



US Army Corps  
of Engineers®  
New England District

DACW33-03-B-0005

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# **Repairs to Sector Gates New Bedford-Fairhaven Hurricane Barrier**

New Bedford and Fairhaven, MA

## **Construction Solicitation and Specifications**

***Job Hazard: Underwater Work***

January 2003

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<b>SOLICITATION, OFFER, AND AWARD</b> <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO. DACW33-03-B-0005	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED(RFP)	3. DATE ISSUED 16-Jan-2003	PAGE OF PAGES 1 OF 40
	<b>IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.</b>			

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W13G86-2350-3654	6. PROJECT NO.
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7. ISSUED BY DEPT. OF THE ARMY N E DISTRICT, CORPS OF ENGINEERS 696 VIRGINIA ROAD CONCORD MA 01742-2751	CODE DACW33	8. ADDRESS OFFER TO (If Other Than Item 7) CODE  <b>See Item 7</b>
TEL:	FAX:	TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME ANN PEINE	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) 978-318-8757
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**SOLICITATION**

**NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".**

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

SPECIFICATIONS ENTITLED, "REPAIRS TO SECTOR GATES, NEW BEDFORD/FAIRHAVEN HURRICANE BARRIER, NEW BEDFORD AND FAIRHAVEN, MASSACHUSETTS." DATED JANUARY, 2003.

DRAWINGS AS LISTED IN PARAGRAPH 1.4 OF SECTION 00800, "CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000), CONTRACT CLAUSES, SECTION 00700 AND SPECIAL CONTRACT REQUIREMENTS, SECTION 00800.

THIS SOLICITATION IS UNRESTRICTED PURSUANT TO PUBLIC LAW 100-656, SMALL BUSINESS COMPETITIVE DEMONSTRATION PROGRAM.

WAGE DETERMINATION NO. MA020018 IS APPLICABLE TO THIS SOLICITATION.

11. The Contractor shall begin performance within 15 calendar days and complete it within 270 calendar days after receiving  award,  notice to proceed. This performance period is  mandatory,  negotiable. (See 00800. Par 1.1 \_\_\_\_\_.)

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 10
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 2 copies to perform the work required are due at the place specified in Item 8 by 2:00 PM (hour) local time 18 Feb 2003 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee  is,  is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.



Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum	\$_____	\$_____

MOBILIZATION AND DEMOBILIZATION  
 FFP  
 PURCHASE REQUEST NUMBER: W13G86-2350-3654

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum	\$_____	\$_____

INSPECT STOP GATES AND LIFTING BEAMS  
 FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		2	Each	\$_____	\$_____

INSTALL STOP GATES AND DEWATER SECTOR  
 GATE POCKETS  
 FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		1	Lump Sum	\$_____	\$_____

REHABILITATE WEST SECTOR GATE  
 FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005		1	Lump Sum	\$_____	\$_____

REHABILITATE EAST SECTOR GATE  
FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		2	Each	\$_____	\$_____

JACKING OF SECTOR GATES  
FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007		5	Each	\$_____	\$_____

REPLACE GATE WHEEL ASSEMBLIES  
FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008		10	Each	\$_____	\$_____

REPLACE TIMBER FENDERS  
FFP

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009		80	Each	\$ _____	\$ _____
	REPLACE TIMBER FENDER BRACKETS FFP			-	-

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010		1	Lump Sum	\$ _____	\$ _____
	CONCRETE AND MISCELLANEOUS REPAIRS FFP			-	-

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011		1	Lump Sum	\$ _____	\$ _____
	PAINTING OF SECTOR GATES FFP			-	-

TOTAL BID PRICE \$ \_\_\_\_\_

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE

52.214-3	Amendments To Invitations For Bids	DEC 1989
52.214-4	False Statements In Bids	APR 1984
52.214-5	Submission Of Bids	MAR 1997
52.214-6	Explanation To Prospective Bidders	APR 1984
52.214-7	Late Submissions, Modifications, and Withdrawals of Bids	NOV 1999
52.214-18	Preparation of Bids-Construction	APR 1984
52.214-19	Contract Award-Sealed Bidding-Construction	AUG 1996
52.225-10	Notice of Buy American Act Requirement--Construction Materials	MAY 2002
52.232-38	Submission of Electronic Funds Transfer Information with Offer	MAY 1999

CLAUSES INCORPORATED BY FULL TEXT

52.003-4002 BIDS RECEIVING DESK

Bids, if submitted in person or by messenger, shall be delivered to the Bids Receiving Desk (so identified), Building 1, Contracts Branch, Contracting Division, at the above address, prior to the time fixed for opening of bids. Bidders who attend the bid opening may deliver bids directly to the Contracting Officer in the New Hampshire Conference Room.

52.003-4014 INQUIRIES

Telephone inquiries relating to this solicitation should be directed as follows:

New England District, Corps of Engineers  
Procurement of Plans and Specifications,  
Prospective Bidders List, Bid Results,  
and Award Information ..... (978) 318-8420

Technical Inquiries on Plans and  
Specifications ..... (978) 318-8062

52.003-4015 MAGNITUDE OF PROJECT

The estimated cost of the work is \$250,000 - \$500,000.

