLATTE COUNTIES.	\$ 28.83	13.22

PLUM0035-002 01/01/2000

CAMDEN, COLE, CRAWFORD, FRANKLIN, JEFFERSON, MARIES, MILLER,
MONITEAU, OSAGE, PHELPS, PULASKI, ST. CHARLES, ST. LOUIS (City
and County), WARREN and WASHINGTON COUNTIES

	Rates	Fringes
Plumber.....	\$ 26.105	9.74

PLUM0045-003 09/01/2003

ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB,
GENTRY, HARRISON, HOLT, NODAWAY AND WORTH COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 28.20	11.70

PLUM0178-003 11/01/2001

BARRY, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
HICKORY, LACLEDE, LAWRENCE, POLK, STONE, TANEY, WEBSTER, AND
WRIGHT COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 22.10	7.37

PLUM0317-002 07/01/1995

BOONE, CALLAWAY, COOPER, HOWARD, AND RANDOLPH COUNTY (Southern
half)

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 19.18	3.17

PLUM0533-004 06/01/2004

BATES, BENTON, CARROLL, CASS, CLAY, HENRY, HICKORY, JACKSON,
JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY, SALINE, ST.
CLAIR AND VERNON COUNTIES

	Rates	Fringes
Pipefitter.....	\$ 31.73	13.73

PLUM0562-004 07/01/2002

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAMDEN, CAPE

GIRARDEAU, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, DUNKLIN, FRANKLIN, GASCONADE, GRUNDY, HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCOLN, LINN, LIVINGSTON, MACON, MADISON, MARIES, MARION, MERCER, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY, NEW MADRID, OREGON, OSAGE, PEMISCOTT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, STE. GENEVIEVE, ST. LOUIS, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WARREN, WASHINGTON, AND WAYNE COUNTIES.

	Rates	Fringes
Pipefitter.....	\$ 28.75	12.08

 PLUM0658-002 07/01/1998

BARTON, JASPER, MCDONALD, AND NEWTON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 16.73	5.33

 TEAM0013-001 05/01/2002

	Rates	Fringes
Truck drivers:		
ADAIR, BUTLER, CLARK, DUNKIN, HOWELL, KNOX, LEWIS, OREGON, PUTNAM, RIPLEY, SCHUYLER, AND SCOTLAND COUNTIES		
GROUP 1.....	\$ 21.79	5.50
GROUP 2.....	\$ 21.95	5.50
GROUP 3.....	\$ 21.94	5.50
GROUP 4.....	\$ 22.06	5.50
AUDRAIN, BOLLINGER, BOONE, CALLAWAY, CAPE GIRARDEAU, CARTER, COLE, CRAWFORD, DENT, GASCONADE, IRON, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONROE, MONTGOMERY, NEW MADRID, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SCOTT, SHANNON, SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES		
GROUP 1.....	\$ 22.52	5.50
GROUP 2.....	\$ 22.68	5.50
GROUP 3.....	\$ 22.67	5.50
GROUP 4.....	\$ 22.79	5.50

TRUCK DRIVERS CLASSIFICATIONS:

GROUP 1: Flat Bed Trucks, Single Axle; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon, Single Axle

GROUP 2: Agitator and Transit Mix Trucks

GROUP 3: Flat Bed Trucks, Tandem Axle; Articulated Dump Trucks; Material Trucks, Tandem Axle; Tank Wagon, Tandem Axle

GROUP 4: Semi and/or Pole Trailers; Winch, Fork & Steel Trucks; Distributor Drivers and Operators; Tank Wagon, Semi-Trailer; Insley Wagons, Dumpsters, Half-Tracks, Speedace, Euclids and other similar equipment; A-Frame and Derrick Trucks; Float or Low Boy

TEAM0056-001 05/01/2002

Rates Fringes

Truck drivers:

ANDREW, BARTON, BATES,
BENTON, CALDWELL, CAMDEN,
CARROLL, CEDAR, CHARITON,
CHRISTIAN, CLINTON,
COOPER, DADE, DALLAS,
DAVISS, DEKALB, DOUGLAS,
GREENE, HENRY, HICKORY,
HOWARD, JASPER, LACLEDE,
LAWRENCE, LINN,
LIVINGSTON, MONITEAU,
MORGAN, NEWTON, PETTIS,
POLK, RANDOLPH, ST CLAIR,
SALINE, VERNON, WEBSTER,
AND WRIGHT COUNTIES

GROUP 1.....	\$ 22.22	5.50
GROUP 2.....	\$ 22.38	5.50
GROUP 3.....	\$ 22.37	5.50
GROUP 4.....	\$ 22.49	5.50
GROUP 5.....	\$ 22.12	5.50

ATCHISON, BARRY, GENTRY,
GRUNDY, HARRISON, HOLT,
MCDONALD, MERCER,
NODADWAY, OZARK, STONE,
SULLIVAN, TANEY AND WORTH
COUNTIES

GROUP 1.....	\$ 21.49	5.50
GROUP 2.....	\$ 21.65	5.50
GROUP 3.....	\$ 21.64	5.50
GROUP 4.....	\$ 21.76	5.50
GROUP 5.....	\$ 21.39	5.50

BUCHANAN, JOHNSON AND
LAFAYETTE COUNTIES

GROUP 1.....	\$ 23.43	5.50
GROUP 2.....	\$ 23.54	5.50
GROUP 3.....	\$ 23.58	5.50
GROUP 4.....	\$ 23.65	5.50
GROUP 5.....	\$ 23.33	5.50

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Flat bed trucks single axle; station wagons; pickup trucks; material trucks single axle; tank wagons single axle.

GROUP 2: Agitator and transit mix-trucks.

GROUP 3: Flat bed trucks tandem axle; articulated dump trucks; material trucks tandem axle; tank wagons tandem axle.

GROUP 4: Semi and/or pole trailers; winch, fork & steel trucks; distributor drivers & operators; tank wagons semi-trailer; insley wagons, dumpsters, half-tracks, speedace, euclids & other similar equipment; A-frames and derrick trucks; float or low boy.

GROUP 5: Warehousemen.

TEAM0245-001 03/25/1998

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DALLAS, DENT, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, MILLER, NEWTON, OZARK, PHELPS, POLK, PULASKI, SHANNON, STONE, TANEY, TEXAS, VERNON, WEBSTER AND WRIGHT COUNTIES

Rates Fringes

Truck drivers:

Traffic Control Service		
Driver.....	\$ 12.90	3.56+a

PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, employee's birthday and 2 personal days.

TEAM0541-001 03/22/2004

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

Rates Fringes

Truck drivers:

GROUP 1.....	\$ 24.40	8.00
GROUP 2.....	\$ 23.85	8.00
GROUP 3.....	\$ 23.34	8.00

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Mechanics and Welders, Field; A-Frame Low Boy-Boomeruck Driver.

GROUP 2: Articulated Dump Truck; Insley Wagons: Dump Trucks, Excavating, 5 cu yds and over; Dumpsters; Half-Tracks: Speedace: Euclids & similar excavating equipment Material trucks, Tandem Two teams; Semi-Trailers; Winch trucks-Fork trucks; Distributor Drivers and Operators; Agitator and Transit Mix; Tank Wagon Drivers, Tandem or Semi; One Team; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon Drivers, Single Axle

GROUP 3: Oilers and Greasers - Field

TEAM0541-002 03/25/2000

BATES, CASS, CLAY, HENRY, JACKSON, JOHNSON, LAFAYETTE, PLATTE, AND RAY COUNTIES

Rates Fringes

Truck drivers:

Traffic Control Service
 Driver.....\$ 14.15 2.44+a

a. PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and 2 personal days.

 TEAM0682-002 05/01/2003

ST LOUIS CITY AND COUNTY

Rates Fringes

Truck drivers:

GROUP 1.....\$ 22.635 3.91+a+b
 GROUP 2.....\$ 22.835 3.91+a+b
 GROUP 3.....\$ 22.935 3.91+a+b
 GROUP 4.....\$ 22.125 3.91+a+b

a. PENSION: \$25.60 per day, \$128.00 maximum per week.

b. HAZMAT PREMIUM: If Hazmat certification on a job site is required by a state or federal agency or requested by project owner or by the employer, employees on that job site shall receive \$1.50 premium pay.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Pick-up trucks; forklift, single axle; flatbed trucks; job site ambulance, and trucks or trailers of a water level capacity of 11.99 cu. yds. or less

GROUP 2 - Trucks or trailers of a water level capacity of 12.0 cu yds. up to 22.0 cu yds. including euclids, speedace and similar equipment of same capacity and compressors

GROUP 3 - Trucks or trailers of a water level capacity of 22.0 cu. yds & over including euclids, speedace & all floats, flatbed trailers, boom trucks, winch trucks, including small trailers, farm wagons tilt-top trailers, field offices, tool trailers, concrete pumps, concrete conveyors & gasoline tank trailers and truck mounted mobile concrete mixers

GROUP 4 - Warehousemen.

