TECHNICAL PROVISIONS

PROJECT TABLE OF CONTENTS

DIVISION 1

SSCR0301000

GENERAL REQUIREMENTS

SECTION 01000

CONTRACT ADMINISTRATION DATA

TABLE OF CONTENTS

DIVISION 1

GENERAL REQUIREMENTS

SECTION 01000

CONTRACT ADMINISTRATION DATA

PART 1 - GENERAL

1.1 CONTRACT ADMINISTRATION

Contract will be administered by:

DEPARTMENT OF ARMY
U.S. ARMY CORPS OF ENGINEERS, CHARLESTON DISTRICT
LowCountry Office
431 Meeting Street Charleston, South Carolina

Name: Kevin Widner
Telephone: 843-329-2339

1.2 CONTRACTING OFFICER

The Contracting Officer who signed this contract is the primary Contracting Officer for the contract. Nevertheless, any Contracting Officer assigned to the Charleston District and acting within his/her authority may take formal action on this contract when a contract action needs to be taken and the primary Contracting Officer is unavailable.

1.3 MANHOURS

In conjunction with SECTION 00700, Clause ACCIDENT PREVENTION including ALT 1, and Section 1, paragraph 01.D.04 of referenced EM 385-1-1, the Contractor shall report to the Government monthly the total manhours expended at the project site by all employees (supervisory as well as labor) together with those of all subcontractors. The reporting period will start at 12:01 a.m. the first day of each month and end as of midnight on the last day of each month. Reporting should be made telephonically to the Resident Engineer's office prior to the 10th day of each month.

1.4 SERIAL LETTER CORRESPONDENCE

1.4.1 General

The original and five copies of all correspondence pertaining to this contract shall be sent to the Resident Engineer, U.S. Army, Corps of Engineers, Charleston District, Lowcountry Office CESAC-TS-OL, Resident Office, 431 Meeting Street – Charleston, South Carolina 29403.

1.4.2 Numbering

All letter correspondence shall be independently numbered serially with no numbers missing or duplicated, and in sequence, commencing with number one (1). Each letter shall show the contract number, description, and subject matter. Only one subject should be covered in the same letter. Letters shall be signed by the Project Manager or by assistants designated to act for the Project Manager. A list of personnel so designated shall be furnished.

1.4.3 Subcontractors

Subcontractors shall not correspond with either the Resident or District offices; the prime Contractor shall handle all correspondence.

1.4.4 Transmittals

Transmittals of signed pay estimates, payrolls, submittals, and other similar correspondence will not require a Serial Letter; use of a commercial transmittal form or speed letter is encouraged.

1.4.5 Submittals

Submittals referred to in sections such as environmental plans, safety plan, quality control plan, etc. shall be submitted by serial letter.

1.5 LETTERS OF AUTHORITY

To authenticate actions required under terms of this contract, a letter of authority shall be furnished to the Resident Engineer which indicates the names of individual or individuals who will be authorized to perform the following functions on behalf of the company:

a. Sign progress payment estimates.

b. Accept Government furnished property (if applicable).

c. Sign contract modifications, supplemental agreements and consent of surety.

d. Monitor and report on the environmental protection plan, management plan, quality control plan, and safety plan.

e. Supervise the field activities

This letter of authority shall bear the typewritten names and the handwritten signatures of each individual and be signed by the person whose signature appears on the final contract.

1.6 **NOT APPLICABLE**

1.7 ACCIDENT REPORTING

All accidents as listed in paragraph (2) below, involving property damage, fires, personal equipment, and all injuries to the public, regardless of degree, shall be reported to the Resident Engineer, on the forms and according to the schedule which follows:

a. Investigation and Reporting.

(1) The Resident Engineer shall be notified by the most expeditious means available of all fatal and permanent total disability injuries, three or more persons hospitalized, all property damage of $100,000 or more, and structural damage involving a question of structural adequacy. All other accidents involving a disabling injury or property damage of $2,000 or more shall be reported to the Resident Engineer by telephone as soon as possible and in all cases within 24 hours.

(2) In all accidents enumerated in the first paragraph, the Contractor shall investigate the circumstances before the scene of the accident is changed, take corrective action, and within 48 hours forward to the Resident Engineer sufficient copies of the report forms indicated below.

(3) In the event of an accident involving a fatality, permanent total disability, hospitalization of three or more persons, or property damage of $100,000 or more, the Contractor shall promptly suspend all operations at the scene of the accident and notify the Resident Engineer of the occurrence. The Contractor shall immediately provide for the rescue and/or care of the injured. Except in situations where safety may be compromised, access to the area shall be restricted and the scene left undisturbed until investigated by a Government appointed board of investigation and until the Contractor is authorized to resume operations.

(4) If property damage and injury result from the same accident, the consequence may be noted on the same ENG Form 3394. If more than one person is injured in a single accident, ENG Form 3394 shall be submitted for each person injured. The Resident Office staff will provide the required forms and assist in their preparation immediately upon notification of an accident.

b. Types of Accidents and Reports. For each accident which results in a consequence or combination of the consequences listed below, a complete report on ENG Form 3394 shall be furnished to the Resident Engineer. Please note that these reports cannot be used for any purpose other than accident reporting.

(1) Disabling injury (including death) is an injury which renders a person unable to perform a regularly established job on the day following the injury or on any subsequent day. Known suicide or deaths from natural causes are not reportable.

(2) Injuries to all other persons occurring on Government property under jurisdiction of this office, regardless of degree.

(3) Damage of $2,000 or more to the Contractor's property or equipment, including motor vehicles and fire and/or damage to other property caused by the Contractor while executing the contract.

(4) Accidents occasioned by flood, hurricane, tornado, fire, navigation, wind, ice, etc., and structural failure in excess of $2,000.

1.8 LABOR STANDARDS

1.8.1 General

The Contractor and all subcontractors are required to comply with the following labor standards, statutes, and regulations; Davis-Bacon Act; Contract Work Hours and Safety Standards Act; Secretary of Labor's regulations (Parts 3 and 5, Subtitle A, Title 29, Code of Federal Regulations).

1.8.2 Coverage

The contract provisions relating to wages, overtime, payroll deductions, and other labor standards requirements cover foremen, laborers, and mechanics, including owner-operators of other than hauling equipment and other individual enterprises performing the duties of a laborer or mechanic. Bona fide owner-operators of hauling equipment, such as trucks, who are independent contractors are not covered, and the certified payrolls, including the names of such owner-operators, need not show hours worked nor rates paid, but only the notation "owner-operator."

1.8.3 Wages

Wages shall be paid at least once a week and shall be computed at hourly rates not less than those set forth in the contract wage schedule, as set by the Davis-Bacon Act wage determinations, for the particular classifications of work performed. (Instructions regarding wage determination obligations are available on request.)

1.8.4 Overtime

Overtime for work in excess of 40 hours in any work week shall be paid at not less than 1-1/2 times the basic rate of pay. Rates paid for fringe benefits are excluded in the computations of overtime.

1.8.5 Deductions

Deductions from wages earned may be only those which are permitted by the Copeland Act (Anti-Kickback) regulations. An instruction sheet entitled "Payroll Deductions" is available upon request.

1.8.6 Forms

DD Form 1565 shall be used in requesting authority from the Contracting Officer to use labor classifications and rates which are not listed in the contract wages schedule.

1.8.7 Apprentices

Apprentices shall be individually registered in a program of a State apprenticeship and training agency approved and recognized by the U.S. Bureau of Apprenticeship and Training. Written evidence of such registration shall accompany the first payroll on which apprentices appear.

1.8.8 Equal Opportunity

Affirmative action shall be taken to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, religion, sex, or national origin. SECTION 00700, Clause "EQUAL OPPORTUNITY," requires the posting of notices and sending of a notice to each labor union or representative of workers with which you have an agreement. Posting of the notice available from the Resident Engineer's office satisfies both requirements.

1.8.9 Reporting

In accordance with SECTION 00700, Clause "AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION," a Form CC-257, Monthly Employment Utilization Report, shall be submitted on a monthly basis. A sample copy of the report form is available upon request.

1.8.10 Subcontracts

Subcontracts (first tier or otherwise) shall physically contain the labor standards provisions of the prime contract. Subcontracts of any tier in excess of $10,000 must also contain the "Equal Opportunity" clause.

1.8.11 Payrolls

Correct Weekly Payrolls, including those of subcontractors, shall be prepared and submitted. An instruction sheet is available upon request. Incorrect and delinquent payrolls will delay processing of partial payment estimates.

1.8.12 Records

Payroll and Employment Records shall be maintained during the course of work and for three years thereafter. They are subject to inspection by authorized representative of the Contracting Officer and the U.S. Department of Labor.

1.8.13 Job Interviews

Contractor and Subcontractor employees will be interviewed from time to time by a Government representative during working hours on the job.

1.8.14 Work Stoppage

Work stoppages resulting, or, likely to result from actual or potential labor disputes, shall be promptly reported, with all relevant information, to the GQAR.

1.8.15 Drug-Free Work Place

In conjunction with SECTION 00700, Clauses "DRUG-FREE WORK PLACE" and "DRUG-FREE WORK FORCE," the Contractor's policy shall be submitted in letter form for approval. No physical work at the site shall be started until this plan has been approved or specific authorization is obtained to start a phase of the work.

1.8.16 Other

The Contractor's attention is called to all the Clauses in SECTION 00700 concerning small business concerns, small disadvantaged business concerns, and women-owned small businesses. The Contractor assumes affirmative obligations with respect to subcontracting with such enterprises. The prime Contractor shall send a copy of the clauses to each subcontractor

- END OF SECTION -

SECTION 01010

SSCR0301010

CONTRACTOR'S SITE OPERATIONS

TABLE OF CONTENTS

SECTION 01010

CONTRACTOR'S SITE OPERATIONS

PART 1 GENERAL

1.1 GENERAL INFORMATION

This section covers the general requirements applicable to specific Contractor's operations or equipment for work performed on site.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced to in the text by basic definition only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	(1997) Occupational Safety and Health Standards for Construction
29 CFR 1910.147	Control of Hazardous Engage (lockout/tagouts)
29 CFR 1910.269	Electrical Power Generation, Transmission and Distribution
29 CFR 1910.333	Selection and Use of Work Practices
29 CFR 1926	(1996) Safety and Health Standards for Construction

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

FHWA	(1988) Manual on Uniform Traffic Control Devices for Streets and Highways

US ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) Safety and Health Requirements Manual

1.3 SUBMITTALS

Submittals required by this section of the Technical Specifications shall be for Government approval (GA) or for information only (FIO), and shall be submitted as stated below in accordance with SECTION 01330. The time of submittal shall be in accordance with SECTION 01330, unless otherwise indicated below.

SD-01 Data

Supervisors Qualifications; GA

Qualifications and identification of Contractor’s work supervisor(s), a minimum of 30 calendar days prior to the start of site work, para. 1.5.

Organizational Chart; FIO

Organization chart, a minimum of 30 calendar days prior to the start of site work, para. 1.6.1.

Employee Identification Procedure; GA

Procedure for identification and control of employees entering or leaving site, a minimum of 30 days prior to the start of site work, para. 1.6.2.

List of Employees; FIO

List of personnel working on the site, a minimum of 14 calendar days prior to the start of site work and updated weekly thereafter to reflect a current listing, para. 1.6.2.

Roadway Access Agreement; FIO

Roadway access agreement, a minimum of 14 calendar days from the date of signature, or before the use of the roadways begins, whichever is earliest, para. 1.7.2.

Contractors Vehicle Identification; GA

Method of identifying Contractor’s vehicles, a minimum of 30 days prior to site work, para. 1.8.2.

Working Hours; GA

Working hours, shifts and days of the week to be worked other than those of the project, a minimum of 7 calendar days in advance, para. 1.9.1 and 1.9.2.

Site Work Schedule; GA

Site work schedule featuring the major stages of the work, a minimum of 30 calendar days prior to the start of site work, para. 1.9.3

Control of Hazardous Energy; GA

Clearance to take operating equipment out of service, a minimum of 14 calendar days prior to the outage date, para. 1.11.

Temporary Electrical Powerlines; GA

Proposed site powerlines and temporary electrical connections, a minimum of 30 calendar days prior to installation, para. 1.14.2.

Transportation of Heavy Equipment; GA

A plan and method of transportation and operation of cranes and heavy equipment, a minimum of 30 calendar days prior to their transportation and site operation, para. 1.15.1.

Indoor Storage Locations; GA

Indoor storage locations for equipment and material, minimum of 30 calendar days, prior to area usage, para. 1.18.

Off-site Disposal Area; GA

Location of off-site disposal area and plan for disposal, a minimum of 30 calendar days prior to the commencement of site work, para. 1.29.

Signage; GA

Content and location of signage, a minimum of 30 calendar days, prior to performing on-site work, para. 1.30.

Access Equipment; GA

Any scaffolding, ladder, stairway, or other access schemes proposed, a minimum of 30 calendar days prior to their installation and use, para. 1.33.

Project Status; FIO

Project report giving project status and activities, once a week of on-site work, para. 1.34.

SD-08 Statements

Record of Parts Removed from Site; FIO

Record of parts shipped from the project for repair, available for review at all times, para. 1.38.2.

Schedule Change Request; GA

Request to change schedule of regular work hours, etc., minimum 48 hours prior to change, para. 1.9.3.

Request for Drawings and Data; FIO

Request for copies of data and drawings, a minimum of 7 days in advance, para. 1.12.

Notification of Damaged Equipment; FIO

Notice of finding damaged equipment or other abnormal conditions of equipment or parts, immediately after discovery, para. 1.21.

1.4 NOT USED

1.5 SUPERVISOR(S)

At least one (1) full-time employee of the Contractor shall be available at the worksite anytime other Contractor or subcontractor personnel are working on the site to supervise and direct the work specified herein. Supervisor(s) shall be present at the site during erection and shall be responsible for providing complete and correct direction of all repair work, the initial starting, and all subsequent operation of the equipment until the field tests are completed. The supervisor(s) shall be responsible for following the Government's Safe Clearance Procedure, para. 1.11. The supervisor(s) shall initiate instructions for all actions necessary for the proper inspection, handling, assembly and testing of the equipment. The supervisor(s) shall keep a record of all measurements taken during rehabilitation and shall provide copies on request or on completion of installation of the equipment associated with the crane. The supervisor(s) shall keep all as-built drawings to current standards and provide copies upon completion of the work. The supervisor(s) shall be fluent in the spoken and written English language. The supervisor(s) shall have been engaged in similar crane work as a supervisor, as is specified herein, for a minimum of 3 years. Documentation of their experience shall be submitted.

1.6 CONTRACTOR'S GENERAL PERSONNEL.

1.6.1 General

The Contractor shall submit a project organization chart reflecting at least those positions described herein and defining their work relationships, etc. All personnel employed by the Contractor shall be fully qualified in their respective fields to render the services necessary.

1.6.2 Identification of Contractor's Employees

The Contractor shall be responsible for furnishing employee identification and for requiring each employee at the powerhouse to display such identification as may be approved and directed by the Contracting Officer, unless otherwise specified below. All Contractor personnel, prior to engaging in work on project premises, shall be issued an identification card by the Contractor. The I.D. cards shall include the following information:

Name of Contractor
Name of Employee
Birth date
Height
Weight
Hair color
Eye color
Recent photo

All prescribed identifications shall be returned immediately to the Contractor upon release of any employee. The Contractor shall supply a complete listing of all personnel and their titles who will be working on the project. This listing shall be revised at a minimum of once weekly and revisions provided. When required, by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed by it or to be employed at the powerhouse.

1.7 WORK AREAS AND ACCESS

1.7.1 Access Roads

Access to St Stephen Powerhouse is by a direct road from Highway 52. No new access roads are required for this work. Damage to existing roadways used for access purposes shall be repaired by the Contractor and the surface shall be restored to its "as found" condition.

1.7.2 Road Restrictions

The Contractor shall comply with any special requirements of the State, County, Local authorities and Corps of Engineers for use of existing roadways. These special requirements include, but are not limited to, traffic regulations and load limits. The Contractor is responsible for investigating and understanding these restrictions. No time extensions or cost claims will be allowed due to road restrictions. Any agreements negotiated with the State or County for road use will be furnished to the Government before use of roadways begin. Both lanes of roads shall not be blocked by the Contractor. If one lane is blocked the, Contractor shall provide the necessary flaggers, based on the visibility, to control traffic.

1.7.3 Access by Government Personnel

Clear access shall be maintained for Government personnel and equipment through all work areas.

1.7.4 Contractor's Staging Area and Employee Access

The Contractor's staging area shall be restricted to the area designated by the Government. His job-site office may be in the staging area, as approved. The project areas off-limits to Contractor shall be all areas other than the work areas. Salespersons or personnel seeking employment will not be permitted inside the powerhouse. Signs may be erected outside the powerhouse containing instructions for personnel seeking the Contractor. The content and location of the signs must be approved. The Contractor shall provide his own office space and administrative facilities and all temporary storage buildings. All temporary Contractor site facilities shall be disposed of before final acceptance of all work.

1.8 VEHICLES

1.8.1 Use of Private Vehicles

Private vehicles of the Contractor and Contractor’s employees shall enter and leave the project from the main entrance. Parking of private vehicles shall be restricted to the areas designated.

1.8.2 Identification of Vehicles

All Contractor's vehicles shall display approved permanent identification of such size and color to allow Government personnel to identify the vehicle.

1.9 PROJECT SECURITY AND WORKING HOURS

1.9.1 General

After the stated Government project personnel working hours, the project gate accesses are locked. A procedure shall be prepared and submitted for approval for the identification and control of employees entering or leaving the project during the hours of closure. The security of the Contractor's property and items furnished under this contract are the Contractors responsibility, until accepted, whether stored inside or outside the powerhouse.

1.9.2 Working Hours

The working hours of the project staff are 7:00 a.m. - 4:30 p.m., Monday through Friday, with Federal holidays off. The Contractor's working hours shall not extend past the working hours of the project staff without prior approval. Working hours which extend past 4:30 p.m. weekdays, on weekends, and Federal holidays, or which are proposed to be different from the project working hours may be possible and shall be coordinated and approved by the Contracting Officer at least 7 days in advance.

1.9.3 Site Work Schedule

A site work schedule shall be prepared and submitted. The schedule shall include major and minor work elements and stages of the work. These documents shall be updated and submitted to reflect the actual work elements and progress and that anticipated in the future.

1.10 NOT USED

1.11 SAFE CLEARANCE PROCEDURES

Hazardous Energy Control (HEC) procedures are implemented for all the maintenance and construction activities on Corps property. These procedures are in accordance with OSHA regulation 29 CFR 1910.147,

1910.333, 1910.269 and USACE EM 385-1-1, The Control of Hazardous Energy (safe clearance). A Safe Clearance System, as stated in EM 385-1-1 and the St. Stephen Power Plant Safe Clearance Procedure, is used by project personnel to insure continuity of service and safety to personnel and equipment. Any work performed at the St. Stephen project will be performed under safe clearance. The Contractor shall request clearance on a piece of equipment or system before any work may begin. The Corps will establish the limits of the clearance, tag and lock the equipment or systems. The Contractor will be required to institute their own safe clearance procedures in accordance with OSHA and USACE regulations, within the perimeter or the Corps clearance. The Contractor’s clearance shall not inhibit or interfere with the Corps operation of the plant. The clearances shall not be violated. Any violation of Hazardous Energy Control procedure (Safe Clearance Procedures) will be grounds for requesting the removal of the offender(s).

1.12 DRAWINGS AND MANUALS

Existing drawings and manuals that may be of value for the work will be available for viewing at the powerplant during normal project day shift working hours. Drawings and manuals shall not be removed from the office. However, one (1) copy of available technical data and drawings not included in the reference drawings will be made at no cost to the Contractor within 7 normal working days after the request for such copies has been made. The drawings and manuals are furnished for information only and the Government does not guarantee the drawings or manuals will match actual field conditions. Reference drawing deviations shall not be the basis for a contract claim.

1.13 EXISTING SANITATION FACILITIES

Existing restroom facilities will be made available for use by Contractor personnel. Failure of the Contractor's personnel to keep restroom facilities neat and orderly will result in denial of continued use.

1.14 UTILITIES.

1.14.1 Government Furnished Utilities

All utilities that are required for use in performance of the work under this contract shall be Contractor-furnished except as noted below:

(1) Water. All reasonable amounts of non-potable water will be made available from existing outlets. The Contractor will be responsible for freeze proofing all accessed water sources.

(2) Electricity. Electric power may be obtained from existing sources located at various locations near the work areas unless otherwise approved:

(a) 120-volt, 1-phase, 20-amperes (maximum) circuits

(b) 480-volt, 3-phase, 60-amperes (maximum) circuits. The 480 volt service is a delta system.

(c) The Contractor may provide his own temporary electrical power distribution panel and connect a power cable from a 480-volt outlet to this temporary panel.

(3) Compressed Air. Up to 100 scfm of compressed air (nominal pressure of 100 psig) will be provided from existing outlets located throughout the powerhouse.

1.14.2 Temporary Utility Connections

All utilities provided by the Government shall be at no cost. Care shall be exercised in conserving all utilities. The contractor shall provide all necessary hoses, cords, couplings, plugs, GFI's and other appurtenances as required to connect to the system(s). All temporary connections shall be subject to approval. All electric power required outside the powerhouse shall be Contractor-furnished or as stated in above paragraph 1.14.1(2). The location of all power lines and all temporary connections for electricity shall be subject to approval. All temporary circuits and devices shall be provided, connected, and maintained and removed prior to final acceptance. Ground fault protection shall be provided for all circuits used, inside and outside, and shall be Contractor-furnished. The temporary panel shall conform to current NEC standards in EM 385-1-1.

1.14.3 Telephone

The project telephone system is not available to the Contractor.

1.15 CONTRACTOR'S EQUIPMENT AND MATERIAL

1.15.1 General.

The planned method of transportation and operation of cranes and other heavy equipment to be used in the performance of this contract shall be submitted. This shall include the type, size, and loadings of equipment and the proposed transportation routes and work areas to be used on the project. Operation of heavy equipment adjacent to existing structures shall be avoided when possible.

1.15.2 Movement of Equipment and Material by the Contractor

The Contractor shall provide all cranes, rigging, lifts, operators, and other necessary means to move equipment or material as required to pursue and complete the work whether owned by the Government or by the Contractor, unless otherwise specifically mentioned. This includes but is not limited to the unloading and loading of equipment and material.

1.15.3 Area Lighting

The Contractor shall provide all lighting necessary to perform his work and to provide a safe work environment.

1.16 CONTRACTOR'S CRANES

1.16.1 General

Contractor's cranes and equipment furnished for this work shall conform with all applicable OSHA requirements and EM 385-1-1.

1.16.2 Crane Testing

Contractor's cranes shall be tested in accordance with EM 385-1-1 at the project prior to use on the project and shall be witnessed by the Contracting Officer's Representative. Forty-eight hours (excluding weekends and federal holidays) notice of the test shall be given.

1.16.3 Loading Diagram

A crawler, wheel, and outrigger loading diagram and deck/powerhouse floor protection for outriggers shall be submitted prior to using any cranes over 50 tons capacity.

1.17 GOVERNMENT FURNISHED TOOLS, EQUIPMENT AND MISCELLANEOUS SITE EQUIPMENT.

Government tools and equipment at the project, i.e., lathes, drill presses, hand tools, etc., are not available for use.

1.18 STORAGE OF EQUIPMENT AND MATERIALS

Indoor and outdoor storage of equipment and materials will be permitted only at designated storage areas in the immediate vicinity of the powerplant which will be coordinated with the Government during the pre-work conference. A minimum access space of three feet shall be maintained between stored items and the existing powerhouse equipment.

1.19 NOT USED

1.20 NOT USED

1.21 DAMAGED EQUIPMENT OR ABNORMAL CONDITIONS

The Government shall be informed immediately upon finding any damaged equipment or other abnormal conditions involving additional work in which the Contractor believes he has no responsibility. The failure or abnormality shall not be disturbed until witnessed by the GQAR. Prior to proceeding further with work on the gantry crane, the Contractor and the Government shall agree in writing as to the responsibility for the damage or abnormality.

1.22 PROTECTION OF MATERIAL AND WORK

All materials, supplies, tools, equipment and Government property (including all tools, equipment, and special devices supplied by the Contractor and to be turned over to the Government at the end of the

Contract) shall at all times be protected and preserved in an approved manner and in accordance with the manufacturer's recommendations. If material, equipment, supplies, and work performed are not adequately protected, such property may be protected by the Government and the cost thereof will be charged to the Contractor or deducted from any payment due.

1.23 DISPOSAL OF ELECTRICAL AND MECHANICAL EQUIPMENT AND MISC. MATERIALS

Title to all materials and equipment to be disposed of, excepting salvage items and hazardous waste, is vested in the Contractor upon receipt of signed contract and such materials and equipment are designated scrap only as directed. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed. The Contractor may retain these items in usable form and take possession of them providing that there is no subsequent cost or inconvenience to the Government. The Government does not guarantee that these items are complete or in working order, and the Contractor shall assume responsibility for any damages caused by their use immediately upon taking possession of them. Scrap materials shall be removed from the Government's property within 14 days of removal from the cranes. Scrap shall not be sold on the site. Disposal of hazardous wastes shall be in accordance with SECTION 02120.

1.24 PROTECTION AND RESTORATION OF EXISTING FACILITIES

All existing grounds, property and facilities shall be protected whether or not shown on the drawings. Upon completion of the work, all the existing grounds, property and facilities, not included as a portion of the work, shall be left in a condition equal to the original condition prior to the contract. Costs for repair and restoration of any facilities shall be considered to be incidental to and included in the contract price.

1.25 NOT USED

1.26 NOISE CONTROL

Noise control and noise levels shall conform to requirements set forth in the appropriate OSHA regulation and EM 385-1-1.

1.27 FIRE CONTROL

All fire fighting equipment, supplies, and personnel shall be supplied in accordance with EM-385-1-1. Delays due to fire will not be acceptable as the basis of a claim for additional compensation.

1.28 CARE OF DRAINS

Existing powerhouse floor drains including the unwatering drains and transformer cell drains shall not be used for disposal of any solid material and or any liquids other than contaminant free water. Drains

obstructed by the Contractor shall be cleaned by the Contractor. All costs incurred in the cleaning and clearing of plugged drains, shall be borne by the Contractor.

1.29 DAILY CLEANUP AND DISPOSAL

In conjunction with SECTION 02120 all debris resulting from the work, such as waste metalwork, packing cases, scrap lumber, oil and grease, and other debris shall be collected, removed, and disposed of off site at least once per shift. Disposal shall be in accordance with Federal, State and Local regulations. The location of the Contractor's off-site disposal area and a plan for safe disposal of material shall be approved. The Government's trash cans, dumpsters, etc. shall not be used. Liquid waste shall not be disposed of in powerhouse drains. All costs of removing debris shall be incidental to the work, and no separate payment will be made therefore. All temporary structures used by the Contractor in the course of the work shall leave the area looking "broom clean".

1.30 BARRICADES AND DANGER, DETOUR AND WARNING SIGNS

1.30.1 Barricades and Danger and Detour Signs

The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient red lights, danger signals, and detour and other signs; provide a sufficient number of watchmen; and take all necessary precautions for the protection of the work and the safety of the public. Roads, etc. closed to traffic shall be protected by effective barricades, and obstruction shall be continuously illuminated day and night. Suitable warning signs shall be illuminated by lanterns or flares day and night.

1.30.2 Warning Signs

Warning signs shall be erected 500 feet in advance of any place on the project where operations interfere with the use of a road by traffic. Warning signs shall conform to the standards established in Part IV of the "Manual on Uniform Traffic Control Devices for Streets and Highways," published by the Federal Highway Administration.

1.31 WORK BY THE GOVERNMENT CONCURRENT WITH CONTRACTOR WORK

The Government will limit interference with the Contractor's work to the maximum reasonable extent and the Government and Contractor shall coordinate as necessary.

1.32 COOPERATION WITH OTHERS

The Government will perform maintenance work and will make every effort to have the area clear. The Contractor shall cooperate with other Contractors and the Government in using the area.

1.33 SCAFFOLDING

Any scaffolding, platform, ladder, stairway, or other access schemes proposed to be used shall be submitted for approval, including type, layout, and connections. Approved anti-slip surface material shall be installed on scaffolding platforms. Scaffolding shall comply in every respect with EM 385-1-1.

1.34 PROJECT REPORTING

Weekly reports shall be submitted by the Contractor giving project status and activities information. This report shall include a written summary, accompanied with detailed information relating to current status of procurement, construction, and delivery activities compared to both the current project schedules and the schedule submitted at the time of the Request for Technical Proposal.

1.35 WEEKLY MEETINGS

Once each week, while on site, a general meeting will be held between the Contractor and the Government. This meeting will be used to discuss progress in the last week and work planned in the up coming week. A meeting time and place shall be mutually agreed upon.

1.36 NOT USED

1.37 PERMITS AND RESPONSIBILITIES

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, County, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, workers, public, and property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

1.38 QUALITY CONTROL AT THE JOB SITE/POWERHOUSE

1.38.1 General

The Contractor shall maintain an effective quality control system in accordance with SECTION 01451. The Contractor's system shall encompass all actions involving selection of construction material sources and suppliers, on-site and off-site fabrication of Contractor-furnished items to be included in the work, on-site and off-site production of construction materials, work placement procedures, workmanship, inspection, and testing. The system shall provide the necessary supervision, inspection, and tests of all items of work, including that of its suppliers and subcontractors, that will assure the compliance of

all work with applicable specifications and drawings in respect to the Contractor furnished equipment, materials, workmanship, construction, finish, functional performance, and identification. The Contractor's system shall encompass all management and supervisory actions taken by its staff that affect quality of the finished construction work, including all inspection controls and tests required for compliance with the contract, except for those inspections and tests specifically reserved to be accomplished by the Government.

1.38.2 Parts Control

A complete written record shall be maintained of the location and estimated date of return of all parts shipped from the project for repair. This record shall be available for review at all times.

1.39 PAYMENT

Unless otherwise noted, separate or direct payment will not be made for compliance with this section. All costs thereof are incidental to and included in the contract prices and payment for the various items listed in the bid schedule.

PART 2 PRODUCTS AND PART 3 EXECUTION

(Not Used)

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SECTION 01090

SSCR0301090

SOURCE OF REFERENCED PUBLICATIONS

TABLE OF CONTENTS

SECTION 01090

SOURCE OF REFERENCED PUBLICATIONS

PART 1 GENERAL

1.1 STANDARD SPECIFICATIONS

Standard specifications of the following authorities referenced herein may be obtained from the addresses listed below:

NAME	ABREVIATION
American Conference of Governmental Industrial Hygienists 1330 Kemper Meadow Dr Cincinnati, OH 45240-1634	ACGIH
American National Standards Institute, Inc. 11 West 42nd Street New York, NY 10036	ANSI
American Society of Mechanical Engineers Three Park Avenue New York, NW 10016-5990	ASME
American Society for Testing and Materials 100 Bar Harbor Drive West Conshohocken, PA 19428-2959	ASTM
American Welding Society Inc. 550 NW LeJune Road Miami, FL 33126	AWS
Code of Federal Regulations Order From: Government Printing Office Washington, DC 20402	CFR
Commercial Item Descriptions Order from: General Services Administration Federal Supply Service Bureau 470 E L'Enfant Plaza, S.W., Suite 8100 Washington, DC 20407	CID
U.S. Army Corps of Engineers Handbook Concrete and Cement Standards Order from: U.S. Army Engineer Waterways Experiment Station 3909 Halls Ferry Rd. Vicksburg, MS 39180-6199	CRD

NAME	ABREVIATION
Defense Federal Acquisition Regulations Order From: Government Printing Office Washington, DC 20402	DFAR
Environmental Protection Agency Order from: Public Information Center 401 M Street, SW Washington, DC 20460	EPA
Federal Acquisition Regulations Order From: Government Printing Office Washington, DC 20402	FAR
Federal Specifications and Standards available from: General Services Administration Federal Supply Service Bureau 470 L'Enfant Plaza, SW Washington, DC 20407	FS
Military Specifications and Standards available from: Standardization Documents Order Desk Building 4, Section D 700 Robbins Avenue Philadelphia, PA 19111-5094	MS
Mine Safety and Health Administration 620 Central Avenue Alameda, CA 94501	MSHA
National Electrical Manufacturers Association Order Department 1300 N 17th Street, Suite 1847 Rosslyn, VA 22209	NEMA
National Fire Protection Association One Batterymach Park, P.O. Box 9101 Quincy, MA 02269-9101	NFPA
National Institute of Occupational Safety & Health Mailstop C-13 4676 Columbia Parkway Cincinnati, OH 45226-1998	NIOSH

NAME	ABREVIATION
US Department of Labor Occupational Safety and Health Administration 4676 Columbia Parkway Cincinnati, OH 45226	OSHA
The Society for Protective Coatings 40 24th Street, 6th floor Pittsburgh, PA 15222-4656	SSPC
U.S. Army Corps of Engineers available from Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402	USACE

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SECTION 01270

SSCR0301270

MEASUREMENT AND PAYMENT

TABLE OF CONTENTS

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 GENERAL INFORMATION

In each instance the contract price for an item will constitute full compensation as herein specified, as shown, or as otherwise approved. The contract price and payment will also constitute full compensation for all work incidental to completion of the item, unless such work is otherwise specifically mentioned for separate payment under another bid item. In the event any work is required by the specification sections or by the drawings and not specifically mentioned in the measurement and payment paragraphs, separate or direct payment will not be made and all costs thereof are incidental to and included in the contract prices and payments for all items listed in the bid schedule.

1.2 MEASUREMENT

1.2.1 General

Items measured as a job will be measured for payment as a completed job, in place, in the locations indicated. This measurement includes measurement of all incidental work and materials that are necessary to make a complete job. Unless the payment paragraph makes a specific exception of an item, incidental items will not be measured under another item, even though there is another listing for the work or material.

1.2.2 Services of Skilled Craftsman for Government Directed Work

The measurement of time will be by units of man-hours, with a man-hour defined as one skilled craftsman working as directed for a period of 60 minutes. To qualify as services of a skilled craftsman, the directed work will be additional to that necessary to comply with specification requirements. Time will be computed by rounding off to the next higher one-half (½) hour. If the Government directed work is during other than normal working hours as defined by the Union contract for the craftsman, the overtime shall be converted to the equivalent regular time which shall be recorded as the total hours worked. No separate measurement for supervision, helper labor, or overhead will be made as they are incidental to the service being provided.

1.2.3 Payment Handling for Radiographic Inspection

The measurement of time will be by units of man-hours, with a man-hour defined as one workman working for a period of 60 minutes. Time will be computed by rounding off to the next higher one-half (½) hour. No separate measurement for supervision, or overhead will be made as they are incidental to the service being provided.

1.2.4 Weld Inspection

The length of welds directed to be inspected will be measured for payment as the number of linear feet of weld satisfactorily inspected, with a minimum of one linear foot for any individual weld that is less than one foot long. All individual welds over one foot in length will be rounded up to the nearest ¼-foot of weld inspected.

1.3 PAYMENT

1.3.1 General

Payment for all work specified, shown, or incidental to complete the work will be made as follows:

Bid Item 0001 Crane Main Hoist Repair and Acceptance Testing

Bid Item 0001 will be paid as a lump sum job, payment shall include all material, equipment, transportation, labor and operations required to inspect and paint the crane, perform calculations, repair the existing 50 ton intake gantry crane main hoist, and to do the acceptance testing, as shown on the drawings and stated in the specifications.

Bid Item 0002 Lead-Based Paint Removal and Disposal

Bid Item 0002 will be paid as a lump sum job, payment shall include all material, equipment, transportation, labor and operations required to remove and dispose of lead-based paint as stated in the specifications and in accordance with all Federal, State and Local laws, regulation, and ordinances.

Bid Item 0003 Services of Skilled Craftsman (Optional). The furnishing of all equipment and labor for performing Government directed supplemental work will be paid for at the contract price under Bid Item No. 0004, "Services of Skilled Craftsman", which price and payment will be full compensation for the directed work. Supervision, helper labor, and overhead costs will be incidental and no separate payment will be made.

Bid Items 0004 - 0009 Weld Inspection

All weld inspection that the Contractor is required to do as part of Contractor Quality Control (CQC) Welding Program as specified elsewhere shall be included in the contract price and no separate payment will be made.

a. Government Quality Assurance Weld Inspection (Optional). The furnishing of all equipment and personnel to perform directed weld inspection will be paid for at the appropriate contract price under Bid Items 0004, 0005, 0006, or 0007 respectively. If the GQAR weld inspection reveals unacceptable defects in the work inspected in accordance with the specifications the cost of the initial test, the cost of repair and handling, and the cost of all subsequent tests shall

be borne by the Contractor, and tests shall not be included in the weld inspection quantities listed in (SECTION 05101).

b. Trips by Radiographic Inspection Agency (Optional). Trips from the inspection agency to the Contractor facility and back to the inspection agency for Government-directed radiographic inspection will be paid for under Bid Item. 0008. All overhead costs will be incidental and no separate payment will be made.

c. Handling for Radiographic Inspection (Optional). The furnishing of all equipment and personnel to handle material for Government-directed radiographic inspection will be paid for under Bid Item. 0009. The GQAR will certify that the number of man-hours charged is acceptable. Supervision and overhead costs will be incidental and no separate payment will be made.

Bid Item 0010 Transportation Services, Equipment Rental, and Parts and Materials (Optional)

Transportation services of parts and material to and from the job site, costs for equipment rental (including such items as machine tool time) as well as parts and materials may be required to rehabilitate the crane or replace components which cannot be determined prior to disassembly and inspection. Payment for transportation services, equipment rental, and parts and materials will be made under Bid Item 0010, "Transportation Services, Equipment Rental, and Parts and Materials". The Contractor shall receive authorization from the Government prior to use of this bid item. The Contractor shall submit invoices for transportation services, equipment rental, and parts and materials and shall be reimbursed at the rate of cost plus 15% (SECTION 01600).