52.003-4021 PLACE OF BID OPENING

Bids will be publicly opened at the appointed time at the U. S. Army Engineer District, New England, 696 Virginia Road, Concord, MA 01742-2751, in the New Hampshire Conference Room.

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm fixed price contract resulting from this solicitation.

(End of clause)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Contracting Officer, U.S. Army Engineer District, New England, 696 Virginia Road, Concord, Massachusetts 01742-2751.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: Mr. Maurice Beaudoin, ACO  
Address: New Bedford Resident Office  
103 Sawyer Street  
New Bedford, MA 02744-0027

Telephone: (508) 990-2550

(End of provision)

## 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far/>

<http://www.acq.osd.mil/dp/dfars>

<http://farsite.hill.af.mil>

<http://www.hq.usace.army.mil/cepr/asp/library/efar.asp>

(End of provision)

Section 00600 - Representations & Certifications

## CLAUSES INCORPORATED BY REFERENCE

52.222-38	Compliance with Veterans' Employment Reporting Requirements	DEC 2001
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## CLAUSES INCORPORATED BY FULL TEXT

## 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision \_\_\_\_\_ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of provision)

#### 52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person 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 on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person 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 on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed

by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

#### 52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

##### (a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

##### (d) Taxpayer Identification Number (TIN).

\_\_\_ TIN: \_\_\_\_\_

\_\_\_ TIN has been applied for.

\_\_\_ TIN is not required because:

\_\_\_ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

\_\_\_ Offeror is an agency or instrumentality of a foreign government;

\_\_\_ Offeror is an agency or instrumentality of the Federal Government.

##### (e) Type of organization.

\_\_\_ Sole proprietorship;

\_\_\_ Partnership;

\_\_\_ Corporate entity (not tax-exempt);

\_\_\_ Corporate entity (tax-exempt);

\_\_\_ Government entity (Federal, State, or local);

\_\_\_ Foreign government;

\_\_\_ International organization per 26 CFR 1.6049-4;

\_\_\_ Other \_\_\_\_\_

(f) Common parent.

\_\_\_ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

\_\_\_ Name and TIN of common parent:

Name \_\_\_\_\_

TIN \_\_\_\_\_

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ( ) is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals --

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

#### 52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is \$28.5 million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: \_\_\_\_\_.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women; in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

#### 52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

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(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

#### 52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except-

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

\_\_\_ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

#### 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a)  It has,  has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b)  It has,  has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

#### 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

#### 52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

(i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

- ( ) (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);
- ( ) (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);
- ( ) (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or
- ( ) (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

- (a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.
- (2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.
- (3) "Significant interest" means --
  - (i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;
  - (ii) Holding a management position in the firm, such as a director or officer;
  - (iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;
  - (iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or
  - (v) Holding 50 percent or more of the indebtedness of a firm.
- (b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

- (1) Identification of each government holding a significant interest; and
- (2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

\_\_\_ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

\_\_\_ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

## Section 00700 - Contract Clauses

## CLAUSES INCORPORATED BY REFERENCE

52.202-1 Alt I	Definitions (Dec 2001) --Alternate I	MAY 2001
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-11	Certification And Disclosure Regarding Payments To Influence Certain Federal Transactions	APR 1991
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 1997
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.211-18	Variation in Estimated Quantity	APR 1984
52.214-26	Audit and Records--Sealed Bidding	OCT 1997
52.214-27	Price Reduction for Defective Cost or Pricing Data - Modifications - Sealed Bidding	OCT 1997
52.214-28	Subcontracting Cost Or Pricing Data--Modifications--Sealed Bidding	OCT 1997
52.219-8	Utilization of Small Business Concerns	OCT 2000
52.222-3	Convict Labor	AUG 1996
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis -Bacon and Related Act Regulations.	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era and Other Eligible Veterans	DEC 2001
52.223-5	Pollution Prevention and Right-to-Know Information	APR 1998
52.223-6	Drug Free Workplace	MAY 2001
52.223-14	Toxic Chemical Release Reporting	OCT 2000
52.225-9	Buy American Act--Construction Materials	MAY 2002
52.225-13	Restrictions on Certain Foreign Purchases	JUL 2000