FOOTNOTE FOR TRUCK DRIVERS:

a. PAID HOLIDAYS: Christmas Day, Independence Day, Labor Day, Memorial Day, Veterans Day, New Years Day, Thanksgiving Day

PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of service in any one contract year. When such an employee has completed 3 years of continuous employment with the same employer and then works the above required number of hours, he shall receive double the number of days of vacation specified above. When such an employee has completed 10 years of continuous employment

with the same employer and then works the above required number of hours, he shall receive triple the number of days of vacation specified above. When such an employee has completed 15 years of continuous employment with the same employer and then works the above required number of hours, he shall receive 4 times the number of days of vacation specified above.

TEAM0682-003 05/01/2002

ST.CHARLES, FRANKLIN, JEFFERSON, LINCOLN AND WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 22.435	3.46+a+b+c
GROUP 2.....	\$ 22.635	3.46+a+b+c
GROUP 3.....	\$ 22.735	3.46+a+b+c
GROUP 4.....	\$ 21.925	3.46+a+b+c

a.PAID HOLIDAYS: Christmas, Fourth of July, Labor Day, Memorial Day, Veterans Day, to be celebrated on either its National Holiday or on the day after Thanksgiving, whichever is agreed upon by the Association and the Union, New Year's Day and Thanksgiving Day.

PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of service in any one contract year. When such an employee has completed 3 years of continuous employment with the same employer and then works the above required number of hours, he shall receive double the number of days of vacation specified above. When such an employee has completed 10 years of continuous employment with the same employer and then works the above required number of hours, he shall receive triple the number of days of vacation specified above. When such an employee has completed 15 years of continuous employment with the same employer and then works the above required number of hours, he shall receive 4 times the number of days of vacation specified above. b.Pension: \$22.80 per day either worked or compensated to a maximum of \$114.00 per week.

c.Hazmat Pay: If Hazmat Certification on a job site is required by a state or federal agency or requested by project owner or by the employer, employees on that job site shall receive \$1.50 per hour premium pay.

TRUCK DRIVER CLASSIFICATIONS:

GROUP 1: Trucks or Trailers of a Water Level Capacity of 11.99 cu. yds. or less, Forklift Trucks, Job Site Ambulances, Pickup Trucks, Flatbed Trucks.

GROUP 2: Trucks or Trailers of a Water Level Capacity of 12.0 cu. yds. up to 22 cu. yds., Euclids, Speedace and Similar Equipment of Same Capacity and Compressors.

GROUP 3: Trucks or Trailers of a Water Level Capacity of 22.0 cu. yds. and over, Euclids and all Floats, Flatbed Trailers, Boom Trucks, Winch Trucks, Including Small

Trailers, Farm Wagons, Tilt Top Trailers, Tool Trailers,
Concrete Pumps, Concrete Conveyors, Gasoline TankTrailers,
Truck Mounted Mobile Concrete Mixers, End Dump, Side Dump
and Articulated Dump Trucks

GROUP 4: Warehousemen.

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
(29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates
listed under the 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, DC 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, DC 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, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

INDEX

DIVISION 2 - SITE WORK

Para. No.	PARAGRAPH TITLE	Page No.
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SECTION 02140

DEWATERING AND SURFACE WATER CONTROL

PART 1	GENERAL	02140-1
1.1	SCOPE	02140-1
1.2	QUALITY CONTROL	02140-1
1.3	GENERAL	02140-1
1.4	DEFINITIONS	02140-2
1.5	SUBMITTALS	02140-2
PART 2	PRODUCTS	02140-3
2.1	DESIGN	02140-3
2.2	DEWATERING and SURFACE WATER CONTROL REQUIREMENTS	02140-3
PART 3	EXECUTION	02140-6
3.1	OPERATION	02140-6
3.2	MAINTENANCE AND SERVICING	02140-6
3.3	DISMANTLING AND DISPOSAL	02140-6
3.4	FLOODING	02140-6

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SECTION 02140

DEWATERING AND SURFACE WATER CONTROL

PART 1 GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, material, and equipment and performing all operations required for designing, furnishing, installing, testing, operating, maintaining and removing a system to dewater Sites 1,2,3,6,7, and 11 and control surface water in the cofferdammed area and all other work areas. It includes maintaining this area free from water during construction operations, rewatering the area under controlled conditions, and removing the entire unwatering, dewatering and surface water control system.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for all unwatering, dewatering, surface water control operations, and subsequent rewatering to assure compliance with contract requirements and shall maintain records of such quality control for all construction operations, including but not limited to the following:

- a. Fabrication and workmanship.
- b. Installation, testing, operation, and removal.
- c. Monitoring piezometric elevations.
- d. Measuring quantity of effluent from pumping systems.
- e. Monitoring of sanding.
- f. Monitoring of flooding.

1.2.2 Reporting. A copy of these records and tests, as well as records of corrective action taken, shall be furnished to the Government on an approved form on a daily basis (based on a 7-day week) for that day's operation. Reports of operation and inspection shall include the following data: piezometric elevations, time of operation of each pump, mode of operation of each pump (e.g., diesel or electric), time of operation of each well and/or wellpoint segment, quantity of effluent discharge from each pump and wellpoint segment, position of valves, sanding rates, problems encountered, proposed actions, and any other pertinent data.

1.3 GENERAL. All permanent construction within the cofferdammed area shall be carried on in areas free of water. The Contractor shall design, furnish, install, test, operate, and maintain dewatering and surface water control system to accomplish the following:

- a. Collect, control, and dispose of all surface water regardless of source, to prevent such water from entering the cofferdammed areas.
- b. Install, maintain, and monitor construction piezometers.
- c. Lower and maintain the piezometric surface at all points within the cofferdammed area at least five feet below the bottom of all excavated surfaces.
- d. Install cofferdams as required.

1.4 DEFINITIONS.

1.4.1 Dewatering. Dewatering as defined for purposes of this contract, is the lowering of the piezometric surface as specified in paragraph GENERAL to ensure dry, firm working conditions.

1.4.2 Surface Water Control. Surface water control consists of the collection, control, removal and disposal of all surface water within the cofferdammed area and all other work areas regardless of source. This includes providing adequate measures to prevent erosion of the foundation and erosion of excavation slopes.

1.4.3 Rewatering. Rewatering is defined as the controlled process of shutting off, adjusting, or slowing down the dewatering system in the excavated area to a specified elevation at a specified rate when construction in the cofferdammed area is completed.

1.4.4 Cofferdam. Cofferdams are defined as temporary sheet pile or earthen structures that the Contractor may deem necessary to dewater construction activities. Cofferdams are Contractor-designed and may or may not be necessary for completion of work.

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 office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

1.5.1 Data. Care of Water Plan; G. Within 30 days after receipt of the Notice to Proceed, submit for review of system design and performance, details of its proposed dewatering and surface water control systems, including the following:

- a. Type of system.
- b. System capacity, supporting calculations, and rationale.
- c. Planned layout and sizes of wells, well points, headers (including all lengths requiring burial), valves, collectors, ditches, piezometers, sumps and pumps.
- d. Capacities of standby pumping and power-supply facilities.
- e. Number, type, location, proposed method of installation, and proposed methods of testing of piezometers.
- f. Facilities for measuring the flow of water pumped for each well and/or wellpoint segment and the total flow from the dewatering, and surface water control systems.
- g. Facilities for monitoring of sanding.
- h. Provisions for disposal of water from the system.
- i. Facilities to prevent scour from system discharge.
- j. Plan of operation, including rewatering and flooding plans.

This submittal shall also include the design capacity of each well and/or wellpoint segment at the design stage, supported by calculations and rationale. The submittal will not be accepted for review unless it contains all of the items enumerated above.