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SECTION 01306

SSCR0301306

OPERATIONS AND MAINTENANCE DATA

TABLE OF CONTENTS

SECTION 01306

OPERATIONS AND MAINTENANCE DATA

PART 1 GENERAL

1.1 GENERAL INFORMATION

Instructions shall be prepared and assembled into a manual for all equipment furnished. The manual shall cover operation, maintenance, overhaul, dismantling, assembling, adjusting, start-up and shutdown, and identification of all parts for replacements. Each system or piece of equipment shall be covered in a single manual regardless of the number of suppliers or subcontractors involved. Data submitted for the manual is in addition to that furnished as shop drawings. Three copies of above data for each electrical, mechanical, and electromechanical system or equipment shall be submitted at least 10 days prior to scheduled testing. The Government will return one copy if "Approved" or "Returned for Correction" (Action Codes A or C). If "Returned for Correction" the corrected manual shall be resubmitted with two sets of additional data for the manuals retained by the Government within 30 days of the date the prior submittal was returned. Subsequent to approval three (3) additional copies identical to the "Approved" copy shall be submitted within 30 days of approval, for a total of six (6) copies.

1.2 FORMAT

Binders shall be side-binding, telescoping-post, expandable-back type, and shall have a supported vinyl cover with a stiff binder board for ANSI sheet size A (8-1/2 x 11 inches). Ring-type loose-leaf binders will not be acceptable. One ANSI sheet size B, or DIN sheet size A3 copy of each of the drawings shall be furnished and shall be folded and bound for easy unfolding without removal from the binder. Each sheet in the binder shall be numbered and an index provided for ready reference to the data. All standard catalog cuts, manufacturer's printed data or descriptive literature, parts sheets, illustrations, etc., shall be either original manufacturer sheets or reproduced copies of equal clarity and durability. The following identification shall be inscribed on the covers:

a. The words "OPERATIONS AND MAINTENANCE MANUAL".

b. The name and location of the project.

c. The volume number and total number of volumes.

d. The systems and/or equipment therein.

e. The name of the Contractor.

f. The contract number.

g. The year of completion of the contract.

1.3 MANUAL ORGAINZATION

Each manual shall contain a master table of contents. The master table of contents shall contain all chapters, appendices, and a master index, and shall be included in the front of the first volume if there is more than one volume. Each subsequent volume shall contain an index for the contents within that respective volume. Each volume shall not be broken between chapters, appendices, and/or indexes. All chapters, appendices, and indexes shall be adequately separated and identified by standard line indexes.

1.4 CATALOG DATA SHEETS AND SPARE PARTS LISTING

1.4.1 General

All catalog data sheets and the spare parts listing shall be inserted in an appendix at the end of the manual following the preventive maintenance (PM) charts appendix. This appendix shall be for catalog data sheets and the spare parts listing only. An index of the catalog data sheets shall be included to provide clear and concise reference to shop drawings and individual pages within the manual. Standard catalog data sheets will not be acceptable unless irrelevant parts are marked out (with a black "x") and relevant parts clearly identified. Any data on catalog sheets which does not directly relate to purchased equipment shall be marked out. Parts shall be so identified that they can be readily ordered from local area industrial supply outlets if not of special manufacture. A cross-reference between items described in catalogs, instructions, and drawings shall be provided to facilitate ease of location of parts described. Highlighting and "scribble notes" will not be acceptable for identification purposes.

1.4.2 Catalog Data Sheets

Catalog data sheets shall be inserted into the manual such that all parts are clearly identified by:

a. Part name. A clear and descriptive name shall be given to each component in the piece of equipment.

b. Manufacturer and part number. The name, address, and telephone number of the manufacturer shall be given along with the catalog part number.

1.4.3 Spare Parts Listing

The spare parts listing shall clearly state the spare parts supplied and a list of recommended spare parts to be stocked. The spare parts listing shall clearly identify:

a. Part name. Asset No.=pump 0288 (for LH pump parts),or Asset No.=pump0266 (for HH pump parts);and a clear and descriptive name shall

be given to each component listed as a spare part in the piece of equipment, and where it is used (reference drawing numbers).

b. Manufacturer and part number. The name, address, and telephone number of the manufacturer shall be given along with the catalog part number and current price.

c. Quantity. The quantity of each part listed as a spare part shall be given.

d. Reference to catalog data sheets. Each spare part shall be referenced to the corresponding catalog data sheet by page number.

Each part shall be tagged and shall provide the equipment asset number, part name, a short description and the manufacturers part number.

PART 2 PRODUCTS

2.1 BINDER REQUIREMENTS

Data for equipment shall be assembled in a binder for 8 1/2- by 11-inch sheets with slide binding or screw post fastening for replacement. Loose-leaf ring binders are not acceptable. A title on the cover shall show the project name, equipment or system, contract, and bid item numbers.

PART 3 EXECUTION

3.1 SPECIFIC REQUIREMENTS

Shop assembly or special drawings for manuals or parts catalogs shall be of a size that requires folding only in left to right coordinate. A permanent reproducible, conforming to SECTION 01330, shall be furnished for all drawings. This reproducible shall be in addition to the eight (8) copies specified. Each sheet shall be numbered and an index shall be provided. All standard catalog cuts, manufacturer's data, parts sheets, or illustrations shall be originals. All copies of such manual shall contain original copies. Non-permanent copies are not acceptable. All non-applicable data such as description of other models, optional equipment not included, etc. shall be marked out. If reference is made to other drawings or data they shall be included. The manual shall list equipment covered; the manufacturer; and name, address, and telephone number of the local representative. In addition to the eight (8) hard copies the Contractor shall provide, on a CD, all O&M manuals in PDF format.

3.2 PARTS CATALOGS

Parts catalogs shall include identification, nomenclature, part numbers, required parts, recommended spare parts stocked, and spare parts supplied. Data shall match equipment furnished. Standard catalog data

will not be acceptable unless irrelevant parts are marked out and relevant parts are clearly identified.

3.3 OPERATIONS DATA

Operations data shall include operating instructions, procedures, sequences, and precautions; and description of parts. Subcontractors, suppliers, and manufacturers shall be coordinated to assure complete submittals on interrelated components. Instructions shall be included for all systems designed or furnished.

3.4 MAINTENANCE DATA

Maintenance data shall include instructions for lubrication, dismantling, assembly, repair and adjustment; parts catalogs; electric schematic and connection diagrams; recommended set points for alarm and trip signals for temperature, vibration, pressure, and any other transducer used in the control scheme; settings for the protective relays; hydraulic circuit diagrams with control and relief valve settings; control and interlock system diagrams; and lists of special tools required. Lubrication instructions shall be for service intended and shall include tables indicating items, frequencies, grades, and types of lubricants. Instructions shall include clearances, bolt torques, pressure settings, and other data. Detailed dismantling and re-assembling procedures for both the motor and pump overhaul work shall be provided, complete with critical check points for alignment, balancing, and air gaps and (for motor and exciter), maximum/minimum permissible clearances, critical dimensions for the parts which wear out and need replacement.

3.5 PREVENTIVE MAINTENANCE CHARTS

Preventive Maintenance charts shall be developed and provided in the manual. These charts shall be inserted in an appendix at the end of the manual. This appendix shall be for PM charts only. Preventive maintenance shall include inspection, testing, cleaning, replacement, lubrication, and all routine maintenance work. These charts shall include the following:

a. Subject. A clear and descriptive name for the equipment requiring PM shall be given. References to shop drawings and catalog cuts shall be provided in a clear manner. "Checkpoints" shall be defined for each piece of equipment.

a. Procedure. A detailed procedural description of the method in which to perform PM shall be provided for all equipment requiring PM work. Safety precautions shall be provided. Descriptions of "checkpoints" shall be provided.

c. Dates. The PM charts shall include recommended PM dates for a period of three years following completion of the contract. The dates shall be defined as requiring PM either daily, weekly, monthly, quarterly, semi-annually, or annually.

3.6 FAILURE TO SUBMIT OPERATIONS AND MAINTENANCE DATA

Where operations and maintenance (O&M) data are required, failure to furnish the data is justification to hold or adjust the retained percentage. Final payment will not be made until all (6) six hard copies and the CD in PDF format of the O&M manuals have been accepted.

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SECTION 01307

SSCR0301307

AS-BUILT RECORDS AND DRAWINGS

TABLE OF CONTENTS

SECTION 01307

AS-BUILT RECORDS AND DRAWINGS

PART 1 GENERAL

1.1 GENERAL INFORMATION

The as-built drawings shall be a Contractor-prepared record of the construction as installed and completed. They shall include all the information shown on the approved shop drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the final work.

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01330.

SD-04 Drawings

Final As-Built Drawings; GA

The final as-built record drawings shall be completed and returned together with the approved preliminary as-built drawings to the Government within 90 calendar days after the final inspection. The Government will review all final as-built record drawings for accuracy and conformance to the drafting standards. The drawings shall be returned to the Contractor if corrections are necessary. The Contractor shall make all corrections and shall return the drawings to the Government within 7 calendar days of receipt.

CADD File Conversion Data; GA

The procedure for converting the CADD files into Microstation format from another CADD format shall be submitted to the Contracting Officer for review and approval a minimum of 90 calendar days prior to the delivery of the final As-Built Drawings. If review of the data reveals errors and/or omissions, the procedure will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the data to the Contracting Officer within 10 days of receipt.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.1 AS-BUILT FIELD DATA

One complete set of full size prints of the approved shop drawings shall be kept at the work site. During the contract, these prints shall be marked to show all deviations in actual work from the approved shop drawings. The color red shall be used to indicate all additions and green to indicate all deletions. The drawings shall show the following information but not be limited thereto:

a. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including, but not limited to, fabrication, erection, installation, and placing details, etc.

b. All changes or modifications from the original design and from the final inspection.

c. Where contract drawings or specifications allow options, only the option actually used in the work shall be shown on the as-built drawings. The option not used shall be deleted.

Marking of the prints shall be pursued continuously during construction to keep them up to date. In addition, the Contractor shall maintain full size marked-up drawings, survey notes, sketches, nameplate data, pricing information, description, and serial numbers of all installed equipment. This information shall be maintained in a current condition at all times until the completion of the work. The resulting field-marked prints and data shall be referred to and marked as "As-Built Field Data", and shall be used for no other purpose. They shall be made available for inspection by the Government whenever requested during the contract and shall be jointly inspected for accuracy and completeness by the GQAR and a responsible representative of the Contractor prior to submission of each monthly pay estimate. Failure to keep the As-Built Field Data (including Equipment-in-Place lists) current shall be sufficient justification to withhold a retained percentage from the monthly pay estimate.

3.2 FINAL AS-BUILT DRAWINGS

3.2.1 Permanent Tracings and Final Copies

Upon completion of work under this contract, one complete set of permanent tracings and two complete sets of prints shall be submitted of all shop drawings as finally approved. The tracings shall be full size reproducibles of such quality and clarity so as to permit sharp and thoroughly legible copying. They shall be plotted on permanent translucent, matte surface on both sides, polyester base film at least 0.004 inch thick. Tracings shall be right-reading positive. The two sets of prints shall be half-size black and white prints.

3.2.2 CADD Files

In addition to the permanent tracings required above, a CD-ROM disk containing the final drawing files shall be submitted. Final drawing files shall be suitable for use on a personal computer running Microstation J Computer-Aided Design System. The information contained on the final tracings and CADD files shall be identical, and black in color.

3.2.3 CADD Requirements

Drawings translated from CADD formats other than Microstation J shall include level assignments and must be checked by the Contractor for proper translation. Drawings on a single level will not be acceptable. The compatibility shall include, but not be limited to 63 level assignments, color tables capable of supporting 256 colors, and capable of supporting 20 fonts. The data structure for level assignment and symbology of the drawing files shall follow the Charleston District Guide Standard or as directed.

3.3 PAYMENT

All costs incurred by the Contractor in the preparation and furnishing of as-built records and drawings shall be included in the contract price and no separate payment will be made for this work. Approval and acceptance of the final as-built record drawings shall be accomplished before final payment is made to the Contractor.

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SECTION 01330

SSCR0301330

SUBMITTAL PROCEDURES

TABLE OF CONTENTS

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

This section covers procedures involved with submittal of documents required in other sections of this specification.

1.2 REFERENCES

Refer to the Transmittal Form (ENG Form 4025, Attachment H-1), or the Submittal Register (ENG Form 4288, Attachment H), (located at back of specifications package) for further information on terms discussed in this section.

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

a. Government-Approved.

(1) Government approval is required for extension of design such as Contractor's, manufacturer's, or fabricator's drawings; descriptive literature included but not limited to catalog cuts, diagrams; operating charts or curves; critical materials; test cylinders; samples; warranties; deviations; equipment whose compatibility with the entire system must be checked will be listed on the ENG Form 4288. Within the terms of Special Clause, SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, these submittals are also considered to be "shop drawings."

(2) Other items (such as environmental plans, safety plans, access, security procedures, Contractor Quality Control (CQC) plans, etc.) designated in the requirements of the technical sections to be "submitted for approval/acceptance" which do not fall under the definitions in paragraph 1.3(a)(1) will not be listed on ENG Form 4288, but will be transmitted as instructed in Special Clauses, Submittals.

b. Information Only. Any submittals on ENG Form 4288 not requiring Government approval (such as certifications and test results, etc.) will be submitted for "information only." See paragraph 3.9 for further information on certificates and test reports. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to at the end of paragraph 1.3(a)(1).

1.4 APPROVED SUBMITTALS

All submittals for Government approval shall be Contractor-approved first and stamped as shown in paragraph 3.8. The approval of submittals by the Government shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing, and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error

which may exist, as the Contractor under the CQC requirements of this contract is responsible for the dimensions, design of adequate connections, and details, and the satisfactory construction of all work. After submittals have been Government-approved no resubmittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an explanation as to why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required and promptly furnish a corrected submittal in the form and number of copies as specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice as required under SECTION 00700, Clause CHANGES, shall be given promptly to the Government.

1.6 WITHHOLDING OF PAYMENTS

Payments for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 - NOT APPLICABLE

PART 3 - EXECUTION

3.1 ENG FORMS 4288 AND 4025 (See Attachments)

3.1.1 General

All items listed on ENG Form 4288 (Attachment H) shall be submitted using ENG Form 4025 (Attachment H-1). The Government may request submittals in addition to those listed or specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control representative (CQCR), and each respective transmittal item shall be stamped, signed, and dated by the CQCR, as shown in paragraph 3.8, certifying that the accompanying submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified as stated in paragraph 3.3.2. Submittals shall include items such as: Contractor’s, manufacturer’s, or fabricator’s drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with the manufacturer’s Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.1.2 Submittal Register (ENG Form 4288)

See Attachment H for one set of ENG Form 4288 listing both “Government-Approved” and “information only” items. Columns “d” through “q” have been completed by the Government. The Contractor shall complete columns “a,” “b,” “c” and “r” through “w” and return two completed copies for approval within 15 calendar days after Notice to Proceed. The approved submittal register will become the scheduling document and will be used to control submittals to the items described in paragraph 1.3(a)(1) throughout the life of the contract. This register and the progress schedules shall be coordinated.

3.1.3 Transmittal Form (ENG Form 4025)

See Attachment H-1 for ENG Form 4025 to be used for submitting both “Government approved” and “information only” submittals listed on ENG Form 4288 in accordance with the instruction on the reverse side of the form and repeated in paragraph 3.3.1.1 below. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.2 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications in accordance with paragraph 3.7, to be submitted with the pertinent drawings shall be so scheduled.

3.3 SUBMITTAL PROCEDURE

3.3.1 "Shop Drawing" Procedures

a. General. The procedure for "shop drawings" shall be as follows:

(1) "Shop Drawings" Approved by Contractor. All "shop drawings" submittals shall be reviewed and corrected to make them complete and in accordance with the contract. Approval shall be indicated on each drawing by an "Approved" stamp as shown in paragraph 3.8. Names and titles of individuals authorized by the Contractor to approve drawings shall be provided prior to any submission. All shop drawings shall be submitted as indicated herein. Submittals which are not required to be approved by the Government ("information only") will be monitored and spot-checks will be made. When such checks indicate noncompliance, the Contractor will be notified by the same method used for Government approvals.

(2) "Shop Drawings" Approved by the Government. Before submission the Contractor shall review and approve all "shop drawings" prepared by subcontractors, suppliers, and the Contractor for completeness and compliance with plans and specifications, and shall so certify by stamp on each drawing or item of printed material. (Red markings are reserved for the Government.) Suppliers or subcontractors certifications are not acceptable as meeting this requirement.

Submittals will be reviewed and processed as follows: NOTE: The following action codes are to further define only the referenced codes on the reverse side of ENG Form 4025.

(a) Action Code A (Approved as Submitted). Shop drawings, which can be approved without correction, will be stamped "Approved" and one reproducible, or two copies of catalog and other printed data, will be returned to the Contractor.

(b) Action Code B (Approved, Except as Noted, Resubmission Not Required). Shop drawings, which have only minor discrepancies, will be corrected and stamped "Approved as Corrected" or "Except as Noted." Corrections will be identified. Distribution will be same as for "Approved" drawings.

(c) Action Code C (Approved, Except as Noted, Resubmission Required). Two prints of shop drawings, which are incomplete or require more than minor corrections will be marked in red to indicate necessary corrections. One marked copy will be returned to the Contractor stamped "Approved, Except as Noted, Resubmission Required." Transparencies of such drawings will be destroyed.

(d) Action Code E (Disapproved). One print of shop drawings which are fundamentally in error, cover wrong equipment or construction, or require extensive corrections will be returned to the Contractor stamped "Disapproved." An explanation will be furnished on the print or on ENG Form 4025 indicating reason for disapproval. Transparencies of such drawings will be destroyed.

(3) Resubmittal. Resubmittal will not be required for drawings with Action Code A or B unless subsequent changes are made by the Contractor or by a contract modification. For drawings with Action Code C or E, corrections required shall be made, any changes shall be noted by dating the revisions to correspond with the change request date, and the drawings shall be promptly resubmitted for review. Government costs incurred after the first resubmittal will be charged to the Contractor.

b. "Shop Drawings" Submittal.

(1) General. ENG Form 4025, in triplicate, shall be used when transmitting "shop drawings" submittals. Five copies are required for (GA) submittals. Three copies are required for (FIO) submittals. All submittals shall separately name the subcontractor, supplier, or manufacturer, specification paragraph number(s), drawing/sheet number(s), pay item number, and any other information needed to identify the item, define its use, and locate it in the work. Each submittal shall be complete containing all information needed to determine contract compliance.

(2) Drawings. Each drawing shall be not more than 14 inches high by 20 inches wide, with a title block in lower right-hand corner and a 3 inches wide by 2 inches high clear area adjacent to the title block. The title block shall contain the subcontractor's or fabricator's name, contract number, description of item(s), bid item number, and a revision block. A blank margin of 0.75 inches at bottom, 2 inches at left, and 0.25 inches at top and right shall be provided.

Separate drawings are required for each bid item. Where drawings are submitted for assemblies of more than one piece of equipment or systems of components dependent on each other for compatible characteristics, complete information shall be submitted on all such related components at the same time. The information shall be complete and the sequence of drawing submittal shall be such that all information is available for reviewing each drawing. Drawings for all items and equipment, of special manufacture or fabrication, shall consist of complete assembly and detail drawings. All revisions after initial submittal, shall be shown by number, date, and subject in revision block. Any drawing or electronic drawing file submitted that is not of satisfactory quality will be returned without action.

(3) Shop Drawing Reproducibles. Upon completion of the work under this contract, the Contractor shall furnish a complete set of files for MicroStation J for all the drawings as finally approved under this contract. The files shall be recorded on CD ROM’s. These files shall show the drawings with all changes and revisions, including any field changes, made up to the time that the equipment is completed and accepted. In addition, the Contractor shall furnish a complete set of reproducibles of the drawings. They shall be no larger than 14 inches high by 20 inches wide, of such quality and clarity as to permit sharp and thoroughly legible microfilm copying. They shall be on permanent translucent, matte-surface two side, polyester-base film at least 0.004 in. thick. Reproducibles shall be right reading positive. They shall show all revisions, including field changes, up to the time that the equipment is accepted.

3.3.2 Deviations

For submittals which include proposed deviations requested, the column "variation" of ENG Form 4025 shall be checked. The reason for any deviations shall be set forth in writing and such deviations annotated on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.3.3 Other Submittals

All requirements for "shop drawings" under paragraphs 3.3.1(1) and 3.3.1(2) shall apply to catalog cuts, illustrations, printed specifications, or other data submitted. Submittals shall be made on standard letter-size paper or, when appropriate, as a drawing not larger than 14 inches high by 20 inches wide. Inapplicable portions shall be marked out and applicable items such as model numbers, sizes, and accessories shall be indicated. Decisions on these other submittals will be given in accordance with paragraph 3.5.

3.4 CONTROL OF SUBMITTALS

The Contractor's procurement operations shall be carefully controlled to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved ENG Form 4288.

3.5 "GOVERNMENT-APPROVED" SUBMITTALS

Decisions on the submittals will be given by letter. Within 3 working days after receipt, one copy will be returned to the Contractor marked "Approved," "Approved, Except as Noted, Resubmission Not Required," "Approved, Except as Noted, Resubmission Required," or "Disapproved."" The Government will endeavor to accelerate submittal review and turn-around to facilitate the Contractors submittal procedure and work plan. The notations "Approved" and "Approved, Except as Noted" authorize the Contractor to proceed with the work covered by such drawings, subject to the corrections if any, indicated thereon or described in the letter of transmittal. When prints of drawings have been "Disapproved," the Contractor shall make the necessary revisions on the drawings and shall submit one reproducible copy for approval in the same routine as before. Every revision made during the life of the contract shall be shown by number, date, and subject in a revision block and a notation shall be made in the drawing margin to permit rapid location of the revision. The time consumed by the Contractor in submitting and obtaining approval of assembly and shop drawings shall be included in the time allowed for completion of the contract.

3.6 "INFORMATION ONLY" SUBMITTALS

Normally submittals for "information only" will not be returned. Government approval is not required on information only submittals. These submittals will be used for information purposes. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the Contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the Government from requiring removal and replacement if non-conforming material is incorporated in the work. This does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

3.7 SUBMITTAL DESCRIPTION CATEGORY CODES IN TECHNICAL REQUIREMENT SECTIONS

Submittal description category codes used in paragraph 1.3 of the technical requirement sections are as follows:

SD-01 Data. Submittals that provide calculations, descriptions, or documentation regarding the work specified.

SD-04 Drawings. Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-06 Instructions. Preprinted material describing installation of a product, system, system, or material including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions. Operation and maintenance manuals are considered deliverables under the contract and not submittals; however, when necessary to review information to be included in the final

manuals such information should be called for under this submittal description.

SD-07 Schedules. Tabular listings showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements. A document required of the Contractor or through the Contractor, from a supplier, installer, manufacturer, or other lower-tiered Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports. Reports of inspection or tests including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

SD-13 Certificates. Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system, or material, attesting that the product, system, or material meets specified requirements. The statement must have these items: be dated after the award of the contract, state the Contractor’s name and address, name the project and location, and list the specific requirements which are being certified.

SD-14 Samples. Samples including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-18 Records. Documentation to record compliance with technical or administrative requirements.

3.8 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets the contract requirements shall be similar to the sample at the end of this Section.

3.9 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in the original and two copies. Each certificate shall be signed by 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 furnishing satisfactory material if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

3.10 CONTRACTOR'S FILES

"Approved" and "Approved Except as Noted, Resubmission Not Required" (Action Codes A and B) drawing files shall be maintained in fabrication shops and at field sites for Government use.

CONTRACTOR

(Firm Name)

Approved

Approved with corrections as noted on submittal data and/or attached sheet(s).

SIGNATURE:
_____
TITLE:
_____
DATE: _____

- END OF SECTION -

SECTION 01355

SSCR0301355

ENVIRONMENTAL PROTECTION

TABLE OF CONTENTS

SECTION 01355

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 GENERAL INFORMATION

This section covers preventing environmental pollution and minimizing environmental degradation during and as a result of operations, required for the repair of the intake crane. The requirements of SECTION 09900 shall be in conjunction with this section in addition to other sections which may contain environmental protection requirements.

1.2 APPLICABLE REGULATIONS

All environmental pollution shall be prevented, abated, and controlled. Environmental degradation arising from construction activities shall be minimized by complying with all applicable Federal, State, and local laws and regulations, as well as specific requirements of this contract. Where conflicting or duplicate regulations apply, the most stringent requirement shall govern. Contractor shall comply with the following list of environmental regulations where applicable. This list is not inclusive of all environmental requirements, but represents the Federal regulations most likely to apply to work under this contract.

a. Clean Air Act - 40 CFR 61: Emission Standards for Hazardous Air Pollutants

b.. Solid Waste Disposal Act - 40 CFR 241: Land Disposal - 40 CFR 245: Resource Recovery

c. Resource Conservation and Recovery Act - 40 CFR 260-272: Hazardous Waste Management

d. Comprehensive Environmental Response , Compensation and Liability Act - 40 CFR 300-302: National Oil and Hazardous Substances Contingency Plan for hazardous substance spills and cleanup

e. Clean Water Act - 40 CFR 110-117 122 : Point source discharges into U.S. waters

f. Executive Order 12856 - Federal Compliance Order with the Emergency Planning and Community Right-to-Know Act and the Pollution Prevention Act

g. 49 CFR 100-177 Hazardous Materials Transportation Regulations

1.3 SUBMITTALS

Submittals required by this section of the Technical Specifications shall be for Government approval (GA) or for information only (FIO), and shall be submitted as stated below in accordance with SECTION 01330. The time of submittal shall be as indicated below.

SD-01 Data

Environmental Protect Plan; GA

Within 20 calendar days following notice to proceed (par. 3.1.1).

1.4 NONCOMPLIANCE

An order stopping all or part of the work may be issued for failure to comply with the provisions of this section until corrective action has been taken. No time lost due to such stop orders or stop orders issued by any appropriate Federal, State or local environmental protection agency shall be the subject of a claim for extension of time or for costs or damages unless it is later determined that the Contractor was in compliance.

1.5 SUBCONTRACTORS

Compliance with this section by subcontractors will be the responsibility of the Contractor.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.1 IMPLEMENTATION

3.1.1 Planning

The approved Environmental Protection Plan including proposals for implementing this section for environmental protection will be checked for completeness and compliance. If satisfactory it will be approved and one copy will be returned. If unsatisfactory it will be returned for resubmission. No physical work at the site shall be started until this plan has been approved or specific authorization is obtained to start a phase of the work. Preparation and submittal of supplemental plans may be required if additional environmental protection planning is found necessary for later phases of work. As a minimum the plan shall include the sections indicated below:

a. A contamination-prevention section listing all potentially hazardous petroleum products and hazardous and toxic materials used by the Contractor in the performance of his work or in his equipment at the powerhouse and corresponding provisions to be taken to prevent accidental or intentional introduction of such materials into any waterway. This section is to include plans for preventing polluted run-off from plant, equipment parking and maintenance areas from entering local water bodies.

b. A containment and cleanup section including the procedures, instructions, and reports to be used in the event of an unforeseen oil,

hazardous material, or chemical spill. This section shall include as a minimum:

(1) The name of the individual who will be responsible for implementing and supervising the containment and cleanup.

(2) Material and equipment for cleanup work shall be tailored to the potential hazards involved.

(3) The names and locations of suppliers of containment materials and names and locations of additional fuel oil recovery, cleanup, restoration, and disposal equipment available in case of an unforeseen spill emergency.

(4) The methods and procedures to be used for expeditious cleanup.

(5) The name of the individual who will report any spills and who will follow up with complete documentation.

3.1.2 Coordination

Prior to the work, a meeting shall be held with the Government to develop mutual understandings relative to the administration of the environmental protection program.

3.1.3 Surveillance

During the work, all activities, including those of subcontractors, shall be supervised to assure compliance with the intent and details of the Plan. Training courses shall be conducted by the Contractor for himself and his subcontractors to assure that all personnel working at the site are familiar with the environmental protection provisions. All equipment and materials for environmental protection shall be inspected periodically to assure that they are in proper order and have not deteriorated.

3.1.4 Completion

Before this contract is completed, all restoration, cleanup and other work required to leave the site in an acceptable condition shall have been completed. Final payment will not be made until the environmental protection requirements have been met.

3.1.5 Protection of Water Resources

No water courses shall be polluted or have existing pollution contributed to with any petroleum products, oils, lubrications, or other toxic materials harmful to life. Chemical emulsifiers, dispersants, coagulants or other cleanup compounds shall not be used without prior written approval. Compliance with State water quality standards and conditions of any permits and clearances obtained for the work is the Contractor's responsibility.

3.2 ENVIRONMENTAL LITIGATION

3.2.1 General

If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Government at the request of the Contractor will determine whether the order is due in any part to the acts or omission 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 the 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 Government in the administration of this contract in accordance with SECTION I. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provision thereof.

3.2.2 Definition

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.

3.3 DISPOSAL OF HAZARDOUS WASTE

The following shall apply to disposal of any hazardous waste:

a. The Contractor, where possible, will use or propose for use materials which may be considered environmentally friendly in that waste from such materials is not regulated as a hazardous waste or is not considered harmful to the environment.

b. Documentation for analysis, sampling, transportation, and disposal of all hazardous waste streams generated during this contract shall be in accordance with 40 CFR parts 260 through 272 and 49 CFR 100-177.

c. A copy of all hazardous waste determinations, sample results, and shipping manifests shall be furnished to the Government Quality Assurance Representative (GQAR) to verify compliance with Federal, State, and local regulations.

d. All hazardous wastes shall be removed from the Project for proper disposal within 90 days of waste generation. All hazardous waste shall be packaged, labeled, and marked in accordance with 40 CFR 172 and 173. All hazardous waste shall be stored in accordance with 40 CFR 264.

e. Certificates of Destruction or Disposal Certificates shall be submitted for all hazardous wastes within 14 days of actual disposal.

f. The Contractor's EPA identification number shall be used to dispose of all hazardous wastes generated by the Contractor and its subcontractors under this contract. This is construed to mean all hazardous wastes the Contractor or subcontractors generate from materials brought on the site for the purpose of performing work under the terms of the contract.

g. The Government's EPA identification number shall be used to dispose of all hazardous waste generated from Government-owned facilities on the project. This is construed to mean hazardous wastes generated from the repair, demolition, or removal of any existing materials and buildings from Government facilities and is not intended to include any wastes generated by the Contractor in the performance of its work.

h. It is the responsibility of the Contractor to prepare all hazardous waste manifests. The Contractor shall prepare manifests for Government signature when the Government's EPA identification number is used. The manifest shall be submitted 48 hours in advance of the waste being removed. The ECC will review and sign the manifest when the transporter arrives.

i. Hazardous or dangerous waste shall be recycled to the maximum extent possible. Placing hazardous or dangerous waste in a permitted hazardous waste landfill shall be the last resort. If such facility is necessary, the Contractor shall dispose of it in compliance with Federal, State and local requirements.

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SECTION 01451

SSCR0301451

CONSTRUCTION QUALITY MANAGEMENT, CONTRACTOR QUALITY CONTROL

TABLE OF CONTENTS

SECTION 01451

CONSTRUCTION QUALITY MANAGEMENT, CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 GENERAL INFORMATION

A Contractor's Quality Control (CQC) system shall be established and maintained in compliance with SECTION 00700, Clause INSPECTION OF CONSTRUCTION. The CQC system shall include but not be limited to plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The CQC system shall cover both on-site and off-site construction operations, and shall be keyed to the proposed construction sequence.

1.2 REFERENCES

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E329	(1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01330. The time of submittal shall be in accordance with SECTION 01330, unless otherwise indicated below.

SD-01 Data

Quality Control Plan; GA

The CQC plan which is proposed to implement the requirements of paragraph 2.1.2, not later than 10 days after receipt of Notice to Proceed. Other submittals shall be as specified elsewhere in the technical sections of DIVISIONS 1 through 16. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

PART 2 PRODUCTS

2.1 QUALITY CONTROL PLAN

2.1.1 General

The plan shall identify personnel, procedures, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted

to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

2.1.2 The Contractor's Quality Control (CQC) Plan

The CQC plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers and purchasing agents:

a. A description of the CQC organization, including a chart showing the lines of authority and acknowledgment that the CQC staff known as Contractor Quality Control Representatives (CQCR's) shall implement the three-phase control system for all aspects of the contract work. The staff shall include a CQC system manager who shall report to the project manager or someone higher in the Contractor's organization. Project manager shall mean the individual with responsibility for the overall management of the project including quality and production.

b. The name, qualifications (in résumé format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC system manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC system manager including authority to stop work which is not in compliance with the contract. The CQC system manager shall issue letters of direction to all other quality control representatives outlining duties, authorities and responsibilities. Copies of these letters shall be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off-site fabricators, suppliers and purchasing agents.

e. Control, verification and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

2.1.3 Acceptance of Plan

Acceptance of the CQC plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in the CQC plan and operations including removal of personnel, as necessary, to obtain conformance with contract requirements.

2.1.4 Notification of Changes

After acceptance of the CQC plan, any proposed changes shall be submitted for acceptance a minimum of 7 calendar days prior to implementing any proposed change.

PART 3 EXECUTION

3.1 COORDINATION MEETING

After the pre-construction conference and before the start of construction, the Government and the Contractor shall meet to discuss and develop a mutual understanding of the CQC system in detail, and the interrelationship of Contractor's management and control with the Government's quality assurance. Minutes of the meeting which will be prepared by the Government and shall be signed by both the Contractor and the Government, shall become a part of the contract file. There may also be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.2 QUALITY CONTROL ORGANIZATION

An individual shall be identified within the Contractor's organization at the site of the work who shall be responsible for the overall management of CQC known as the CQC manager and shall have the authority to act in all CQC matters for the contractor. This individual shall be other than the Contractor's Agent or the Contractor's Work Supervisor. This CQC system manager will be employed by the Contractor and shall be on the site at all times during the contract. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the system manager's absence. Period of absence may not exceed 3 weeks at any one time, and not more than 40 workdays during a calendar year.

The requirements for the alternate will be the same as for the designated CQC manager. In addition to the above experience and education requirements the CQC System manager shall have completed the course entitled “Construction Quality Management for Contractors.” This course is periodically offered by the Government.

3.3 CQC CONTROLS

CQC is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The controls shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and will be keyed to the proposed construction sequence. The controls shall include at least three phases of control to be conducted by the CQC system manager for all definable features of work, as follows:

3.3.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work and shall include:

a. A review of each paragraph of applicable specifications.

b. A review of the contract plans.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. A check to assure that required control inspection and testing are provided.

e. Examination of the work area to assure that all required previous work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawing or submitted data, and are stored as specified.

g. A review of the appropriate activity hazard analysis to assure that safety requirements are met.

h. Discussion of procedures for the work features including but not limited to tolerances and workmanship standards for that phase of work.

i. A check to ensure that the portion of the plan for the work to be performed has been submitted and accepted.

j. The Government shall be notified at least 48 hours in advance of beginning any of the required action of the preparatory phase. This phase shall include a meeting conducted by the CQC system manager and attended by the superintendent, other CQC personnel (as applicable), and the individual responsible for the definable feature. The results of

the preparatory phase actions shall be documented by separate minutes prepared by the CQC system manager and attached to the daily CQC report. The applicable workers shall be informed as to the acceptable level of workmanship required in order to meet contract specifications prior to the start of the actual work.

3.3.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of preparatory phase work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verification of full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with sample panels is appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC system manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work on-site, or any time specified quality standards are not being met.

3.3.3 Follow up Phase

Daily checks shall be performed on the ongoing work to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

3.3.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases may be conducted on the same definable features of work as determined by the Government if the quality of on-going work is unacceptable; or if there are changes in the applicable CQC staff or in the on-site production supervision or work

crew; or if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.4 NOT APPLICABLE

3.5 COMPLETION INSPECTION

At the completion of all work or any increment thereof established by a completion time stated elsewhere in the specifications, the CQC manager shall conduct an inspection of the work and develop a "punch list" of items which are incomplete and/or do not conform to the approved plans and specifications. Such a list shall be included in the CQC documentation, as required by paragraph 3.6, and shall include the estimated date by which the deficiencies will be corrected. The CQC system manager or staff shall make a second inspection jointly with the GQAR to ascertain that all deficiencies have been corrected and submit a record of the inspection to the GQAR. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time stated for completion of the entire work or any particular increment thereof, if the project is divided into increments by separate completion dates.

3.6 DOCUMENTATION

Current records of CQC operations, activities, and tests performed shall be maintained including the work of subcontractors and suppliers. These records shall be on an approved form and shall include factual evidence that required quality control activities and/or tests have been performed including but not limited to the following:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed today, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/plan requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.

e. Material received with statement as to its acceptability and storage.

f. Identify submittals reviewed, with contract reference, by whom, and action taken.

g. Off-site surveillance activities, including actions taken.

h. Job safety and environmental protection evaluations stating what was checked, results, and instructions or corrective actions.

i. List instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

k. These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. All calendar days shall be accounted for throughout the life of the contract. Reports shall be signed and dated by the CQC system manager. The report from the CQC system manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.7 NOTIFICATION OF NONCOMPLIANCE

If the Contractor fails or refuses to comply with the contract requirements promptly, the Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.8 TECHNICAL SPECIFICATIONS SECTION REQUIREMENTS

Inspections, tests, assurances, reports, etc., called for in the technical sections of DIVISIONS 1 through 16 are in conjunction with this section. The CQC manager or a CQCR staff shall conduct the inspection of all aspects of the items mentioned in the Technical Specifications for compliance and conduct all required inspections and tests, etc. Inspections and tests shall be recorded in the daily CQC report required in paragraph 3.6.