52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.227-4	Patent Indemnity-Construction Contracts	APR 1984
52.228-2	Additional Bond Security	OCT 1997
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.228-11	Pledges Of Assets	FEB 1992
52.228-12	Prospective Subcontractor Requests for Bonds	OCT 1995
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.228-15	Performance and Payment Bonds--Construction	JUL 2000
52.229-3	Federal, State And Local Taxes	JAN 1991
52.229-5	Taxes--Contracts Performed In U S Possessions Or Puerto Rico	APR 1984
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 1997
52.232-17	Interest	JUN 1996
52.232-23	Assignment Of Claims	JAN 1986
52.232-27	Prompt Payment for Construction Contracts	FEB 2002
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	MAY 1999
52.233-1 Alt I	Disputes (Jul 2002) - Alternate I	DEC 1991
52.233-3	Protest After Award	AUG 1996
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13 Alt I	Accident Prevention (Nov 1991) - Alternate I	NOV 1991
52.236-14	Availability and Use of Utility Services	APR 1984
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-21 Alt I	Specifications and Drawings for Construction (Feb 97) - Alternate I	APR 1984
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	AUG 1987
52.244-6	Subcontracts for Commercial Items	MAY 2002
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994
52.248-3	Value Engineering-Construction	FEB 2000
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (Sep 1996) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.252-2	Clauses Incorporated By Reference	FEB 1998
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991

252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense- Contract-Related Felonies	MAR 1999
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004	Required Central Contractor Registration	NOV 2001
252.205-7000	Provisions Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7000	Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate Range Nuclear Forces (INF) Treaty	NOV 1995
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.223-7004	Drug Free Work Force	SEP 1988
252.223-7006	Prohibition On Storage And Disposal Of Toxic And Hazardous Materials	APR 1993
252.225-7012	Preference For Certain Domestic Commodities	APR 2002
252.225-7031	Secondary Arab Boycott Of Israel	JUN 1992
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises-DoD Contracts	SEP 2001
252.227-7033	Rights in Shop Drawings	APR 1966
252.231-7000	Supplemental Cost Principles	DEC 1991
252.236-7000	Modification Proposals -Price Breakdown	DEC 1991
252.236-7001	Contract Drawings, Maps, and Specifications	AUG 2000
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991
252.242-7000	Postaward Conference	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

#### CLAUSES INCORPORATED BY FULL TEXT

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except-

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

\_\_\_ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
-------------------------------------------------	-----------------------------------------------

1.6%

6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is New Bedford, Bristol County, Massachusetts.

(End of provision)

#### 52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

- (c) The amount of the bid guarantee shall be 20 percent of the bid price or \$3 million, whichever is less.-
- (d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-
- (e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE  
MAR 1995)—EFARS

- (a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.
- (b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region I. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.
- (c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.
- (d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-5001 CONTINUING CONTRACTS (MAR 1995)--EFARS

- (a) This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U.S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations, and from future contribution to the project having one or more non-federal project sponsors. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract.
- (b) The sum of \$1,000.00 has been reserved for this contract and is available for payments to the contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds together with funds provided by one or more non-federal project sponsors will be reserved for this contract.

- (c) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (f) and (i) below. No such failure shall constitute a breach of this contract, except that this provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefore.
- (d) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.
- (e) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under the contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.
- (f) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of the contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.
- (g) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under the "Suspension of Work" clause or in any other manner under this contract.
- (h) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds
- (i). If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.
- (j) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(End of clause)

(d) INSURANCE REQUIRED

In accordance with CONTRACT CLAUSE titled “INSURANCE – WORK ON A GOVERNMENT INSTALLATION” the Contractor shall procure and maintain during the entire period of his performance under this contract the following kinds and minimum amounts of insurance:

TYPE	AMOUNT
Workmen’s Compensation and Employers’ Liability Insurance The Contractor shall comply with all applicable Workmen’s Compensation Statutes and shall furnish evidence of Employers’ Liability Insurance.	Not less than \$100,000
General Liability Insurance Bodily injury liability insurance on the comprehensive form of policy.	Minimum limits of \$500,000 per accident
Automobile Liability Insurance damage liability insurance on the comprehensive form of policy and shall cover the operation of all automobiles used in performance of the contract.	Minimum limits of \$200,000 per person and \$500,000 per accident \$20,000 per accident For property damage.

WAGE DETERMINATION

**General Decision Number MA020018**

General Decision Number **MA020018**  
 Superseded General Decision No. MA010018

State: Massachusetts

Construction Type:  
 HEAVY  
 MARINE

County(ies):  
 BARNSTABLE                      ESSEX                                  NORFOLK  
 BRISTOL                              MIDDLESEX                          PLYMOUTH  
 DUKES                                  NANTUCKET                          SUFFOLK

HEAVY AND MARINE CONTRUCTION PROJECTS

Modification Number	Publication Date
0	03/01/2002
1	03/08/2002
2	03/22/2002
3	04/05/2002
4	05/03/2002
5	06/07/2002
6	06/21/2002
7	09/06/2002
8	09/20/2002
9	11/22/2002

COUNTY(ies):  
 BARNSTABLE                      ESSEX                                  NORFOLK  
 BRISTOL                              MIDDLESEX                          PLYMOUTH  
 DUKES                                  NANTUCKET                          SUFFOLK

BOIL0029A	10/01/2001		
		Rates	Fringes
BOILERMAKER		27.96	35% + 4.49

BRMA0001K	03/01/2002		
		Rates	Fringes
FOXBORO CHAPTER			

BRISTOL (Attleboro, Berkley, Dighton, Mansfield, North  
 Attleboro, Norton, Raynham, Rehoboth, Seekonk, Taunton); NORFOLK  
 (Bellingham, Canton, Dedham, Foxboro, Franklin, Norfolk,