Cofferdam Design; G. The Contractor shall submit a plan for construction of any cofferdams 30 days prior to the beginning of any cofferdam construction. The cofferdam plan shall include:

- a. Drawings sealed by an Illinois structural engineer describing the cofferdam construction.
- b. The plan limits of expected cofferdam construction.
- c. Typical sections showing sheet pile types used.
- d. Description of cutoff or removal method of temporary sheet piles at the conclusion of work.
- e. Cofferdam system shall be designed to protect the interior work to 424.0 NGVD.

PART 2 PRODUCTS

2.1 DESIGN. The dewatering and surface water control system shall be designed by the Contractor, using accepted professional methods of engineering design consistent with the best current practice, to meet all the system requirements herein. The Contractor shall perform necessary tests and/or analyses of the groundwater quality and soil environment at the site to satisfy itself that materials used in the system will not corrode, incrust, become silted, degrade, chemically react, or otherwise deteriorate to such an extent that the system will not perform satisfactorily during the life of the contract. The Contractor shall incorporate adequate preventative and/or maintenance procedures in the system design to prevent the clogging of the system due to incrustation build up resulting from the deposition of dissolved minerals, slime-forming organisms, and any other incrustants. The Contractor shall be responsible for all damage to any and all work both permanent and temporary caused by failure to operate and maintain the system as specified.

2.2 DEWATERING and SURFACE WATER CONTROL REQUIREMENTS. The dewatering system shall consist of pumped wells, cofferdams, well points or combinations thereof, and necessary appurtenances capable of maintaining all free water and piezometric surfaces specified herein. The interior surface water control system shall consist of sumps, sump pumps, ditches or combinations thereof, and necessary appurtenances, and shall be operated to insure that construction operations may be performed without interruption due to wet conditions.

The dewatering system shall be designed, installed and operated to accomplish all specified requirements for Mississippi and Illinois River elevations up to and including 424.0 NGVD. Intermediate stages used for interim dewatering while installing the remainder of the system and prior to completion of final dewatering system stages shall be designed, installed, and operated to permit installation of the subsequent stages for the maximum expected groundwater levels.

The dewatering system shall be of such capacity and shall be operated such that it will lower and maintain the piezometric levels at all points within the cofferdammed area to an elevation at least five feet below all earth slopes and excavation surfaces. Compliance with these requirements will be determined using all available piezometric information, and interpolation between such piezometers. No permanent construction in the cofferdammed area will be permitted until this requirement is met. Seepage shall be intercepted before it exits on any interior surface or excavation face. System capacity shall be continuously reviewed during operation and, if necessary, increased to insure that the installed capacity will always be adequate to perform the

specified dewatering for the specified conditions. System capacity review, and any increase in such capacity to adequately perform the specified dewatering for the specified conditions, shall be included in the bid price.

The dewatering system shall be operated continuously from initial unwatering until construction is complete, or as directed by the Contracting Officer. No upward or lateral flow of groundwater into the cofferdammed area shall be permitted at any time. The dewatering system shall be designed, constructed, and operated to prevent movement and/or piping of any foundation or fill materials.

The installation of the dewatering system shall not disturb any existing structures or their foundations. Jetting shall not be allowed within 50 feet of any installed piling.

Piezometers shall be used to measure the piezometric elevations in the cofferdammed area. The Contractor shall make a minimum of one reading per piezometer, per 24-hour period, including holidays, based on a 7-day week. Piezometer readings shall be converted to elevations and furnished as specified in paragraph REPORTING. The Contracting Officer reserves the right to read, record and check these piezometers with Government personnel at any time. The Contractor shall install a minimum of two piezometers in each cofferdammed area. At least one of these piezometers shall be located near the center of the sheetpile wall. The Contractor may, at his expense, install additional piezometers and obtain supplemental piezometric data from these piezometers and by other approved means. This supplemental piezometric data shall be furnished to the Government without additional cost.

Flow measurement from each pump of the dewatering system is required. Any devices used to measure flow shall be demonstrated to be accurate within 3 percent at the flows encountered. The Contractor shall make a minimum of one flow measurement per pump, per 24-hour period, based on a 7-day week. These instrument readings shall be recorded and reported to the Contracting Officer within 24 hours after they are obtained. The Contracting Officer reserves the right to read, record and check instrument readings at any time.

2.2.1 Sanding. The dewatering system shall be designed, installed and operated in a manner which precludes removal of materials from the foundation by the pumping operation (hereafter referred to as "sanding"). After installation, the dewatering system shall be tested to verify acceptability with respect to sanding. Rossum sand testers shall be used to measure the sanding characteristics of each well or wellpoint segment. Any well or wellpoint segment found sanding at a rate exceeding 1 pint per 25,000 gallons of effluent at any time during this contract shall be replaced by the Contractor at no additional cost to the Government. The initial sanding tests shall be performed after the cofferdammed area is dewatered and every 30 days thereafter.

2.2.2 Discharge. Discharge from the dewatering system shall not scour or erode the soil.

2.2.3 Rewatering. Rewatering shall be accomplished by adjusting, slowing down, or shutting off the dewatering system in a manner that will not damage permanent work. The maximum rate of rise in rewatering the cofferdammed area shall be 3 feet per day until the free water surface reaches the surrounding free water surface elevation.

The system shall be provided with sufficient standby components and spare parts to assure continuous achievement of the specified dewatering. The number of standby components and spare parts shall be determined by the Contractor in consideration of known reliability and availability to ensure continuous operation.

PART 3 EXECUTION

3.1 OPERATION. The Contractor shall be required to perform dewatering and surface water control, and to maintain the cofferdammed areas in a workable condition continuously and as long as necessary to perform the work under this contract. Once the cofferdammed area is dewatered, it shall be maintained in a dewatered condition until all work in that area is completed, unless directed by the Contracting Officer.

3.2 MAINTENANCE AND SERVICING. The Contractor shall be responsible for the maintenance, servicing, and repairs of the entire dewatering, and surface water control system and appurtenances, during the life of the contract, including but not limited to replacement of, all wells, wellpoints, appurtenances or piezometers found performing unsatisfactorily. Maintenance, servicing, and repair operations are not cause for relaxation of the specified dewatering requirements, and the system shall be designed to provide the specified conditions during maintenance, servicing and repair.

3.3 DISMANTLING AND DISPOSAL. After the dewatering operations are completed, the entire system and all component parts shall be dismantled and removed from the project, except as specified in paragraph WELLS, WELLPOINTS AND PIEZOMETERS and shall become the property of the Contractor.

3.3.1 Wells, Wellpoints and Piezometers. Screens and riser pipes shall be pulled and holes backfilled with a sand and cement grout. Subject to the approval of the Contracting Officer, screens and riser pipes outside the limits of the structure and future structures may be cut off below finished grade or below the base of existing or future stone protection, whichever is lower, and backfilled with a sand and cement grout. The holes shall be backfilled to the final grading elevation. Screens and riser pipes shall be removed from the project and shall remain the property of the Contractor.

3.4 FLOODING. The Contracting Officer may, at any time during this contract, direct the Contractor to flood the cofferdammed area in anticipation of overtopping or for any other emergency. Upon a directive to flood the cofferdammed area, the Contractor shall implement the flooding plan and flood the cofferdammed area to the prevailing river elevation in a period not to exceed 36 hours. Flooding of the cofferdammed area shall be accomplished by directing surface water, groundwater, effluent from the dewatering and surface water control system, and if necessary, river water, into the cofferdammed area. The dewatering system shall be kept operating at full capacity until the water surface elevation in the cofferdammed area is equal to the prevailing river elevation. No upward, vertical or lateral flow of groundwater into the cofferdammed area shall be permitted during the flooding. All surfaces in the cofferdammed area shall be protected against scour and erosion during the flooding. All of the Contractor's facilities located within the cofferdammed area shall be removed, designed and/or floodproofed to permit flooding within the allotted 36-hours and resume service within 7-days after the Contracting Officer's directive to begin unwatering after flooding.