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SECTION 01525

SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
11/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z359.1	(1999) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ASME INTERNATIONAL (ASME)

ASME B30.5	(2000) Mobile and Locomotive Cranes
ASME B30.8	(2000) Floating Cranes and Floating Derricks
ASME B30.22	(2000) Articulating Boom Cranes

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910	Safety and Health Regulation in General Industry
29 CFR 1910.94	Ventilation
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.62	Lead in Construction

29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.450	Scaffolds
29 CFR 1926.500	Fall Protection
29 CFR 1926.1101	Asbestos

U. S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) Safety and Health Requirements Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1998) Portable Fire Extinguishers
NFPA 70	(2002) National Electrical Code
NFPA 241	(2000) Safeguarding Construction, Alteration, and Demolition Operations

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP) G

Activity Hazard Analysis (AHA) G

Crane Critical Lift Plan G

Lead Abatement Plan; G

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Regulatory Citations and Violations

Crane Reports
Certificate of Compliance (Crane)

1.3 DEFINITIONS

a. Certified Industrial Hygienist (CIH). An individual who is currently certified by the American Board of Industrial Hygiene.

b. Certified Safety Professional (CSP). An individual who is currently certified by the Board of Certified Safety Professionals.

c. High Visibility Accident. Any mishap, which may generate publicity and/or high visibility.

d. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

e. Multi-Employer Work Site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

f. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

g. Record able Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;

(2) Days away from work;

(3) Restricted work;

(4) Transfer to another job;

(5) Medical treatment beyond first aid;

(6) Loss of consciousness; or

(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

h. Site Safety and Health Officer (SSHO). The qualified person who is responsible for the on-site safety and health required for the project. The Contractor quality control (QC) person cannot be the SSHO, even though the QC has safety inspection responsibilities as part of the QC duties.

i. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

j. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.4 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.5 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal

drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The SSHO shall meet the following requirements:

Level 6:
Certified Safety Professional (CSP).
A minimum of 10 years safety work of a progressive nature with at least 5 years of experience on similar projects.
30-hour OSHA construction safety class or equivalent within the last 5 years.
An average of at least 24 hours of formal safety training each year for the past 5 years with training for competent person status for at least the following areas of competency: Scaffolding; Fall protection; Hazardous energy; Confined space; Lead abatement, Health hazard recognition, evaluation and control of chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance.

1.6.1.2 Certified Safety Professional (CSP)

Provide a Certified Safety Professional (CSP)at the work site to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The CSP shall be the safety and occupational health "competent person" as defined by USACE EM 385-1-1.

1.6.1.3 Omitted

1.6.1.4 Omitted

1.6.1.5 Competent Person for the Health Hazard Control and Respiratory Protection Program

Provide a competent person meeting the requirements of EM 385-1-1 who is:

a. Capable by education, specialized training and/or experience of anticipating, recognizing, and evaluating employee exposure to hazardous chemical, physical and biological agents in accordance with USACE EM 385-1-1, Section 6.

b. Capable of specifying necessary controls and protective actions to ensure worker health.

1.6.1.6 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Appendix G.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.

b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.

c. Maintain applicable safety reference material on the job site.

d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.

e. Implement and enforce accepted APPS, Lead Abatement Plan, Critical Lift Plan, and AHAs.

f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.

g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.2.2 Certified Safety Professional (CSP).

a. Perform safety and occupational health management, surveillance, inspections, and safety enforcement for the project.
b. Perform as the safety and occupational health "competent person" as defined by USACE EM 385-1-1.

c. Be on site whenever work or testing is being performed.

d. Conduct and document safety inspections.

e. Shall have no other duties other than safety and occupational health management, inspections, and enforcement on this contract.

The CSP will also be appointed as the SSHO and all duties of that position shall also be preformed.

1.6.3 Meetings

1.6.3.1 Preconstruction Conference

a. The Contractor will be informed, in writing, of the date of the preconstruction conference. The purpose of the preconstruction conference is for the Contractor and the Contracting Officer's representatives to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project's APP before the initiation of work.

b. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the AHAs and special plans, program and procedures associated with it).

c. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated activity hazard analyses (AHAs) that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.

d. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

1.6.3.2 Weekly and Monthly Safety Meetings

The SSHO shall conduct weekly safety meetings at the project site for all employees. The SSHO shall also conduct monthly Supervisor's safety meetings. The Contracting Officer will be informed of the meetings in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.6.3.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

1.7 TRAINING

1.7.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.7.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

1.7.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

1.8 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a Certified Safety Professional (CSP) to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan". Where a paragraph or subparagraph element is not applicable to the work to be performed indicate "Not Applicable" next to the heading. Specific requirements for some of the APP elements are described below at paragraph 1.8.1. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the

subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the CSP and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer/CSP.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. The Contracting Officer reviews and comments on the Contractor's submitted APP and accepts it when it meets the requirements of the contract provisions.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, any requested changes to the accepted APP shall be made in writing to and with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any unforeseen hazard become evident during the performance of work, the project superintendent shall inform the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the resident engineer's office and at the job site.
The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.8.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs, CIHs. The duties of each position shall be specified.

b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: scaffolding; fall

protection; hazardous energy; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.

c. Health Hazard Control Program. The Contractor shall designate a competent and qualified person to establish and oversee a Health Hazard Control Program in accordance with USACE EM 385-1-1, Section 6. The program shall ensure that employees, on-site Government representatives, and others, are not adversely exposed to chemical, physical and biological agents and that necessary controls and protective actions are instituted to ensure health.

d. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of crane hoist's maximum load limit; lifts involving more than one crane or hoist; lifts of personnel; and technically difficult lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks in accordance with USACE EM 385-1-1, paragraph 16.c.18. and shall submit the plan to the Contracting Officer 15 calendar days prior to on-site work.

e. Alcohol and Drug Abuse Plan

(1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."

(2) Description of the on-site prevention program

f. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised every six months for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project. The Contractor shall submit this plan to the Contracting Officer 15 calendar days prior to on-site work.

g. Lead Abatement Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 09900 paragraph 3.5. The Contractor shall submit this plan to the Contracting Officer 15 calendar days prior to on-site work.

h. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. An AHA will be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measures (to include personal protective equipment) to eliminate or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations. An activity requiring an AHA shall not proceed until the AHA has been accepted by the Contracting Officer's representative and a meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activity, including on-site Government representatives. The Contractor shall document meeting attendance at the preparatory, initial, and follow-up phases of quality control inspection. The AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Activity hazard analyses shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, CSP, site safety and health officer and competent persons used to develop the AHAs, including updates, shall sign and date the AHAs before they are implemented.

1.10 DISPLAY OF SAFETY INFORMATION

Prior to commencement of work, erect a safety bulletin board at the job site. The following information shall be displayed on the safety bulletin

board in clear view of the on-site construction personnel, maintained current, and protected against the elements and unauthorized removal:

a. Map denoting the route to the nearest emergency care facility.

b. Emergency phone numbers.

c. Copy of the most up-to-date APP.

d. AHA(s).

e. OSHA 300A Form.

f. A sign indicating the number of hours worked since last lost workday accident.

g. OSHA Safety and Health Protection-On-The-Job Poster.

h. Safety and Health Warning Posters.

1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.12 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.13 REPORTS

1.13.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 5 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide the report to the Contracting Officer within 5 calendar days of the accident. The

Contracting Officer will provide a blank copy of the accident report form.

1.13.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than two hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident involving a overturned crane, collapsed boom, or any other major damage to the crane or adjacent property. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on site and Government investigation is conducted.

1.13.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.13.4 Regulatory Citations and Violations

Contact the Contracting Officer immediately of any OSHA or other regulatory agency inspection or visit, and provide the Contracting Officer with a copy of each citation, report, and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.13.5 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

1.13.6 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix H. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators

working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). These certifications shall be posted on the crane.

1.14 HOT WORK

Prior to performing "Hot Work" (welding, etc.) or operating other flame-producing devices, a written permit shall be requested from the Resident Engineer. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity.

a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the facility at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.

b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the facility at the close of each workday and such material disposed of in the proper containers located away from the facility.

c. The storage of combustible supplies shall be a safe distance from structures.

d. Area outside the facility undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.

e. All portable electric devices (saws, sanders, compressors, extension chord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the facility shall be deactivated.

f. When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency St. Stephen Power Plant phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE ST. STEPHEN POWER PLANT MANAGER IMMEDIATELY.

PART 2 PRODUCTS:

2.1 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, will be left in place and so identified for continued customer use.

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Use

Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.3 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Resident Engineer immediately. Within 30 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2.1 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the

outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Resident Engineer and the St. Stephen Power Plant Manager to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and escape procedures.

3.3.1 Training

The Contractor shall institute a fall protection-training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

3.3.2 Fall Protection Equipment

The Contractor shall enforce use of the fall protection equipment designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is on a surface 1.8 m (6 feet) or more above lower levels. Fall protection systems such as guardrails, personnel fall arrest system, safety nets, etc., are required when working within 1.8m (6 feet) of any leading edge. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.I. and 05.J. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems may be required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. Fall protection must comply with 29 CFR 1926.500, Subpart M and USACE EM 385-1-1.

3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabineers shall be

used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance shall always be taken into consideration when attaching a person to a fall arrest system.

3.3.3 OMITTED

3.3.4 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work. Safety nets shall be tested immediately after installation with a drop test of 181.4 kg (400 pounds) and every six months thereafter.

3.3.5 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person in accordance with ANSI Z359.1.

3.3.6 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person as part of a complete fall arrest system (29 CFR 1926.500).

3.5 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m (20 feet) in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m (20 feet) in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mudsills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.6 EQUIPMENT

3.6.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.6.2 Weight Handling Equipment

a. Cranes must be equipped with:

(1) Load indicating devices (LIDs) and a boom angle or radius

(2) or load moment indicating devices (LIMs).

(3) Anti-two block prevention devices.

(4) Boom hoist hydraulic relief valve, disconnect, or shutoff (stops hoist when boom reaches a predetermined high angle).

(5) Boom length indicator (for telescoping booms).

(6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.

(6) Device to prevent uncontrolled retraction of a telescoping Hydraulic boom.

b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.

c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

d. The Contractor shall comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes and ASME B30.8 for floating cranes and floating derricks.

e. The presence of Government personnel does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

h. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

i. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

j. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or crane cabs. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

k. All employees shall be kept clear of loads about to be lifted and of suspended loads.

l. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

m. Only Contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.500, USACE EM 385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.

n. The Contractor shall use cribbing when performing lifts on outriggers.

o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

p. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto

the crane cab in a location allowing easy reading by the operator while seated in the control station.

r. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

s. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

t. The Contractor shall certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

3.6.3 Equipment and Mechanized Equipment

a. Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Such additional safety precautions or requirements shall be incorporated into the AHAs.

c. Equipment and mechanized equipment shall be inspected by a Competent Person in accordance with manufacturer's recommendations and EM 385-1-1, Section 16, for safe operation by a competent person prior to being placed into use.

d. Daily checks or tests shall be conducted and documented on equipment and mechanized equipment by designated competent persons.

3.7 Omitted

3.7 ELECTRICAL

3.8.1 Conduct of Electrical Work

Electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Resident Engineer and the St. Stephen Power Plant Manager for identification. The Resident Engineer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during

the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor's AHA.

3.8.2 Portable Extension Cords, Hand and Power Tools

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70. All hand and power tools shall meet the requirements of EM 385-1-1, Section 13 and applicable OSHA Standards.

3.9 Omitted

3.10 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.11 HOUSEKEEPING

3.11.1 Clean-Up

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.11.2 Dust control

In addition to the dust control measures required elsewhere in the contract Documents, dry cutting of brick or masonry shall be prohibited. The Resident Engineer, upon written request by the Contractor, may consider exceptions to this prohibition on a case-by-case basis. Wet cutting must address control of water run off.

SECTION 01600

SSCR0301600

INTAKE GANTRY CRANE REPAIR

TABLE OF CONTENTS

SECTION 01600

INTAKE GANTRY CRANE REPAIR

PART 1 GENERAL

1.1 GENERAL INFORMATION

This section covers repair of the 50-ton bridge gantry crane at St Stephen Powerhouse. The intake gantry crane rating (50-ton Main Hoist and 10-ton Auxiliary Hoist) shall be verified. Metalwork fabrication shall be in accordance with the applicable requirements of SECTION 05101. Materials shall be in accordance with applicable paragraphs of SECTION 05502. Metal surfaces shall be painted in accordance with requirements of SECTION 09900. Mechanical work shall be in accordance with requirements of SECTION 15000. Electrical work shall be in accordance with requirements of SECTION 16050. Calculations shall be prepared and submitted verifying that the intake gantry crane design conforms to design criteria.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

ASME B30.2b (1998) Overhead and Gantry Cranes

ASME B30.10 (1993) Hooks

U.S. ARMY CORPS OF ENGINEERS

EM 385-1-1 (1996) Safety and Health Requirement Manual

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted as stated below in accordance with SECTION 01330.

SD-01 Data

Crane Inspectors, Craftsmen, and Crane Operators qualifications, see Paragraph 3.1.; GA

Complete repair procedure, see paragraph 3.2.; GA

Complete Pre-Repair Inspection Procedure, 3.4; GA

Acceptance test procedure, see paragraph 3.7.; GA

Post-Repair inspection procedure, see paragraph 3.5.4; GA

Crane Computations, see paragraph 3.9; GA

1.4 DATA, CAPACITIES, SPEEDS AND TRAVEL

1.4.1 General

Rated capacity of the main hoist is defined as the rated capacity at the hook. Rated capacity of the intake gantry crane is defined as the rated capacity at the main hoist. The rated capacity of the auxiliary hoist is defined as the rated capacity at the hook. Rated hoisting speed is defined as the speed when raising rated capacity. Rated bridge travel speed is defined as the travel speed when traveling at rated capacity. Rated travel speed of the trolley is defined as the travel speed when operating at rated capacity. Data, capacities, travel distances, and rated speeds of the crane are as follows:

1.4.2 Intake Gantry Crane

a. Rated Capacity, Tons (2,000 pounds)	50
b. Travel, Feet approx.	N/A
c. Rated Travel Speed, Feet Per Minute	50 FPM

1.4.3 Main Hoist

a. Rated Capacity, Tons	50
b. Rated Hoisting Speed, Feet Per Minute	10
c. Lifting Beam, Travel, Ft.	85 ft.

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1.4.4 Auxiliary Hoist

a. Rated Capacity, Tons	10
b. Rated Hoisting Speed, Feet Per Minute	20
c. Auxiliary Lifting Beam Travel	93 ft.

1.5 WORK AREA

The work area shall be at the intake deck.

1.6 CRANE CALCULATIONS AND DESIGN CRITERIA

1.6.1 General

The reference drawings indicate the arrangement of the intake gantry crane. Additional drawings may be available at the projects. Original computations are available, however, they are not complete. Submit

detail calculations performed by a registered professional engineer registered within the United States. The calculations shall verify the intake gantry crane design conforms with the design criteria and other requirements specified herein and in Section 15000.

1.6.2 Loading

1.6.2.1 General

The design loads shall be based on the rated capacities specified in Section 01600 paragraph DATA, CAPACITIES, SPEEDS, AND TRAVEL. For the purpose of design of structural and mechanical parts, loads resulting from the maximum torque of the motors shall be taken as 280 percent of the rated full-load torque of the motor. Loads shall be computed with the load in such a position as will give maximum loading or stress in any part of the crane and with due allowance for eccentricity of application.

1.6.2.2 Dead Loads

The dead loads shall include all weights except the movable blocks, rope, and lifting beam.

1.6.2.3 Live Loads

a. Hoist Loads. The live load on the main hoist shall include the rated capacity plus the weight of movable blocks, rope, and lifting beam. The live load on the auxiliary hoist shall include the rated capacity plus the weight of movable blocks, rope, and lifting beam

b. Travel Loads. The live load on the gantry for travel operations shall be the same as the live load on the main hoist.

1.6.2.4 Tractive Forces

a. Gantry. The forces resulting from the acceleration or deceleration of the gantry crane shall be taken as 10 percent of the sum of the dead load in such positions as will give maximum loading or stress due to moment or shear in any part of the crane.

1.6.2.5 Collision Forces

Collision forces between bumpers and stops shall be taken as the forces produced by such collision with the gantry traveling at full speed with the power off. Only the dead load will be considered as contributing to the collision forces.

1.6.2.6 Impact

Impact will be taken as 10 percent of the live load.

1.6.2.7 Wind Load

Wind loads specified below shall be applied where applicable to the horizontally projected area of the crane and gate. No shielding effect of one element by another shall be considered where the distance between them exceeds four times the smaller projected dimension of the windward element.

1.6.2.8 Combination of Loads

The structural parts of the crane shall be designed for the following load combinations and unit stresses:

a. Live load for gantry travel, impact, dead load, 10 psf wind load, and tractive forces with resulting unit stresses not exceeding the basic unit stress specified.

b. Live load for gantry travel, impact, dead load, 10 psf wind load, and collision forces with resulting unit stresses not more than 25 percent in excess of the basic unit stress specified.

c. Dead load, 10 psf wind load, and the forces produced by the maximum torque of the hoist motor with the resulting unit stresses not exceeding 90 percent of the yield points of the materials involved. Loads resulting from forces produced by the maximum torque of the motor shall be taken with the trolley in any position required to handle a load in the gate slots.

d. Dead load, [travel load], and 30 psf wind load with resulting unit stress not more than 25 percent in excess of the basic unit stress specified.

1.6.2.9 Stability

The gantry crane shall have a minimum factor of safety of 1.25 against overturning under each condition of loading stated in paragraph COMBINATION OF LOADS. Counterweights shall be provided if necessary to secure the required stability.

1.6.2.10 Stiffness

Deviations from the nominal span, center to center of the gantry rails, due to the overall deflection of the gantry shall not exceed plus or minus 5/8 inches from the rated load to no load, respectively. The deflection shall be computed with the assumption that the base of the legs on both sides of the gantry are free.

1.6.3 Unit Stresses

1.6.3.1 Beams, Girders, Columns, and Other Members Carrying Primary Loads

Unit stress in structural parts (except bolts and welds) for the beams, girders, columns, and other members carrying primary loads shall be designed for a base tensile stress of 45 percent of the yield. Base stress and base stress plus 25 percent cases shall be 75 percent and 100 percent, respectively, of the stresses specified in Chapters D, E, and F of AISC M016. Allowable unit stresses for the 90 percent of yield case shall be 150 percent of the stresses specified in Chapters D, E, and F of AISC M016 or 90 percent of the yield, whichever is smaller, except that the allowable shear stress shall not exceed 54 percent of the yield. Combined stresses shall be in accordance with the requirements of Chapter H Section H1 of AISC M016 except that: values of 0.75 Fe' shall be used in Formula H1-1 and 0.45 Fy in Formula H1-2 for the base stress case, values of 0.91 Fe' and 0.55 Fy shall be used in the formulas for the base plus 25 percent case, and values of 1.40 Fe' and 0.90 Fy shall be used in the formulas for the 90 percent yield case.

1.6.3.2 Bolts and Welds

Allowable stresses in bolts and welds shall be in accordance with Chapter J of AISC M016, using the 75, 100, and 150 percent respective multipliers as given in paragraph BEAMS, GIRDERS, COLUMNS, AND OTHER MEMBERS CARRYING PRIMARY LOADS for base stress, base stress plus 25 percent, and 90 percent of yield.

1.6.3.3 Walkways, Ladders, Platforms, and Machinery Housing

Unit stress in structural parts for the walkways, ladders, platforms, machinery housing and similar parts not affected by primary loads shall be in accordance with the values given in Chapters D, E, and F of AISC M016.

1.6.3.4 Mechanical Parts of the Crane

Mechanical parts of the crane, including the lifting beam trucks, trolley frame, and tractive drive shall be designed for rated loads, with a factor of safety of 5 based on the ultimate strength of the materials, provided that each part or component, including speed reducers but excluding wire rope, shall be proportioned to withstand the stresses produced by the maximum torque of the motors with resultant stresses not exceeding 75 percent of the yield point of the materials involved.

1.6.3.5 Stress Concentration Factors

Stress concentration factors shall be used where applicable. Reduction of allowable stresses to compensate for repeated cycles of loading is not required.

1.6.3.6 Use of Cast Iron

Cast iron of a class less than 30 shall not be used for any parts of the crane except for counterweights. Cast iron of class 30 or higher may be used for line shaft bearing housings, end caps, brake shoes, and brake wheels.

1.6.4 Connections

1.6.4.1 Shop Connections

Shop connections shall be designed for assembly by means of welding or by bolting. Welding shall not be associated with bolting in the same joint. Field connections shall be designed for assembly with bolts of the type specified for the application. Riveting or field welding will not be acceptable.

1.6.4.2 Welded Connections

Design of welded connections shall be in accordance with the applicable provisions of AWS D1.1 Sections 1 through 6 and Section 9, except that allowable unit stresses in paragraph BOLTS AND WELDS shall apply and provisions for repeated stress will not be required.

1.6.4.3 Bolted Connections

Design of bolted connections shall be as follows:

a. Machine bolts or fitted bolts shall be used for assembly connections on machine parts, trucks, trolley frames, attaching machine parts, and similar items.

b. ASTM A 325 or ASTM A 490 type bolts shall be used on structural bolted connections carrying primary loads.

c. ASTM A 307, ASTM A 325, or machine bolts shall be used for bolted connections on the cab, ladders, guardrails, and similar structural items.

d. All speed reducers, bearing bases, and pillow blocks shall be held securely in place by one of the following methods:

   1. Fitted bolts installed with plain washers and double nuts.

   2. Machine bolts and dowels. The dowels shall be of such size as to adequately locate the device and resist the total shearing forces. The bolts shall be installed with nuts and lockwashers.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

Data showing that crane inspectors and craftsmen meet the following qualifications shall be submitted for approval:

3.1 QUALIFICATIONS

3.1.1 Qualified Crane Inspectors

Crane inspectors shall possess the following:

a. Have experience and knowledge in performing inspection on bridge cranes of similar size and capacity as St Stephen intake gantry crane.

b. Certifications showing they have attended crane inspection training seminars at established institutions.

c. Are employed as crane inspectors for at least two years by a firm specializing in crane inspection work.

3.1.2 Qualified Craftsmen

Craftsmen shall possess the following:

a. Have experience and knowledge in performing work on gantry cranes.

b. Have performed work on gantry cranes for at least 5 years.

c. Are employed as craftsmen for at least two years by a firm specializing in crane repair and rehabilitation work.

3.1.3 Qualified Crane Operators

Crane operators shall have experience and knowledge in operating bridge cranes of similar capacity as St Stephen intake gantry crane. The crane operator shall meet the Contracting Officer satisfaction that the crane operators has the ability to operate the crane.

3.2 REPAIR PROCEDURE AND SCHEDULE

A complete repair procedure and schedule for all work done on this job shall be submitted and approved before any work can start. The procedure shall include, but not be limited to the following:

a. Step by step crane repair procedure.

b. Schedule of work.

c. Types of equipment used on site including work platforms, cranes, scissor lifts, etc.

d. Methods of removing and reinstalling components.

e. Safety precautions.

f. Method of removing and reinstalling all Signage operating information, hazard warning, and information as contain in and on decals, data plates, placards, etc.

As many components as possible shall be furnished and ready for installation before starting work on the cranes to minimize downtime of cranes.

3.3 CLEANUP

All components of the intake gantry crane shall be cleaned up during the repair of the crane. All grease, oil, dirt, dust, debris, and any other foreign objects shall be cleaned up using appropriate cleanup methods. Cleanup methods include sweeping, vacuuming, wiping/washing using soap and water, solvents, etc. Additional cleanup requirements will be specified in other paragraphs.

3.4 PRE-REPAIR INSPECTION

Before any repair work is performed, an entire crane inspection shall be performed to determine if there are problems, beyond those referred to in these specifications, which require corrective action. A complete pre-repair inspection procedure shall be submitted and approved before any pre-repair inspection can start. The inspection shall be performed by qualified crane inspectors in the presence of the GQAR. Inspection shall be in accordance with all applicable standards including ASME B30.2, Overhead and Gantry Cranes and ASME 30.10, Hooks. Inspections shall meet or exceed the requirements of periodic inspection as stated in the standards. Records shall be kept of findings of inspections and a designated GQAR shall be present. The Government shall be notified of the date and time of the inspections. Any deficiencies found shall be brought to the attention of the GQAR. Inspections shall be performed by qualified crane inspectors, although disassembling and reassembling may be performed by qualified craftsmen. A copy of the record of inspection will be furnished to the Government and any recommended corrective action so noted.

3.5 REPAIR INSPECTION

The entire crane shall be inspected. Particular attention shall be given to main hoist components. Main hoist components including the following, shall be inspected for wear, distortion, deformation, cracks, nicks, corrosion, and any possible defect:

Drum
Bearing stands and housings
Sheaves
Couplings
Structural frame
Shafting
Lifting beam
Motors (Including coupling and shafting)
Brake Assemblies

Inspection shall be in accordance with all applicable standards including ASME B30.2, Overhead and Gantry Cranes and ASME B30.10, Hooks.

Inspections shall meet or exceed the requirements of periodic inspection as stated in the standards. Records shall be kept of findings of inspections and a test report submitted. Any deficiencies found shall be brought to the attention of the Contracting Officer. Qualified crane inspectors shall perform inspections. Inspections includes thorough cleaning of the components for optimum inspecting. After inspection and correcting any deficiencies, components shall be reassembled, adjusted, lubricated, and made ready for service.

3.6 ACCEPTANCE TESTS

3.6.1 General

After completing the crane repairs, the acceptance tests shall be performed. No testing shall be performed without an approved acceptance test procedure. Provide all personnel and equipment necessary to conduct the tests including but not limited to crane operators, riggers, data recorders (personnel), rigging gear, test weights, and measuring instruments. Testing shall be performed in the presence of the Government. Notify the Government, at least 20 days in advance, the date of the acceptance test.

3.6.2 Test Weights

The type of test weights used by the Contractor in the tests shall be submitted for approval. Detailed weight handling procedures and detailed “to scale” drawings showing test weight configuration with the crane, powerhouse, and other features shown on the drawings shall be submitted. If water bags are used, provide means of pumping water into the water bags and means of draining the bags. Test loads shall be plus 5 percent, minus 0 percent. Load on the intake deck floor shall not exceed 1,000 lbs. per sq. foot.

3.6.3 Test Sequence

The crane shall be tested according to the applicable paragraphs of this procedure in the sequence provided.

3.6.4 Equipment Monitoring

During the acceptance test, improper operation or poor condition of safety devices, electrical components, mechanical equipment, and structural assemblies shall be monitored. A complete post-repair inspection shall be submitted for approval. Observed defects critical to continued testing shall be reported immediately to the GQAR and testing shall be suspended until the deficiency is corrected. During and immediately following the acceptance test, the following inspections shall be made:

a. Inspect for evidence of bending, warping, permanent deformation, cracking or malfunction of structural components.

b. Inspect for evidence of slippage in wire rope sockets and fittings.

c. Check for overheating in brake operation; check for proper stopping. All safety devices, including emergency stop switches and POWER OFF pushbuttons, shall be tested and inspected separately to verify proper operation of the brakes.

d. Check for abnormal noise or vibration and overheating in machinery drive components.

e. Check wire rope sheaves and drum spooling for proper operation, freedom of movement, abnormal noise or vibration.

f. Check electrical drive components for proper operation, freedom from chatter, noise or overheating.

g. Inspect external gears for abnormal wear patterns, damage, or inadequate lubrication.

h. Check load cells for proper operation.

3.6.5 No-Load Testing

3.6.5.1 Hoist Operating and Limit Switch Test

The lifting beam shall be raised and lowered through the full range of normal travel at rated speed and other speeds of the crane. The lifting beam shall be stopped below the limit switch upper setting. In slow speed only, proper operation of upper and lower limit switches shall be verified. The test shall be repeated a sufficient number of times (minimum of three) to demonstrate proper operation. Brake action shall be tested in each direction.

3.6.5.2 Hoist Loss of Power No-Load Test

The lifting beam shall be raised to a height of approximately 15 feet. While slowly lowering the hook, the main power source shall be disconnected verifying that the lifting beam will not lower and that the brake will set. The test shall be repeated for the hoist reduced speed drive controls.

3.6.6 Load Test

The load test shall be performed using a test load of 125 percent of rated load. The test load shall be raised and lowered at least four feet, operating at the lowest speed point. The machinery shall be completely stopped at least once in each direction to ensure proper brake operation.

3.6.7 Functional Test

An intake gate and a bulkhead gate shall be lowered in the slots and the lifting beam taken out of the slot. The intake gate and bulkhead shall then be removed from the slots. The test is considered successful when

the gate and bulkhead can be handled without any problems. Contractor shall coordinate with project staff to address post operating problems.

3.6.8 Additional Test Requirements

Tests shall be made by and at the expense of the Contractor and witnessed by the GQAR. If defects, such as misalignment, improper adjustment, overheating, or other defects, become apparent which tend to damage the crane, or nullify the test results, the tests shall be discontinued until proper action has been taken to correct the conditions. After corrective action has been taken, the tests shall be continued or rerun as directed by Contracting Officer.

3.7 MANUFACTURER'S SERVICES

Services of a manufacturer's representative who is experienced in the installation, adjustment, erection and operation of the equipment specified shall be provided. The representative shall supervise the installation, adjustment, and testing of the equipment.

3.8 TRANSPORTATION SERVICES, EQUIPMENT RENTAL, PARTS AND MATERIALS (OPTIONAL)

Repairs which are specifically directed in writing and not covered elsewhere in the specifications may require parts and materials which can only be determined after disassembly and inspection. Examples are fasteners, material for special fasteners, bronze bushings, materials for replacement components, standard ball bearings, etc. Repairs may also require equipment rental including items as machine tool time. Repairs may also require the transportation of items to a repair facility. Invoices and signed purchase orders for reimbursement for such purchases, equipment rental, and services (i.e. transportation) shall be submitted. Bid Item No. 0010, "Transportation Services, Equipment Rental, and Parts and Materials" will be used for this work. Labor required for machining of bushings, special fasteners, etc. shall be paid for under the Miscellaneous Hire Bid Item No. 0003.

3.9 INTAKE GANTRY CRANE RATING

3.9.1 General

Contractor shall verify the Intake Gantry Crane Rating.

3.9.2 Rating Computations

Provide computations for all crane components to determine the stresses that will result using design criteria specified in this section, Section 15000, and original design requirements. If the resulting stresses exceed allowable stresses, a recommendation shall be included as to what should be done about the overstress condition. The computations shall be submitted with 90 days of award of the contract. All computations shall be performed and stamped by a registered professional engineer who is registered within the United States.

SECTION 02120

SSCR0302120

TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS

TABLE OF CONTENTS

SECTION 02120

TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS

PART 1 GENERAL

1.1 GENERAL INFORMATION

It shall be assumed that existing paint contains lead. Potential hazardous wastes to be generated by this work include lead-based paint and associated abrasive blasting material. See SECTION 09900 for health and safety requirements during paint removal procedures.

1.2 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.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administered Permit Programs: The Hazardous Waste Permit Program
40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities, and Notification

49 CFR 107	Hazardous Materials Program Procedures
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packaging
49 CFR 178	Specifications for Packaging

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01330.

SD-1 Data

On-site Hazardous Waste Management; GA

Off-site Hazardous Waste Management; GA

Prior to start of work, a plan detailing the manner in which hazardous wastes shall be managed.

SD-09 Reports

Record keeping; GA

Information necessary to file state annual or EPA biennial reports for all hazardous waste transported, treated, stored, or disposed of under this contract. The Contractor shall not forward these data directly to the regulatory agency but to the Contracting Officer at the specified time. The submittal shall contain all the information necessary for filing of the formal reports in the form and format required by the governing Federal or state regulatory agency. A cover letter shall accompany the data to include the contract number, Contractor name, and project location.

Spill Response; FIO

In the event of a spill or release of a hazardous substance (as designated in 40 CFR 302), or pollutant or contaminant, or oil (as governed by the Oil Pollution Act (OPA), 33 U.S.C. 2701 et seq.), the Contractor shall notify the Contracting Officer immediately. If the spill exceeds a reporting threshold, the Contractor shall follow the pre-established procedures for immediate reporting to the Contracting Officer.

Exception Reports; GA

In the event that a manifest copy documenting receipt of hazardous waste at the treatment, storage, and disposal facility is not received within

35 days of shipment initiation, the Contractor shall prepare and submit an exception report to the Contracting Officer within 37 days of shipment initiation.

SD-13 Certificates

Qualifications; FIO

Copies of the current certificates of registration issued to the Contractor and/or subcontractors or written statements certifying exemption from these requirements.

Off-Site Policy Compliance Certification; FIO

A letter certifying that EPA considers the facilities to be used for all off-site disposal to be acceptable in accordance with the Off-Site policy in 40 CFR 300, Section .440. This certification shall be provided for wastes from Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq., sites as well as from Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq., responses. See Attachment A sample certification at the end of this section.

Certificates of Disposal; FIO

Certificates documenting the ultimate disposal of hazardous wastes within 180 days of initial shipment. Receipt of these certificates will be required for final payment.

Shipping Documents and Packagings Certification; GA

All transportation related shipping documents to the Contracting Officer, including draft hazardous waste manifests, draft land disposal restriction notifications, draft bill of loadings for hazardous materials, lists of corresponding proposed labels, packages, marks, and placards to be used for shipment, waste profiles, and supporting waste analysis documents, for review a minimum of 14 days prior to anticipated pickup. Packaging assurances shall be furnished prior to transporting hazardous material; "generator copies" of hazardous waste manifests, land disposal restriction notifications, "generator copies" of manifests used for initiating shipments of used oil invoices/shipment records, bill of loadings and supporting waste analysis documents shall be furnished when shipments are originated.

SD-18 Records

Notices of Non-Compliance and Notices of Violation; FIO

Notices of non-compliance or notices of violation by a Federal, state, or local regulatory agency issued to the Contractor in relation to any work performed under this contract. The Contractor shall immediately provide copies of such notices to the Contracting Officer. The Contractor shall also furnish all relevant documents regarding the

incident and any information requested by the Contracting Officer, and shall coordinate its response to the notice with the Contracting Officer or his designated representative prior to submission to the notifying authority. The Contractor shall also furnish a copy to the Contracting Officer of all documents submitted to the regulatory authority, including the final reply to the notice, and all other materials, until the matter is resolved.

1.4 QUALIFICATIONS

1.4.1 Transportation and Disposal Coordinator

The Contractor shall designate, by position and title, one person to act as the Transportation and Disposal Coordinator (TDC) for this contract. The TDC shall serve as the single point of contact for all environmental regulatory matters and shall have overall responsibility for total environmental compliance at the site including but not limited to accurate identification and classification of hazardous waste and hazardous materials; determination of proper shipping names; identification of marking, labeling, packaging and placarding requirements; completion of waste profiles, hazardous waste manifests, asbestos waste shipment records, bill of loadings, exception and discrepancy reports; and all other environmental documentation. The TDC shall have, at a minimum, one year of specialized experience in the management and transportation of hazardous waste.

1.4.2 Training

The Contractor's employees transporting hazardous materials or preparing hazardous materials for transportation shall be trained, tested, and certified in accordance with 49 CFR 172.

1.4.3 Certification

The Contractor and/or subcontractors transporting hazardous materials shall possess a current certificate of registration issued by the Research and Special Programs Administration (RSPA), U.S. Department of Transportation, when required by 49 CFR 107, Subpart G.

1.5 LAWS AND REGULATIONS REQUIREMENTS

Work shall meet or exceed the minimum requirements established by Federal, state, and local laws and regulations which are applicable. These requirements are amended frequently and the Contractor shall be responsible for complying with amendments as they become effective. In the event that compliance exceeds the scope of work or conflicts with specific requirements of the contract, the Contractor shall notify the Contracting Officer immediately.

1.6 DEFINITIONS

a. Hazardous Material. A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in

commerce, and which has been so designated pursuant to the Hazardous Materials Transportation Act, 49 U.S.C. Appendix Section 1801 et seq. The term includes materials designated as hazardous materials under the provisions of 49 CFR 172, Sections .101 and .102 and materials which meet the defining criteria for hazard classes and divisions in 49 CFR 173. EPA designated hazardous wastes are also hazardous materials.

b. Hazardous Waste. A waste which meets criteria established in RCRA or specified by the EPA in 40 CFR 261 or which has been designated as hazardous by a RCRA authorized state program.

PART 2 PRODUCTS

2.1 MATERIALS

The Contractor shall provide all of the materials required for the packaging, labeling, marking, placarding and transportation of hazardous wastes and hazardous materials in conformance with Department of Transportation standards. Details in this specification shall not be construed as establishing the limits of the Contractor's responsibility.

2.1.1 Packagings

The Contractor shall provide non-bulk containers for packaging hazardous materials/wastes consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 8. Bulk and non-bulk packaging shall meet the corresponding specifications in 49 CFR 173 referenced in the Hazardous Materials Table, 49 CFR 172, Section 101. Each packaging shall conform to the general packaging requirements of Subpart B of 49 CFR 173, to the requirements of 49 CFR 178 at the specified packing group performance level, to the requirements of special provisions of column 7 of the Hazardous Materials Table in 49 CFR 172, Section .101, and shall be compatible with the material to be packaged as required by 40 CFR 262. The Contractor shall also provide other packaging related materials such as materials used to cushion or fill voids in overpacked containers, etc. Sorbent materials shall not be capable of reacting dangerously with, being decomposed by, or being ignited by the hazardous materials being packaged. Additionally, sorbents used to treat free liquids to be disposed of in landfills shall be non-biodegradable as specified in 40 CFR 264, Section .314.

2.1.2 Markings

The Contractor shall provide markings for each hazardous material/waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 172, Subpart D and 40 CFR 262, Section .32 (for hazardous waste). Markings must be capable of withstanding, without deterioration or substantial color change, a 180 day exposure to conditions reasonably expected to be encountered during container storage and transportation.

2.1.3 Labeling

The Contractor shall provide primary and subsidiary labels for hazardous materials/wastes consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 6. Labels shall meet design specifications required by 49 CFR 172, Subpart E including size, shape, color, printing, and symbol requirements. Labels shall be durable and weather resistant and capable of withstanding, without deterioration or substantial color change, a 180 day exposure to conditions reasonably expected to be encountered during container storage and transportation.

2.1.4 Placards

For each off-site shipment of hazardous material/waste, the Contractor shall provide primary and subsidiary placards consistent with the requirements of 49 CFR 172, Subpart F. Placards shall be provided for each side and each end of bulk packaging, freight containers, transport vehicles, and rail cars requiring such placarding. Placards may be plastic, metal, or other material capable of withstanding, without deterioration, a 30 day exposure to open weather conditions and shall meet design requirements specified in 49 CFR 172, Subpart F.