Norwood, Plainville, Sharon, Walpole, Westrwood, Wrentham); and  
 PLYMOUTH (Lakeville)

BRICKLAYERS & CEMENT MASONS	28.99	15.32
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BRMA0001L 03/01/2002

Rates	Fringes
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LOWELL CHAPTER

MIDDLESEX (Acton, Ashby, Ayer, Bedford, Billerica, Boxboro, Carlisle, Chemsford, Dracut, Dunstabale, Ft Devens, Groton, Littleton, Lowell, North Acton, Pepperell, Shirley, South Acton, Tewksbury, Townsend, Tyngsboro, West Acton, Westford, Wilmington)

BRICKLAYERS	28.99	15.32
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BRMA0001M 03/01/2002

Rates	Fringes
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LOWELL CHAPTER

MIDDLESEX (Ashland, Framingham, Holliston, Hopkinton, Hudson, Maynard, Natick, Sherbvorn, Stow); and NORFOLK (Medfield, Medway, Millis)

BRICKLAYERS	28.99	15.32
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BRMA0003A 03/01/2002

Rates	Fringes
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MARBLE, TILE & TERRAZZO WORKERS

30.10	13.72
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TERRAZZO FINISHERS

33.88	8.67
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MARBLE & TILE FINISHERS

23.88	13.55
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BRMA0003C 03/01/2002

Rates	Fringes
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BOSTON CHAPTER

MIDDLESEX (Arlington, Cambridge, Everett, Malden, Medford, Melrose, Somerville); NORFOLK (Brookline, Milton); and SUFFOLK

BRICKLAYERS	30.69	13.99
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BRMA0003K 03/01/2002

Rates	Fringes
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LYNN CHAPTER

ESSEX (Amesbury, Andover, Beverly, Boxford, Danvers, Essex, Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich, Lawrence, Lynn, Lynnfield, Manchester, Marblehead, Merrimac, Methuen, Middleton, Nahant, Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley, Salisbury, Salem, Saugus, Swampscott, Topsfield, Wakefield, Wenham, West Newbury); and MIDDLESEX (North Reading, Reading, Wakefield)

BRICKLAYERS & CEMENT MASONS	30.59	14.09
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BRMA0003L 03/01/2002

Rates	Fringes
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WALTHAM CHAPTER

MIDDLESEX (Belmont, Burlington, Concord, Lexington, Lincoln, Stoneham, Sudbury, Waltham, Watertown, Wayland, Weston, Winchester, Woburn)

BRICKLAYERS	29.29	15.39
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NEWTON CHAPTER

MIDDLESEX (Newton) AND NORFOLK (Dover, Needham, Wellesley) COUNTIES

BRICKLAYERS & CEMENT MASONS	29.79	14.89
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BRMA0003M 03/01/2002

Rates	Fringes
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NEW BEDFORD CHAPTER

BARNSTABLE; BRISTOL (Acushnet, Darmouth, Fairhaven, Fall River, Freetown, New Bedford, Somerset, Swansea, Westport); DUKES; NANTUCKET; PLYMOUTH (Marion, Mattapoisett, Rochester, Wareham)

BRICKLAYERS & CEMENT MASONS	30.59	14.09
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BRMA0003N 03/01/2002

Rates	Fringes
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QUINCY CHAPTER

PLYMOUTH COUNTY (Abington, Bridgewater, Brockton, Carver, Duxbury, East Bridgewater, Halifax, Hanover, Hanson, Hingham, Hull, Kingston, Marshfield, Middleboro, Norwell, Pembroke, Plymouth, Rockland, Scituate, West Bridgewater, Whitman)

BRICKLAYERS & CEMENT MASONS	29.29	15.39
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BRMA0032D 08/01/1999

	Rates	Fringes
MIDDLESEX (Newton) AND NORFOLK (Dover, Needham, Wellesley) COUNTIES		

BRICKLAYERS & CEMENT MASONS	28.67	12.14
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\* CARP0026C 10/01/2002

	Rates	Fringes
BRISTOL (Attleborough, North Attleborough); ESSEX; MIDDLESEX (Except Belmont, Cambridge, Everett, Malden, Medford, Somerville); AND NORFOLK (Bellingham, Braintree, Canton, Cohasset, Foxboro, Franklin, Medfield, Medway, Millis, Needham, Norfolk, Norwood, Plainville, Quincy, Sharon, Walpole, Wellesley, Westwood, Weymouth, Wrentham) COUNTIES		

CARPENTERS	26.25	11.91
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\* CARP0033C 10/01/2002

	Rates	Fringes
MIDDLESEX (Belmont, Cambridge, Everett, Malden, Medford, Somerville); NORFOLK (Brookline, Dedham, Milton); AND SUFFOLK COUNTIES		