-- End of Section --

INDEX

DIVISION 2 - SITE CONSTRUCTION

Para. No.	PARAGRAPH TITLE	Page No.
	SECTION 02220	
	EXCAVATION	
PART 1	GENERAL	02220-1
1.1	SCOPE	02220-1
1.2	QUALITY CONTROL	02220-1
1.3	REFERENCES	02220-1
1.4	SUBMITTALS	02220-1
PART 2	PRODUCTS	02220-1
PART 3	EXECUTION	02220-2
3.1	EXCAVATION - GENERAL	02220-2
3.2	BORROW AREAS	02220-2
3.3	EXCAVATION FOR STRUCTURES	02220-2
3.4	SUBAQUEOUS EXCAVATION	02220-3

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SECTION 02220

EXCAVATION

PART 1 GENERAL

1.1 SCOPE. The work covered by this section consists of furnishing all plant, labor, materials, and equipment, and performing all operations necessary for excavations of borrow material from borrow areas, removal of material to the lines and grades shown on the drawings while preparing the embankment foundations, excavations for cells and other structures and removal of unsuitable materials as specified herein and as shown on the drawings.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for excavation operations to assure compliance with contract requirements, and maintain records of quality control for all construction operations including but not limited to the following:

a. Borrow Material Stockpile. Location, limits, depth of excavation and drainage.

b. Foundation Excavations. Location, limits, depth of excavation and drainage.

c. Disposition of Materials. Suitability of materials and waste areas.

d. Quantity Surveys. Accuracy and timeliness.

1.2.2 Reporting. A copy of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily.

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.

1.3.1 Corps of Engineers Manual (EM).

EM 385-1-1 (2003) Safety and Health Requirements Manual

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 office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

1.4.1 Statements. Excavation Plan; G. Submit complete and detailed descriptions of proposed excavation plan. This plan shall include, but not be limited to, the Contractor's proposed sequence of construction for all excavation; methods and types of equipment to be utilized for all excavation operations; quantity, type and final disposition of stockpiled materials; location and drainage of proposed stockpiles; proposed disposition of all excavated materials, including items which are anticipated to be disposed of off-site. Excavation plan shall be submitted to the Government not less than 30 days prior to initiating any excavation.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 EXCAVATION - GENERAL

3.1.1 General. Excavation shall consist of required excavations of borrow material from borrow areas, removal of material to the lines and grades shown on the drawings while preparing the embankment foundations, excavations for structures and removal of unsuitable materials as defined in Section 02212 IMPERVIOUS EMBANKMENT.

3.1.1.1 Depth of Excavations. Excavation below the lines and grades specified or below the depth directed shall be backfilled by the Contractor at no additional cost to the Government. Such backfill shall be brought to grade with suitable material with each layer placed and compacted as specified in Section 02212 IMPERVIOUS EMBANKMENT.

3.1.1.2 Suitable Materials. Excavated materials which are suitable for incorporation in the embankment shall be placed directly therein, or stockpiled and subsequently used in the embankment or other fills. Subaqueous excavated materials shall be placed in the low areas along the access roads outside of other planned excavations or as directed by the Contracting Officer.

3.1.1.3 Unsuitable Materials. Materials from required excavation which, as defined in Section 02212, are unsuitable for embankment or fill material will be ordered wasted and shall be properly disposed of in the immediate vicinity of the excavation as per the Contracting Officer. Where possible, the excavation of unsuitable materials in required excavations shall be minimized. Whenever unsuitable foundation material is encountered, the unsuitable material shall be removed to the depth directed by the Contracting Officer. The Contractor shall exercise care in excavating to the lines and grades shown and in removing unsuitable materials so as not to excavate below the grades specified or depth directed.

3.1.1.4 Temporary Slopes. Temporary excavated earth slopes shall not be steeper than 1V on 2H or steeper than the slopes shown on the drawings unless the excavation is shored.

3.2 BORROW AREAS. Borrow areas shall be excavated to the extent necessary to obtain satisfactory material within the lines and grades as shown on the drawings. When the material necessary for the construction of the embankment and berms cannot be obtained from the designated borrow area, it shall be obtained from other Government-furnished borrow areas. The permissible depth(s) in the borrow areas are indicated on the drawings. Any excavation below the depths and slopes specified herein or shown on the drawings shall be backfilled by the Contractor, at the Contractor's expense, to the specified permissible excavation line, with satisfactory material as specified by the Contracting Officer to a density of at least that of the surrounding material. Borrow areas shall be drained and kept dry during excavation. Remove borrow uniformly over entire borrow area so that surface drainage is maintained and no localized depressions are created. Where possible, unsatisfactory materials in borrow areas shall not be removed.

3.3 EXCAVATION FOR STRUCTURES.

3.3.1 General. Excavation for structures shall be performed as necessary to permit construction of the structures and work incidental thereto, to the lines, dimensions, and elevations shown on the drawings. Excavation shall extend a sufficient distance from walls and footings to allow for placement and removal of shoring and forms (except where the concrete for

walls and footings is authorized to be deposited directly against excavated surfaces), performance of all work in the excavations, and inspection.

3.3.2 Inspection. After completion of excavation, and prior to construction of the structures, the Contracting Officer will inspect the excavation to insure that suitable foundations or depths have been established. The Contractor shall not excavate below the depths indicated on the drawings unless otherwise specified or directed by the Contracting Officer. Where the excavation is made below the prescribed elevation, the excavation shall be restored to the proper elevation or the depths of the walls or footings shall be increased as directed by the Contracting Officer. Where excavation is made below the prescribed depths through the fault of the Contractor, the additional backfill or concrete required shall be at no additional expense to the Government.

3.3.3 Shoring. The Contractor shall do all sheeting and shoring required for the protection of the work and for the safety of personnel. Shoring shall be designed by a registered professional engineer and shall be constructed when and where required by, and in accordance with the provisions of Section 25 of the Corps of Engineers Manual EM 385-1-1. Unless otherwise indicated all sheeting and shoring rendered unnecessary by the placement of backfill shall be removed as the backfill progresses so that backfill is placed directly against undisturbed earth.

3.4 SUBAQUEOUS EXCAVATION.

3.4.1 Equipment. Subaqueous excavation shall be accomplished with mechanical means. The Contractor shall have the option of using hydraulic excavation. The crane and boom shall be of sufficient capacity to support the loaded bucket within the necessary operating range. The crane and boom shall be of sufficient capacity such that the Contractor handles the excavated material only once.

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INDEX
DIVISION 15 - MECHANICAL

PAR. NO.	PARAGRAPH TITLE	PAGE NO.
SECTION 15165		
TRAILER MOUNTED DIESEL ENGINE PUMP DRIVE UNITS		
PART 1	GENERAL	1
1.1	SCOPE.	1
1.2	QUALITY CONTROL.	1
1.3	REFERENCES.	1
1.4	SUBMITTALS.	2
1.5	PREPARATION FOR SHIPMENT AND STORAGE AT THE WORKSITE.	4
1.6	ERECTING ENGINEER.	5
1.7	WARRANTY.	5
PART 2	PRODUCTS	5
2.1	EQUIPMENT TO BE INSTALLED.	5
2.2	WORKMANSHIP.	5
2.3	METALWORK.	6
2.4	WELDING.	6
2.5	MATERIALS.	6
2.6	DIESEL ENGINE.	6
2.7	POWER TAKE-OFF.	11
2.8	DRIVE SHAFT.	11
2.9	TORQUE-LIMITING COUPLING.	11
2.10	TRAILER.	11
2.11	SAFETY DEVICES.	12
2.12	PAINTING.	12
2.13	SPARE PARTS.	12
PART 3	EXECUTION	12
3.1	FIELD ERECTION AND INSTALLATION.	12
3.2	FIELD TESTS.	13

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SECTION 15165

TRAILER MOUNTED DIESEL ENGINE PUMP DRIVE UNITS

PART 1 GENERAL

1.1 SCOPE. The work provided for herein consists of furnishing all plant, labor, material, and equipment, and performing all operations required to furnish, deliver, store, install and test two (2) diesel engine pump drive units including drive shafts as specified below and as shown on the contract drawings. Engine drive units, shafts, torque-limiting couplings and accessories shall be provided by pump manufacturer.

1.2 QUALITY CONTROL.

1.2.1 General. The Contractor shall establish and maintain quality control for the work specified in this section to assure compliance with contract requirements and shall maintain records of quality control for all operations including but not limited to the following:

- a. Inspection at the manufacturing plant and worksite for damage to and defects in material and equipment.
- b. Inspection at the manufacturing plant and worksite to assure use of specified material and equipment.
- c. Factory assembly of engine, drive connections, and trailer.
- d. Factory tests of the diesel drive unit.
- e. All shop fabrication.
- f. Factory painting.
- g. Preparation for shipment and storage at the worksite.
- h. Storage at the worksite.
- i. Installation and tests of diesel drive unit and equipment.
- j. Field painting.
- k. Maintenance after installation.
- l. Field tests.