2.1.5 Spill Response Materials

The Contractor shall provide spill response materials including, but not limited to, containers, adsorbent, shovels, and personal protective equipment. Spill response materials shall be available at all times in which hazardous materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of material being handled.

2.2 EQUIPMENT AND TOOLS

The Contractor shall provide miscellaneous equipment and tools necessary to handle hazardous materials and hazardous wastes in a safe and environmentally sound manner.

PART 3 EXECUTION

3.1 ON-SITE HAZARDOUS WASTE MANAGEMENT

These paragraphs apply to Government owned waste only. Contractors are prohibited by 10 U.S.C. 2692 from storing contractor owned waste on site for any length of time. The Contractor shall be responsible for ensuring compliance with all Federal, state, and local hazardous waste laws and regulations and shall verify those requirements when preparing reports, waste shipment records, hazardous waste manifests, or other documents. The Contractor shall identify hazardous wastes using criteria set forth in 40 CFR 261 or all applicable state and local laws, regulations, and ordinances. When accumulating hazardous waste on-site, the Contractor shall comply with generator requirements in 40 CFR 262 and any applicable state or local law or regulations. On-site

accumulation times shall be restricted to applicable time frames referenced in 40 CFR 262, Section .34 and any applicable state or local law or regulation. Accumulation start dates shall commence when waste is first generated (i.e. containerized or otherwise collected for discard). The Contractor shall only use containers in good condition and compatible with the waste to be stored. The Contractor shall be responsible for ensuring containers are closed except when adding or removing waste. The Contractor shall be responsible for immediately marking all hazardous waste containers with the words "hazardous waste" and other information required by 40 CFR 262, Section .32 and any applicable state or local law or regulation as soon as the waste is containerized. An additional marking shall be placed on containers of "unknowns" designating the date sampled, and the suspected hazard. The Contractor shall be responsible for inspecting containers for signs of deterioration and shall be responsible for responding to any spills or leaks. The Contractor shall inspect all hazardous waste areas weekly and shall provide written documentation of the inspection. Inspection logs will contain date and time of inspection, name of individual conducting the inspection, problems noted, and corrective actions taken.

3.1.1 Hazardous Waste Classification

The Contractor, in consultation with the Contracting Officer, shall identify all waste codes applicable to each hazardous waste stream based on requirements in 40 CFR 261 or any applicable state or local law or regulation. The Contractor shall also identify all applicable treatment standards in 40 CFR 268 and state land disposal restrictions and shall make a determination as to whether or not the waste meets or exceeds the standards. Waste profiles, analyses, classification and treatment standards information shall be submitted to Contracting Officer for review and approval.

3.1.2 Management Plan

The Contractor shall prepare a plan detailing the manner in which hazardous wastes shall be managed and describing the types and volumes of hazardous wastes anticipated to be managed as well as the management practices to be utilized. The plan shall identify the method to be used to ensure accurate piece counts and/or weights of shipments; shall identify waste minimization methods; shall propose facilities to be utilized for treatment, storage, and/or disposal; shall identify areas on-site where hazardous wastes are to be handled; shall identify whether transfer facilities are to be utilized; and if so, how the wastes will be tracked to ultimate disposal.

3.2 OFF-SITE HAZARDOUS WASTE MANAGEMENT

The Contractor shall use RCRA Subtitle C permitted facilities which meet the requirements of 40 CFR 264 or facilities operating under interim status which meet the requirements of 40 CFR 265. Off-site treatment, storage, and/or disposal facilities with significant RCRA violations or

compliance problems (such as facilities known to be releasing hazardous constituents into ground water, surface water, soil, or air) shall not be used.

3.2.1 Description of TSD Facility and Transporter

The Contractor shall provide the Contracting Officer with EPA ID numbers, names, locations, and telephone numbers of TSD facilities and transporters. This information shall be contained in the Hazardous Waste Management Plan for approval prior to waste disposal.

3.2.2 Status of the Facility

Facilities receiving hazardous waste must be permitted in accordance with 40 CFR 270 or operating under interim status in accordance with 40 CFR 265 requirements or must be permitted by an authorized state program. Additionally, prior to using a TSD Facility, the Contractor shall contact the EPA Regional Off-site Coordinator specified in 40 CFR 300, Section .440, to determine the facility's status and document all information necessary to satisfy the requirements of the EPA Off-Site policy and furnish this information to the Contracting Officer.

3.2.3 Packaging Certification

Prior to shipment of any hazardous material off-site, the Contractor's TDC shall provide written certification to the Contracting Officer that hazardous materials have been properly packaged, labeled, and marked in accordance with Department of Transportation and EPA requirements.

3.2.4 Transportation

The Contractor shall use manifests for transporting hazardous wastes as required by 40 CFR 263 or any applicable state or local law or regulation. Transportation shall comply with all requirements in the Department of Transportation referenced regulations in the 49 CFR series. The Contractor shall acquire manifests in accordance with the hierarchy established in 40 CFR 262, Section .21. The Contractor shall prepare hazardous waste manifests for each shipment of hazardous waste shipped off-site. Manifests shall be completed using instructions in 40 CFR 262, Subpart B and any applicable state or local law or regulation. Manifests and waste profiles shall be submitted to Contracting Officer for review and approval. The Contractor shall prepare land disposal restriction notifications as required by 40 CFR 268 or any applicable state or local law or regulation for each shipment of hazardous waste. Notifications shall be submitted with the manifest to the Contracting Officer for review and approval. When the additional cost of sending a qualified USACE representative to a remote location for a small clean up project is unwarranted, the option of requiring the on-site Contractor to sign the manifests on behalf of the generator is permitted and should be considered. This option shall only be exercised on a project specific basis, if prior to the solicitation process, written authorization of the customer and approval of the Chief, Construction Division at the executing district has been obtained, and the technical

provisions of the contract solicitation provide competing contractors notice of the requirement.

3.2.5 Treatment and Disposal of Hazardous Wastes

The hazardous waste shall be transported to an approved hazardous waste treatment, storage, or disposal facility within 90 days of the accumulation start date on each container. The Contractor shall ship hazardous wastes only to facilities which are properly permitted to accept the hazardous waste or operating under interim status. The Contractor shall ensure wastes are treated to meet land disposal treatment standards in 40 CFR 268 prior to land disposal. The Contractor shall propose TSD facilities via submission of the Hazardous Waste Management Plan, subject to the approval of the Contracting Officer.

3.3 HAZARDOUS MATERIALS MANAGEMENT

The Contractor, in consultation with the Contracting Officer, shall evaluate prior to shipment of any material off-site whether the material is regulated as a hazardous waste in addition to being regulated as a hazardous material; this shall be done for the purpose of determining proper shipping descriptions, marking requirements, etcetera, as described below.

3.3.1 Identification of Proper Shipping Names

The Contractor shall use 49 CFR 172, Section .101 to identify proper shipping names for each hazardous material (including hazardous wastes) to be shipped off-site. Proper shipping names shall be submitted to the Contracting Officer in the form of draft shipping documents for review and approval.

3.3.2 Packaging, Labeling, and Marking

The Contractor shall package, label, and mark hazardous materials/wastes using the specified materials and in accordance with the referenced authorizations. The Contractor shall mark each container of hazardous waste of 110 gallons or less with the following:

"HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal.
If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.
Generator's name _____
Manifest Document Number _____".

3.3.3 Shipping Documents

The Contractor shall ensure that each shipment of hazardous material sent off-site is accompanied by properly completed shipping documents. The Contractor shall prepare a bill of lading for each shipment of hazardous material which is not accompanied by a hazardous waste manifest which fulfills the shipping paper requirements. The bill of lading shall satisfy the requirements of 49 CFR 172, Subpart C, and any

applicable state or local law or regulation, and shall be submitted to the Contracting Officer for review and approval. For laboratory samples and treatability study samples, the Contractor shall prepare bills of lading and other documentation as necessary to satisfy conditions of the sample exclusions in 40 CFR 261, Section .4(d) and (e) and any applicable state or local law or regulation. Bill of loadings requiring shipper's certifications shall be signed by the Government.

3.4 OBTAINING EPA ID NUMBERS

The Contractor shall complete EPA Form 8700-12, Notification of Hazardous Waste Activity, and submit to the Contracting Officer for review and approval. The Contractor shall allow a minimum of 30 days for processing the application and assigning the EPA ID number. Shipment shall be made not earlier than one week after receipt of the EPA ID number.

3.5 SPECIAL REQUIREMENTS FOR ASBESTOS WASTES

If work involves asbestos containing wastes, the Contractor shall manage these wastes in accordance with specification Section 02080 ASBESTOS ABATEMENT.

3.6 WASTE MINIMIZATION

The Contractor shall minimize the generation of hazardous waste to the maximum extent practicable. The Contractor shall take all necessary precautions to avoid mixing clean and contaminated wastes. The Contractor shall identify and evaluate recycling and reclamation options as alternatives to land disposal. Requirements of 40 CFR 266 shall apply to: hazardous wastes recycled in a manner constituting disposal; hazardous waste burned for energy recovery; lead-acid battery recycling; and hazardous wastes with economically recoverable precious metals.

3.7 RECORDKEEPING

The Contractor shall be responsible for maintaining adequate records to support information provided to the Contracting Officer regarding exception reports, annual reports, and biennial reports. The Contractor shall be responsible for maintaining asbestos waste shipment records for a minimum of 3 years from the date of shipment or any longer period required by any applicable law or regulation or any other provision of this contract.

3.8 SPILL RESPONSE

The Contractor shall respond to any spill of hazardous materials or hazardous waste which are in the custody or care of the Contractor pursuant to this contract. Any direction from the Contracting Officer concerning a spill or release shall not be considered a change under the contract. The Contractor shall comply with all applicable requirements of Federal, state, or local laws or regulations regarding any spill incident.

3.9 EMERGENCY CONTACTS

The Contractor shall be responsible for complying with the emergency contact provisions in 49 CFR 172, Section .604. Whenever the Contractor ships hazardous materials, the Contractor shall provide a 24-hr emergency response contact and phone number of a person knowledgeable about the hazardous materials being shipped and who has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information. The phone must be monitored on a 24-hour basis at all times when the hazardous materials are in transportation including during storage incidental to transportation. The Contractor shall ensure that information regarding this emergency contact and phone number are placed on all hazardous materials shipping documents. The Contractor shall designate an emergency coordinator and post the following information at areas in which hazardous wastes are managed:

a. The name of the emergency coordinator.

b. Phone number through which the emergency coordinator can be contacted on a 24 hour basis.

c. The telephone number of the local fire department.

d. The location of fire extinguishers and spill control materials.

Attachment A

SAMPLE OFF-SITE POLICY CERTIFICATION MEMO

Project/Contract #:_____
Waste Stream:_____
Primary TSD Facility, EPA ID # and Location: _____
Alter. TSD Facility, EPA ID # and Location:_____

EPA Region	Primary Contact	Secondary Contact
I	(617) 573-5755	(617) 573-1754
II	(212) 264-9504	(212) 264-2638
III	(215) 597-1857	(215) 597-8338
IV	(404) 347-7603	(404) 347-7603
V	(312) 353-7921	(312) 886-4445
VI	(214) 655-2282	(214) 655-2281
VII	(913) 551-7816	(913) 551-7667
VIII	(303) 293-1823	(303) 293-1506
IX	(415) 744-2129	(415) 744-2114
X	(206) 553-6646	(206) 553-1061

EPA representative contacted: _____
EPA representative phone number: _____
Date contacted: _____
Comment: _____

The above EPA representative was contacted on _____. As of that date the above sites were considered acceptable in accordance with the Off-Site Policy in 40 CFR 300.440.

Signature: _____ Date: _____
Phone number: _____

SECTION 05101

SSCR0305101

METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS

TABLE OF CONTENTS

SECTION 05101

METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS

PART 1 GENERAL

1.1 GENERAL INFORMATION

This section covers general workmanship requirements, applicable to the fabrication and inspection of various items of metalwork and machine work. These requirements are in addition to those contained in the specification sections covering the specific items of work or as shown.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B4.1	(1967; R 1999) Preferred Limits and Fits for Cylindrical Parts
ASME B46.1	(1995) Surface Texture (Surface Roughness, Waviness and Lay)
ASME Section IX	Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A123/A123M REV A	(2002) Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products
ASTM A 325	(2002) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 490	(2002) Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength

AMERICAN WELDING SOCIETY, INC. (AWS)

AWS D1.1	(2002) Structural Welding Code-Steel
AWS QC1	(1996) Standard for AWS Certification of Welding Inspectors

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01330

SD-04 Drawings

Shop Drawings; GA

Shop drawings including catalog cuts, templates, fabrication and assembly details and type, grade and class of materials as appropriate. A list shall be furnished designating the material to be used for each item. The shop drawings shall be complete and show all material machining allowances and other details that the shop personnel require to fabricate the items. The Contractor is responsible for checking the fit and dimensions shown on the plans prior to fabrication and machining of the parts. Information or elements of fabricated items omitted on the contract drawings but necessary for shop fabrication shall be detailed and indicated on the shop drawings.

SD-07 Schedules

Schedule of Welding Procedures; GA

(a) Three copies of the complete schedules of welding procedures as described in paragraph 3.2.4.1 and other required procedures.

(b) Welder Qualifications. See paragraph 3.2.3.

(c) Inspection Agency Qualifications. See paragraph 3.2.6.2.3.

(d) Weld repair plan. See paragraph 3.2.6.2.6.

1.4 INSPECTIONS AND TESTS

1.4.1 Inspections and Tests

Inspections and tests shall be performed in accordance with this section and in conjunction with SECTION 01451 to demonstrate that the fabrication and machine work are in conformity and in addition to the applicable inspection requirements elsewhere specified. A detailed plan shall be prepared as part of the CQC Plan to record all measurements, and other details that indicate the plans and specifications are met. These tests and inspections shall be performed at the Contractor's expense, certified, and available for review. Inspections and tests shall conform to the requirements of the particular sections of these specifications and plans for the respective items of work unless otherwise specified or authorized. The Government will notify the Contractor which inspections and tests shall be conducted in the presence of and witnessed by the GQAR. The Government shall be notified of the dates of the inspections and tests as required in SECTION 01451.

1.4.2 Structural Weldments

1.4.2.1 General

Inspection shall be made of each weldment to show that the completed unit meets all the details shown or specified. Records shall be kept of each inspection.

1.4.2.2 Non-destructive Inspection

When doubt exists as to the soundness of any weldment, such weldment shall be subjected to any form of non-destructive inspection as directed. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly inspect the weldment in question. The cost of such inspection will be borne by the Government only if the weldment is determined to meet the specifications. The cost of the inspection for weldments found unsound shall be borne by the Contractor. Any unsound weldments will be rejected and shall be replaced and re-inspected at the Contractor's expense.

1.4.2.3 Destructive Inspection

When doubt exists as to the soundness of any weldment that cannot be resolved by non-destructive inspection, coupons shall be taken for destructive inspection as directed. The cost of such inspection, repair, or replacement will be borne by the Government only if the weldment is determined to meet the specifications. The cost of the inspection for weldments found unsound shall be borne by the Contractor. Any unsound weldments will be cause for rejection and rejected weldments shall be repaired or replaced and re-inspected at the Contractor's expense.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.1 STRUCTURAL FABRICATION

3.1.1 General

Material must be straight before being laid off or worked. If straightening is necessary it shall be done by methods that will not impair the metal. Sharp kinks or bends shall be cause for rejection of the material. Material with welds will not be accepted except where welding is definitely specified, indicated on the drawings or otherwise approved. Bends shall be made by dies, press brakes or bending rolls normally used in this type of fabrication. Where heating is required, precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in a manner that will restore the original properties

of the metal. Proposed flame cutting of material other than structural steel shall be subject to approval and shall be indicated on shop drawings. Shearing shall be accurate and all portions of the work shall be neatly finished. Corners shall be square and true unless otherwise shown. Re-entrant cuts shall be filleted to a minimum radius of 3/4-inch unless otherwise approved. Finished members shall be free of twists, bends and open joints.

3.1.2 Dimensional Tolerances for Structural Work

Dimensions shall be measured by an approved calibrated steel tape of approximately the same temperature as the material being measured at the time of measurement. The overall dimensions of an assembled structural unit shall be within the tolerances shown or as specified in the particular section of these specifications for the item of work. Where tolerances are not specified in other sections of these specifications or shown an allowable variation of 1/32-inch is permissible in the overall length of component members with both ends milled, and component members without milled ends shall not deviate from the dimensions shown by more than 1/16-inch for members 30 feet or less in length and by more than 1/8-inch for members over 30 feet in length.

3.1.3 Structural Steel Fabrication

Structural steel may be cut by mechanically guided or hand guided torches provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1, Subsection 3.2. Where structural steel is not to be welded and is not exposed to view, grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand guided cuts. Hand or mechanically guided cuts which are to be exposed or visible shall be chipped, ground or machined to sound metal. All exposed edges shall be ground to provide a radius, approximately 1/16 inch minimum.

3.2 WELDING

3.2.1 General

Unless otherwise authorized or specified, welding shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal. Welding shall conform to AWS D1.1 (Section 8, Statically Loaded Structures, does not apply) and welding procedures in ASME, Section 9. All mandatory appendices will be considered part of AWS D1.1 and therefore apply. The nonmandatory appendices and commentary will be used as guides and supplementary information unless otherwise specified for the interpretation and application of AWS D1.1.

3.2.2 Filler Metal

The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal or metals and welding process being used or shall be as shown where a

specific choice of AWS specification allowables is required. Only low hydrogen electrodes shall be used for shielded metal-arc welding. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedure to be furnished. The filler metal shall meet the requirements of AWS D1.1, Section 4 and as specified on drawings or on the approved procedure for welding.

3.2.3 Qualification of Welders and Welding Operators

Welding operators, welders, and tack welders shall be qualified for the particular type of work to be done. Qualification shall be in accordance with AWS D1.1. The welders and welding operators so qualified shall be certified and approved by name prior to any welding being performed by that individual. The qualifications shall be submitted on Form E-4, Appendix E of AWS D1.1 or equal. Prior qualification may be accepted provided the welder has performed satisfactory work in accordance with AWS D1.1 within the preceding 6 months. The welder or welding operator shall be required to repeat the qualifying tests when, in the opinion of the GQAR, their work indicates a reasonable doubt as to their proficiency. Certification shall be submitted for those passing the test and upon approval, they shall be considered qualified. Those not passing shall be disqualified until passing. All expenses in connection with qualification or requalification shall be borne by the Contractor.

3.2.4 Workmanship Requirements

3.2.4.1 Welding Procedure

The approved weld procedure shall consist of detailed procedure specifications for each required joint to be welded with tables or diagrams showing the procedure to be used. The weld procedure shall be submitted on Form E-1 or E-2, Appendix E of AWS D1.1 or equal. Properly documented evidence of compliance with all requirements of these specifications for previous welding joint qualifications tests will establish the joint welding procedure as prequalified and a qualification test will not be required. Each procedure shall be clearly identified as being either prequalified or qualified by tests.

3.2.4.2 Preheat and Interpass Temperature

Preheating shall be performed as required by AWS D1.1 or as otherwise specified. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

3.2.4.3 Stress-Relief Heat Treatment

If stress-relief heat treatment is needed it shall be done in accordance with the requirements of AWS D1.1, Subsection 4.4.

3.2.5 Welding of Dissimilar Ferrous Metals and Stainless

Welding of dissimilar ferrous metals and stainless shall conform to the applicable requirements of Section IX of the current ASME Boiler and Pressure Vessel Code for "Weldings Qualifications," respectively, and the following additional requirements:

a. Welders, welding operators and machines shall be qualified for both materials being welded.

b. Electrodes and welding procedures shall have been previously demonstrated by test to be effective in achieving sound welded joints with equivalent dissimilar metals or stainless steel.

c. Preheat temperature shall be the higher of the specified preheat temperatures for the two materials being joined.

d. Special welding procedures shall be submitted for approval for these joints either approved by or prepared by competent metallurgist whose qualifications have been previously submitted and approved.

e. Except where high strength joints are specifically required, selection of welding electrodes shall include:

(1) Austenitic filler shall be used for welding any chromium steel to an austenitic steel.

(2) Filler metal containing chromium equal to either the higher or lower chromium content of either material shall be used for welding a hardenable chromium steel to another with a chromium content.

(3) Unless otherwise shown, filler metal for welding stainless steel to a carbon steel may be the specified carbon steel filler provided; (i) a high strength joint is not specified; (ii) the affect of hardening is controlled; and (iii) previously fabricated and tested weld test specimens with the equivalent base metals to be joined. In the event the proposed carbon steel weld rods are determined to be unsuitable by test, the Contractor shall use only an appropriate pretested alloy steel filler rod which will produce sound welds.

(4) Unless otherwise shown, filler metal for welding any chromium steel to any low alloy steel shall be (i) of the same composition as the low alloy steel provided the alloying elements are essential for the service application (ii) any low alloy composition that will provide the mechanical properties for the service application.

(5) Austenitic filler rod may be used generally for joining two dissimilar steels except where control of carbon migration is required.

3.2.6 Inspection

3.2.6.1 General

In conjunction with Section 01451, all welding shall be inspected to ensure that the welds conform to the requirements of this specification, AWS D1.1, or ASME SECTION IX and the approved welding procedure. Inspection will be performed in two categories: 1) The CQC Welding Program shall guarantee complete compliance of all welds with the contractrequirements, and 2) The Government Quality Assurance Program (GQAR) will be utilized to verify implementation and acceptability of the CQC Welding Program.

3.2.6.2 Contractor's Quality Control (CQC) Welding Program

3.2.6.2.1 General

Inspection performed under the CQC Welding Program shall be in accordance with the specifications herein, and Section 6 of AWS D1.1. The Contractor's weld inspector shall hold a current certification as a certified welding inspector (CWI) in accordance with AWS QC1. Copies of the weld inspector's certification and qualifications for all assistant inspectors shall be submitted.

3.2.6.2.2 Inspection

Inspection and tests shall be performed as necessary prior to welding, during welding, and after welding to ensure that materials and workmanship meet the requirements specified. In addition to visual inspection, all welds shall be subject to non-destructive inspection. As a minimum the following amount of non-destructive inspection shall be performed for each fabricated weldment:

a. Ten percent of the full penetration welds shall be inspected by ultrasonic testing,

b. Ten percent of the groove welds shall be inspected by ultrasonic testing,

c. Ten percent of the fillet welds shall be inspected by magnetic particle testing or liquid penetrant testing, and

d. Radiographic inspection shall be performed on welds designated on the drawings.

e. The samples shall be randomly selected and shall be representative of the welds on that weldment.

Any weld that does not meet the acceptance criteria shall not be counted as meeting the above inspection requirements. Rejection of any portion of a weld inspected on less than a 100 percent basis, by a method other than visual, shall be 100 percent inspected by the method used in

finding the defect. This inspection will not count towards meeting the above quality requirements.

3.2.6.2.3 Inspection Agency

Non-destructive inspection of welds and evaluation of tests or inspections as to the acceptability of the welds shall be performed by an agency adequately equipped and qualified to perform such services; or the Contractor may make its own tests or inspections and evaluations, provided the Contractor has available suitable equipment and qualified personnel. In either case, the Inspection Agency or Contractor's personnel qualifications shall be submitted for approval. The evaluation of the tests or inspections shall be subject to approval and all records shall become the property of the Government. Testing performed as part of the GQAP shall be made in the presence of the GQAR.

3.2.6.2.4 Inspection Procedure

The procedure for making, evaluating and reporting the radiographic testing, ultrasonic testing, magnetic particle inspection, and liquid penetrant inspection of the welds shall conform to the requirements of AWS D1.1. The ultrasonic equipment shall be capable of making a permanent record of the test indications and a record shall be made of each weld tested.

3.2.6.2.5 Acceptability of Welds

All welds shall meet the inspection requirements of AWS D1.1, Section 9.25 for visual, radiographic, ultrasonic, magnetic particle, and liquid penetrant as applicable for the procedure specified.

3.2.6.2.6 Repairs

Defective welds shall be repaired in compliance with AWS D1.1, Section 3.7. A welding repair plan shall be submitted for approval before repairs are made. Defective weld metal shall be removed to sound metal by use of air carbon-arc and/or grinding. Except for repairs of members cut to remove test coupons that were found to have acceptable welds, costs of repairs and retesting shall be borne by the Contractor.

3.2.6.3 Government Quality Assurance Program (GQAP)

3.2.6.3.1 General

All welds shall be subject to inspection by the Government. The Government reserves the right to require the Contractor to conduct non-destructive examination of any weld by any of the methods listed below. The GQAR may require that coupons to be cut from any location in any joint

3.2.6.3.2 Non-Destructive Inspection

As directed by the GQAR non-destructive examination of the designated welds shall be performed by one of the following methods. See bid

schedule for anticipated quantities of weld inspection, quantities are an estimate and higher or lower amounts may be required as directed by the Government.

a. Radiographic inspection.

b. Ultrasonic inspection.

c. Magnetic Particle inspection.

d. Dye Penetrant inspection.

These welds shall meet the acceptance standards based upon the respective welds and method of inspection specified in paragraph 3.2.6.2.2 regardless of the method used by the Government to inspect the weld. Ultrasonic or radiographic inspection may be used to ensure proper visual inspection was performed at all stages of the welding process, according to AWS D1.1, Section 6.6.1. Rejected welds found by the GQAP shall be inspected the full length of that weld by the Contractor at its expense using the NDT method which found the first defect in the weld.

3.2.6.3.3 Test Coupons

The Government reserves the right to require the Contractor to remove coupons from completed work when in doubt as to soundness cannot be resolved by non-destructive inspection. Coupons will be subjected to a guided bend test. Should tests of any two coupons cut from the work of any welder show non-conformance with AWS D1.1, it will be considered evidence of negligence or incompetence, and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired with joints which conform to AWS D1.1 or ASME SECTION IX, with peening as approved or directed to relieve residual stress.

3.3 MACHINE WORK

3.3.1 General

Tolerances, allowances and gages for metal fits between plain, non-threaded, cylindrical parts shall conform to ASME B4.1 for the class of fit shown or to the dimensions shown. Where fits are not shown they shall be in accordance with good industrial practice for the intended application and approved prior to the beginning of work. Tolerances for machine-finished surfaces designated by non-decimal dimensions shall be within 1/64-inch unless otherwise specified. Sufficient excess material stock shall be allowed on surfaces requiring machining to ensure true surfaces of solid material while maintaining the specified minimum or finished plate thickness. Finished contact or bearing surfaces shall be true and exact to secure full contact. All surfaces shall be finished in accordance with the contract drawings to ensure proper operation when assembled. Parts shall be accurately machined and all like parts shall be interchangeable. All drilled bolt holes shall be accurately located to ensure interchangeability.

3.3.2 Finished Surfaces

Surface finishes as indicated or specified shall be in accordance with ASME B46.1. Values of required roughness heights are arithmetical average deviations expressed in micro inches. These values are maximum. Lesser degrees will be satisfactory unless otherwise indicated. Compliance with surface requirements shall be determined by sense of feel and visual inspection of the work compared to Roughness Comparison Specimens in accordance with the provisions of ASME B46.1. Values of roughness width and waviness height shall be consistent with the general type of finish specified by roughness height. Where the finish is not indicated or specified it shall be that which is most suitable for the particular surface, provide the class of fit required and shall be indicated on the shop drawings by a symbol which conforms to ASME B46.1 when machine finishing is provided. Flaws such as scratches, ridges, holes, peaks, cracks or checks which will make the part unsuitable for the intended use will be cause for rejection.

3.3.3 Unfinished Surfaces

All work shall be laid out to secure proper matching of adjoining unfinished surfaces unless otherwise directed. Where there is a discrepancy between adjoining unfinished surfaces they shall be ground smooth or machined to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown and shall be ground free of all projections and rough spots. Depressions or holes not affecting the strength or usefulness of the parts shall be filled in using an approved method.

3.3.4 Pin Holes

Pin holes shall be bored in accordance with the dimensions and tolerances as per 3.3.1.

3.3.5 Shafting

All shafting shall be as shown or noted. Fillets shall be provided where changes in section occur. Cold-finished shafting may be used where keyseating or grinding are the only machine work required.

3.4 SHOP INSPECTION

Each structural unit shall be inspected prior to assembly to determine the correctness of the fabrication and machining of the component parts. Tolerances shall not exceed those shown. Each unit inspected shall be closely checked to ensure that dimensions and tolerances are met. An inspection record shall be kept for review by the GQAR for each item inspected.

3.5 PROTECTION OF MACHINED SURFACES

Machined surfaces shall be thoroughly cleaned of foreign matter and shall be protected by suitable means. Unassembled pins and bolts shall be oiled and wrapped with moisture resistant paper or protected by other approved means.

3.6 BOLTED CONNECTIONS

3.6.1 General

Bolts, nuts, and washers shall be of the type specified or indicated on the drawings. All nuts shall be equipped with washers except for high strength bolts. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. Where the use of high strength bolts is specified, the materials, workmanship, and installation shall conform to the applicable provisions of the specification for Structural Joints Using ASTM A 325 or A 490 Bolts issued by the Research Council on Riveted and Bolted structural Joints of the Engineering Foundation. Ribbed bolts will not be acceptable.

3.6.2 Bolt Holes

3.6.2.1 Regular Bolts

Holes for regular bolts shall be drilled or subdrilled and reamed. Holes shall be accurately located, smooth, perpendicular to the member, cylindrical and not more than 1/16-inch larger than the diameter of the bolt, unless shown otherwise.

3.6.2.2 Fitted Bolts

Holes for fitted bolts shall be match-reamed or drilled. Holes shall be smooth,and perpendicular to the member and cylindrical. Burrs resulting from reaming shall be removed. The threads shall be entirely outside of the holes. The body diameter of the bolt shall have tolerances as recommended by ASME B4.1 for the class to fit specified. Fitted bolts shall be fitted in reamed holes by selective assembly to provide an LC 7 or closer tolerance fit.

3.6.2.3 High Strength Bolts

Holes for high strength bolts shall be accurately spaced, cylindrical and perpendicular to the member. The diameter of the hole shall be not more than 1/16-inch larger than the bolt diameter. If the thickness of the material is not greater than the diameter of the bolt, the holes may be punched. If the thickness of the material is greater than the diameter of the bolt, the holes will be either drilled full size or shall be subpunched or subdrilled at least 1/8-inch smaller than the diameter of the bolt and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting done during assembly shall not distort the metal or enlarge the holes. For slight mismatching

reaming to a larger diameter for the next standard size bolt will be allowed.

3.7 SET SCREWS

Set screws shall be of the socket type, with sockets of the hexagonal or multisplined shape. Set screws shall not be used for transmitting torsion.

3.8 SPECIAL NONDESTRUCTIVE TESTING

When doubt exist as to the soundness of any part, such part may be subjected to any form of nondestructive testing determined by the GQAR. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government only if the part is found not to be defective. Repair or replacement of defective parts and all retesting shall be at Contractor’s expense. This is in addition to the nondestructive testing specified in paragraph 3.2.6.3.

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SECTION 05502

SSCR0305502

METALS: MISCELLANEOUS,
STANDARD ARTICLES, SHOP FABRICATED ITEMS

TABLE OF CONTENTS

SECTION 05502

METALS: MISCELLANEOUS,
STANDARD ARTICLES, SHOP FABRICATED ITEMS

PART 1 GENERAL

1.1 GENERAL INFORMATION

Fabrication requirements and workmanship provisions for items specified in this section shall also conform with the requirements of SECTION 05101.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B1.1	(1989; R2001) Unified Inch Screw Threads (UN and UNR Threaded Form)
ASME B18.2.1	(1996) Square and Hex Bolts and Screws (Inch Series)
ASME B18.2.2	(1987; R1999) Square and Hex Nuts (Inch Series)
ASME B18.3	(1998) Socket Cap, Shoulder and Set Screws (Inch Series) Including Dimensions of Hexagon and Spline Sockets and Keys to Match
ASME B18.6.2	(1998) Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws
ASME B18.6.3	(1998) Machine Screws and Machine Screw Nuts
ASME B18.22.1	(1965; R 1998) Plain Washers
ASME B30.2	(2001) Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A27/A27M	(1995; R2000) Steel Castings, Carbon, for General Application

ASTM A48/A48M	(2000) Gray Iron Castings
ASTM A36/A 36M	(2001) Structural Steel
ASTM A53/A 53M	(2002) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A108	(1999) Steel Bars, Carbon, Cold Finished, Standard Quality
ASTM A148/A148M	(2002) Steel Castings, High-Strength, for Structural Purposes
ASTM A 307	(2002) Carbon Steel Bolts and Studs 60,000 psi Tensil Strength
ASTM A325	(2002) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strentgh
ASTM A576 REV B	(1990; R 2000) Steel Bars, Carbon, Hot-Wrought, Special Quality.
ASTM A588/A588M	(2001) High-Strength Low-Alloy Structural Steel with 50 ksi (345mpa) Minimum Yield Point to 4 in. (100 mm) Thick
ASTM A668/A668M	(1996) Steel Forgings, Carbon Alloy, for General Industrial Use.
ASTM A786/A286M REV B	(2000) Rolled Steel Floor Plates
ASTM A808/A808M REV A	(2000) High-Strength Low-Alloy Structural Manganese Vanadium Steel
ASTM B6	(2000) Zinc Metal (Slab Zinc)

CRANE MANUFACTURERS ASSOCIATION OF AMERICA (CMAA)

CMAA-70	(2000) Specifications for Electric Overhead Traveling Cranes

FEDERAL SPECIFICATIONS (FS)

FS A-A-1922A	(1995) Shield, Expansion (Caulking Anchors, Single Lead)
FS RR-W-410E	(2002) Wire Rope and Strand

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) Safety and Health Requirement Manual

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted as stated below in accordance with SECTION 01330:

SD-01 Data

Materials List; GA

Lists of materials as specified herein and in SECTION 05101.

SD-04 Drawings

Drawing; GA

Complete detail drawings for newly installed equipment on the Intake Crane and within Operator’s Cab; as specified herein and in SECTION 05101. Drawings shall include equipment installation details.

SD-09 Reports

Test Reports; FIO

Certified test reports for materials tests and analyses as specified herein and in SECTION 05101.

SD-18 Records

Disposition Records; FIO

Records which identify the disposition of approved material and fabricated items in the work as specified herein and in SECTION 05101.

1.4 TEST OF MATERIALS

1.4.1 General

All materials, supplies, and parts and assemblies thereof entering into the work to be done under these specifications shall be tested, unless otherwise directed, in conformity with the Contract Clauses, and in accordance with the requirements of these specifications. In case the Contractor desires to use stock material not manufactured specifically for the work covered by these specifications, they shall, in accordance with SECTION 01330, submit evidence that such material conforms to the requirements of these specifications, in which case detailed test on these materials may be waived.

1.4.2 Test

All test or trials shall be made in accordance with SECTION 01451. Results of these tests shall be submitted as soon as practicable after

the test are made. The results shall be submitted in a form, which provides a means of determining compliance with the specifications for the material tested.

1.4.3 Specimens Samples

Test specimens and samples for analysis shall be plainly marked to indicate the materials they represent and, if required, they shall be properly boxed and prepared for shipment.

1.4.4 Cost

All cost of all test and trials, excepting the pay and expense of the Government Inspector, shall be borne by the Contractor and shall be included in the contract price for Line Item 0001 and Line Item 0002 of these specifications.

PART 2 PRODUCTS

2.1 STRUCTURAL STEEL

Structural steel shall conform to ASTM A36, ASTM A808, or ASTM A588.

2.2 STEEL FORGINGS

Steel forgings shall conform to ASTM A688, class as required.

2.3 SHAFT STEEL

Steel for shafting shall conform to ASTM A108, A576 or applicable specifications of the Society of Automotive Engineers, Inc.

2.4 BOLTS, SCREWS, AND WASHERS

2.4.1 General

Material for fitted bolts shall conform to the applicable requirements of ASTM A307. Washers shall conform to the applicable requirements in paragraph 2.4.2 f.

2.4.2 Machine Bolts, Studs, Screws and Washers

Machine bolts, studs, screws and washers furnished as an integral part of a catalog item shall conform to the manufacturer’s standard practice. Except where otherwise specified, machine bolts, studs, screws and washers shall conform to the applicable requirements of the following specifications:

a. Threads. All bolts, studs, machine screws, nuts, and tapped holes shall be threaded in accordance with ASME B1.1.

b. Bolts. Bolts shall be finished hex bolts conforming to ASME B18.2.1, SAE grade 2 or higher.

c. Nuts. Nuts shall be hex conforming to ASME B18.2.2.

d. Cap and Set Screws. Cap and setscrews shall conform to the requirements of ASME B18.3 or ASME B18.6.2.

e. Machine Screws and Nuts. Machine screws and nuts shall conform to the requirements of ASME B18.6.3.

f. Washers. Plain washers shall conform to the requirements of ASME B18.22.1.

2.4.3 Structural Bolts

Structural bolts shall conform to the requirements of ASTM A325, ASTM A 490, or ASTM A307, Grade A.

2.4.4

2.5 FLOOR PLATES

Floor plates shall conform to the requirements of ASTM A786 pattern to match existing plate.

2.6 CARBON STEEL PIPE

Carbon steel pipe shall conform to the requirement of ASTM A53.