CARPENTERS	30.49	13.39
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CARP0056A 08/01/2002

	Rates	Fringes
All of SUFFOLK COUNTY; and those areas of BARNSTABLE, BRISTOL, ESSEX, MIDDLESEX, NORFOLK, and PLYMOUTH COUNTIES situated INSIDE Boston Beltway (I-495) and North of Cape Cod Canal		

PILEDRIVERMEN & DIVER TENDERS	27.88	13.45
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CARP0056B 08/01/2001

	Rates	Fringes
DUKES and NANTUCKET COUNTIES; and those areas of  BARNSTABLE, BRISTOL, PLYMOUTH, and NORFOLK COUNTIES situated OUTSIDE Boston Beltway (I-495) and South of Cape Cod Canal		

PILEDRIVERMEN & DIVER TENDERS	24.11	13.45
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CARP0056C 08/01/2001

	Rates	Fringes
Those areas of ESSEX and MIDDLESEX COUNTIES situated OUTSIDE Boston Beltway (I-495)		

PILEDRIVERMEN & DIVER TENDERS	24.90	13.45
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CARP0056D	08/01/2001		
		Rates	Fringes
DIVERS		36.51	13.45

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* CARP0424A	10/01/2002		
		Rates	Fringes
NORFOLK (Braintree, Quincy, Cohasset, Weymouth, etc.)			
PLYMOUTH (Duxbury, Hanover, Hull, Hingham, Marshfield, Norwell, Pembroke Rockland, Scituate)			
CARPENTERS		26.25	11.91

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* CARP0624B	10/01/2002		
		Rates	Fringes
BARNSTABLE; BRISTOL (Except Attleboro & North Attleboro); DUKES;			
NANTUCKET; NORFOLK (Avon, Holbrook, Randolph, Stoughton); PLYMOUTH			
(Bridgewater, Kingston, Lakeville, Middleboro, Plymouth, S. Hanover, Whitman)			
CARPENTERS		26.25	11.91

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CARP1121A	04/01/2001		
		Rates	Fringes
MILLWRIGHTS		25.08	13.16

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ELEC0096A	06/01/2002		
		Rates	Fringes
MIDDLESEX (Ashby, Ashland, Ayer, Ft. Devens, Groton, Hopkinton, Hudson, Marlboro, Pepperell, Shirley, Stow, Townsend)			
ELECTRICIAN		29.44	10.29
TELEDATE SYSTEM INSTALLERS		20.65	7.31

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ELEC0099A	06/01/2001		
		Rates	Fringes
BRISTOL (Attleboro, North Attleboro, Seekonk)			
ELECTRICIANS		24.91	44%
TELEDATE SYSTEM INSTALLERS		18.85	4.44+17%

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ELEC0103B	09/01/2002		
		Rates	Fringes
ESSEX (Amesbury, Andover, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, Newbury, Newburyport,			

North Andover, Rowley, Salisbury, West Newbury); MIDDLESEX (Bedford, Billerica, Boxboro, Burlington, Carlisle, Chelmsford, Dracut, Dunstable littleton, Lowell, North Reading, Tewksbury, Tyngsboro, Westford, Wilmington)

ELECTRICIANS	33.96	14.89
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ELEC0103D 09/01/2002

	Rates	Fringes
ESSEX (Beverly, Danvers, Essex, Gloucester, Hamilton, Ipswich, Manchester, Marblehead, Middleton, Peabody, Rockport, Salem, Topsfield, Wenham)		

ELECTRICIANS	33.96	14.89
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ELEC0103E 09/01/2002

	Rates	Fringes
ESSEX (Lynn, Lynnfield, Nahant, Saugus, Swampscott); MIDDLESEX (Acton, Arlington, Belmont, Cambridge, Concord, Everett, Framingham, Holliston, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Natick, Newton, Reading, Sherborn, Somerville, Stoneham, Sudbury, Wakefield, Waltham, Watertown, Wayland, Weston, Winchester, Woburn); NORFOLK (Bellingham, Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Foxboro, Frankloin, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Quincy, Sharon, Walpole, Wellesley, Westwood, Weymouth, Wrentham); PLYMOUTH (Hingham and Hull); SUFFOLK		

ELECTRICIANS	33.96	14.89
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ELEC0104A 09/01/2002

	Rates	Fringes
LINE CONSTRUCTION:		
Lineman	30.10	8.70+6%+A
Equipment Operator	25.59	6.70+6%+A
Cableman and Technician	25.59	6.70+6%+A
Groundsman	16.56	4.20+6%+A

A. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day and Columbus Day, provided the employee has been employed 5 working days prior to any one of the listed holidays.