1.2.2 Reporting. Three copies of the records of inspection and tests, as well as the records of corrective actions taken, shall be furnished to the Government daily.

1.2.3 Manufacturer's Qualifications. The diesel drive unit, trailer, and associated appurtenances shall be products of a manufacturer who has been regularly engaged during the past five years in the production of similar equipment.

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.

1.3.1 American Bearing Manufacturers Association (ABMA).

ABMA 11 (1990) Load Ratings and Fatigue Life for Roller Bearings

1.3.2 American Iron and Steel Institute (AISI).

AISI SG 673 (1990) Cold-Formed Steel Design Manual

1.3.3 American Society for Testing and Materials (ASTM).

ASTM A 36/A 36M (1997; Rev A) Carbon Structural Steel

ASTM D 975 (1998; Rev B) Standard Specification for Diesel Fuel Oils

ASTM F 467 (1998) Nonferrous Nuts for General Use

ASTM F 593 (1998) Stainless Steel Bolts, Hex Cap Screws, and Studs

1.3.4 American Welding Society (AWS).

AWS D 1.1 (1998) Structural Welding Code Steel

1.3.5 Code of Federal Regulations (CFR).

29CFR1910 (2000) Occupational Safety and Health Standards

1.3.6 Starting, Lighting, and Ignition (Automobile Systems).

SLI (2000) Starting, Lighting, and Ignition (Automobile Systems).

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 office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

1.4.1 Data. Diesel Drive Unit; G. Appropriate computations shall be submitted to substantiate the sizing of the components. The following data shall be submitted on the diesel engines:

- a. List of materials.
- b. Literature describing the diesel engine and indicating its current production status.
- c. Make of engine.
- d. Number of cylinders.
- e. Bore, in inches.
- f. Stroke, in inches.
- g. Piston displacement, in cubic inches.
- h. Piston speed, in fpm at rated rpm.
- i. Recommended cooling water temperature leaving engine.

- j. Lubricating oil pressure at pump discharge.
- k. Published speed-horsepower curve for engine for continuous and maximum ratings.
- l. Load-fuel consumption curve for engine.
- m. Design computations for drive shafts and torque-limiting couplings.
- n. Catalog data on drive shafts and torque-limiting couplings.

Paint; G. The Contractor shall submit the paint formulas, manufacturer's application instructions and colors for approval.

1.4.2 Drawings. Diesel Drive Unit; G. Drawings shall be of sufficient size so as to be easily read. Drawings shall be in sufficient detail to show the diesel drive unit meets all of the specifications. Any items or parts omitted from the drawings but needed to comply with the requirements of these specifications, or in order to provide a complete and workable installation, shall be supplied by the Contractor. Drawings of any items made specially or specifically for this project shall be true shop drawings, but catalog cuts will be sufficient for the diesel engine. However, for those items for which true shop drawings are not required, sufficient descriptive data and/or other information, in addition to the catalog cuts, shall be submitted to demonstrate compliance with the specifications. Structural openings and clearances which are dependent upon the design, shall be included with the shop drawings. After completion of the installation of the equipment, the Contractor shall submit a complete set of "as-built" information suitable for microfilming.

a. Outline drawings of the trailer-mounted engine showing all pertinent dimensions and weight of the various components and the assembly.

b. Cross sectional drawings of the diesel drive unit showing the various components. Major or complicated sections of the diesel drive unit shall be shown in detail. An itemized list of the components showing the type, grade, and/or class of material used and the make and/or model number of the standard component used shall also be indicated thereon.

c. Detail and assembly drawings required for manufacturing showing the dimensions, tolerances and clearances.

d. Drawings covering erection and installation which the Contractor intends to furnish to the Field Service Representative.

e. Drawings and/or literature describing auxiliary equipment to be furnished.

f. Drawing showing details and dimensions of trailer track and stops design or layout including any embedded items.

g. Lists of one or more diesel drive units installation using major components of the same or similar types as those proposed to be furnished under this contract.

1.4.3 Manuals.

1.4.3.1 Installation and Erection Instructions. Not later than the time the various items of the diesel drive unit are shipped to the worksite, the Contractor shall furnish the Contracting Officer, for approval, three copies of a typed or printed, and bound as applicable, instruction sheet or

manual, describing the procedure to be followed by the erecting engineer and/or Contractor in erecting, assembling and installing each item of equipment and field testing of the unit. To the extent necessary and/or desirable, the description for the diesel drive unit shall be coordinated and consolidated with the description for the pumps.

a. The description shall be a complete, orderly, step-by-step explanation of the various operations required, and shall also include such things as alignment procedures, permissible drive shaft misalignment; and similar details.

b. The description shall be complemented and supplemented by drawings, sketches, photos and similar materials to whatever extent necessary or desirable, and the overall result shall be a description which may be comprehended by an engineer or mechanic without extensive experience in erecting or installing pumps of this type.

1.4.3.2 Operating Instructions. The Contractor shall furnish to the Contracting Officer six (6) complete copies of operating instructions outlining the step-by-step procedures required for pump start-up, operation and shutdown. Descriptions and illustrations of all indicators and engine controls shall be included.

1.4.3.3 Maintenance Instructions. The Contractor shall furnish to the Contracting Officer six (6) complete copies of maintenance instructions listing operation, lubrication, adjustment, routine and/or special maintenance, disassembly, repair, reassembly and trouble diagnosis of the diesel drive unit and auxiliary units. The manual shall include routine maintenance for the complete system that covers daily, weekly, monthly, bi-annual, and annual maintenance requirements and includes a complete lubrication chart. Wiring diagrams and schematics showing the function of all electrical components shall be included. A troubleshooting chart covering the complete engine showing description of trouble, probable cause, and suggested remedy shall be included.

1.4.3.4 Parts List. The Contractor shall furnish six (6) copies of the manufacturer's complete parts list showing all parts and spare parts lists and/or bulletins for the diesel drive unit. These lists and/or bulletins shall clearly show all details and parts, and all parts shall be adequately described and/or have proper identification marks. All assemblies, subassemblies and components, except standard fastening hardware (nuts, bolts, washers, etc.) shall be illustrated. A list of all consumables anticipated to be required during routine maintenance and test shall be included.

1.5 PREPARATION FOR SHIPMENT AND STORAGE AT THE WORKSITE.

1.5.1 Preparation for Shipment. Prior to shipment from the manufacturers' and/or fabricators' plants, the Contractor shall prepare the various elements of the diesel drive unit for shipment as described herein. All large, bulky and/or heavy items shall be mounted on skids or pallets of ample size and strength to facilitate loading and unloading. All small parts shall be boxed in sturdy wood or heavy corrugated paperboard boxes. A packing list, indicating the contents of each such box and enclosed in a moisture-proof envelope, shall be securely fastened to the outside of the box. The skid and/or pallet mounting and the boxing shall be done in a manner which will prevent damage to the equipment during loading, shipment, unloading, storage and any associated and/or subsequent handling. Weatherproof covers shall be provided during shipment to protect all items which the Contracting Officer designates as requiring such protection. Any special slings, strongbacks, skidding attachments or other devices used in loading the equipment at the manufacturers' and/or fabricators' plants shall be furnished for unloading and handling at the destination.

1.5.2 Preparation for Storage. At the conclusion of all shop tests, the diesel drive unit shall be prepared for storage as described below.

The diesel drive unit parts, sections and elements shall be protectively processed for not less than 6-month storage outdoors or indoors as the case may be at the destination. Bulky parts not particularly susceptible to damage from exposure may be stored outdoors. Other parts such as bearings, shafts, etc., shall be stored indoors. The Contractor shall furnish for approval, a complete description of the processing method or methods intended for use, including complete instructions for maintaining the protection during the storage period.