PART 3 EXECUTION

(NOT USED)

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SECTION 09900

SSCR0309900

PAINTING

TABLE OF CONTENTS

SECTION 09900

PAINTING

PART 1 GENERAL

1.1 GENERAL INFORMATION

The work covered by this section consists of furnishing all plant, labor, equipment, appliances, and materials; and in performing all operations in connection with preparation of surfaces and application of paint and other specified materials on the St. Stephen Intake Gantry Crane. It shall be assumed that the existing paint contains lead. Transportation and disposal requirements for waste generated during removal of the paint are contained in SECTION 02120. In additional to containment requirements as specified below; No Sand, Paint, Lead, etc., shall be allowed to enter the Forebay or Draft Tube areas of the Powerplant.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z87.1	(1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1186	(1993) Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.94	Ventilation
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910, Subpart I	Personal Protective Equipment
29 CFR 1926	Safety and Health Regulations for Construction

29 CFR 1926.62	Lead
40 CFR 60, App A, Mtd 22	Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261, App II, Mtd 1311	Toxicity Characteristic Leaching Procedure (TCLP)
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.22	Number of Copies
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171, Subchapter C	Hazardous Materials Regulations

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-595	(Rev B, Notice 1) Colors Used in Government Procurement

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

MASTER PAINTERS INSTITUTE (MPI)

MPI 9	(Mar 2000) Exterior Alkyd Enamel

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1999) National Electrical Code

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 98-119	(1998, 4th Ed., 2nd Supplement) NIOSH Manual of Analytical Methods

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Guide 6	(1995) Containing Debris Generated During Paint Removal Operations
SSPC Paint 25	(1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (Without Lead and Chromate Pigments)
SSPC SP 1	(1982) Solvent Cleaning
SSPC SP 6	(1994) Commercial Blast Cleaning

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals not having a "GA" designation are for information only. When used, a designation following the "GA" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Accident Prevention Plan; GA,

The Contractor shall submit an Accident Prevention Plan in accordance with the requirements of Section 01 of EM 385-1-1. The plan shall include, but is not limited to, each of the topic areas listed in Appendix A therein and the requirements of paragraph SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects.

Respiratory Protection Program; GA,

The Contractor shall submit a comprehensive written respiratory protection program in accordance with 29 CFR 1910.134, 29 CFR 1926.62, and Section 05.E of EM 385-1-1.

Airborne Sampling Plan; GA,

The contractor shall submit an Airborne Sampling Plan detailing the NIOSH Pub No. 98-119, Factory Mutual, or Underwriters Laboratories approved equipment, equipment calibration procedures, sampling methods, sampling to be performed, and analytical procedures to be used based on the type of work to be performed and anticipated toxic contaminants to be generated. The contractor shall include the name of the accredited laboratory, listed by the

American Industrial Hygiene Association (AIHA), to be used to conduct the analysis of any collected air samples.

Medical Surveillance Plan; GA,

The Contractor shall submit a Medical Surveillance Plan as required in paragraph MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number.

Worker Protection Plan; GA,

The Contractor shall submit a Worker Protection Plan in accordance with the requirements of 29 CFR 1926.62. The plan shall address all necessary aspects of worker protection and shall include activities emitting lead, means to achieve compliance, alternative technologies considered, air monitoring program, implementation schedule, work practice program, administrative controls, multicontractor site arrangements, and jobsite inspections.

Environmental Compliance Plan; GA,

The Contractor shall submit an Environmental Compliance Plan. The plan shall incorporate the submittals for Water Quality Plan, Soil Quality Plan, Ambient Air Monitoring Plan, and Visible Emissions Monitoring Plan. The submitted plan shall also address all aspects of establishing and demarcating regulated areas, ventilation/containment system performance verification, and reporting of accidental releases.

Waste Classification, Handling, and Disposal Plan; GA,

The contractor shall submit a Waste Classification, Handling, and Disposal Plan in accordance with the requirements of 40 CFR 261 and 40 CFR 262 and paragraph Waste Classification, Handling, and Disposal.

Containment Plan; GA,

The Contractor shall submit a plan for containing debris generated during paint removal operations in accordance with the requirements of paragraph Containment. The plan shall include drawings, load-bearing capacity calculations, and wind load calculations. When the design is such that the spent abrasive is allowed to accumulate in quantities greater than 1,000 pounds, and/or impart a significant wind load on the structure, the contractor shall have the drawings approved by a registered structural engineer. The drawings and calculations shall be stamped with the engineer's seal. The contractor shall also

identify the type and placement of water booms, methods for anchoring the booms, and the procedures for removing debris.

Visible Emissions Monitoring Plan; GA,

The Contractor shall submit a Visible Emissions Monitoring Plan in accordance with the paragraph Visible Emissions Monitoring. The plan shall include the provisions for halting work and correcting the containment in the event unacceptable emissions are observed. General statements shall not be used; specific methods, procedures, and details are required.

Water Quality Plan; GA,

For all job sites where lead-containing or other hazardous paint will be removed, the Contractor shall submit a Water Quality Plan. The plan shall include provisions for halting work if spills or emissions are observed entering into bodies of water or found in areas where storm water runoff could carry the debris into bodies of water or storm sewers. The plan shall also address cleanup and reporting procedures.

SD-04 Samples

Specification and Proprietary Paints; GA,

The Contractor shall submit samples of all special paint formula, Military, Master Painter Institute, Commercial Item Description, and SSPC paints. For products that are specified to be applied in accordance with the manufacturer's recommendations the Contractor shall submit the paint producer’s product data sheet or other written instructions for those products. When the required quantity of any type is 50 gallons or less, the Contractor shall submit in lieu of the liquid paint sample:

a. A certified test report showing the results of required tests made on the material and a statement that it meets all of the specification requirements.

b. A certified test report showing the results of required tests made on a previous batch of paint produced by the same firm using the same ingredients and formulation except for minor differences necessitated by a color change and a statement that the previous batch met all of the specification requirements. A report of tests on the proposed batch showing the following properties applicable to the material specifications shall be furnished: color, gloss, drying time, opacity, viscosity, weight per gallon (liter), and fineness of grind.

Thinners; GA,

Samples shall be submitted of the thinners which are those solvents used to reduce the viscosity of the paint.

SD-06 Test Reports

Airborne Sampling Report; GA,

The Contractor shall submit reports of airborne sampling tests as required by paragraph Airborne Sampling.

Inspection and Operation Records; GA,

The Contractor shall submit records of inspections and operations performed in accordance with paragraph INSPECTION. Submittals shall be made on a daily basis.

SD-07 Certificates

Qualifications and Experience; GA,

The Contractor shall submit certification pursuant to paragraph QUALIFICATIONS for all job sites. Submittal of the qualifications and experience of any additional qualified and competent persons employed to provide on-site environmental, safety, and health shall also be provided. Acceptance of this submission must be obtained prior to the submission of other required environmental, safety, and health submittal items.

Qualified Coating Thickness Gages; GA,

Documentation of manufacturer's certification shall be submitted for all coating thickness gages.

1.4 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.4.1 Certified Professional

The Contractor shall utilize a qualified and competent person as defined in Section 01 of EM 385-1-1 to develop the required safety and health submittal and to provide on-site safety and health services during the contract period. The person shall be a Certified Industrial Hygienist (CIH), an Industrial Hygienist (IH), or a Certified Safety Professional (CSP) with a minimum of 3 years of demonstrated experience in similar related work. The Contractor shall certify that the Certified Industrial Hygienist (CIH) holds current and valid certification from the American Board of Industrial Hygiene (ABIH), that the IH is considered board eligible by written confirmation from the ABIH, or that the CSP holds current and valid certification from the American Board of Certified Safety Professionals. The CIH, IH, or CSP may utilize other qualified and competent persons, as defined in EM 385-1-1, to conduct on-site safety and health activities as long as these persons have a minimum of 2 years of demonstrated experience in similar related work and are under the direct supervision of the CIH, IH,

or CSP. For lead containing jobsites, the competent and qualified person shall have successfully completed an EPA or state accredited lead-based paint abatement Supervisor course specific to the work to be performed and shall possess current and valid state and/or local government certification, as required.

1.4.2 Certified Laboratory

The Contractor shall provide documentation which includes the name, address, and telephone number of the laboratories to be providing services. In addition, the documentation shall indicate that each laboratory is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and that each is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT) and will document the date of current accreditation. Certification shall include accreditation for heavy metal analysis, list of experience relevant to analysis of lead in air, and a Quality Assurance and Quality Control Program.

1.4.3 Coating Thickness Gage Qualification

Documentation of certification shall be submitted for all coating thickness gages. Magnetic flux thickness gages as described in ASTM D 1186 shall be used to make all coating thickness measurements on ferrous metal substrates. Gages shall have an accuracy of +/- 3 percent or better. Gages to be used on the job shall be certified by the manufacturer as meeting these requirements.

1.5 SAMPLING AND TESTING

The Contractor shall allow at least 30 days for sampling and testing. Sampling may be at the jobsite or source of supply. The Contractor shall notify the Contracting Officer when the paint and thinner are available for sampling. Sampling of each batch shall be witnessed by the Contracting Officer unless otherwise specified or directed. A 1-quart sample of paint and thinner shall be submitted for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the Government. Costs for retesting rejected material will be deducted from payments to the Contractor at the rate of 400 dollars for each paint sample retested and 100 dollars for each thinner retested.

1.6 SAFETY AND HEALTH PROVISIONS

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply. Paragraph SAFETY AND HEALTH PROVISIONS supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.6.1 Abrasive Blasting

The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

1.6.1.1 Hoses And Nozzles

In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

1.6.1.2 Workers Other Than Blasters

Workers other than blasting operators working in close proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing a noise reduction rating of at least 20 dBA or as needed to provide adequate protection.

1.6.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.134.

1.6.3 Cleaning with Solvents

1.6.3.1 Ventilation

Ventilation shall be provided where required by 29 CFR 1910.146 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (c)(5).

1.6.3.2 Personal Protective Equipment

Personal protective equipment shall be provided where required by 29 CFR 1910.146 and in accordance with 29 CFR 1910, Subpart I.

1.6.4 Paint Application

1.6.4.1 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 20 feet of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas

or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and ductwork shall be electrically bonded and the bonded assembly shall be grounded.

1.6.4.2 Further Precautions

a. Workers shall wear nonsparking safety shoes.

b. Solvent drums taken into the spraying area shall be placed on nonferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred.

c. Insulation on all power and lighting cables shall be inspected to ensure that the insulation is in excellent working condition and is free of all cracks and worn spots. Cables shall be further inspected to ensure that no connections are within 50 feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

1.6.4.3 Ignition Sources

Ignition sources, to include lighted cigarettes, cigars, pipes, matches, or cigarette lighters shall be prohibited in area of solvent cleaning, paint storage, paint mixing, or paint application.

1.6.5 Health Protection

1.6.5.1 Air Sampling

The Contractor shall perform air sampling and testing as needed to assure that workers are not exposed to contaminants above the permissible exposure limit. In addition, the Contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within five working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

1.6.5.2 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the face piece to face seal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-face piece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed

the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas (ses)/vapor anticipated or encountered. Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half- and full-face piece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

1.6.5.3 Protective Clothing and Equipment

All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications. Where necessary for emergencies, protective equipment such as lifelines, body harnesses, or other means of personnel removal shall be used during confined-space work.

1.7 MEDICAL STATUS

Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. Medical records shall be maintained as required by 29 CFR 1910.20. The evaluation shall include:

a. Audiometric testing and evaluation of employees who will work in a noise environment with a time weighted average greater than or equal to 90 dBA.

b. Vision screening (employees who use full-face piece respirators shall not wear contact lenses).

c. Medical evaluation shall include, but shall not be limited to, the following:

(1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.

(2) General physical examination with emphasis on liver, kidney, and pulmonary system.

(3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.

(4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and

FEV, chest x-ray (if medically indicated), blood lead and ZPP (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.

(5) For lead-based paint removal, the medical requirements of 29 CFR 1926.62 shall also be included.

1.8 CHANGE IN MEDICAL STATUS

Any employee whose medical status has changed negatively due to work related chemical and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in paragraph MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physician’s reevaluation statement.

1.9 ENVIRONMENTAL PROTECTION

In addition to the requirements of section 01355 the Contractor shall comply with the following environmental protection criteria.

1.9.1 Waste Classification, Handling, and Disposal

The Contractor shall be responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Waste generated from abrasive blasting lead-containing paints with recyclable steel or iron abrasives shall be disposed of as a hazardous waste or shall be stabilized with proprietary pre-blast additives regardless of the results of 40 CFR 261, App II, Mtd 1311. Where stabilization is preferred, the contractor shall employ a proprietary blast additive, that has been blended with the blast media prior to use. Hazardous waste shall be placed in properly labeled closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas. All hazardous waste shall be transported by a licensed transporter in accordance with 40 CFR 263 and 49 CFR 171, Subchapter C. All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation. In addition to the number of manifest copies required by 40 CFR 262.22, one copy of each manifest will be supplied to the Contracting Officer prior to transportation.

1.9.2 Containment

The Contractor shall contain debris generated during paint removal operations in accordance with the requirements of SSPC Guide 6, Class 2A. Where required the containment air pressure shall be verified visually.

Where required the minimum air movement velocity shall be 100 fpm for cross-draft ventilation or 60 fpm for downdraft ventilation.

1.9.3 Visible Emissions Monitoring

The time of emissions shall be measured in accordance with 40 CFR 60, App A, Mtd 22. Visible emissions shall be monitored for not less than 15 minutes of every hour. Visible emissions for each hour shall be calculated by extrapolation. In no case shall visible emissions extend greater than 150 feet in any direction horizontal from the containment. In no case shall visible emissions be observed in the area of any sensitive receptor. If such emissions occur the job shall be shut down immediately and corrective action taken. The foreman shall be notified whenever visible emissions exceed 40 seconds in a 1-hour period. The foreman shall be notified and the job shall be shut down and corrective action taken whenever visible emissions exceed 75 seconds in a 2 hour period. Total observed visible emissions from the containment shall not exceed 1 percent of the workday. Shutdown and corrective action shall be taken by the Contractor to prevent such an occurrence. The Contractor shall document each time that the work is halted due to a violation of the visible emissions criteria. Documentation shall include the cause for shutdown and the corrective action taken to resolve the problem.

1.9.4 Water Quality

The Contractor shall conduct operations in such a manner that lead containing and other hazardous paint debris do not contaminate the water and so that NPDES permits per EPA regulation 40 CFR 122 are not required for the project. In the event that there are any releases of lead paint debris into the waterways, with reportable quantities of hazardous substances designated pursuant to Section 311 of the Clean Water Act, they shall be reported to the EPA in accordance with 40 CFR 117 and 40 CFR 355. Releases or spills that carry into waterways or storm sewers shall be thoroughly documented. The documentation shall include the time and location of the release, amount of material released, actions taken to clean up the debris, amount of debris recovered, and corrective action taken to avoid a reoccurrence. Releases shall also be reported to the Coast Guard and other state and local authorities as appropriate. If the release is equivalent to 10 pounds or more of lead-containing material in a 24-hour period, it is considered to be a reportable quantity under CERCLA. The Contractor shall comply with 40 CFR 302.

1.10 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be

delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS (NOT UTILIZED)

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 100 degrees F. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Items not to be prepared or coated shall be protected from damage by the surface preparation methods. Machinery shall be protected against entry of blast abrasive and dust into working parts. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Ferrous Surfaces Subject to Atmospheric Exposures

Ferrous surfaces that are to be continuously in exterior or interior atmospheric exposure and other surfaces as directed shall be cleaned by means of dry blasting to a commercial grade. Cleaning and priming shall be done in the shop unless otherwise directed or permitted. Commercial blast cleaning shall conform to the requirements of SSPC SP 6. Welds and adjoining surfaces within a few inches (centimeters) thereof shall be cleaned of weld flux, spatter, and other harmful deposits by blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete removal of each type of deposit. The combination of cleaning methods need not include blasting when preparation of the overall surfaces is carried out by the power tool method. However, brush scrubbing and rinsing with clean water, after mechanical cleaning is completed, will be required unless the latter is carried out with thoroughness to remove all soluble alkaline deposits. Wetting of the surfaces during water-washing operations shall be limited to the weld area required to be treated, and such areas shall be dry before painting. Welds and adjacent surfaces cleaned thoroughly by blasting alone will be considered adequately prepared provided that weld spatter not dislodged by the blast stream shall be removed with impact or grinding tools. All

surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. To the greatest degree possible, steel surfaces shall be cleaned (and primed) prior to lengthy outdoor storage.

3.2 PAINT APPLICATION

3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the Contracting Officer has verified that atmospheric conditions and the surfaces to be coated are satisfactory. Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes. Airless-type equipment shall not be used for the application of vinyl paints.

3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 1 pint per gallon of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

3.2.3 Atmospheric and Surface Conditions

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight

and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition. During periods of inclement weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

3.2.4 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.5 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush or spray to ferrous and nonferrous metal surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer. Paint on plaster, concrete, or other nonmetallic surfaces shall be applied by brush, roller, and/or spray.

3.2.6 Coverage and Film Thickness

Film thickness or spreading rates shall be as specified hereinafter. Where no spreading rate is specified, the paint shall be applied at a rate normal for the type of material being used. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.6.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with a gage qualified in accordance with paragraph Coating Thickness Gage Qualification. They shall be calibrated and used in accordance with ASTM D 1186. They shall be calibrated using plastic shims with metal practically identical in composition and surface preparation to that being coated, and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 1186 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use.

3.2.7 Progress of Painting Work

Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, over spray, or foreign matter by means of air blast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

3.2.8 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. Contacting metal surfaces formed by high-strength bolts in friction-type connections shall not be painted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.9 Drying Time Prior to Immersion

Minimum drying periods after final coat prior to immersion shall be: epoxy systems at least 5 days, vinyl-type paint systems at least 3 days, and cold-applied coal tar systems at least 7 days. Minimum drying periods shall be increased twofold if the drying temperature is below 65 degrees F and/or if the immersion exposure involves considerable abrasion.

3.2.10 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the shop or field prior to final erection shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up

without delay. The first field coat of paint shall be applied within a reasonable period of time after the shop coat and in any event before weathering of the shop coat becomes extensive.

3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Fabricated and Assembled Items

Items that have been fabricated and/or assembled into essentially their final form and that are customarily cleaned and painted in accordance with the manufacturer's standard practice will be exempted from equivalent surface preparation and painting requirements described herein, provided that:

a. Surfaces primed (only) in accordance with such standard practices are compatible with specified field-applied finish coats.

b. Surfaces that have been primed and finish painted in accordance with the manufacturer's standard practice are of acceptable color and are capable of being satisfactorily touched up in the field.

c. Items expressly designated herein to be cleaned and painted in a specified manner are not coated in accordance with the manufacturer's standard practice if different from that specified herein.

3.3.2 Surface Preparation

Ferrous surfaces subject to extended periods of immersion or as otherwise required shall be commercial dry blast-cleaned to SSPC SP 6. The blast profile, unless otherwise specified, shall be 1.5 to 2.5 mils 38 to 63 microns as measured by ASTM D 4417, Method C. Appropriate abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Steel shot or other abrasives that do not produce an angular profile shall not be used. Weld spatter not dislodged by blasting shall be removed with impact or grinding tools and the areas reblasted prior to painting. Surfaces shall be dry at the time of blasting. Blast cleaning to SSPC SP 6 shall be done in the field and unless otherwise specifically authorized, after final erection. Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 6 shall be clean of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the first coat of paint. Upon written request by the Contractor, the Contracting Officer may authorize mill or shop cleaning of assembled of partially assembled components specified to receive one of the vinyl-type paint systems or System No. 21-A-Z employing the epoxy zinc-rich primer. The surfaces, if shop blasted, shall be shop coated with the first and second coats of the specified paint system except that the epoxy zinc-rich primed surfaces shall

receive an extra single spray coat of the zinc primer at the time field painting is started, as specified in the paint system instructions. The shop coating shall be maintained in good condition by cleaning and touching up of areas damaged during the construction period. If pinpoint or general rusting appears, surfaces shall be reblasted and repainted at no added cost to the Government. Prior to the field application of subsequent coats, soiled areas of the shop coating shall be thoroughly cleaned and all welds or other unpainted or damage areas shall be cleaned and coated in a manner to make them equivalent to adjacent, undamaged paint surfaces.

3.3.3 System No. 21-A-Z

The epoxy zinc-rich paint 19B shall be applied in two singles half-lapped spray coats to an average dry film thickness of a minimum of 4.0 mils (100 microns), and a thickness at any point of not less than 2.5 mils (63 microns) or greater than 8.0 mils (200 microns). After a drying period of not less than 6 hours nor more than 96 hours, at least two coats of epoxy polyamide paint shall be applied to produce an average dry film thickness totaling 12 mils (805 microns). If the epoxy zinc-rich paint has been applied in the shop or otherwise has been permitted to cure for longer than 96 hours, it shall be abraded and recoated with an additional thin tack coat of the zinc-rich paint, which in turn shall be overcoated within 96 hours with the first coat of the epoxy polyamide paint. When applying MIL-DTL-24441, the type of thinner, amount of thinner, and required induction time shall be as recommended by the manufacturer. The drying time between non-zinc coats shall not be less than 12 hours nor more than 96 hours. One coat of polyurethane paint shall be applied over the final coat of the epoxy system in one single half-lapped spray coats to an average dry film thickness of a minimum of 2.0 mils. The drying time between the epoxy and polyurethane paint coats shall be as recommended by the manufacturer. See in this Section Paragraph 3.6 “Painting Schedules”.

3.3.4 Protection of Nonpainted Items and Cleanup

Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. In addition, mask and protect items and materials such as machinery, name plates, identification labels, bearings, shafting, and previously unpainted items which would have their function and appearance degraded by paint to keep them free of paint. Paint spillage and painting activity damage shall be promptly repaired.

3.4 INSPECTION

The Contractor shall inspect, document, and report all work phases and operations on a daily basis. As a minimum the daily report shall contain the following:

a. Inspections performed, including the area of the structure involved and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent,

abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

3.5 FINAL CLEANING AND CLEARANCE TESTING FOR LEAD CONTAMINANTS

All facilities and surfaces within or directly adjacent to the regulated area shall be cleaned and decontaminated using phosphate detergents and HEPA vacuums as necessary to provide surfaces that are clean of residual lead dust. Clearance testing shall be performed. A sufficient number of wipe tests shall be performed to document the level of residual lead contamination. No surface shall have greater than 8,000 micrograms of lead per square foot.

3.6 PAINTING SCHEDULES

SYSTEM NO. 21-A-Z

Items to be coated: Entire Gantry Crane

Surface Preparation	1st & 2nd Coat	3rd Coat	4th Coat	5th Coat
SSPC-SP-6	Mil-DTL-24441/19B Formula 159	Mil-DTL-24441/21A Formula 151	Mil-DTL-24441/22A Formula 152	Mil-PRF-85285 Type II Color No. 13538 (Color to be determined and verified by the Government)

SECTION 15000

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MAIN HOIST MECHANICAL

TABLE OF CONTENTS

SECTION 15000

MECHANICAL

PART 1 GENERAL

1.1 GENERAL INFORMATION

This section covers the mechanical work for the repair of the 50-ton intake gantry crane at the St. Stephen Project. The Contractor shall submit detailed drawings and calculations for Contractor-designed components. Contract and reference drawings are not sufficiently detailed to show all the dimensions required for fabrication and installation of structural and mechanical equipment. See SECTION 01600 for inspection and cleaning requirements. See SECTION 05502 for additional products.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced to in the text by basic designation only.

AMERICAN BEARING MANUFACTURERS ASSOCIATION, INC (ABMA)

ABMA 8.2	(1999) Ball and Roller Bearing Mounting Accessories Inch Design
ABMA 19.1	(1993) Tapered Roller Bearings Radial Metric Design
ABMA 19.2	(1999) Tapered Roller Bearings Inch Design
ABMA 20	(1996) Radial Bearings of Ball, Cylindrical Roller and Spherical Roller Types – Metric Design

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)

AGMA 2001-C	(1995) Fundamental Rating Factors & Calculation Methods for Involute Spur and Helical Gear Teeth
AGMA 6010-F	(1997) Standard for Spur, Helical, Herringbone and Bevel Enclosed Drives

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B4.1	(1967; R 1999) Preferred Limits and Fits for Cylindrical Parts
ASME B15.1	(2000) Standard for Mechanical Power Transmission Apparatus, Safety
ASME B17.1	(1967; R 1998) Keys and Keyseats

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B22 (2002) Bronze Castings for Bridges and Turntables

FEDERAL SPECIFICATIONS (FS)

FS RR-W-410 Wire Rope and Strand

SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

SAE J-462 (1981) Copper Based Casting Alloys, Alloy Numbers 64 and 660

(USACE U.S. ARMY CORPS OF ENGINEERS)

EM 385-1-1 (1996) Safety and Health Requirement Manual

1.3 SUBMITTALS

Submittals required by this section of the Technical Specifications shall be for Government approval (GA) or for information only (FIO), and shall be submitted as stated below in accordance with SECTION 01330.

SD-01 Data

Descriptive Data; GA

Complete descriptive data, catalog cuts, detailed drawings, parts list, and other data for all components furnished, Para. 2.1.

Computations; GA

Registered Professional Engineer shall reviewed, approved and sealed all design computations for all Contractor-designed components, Para.2.1.

SD-04 Drawings

Drawings; GA

Registered Professional Engineer shall reviewed, approved and sealed all dimensioned outline and detail drawings, Para 3.1.1

PART 2 PRODUCTS

2.1 GENERAL

All products provided shall conform to requirements of the plans and specifications. The Contractor shall submit complete descriptive data; catalog cuts and detailed drawings, calculations, parts list, and other data for all components furnished that supports required design criteria.

2.2 SHAFT COUPLINGS

2.2.1 Flexible Couplings

Flexible couplings shall be capable of developing the full strength of the shafting that they connect and shall be pressed and keyed thereon. In determining the coupling capacity, the manufacturer's published rating shall be divided by a service factor of 1.5 or factor recommended by manufacturer whichever is greater. Couplings shall be forged steel and shall transmit torque by means of external gears on hubs engaging in internal gears on the coupling sleeves. Sleeves shall be fastened so that they cannot work or slip off. Couplings with sleeves held in place or retained by snap rings will not be permitted. Couplings shall be enclosed and sealed to retain the lubricant and shall be oil tight under both static and operating conditions. A flexible coupling shall be provided at each motor and on the reducer output shaft to the pinion. Motor and reducer shafts shall extend all the way through the coupling halves. Brake wheels shall not be used in lieu of couplings.

2.3 GEARS AND SPEED REDUCERS

2.3.1 General

Speed reducers shall be in accordance with AGMA 6010-E. Gears for final reductions shall be of the spur type, in accordance with AGMA 2001-C ability rating of gears. A value of not less than 1.0 shall be used for the overload factor, size factor, surface condition factor, factor of safety, and temperature factor, and a value of 1.0 shall be used for the life factor. The durability rating of gears shall be based on not less than 0.8 of the tangential load produced at rated horsepower output of the motor. In calculating the strength rating of gears, a value of not less than 1.0 shall be used for the overload factor, size factor, surface condition factor, factor of safety (fatigue strength) and temperature factor, and a value of 1.0 shall be used for the life factor. A value of 70 percent of the allowable fatigue or bending design stress shall be used for gears for the trolley and bridge drives and other gears that are subject to reverse loading. In addition, the gears shall be designed such that the bending stress produced by the rated torque (factory adjusted torque setting) of the brakes will not exceed 50 percent of the yield point of the material. Also, the gears shall be designed such that the bending stress produced by the maximum torque of the motor will not exceed 75 percent of the yield point of the material. The materials yield points used shall be the allowable yield strength of the materials given in AGMA 2001-C and AGMA 6010-E, except that for surface hardened gears the yield point shall be that of the base material. Gears shall be cut from solid metal to tolerances equal to or better than AGMA Quality Number 6. Overhung gears or pinions will not be permitted except for spiral bevel pinions in speed reducers. Pinions shall be forged integral with the shaft where practicable. Gears shall be pressed or shrunk on the shaft and provided with standard rectangular keys. Gears may be cast-steel, steel that is welded and annealed, or forged steel. Welding of defective gear teeth with not be permitted.

2.3.2 Speed Reducers

Speed reducers shall be of the right angle bevel - helical gear type or parallel shaft type entirely self-contained in an oil tight, steel or cast-iron housing designed to maintain shafts and bearings in accurate alignment. The pitch line velocity of spur gears shall not exceed 760 feet per minute at rated load and speed. The speed reducer shall be a standard catalog product of a speed reducer manufacture with special shafts to suit. The rating of standard speed reducers shall be based on the catalog rating of the speed reducer. Catalog rated speed reducers shall have a service factor of not less than 1.5. Rating of the speed reducer shall be based on the rated horsepower output of the motor or on the full load torque of the motor, depending on the operating speed, taking into account the friction losses in the machinery connecting the motor to the respective speed reducer. In addition, the speed reducer shall be sized such that the rated torque (factory torque setting) of the brake will not exceed the catalog torque rating of the speed reducer. Bearings shall be of anti-friction type. Provisions shall be made for adequate lubrication of all gears and bearings throughout the range of operating speeds. Each reducer shall be provided with a permanently attached nameplate containing the following information: The name of the manufacturer, the reduction ratio, the rated capacity, speed, the service rating or service class. All speed reducers shall be held securely in place by one of the following methods:

a. Fitted bolts installed with plain washers and double nuts.

b. Machine bolts and dowels. The dowels shall be of such size as to adequately locate the device and resist the total shearing forces. The bolts shall be installed with nuts and lockwashers. Shear bars will not be allowed.

2.4 BEARINGS

2.4.1 General

Except where otherwise specified, bearings may be of the roller or ball type. Bearings shall be so designed as to be easily replaceable and shall be placed as close as possible to the points of loading where feasible, bearing bases for gear trains shall be made in one piece to ensure that alignment and spacing will be maintained. Where welded construction is employed for bearing housing assemblies or pedestals, the weldment shall be stress relieved. The Contractor shall submit detailed welding procedures for the bearing housing assembly. Bearing fits and lubrication shall be as recommended by the manufacturer for the application. Bearing bases shall have solid bases and shall be held securely in place by one of the following methods:

a. Fitted bolts installed with plain washers and double nuts.

b. Machine bolts and dowels. The dowels shall be of such size as to adequately locate the device and resist the total shearing forces. The bolts shall be installed with nuts and lockwashers. Shear bars will not be allowed.

2.4.2 Antifriction

Antifriction bearings shall be of standard types most suitable for the respective application and shall have both inner and outer races. Ball and roller bearings shall conform to the applicable requirements of the ABMA 19.1, 19.2 and 20. The manufacturer's published ratings shall be used in determining the bearing capacity. Fixed bearings shall be secured against a shaft shoulder by means of a locknut and bearing lockwasher as described in ABMA 8.2. Floating bearings shall be secured against a shaft shoulder by means of a retaining ring or locknut and lockwasher, except that floating bearings at intermediate points on long shafts may be secured with a tapered sleeve and locknut and lockwasher. Bearings, except as noted below, shall have a L-10 life of 5,000 hours and shall be designed for the loads and speeds resulting from the crane performance specified in SECTION 01600. On other bearings where thrust occurs, unless the design is such that the thrust on a bearing can be determined, the full thrust load shall be added to each bearing on the shaft or axle. Bearings shall have oil-tight enclosures and, except for sheave bearings, shall have double lipped seals; a synthetic rubber spring-loaded element to retain the grease and another synthetic rubber element to exclude foreign matter.

2.5 SHAFTING

2.5.1 General

New shafting shall be designed to provide factors of safety not less than 5 with loads increased by the applicable shock factors. A combined shock and fatigue factor of 1.25 shall be used for hoist or other non-reversing loads. Shafting in speed reducers that are standard catalog items shall conform to the requirements of paragraph 2.3.3.

2.5.2 Support

New shafting shall be amply supported and provided with adequate means to prevent longitudinal movement. Torsional shaft deflection shall not exceed 0.08 degrees per foot of shaft length at rated load. Shafting of non-uniform diameter shall be made of hot-rolled steel, shall be turned with fillets of not less than 1/4-inch radius where changes of section occur, and shall be polished at the bearings and seals. Plain shafting 6 inches and smaller in diameter may be made of cold-finished steel. Shaft fillet radii at bearings shall be the maximum size recommended by the bearing manufacturer for the bearing being used.

2.6 KEYS AND KEY SEATS

Keys and key seats shall conform to ASME B17.1.

2.7 LUBRICATION

Oil lubrication shall be provided for gear trains, gear- or grid-type couplings, and speed reducers except that grease lubrication will be acceptable for drum gears. Lubrication for other mechanical operating parts shall be by means of high-pressure grease, and industrial button-type fittings. The lubricating fittings of journals or bearings shall

be in accordance with manufacturer's recommendations. Fittings shall be readily accessible and, where necessary, shall be piped to convenient points using copper or brass pipe of ample size, adequately fastened with grommets and clamps to prevent vibration during gantry operations. Drain and fill plugs of speed reducers and gear cases shall be located so as to be readily accessible and shall be provided with extension piping where required.

The lubricants to be used shall be as follows:

GEAR REDUCER LUBE OIL: Mobil Oil Co. Mobilgear 632 or as specified by reducer manufacturer.

COUPLING GREASE: Texaco Oil Co. Multifak EP2 or as specified by coupling manufacturer.

BEARING GREASE: Texaco Oil Co. Multifak EP2 or as specified by bearing manufacturer.

BULL/PINION GEAR LUBE: Texaco Oil Co. Crater 2X

WIRE ROPE LUBRICANT: Eureka Chemical Co. Fluid Film Aerosol or as specified by wire rope manufacturer.

2.8 GUARDS, COVERS, AND DRIP PANS

Safety guards shall be provided throughout the crane where necessary for protection of operators and others from injury. Couplings, shafts, projecting setscrews, keys, and similar rotating parts shall be provided with metal guards in accordance with the applicable requirements of ASME B15.1. Wires or other parts carrying current at any time shall be adequately guarded to prevent persons or equipment from coming in contact with live parts. Suitable drip pans made of steel plate shall be provided to collect oil and grease that may drip from operating parts (new and existing). Drip pans shall be removable for cleaning without dismantling of equipment.

2.9 WIRE ROPE

Wire rope shall conform to the requirements of Fed. Spec. RR-W-410, Type I, Class 2, 6 x 19, construction optional, improved or extra improved plow steel, performed, regular lay, uncoated, independent wire rope core. The wire rope shall be the same size as existing wire rope. Wire rope shall come from a domestic wire rope manufacturer.

PART 3 EXECUTION

3.1 MAIN HOIST

3.1.1 General

Existing reducer, pinion, main hoist gear, bearings, and wire rope shall be replaced. New mounting bases and bearing stands shall be fabricated and installed. Submit detailed drawings and design calculations of all components for approval before fabrication. Work on other components is specified below.

3.1.2 Main Hoist Drum

The main hoist drum shall be removed, cleaned, inspected, and reinstalled (see SECTION 01600). The main hoist drum shall be aligned such that misalignment between the pinion and the mating bull gear does not exceed 0.0008 inch per inch of tooth face at all load conditions.

3.1.3 Main Hoist Pinion and Bull Gear

3.1.3.1 Main Hoist Pinion and Pinion Shaft

Design and provide a new pinion and pinion shaft. Bore diameter to suit the new reducer output shaft. The existing pinion has the following characteristics (contractor to verify):

OD	11-1/2	inches
Pitch Diameter	10	inches
Face Width	10-1/8	inches
DP	2	
Pressure Angle	20	degrees
No. of Teeth	20	
AGMA Quantity	6	

3.1.3.2 Main Hoist Bull Gear

Design and provide a new bull gear and mounting bolts. The existing gear has the following characteristics (contractor to verify):

OD	40-7/8	inches
Pitch Diameter	40	inches
Face Width	10	inches
DP	2	
Pressure Angle	20	inches
No. of Teeth	80	
AGMA Quantity	6	

3.1.4 Drum Bearing (Non-Drive End)

The existing drum bearing and drum bearing stand shall be cleaned and inspected. The bearing shall be replaced.

3.1.5 Main Hoist Gear Reducer

A new parallel shaft gear reducer shall be provided as shown. Reduction ratio shall be 112:1. The reducer may require a custom shaft to accommodate the new coupling. The reducer shaft shall be stiff enough not to cause excessive gear misalignment. New mounting bases, bearings stands, and bearings shall be furnished.

3.1.6 Mounting Bases

The existing brake, motor, reducer, pinion, and gear bearing mounting bases shall be replaced, with new mounting bases designed and installed. Each mounting base shall be one weldment for mounting of the associated component except the bearing assembly for both pinion bearings and the main hoist gear bearing shall be a single, common weldment, as shown on the drawings. Submit detailed drawings showing

the installation of the mounting bases. The mounting bases shall be welded directly to the crane structure, not to the floor plate. See the contract drawings for additional details.

3.1.7 Gear and Coupling Safety Guards

Metal Safety Guards shall be provided for gears and couplings. Safety Guards shall be in accordance with ASME B15.1. Contractor may submit proposal for reusing or modifying existing safety guards.

3.1.8 Miscellaneous Items

Miscellaneous items such as bolts for replaced components, keys, grease fittings, grease line tubing, spiral pins, snap rings, etc. shall be replaced with new during rebuilding/reassembling of components.

3.1.9 Wire Rope

New wire rope shall be provided and installed. The existing reeving system consists of two (2) 1 ¼ inch ropes with 2 parts each. One end dead ends on the gantry structure and the other end is attached to the drum. The hoist drum centerline to lifting beam upper limit is approximately 108 inches. The lifting beam travel from the upper limit to the lower limit is 85 feet.

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SECTION 15995

SSCR0315995

MISCELLANEOUS HIRE

TABLE OF CONTENTS

SECTION 15995

MISCELLANEOUS HIRE

PART 1 GENERAL

1.1 GENERAL INFORMATION

As the condition of crane cannot be determined until the crane is disassembled, it is anticipated that work in addition to that specified in other sections may be required. This additional work will be directed in writing to be accomplished under an item or items in this section. Where work is specified in other sections to be accomplished under these items, no work shall be accomplished until the Government inspects the item and specific directions are given in writing. The unit prices to be charged for labor for additional work shall not exceed the unit price quoted in the Bidding Schedule which price shall include the price for supervision, equipment, tools, labor, materials, transportation of items to and from site to work place, overhead, and incidentals required for the work. The estimated quantities in the Bidding Schedule for these items are for canvassing bids and more or less work than indicated may be required.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.1 SKILLED CRAFTSMAN HIRE (OPTIONAL)

Furnish skilled craftsman, such as Millwright, Mechanic, Welder, Painter, etc. to perform work on the various parts and types of equipment.