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ELEC0223B 09/01/2002

	Rates	Fringes
BARNSTABLE, BRISTOL (Except Attleboro, North Attleboro, Seekonk); DUKES; NANTUCKET; PLYMOUTH (Except Hingham and Hull Twps); NORFOLK (Avon, Halbrook, Randolph, Sloughton)		

ELECTRICIANS	27.43	11.66
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ELEC0223J 09/01/2002

	Rates	Fringes
BARNSTAABLE; BRISTOL (Except Attleboro, North Attleboro, Seekonk); DUKES; NANTUCKET; PLYMOUTH (Except Hingham and Hull Townships); NORFOLK (Avon, Halbrook, Randolph, Sloughton)		

TELEDATA	21.43	9.08
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ENGI0004I 06/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Group 1	30.57	11.87+A
Group 2	30.36	11.87+A
Group 3	23.82	11.87+A
Group 4	26.90	11.87+A
Group 5	19.92	11.87+A
Group 6	21.81	11.87+A

FOOTNOTE FOR POWER EQUIPMENT OPERATORS:

A. PAID HOLIDAYS: New Year's Day, Washington,s Birthday, Labor Day, Memorial Day, Independence Day, Patriot's Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day

HOURLY PREMIUM FOR BOOM LENGTHS (Including Jib):

Over 150 ft.	+1.40
Over 185 ft.	+2.45
Over 210 ft.	+3.45
Over 250 ft.	+5.23
Over 295 ft.	+7.24
Over 350 ft.	+8.43

POWER EQUIPMENT OPERATORS CLASSIFICATIONS  
[HEAVY CONSTRUCTION]

Group 1: Power shovel; crane; truck crane; derrick; pile driver; trenching machine; mechanical hoist pavement breaker; cement concrete paver; dragline; hoisting engine; three drum machine; pumpcrete machine; loaders; shovel dozer; front end loader; mucking machine; shaft hoist; steam engine; backhoe; gradall; cable way; fork lift; cherry picker; boring machine; rotary drill; post hole hammer; post hole digger; asphalt plant on job

site; concrete batching and/or mixing plant on job site; crusher plant on job site; paving concrete mixer; timber jack

Group 2: Sonic or vibratory hammer; grader; scraper; tandem scraper; bulldozer; tractor; mechanic - maintenance; York rake;

mulching machine; paving screed machine; stationary steam boiler; paving concrete finishing machine; grout pump; portable steam boiler; portable steam generator; roller; spreader; asphalt paver; locomotives or machines used in place thereof; tamper (self propelled or tractor-draw); cal tracks; ballast regulator; rail anchor machine; switch tamper; tire truck

Group 3: Pumps (1-3 grouped); compressor; welding machines (1-3 grouped); generator; sighting plant; heaters (power driven, 1-5); syphon-pulsometer; concrete mixer; valves controlling permanent plant air steam, conveyor, wellpoint system (operating)

Group 4: Assitant engineer (fireman)

Group 5: Oiler (other than truck cranes and gradalls)

Group 6: Oiler (on truck cranes and gradalls)

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

##### [MARINE CONSTRUCTION]

Group 1: Shovel; crane; truck crane; cherry picker; derrick; pile driver; two or more drum machines; lighters; derrick boats; trenching machines; mechanic hoist pavement breakers; cement concrete pavers; draglines; hoisting engines; pumpcrete machines; elevating graders; shovel dozer; front end loader; backhoe; gradall; cable ways; boring machine; rotary drill; post hole hammer; post hole digger; fork lift; timber jack; asphalt plant (on site); concrete batching and/or mixing plant (on site); crusher plant (on site); paving concrete mixer

Group 2: Portable steam boiler; portable steam generator; sonic or vibratory hammer; grader; scraper; tandem scraper; concrete pump; bulldozer; tractor; York rake; mulching machine; roller; spreader; tamper (self-propelled or tractor-drawn); asphalt paver; concrete mixer with side loader; mechanic - maintenance; cal tracks; ballast regulator; switch tamper; rail anchor machine; tire truck

Group 3: Pumps (1-3 grouped); compressor; welding machines (1-3 grouped); generator; lighting plant; heaters (power driven 1-5); syphon-pulsometer; concrete mixer; valves controlling permanent plant air or steam; conveyor; well point systems; auger (powered by independent engines and attached to pile drivers); hydraulic saws

Group 4: Fireman

Group 5: Assistant engineer (other than truck crane and gradall)

Group 6: Assistant engineer (on truck crane and gradall)

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IRON0007A 09/16/2002

	Rates	Fringes
BRISTOL (Easton); ESSEX (Beverly, Gloucester, Lynn, Lynnfield, Manchester, Marblehead, Nahant, Salem, Saugus, Swampscott); MIDDLESEX (Arlington, Bedford, Belmont, Burlington, Cambridge, Concord, Everett, Framingham, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Natick, Newton, Reading, Sherborn, Somerville, Stoneham, Sudbury, Wakefield, Waltham, Watertown, Wayland, Weston, Winchester, Woburn); NORFOLK (Except Medway); PLYMOUTH (Abington, Bridgewater, Brocton, Duxbury, East Bridgewater, Halifax, Hanover, Hanson, Hingham, Hull, Kingston, Marshfield, Norwell, Pembroke, Plymouth, Plympton, Rockland, Scituate, West Bridgewater, Whitman); SUFFOLK		