1.6 ERECTING ENGINEER. The setting, installation, assembly, lubrication, and testing of the unit shall be in accordance with the instructions of the unit manufacturer as approved by the Contracting Officer. The Contractor shall furnish the services of a competent erecting engineer who is an employee of the manufacturer of the diesel drive unit to: supervise and direct the erection and installation of the diesel drive unit furnished under this section of the specifications; perform the services specified in paragraph FIELD ERECTION AND INSTALLATION; inspect and determine the adherence to the above instructions for the assembly, setting, and field testing and all operations until acceptance has been made by the Contracting Officer. The Contractor shall make all arrangements for the presence of the erecting engineer for this inspection and shall bear all expenses incurred. The services of each of the engineers shall be furnished at no extra cost to the Government. The erection and installation of the diesel drive unit, under the direction and supervision of the erecting engineer and the inspection of the operation of the completed installation of the diesel drive unit by the units manufacturer's erecting engineer, shall in no way relieve the Contractor of sole responsibility for the diesel drive unit meeting all requirements of the specifications and fulfilling all the Contractor's guarantees.

1.7 WARRANTY. The Contractor shall furnish manufacturer's standard warranty for all equipment provided under this section.

PART 2 PRODUCTS

2.1 EQUIPMENT TO BE INSTALLED. The following equipment, together with all necessary accessories and appurtenances, shall be installed. Equipment and associated appurtenances specified under this section shall be products of a manufacturer who has been regularly engaged during the past five years in the production of similar equipment. The following paragraphs may at times refer to only one item, assembly or arrangement, but these requirements shall apply to all such items, assemblies or arrangements furnished under these specifications.

2.1.1 Engines. Two (2) portable diesel engines, each mounted on a trailer, shall be provided for driving the pumps specified in Section 15131 PUMPS. The trailer shall include the complete diesel drive unit including engine, starting system, and drive connections. The trailer shall match into a permanently built track with stops. Two mobile fuel tanks including fuel lines for connection to the diesel engines are specified in Section 15455 PORTABLE FUEL TANK. The Contractor shall coordinate among the manufacturers of the diesel engine, belt and right angle gear drive, jack shaft, fuel tank, trailer, and the pump to ensure the compatibility of these components including, but not limited to, the proper fit of engine, universal shafts, torque-limiting coupling, jackshaft, and belt and gear drive components; the interaction of major components and control of safety and alarm signals.

2.2 WORKMANSHIP. All workmanship, whether in the factory or the field, shall be of the highest grade and in accordance with modern practice.

All work shall be performed in a skillful and workmanlike manner in accordance with the best modern shop practice for the manufacture of finished products of a nature similar to those covered by these specifications, and shall be performed by mechanics especially skilled for each kind of work and under competent supervision and direction. Like components, parts, and sub-assemblies of the same make and model of engine shall be interchangeable without modification. All screws, pins and bolts, where practicable, shall be installed with secure means of protection against their working loose due to vibration. Locking shall be by cotter pins, locknuts, castellated nuts, split lockwashers or any other approved locking method. Swaging, peening or staking of threads of parts which are subject to removal or adjustment will not be permitted. All rotating or reciprocating parts, and parts subject to high temperature, that are of such nature or so located as to become a hazard to operating personnel, shall be insulated, fully enclosed or properly guarded.

2.3 METALWORK. Flame cutting of material other than steel shall be subject to approval of the Contracting Officer. Shearing shall be accurately done, and all portions of the work neatly finished. Steel may be cut by mechanically guided or hand guided torches provided an accurate profile with a smooth surface free from cracks and notches is secured. Surfaces and edges to be welded shall be prepared in accordance with Section 3 of AWS D1.1. Shipping and/or grinding will not be required except where specified and as necessary to remove slag and sharp edges of mechanically guided or hand guided cuts not exposed to view. Visible or exposed hand guided cuts shall be chipped, ground or machined to metal free of voids, discontinuities and foreign materials.

2.4 WELDING. Welding operators, welders, and tack welders shall be qualified and, as necessary, requalified of the particular type of work to be performed. Qualification shall be in accordance with the following code: Part III, Section 5 of the AWS D 1.1. The Contractor shall certify by name to the Contracting Officer, the welders and welding operators so qualified including the date of qualification, code, and procedures under which qualified. Prior qualification may be accepted provided the welder has performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require the welder or welding operator to repeat the qualifying tests when, in the opinion of the Contracting Officer, a reasonable doubt as to the welders proficiency is indicated by performance of the work. In such cases, the welder shall be recertified, as above, if the retest is successfully completed; otherwise, the welder shall be disqualified until a retest has been successfully completed. All expenses in connection with qualification and requalification shall be borne by the Contractor.

2.5 MATERIALS. All materials shall be free from defects and imperfections, of recent manufacture and unused, and of the classifications and grades specified herein unless otherwise approved by the Contracting Officer. Material not specifically described shall, as far as practicable, conform to the latest specifications of the American Society for Testing and Materials. All materials, supplies and articles not manufactured by the Contractor shall be the products of recognized reputable manufacturers. Samples of materials shall be submitted for approval when so directed. Equipment, materials and articles installed or used without such approval shall be at the risk of subsequent rejection.

2.6 DIESEL ENGINE. The engine shall be a general purpose, continuous service diesel for stationary applications. The engine shall be the standard product of the manufacturer, a current production model complete with all auxiliaries normally furnished, and shall provide sufficient power to operate the pumps. The engine shall be a compression-ignition, four-cycle, vertical inline or V-type engine with at least two and not more than eight cylinders. The engine may be either naturally aspirated, scavenged, supercharged,

turbocharged with or without intercoolers. The engine and all components shall be suitable for outdoor installation and operation.

2.6.1 Operation. The engine shall operate satisfactorily and shall develop the required horsepower when operating on No. 2 diesel fuel conforming to ASTM D 975.

2.6.2 Rating. The engine shall be rated for not less than 110 percent of maximum horsepower required for continuous duty at 1800 rpm. The horsepower required shall be determined from the pump curves at the specified speed, the power required by accessories, and losses in the drive equipment.

2.6.3 Engine Equipment. The engine shall be equipped with air filters, fuel filters and pressure gage, lubricating oil cooler, filters, and pressure gage, water pump and temperature gage, service hour meter, and flywheel housing.

2.6.4 Structure/Metallurgy. The design of the basic engine shall provide for maximum structural integrity to extend service life. Materials used in the engine shall incorporate the highest level of proven metallurgical and manufacturing technology.

2.6.4.1 Block. Block shall be of one piece design and cast of high tensile strength iron in the system manufacturer's own foundry. Counterboring for cylinder liners shall not be permitted.

2.6.4.2 Crankshaft. Crankshaft shall be a one piece forging with regrindable wear surfaces hardened through heat treat method.

2.6.4.3 Cylinder Wear Surface. Cylinder wear surface shall be induction hardened over their entire length.

2.6.4.4 Main and Rod Bearings. Main and rod bearings shall consist of aluminum bonded by copper to a steel backing. The wear surface shall be coated with a lead-tin overlay and the bearing covered by a tin flashing.

2.6.4.5 Connecting Rods. Connecting rods shall be high strength steel with tapered pin bore. Drilled passages to supply oil from rod bearing for piston cooling and lubricating oil will not be permitted.

2.6.4.6 Pistons. Pistons shall be a lightweight aluminum alloy which is elliptically ground across the skirt and tapered from crown to skirt. For medium and high speed engines, compression rings in aluminum bodies shall have integral cast iron ring bands with keystone sectioned top rings. Compression rings in steel piston crowns shall seat in hardened steel grooves. Oil jets shall supply piston cooling and lubricating oil.

2.6.4.7 Valves. Valves shall be hard-faced with replaceable inserts.

2.6.5 Lubrication System. The lubrication oil pump shall be a positive displacement type that is integral with the engine and gear driven from the engine gear train. The system shall incorporate full flow filtration with bypass valve to continue lubrication in the event of filter clogging.

The bypass valve must be integral with the engine filter base or receptacle. Systems where bypass valves are located in the replaceable oil filter are not acceptable. Pistons shall be oil cooled by continuous jet spray to the underside or inside of the crown and piston pin.

2.6.6 Diesel Fuel System. The fuel system shall be integral with the engine. It shall consist of fuel filter, transfer pump, injection pumps,

lines, and nozzles. The transfer pump shall deliver fuel under low pressure to individual injection pumps - one for each cylinder.

The injection pumps shall be driven from the camshaft and simultaneously controlled by a rack and pinion assembly that is hydraulically actuated by signals from the engine governor. The pumps shall be of a variable displacement type to alter the volume of fuel delivered to the spray nozzles according to load demand.

The nozzles shall inject fuel directly into the cylinder in the optimum spray pattern for efficient combustion.