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SECTION 16050

SSCR0316050

ELECTRICAL WORK AND EQUIPMENT

TABLE OF CONTENTS

SECTION 16050

ELECTRICAL WORK AND EQUIPMENT

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work specified under this section includes the furnishing and installation of load cells and wind speed indicator and the repositioning of existing electrical components for the intake, gantry crane at St. Stephen Powerhouse.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent indicated by the references thereto. The publications are referred to in the text by basic definition only.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 383	(1974; R 1992) Class 1E Electric Cables; Field Splices and Connections for Nuclear Power Generating Stations

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA WC 57	(1999) Control Cables
NEMA WC 70	(1999) Non-shielded Power Cables Rated 2000 Volts or Less for the Distribution of Electric Energy

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2000) National Electrical Code

1.3 SUBMITTALS

Submittals required by this section of the Technical Specifications shall be for Government approval (GA) or for information only (FIO), and shall be submitted as stated below in accordance with SECTION 01330. The time of submittals shall be in accordance with SECTION 01330, unless otherwise indicated below.

SD 01 Data

Three (3) copies of the following data shall be submitted:

Load Cells; GA

Complete descriptive literature and specifications with necessary catalog cuts, photographs, and drawings to clearly indicate the construction of the units.

Insulated Wire and Cable; GA

Data to demonstrate that the proposed wire and cable conform to these specifications. This information shall include the name of the manufacturer and trade name or designation, the standard to which manufactured (NEMA, etc.), voltage rating, insulation material and thickness, and other pertinent features. Procurement of the wire and cable shall not be made until the data has been approved.

SD 04 Drawings

Dimensioned Outline Drawings; GA

Locations and layout of all electrical equipment, including cabinets, motors, brakes, and interconnecting conduits. Drawings shall include detailed locations of all drilling required in structural members. Weights of items shall be included.

Detail Drawings and Data; GA

Load cell and wind speed indicator arrangements and components.

Assembly Drawings and Diagrams; GA

Dimensioned panel layouts and assembly drawings, functional, schematic, and wiring diagrams, interconnecting wiring diagram, and construction wiring diagrams. Assembly drawings shall show physical arrangements of components and systems. Functional diagrams, one-line diagrams or block diagrams, shall illustrate the systems' operation, and interactions between components and between systems. The schematics and wiring diagrams shall include power, control, and communication circuitry, and shall indicate the main power collectors. The wiring diagrams shall indicate the wiring for individual items of equipment within all panels and equipment items, terminal board connections, wire designations, and sizes and types of wire. The wiring diagrams shall also show all connections between individual panels, and between panels and separately located items.

SD-06 Instructions

Operation and Maintenance Information; GA

Six (6) complete copies of operating instructions outlining step-by-step procedures required for system start up, operation, and shutdown shall be provided. The instructions shall include the manufacturer's name, model number, service manual, parts list, and brief description of all equipment and their basic operating features. Manual shall also contain a description of the scheme of operation and of the provisions for adjusting the operating characteristics in the field.

Maintenance Instructions; GA

Six (6) copies of maintenance instructions listing routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guide shall be provided. The instructions shall include conduit layout, equipment layout and simplified wiring, and control diagrams of the system as installed. Instructions shall be approved prior to training.

1.4 GENERAL REQUIREMENTS

1.4.1 Type of Equipment and Quality

All equipment shall be of the type normally furnished for crane applications and service, unless specified otherwise. All equipment shall be the standard products of manufacturers specializing in the production of this type of equipment as evidenced by the existence of previously published catalog data. Equipment shall essentially duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening. All equipment shall be new and unused, unless excepted elsewhere in these specifications. Defective equipment, or equipment or finishes damaged in the course of installation shall be replaced or repaired as approved. Equipment and materials for the same or similar or allied services shall be of the same manufacturer and type, and when of the same rating shall be interchangeable.

1.4.2 Code

The installation shall be in accordance with the National Electric Code and the National Electrical Safety Code, except where otherwise specifically indicated on the contract drawings or called for in the specifications. Omissions of details from the drawings or specifications shall not be construed as permitting deviations from code requirements.

1.4.3 Nameplates

Each item of electrical equipment shall be provided with a nameplate. Motors and brakes shall have nameplates conforming to the requirements of their applicable standards. Each other item shall, in addition to that provided by the manufacturer, be provided with a nameplate designating its function and service. All proposed designations shall be submitted to the Contracting Officer for approval. Designation nameplates shall be of 20 gage stainless steel with embossed lettering, laminated plastic with lettering engraved through upper layer, or anodized aluminum, stainless steel, plastic, or other material of equivalent durability which has engraved or etched lettering filled with enamel of a contrasting color. All nameplates shall be attached to the equipment with corrosion resisting screws.

1.4.4 Tests

Tests, unless otherwise specified, shall be made in conformity with the applicable Standards of the Institute of Electrical and Electronics Engineers.

1.4.5 Storage and Handling

Materials and equipment shall be suitably protected from dampness, dust and physical damage.

1.5 MAINTENANCE ITEMS

1.5.1 Spare Parts

One set of manufacturer's recommended spare parts shall be furnished and delivered to the site. The spare parts shall be packaged for long term protection and storage. The packaging shall be legibly labeled to identify the spare parts. A list of the furnished spare parts shall be included in Maintenance Manual.

PART 2 PRODUCTS

2.1 LOAD CELL

A load cell shall be placed on each hoist to provide alarm circuits and continual load readout. The load cells shall be installed such that they do not reduce the hoist’s original lift distance. The load cells shall be electronic type with a load indicator. The load indicator with digital display shall be calibrated in tons for the main hoist and auxiliary hoist and be accurate to within 2 percent of the rated capacity of the load cell. The display shall be easy to read with characters measuring 1 inch high by 4 inches wide and shall have some kind of device to prevent glare on the display.

2.2 WIND SPEED INDICATOR

An wind speed indicator shall be mounted at the uppermost point on the crane. An analog or digital display, calibrated in mph, shall be placed in the cab within clear view of the operator. The wind speed display shall also have an alarm system that will notify the crane operator when winds gust above a set speed. The operator shall be able to change the wind speed for which the alarm will sound. The wind speed indicator shall have a range of 10-60 mph.

2.3 INSULATED WIRE AND CABLE

2.3.1 General

Materials, construction and tests, unless otherwise specified, shall conform to the applicable requirements of NEMA Pub. No. WC 70 and WC 57, and to the referenced requirements of IEEE Standard 383. Parts, tables, sections, appendices, grades and classes specified below will refer to NEMA WC 70, unless otherwise stated. Wire for power circuits shall have a current carrying capacity of not less than the full-load current of the circuit, but in no case less than No. 10 AWG. Wire for control circuits shall not be smaller than No. 14 AWG.

2.3.2 Conductors

Conductors shall conform to all the applicable requirements of Section 2 of NEMA WC 70 or part 2 of WC 57 and shall be annealed copper wire. Conductors shall be tin or lead alloy coated, or bare, as required by the type of insulation used. Conductors shall be solid or stranded as required below:

Power and Control Circuits. Conductors shall have Class B or C stranding.

2.3.3 Insulation

Insulation shall be a cross-linked polyethylene (XLPE) meeting the requirements of Section 3 or NEMA WC 70 or of Part 3 of NEMA WC 57. Insulation thickness shall be as required by Table 3-1, Section 3, of NEMA WC 70 or Part 3 of NEMA WC 57. Single conductor cross-linked polyethylene insulated cable with Column A thickness only will be permitted without a jacket. Single-conductor EPR conductors shall have a jacket.

2.3.4 Jackets

An outer jacket of a synthetic thermosetting material shall be applied over multiple-conductor cables. Single-conductor cable s and individual conductors of a multiple-conductor cable may have a jacket. The jacket shall be tightly and concentrically formed around the core of the cable. Single-conductor cables shall have jackets when insulation thicknesses are in accordance with Section H of NEMA WC 70.

The Jacket shall be one of the materials listed below in accordance with the applicable paragraphs of NEMA WC 70. Polyvinyl chloride compounds will not be permitted. Variations from the materials required below will be permitted only if approved for each specific use, upon submittal of sufficient date to prove that they exceed all specified requirements for the particular application.

a. Neoprene, Heavy-duty black.

b. Chlorosulfonated polyethylene, Heavy-duty black.

c. Chlorinate polyethylene, Cross-linked, Heavy-duty.

The outside diameter of single-conductor wires and multiple conductor cables shall not vary more than 5 percent and 10 percent, respectively from the manufacturer’s published catalog data.

2.3.5 Festoon System Cable

The connections to the trolley shall be made using type SO cables with 140?F, 600-volt insulation and neoprene jacket for control, circuits. So cables shall conform to the applicable requirements of UL 62. Conductors shall have not less than Class H stranding. If shielded cables are needed to reduce electrical interference, descriptions of the proposed cables shall be submitted for approval. Shielded cables shall be of fire-resistant materials, having conductors with thermosetting insulation of equivalent thickness to those in type SO cables, with thermosetting jackets, and durable, flexible shields suitable for long-term reliability in the intended application.

2.4 WIRE MARKERS

Tube-type markers such as branded wire markers manufactured by Floy Tag and Manufacturing Co., shall be suitable for contact with rubber, neoprene, or plastic, or any other type of insulation material used. Tubing shall be sized to fit the wire being marked and shall have permanent black marking on a light-colored background. A written certificate from an approved independent testing laboratory shall be furnished in duplicate to indicate that the markers will not stain or discolor after 20 years service when subjected to an accelerated aging test while in contact with wire insulating materials.

PART 3 EXECUTION

3.1 EQUIPMENT INSTALLATION

3.1.1 General

All work shall be installed as shown and in accordance with the manufacturer's recommendations, unless otherwise specified. All necessary interconnections, services, and adjustments required for a complete and operational system shall be provided. Electrical work shall be in accordance with NFPA 70. The location and source of power for load cells, wind speed indicator, and displays shall be determined in the field and submitted for approval.

3.1.2 Manufacturers Technical Services

Equipment manufacturers shall make available the services of a competent installation technician during installation, startup, and testing. He shall have the responsibility of checking the installation and making any field adjustments necessary to obtain a working system within the applicable requirements. The manufacturer's representative shall also be responsible for supervision of all testing, and for providing system training.

3.1.3 Conduit Installation

All wiring between equipment units or components shall be installed in rigid, hot-dip galvanized steel conduit, except that liquid-tight flexible conduit may be used for short connection when so approved by the Contracting Officer. The conduit shall be securely mounted and installed in a neat and workmanlike manner. Conduit shall not be run on top of girders or walkways and, except where necessary, shall not be exposed to view from the powerhouse floor. Conduit junction boxes, cover plates, and fittings shall be galvanized cast or malleable iron, cast aluminum, or cast brass. Turns shall be made by means of conduit bodies, in order that the conduit may fit close to the crane framework. All joints shall be threaded, and all terminations at equipment units or components shall be made by lock nuts and bushings or shall be threaded. Conduit unions may be used to join conduit where standard couplings cannot be used, and as required to permit dismantling for shipment. No running threads will be permitted. Ends of conduit shall be carefully reamed. Separate conduit systems shall be provided for power, control and lighting circuits. The entire conduit system shall

be grounded. No conduit smaller than 3/4 inch size shall be used. All mechanical work of installing the conduit shall be complete before installing wire.

3.1.4 Wiring

All conductor connections, except for splices in lighting conductors which are made in junction boxes, shall be terminated at terminal studs or terminal blocks using approved indented terminal connectors of the ring-tongue type which are equal to "STA-KON" type as manufactured by Thomas and Betts Co. All screw type terminals shall have lock washers and all stud type terminals shall have contact nuts and either all-metal locking nuts or lock washers. No splices shall be made in any wiring on a panel or in a conduit. All wiring shall be color coded. Wiring, entering or leaving control cabinets, boxes or enclosures, shall be identified by means of the numbers used for identification on the Contractor's wiring diagrams. Single conductors and individual conductors of cables shall be identified with non-metallic tube-type markers at each termination. Tubing shall be sized to fit the wire and shall be uniform in position. The tubing shall be stamped with black wire numbers. Multiple-conductor cables shall be identified with cable designation by embossed aluminum band markers at each termination.

3.2 TESTING

3.2.1 General

Each system and item shall be tested, as required below, to determine if the item is free from electrical and mechanical defects and conforms to the requirements of the specifications. The tests of systems and major components shall be performed under the supervision of the manufacturers' qualified representatives. All tests shall be witnessed by the GQAR, unless waived in writing, and no equipment shall be shipped until it has been approved for shipment by the GQAR. The Contractor shall notify the GQAR 24 hours before tests and measurements are made on individual items such as wire Megger checks, and 14 days before the systems' performance and acceptance tests are to be conducted. The test equipment and the test methods used shall conform to the applicable requirements of ANSI, IEEE and NEMA standards, and shall be subject to the approval of the GQAR. The Contractor shall furnish five certified copies of the reports of all tests recording all data obtained during any given test. Certified copies of the results of the performance and speed-torque tests for duplicate motors will be accepted in lieu of requiring these tests to be repeated. The Contractor shall furnish all instruments and personnel required for the tests. The cost of performing all tests shall be borne by the Contractor and shall be included in the price bid.

3.2.2 Performance Testing

Upon completion of the installation, the system shall be subjected to a complete functional and operational performance test by the Contractor. Test shall determine that the system is free from grounded, shorted, or open circuits. When all corrections have been made, the system shall be retested to assure that it is functional. Tests shall include as a minimum demonstration of all control functions including component failure and signal failure modes, and other tests as specified below.

All safety features shall be demonstrated. Copies of performance test reports shall be submitted in accordance with paragraph SUBMITTALS.

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ATTACHMENTS

	DESCRIPTION	No. Of PAGES
A	CONSTRUCTION QUALITY CONTROL REPORT	2
B	DEFICIENCY TRACKING LOG	1
C	LOG AND SUMMARY OF OCCUPATION INJURIES AND ILLNESSES (OSHA FORM 200)	2
D	MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PROGRAM	3
E	ACTIVITY HAZARD ANALYSIS	1
F	REPORT OF WEEKLY SAFETY MEETING (SAC FORM 253)	1
G-1	SAD FORM 1437a-R, FLOATING PLANT	8
G-2	SAD FORM 1437b-R, LAUNCHES, MOTORBOATS, AND SKIFFS	2
G-3	SAD FORM 1666a-R, CRAWLER, TRUCK, AND WHEEL MOUNTED CRANES	4
G-4	SAD FORM 1666b-R, PORTAL, TOWER, AND PILLAR CRANES	2
G-5	SAD FORM 1666c-R, RIGGING	4
G-6	SAD FORM 1666d-R, MOTOR VEHICLES, TRAILERS, AND TRUCKS	3
G-7	SAD FORM 1666e-R, CRAWLER TRACTORS AND DOZERS	2
G-8	SAD FORM 1666f-R, SCRAPERS, MOTOR GRADERS, AND OTHER MOBILE EQUIPMENT	3
G-9	SAD FORM 1666g-R, MATERIAL HOISTS	1
G-10	SAD FORM 1666h-R, EARTH DRILLING EQUIPMENT	1
H	SHOP DRAWINGS (ENG 4288-R)	5
H-1	TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES,MANUFACTURERS CERTIFICATES COMPLIANCE (ENG FORM 4025-R)	2
I	DISCLOSURE OF LOBBYING ACTIVITIES Standard Form LLL	3
J	OMITTED(BORINGS)	
K	OMITTED (TURTLES/MANATEES/WHALES)	
L	WAGE RATES	2

ATTACHMENTS

	DESCRIPTION	No. Of PAGES
M	CONSTRUCTION PROGRESS CHART	1
N	MINIMUM STANDARD FOR TEMPORARY ELECTRICAL SERVICE	1
O	ELECTRICAL SERVICE REQUIREMENTS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS	11

FORMAT

CONTRACTOR'S NAME
(Address)

CONSTRUCTION QUALITY CONTROL REPORT

Date:_____ Report No._____

Contract No._____

Description and Location of Work:_____
_____

Weather: (Clear) (P. Cloudy) (Cloudy): Temperature:_____-Min,_____Max:;
Rainfall_____Inches

Contractor/Subcontractors and Area of Responsibility .
a. _____
b. _____
c._____
d._____
e._____
f._____
g._____

1. Work Performed Today:

(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above.)

_____

2. Results of Control Activities:

(Indicate whether: P-Preparatory, I-Initial, or F-Follow-up and include satisfactory work completed or deficiencies with action to be taken.)

_____

3. Test Required by Plans and/or Specifications Performed and Results of Tests:

_____

4. Monitoring of Materials and Equipment:

_____

5. Off-Site Surveillance Activities:

_____

6. Job Safety and Health Deficiencies:

(Daily Comment Required)

_____

7. Remarks:

a. (Cover any conflicts in plans and specifications or instructions.)

b. (Action taken in review of submittal.)

c. (Verbal instructions received.)

_____

CONTRACTOR'S VERIFICATION:

The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

_____
Chief of Contractor Quality Control

DEFICIENCY TRACKING LOG

DEFICIENCY NUMBER	INITIAL REPORT		SCHEDULED Corrective Action		When Corrected		REMARKS
	Report#	DATE*	Report#	DATE	Report#	DATE**	

*Include initials of who identified deficiency
** Include initials of who corrected deficiency

Log Prepared by:_____

OSHA Form 200

U.S. Department of Labor

For Calendar Year 19____ Page ___ of ___

Company Name

Establishment Name

Establishment Address

Form Approved
O.M.B. No. 1220-0029

Extent of and Outcome of INJURY						Type, Extent of, and Outcome of ILLNESS											
Fatalities	Nonfatal Injuries					Type of Illness							Fatalities	Nonfatal Illness				
Injury Related	Injuries With Lost Workdays				Injuries Without Lost Workdays	CHECK Only One Column for Each Illness (*See other side of form for terminations or permanent transfers.*)							Illness Related	Illnesses With Lost Workdays				Illnesses Without Lost Workdays
Enter DATE of death. Mo./day/yr.	Enter a CHECK if injury involves days away from work, or days of restricted work activity, or both.	Enter a CHECK if injury involves days away from work.	Enter number of DAYS *away from work.*	Enter number of DAYS of *restricted work activity.*	Enter a CHECK if no entry was made in columns 1 or 2 but the injury is recordable as defined above.	Occupational skin diseases or disorders	Dust diseases of the lungs	Respiratory conditions due to toxic agents	Poisoning (systemic effects of toxic materials	Disorders due to physical agents	Disorders associated with repeated trauma	All other occupational illnesses	Enter DATE of death. Mo./day/yr.	Enter a CHECK if illness involves days away from work, or days of restricted work activity, or both.	Enter a CHECK if illness involved days away from work.	Enter number of DAYS *away from work.*	Enter number of DAYS of *restricted work activity.*	Enter a CHECK if no entry was made in columns 8 or 9.
(1)	(2)	(3)	(4)	(5)	(6)	(7)							(8)	(9)	(10)	(11)	(12)	(13)
						(a)	(b)	(c)	(d)	(e)	(f)	(g)						

Certification of Annual Summary Totals By _____ Title _____ Date _____

OSHA No. 200 POST ONLY THIS PORTION OF THE LAST PAGE NO LATER THAN FEBRUARY 1.

Bureau of Labor Statistics
Log and Summary of Occupational
Injuries and Illnesses

NOTE: This form is required by Public Law 91-596 and must be kept in the establishment for *5 years*. Failure to maintain and post can result in the issuance of citations and assessments of penalties. (*See posting requirements on the other side of form.*)

RECORDABLE CASES: You are required to record information about every occupational **death**, every nonfatal occupational **illness**, and those nonfatal occupational **injuries** which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid). (*See definitions on the other side of form.*)

Case or File Number	**Date of Injury or Onset of Illness**	**Employee's Name**	**Occupation**	**Department**	**Description of Injury or Illness**
Enter a nonduplicating number which will facilitate comparisons with supplementary records.	Enter Mo./day.	Enter first name or initial, middle initial, last name.	Enter regular job title, not activity employee was performing when injured or at onset of illness. In the absence of a formal title, enter a brief description of the employee's duties.	Enter department in which the employee is regularly employed or a description of normal workplace to which employee is assigned, even thought temporarily working in another department at the time of the injury or illness	Enter a brief description of the injury or illness and indicate the part or parts of body affected. Typical entries for this column might be: Amputation of 1st joint right forefinger; Strain of lower back; Contact dermatitis on both hands; Electrocution—body.
(A)	(B)	(C)	(D)	(E)	(F)
					PREVIOUS PAGE TOTALS
					TOTALS (Instructions on other side of form)

MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PROGRAM

This outline is intended to be a guide and may be incomplete dependent on the type of operations to be performed. Its only purpose is to assist the contractor when submitting his proposal for carrying out the accident prevention provisions of the contract. When composing the proposals the Contractor must be mindful to be relevant, specific, and not copy or reproduce statements from safety regulations. Rather, his submitted proposals are to relate "how, who, why, what, where" he plans to perform the contracted work requirements in a safe manner using the Safety and Health Requirements Manual, EM 385-1-1, Revised September 1996 and current revisions to date.
Non-applicable parts of this outline should be disregarded.

1. CONTRACT NO: DATE SUBMITTED:

2. CONTRACTORS NAME, ADDRESS AND TELEPHONE NO:

3. PROJECT LOCATION:

4. CONTRACTORS PAST SAFETY RECORD: (Including work with other Districts.)

A. Analysis of Accident experience

B. Years experience covers

C. Types of Accidents

D. Causes of Accidents

E. Corrective measures taken

F. Statement giving percent debit or credit of annual rate of compensation insurance

5. INVESTIGATION: All accidents investigation for the purpose of preventing similar accidents and gather facts

A. Procedures used in investigation accidents

B. Completeness and promptness of reports

6. SAFETY INSPECTIONS:

A. Who will perform these inspections

B. How often will they be conducted

C. What items will be inspected

1) Hand Tools

2) Equipment

3) Motor Vehicles

4) Housekeeping

5) Safe work practices

6) Sanitation

7) Personal Protective Equipment

7. SAFETY TRAINING

A. Orientation and Instruction of new employee (safety topics)

B. Who will give the orientation and instruction

C. Knowledge of Corps of Engineers Safety Requirements

8. SAFETY MEETINGS:

A. Who will conduct safety meetings

B. What subjects will be discussed

C. How often will meetings be conducted

D. When will reports of these meetings be submitted

E. Do you have an incentive program for safety consciousness

F. Who will administer your overall Accident prevention Program

9. HEALTH AND SANITATION:

A. Drinking Water

1) Source

2) Type of Dispensing Unit

a. methods

b. care of units

B. Toilet Facilities

1) Location

2) Type of Unit

3) Quantity

4) Service Frequency

C. Housing and/or office facilities

1) Location

2) Type of Accommodations

D. Medical Facilities

1) First Aid Capabilities

a. Number of trained personnel and certificate of qualifications

b. Number and type of first aid kits and supplies

c. How often are instructions given to employees

2) Professional care and services (names, addresses and phone numbers)

a. Local physicians

b. Hospital Facilities

c. EMS or Ambulance Service

3) Emergency Evacuation for Critically Injured personnel

a. Procedure

b. Helicopter Service and Phone Number

10. FIRE PREVENTION AND PROTECTION:

A List your Fire Fighting Personnel

1) Who has definite responsibility

2) How often are personnel trained

B. Fire Fighting Equipment/Extinguishers

1) Type of Service

2) Is it adequate

3) Where is it located

4) When is maintenance and inspection performed

C. Flammable

1) Types stored

2) How stored (methods)

3) Where stored (containers, cabinets, etc)

4) Dispensing methods

11. PERSONAL PROTECTIVE EQUIPMENT (PPE): (Safety hats, goggles, personal flotation devices, safety shoes, respirators, etc.

A. Provided

B. Use required

C. Maintenance of PPE

D. Storage

12. LIGHTING:

A. On mobile equipment

B. Work areas

C. Access to work areas

13. TRANSPORTING PERSONNEL:

A. Equipment used

1) Design

2) Capacity

3) Maintenance and frequency

B. Operators and Qualifications

14. MACHINERY AND EQUIPMENT: (includes floating plant)

A. Number and type equipment

B. Pre-work safety checks

C. Guards and safety devices

D. Maintenance and Servicing

E. Load tests

F. Operating Personnel

1) Qualifications and Certification

2) Responsibilities

3) Observance of instructions, etc.

15. CLEARING OPERATIONS:

A. Burning

16. ACCESS FACILITIES:

A. Ladders

B. Stairways

17. HANDTOOLS

A. Electric

B. Pneumatic

C. Explosive activated

D. Other (specify)

18. WELDING AND BURNING OPERATIONS:

A. Type Equipment

B. Personal Protective Equipment and Devices

C. Storage of compressed cylinders (full and empty)

D. Safe practices

19. HEATING DEVICES:

A. Types

B. Fuel

C. Maintenance

D. Locations

20. RIPRAP - METHODS OF PLACEMENT:

21. PROTECTION OF THE PUBLIC:

A. Visitors

B. Pedestrians

C. Motor vehicles

D. Controls and procedures

22. HOUSEKEEPING POLICY:

A. Procedures

B. Methods

C. Debris Disposal

23. EXCAVATIONS:

A. Type

B. Depth

C. Shoring

D. Sloping

24. WATER SAFETY:

A. Type and size floating plant

B. Use of personal protective equipment (PPE)

C. Life saving skiff

D. Lifesaving and rescue drills

E. Diving policy and notifications procedures (Separate plan must be submitted)

25. ELECTRICAL WIRING

A. Voltage and uses

B. Elevated and/or buried

C. Grounding

D. Ground fault circuit interrupters (GFCI's)

E. Operators adjacent to overhead lines

26. NOISE ABATEMENT:

A. Hearing Conservation Program

B. Source

C. Exposure controls (PPE)

27. HAZARD COMMUNICATION PROGRAM:

A. Description of Company Policy

B. Materials Safety Data Sheets (MSDS)

C. Communication Methods with Employees

28. ALCOHOL AND DRUG POLICY:

29. COMPLIANCE STATEMENT:

(All work will be performed in accordance with Corps of Engineers' Safety and Health Requirements Manual, EM 385-1-1, Revised September 1996, and current revisions to date, and will included any additional measures the Contracting Officer deems necessary for the prevention of Accidents.)

30. OTHER SAFETY HAZARDS:

(Describe any other hazards you may anticipate for this particular job and those measures that will be taken to eliminate them.)

31. ACTIVITY HAZARD ANALYSIS:

EM 385-1-1, requires an Activity Hazards Analysis to be prepared by the Contractor. This (phase plan) will be attached to the accident prevention plan. Work will not proceed until these plans have been accepted by the Government.

This plan has been reviewed and determined appropriate for the safe operations of this job.

_____

PRIME CONTRACTOR

_____

AUTHORIZED REPRESENTATIVE
OF THE CONTRACTING OFFICER

_____

CHIEF, SAFETY OFFICE

ACTIVITY HAZARD ANALYSIS

ACTIVITY_____ANALYZED BY/DATE_____REVIEWED BY/DATE_____

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS	
Identify the principal steps involved and the sequence of work activities	Analyze each principal step for its potential hazards	Develop specific controls for each potential hazard.	
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	SUPERVISORY REQUIREMENT	TRAINING REQUIREMENT
List of equipment/machinery to be used in conducting the work activities.	List inspection requirements for the equipment/machinery listed.	List the names of the individuals responsible for the safe execution of these activities	Determine requirements for worker training including hazard communicaton.

REPORT OF WEEKLY SAFETY MEETING_____
(DR 385-1-4)

TO: Chief, Safety Office	FROM

DATE:_____ TIME:_____ (A.M./P.M.)

No. Employees Present_____ Duration:_____

Old Business: (Review report of last meeting. Follow up on action taken or anticipated to correct any safety deficiencies brought up at last meeting. Discuss any unfinished business.)

New Business: (Discuss any unsafe acts or conditions observed since last safety meeting and any mishaps or injuries which occurred during the week.)

Safety Presentation: Safety talk, movie, or slide presentation on subject that is relevant to operation at hand.)

_____	_____
SIGNATURE & DATE Government Representative	SIGNATURE & DATE Contractor Safety Representative

SAFETY CHECKLIST FOR FLOATING PLANT

Contract # and title:	
Contractor:	Subcontractor:
Plant Name:	Owner:
Superintendent:	Captain:
Engineer:	Number in crew:
Contract inspector:	Date inspected:

	Yes	No	N/A
1. Is a copy of the current USCG Form 835 available for plants regulated by USCG? (19.A.01)			
2. Is documentation of an accredited marine surveyor (SAMS or NAMS) available for non USCG inspected plants? (19.A.01)			
3. Do all officers and crew posses an appropriate USCG license or USACE license and certification? (19.A.02)			
4. Are periodic inspections and test records of all floating plant, equipment, and machinery available as part of the official project file? (19.A.01)			
5. Is there a severe weather plan which contains the following available? (19.A.03) a. a description of potential types of severe weather hazards and steps to guard against the hazards? b. the time frame for implementing the plan? c. the name and location of the safe harbor? d. the name of the vessels which will be used to move any non-self propelled plant, and their type, capacity, speed, and availability? e. river gage readings at which floating plant must be moved away from dams, river structures, etc. to safe areas?			

	Yes	No	N/A
6. Is the station bill conspicuously posted throughout the vessel? (19.A.04)			
7. Has each crew member been given a written description of their emergency duties and are they familiar with them? (19.A.04)			
8. Have the following drills and tests been recorded in the station log? (19.A.04) a. abandon ship drill? b. fire drill? c. man overboard drill? d. pump shell or pipe rupture? e. hull failure? f. emergency power and lighting tests? g. bimonthly emergency power generator tests? h. bimonthly emergency lighting storage batteries tests?			
9. Are material safety data sheets(MSDSs) available for all hazardous materials on board? (06.B.01)			
10. Are employees trained to handle hazardous materials? (06.B.01)			
11. Are at least two employees on each shift certified in CPR and first aid? (03.A.02)			
12. Is there a first aid log at each first aid station? (01.D.04)			
13. Are first aid kits located in a readily accessible location and adequately stocked? (03.B.01 & .02)			
14. Is there an adequate supply of approved, potable drinking water available? (02.A.01)			
15. Are outlets dispensing non-potable water clearly marked “Water Unfit For Drinking, Washing or Cooking”?(02.A.07)			
16. Are the proper numbers of toilets, washbasins and showers provided? (02.B.06 & .07)			

	Yes	No	N/A
17. Are water, soap, and a means of drying available? (02.C.02)			
18. Is the latest information published by the USCG regarding aids to navigation available on board the vessel? (19.A.11)			
19. Is the vessel equipped with: (19.A.05) a. fenders? b. axes or other emergency cutting equipment? c. an appropriate navigational signal device? d. general alarm system operated from primary electrical system with standby batteries on trickle charge? e. easily accessible emergency controls that are adequately protected against accidental operation? f. explosion-proof lights around gasoline and oil barges or other locations where a fire or explosive hazard exists? g. interconnected emergency alarms? h. smoke alarms in living quarters? i. doors that open from both sides? j. clearly marked emergency exits? k. emergency stops for prime movers operating a dredge pump? l. GFCI protection on grounded 120 or 240 volt systems in toilet/shower spaces, galley, machinery spaces, weather deck, exterior or near any sinks? m. properly maintained and identified water tight compartments?			
20. Fuel systems: (19.A.06) a. Are tanks or lines free of gauge glasses or try cocks? b. Do all fuel tanks have shutoff valves that can be operated outside the compartment in which the tank is located and outside the engine compartment and outside the house bulkheads at or above the weather deck? c. Is there a shut off valve at the engine end of the fuel lines that are 6 feet or more in length and can it be operated from outside the house bulkheads at or above the weather deck? overboard discharge?			

	Yes	No	N/A
d. Are all carburetors on gasoline engines equipped with a backfire trap or flame arrestor? e. Are all carburetors (except downdraft type) equipped with a drip pan, with flame screen, which is continuously emptied by suction from the intake manifold or if permitted by the overboard discharge? f. Are fuel storage tanks diked or curbed IAW NAVFAC DM-22? If not are portable tanks used IAW USCG requirements in 46CFR Parts 64 and 98.3?			
21. Are cables which cross the waterways between floating plants or between plant and mooring marked? (19.A.07)			
22. Is there a fire and emergency warning system (or an established fire watch) on all vessels where people are quartered? (19.A.07)			
23. Are all floors, decks, and bilge's free of accumulation of fuel and grease? (19.A.07)			
24. Are there holdbacks or rings available to secure equipment during rough weather? (19.A.07)			
25. Are all deck openings, elevated surfaces, and similar locations provided with guardrails, bulwarks, or taut cable guardlines? (19.A.07)			
26. Are all rotating machinery, hot pipes, and moving cables guarded against accidental contact? (16.B.03)			
27. Are hazardous energy control procedures available to insure that machinery will not be operated while greasing or making repairs? (12.A.01 & 16.A.08)			
28. Are decks free of tripping hazards? or adequately marked in yellow? (19.A.07)			
29. Is all deck cargo carried on fuel barges placed on dunnage? (19.A.07)			
30. Are all pieces of floating plants operating as one unit securely fastened together with no openings(or with guarded openings)? (19.A.07)			
31. Is there a list of confined spaces available? (19.A.08)			

32. Are all permitted required confined spaces labeled? (19.A.08)	Yes	No	N/A
33. Are engine spaces housing internal combustion engines having electric spark ignition systems equipped with exhaust fans? (19.A.10)			
34. Are all machinery spaces and non-diesel fuel tanks compartments equipped with at least 2 ventilators, fitted with fans? (19.A.10)			
35. Are the following spaces provided with an adequate natural ventilation system? (19.A.10) a. spaces containing a portable fuel tank? b. living spaces or galley? c. other compartment spaces?			
36. Do vent intakes extend to within 1 foot of the bottom of the compartment? (19.A.10)			
37. Is suitable eye protection provided at battery charging stations? (05.B.01 & .05)			
38. Are eye wash stations provided at battery charging stations? (6.B.02)			
39. Are flammable items such as paint and thinners properly stored? (9.B)			
40. Are gasoline and other flammable liquids properly stored, dispensed, and handled? (09.B.01-.30)			
41. Does all electrical wiring meet requirements of USCG-259, the National Electrical Safety Code and the National Electric Code? (11.A.01)			
42. Are insulated mats provided at locations where machinery has exposed live parts? (11.A.07)			
43. Are switch and transformer banks adequately protected and marked to keep unauthorized personnel out of the danger area? (11.A.02)			
44. Are portable electric tools grounded by a multiconductor cord with an identified conductor and a multicontact polarized plug-in receptacle? (11.C.01)			

	Yes	No	N/A
45. Are ground fault circuit interrupters provided in locations where portable tools could be used? (11.C.05)			
46. Are flexible cords protected in work area, appropriately secured or suspended and are they used for appropriate useages. (11.A.03 and Table 11-1?)			
47. Are all means of access properly secured, guarded and free of slipping and tripping hazards? (19.B.01)			
48. Are all working decks, stair treads, ship ladders, platforms, catwalks, and walkways, provided with non-slip surfaces? (19.B.01)			
49. Are grab bars provided on the sides of super structure of tugs, tenders, and launches except where railings are present? (19.B.01)			
50. Are double rung or flat tread type Jacob's ladders restricted to use only when no safer form of access is practical? (19.B.01)			
51. Is there a safe means for boarding or leaving the vessel? (19.B.02)			
52. Is there a stairway, ladder, ramp, gangway, or personnel hoist provided at all personnel points of access with breaks of 19" or more in elevation? (19.B.02)			
53. Are gangways and ramps: (19.B.02) a. secured at one end by at least one point on each side with lines or chains to prevent overturning? b. supported at the other end in such a manner as to support them and their normal loads in the event they slid off their supports? c. placed at an angle no greater than that recommended by the manufacturer? d. provided with a standard guardrail?			
54. Are stairs or permanent inclined ladders provided for vertical access between decks? (9.B.03)			

	Yes	No	N/A
55. Is there at least 2 feet of clearance on outbord edges used for passageways? (19.B.3)			
56. Is the vessel equipped with at least one portable or permanent ladder with at leastr one portable or permanent ladder with which to rescue a person in the water? (19.B.04)			
57. Are there at least 2 means of escape from all assembly, sleeping and messing areas on the plant? (19.B.04)			
58. Are all means of access maintained safe and functional? (19.B.04)			
59. Are all floating pipelines used as walkways equipped with a walkway which is at least 20″ wide and has a handrail on at least one side? (19.B.05)			
60. Are floating pipelines that are not intended as walkways barricaded on both ends?(19B.05)			
61. Are positive measures taken to raise and secure the ladder and to block suction and discharge lines during maintenance on pumps and suction or discharge lines? (19.D.01)			
62. Do floating or trestle supported dredge pipelines display the following lights at night and in periods of restricted visibility: (19.D.02) a. One row of yellow lights that : (1) flash 50-70 times per minute? (2) are visible all around the horizon? (3) are visible for at least 2 miles on a clear night? (4) are between 3-10 feet above the water? (5) are approximately evenly spaced? (6) are not more than 30 feet apart where the pipeline crosses a navigable channel? (7) are sufficient in number to clearly show the pipeline's length and course? b. two red lights at each end of the pipeline (including ends in a channel where the pipeline is separated to allow vessels to pass) that: (1) are visible all around the horizon? (2) are visible for at least 2 miles on a clear dark night? (3) are 3 feet apart in a vertical line with the lower light at the same height above the water as the flashing yellow light?			