IRONWORKERS	27.95	15.59
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ESSEX (Amesbury, Andover, Boxford, Danvers, Essex, Georgetown, Hamilton, Haverhill, Ipswich, Lawrence, Merrimac, Methuen, Newbury, Newburyport, North Andover, Rockport, Rowley, Salisbury, Topsfield, Wenham, West Newbury); MIDDLESEX (Action, Billerica, Carlisle, Chelmsford, Dracut, Dunstable, Groton, Groveland, Littleton, Lowell, Middleton, North Reading, Pepperell, Tewksbury, Tyngsboro, Westford, Wilmington)

IRONWORKERS	23.54	15.59
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IRON0037B 06/02/2002

	Rates	Fringes
BARNSTABLE; BRISTOL (Acushnet, Attleboro, Berkley, Dartmouth, Dighton, Fairhaven, Fall River, Freetown, Mansfield, New Bedford, North Attleboro, Norton, Raynham, Rehoboth, Seekonk, Somerset, Swansea, Taunton, Westport); DUKES; NANTUCKET; NORFOLK (Billingham, Franklin, Plainville, Wrentham); PLYMOUTH (Lakeville, Marion, Mattapoissett, Middleboro, Rochester, Wareham)		

IRONWORKERS	26.20	12.68
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IRON0057A 05/01/2002

	Rates	Fringes
MIDDLESEX (Ashby, Ashland, Ayer, Boxboro, Holliston, Hopkinton, Hudson, Marlboro, Shirley, Stow, Townsend); NORFOLK (Medway)		

IRONWORKERS	28.37	13.93
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LABO0022F 06/01/2002

	Rates	Fringes
SUFFOLK COUNTY (Boston, Chelsea, Revere, Winthrop, Deer & Nut Islands); MIDDLESEX COUNTY (Arlington, Belmont, Burlington, Cambridge, Everett, Malden, Medford, Melrose, Reading, Somerville, Stoneham, Wakefield, Winchester, Winthrop and Woburn)		

only); NORFOLK COUNTY (Brookline, Dedham, and Milton only)

LABORERS :

GROUP 1	22.50	9.80
GROUP 2	22.75	9.80
GROUP 3	23.25	9.80
GROUP 4	23.50	9.80
GROUP 5	16.60	9.80
GROUP 6	24.50	9.80

LABORERS CLASSIFICATIONS

GROUP 1: Laborers; carpenter tenders; cement finisher tenders

GROUP 2: Asphalt raker; fence and guard rail erector; laser beam operator; mason tender; pipelayer; pneumatic drill operator; pneumatic tool operator; wagon drill operator

GROUP 3: Air track operator; block paver; rammer; curb setter

GROUP 4: Blaster; powderman

GROUP 5: Flagger

GROUP 6: Asbestos Abatement; Toxic and Hazardous Waste Laborers

LABO0022L 06/01/2002

	Rates	Fringes
Counties of BARNSTABLE; BRISTOL; DUKES; ESSEX; NANTUCKET; PLYMOUTH; MIDDLESEX (With the exception of Arlington, Belmont, Burlington, Cambridge, Everett, Malden, Melrose, Reading, Somerville, Stoneham, Wakefield, Winchester, Winthrop and Woburn); NORFOLK (With the exception of Brookline, Dedham, and Milton)		

LABORERS:

GROUP 1	20.85	8.60
GROUP 2	21.10	8.60
GROUP 3	21.60	8.60
GROUP 4	21.85	8.60
GROUP 5	14.95	8.60
GROUP 6	22.85	8.60

LABORERS CLASSIFICATIONS

GROUP 1: Laborers; carpenter tenders; cement finisher tenders

GROUP 2: Asphalt raker; fence and guard rail erector; laser beam operator; mason tender; pipelayer; pneumatic drill operator; pneumatic tool operator; wagon drilloperator

GROUP 3: Air track operator; block paver; rammer; curb setter

GROUP 4: Blaster; powderman

GROUP 5: Flagger

GROUP 6: Asbestos Abatement; Toxic and Hazardous Waste Laborers

LABO0022M 06/01/2002

	Rates	Fringes
LABORERS (TUNNELS, CAISSON & CYLINDER WORK IN COMPRESSED AIR)		
GROUP 1	21.65	9.60+A
GROUP 2	32.13	9.60+A
GROUP 3	32.13	9.60+A
GROUP 4	32.13	9.60+A
GROUP 5	32.13	9.60+A
GROUP 6	34.13	9.60+A

LABORERS CLASSIFICATIONS

GROUP 1: Powder watchman; Top man on iron bolt; change house attendant

GROUP 2: Brakeman; trackman; groutman; laborer; outside lock tender; lock tender; guage tender

GROUP 3: Motorman

GROUP 4: Blaster

GROUP 5: Mucking machine operator

GROUP 6: Hazardous Waste work within the "HOT" zone. (A premium of two dollars \$2.00 per hour over the basic wage rate.