2.6.7 Fuel/Water Separator. A fuel/water separator shall protect the fuel system from water damage.

2.6.8 Fuel Priming Pump. A manual fuel priming pump shall facilitate priming and bleeding air from the system.

2.6.9 Fuel Lines. Flexible fuel lines between engine and the mobile fuel tank fuel supply lines shall be installed to isolate vibration and shall be provided with "quick connect" fittings.

2.6.10 Fuel System Maintenance. The fuel transfer pump, injection pumps, rack and pinion assembly, and time mechanism shall be maintenance and adjustment free for the life of the equipment. The fuel filter shall not require changing more frequently than once per year or every 250 hours, whichever comes first. Fuel water separators shall not require draining more frequently than once per week.

2.6.11 Governor, Hydra-Mechanical. The governor shall be mechanical with hydraulic assist as required. Steady state speed regulation shall be ± 10 percent. The governor shall be equipped with a vernier control and positive locking to allow manual speed adjustment.

2.6.12 Cooling System. The engine jacket water cooling system shall be closed circuit design with provision for filling, expansion, and deaeration. The cooling pump shall be driven by the engine. Auxiliary coolant pumps required for heat exchangers or separate circuit aftercooling shall also be engine driven. The cooling system shall tolerate at least 172 kPa (25 PSI) static head. Coolant temperature shall be internally regulated to disconnect external cooling systems until operating temperature is achieved.

2.6.13 Radiator, Engine Mounted. Heat rejected to the engine jacket water shall be discharged to the atmosphere through a close coupled radiator. The engine shall be installed outside and have a 50% antifreeze/coolant mixture. The radiator shall cool the jacket water while the engine is operating at full site capability and 0.062 kPa (0.25 H₂O) external air restriction. Additional restrictions affecting air flow shall not limit the radiator's capability to adequately cool at maximum site temperature.

2.6.14 Fan and Belt Guarding. The fan, fan drive, and fan belts shall be covered with 14 gage punched steel mesh guarding for personnel protection. The guarding shall conform to OSHA 29CFR1910 standards.

2.6.15 Suction Fan. The radiator cooling fan shall be a suction type driven from the engine. Air shall be drawn from the outside of the radiator and exhausted across the engine.

2.6.16 Inlet Air System. The engine air cleaner shall be engine mounted with dry element requiring replacement no more frequently than 250 operating hours or once each year. Air intake shall be equipped with a rain cap.

2.6.17 Turbocharging. Only single stage turbocharging shall be allowed. The turbocharging shall be of the axial turbine type driven by engine exhaust gases and direct - connected to a compressor supplying engine combustion air.

2.6.18 Aftercooling. Aftercooling core air surfaces shall be coated with a corrosion inhibitor to minimize oxidation.

2.6.19 Exhaust System. The engine exhaust system shall be installed to discharge combustion gases quickly and silently with minimum restriction. System including silencer (muffler) shall be designed for minimum restriction, and in no case shall backpressure exceed 6.7 kPa (27 in H2O).

The exhaust silencer (muffler) shall be flange mounted and supported from the engine and shall include a weather cap.

2.6.20 Exhaust Noise Control. The exhaust silencer shall provide the noted attenuation while imposing minimum restriction.

The exhaust silencer shall reduce the exhaust sound spectrum to, or below, the following listed levels when measured 75 feet from the silencer, under full engine load and clear weather, with an ANSI Sound-Level Meter.

FREQUENCY BAND Hz	SOUND LEVEL DECIBELS RESIDENTIAL
20-75	78
75-150	68
150-300	60
300-600	53
600-1,200	48
1,200-2,400	44
2,400-4,800	42
4,800-10 kHz	41

2.6.21 Electric Starting System. The engine starting system shall include 24 volt DC starting motor(s), starter relay, and automatic reset circuit breaker to protect against butt engagement. Batteries shall be maintenance free, lead acid type mounted near the starting motor. A corrosion resistant or coated steel battery rack shall be provided for mounting. Required cables will be furnished and sized to satisfy circuit requirements. The system shall be capable of starting a properly equipped engine within 10 seconds at ambient temperatures.

2.6.22 Batteries. Batteries for starting and control shall be selected and supplied by the engine manufacturer. They shall be a heavy duty SLI lead acid type with thru-partition connectors, and house in a hard rubber or polypropylene case with provision for venting. Starting batteries shall be rated 24 volt DC. Sizing shall consider specific application requirements of engine oil viscosity, ambient starting temperature, control voltage, overcharging and vibration. Batteries shall be located as close to the starting motor as practical, away from spark sources, and permit easy

inspection and maintenance. Battery warranty shall be the responsibility of the engine manufacturer.

2.6.23 Alternator. An engine mounted belt driven battery charging alternator shall be installed with an automatic voltage regulator. It shall be suitable for heavy duty applications with a rating of 24 volts 35 amperes.

2.6.24 Instrumentation-Engine. The engine mounted instrument panel shall consist of a shock-mounted formed and welded enclosure primed for coastal environment and finished in semi-gloss black enamel and removable protective cover both suitable for outdoor installation. Metric/English marked gages with minimum 63.5 mm (2.5 in.) diameter dial face shall be mounted in a brushed stainless steel face panel with pressure instruments piped to bulk head connections in the enclosure bottom. Gages shall include: engine oil pressure, oil filter differential, fuel pressure, jacket water temperature, electric service meter, tachometer and elapsed time meter.

2.6.24.1 Temperature and pressure gages shall be non-vented with interior filled with argon gas. Gages shall resist water entry under 22.5 kPa (3.26 PSI) pressure. Provision shall be made in the panel for three additional gages.

2.6.25 Mounting Base-Structural Steel, Rail. The base shall be of heavy duty steel construction with rolled "C" channel structural members reinforced to maintain engine alignment during skidding, lifting, and operation. Structural side members shall have bottom mounting holes and be suitable for mounting on the trailer.

2.6.26 Controls, Protection, and Monitoring. The controls, protection, and monitoring systems of the engine and its operation shall be the responsibility of the Contractor and engine manufacturer. All subsystem components, interfaces, and logic shall be compatible with engine mounted devices. Provide safety shutdown devices for high water temperature, low oil pressure and engine overspeed as a minimum.

2.6.27 Nameplates. Each major component shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the equipment. As a minimum, nameplates shall be provided for the following items:

- a. Engines
- b. Pumps and pump motors
- c. Radiators
- d. Heaters
- e. Exhaust mufflers

2.6.28 Predelivery Inspection. A predelivery inspection must be performed at the engine manufacturers' facility to insure all components and controls are included as specified herein.

2.6.29 Predelivery Testing. Prior to delivery and acceptance, the engine shall be tested to show it is free of any defects and will start and carry full load. This testing shall be performed at the facility of the engine manufacturer.

All consumables necessary for testing shall be furnished by the engine manufacturer. Any defects which become evident during the test shall be corrected by the engine manufacturer at its own expense prior to shipment to

the jobsite. A manufacturers' certified test report shall be submitted for approval.

2.6.30 Field Quality Control. The complete installation shall be checked for procedural and operational compliance by a representative of the engine manufacturer. The engine lubricating oil and antifreeze, as recommended by the engine manufacturer, shall be provided by the engine manufacturer. The engine manufacturer's representative shall be present to assist the Contractor during start-up, systems check, adjusting, and any site testing required after the installation is complete. See paragraph FIELD TESTS.

2.7 POWER TAKE-OFF. A power take-off assembly complete with clutch assembly with shaft and bearings mounted in a cast iron housing shall be provided with the engine. Power take-off assembly shall have sealed pilot ball bearings and sealed main roller bearings to eliminate lubrication requirements. Power take-off shall have two clutch plates.

2.8 DRIVE SHAFT. The drive shaft shall be designed to transmit horsepower equal to the engine's continuous rated horsepower at 1800 RPM for 24 hours daily operation with a service factor of 1.3. The shaft shall be adjustable in length with universal joints at each end. Universal joints shall have roller bearings with double lip seals. Bearings shall be caged and shall have permanent grease feature which shall last for a life of the universal joint assembly. Normal bearing housing shall have a life of not less than 10,000 B10 hours. Load ratings and fatigue life of roller bearings shall be in accordance with ABMA 11. Drive shaft shall be wing-bearing, double universal joint type. Provide yokes for the power take-off shaft and for the jack shaft assembly specified in Section 15131 PUMPS that are compatible with the flanges on the drive shaft. Drive shaft shall be provided with personnel safety guarding.