	Yes	No	N/A
63. Is the dredge designed such that a failure or rupture of any dredge pump component including the pipe shall not cause the dredge to sink? (19.D.04)			
64. Is submerged pipeline resting on the bottom where it crosses the navigation channel and is it and the anchoring system no higher than the required project depth? (19.D.03)			
65. Is buoyant or semi-buoyant pipeline fully submerged and on the bottom? (19.D.03)			
66. Is raised pipeline adequately marked? (19.D.03)			
67. Is a bilge alarm or shutdown interface available on any dredge with the dredge pump below the waterline? (19.D.07)			
68. Are two positive means available to secure “stone boxes” when the boxes are under positive pressure? (19.D.08)			
69. Remarks: (Enter actions taken for “no” answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR LAUNCHES, MOTORBOATS AND SKIFFS

Contract # and title:	
Contractor:	Subcontractor:
Name of equipment:	Superintendent:

	Yes	No	N/A
1. Is a qualified crew person assigned to assist with deck duties under the following circumstances: (19.C.01) a. when extended trips(more than 2 hours) are made from the work site? b. when conditions of navigation make it hazardous for an operator to leave the wheel while underway? c. when operation other than tying-in require the handling of lines? d. when operating at night or in inclement weather? e. when towing?			
2. Are all motorboats, launches and skiffs posted with the number of passengers and weight they can carry? (19.C.02)			
3. Is there a PFD available for each passenger and crew member? (19.C.02)			
4. Do all launches and motorboats that are less than 26 feet in length have at least one 1A-10B:C fire extinguisher on board? (19.C.03)			
5. Do all launches and motorboats that are 26 feet or more in length have at least 2 1A-10B:C fire extinguishers on board? (19.C.03)			

SAD Form 1437b-R Mar 97 Previous edition may be used for contracts referencing the 1992 edition of EM 385-1-1.

	Yes	No	N/A
6. Do all launches and motorboats that have gasoline or liquid petroleum gas power plants or equipment in cabins, compartments, or confined spaces have built-in automatic CO2 or other equally effective type of fire extinguishing system? (19.C.03)			
7. Remarks: (Enter actions taken for “no” answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

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SAFETY CHECKLIST FOR CRAWLER, TRUCK & WHEEL MOUNTED CRANES

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor:	Subcontractor:		
Contract Inspector:	Date inspected:		
	Yes	No	N/A
1. Unless the manufacture has specified an on-rubber rating, outriggers will be fully extended and down? (16.D.10)			
2. Are lattice boom cranes equipped with a boom angle indicator, load indicating device, or a load moment indicator? (16.D.01)			
3. Are lattice boom and hydraulic cranes equipped with a means for the operator to visually determine levelness? (16.D.02)			
4. Are lattice boom and hydraulic cranes, except articulating booms cranes, equipped with drum rotation indicators located for use for the operator? (16.D.03)			
5. Are lattice boom and hydraulic mobile cranes equipped with a boom angle or radius indicator within the operator's view? (16.D.04)			
6. Are lattice boom cranes, with exception of duty cycle cranes, equipped with an anti-two blocking device? (16.D.05)			
7. When duty cycle machines are required to make a non-duty lift, is the crane equipped with an international orange warning device and is a signal person present? (16.D 05)			
8. Are the following with the crane at all times: (16.C.02) a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. operating manual for crane operator aids used on the crane.			

	Yes	No	N/A
9. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspection? (16.C.12) c. written reports of the operational performance test? (16.C.13) d. written reports of the load performance test? (16.C.13)			
10. Are all operators physically qualified to perform work? (16.C.05)			
11. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
12. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.06)			
13. Is a hazard analysis for set-up and set-down available? (16.C.08)			
14. Are accessible areas within the swing radius of the rear of the crane barricaded? (16.C.09)			
15. Are there at least 3 wraps of cable on the drum? (16.C.10)			
16. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
17. Are critical lift plans available? (16.C.18)			
18. Are minimum clearance distance for high voltage lines posted at the operator’s position? (11.E.04)			
19. Do older lattice boom cranes with anti-two block warning devices in lieu of anti-two block prevention devices have a written exemption? (16.D.05)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08.A.04)			
21. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			

	Yes	No	N/A
22. Is all equipment to be operated on public roads provided with: (16A.07) a. headlights? b. brake lights? c. taillights? d. back-up lights? e. front and rear turn signals?			
23. Are seat and seat belts provided for the operator and each rider on equipment? (16.A.07 and 16.B.08)			
24. Is all equipment with windshields equipped with powered wipers and defogging or defrosting devices? (16.A.07)			
25. Is the glass in the windshield or other windows clear and unbroken to provide adequate protection and visiblity for the operator? (16.A.07, 16.B.10)			
26. Is all equipment equipped with adequate service brake system and emergency brake system? (16.A.18)			
27. Are areas on equipment where employees walk or climb equipped with platforms, footwalks, steps, handholds, guardrails, toeboards and non-slip surfaces? (16.B.03)			
28. Is all self propelled equipment equipped with automatic, audible, reverse signal alarms? (16.B.01)			
29. Is there a record of manufacturer's approval of any modification of equipment which affects its capacity or safe operation? (16.A.18)			
30. Are truck and crawler cranes attached to a barge or pontoon by a slack tiedown system? (16.F.06)			
31. Have the following conditions been met for land cranes mounted on barges or pontoons: (16.F.04) a. Have load ratings been modified to reflect the increased loading from list, trim, wave, and wind action? b. Are all deck surfaces above the water? c. Is the entire bottom area of the barge or pontoon submerged? d. Are tie downs available? e. Are cranes blocked and secured?			
32. Are all belts, gears, shafts, spindles, drums, flywheels, or other rotating parts of equipment guarded where is a potential for exposure to workers? (16.B.03)			

	Yes	No	N/A
33. Is the area where the crane is to work level, firm and secured? (16.A.10)			
34. Is a dry chemical or carbon dioxide fire extinguisher rated at least 5-B:C on the crane? (16.A.26)			
35. Are trucks, for truck mounted cranes, equipped with a working reverse signal alarm? (16.B.01)			
36. Is a signal person provided where there is danger from swinging loads, buckets, booms, etc.? (16.B.13)			
37. Is there adequate clearance from overhead structures and electrical sources for the crane to be operated safely? (16.C.09)			
38. Is there adequate lighting for night operations? (16.C.19)			
39. Has the the boom stop test on cable-supported booms been performed? (16.D.06)			
40. Is the boom disenaging device functioning as required? (16.D.06)			
41. Has all rigging and wire rope been inspected? (Section 15)			
Remarks:(Enter actions taken for all “no” answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR PORTAL, TOWER, AND PILLAR CRANES

Contract # and Title:			
Equipment name & number: owned or leased?			
Contractor:	Subcontractor:		
Contract Inspector:	Date Inspected:		
	Yes	No	N/A
1. Are the following available: (16.E.02) a. written erection instructions? b. listing of the weight of each component? c. an activity hazard analysis for the erection? d. does the activity hazard analysis contain (1.) location of crane and adjacent structures? (2.) foundation design and construction requirements? (3.) clearance and bracing requirements?			
2. Is there a boom angle indicator within the operator's view? (16.E.04)			
3. Are luffing jib cranes equipped with: (16.E.05) a. shock absorbing jib stops? b. jib hoist limit switch? c. jib angle indicator visible to operator?			
4. If used, do rail clamps have slack between the point of attachment to the rail and the end fastened to the crane? (16E.06)			
5. Are the following with the crane at all times: (16.C.02) a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. the operating manual for crane operational aids used on the crane?			

	Yes	No	N/A
6. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspections? (16.C.12) c. written reports of the operational performance tests? (16.C.13) d. written reports of the load performance tests? (16.C.13)			
7. Is every crane operator certified by a physician to be physically qualified to perform work? (16.C.05)			
8. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
9. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.05)			
10. Is a hazard analysis for set-up and set-down available? (16.C.08)			
11. Are there at least 3 wraps of cable on the drum? (16.C.10)			
12. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
13. Is the a record of manufacturer’s approval of any modification of equipment which affects its capacity or safe operation? (16.A.07)			
14. Remarks: (Enter actions taken)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666b-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR RIGGING

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor	Subcontractor:		
Contractor inspector:	Date inspected:		
	Yes	No	N/A
1. Has all defective rigging been removed? (15.A.01)			
2. Is rigging stored properly? (15.A.01)			
3. Are running lines within 6.5’ of the ground or working level guarded? (15.A.03)			
4. Are all eye splices made in an approved manner with rope thimbles? (sling eyes excepted) (15.A.04)			
5. Are positive latching devices used to secure loads? (15.A.05)			
6. Are all custom lifting accessories marked to indicate their safe working loads? (15A.07)			
7. Are all custom designed lifting accessories proof-tested to 125% of their rated load? (15.A.07)			
8. Are the following conditions met for wire rope: (15.B.01-09) a. Are they free of rust or broken wires? b. Are defective ropes cut up or marked as unusable? c. Do rope clips attached with U-bolts have the U-bolts on the dead end or short end of the rope? d. Are protruding ends of strands in splices on slings and bridles covered or blunted? e. Except for eye splices in the end of wires and for all endless wire rope slings, are all wire ropes used in hoisting, lowering, or pulling loads one continuous piece, free of knots or splices?			

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	Yes	No	N/A
f. Do all eye splices have at least 5 full tucks? g. If used, are wedge sockets fastening attached without attached the dead end of the wire rope to the live rope? h. Are they free of eyes or splices formed by wire rope clips or knots?			
9. Are the following conditions met for chain? (15.C.01-04) a. Are all chains alloyed? b. Do all coupling links or other attachments have rated capacities at least equal to that of the chain. c. Are makeshift fasteners restricted from use?			
10. Are the following conditions met for fiber rope:(15.D.01-07) a. Are all ropes protected from freezing, excessive heat or corrosive materials? b. Are all ropes protected from abrasion? c. Are splices made IAW manufacture's recommendations? d. Do all eye splices in manila rope contain at least 3 full tucks and do all short splices contain at least 6 full tucks(3 on each side of the centerline of the splice)? e. Do all splices in layed synthetic fiber rope contain at least 4 full tucks and do short splices contain at least 8 full tucks (4 on each side of the centerline of the splice)? f. Do the tails of fiber rope splices extend at least 6 rope diameters (for rope 1" diameter or greater) past the last full tuck? g. Are all eye splices large enough to provide an included angle of not greater than 60* at the splice when the eye is placed over the load or support?			
11. Are the following conditions met for all slings:(15.E.01-06) a. Is protection provided between the sling and sharp surfaces? b. Do all rope slings have minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice? c. Do all braided slings have a minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice?			

	Yes	No	N/A
d. Do all welded alloy steel chain slings have affixed permanent identification stating size, grade, rated capacity and manufacturer? e. Is each synthetic web sling marked or coded to identify its manufacturer, rated capacities for each type hitch and the type material?			
12. Are drums, sheaves, and pulley smooth and free of surface defects? (15.F.01)			
13. Is the ratio of the diameter of the rigging and the drum, block sheave or pulley thread diameter such that the rigging will adjust without excessive wear, deformation, or damage? (15F.02)			
14. Have all damaged drums, sheaves and pulleys been removed from service? (15.F.04)			
15. Are all connections, fittings, fastenings, and attachments of good quality, proper size and strength, and installed IAW manufacturer's recommendations? (15.F.05)			
16. Are all shackles and hooks sized properly? (15.F.06 & .07)			
17. Are hoisting hooks rated at 10 tons or greater provided with safe handling means? (15.F.07)			
18. Do all drums have sufficient rope capacity? (15.F.08)			
19. Is the drum end of the rope anchored by a clamp securely attached to the drum in a manner approved by the manufacturer? (15.F.08)			
20. Do grooved drums have the correct groove pitch for the diameter of the rope and is the groove depth correct? (15.F.08)			
21. Do the flanges on grooved drums project beyond the last layer of rope at a distance of either 2″ or twice the diameter of the rope, whichever is greater? (15.F.08)			
22. Do the flanges on ungrooved drums project beyond the last layer of rope a distance of either 2.5″ or twice the diameter of the rope, which ever is greater.			

	Yes	No	N/A
23. Are the sheaves compatible with the size of rope used and as specified by the manufacture? (15F.09)			
24. Are sheaves properly aligned, lubricated, and in good condition? (15.F.09)			
25. When rope is subject to riding or jumping off a sheave, are sheaves equipped with cablekeepers? 915.F.09)			
26. Are eye bolts loaded in the plane of the eye and at angles less than 45* to the horizontal? (15.F.10)			
27. Remarks: (Enter actions taken for “no” answers.)			
Contractor inspector signature			
Contractor QC/safety/project manager signature			

SAD Form 1666c-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR MOTOR VEHICLES , TRAILERS AND TRUCKS

Contract # and title: owned or leased?	
Equipment name & number:	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are records of safety inspections of all vehicles available? (18.A.02)			
2. Are all vehicles to be operated between sunset and sunrise equipped with: (18.A.04) a. 2 headlights? b. taillights and brake lights? c. front and back turn signals? d. 3 emergency flares, reflective markers, or equivalent portable warning devices?			
3. Are vehicles, except trailers or semi-trailers having a gross weight of 5000 lbs or less, equipped with service brakes and manually operated parking brakes? (18.A.05)			
4. Are service brakes on trailers and semitrailers controlled from the driver's seat of the prime mover? (18A.06)			
5. Does the vehicle have: (18.A.06) a. a speedometer? b. a fuel gage? c. an audible warning device (horn)? d. a windshield & adequate windshield wiper? e. an operable defroster and defogging device? f. an adequate rearview mirror? g. a cab, cab shield, and other protection to protect the driver from the elements and falling or shifting materials? h. non-slip surfaces on steps? I. a power-operated starting device?			

	Yes	No	N/A
6. Is all the glass safety glass and is all broken or cracked glass replace? (18.A.07)			
7. Do trailers meet the following: (18A.08) a. Are all towing devices adequate for the weight drawn? b. Are all towing devices properly mounted? c. Are locking devices or a double safety system provided on every 5th wheel mechanism and tow bar arrangement to prevent accidental separation? d. Are trailers coupled with safety chains or cables to the towing vehicle? e. Are trailers equipped with the power brakes equipped with a break-away device which will lock-up the brakes in the event the trailer separates from the towing vehicle?			
8. Are all dump trucks:(18.A.10) a. equipped with a holding device to prevent accidental lowering of the body? b. equipped with a hoist lever secured to prevent accidental starting or tipping? c. equipped with means to determine (from the operator’s position) if the dump box is lowered? d. equipped with trip handles for tailgates that allow the operator to be clear?			
9. Are all buses, trucks and combination of vehicles with a carrying capacity of 1.5 tons or more, to be operated on public roads equipped with: (18.A.11) a. 3 reflective markers? b. 2 wheel chocks for each vehicle? c. at least one 2A:10B:C fire extinguisher? d. at least two properly rated fire extinguishers (for vehicles carrying flammable cargo)? e. a red flag not less than 1 foot square.			
10. Is vehicle exhaust controlled so as not to present a hazard to personnel? (18.A.13)			
11. Are all rubber tired motor vehicles equipped with fenders or with mud flaps if the vehicle is not designed for fenders? (18.A.14)			

	Yes	No	N/A
12. Are all vehicles, except buses, equipped with seat belts? (18.B.02)			
13. Does all self-propelled construction and industrial equipment have a working reverse signal alarm? (16.B.01)			
14. Are all hot surfaces of equipment, including exhaust pipes or other lines, guarded or insulated to prevent injury or fire? (16.B.03)			
15. If an off the road vehicle, is it equipped with rollover protective structures? (16.B.12)			
16. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666d-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR CRAWLER TRACTORS AND DOZERS

Contract # and title:	
Equipment name & number: owned or leased?	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01& .02)			
2. Are only qualified operators assigned to operate mechanized equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Is the unit shut down before refueling? (16.A.14)			
5. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
6. Is there an effective, working reverse alarm? (16.B.01)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03 ,07, and 13)			
8. Is protections against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine exhaust or electrical equipment?			

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	Yes	No	N/A
10. Are exhaust discharges directed so they do not endanger person of obstruct operator vision?(16.B.05)			
11. Are seat belts provided? (16B.08)			
12. Is protection (grills, canopies, screens) provided to shield operator from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666e-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR SCRAPERS, MOTOR GRADERS , AND OTHER MOBILE EQUIPMENT

Contract # and title:			
Equipment name and number: owned or leased?			
Contractor:	Subcontractor:		
Contractor inspector:	Date inspected:		
	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01 & .02)			
2. Are only qualified operators assigned to operate equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
5. Is there an effective working reverse alarm? (16.B.01)			
6. Is the unit shut down for refueling? (16.A.14)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03, .07 and .13)			
8. Is protection against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflow from running onto engine exhaust or electrical equipment? (16.B.04)			
10. Are exhaust discharges directed so they do not endanger persons or obstruct operator vision? (16.B.05)			

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	Yes	No	N/A
11. Are seat belts provided for each person required to ride on the equipment? (16.B.08)			
12. Is protection (grills, canopies, screens) provided to shield operators from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Is a safe means of access to the cab provided (steps, grab bars, non-slip surfaces)? (16.B.03)_			
15. Are adequate head and tail lights provided? (16.A.07)			
16. Have brakes been tested and found satisfactory? (16.A.07)			
17. Does the unit have an emergency brake which will automatically stop the equipment upon brake failure? Is this system manually operable from the drivers position? (16.A.07)			
18. Is all equipment with windshields equipped with powered wipers and defogging or defrosting system? (16.A.07)			
19. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08A.04)			

	Yes	No	N/A
21. Have air tanks been tested and certified? (20.A.01)			
22. Is an air pressure gage in working condition installed on the unit? (20.A.12)			
23. Does the air tank have an accessible drain valve? (20.B.17)			
24. Remarks: (Enter action taken for all “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAD Form 1666f-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR MATERIAL HOISTS

Contract # and title:			
Equipment name & number:			
Contractor:	Subcontractor:		
Contract Inspector:	Date inspected:		
	Yes	No	N/A
1. Are all hoist towers, masts, guys or braces, counterweights, drive machinery supports, sheave supports, platforms, supporting structures, and accessories designed by a licensed engineer? (16.K.02)			
2. Is a copy of the hoist operating manual available? (16.K.04)			
3. Do all floors and platforms have slip-resistant surfaces? (16.K.08)			
4. Are landings and runways adequately barricaded and is overhead protection provided where needed? (16.K.08)			
5. Are hoisting ropes installed IAW manufacturer's instructions? (16.K.10)			
6. Are operating rules posted at the hoist operator's station? (16.K.14)			
7. Are air powered hoists connected to an air supply of sufficient capacity and pressure to safely operate the hoist? (16.K.15)			
8. Are pneumatic hoses secured by some positive means to prevent accidental disconnection? (16.K.15)			
9. Remarks: (Enter actions taken for all "no" answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666g-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR EARTH DRILLING EQUIPMENT

Contract # and title:			
Equipment name & number:			
Contractor:	Subcontractor:		
Contractor inspector:	Date inspected:		
	Yes	No	N/A
1. Is a copy of the manual for all drilling equipment available? (16.M.01)			
2. Have all overhead electrical hazards and potential ground hazards been identified in a site layout plan and addressed in an activity hazard analysis? (16.M.02)			
3. Are MSDSs for all drilling fluids available? (16.M.05)			
4. Does the drilling equipment have 2 easily accessible emergency shut down devices (one for the operator and one for the helper)? (16.M.06)			
5. Is the equipment posted with a warning of electrical hazards? (16.M.06)			
6. Is there a spotter or an electrical proximity warning device available to ensure safe distances from power lines are maintained? (16.M.06)			
7. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAD Form 1666h-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO:

TITLE AND LOCATION:
ST STEPHEN 50 TON INTAKE GANRTY CRANE MAIN HOIST REPAIR

CONTRACTOR:

SPECIFICATION SECTION:

TRANSM-ITTAL NO.	ITEM NO	SPECIFICA-TION PARA-GRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION		REVIEWER (ORG CODE)	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				E. DATA	F. DRAWINGS	G. INSTRUCTIONS	H. SCHEDULES	I. STATMENTS	J. REPORTS	K. CERTIFICATES	L. SAMPLES	M. RECORDS	N. INFORMATION ONLY	O. GOVERNMENT APPROVED	P.	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE	
A.	B.	C.	D.													Q.	R.	S.	T.	U.	V.	W.	X.	Y.
			SECTION 01010																					
		1.3	Supervisors qualifications	X										X		30 days								Prior to start of work
			Organizational Chart	X										X		30 days								Prior to start of work
			Employee ID Procedure	X										X		30 days								Prior to start of work
			List of Employees	X									X			14 days								Prior to start of work
			Roadway Access Agreement	X									X			14 days								Prior to start of work
			Contractor's Vehicle ID	X										X		30 days								Prior to start of work
			Working Hours	X										X		7 days								Prior to start of work
			Site Work Schedule	X										X		30 days								Prior to start of work
			Cntl of Hazardous Energy	X										X		14 days								Prior to start of work
			Temp Electrical Powerlines	X										X		30 days								Prior to start of work
			Transportation of Heavy Equipment	X										X		30 days								Prior to Transport to Site
			Indoor Storage Locations	X										X		30 days								Prior to Area Useage
			Dust & Fume Control	X										X		30 days								Prior to on-site work
			Off-Site Disposal Area	X										X		30 days								Prior to start of work
			Signage	X										X		30 days								Prior to start of work
			Access Equipment	X										X		30 days								Prior to Install & Use
			Project Status	X									X			Weekly								
			Record of Parts Removed from Site					X					X												Available for Review
			Schedule Change					X						X		48 hrs								Prior to Change

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO:

TITLE AND LOCATION:
St Stephen 50 Ton Intake Gantry Crane Main Hoist Repair

CONTRACTOR:

SPECIFICATION SECTION:

TRANSM-ITTAL NO. A.	ITEM NO B.	SPECIFICA-TION PARA-GRAPH NUMBER C.	DESCRIPTION OF ITEM SUBMITTED D.	TYPE OF SUBMITTAL E. DATA	F. DRAWINGS	G. INSTRUCTIONS	H. SCHEDULES	I. STATMENTS	J. REPORTS	K. CERTIFICATES	L. SAMPLES	M. RECORDS	CLASSI-FICATION N. INFORMATION ONLY	O. GOVERNMENT APPROVED	REVIEWER (ORG CODE) P.	CONTRACTOR SCHEDULE DATES Q. SUBMIT	R. APPROVAL NEEDED BY	S. MATERIAL NEEDED BY	CONTRACTOR ACTION T. CODE	U. DATE	V. SUBMIT TO GOVERNMENT	GOVERNMENT ACTION W. CODE	X. DATE	Y. REMARKS
			Request for Dwgs & Data					X					X			7 days								
			Notification of Damaged Equipment					X					X			Immed.								
			SECTION 01307																					
		1.2	As-Built Field Data	X										X		30 days								After Final Inspection
			Final As-Built Dwgs		X									X		90 days								After Final Inspection
			CADD File Conversion		X									X		90 days								Prior to Delivery of Final Dwgs
			SECTION 01355																					
		1.3	Environmental Plan	X										X		20 days								After Notice to Proceed
			SECTION 01451																					
		1.2	Quality Control Plan	X										X		10 days								After Notice to Proceed

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO:

TITLE AND LOCATION:
St Stephen 50 Ton Intake Gantry Crane Main Hoist Repair

CONTRACTOR:

SPECIFICATION SECTION:

TRANSM-ITTAL NO. A.	ITEM NO B.	SPECIFICA-TION PARA-GRAPH NUMBER C.	DESCRIPTION OF ITEM SUBMITTED D.	TYPE OF SUBMITTAL: DATA E.	DRAWINGS F.	INSTRUCTIONS G.	SCHEDULES H.	STATMENTS I.	REPORTS J.	CERTIFICATES K.	SAMPLES L.	RECORDS M.	CLASSI-FICATION: INFORMATION ONLY N.	GOVERNMENT APPROVED O.	REVIEWER (ORG CODE) P.	CONTRACTOR SCHEDULE DATES: SUBMIT Q.	APPROVAL NEEDED BY R.	MATERIAL NEEDED BY S.	CONTRACTOR ACTION: CODE T.	DATE U.	SUBMIT TO GOVERNMENT V.	GOVERNMENT ACTION: CODE W.	DATE X.	REMARKS Y.
			SECTION 05101																					
		1.3	Shop Drawings		X									X										
			Schedule of Welding				X							X										
			SECTION 05502																					
		1.3	Materials List	X										X										
			Drawings		X									X										
			Test Reports						X					X										
			Disposition Records									X		X										
			SECTION 09900																					
		1.3	Notification of Paint Batch Sampling					X					X			48hrs								
			Qualifications & Experience					X						X										
			Airborne Sampling Results					X						X										
			Ventilation Assessement					X						X										
			Containment Plan					X						X										
			W ater Quality Plan					X						X										

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO:

TITLE AND LOCATION:
St stephen 50 Ton Intake Gantry Crane Main Hoist Repair

CONTRACTOR:

SPECIFICATION SECTION:

TRANSM-ITTAL NO.	ITEM NO	SPECIFICA-TION PARA-GRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION		REVIEWER (ORG CODE)	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION ONLY	GOVERNMENT APPROVED		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE	
A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.	R.	S.	T.	U.	V.	W.	X.	Y.
			Certified Test Reports-Paint/Thinners						X				X			30 days								Prior to use
			Supplier's Statement							X			X											
			Paints & Thinners								X			X		30 days								Prior to use
			SECTION 15000																					
		1.3	Descriptive Data	X										X										
			Computations	X										X										
			Drawings a-b		X									X										
			Mounting Bases			X								X										
			SECTION 16050																					
		1.3	Load Cells	X										X									3 copies	
			Insulated Wire & Cable	X										X									3 copies	
			Main Line Conductor Sys	X										X									3 copies	
			Dimensioned Outline Dwgs a-b		X									X										

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO:

TITLE AND LOCATION:
St Stephen 50 Ton Intake Gantry Crane Main Hoist Repair

CONTRACTOR:

SPECIFICATION SECTION:

TRANSM-ITTAL NO. A.	ITEM NO B.	SPECIFICA-TION PARA-GRAPH NUMBER C.	DESCRIPTION OF ITEM SUBMITTED D.	TYPE OF SUBMITTAL: DATA E.	DRAWINGS F.	INSTRUCTIONS G.	SCHEDULES H.	STATMENTS I.	REPORTS J.	CERTIFICATES K.	SAMPLES L.	RECORDS M.	CLASSI-FICATION: INFORMATION ONLY N.	GOVERNMENT APPROVED O.	REVIEWER (ORG CODE) P.	CONTRACTOR SCHEDULE DATES: SUBMIT Q.	APPROVAL NEEDED BY R.	MATERIAL NEEDED BY S.	CONTRACTOR ACTION: CODE T.	DATE U.	SUBMIT TO GOVERNMENT V.	GOVERNMENT ACTION: CODE W.	DATE X.	REMARKS Y.
			Detail Drawings & Data		X									X										
			Assembly Dwgs & Diagrams		X									X										
			O&M Information			X								X										6 copies
			Maintenance Instructions			X								X										6 copies
			SECTION 00800																					
		1.9	Insurance																					During Entire Perf of Contract
			SECTION 01600																					
		1.3	Crane Inspectors and Craftsmen Qualifications	X										X										
			Complete Repair Procedue	X										X										
			Acceptance Test Procedure	X										X										
			Post-Repair Inspection Procedure	X										X										

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS	**I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.** NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A	--	Approved as submitted.	E	--	Disapproved (See attached).
B	--	Approved, except as noted on drawings.	F	--	Receipt acknowledged.
C	--	Approved, except as noted on drawings. Refer to attached sheet resubmission required.	FX	--	Receipt acknowledged, does not comply as noted with contract requirements.
D	--	Will be returned by separate correspondence.	G	--	Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

Approved by OM
0348-0046

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:

☐ a. contract
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

2. Status of Federal Action:

☐ a. bid/offer/application
b. initial award
c. post-award

3. Report Type:

☐ a. initial filing
b. material change

For Material Change Only:
year _____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity:

☐ Prime ☐ Subawardee
Tier _____, *if known*:

Congressional District, *if known:*

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, *if known*:

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, *if applicable*: _____

8. Federal Action Number, *if known*:

9. Award Amount, *if known*:

$

10. a. Name and Address of Lobbying Entity (*if individual, last name, first name, MI):*

b. Individuals Performing Services *(including address if different from No. 10a) (last name, first name, MI)*:

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

11. Amount of Payment *(check all that apply)*:

$ _____ ☐ actual ☐ planned

12. Form of Payment *(check all that apply)*:

☐ a. cash
☐ b. in-kind; specify: nature _____
value _____

13. Type of Payment *(check all that apply)*:

☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e. deferred
☐ f. other; specify: _____

14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11:

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No

16. Information requested through this form is authorized by title 31 U.S.C section 1352. This disclosure of lobbyig activities is a materia representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352 . This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: _____

Print Name: _____

Title: _____

Telephone No.: _____ **Date:** _____

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individuals(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

    Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in

Approved by OM
0348-0046

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____ _____

WAGE DETERMINATION NO: **94-2473** REV (27) AREA: SC,CHARLESTON
REGISTER OF WAGE DETERMINATIONS UNDER | U.S. DEPARTMENT OF LABOR
FOR OFFICIAL USE ONLY BY FEDERAL AGENCIES PARTICIPATING IN MOU WITH DOL
| WASHINGTON D.C. 20210
|
|
|
| Wage Determination No.: 1994-2473
William W.Gross Division of | Revision No.: 27
Director Wage Determinations | Date Of Last Revision: 06/05/2003

State: South Carolina
Area: South Carolina Counties of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Williamsburg

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	MINIMUM WAGE RATE
01000 - Administrative Support and Clerical Occupations	
01011 - Accounting Clerk I	9.22
01012 - Accounting Clerk II	10.47
01013 - Accounting Clerk III	12.46
01014 - Accounting Clerk IV	13.97
01030 - Court Reporter	12.93
01050 - Dispatcher, Motor Vehicle	14.17
01060 - Document Preparation Clerk	10.40
01070 - Messenger (Courier)	7.76
01090 - Duplicating Machine Operator	10.40
01110 - Film/Tape Librarian	11.49
01115 - General Clerk I	8.67
01116 - General Clerk II	9.74
01117 - General Clerk III	10.62
01118 - General Clerk IV	11.95
01120 - Housing Referral Assistant	17.42
01131 - Key Entry Operator I	9.49
01132 - Key Entry Operator II	10.79
01191 - Order Clerk I	8.91
01192 - Order Clerk II	11.14
01261 - Personnel Assistant (Employment) I	9.59
01262 - Personnel Assistant (Employment) II	10.79
01263 - Personnel Assistant (Employment) III	12.46
01264 - Personnel Assistant (Employment) IV	14.01
01270 - Production Control Clerk	13.97
01290 - Rental Clerk	10.02
01300 - Scheduler, Maintenance	12.64
01311 - Secretary I	12.64
01312 - Secretary II	14.16
01313 - Secretary III	17.42
01314 - Secretary IV	17.78
01315 - Secretary V	19.54
01320 - Service Order Dispatcher	12.59
01341 - Stenographer I	11.98
01342 - Stenographer II	12.38
01400 - Supply Technician	13.76
01420 - Survey Worker (Interviewer)	12.39
01460 - Switchboard Operator-Receptionist	8.89
01510 - Test Examiner	14.16
01520 - Test Proctor	14.16
01531 - Travel Clerk I	9.15
01532 - Travel Clerk II	9.75

01533 - Travel Clerk III	10.43
01611 - Word Processor I	8.43
01612 - Word Processor II	10.52
01613 - Word Processor III	11.76
03000 - Automatic Data Processing Occupations	
03010 - Computer Data Librarian	9.13
03041 - Computer Operator I	9.13
03042 - Computer Operator II	11.59
03043 - Computer Operator III	15.03
03044 - Computer Operator IV	16.71
03045 - Computer Operator V	18.50
03071 - Computer Programmer I (1)	15.58
03072 - Computer Programmer II (1)	19.28
03073 - Computer Programmer III (1)	24.59
03074 - Computer Programmer IV (1)	26.87
03101 - Computer Systems Analyst I (1)	23.30
03102 - Computer Systems Analyst II (1)	27.62
03103 - Computer Systems Analyst III (1)	27.62
03160 - Peripheral Equipment Operator	10.65
05000 - Automotive Service Occupations	
05005 - Automotive Body Repairer, Fiberglass	16.13
05010 - Automotive Glass Installer	14.51
05040 - Automotive Worker	15.71
05070 - Electrician, Automotive	15.24
05100 - Mobile Equipment Servicer	13.07
05130 - Motor Equipment Metal Mechanic	17.27
05160 - Motor Equipment Metal Worker	15.71
05190 - Motor Vehicle Mechanic	17.27
05220 - Motor Vehicle Mechanic Helper	12.37
05250 - Motor Vehicle Upholstery Worker	14.94
05280 - Motor Vehicle Wrecker	15.71
05310 - Painter, Automotive	15.24
05340 - Radiator Repair Specialist	15.71
05370 - Tire Repairer	11.58
05400 - Transmission Repair Specialist	17.27
07000 - Food Preparation and Service Occupations	
(not set) - Food Service Worker	7.61
07010 - Baker	8.69
07041 - Cook I	8.07
07042 - Cook II	9.30
07070 - Dishwasher	6.67
07130 - Meat Cutter	10.14
07250 - Waiter/Waitress	6.51
09000 - Furniture Maintenance and Repair Occupations	
09010 - Electrostatic Spray Painter	13.96
09040 - Furniture Handler	10.72
09070 - Furniture Refinisher	13.97
09100 - Furniture Refinisher Helper	11.34
09110 - Furniture Repairer, Minor	12.66
09130 - Upholsterer	13.97
11030 - General Services and Support Occupations	
11030 - Cleaner, Vehicles	7.31
11060 - Elevator Operator	7.31
11090 - Gardener	9.85
11121 - House Keeping Aid I	6.97
11122 - House Keeping Aid II	8.39
11150 - Janitor	7.67
11210 - Laborer, Grounds Maintenance	8.22
11240 - Maid or Houseman	6.97
11270 - Pest Controller	10.38
11300 - Refuse Collector	8.82
11330 - Tractor Operator	9.28
11360 - Window Cleaner	8.35
12000 - Health Occupations	
12020 - Dental Assistant	13.52
12040 - Emergency Medical Technician (EMT)/Paramedic/Ambulance Driver	11.36

12071 - Licensed Practical Nurse I	11.92
12072 - Licensed Practical Nurse II	13.37
12073 - Licensed Practical Nurse III	14.96
12100 - Medical Assistant	9.95
12130 - Medical Laboratory Technician	14.15
12160 - Medical Record Clerk	12.45
12190 - Medical Record Technician	13.47
12221 - Nursing Assistant I	7.34
12222 - Nursing Assistant II	7.53
12223 - Nursing Assistant III	8.23
12224 - Nursing Assistant IV	9.22
12250 - Pharmacy Technician	12.11
12280 - Phlebotomist	12.09
12311 - Registered Nurse I	17.57
12312 - Registered Nurse II	21.50
12313 - Registered Nurse II, Specialist	21.50
12314 - Registered Nurse III	26.00
12315 - Registered Nurse III, Anesthetist	26.00
12316 - Registered Nurse IV	31.18
13000 - Information and Arts Occupations	
13002 - Audiovisual Librarian	14.52
13011 - Exhibits Specialist I	14.17
13012 - Exhibits Specialist II	18.00
13013 - Exhibits Specialist III	21.45
13041 - Illustrator I	14.17
13042 - Illustrator II	18.00
13043 - Illustrator III	21.45
13047 - Librarian	18.16
13050 - Library Technician	12.39
13071 - Photographer I	11.52
13072 - Photographer II	12.88
13073 - Photographer III	16.36
13074 - Photographer IV	19.50
13075 - Photographer V	23.60
15000 - Laundry, Dry Cleaning, Pressing and Related Occupations	
15010 - Assembler	7.16
15030 - Counter Attendant	7.16
15040 - Dry Cleaner	8.21
15070 - Finisher, Flatwork, Machine	7.16
15090 - Presser, Hand	7.16
15100 - Presser, Machine, Drycleaning	7.16
15130 - Presser, Machine, Shirts	7.16
15160 - Presser, Machine, Wearing Apparel, Laundry	7.16
15190 - Sewing Machine Operator	9.07
15220 - Tailor	9.54
15250 - Washer, Machine	7.44
19000 - Machine Tool Operation and Repair Occupations	
19010 - Machine-Tool Operator (Toolroom)	16.05
19040 - Tool and Die Maker	19.17
21000 - Material Handling and Packing Occupations	
21010 - Fuel Distribution System Operator	12.70
21020 - Material Coordinator	12.73
21030 - Material Expediter	12.73
21040 - Material Handling Laborer	9.53
21050 - Order Filler	10.97
21071 - Forklift Operator	11.32
21080 - Production Line Worker (Food Processing)	10.82
21100 - Shipping/Receiving Clerk	11.78
21130 - Shipping Packer	10.78
21140 - Store Worker I	9.64
21150 - Stock Clerk (Shelf Stocker; Store Worker II)	12.27
21210 - Tools and Parts Attendant	10.76
21400 - Warehouse Specialist	11.88
23000 - Mechanics and Maintenance and Repair Occupations	
23010 - Aircraft Mechanic	16.57
23040 - Aircraft Mechanic Helper	12.46

23050 - Aircraft Quality Control Inspector	16.81
23060 - Aircraft Servicer	13.92
23070 - Aircraft Worker	14.63
23100 - Appliance Mechanic	15.52
23120 - Bicycle Repairer	11.58
23125 - Cable Splicer	19.18
23130 - Carpenter, Maintenance	13.96
23140 - Carpet Layer	13.94
23160 - Electrician, Maintenance	16.81
23181 - Electronics Technician, Maintenance I	16.04
23182 - Electronics Technician, Maintenance II	18.26
23183 - Electronics Technician, Maintenance III	21.27
23260 - Fabric Worker	13.20
23290 - Fire Alarm System Mechanic	16.16
23310 - Fire Extinguisher Repairer	12.31
23340 - Fuel Distribution System Mechanic	14.69
23370 - General Maintenance Worker	12.58
23400 - Heating, Refrigeration and Air Conditioning Mechanic	15.15
23430 - Heavy Equipment Mechanic	16.81
23440 - Heavy Equipment Operator	16.81
23460 - Instrument Mechanic	19.34
23470 - Laborer	8.62
23500 - Locksmith	14.68
23530 - Machinery Maintenance Mechanic	18.72
23550 - Machinist, Maintenance	14.62
23580 - Maintenance Trades Helper	11.33
23640 - Millwright	16.84
23700 - Office Appliance Repairer	14.68
23740 - Painter, Aircraft	15.24
23760 - Painter, Maintenance	13.96
23790 - Pipefitter, Maintenance	14.62
23800 - Plumber, Maintenance	13.97
23820 - Pneudraulic Systems Mechanic	14.83
23850 - Rigger	14.62
23870 - Scale Mechanic	13.94
23890 - Sheet-Metal Worker, Maintenance	14.62
23910 - Small Engine Mechanic	13.30
23930 - Telecommunication Mechanic I	14.85
23931 - Telecommunication Mechanic II	15.52
23950 - Telephone Lineman	14.85
23960 - Welder, Combination, Maintenance	14.62
23965 - Well Driller	14.83
23970 - Woodcraft Worker	14.62
23980 - Woodworker	12.64
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	6.71
24580 - Child Care Center Clerk	8.37
24600 - Chore Aid	7.55
24630 - Homemaker	9.47
25000 - Plant and System Operation Occupations	
25010 - Boiler Tender	14.83
25040 - Sewage Plant Operator	14.89
25070 - Stationary Engineer	14.83
25190 - Ventilation Equipment Tender	11.57
25210 - Water Treatment Plant Operator	14.82
27000 - Protective Service Occupations	
(not set) - Police Officer	14.94
27004 - Alarm Monitor	10.51
27006 - Corrections Officer	12.45
27010 - Court Security Officer	12.45
27040 - Detention Officer	12.45
27070 - Firefighter	12.27
27101 - Guard I	7.74
27102 - Guard II	11.54
28000 - Stevedoring/Longshoremen Occupations	
28010 - Blocker and Bracer	13.94

28020 - Hatch Tender	13.94
28030 - Line Handler	13.94
28040 - Stevedore I	11.53
28050 - Stevedore II	14.00
29000 - Technical Occupations	
21150 - Graphic Artist	19.13
29010 - Air Traffic Control Specialist, Center (2)	29.36
29011 - Air Traffic Control Specialist, Station (2)	20.24
29012 - Air Traffic Control Specialist, Terminal (2)	22.29
29023 - Archeological Technician I	16.26
29024 - Archeological Technician II	18.22
29025 - Archeological Technician III	22.54
29030 - Cartographic Technician	23.76
29035 - Computer Based Training (CBT) Specialist/ Instructor	23.30
29040 - Civil Engineering Technician	18.50
29061 - Drafter I	14.44
29062 - Drafter II	17.40
29063 - Drafter III	18.12
29064 - Drafter IV	23.04
29081 - Engineering Technician I	13.64
29082 - Engineering Technician II	15.31
29083 - Engineering Technician III	19.09
29084 - Engineering Technician IV	23.82
29085 - Engineering Technician V	25.93
29086 - Engineering Technician VI	31.35
29090 - Environmental Technician	21.27
29100 - Flight Simulator/Instructor (Pilot)	27.62
29160 - Instructor	16.89
29210 - Laboratory Technician	18.16
29240 - Mathematical Technician	22.39
29361 - Paralegal/Legal Assistant I	14.65
29362 - Paralegal/Legal Assistant II	15.45
29363 - Paralegal/Legal Assistant III	18.88
29364 - Paralegal/Legal Assistant IV	22.86
29390 - Photooptics Technician	20.63
29480 - Technical Writer	21.30
29491 - Unexploded Ordnance (UXO) Technician I	18.66
29492 - Unexploded Ordnance (UXO) Technician II	22.57
29493 - Unexploded Ordnance (UXO) Technician III	27.05
29494 - Unexploded (UXO) Safety Escort	18.66
29495 - Unexploded (UXO) Sweep Personnel	18.66
29620 - Weather Observer, Senior (3)	17.51
29621 - Weather Observer, Combined Upper Air and Surface Programs (3)	15.76
29622 - Weather Observer, Upper Air (3)	15.76
31000 - Transportation/ Mobile Equipment Operation Occupations	
31030 - Bus Driver	11.80
31260 - Parking and Lot Attendant	7.98
31290 - Shuttle Bus Driver	11.11
31300 - Taxi Driver	10.49
31361 - Truckdriver, Light Truck	12.30
31362 - Truckdriver, Medium Truck	12.98
31363 - Truckdriver, Heavy Truck	15.71
31364 - Truckdriver, Tractor-Trailer	15.71
99000 - Miscellaneous Occupations	
99020 - Animal Caretaker	7.41
99030 - Cashier	6.44
99041 - Carnival Equipment Operator	8.96
99042 - Carnival Equipment Repairer	9.51
99043 - Carnival Worker	7.29
99050 - Desk Clerk	8.61
99095 - Embalmer	18.84
99300 - Lifeguard	9.05
99310 - Mortician	18.84
99350 - Park Attendant (Aide)	10.79
99400 - Photofinishing Worker (Photo Lab Tech., Darkroom Tech)	7.87
99500 - Recreation Specialist	13.40

99510 - Recycling Worker	10.67
99610 - Sales Clerk	8.53
99620 - School Crossing Guard (Crosswalk Attendant)	6.68
99630 - Sport Official	7.87
99658 - Survey Party Chief (Chief of Party)	10.24
99659 - Surveying Technician (Instr. Person/Surveyor Asst./Instr.)	9.31
99660 - Surveying Aide	8.54
99690 - Swimming Pool Operator	10.19
99720 - Vending Machine Attendant	7.13
99730 - Vending Machine Repairer	9.36
99740 - Vending Machine Repairer Helper	7.70

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:
HEALTH & WELFARE: $2.36 an hour or $94.40 a week or $409.07 a month
VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 8 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)
HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)
THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):
1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)
2) APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.
3) WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).
HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordinance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.
A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordance, explosives, and incendiary material differential pay.
** UNIFORM ALLOWANCE **
If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $3.35 per week (or $.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

** NOTES APPLYING TO THIS WAGE DETERMINATION **

Source of Occupational Title and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Third Supplement, dated March 1997, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).