2.9 TORQUE-LIMITING COUPLING. A torque-limiting coupling shall be furnished for the engine end of each drive shaft to dampen torsional vibration, absorb shocks and act as a mechanical fuse to protect all equipment from excessive torque. The coupling shall be similar and equal to the Vulkardan model VKL 1690/TL, size as required by manufacturer's computations, as manufactured by American Vulkan Corp., Winter Haven, Florida, (863)324-2424.

2.10 TRAILER. Engine shall be factory mounted to a 2-axle steel trailer. Trailer shall be designed for on and off road movement and incorporate suitable suspension, wiring and lights, wheels, tires, tongue and protective paint coatings as specified in paragraph PAINTING.

Both axles shall have electric brakes, leaf spring suspension, and a means of lubricating the wheel bearings without their removal from the axle.

Lighting package shall meet all Interstate Commerce Commission (I.C.C.) regulations, the stop, turn, and tail light on each side shall be enclosed in a single sealed, submersible, and shock mounted unit. I.C.C. lighting package on trailer and enclosure:

- (2) 4-inch sealed stop/turn/tail lamps
- (2) 3-inch diameter red reflectors
- (3) 3-inch diameter amber reflectors
- (1) 1-1/2-inch diameter license plate light
- (1) Heavy duty zinc die cast 6-way male socket

Tires shall be 7.00 x 15 - 8 ply minimum. The hitch shall be a removable type attached through a concentric box beam arrangement. It shall be bolted to trailer tongue. Tow vehicle attachments shall be 2-5/16-inch ball type rated

for 10,000 lb. load. Furnish two 2-5/16-inch hitch balls and 1 frame mounted trailer hitch rated for 10,000 lbs. for a 3/4 ton pick-up. Present tow vehicle bumper height is 25 inches above grade. Provide a screw type tongue jack swivel with sand shoe mounted to the trailer tongue. Trailer shall match into a permanently built track with stops as shown on drawings. All bolts shall be stainless steel in accordance with ASTM F 593 and all nuts shall be non ferrous in accordance with ASTM F 467. Trailer frame shall be constructed in accordance with AISI SG673 and AWS D1.1 with materials conforming to ASTM A 36/A 36M where applicable.

2.11 SAFETY DEVICES. Exposed moving parts, parts that produce high operating temperatures, parts which may be electrically energized, and parts that may be a hazard to operating personnel shall be insulated, fully enclosed, guarded, or fitted with other types of safety devices. The safety devices shall be installed so that proper operation of the equipment is not impaired. Guards and covers for moving parts shall be of sheet steel, expanded metal, or another acceptable material and shall be removable for disassembly of the diesel drive unit.

2.12 PAINTING. All manufactured equipment shall be painted in the shop in accordance with Section 09965 PAINTING - HYDRAULIC STRUCTURES, unless otherwise approved. The Contractor shall submit the paint formula, manufacturer's application instruction and color for approval by the Contracting Officer. The Contractor shall not paint any aluminum, brass, bronze, stainless steel, or nonmetallic surfaces.

2.12.1 Preparation. Surfaces that contain loose rust, mill scale or other foreign substances shall be mechanically cleaned by power wire brushing. After cleaning, one coat of ferrous-metal primer shall be applied to the surface. Shop-coated ferrous surfaces shall be stored out of contact with the ground.

2.12.2 Application. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture and finish. The hiding shall be complete. Each coat shall be so applied as to produce a film of uniform thickness. Respirators shall be worn by persons engaged or assisting in spray painting. All paint shall be mixed, thinned, stored, and applied in accordance with the manufacturer's recommendations.

2.13 SPARE PARTS. The Contractor shall furnish the following spare parts: One complete drive shaft assembly and one complete spare trailer tire. All spare parts shall be duplicates of the original parts furnished and interchangeable therewith. Spare parts shall be packed in crates.

PART 3 EXECUTION

3.1 FIELD ERECTION AND INSTALLATION.

3.1.1 General. All items of equipment, or elements thereof, shall be cleaned of all protective coating used on the items or elements during shipment and storage, and all rust, dirt, grit or other foreign matter removed. Stilson wrenches, cold chisels or other tools, likely to cause injury to the surface of any part, shall not be used in the work assembly and tightening. Bolts and screws shall be tightened uniformly and firmly, but care shall be taken not to overstress either the fastener or the member with which it is associated. Where specific torque values or ranges are cited in the erection or installation instructions, an accurately calibrated torque-wrench, having the proper capacity range, shall be used. All studs, nuts and screws shall be installed with an anaerobic locking compound. Cleaning prior to application of the locking compound shall follow the manufacturer's recommendations. Each item of equipment shall be carefully and accurately aligned so that after it is fastened in place there will be no binding or

excessive pressure or wear in any moving part and no distortion of any member. All shims shall be of bronze or corrosion-resisting steel.

All installation and erection of the diesel drive unit shall be in accordance with the installation and erection instructions specified in paragraph INSTALLATION AND ERECTION INSTRUCTIONS and under the supervision and direction of the erecting engineer specified in paragraph ERECTING ENGINEER. The assembled trailer mounted engine shall be positioned and have the clearances, all as shown on the contract drawings, when installed in the spaces provided.

3.1.2 Orientation. The engine manufacturer's authorized representative and the Contractor shall provide a complete orientation for the Contracting Officer's Representative. Orientation shall include both classroom and hands-on instruction. Topics covered shall include control operation, schematics, wiring diagrams, meters, indicators, warning lights, shutdown system and routine maintenance.

3.2 FIELD TESTS.

3.2.1 General. The equipment shall be operated and tested by and at the expense of the Contractor to determine if it has been properly manufactured, assembled and installed and if it meets the requirements of the specifications. Tests shall be conducted as specified in paragraph INSTALLATION AND ERECTION INSTRUCTIONS and the Contractor shall notify the Contracting Officer at least 5 days prior to commencing the testing, or any phase thereof.

3.2.2 Pre-Installation Testing. Prior to connecting the engine to either of the pumps the following tests shall be performed by the Contractor and the Engine Manufacturer's Representative(s) in the presence of the Contracting Officer:

3.2.2.1 Prestart checks:

- a. Oil level
- b. Water level
- c. Battery connection and charge condition
- d. Engine to control interconnects
- e. Engine intake/exhaust obstructions
- f. Removal of all packing materials

3.2.2.2 Operation Test. Run engine at rated speed for one (1) hour. After the first half-hour stabilization period at rated speed, the following shall be recorded at fifteen minute intervals:

- a. Fuel pressure, oil pressure and water temperature.
- b. Exhaust gas temperature at engine exhaust outlet.
- c. Ambient temperature.

3.2.3 Initial Wet Run Tests. The Contractor shall connect the engine and make a wet run test on each pumping unit. The test shall be performed at the available water level and load conditions with engine and pumps operating at 80 percent of rated speed for 1 hour and at 100 percent of rated speed for 2 hours. The tests shall demonstrate satisfactory functional operation of the engines and pumping units. Each pumping unit shall be checked visually and

aurally for vibration, any unusual noises, and its general operation. After the first half-hour stabilization period at full load, the following shall be recorded at fifteen minute intervals:

- a. Engine fuel pressure, oil pressure and water temperature.
- b. Engine exhaust gas temperature at engine exhaust outlet.
- c. Engine ambient temperature.

Proper operation of controls, engine shutdown, and safety devices shall be demonstrated. Should these tests indicate that the equipment does not meet the specified performance requirements, the cost of all corrective measures shall be borne by the Contractor.

3.2.4 Final Acceptance Tests. Not more than 5 days after successful completion of the field run tests, the Contractor shall perform a final acceptance test as follows:

- a. The final acceptance tests shall consist of wet run tests on all equipment, simulating actual operating procedures, for an aggregate period not to exceed four hours of successful testing. These tests shall be run under the direction of the Contracting Officer and in accordance with operating instructions furnished by the Government. The operating instructions shall be furnished by the Contractor not less than 15 days prior to performance of this test.

- b. The final acceptance test shall demonstrate satisfactory functional operation of the pumping units and diesel drive unit and shall include complete wet run operation of the pumping units throughout all their functions. Final acceptance will be made upon successful completion of these tests.

-- End of Section --