2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the

wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.
&&&&&&&&&&

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CONSTRUCTION PROGRESS CHART

(EP 415-1-260)

REQUIREMENTS CONTROL SYMBOL

1. CONTRACTOR	3. PROJECT	5. CONTRACT DESCRIPTION	6. SUBMITTED FOR APPROVAL	DATE
			7. APPROVAL RECOMMENDED	DATE
2. CONTRACT NUMBER	4. LOCATION		8. APPROVED	DATE

LEGEND

BARS: 0 5 10

Scheduled progress to date of report

Actual progress

CURVES:

Scheduled progress _____ Actual progress .....

PRINCIPAL CONTRACT FEATURE	LINE ITEM	WT	ESTIMATED COST	
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL

100 90 80 70 60 50 40 30 20 10 0

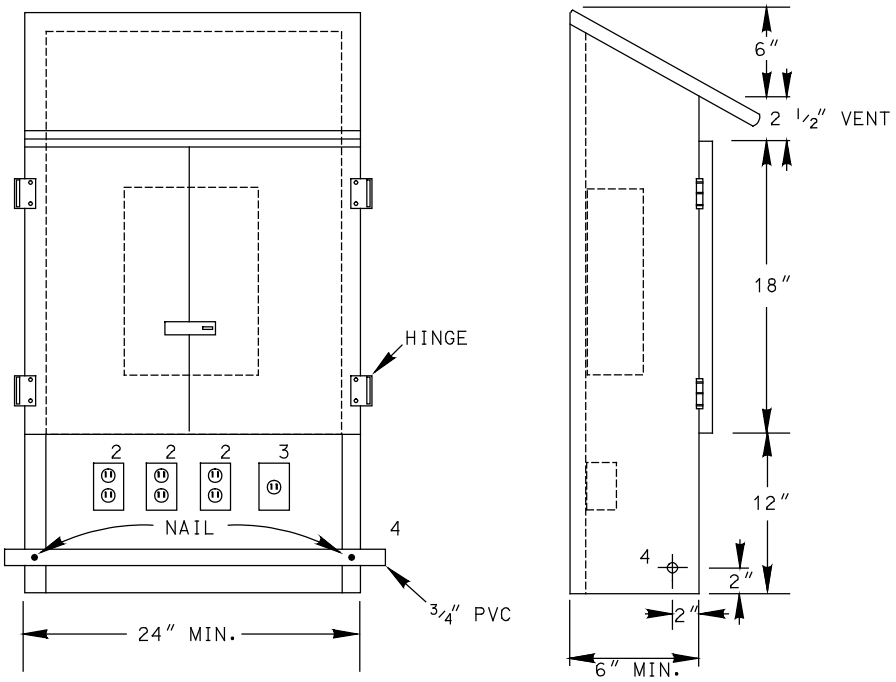
ING FORM 2454
1 JUNE 65

PREVIOUS EDITION MAY BE USED

M-1

ATTACHMENT M

MINIMUM STANDARD FOR TEMPORARY ELECTRICAL SERVICE



(DIMENSIONS ARE APPROXIMATE)

A. GENERAL CONSTRUCTION OF THE ENCLOSURE FOR TEMPORARY SERVICE SHALL CONSIST OF NOT LESS THAN 1/2 INCH PLYWOOD OF EXTERIOR GRADE.

B. ITEM 1: NEMA 1 CIRCUIT BREAKER TYPE PANELBOARD. THIS PANELBOARD SHALL CONSIST OF 1 TWO POLE 60 AMP MAIN CIRCUIT BREAKER, 4*ONE POLE 20 AMP BRANCH CIRCUIT BREAKERS, AND 1*TWO POLE 20 AMP BRANCH CIRCUIT BREAKER. BREAKERS SHALL MEET FEDERAL SPECIFICATIONS STANDARDS FOR CLASS 1A BREAKERS AND SHALL BE OF THE PLUG-IN TYPE (*NIMBER OF BREAKERS TO BE ADJUSTED TO SUIT JOB REQUIREMENTS). ANY OF THE ABOVE BREAKERS WHICH FEED 15 OR 20 AMP 120 VOLT RECEPTACLES SHALL BE GROUND FAULT INTERRUPTER TYPE.

C. ITEM 2 SHALL BE DUPLEX GROUNDING TYPE CONVENIENCE OUTLETS IN STANDARD UTILITY TYPE OUTLET BOXES WITH METAL COVERS. CONNECTIONS TO THE BRANCH CIRCUIT BREAKERS SHALL BE GROUNDED TWO CONDUCTOR #12 NMC CABLE.

D. ITEM 3 SHALL BE A SINGLE 3 CONDUCTOR GROUNDING TYPE OUTLET RATED FOR 240 VOLT SERVICE. CONNECTIONS FROM THIS OUTLET TO THE TWO POLE BREAKER SHALL BE BY TWO CONDUCTOR GROUNDED TYPE NMC CABLE. (IF REQUIRED).

E. ITEM 4 IS 3/4 INCH PVC AND IS USED TO SUPPORT EXTENSION CORDS.

F. THE PANELBOARD SHALL BE GROUNDED BY #6 WIRE CONNECTED TO A 3/4 INCH BY 8 FOOT LONG GROUND ROD.

G. SERVICE TO THE PANEL SHALL CONSIST OF THREE CONDUCTOR #6 MINIMUM SERVICE ENTRANCE CABLE. THIS CABLE MAY ENTER EITHER THE TOP OR THE SIDE OF THE WOODEN ENCLOSURE WITH THE OPENING BETWEEN THE CABLE AND THE WOOD SEALED WITH ELECTRICAL PUTTY OR SOME SIMILAR ACCEPTABLE SEALING COMPOUND.

H. PERIODIC INSPECTIONS OF SYSTEMS AND DEVICES WILL BE MADE BY THE CONTRACTOR AT INTERVALS NOT TO EXCEED ONE WEEK, AND A REPORT WILL BE SUBMITTED INDICATING THE RESULTS.

I. GROUND FAULT CIRCUIT INTERRUPTERS, APPROVED FOR PROTECTION OF PERSONNEL, WILL BE MANDATORY ON ALL 15 AND 20 AMPERE RECEPTACLE OUTLETS ON 120-VOLT SINGLE PHASE CIRCUITS FOR CONSTRUCTION SITES. THIS REQUIREMENT INCLUDES NOT ONLY TEMPORARY WIRING INSTALLED BY THE CONTRACTOR BUT ALSO ANY PART OF PERMANENT WIRING OF THE BUILDING OR STRUCTURE UTILIZED BY THE CONTRACTOR UNDER THIS CONTRACT. THIS SHALL INCLUDE ANY AND ALL GENERATORS EQUIPPED WITH 15 OR 20 AMPERE 120-VOLT RECEPTACLES.

APPENDIX VIII

ELECTRICAL SERVICE REQUIREMENTS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS

1. Purpose. The purpose of this appendix is to provide for safe temporary electrical service installed and used by contractors and government employees on all construction and maintenance operations.

2. Applicability. All elements and all contractors of the District will comply.

3. References.

a. AR 385-10
b. EM 385-1-1
c. ANSI-CI (NFPA 70)

4. General.

a. All wire, apparatus, and equipment used in a temporary power service shall be listed by Underwriters' or Factory Mutual Laboratories for the specific application. Materials and equipment need not be new but must be in good repair and serviceable condition.

b. Electrical systems and devices will be checked and approved for polarity, continuity of ground, and resistance to ground prior to being put into service. Resistance of driven rods shall be measured, recorded, and furnished to the Resident or Area Engineer at the time of installation, and shall not exceed 25 ohms. Periodic inspections of systems and devices will be made by the contractor at intervals not to exceed one week and a report will be submitted indicating the results.

c. Temporary electrical systems shall conform to the applicable provisions of the National Electrical Code and the Corps of Engineers' "Safety and Health Requirements Manual," EM 385-1-1.

d. Prime contractors shall submit a sketch of their proposed temporary power distribution systems to the Area or Resident Engineer at the prework conference.

e. Typical configurations of temporary electrical services and panels are shown in sketches A-D and will be included in the Special Conditions of the Contract.

f. Conductors shall be sized according to the recommendations of the National Electric Code.

5. Grounding.

a. All electrical tools, fuse boxes, and other equipment with conducting surfaces that could become energized shall be grounded. The only exception is double insulated tools that carry a legible Underwriters' or Factory Mutual Laboratories label.

b. Ground Fault Circuit Interrupters, approved for protection of personnel, will be mandatory on all 15 and 20 ampere 120-volt receptacle outlets on single phase circuits for construction sites beginning 1 January 1974. Until then Ground Fault Circuit Interrupters may be used in addition to adequate grounding methods. Ground Fault Circuit Interrupters are not an acceptable substitute for grounding.

c. Bare conductors or earth returns shall not be used for the wiring of any circuit.

d. Grounding will normally be accomplished by one of the following methods:

(1) A conductor is the supply cord or run with the circuit conductors to the distribution point where it is grounded. All portable and semi-portable electrical tools shall be grounded using this method via a multi-conductor cord having an identified grounding conductor and a multicontact polarized plug/receptacle.

(2) A grounding conductor separate form the power supply cable attached to a grounding rod, water pipe, or other grounded object. This method may be used only by special permission. Grounding rods must be at least five-eighths inch diameter, copper clad steel, steel or iron rods or three-fourths inch diameter pipe. They shall be in unbroken 8 -foot lengths and driven to full depth. Resistance to ground shall not exceed 25 ohms for any grounding system.

6. Plugs and Receptacles.

a. NEMA type 5 or 1.5 plugs and receptacles for the appropriate amperage shall be used for 125-volt services. See figure 1.

b. 250-Volt circuits shall be direct wired where feasible. Type 6 or 1.6 plugs and receptacle for the appropriate amperage shall be used when directing-wiring 250-volt circuits is not practical.

c. Other NEMA device configurations may be used only on written approval of the Contracting Officer.

d. Equipment requiring 3-phase current, over 250 volts, or more than 20 amperes per phases shall be direct wired.

e. Fuse and breaker boxes, receptacle boxes and switch boxes shall be plainly marked on the exterior to indicate the maximum operating amperage and voltage.

f. Underwriters' Laboratories approved double insulted tools having a standard parallel plug (NEMA Type 1-15P) will be considered to comply with paragraph a. above.

g. Receptacles used in damp or wet location shall be approved for the purpose. Outdoors is a wet locations and a receptacle installed outdoors where exposed to the weather shall be in a weatherproof enclosure, the integrity of which is not affected when an attachment plug cap is inserted.

7. Overcurrent Protection and Disconnects.

a. Overcurrent protection devices must be readily accessible, not exposed to physical damage and not placed in the vicinity of easily ignitable material.

b. Each circuit shall be protected by a fuse or breaker of the proper rating for the circuit to be protected.

c. A readily accessible, manually operated fusible switch or circuit breaker shall be provided for each incoming service or supply circuit. It shall disconnect all ungrounded conductors.

d. An approved type switch, properly identified and plainly marked to indicate that it is the tank or space disconnect shall be provided at or near the entrance to tanks or other confined spaces. It shall disconnect all power in such spaces.

e. Switches, boxes, circuit breakers, fuse panels, and motor controller in wet locations or outside shall be enclosed in a weatherproof enclosure or cabinet.

8. Wiring Methods.

a. Extension Cords. Flexible (extension) cords shall be of the hard usage (type SJ, SJO, SJT and SJTO) or extra hard usage (types S, SO, ST and STO) types and shall be listed by the Underwriters' Laboratories for the purpose in which they are used.

(1) The current carrying conductors shall not be smaller than No. 14 in any cord supplying more than one receptacle.

(2) If the insulation on a cord is burned, cut, or abraided to such an extent that bare conductor is exposed or the effectiveness of the insulation is questionable, it shall be removed the service.

(3) Flexible electrical cords shall be used only in continuous Lengths without splice or tap.

(4) Cords shall be connected to devices and fittings that tension will not be transmitted to joints, terminal screw or conductors. This shall be accomplished by a knot in the cord, winding with tape, by a special fitting designed for that purpose, or by other approved means. The outer insulation jacket on cords must be securely held by the connector devices for plugs, receptacle boxes, panel boxes, or other equipment.

(5) Field fabricated cords shall be constructed of materials for this purpose. Knockout type boxes shall not be laid on the ground unless properly protected.

(6) Plugs and receptacles shall be kept out of water unless of an approved submersible type.

b. Open Wiring on Insulators. Conductors shall be rigidly supported on insulators of noncombustible, nonabsorptive material. A loop of insulated wire approved for use in wet locations meets this requirement. Conductors may touch only their insulated support or using device. Conductors shall be supported as follows:

(1) At intervals not to exceed 4-1/2 feet over surfaces. Where conductors are likely to be disturbed, support distances shall be shortened.

(2) At intervals not to exceed 10 feet along walls and ceilings.

(3) For voltage not to exceeding 300 volts between conductors.

(4) Conductors shall be separated:

(a) A minimum of 2-1.2 inches from each other.

(b) Conductors shall be separated at least 1 inch from the surface wired over

(c) Within 6 inches of tap.

(5) The clear span between supports for areas other than the aforementioned which does not contain a messenger shall not exceed:

AWG (Copper)	Span (ft)
14	20
12	30
10	50
8	60

(6) Where open conductors cross ceiling joists or wall studs within 7 feet of the floor or are otherwise exposed to physical damage, they shall be protected. Conduit, pipe, guard strips, or other means may be used.

(7) Conductors entering or leaving damp locations shall have drip loops formed in them.

c. Splices and Taps. Conductors shall be spliced or joined with splicing devices approved for the use or by brazing, welding or soldering with a fusible metal or alloy. Soldered splices shall be so spliced or joined as to be mechanically or electrically secure without solder and then soldered. All splices and joints and the free ends of conductors shall be covered with an insulations equivalent to that of the conductors.

9. Use of Cable.

a. Nonmetallic sheathed cable may be used as follows:

(1) Type NM only in dry locations.

(2) Type NMC in wet or dry locations.

(3) Type UF as protected buried cable not less than 12 inches in depth. Also may be installed without protection at depths greater than 18 inches.

(4) When secured by staples, straps, or similar fittings designed and installed so as not to injure the cable insulation.

(5) Along studs, joists, or similar supports closely following the building finish or running boards when 7 feet, 8 inches or less above the floor. Above 7 feet, 8 inches, see paragraph 8b(1)(e).

(6) When firmly attached to each cabinet, box, fitting or fixture by means of a cable clamp.

(7) When protected by conduit, pipe, guard strips or other means on exposure to physical damage. Through the floor when mechanically protected to at least 6 inches above the floor.

b. Nonmetallic sheathed cable may not be used as follows:

(1) As portable extensions cords.
(2) Lying on the ground subject to any type of traffic.
(3) Where subject to frequent flexing.
(4) As service entrance cable.

c. Rigid metal conduit and other methods of installing temporary wiring may be used when installed by qualified electricians in conformity with the National Electrical Code and the Corps of Engineers “Safety and Health Requirements Manual,” EM 385-1-1

10. Outside Clearance - 600 Volts and Less.

a. Conductors shall clear the highest point of roofs by 8 feet except, where the voltage between conductors is less than 300 volts and the roof cannot be readily walked upon, only 3 feet of clearance is required.

b. Conductors shall be 10 feet above the ground or any other platform or projection from which they might be reached.

c. Conductors shall be 3 feet from windows, doors, balconies, fire escapes, or similar locations.

d. 10 feet above sidewalks

e. 18 feet above driveways, alleys and public roads.

11. Festoon Lighting.

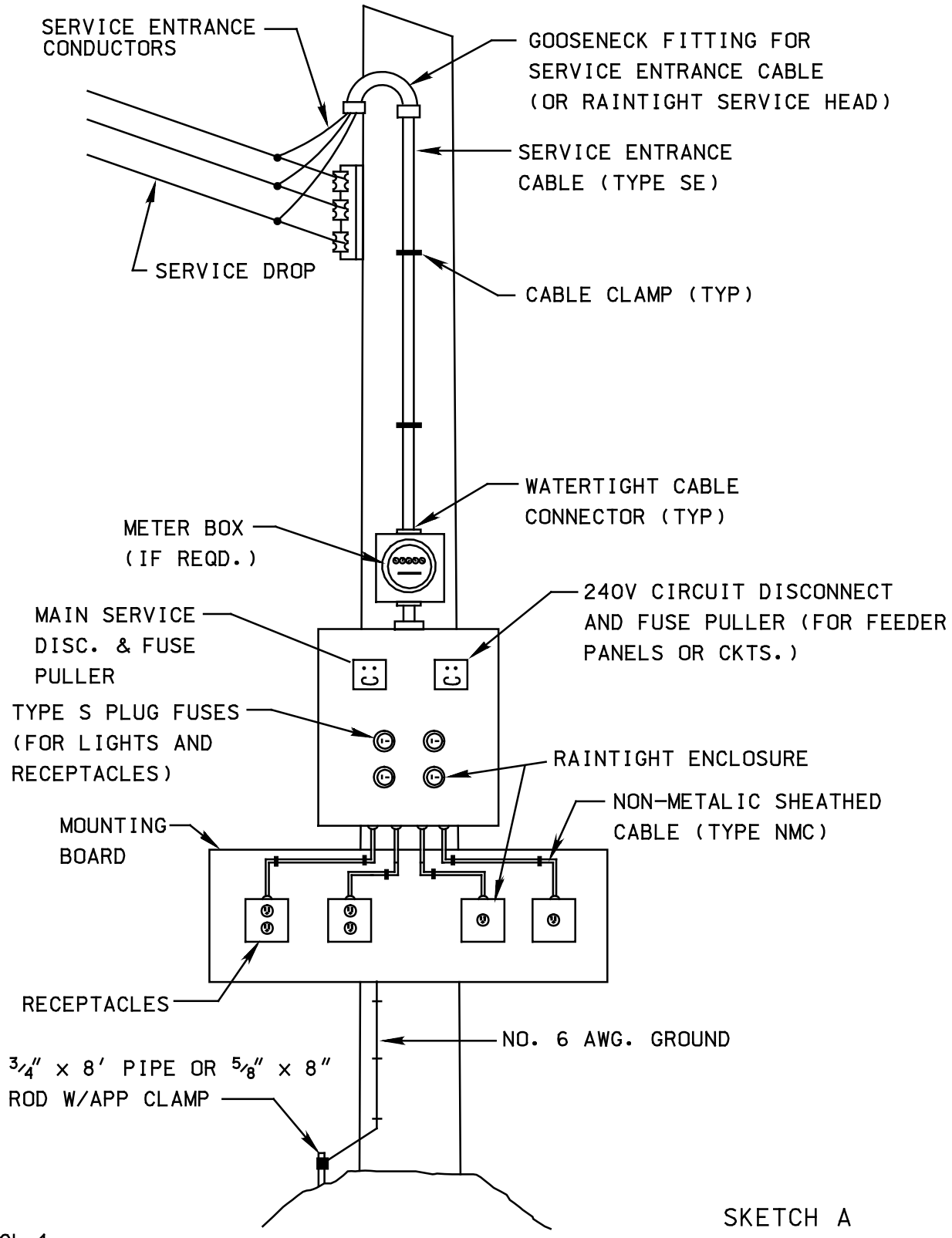
a. Conductors which span over 15 feet between supports may not be less than No. 12 unless supported by messenger wires. All conductors with spans in excess of 40 feet between supports shall be supported by messenger wires.

b. Messenger wire shall be supported by approved strain insulators.

c. Conductors or messenger wire shall not be attached to any fire escape, downspout, or plumbing equipment.

d. Festoon lighting strings shall be made using weatherproof lamp sockets. Pendant taps shall be used as specified in para. 8b(4).

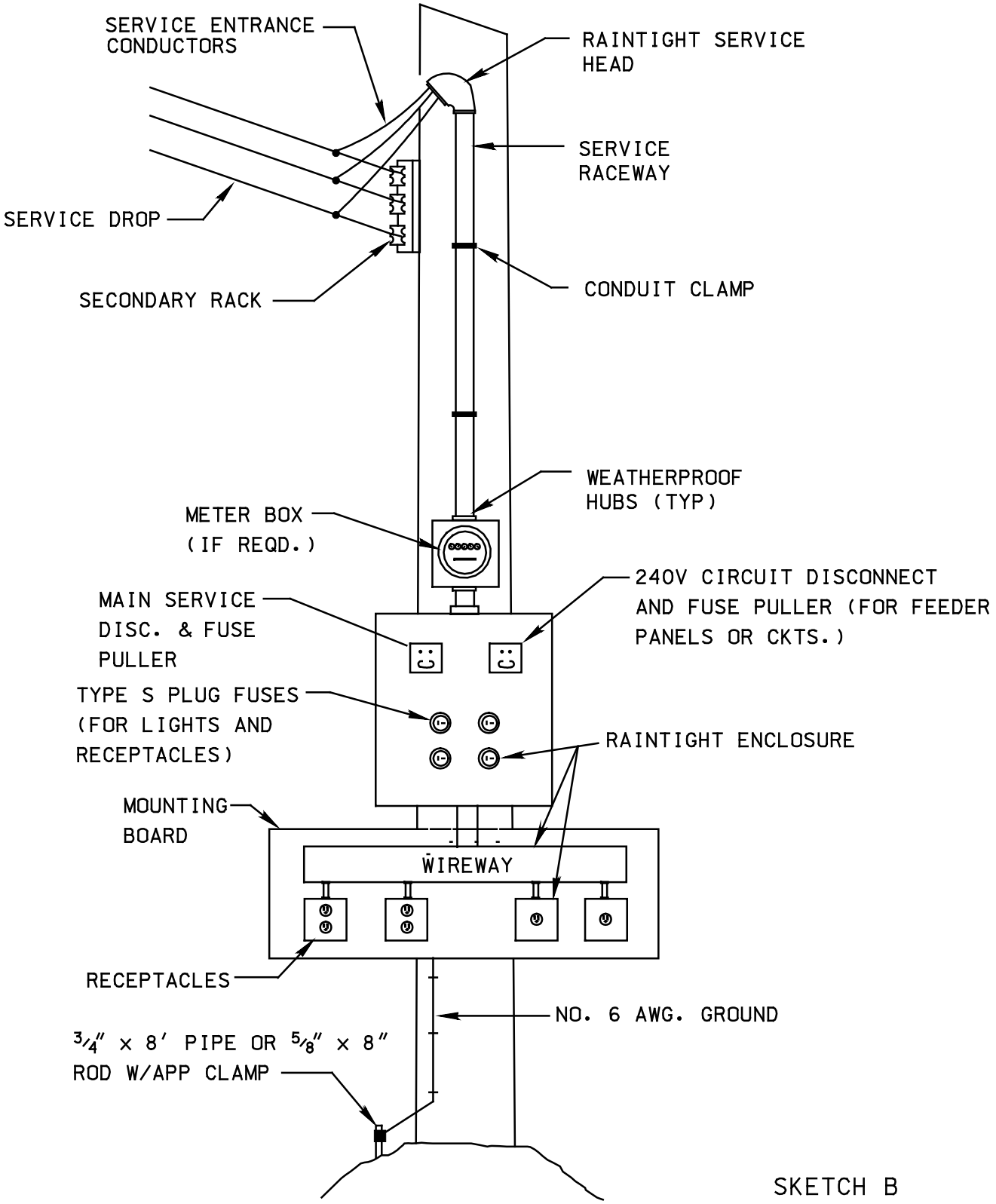
Enclosures 1 through 5



INCL 1

TEMPORARY ELECTRICAL SERVICE USING CABLE (TYPICAL)

SKETCH A
ATTACHMENT O

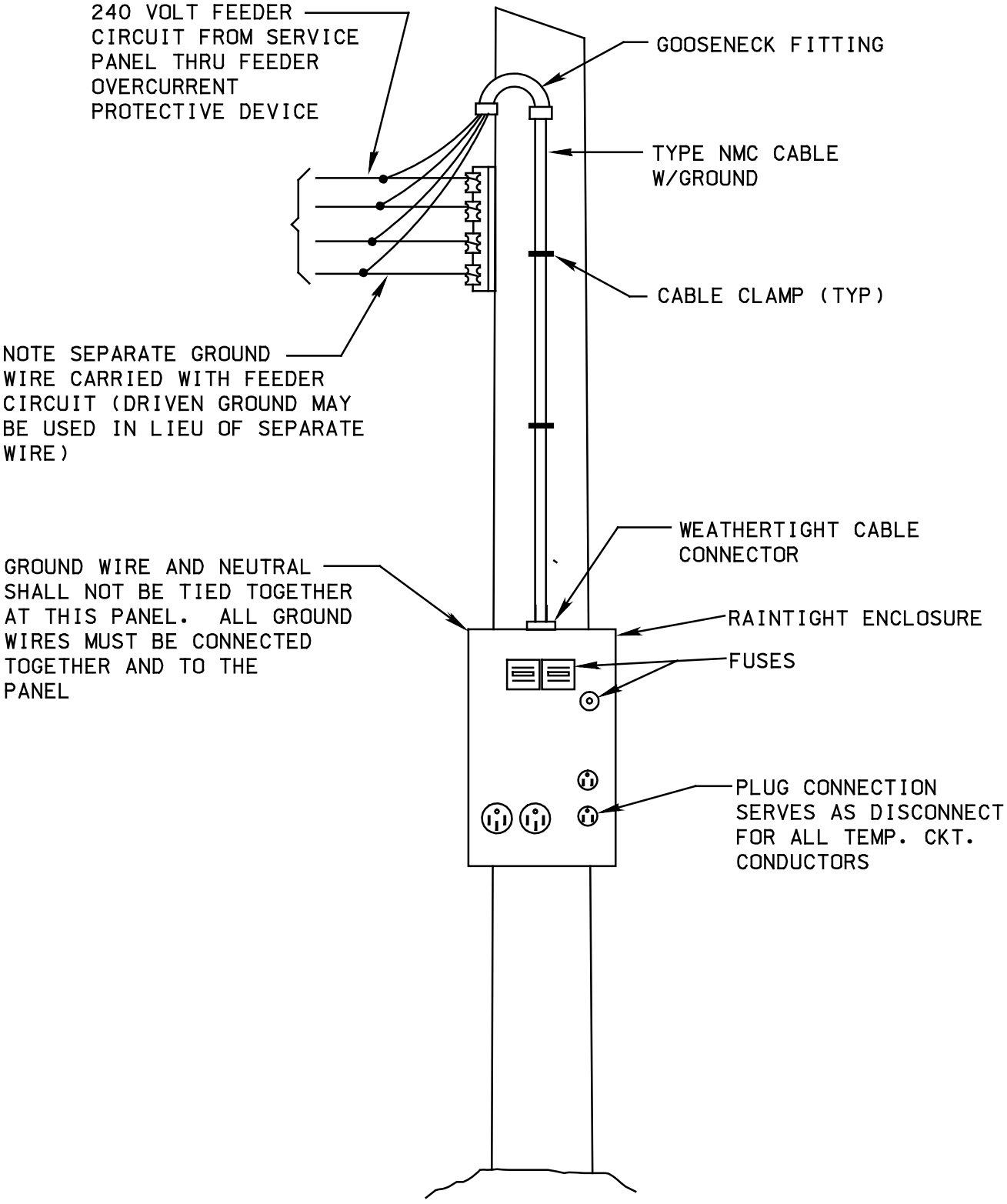


INCL 2

SKETCH B

ATTACHMENT O

TEMPORARY ELECTRICAL SERVICE USING RIGID CONDUIT OR E.M.T. (TYPICAL)



INCL 3

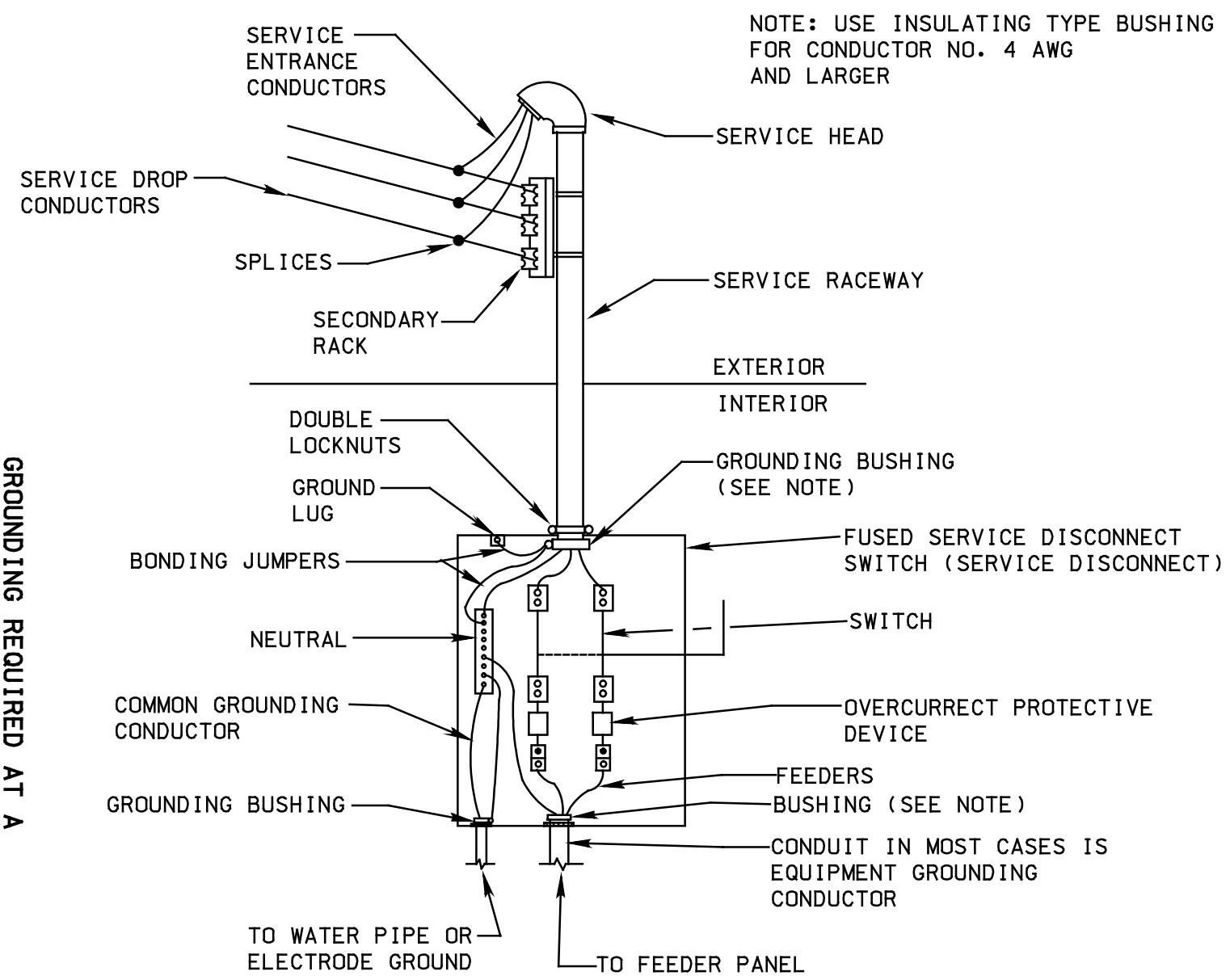
TEMPORARY POWER PANEL OTHER THAN SERVICE EQUIPMENT (TYPICAL)

SKETCH C
ATTACHMENT O

INCL 4

ATTACHMENT O

GROUNDING REQUIRED AT A TYPICAL ELECTRICAL SERVICE



INCL 5

NEMA STANDARD FOR PLUG DESIGN

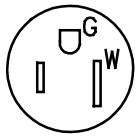
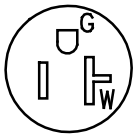
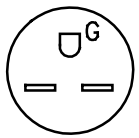
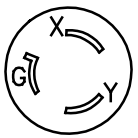
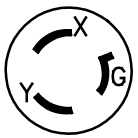
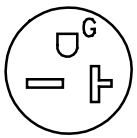
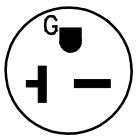
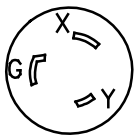
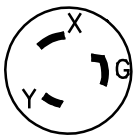
	15 AMPERE				20 AMPERE			
	NON-LOCKING		LOCKING		NON-LOCKING		LOCKING	
	RECPTACLE	PLUG	RECPTACLE	PLUG	RECPTACLE	PLUG	RECPTACLE	PLUG
125 VOLT								
	5-15R	5-15P	L5-15R	L5-15P	5-20R	5-20P	L5-20R	L5-20P
250 VOLT								
	6-15R	6-15P	L6-15R	L6-15P	6-20R	6-20P	L6-20R	L6-20P

FIGURE 1

ATTACHMENT O