LABORERS (FREE AIR OPERATION):  
SHIELD DRIVEN AND LINER PLATE IN FREE AIR)

GROUP 1	24.20	9.60+A
GROUP 2	24.20	9.60+A

LABORERS CLASSIFICATIONS

GROUP 1: Miner; miner welder; conveyor operator; motorman; mucking machine operator; nozzle man; grout man; shaft and tunnel steel and rodman; shield and erector arm operators

GROUP 2: Brakeman; trackman

CLEANING CONCRETE AND CAULKING TUNNEL (Both New & Existing)

GROUP 1	24.20	9.60+A
GROUP 2	24.20	9.60+A

LABORERS CLASSIFICATIONS

GROUP 1: Concrete workers; strippers and form movers (wood & steel rock shaft, concrete lining of same and tunnel in free air)

GROUP 2: Form erector

ROCK SHAFT, CONCRETE LINING OF SAME AND TUNNEL IN FREE AIR

GROUP 1	21.65	9.60+A
GROUP 2	24.20	9.60+A
GROUP 3	24.20	9.60+A
GROUP 4	24.20	9.60+A
GROUP 5	26.20	9.60+A

LABORERS CLASSIFICATIONS

GROUP 1: Change house attendants

GROUP 2: Laborers, topside

GROUP 3: Brakeman; trackman; tunnel laborers; shaft laborers

GROUP 4: Miner; cage tender; bellman

GROUP 5: Hazardous Waste work within the "HOT" zone. (A premium of two dollars \$2.00 per hour over the basic wage rate)

LABORERS (OPEN AIR CASSONS, UNDERPINNING AND TEST BORING INDUSTRIES):

OPEN AIR CASSON, UNDERPINNING WORK & BORING CREW

Laborers; Top man	21.95	10.35+A
Bottom man	22.90	10.35+A

TEST BORING & WELL DRILLING

Laborer	21.95	10.35+A
Driller	23.35	10.35+A

FOOTNOTE FOR LABORERS:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day

LABO1421A 06/01/2002

	Rates	Fringes
WRECKING LABORERS:		
Yardmen Laborer (Salvage Yard only)	19.40	9.10
Yardmen Burners, Sawyers	22.50	9.10

Wrecking Laborers	23.40	9.10
Adzeman	23.40	9.10
Burners, Jackhammers	23.65	9.10
Small Front Loaders on Tracks		
and Bobcat Operators	23.90	9.10
Asbestos Removers	25.40	9.10

PAIN0035A 07/01/2002

	Rates	Fringes
BARNSTABLE BRISTOL; DUKES; ESSEX; NANTUCKET; PLYMOUTH(Remainder of NORFOLK; MIDDLESEX AND SUFFOLK COUNTIES)		

PAINTERS:

NEW CONSTRUCTION:

Brush	24.66	11.52
Spray, Sandblast	25.66	11.52
Bridge	32.66	11.52

REPAINT:

Brush	22.72	11.52
Spray, Sandblast	23.72	11.52
Bridge	32.66	11.52

PAIN00350 07/01/2002

	Rates	Fringes
MIDDLESEX (Cambridge, Everett, Malden, Medford, Somerville)		
SUFFOLK COUNTY (Boston, Chelsea) NORFOLK COUNTY (Brookline)		

PAINTERS:

NEW CONSTRUCTION:

Brush, Taper	30.45	11.52
Spray, Sandblast	31.45	11.52

REPAINT:

Brush, Taper	28.51	11.52
Spray, Sandblast	29.51	11.52
Bridge	32.66	11.52

PAIN0035R 06/01/2001

	Rates	Fringes
SIGN PAINTERS	17.43	6.47

\* PLAS0534A 09/01/2002

	Rates	Fringes
ESSEX (Amesbury, Andover, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, North Andover, Salisbury, West Newbury); MIDDLESEX (Acton, Arlington, Bedford, Billerica, Burlington, Cambridge, Carlisle, Chemsford, Dracut, Dunstable, Everett, Littleton, Lowell, Malden, Medford, Melrose, Reading, North Reading, Stoneham, Tewksbury, Tyngsboro, Wakefield,		

Westford, Wilmington, Winchester & Woburn); AND NORFOLK  
(Brookline, Milton)SUFFOLK COUNTY

CEMENT MASONS	28.50	17.86
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PLUM0004A 09/01/2001

Rates	Fringes
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MIDDLESEX (Ashby, Ayer - West of Greenville branch of Boston and  
Maine Railroad, Ft. Devens, Groton, Shirley, Townsend)

PLUMBERS & PIPE FITTERS	27.36	10.38
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\* PLUM0012A 09/01/2002

Rates	Fringes
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ESSEX (Lynn, Lynnfield, Nahant, Saugus, Swampscott); MIDDLESEX  
(Acton, Arlington, Ashland, Ayer - except W. of Greenville Branch  
of Boston & Maine RR, Bedford, Belmont, Billerica, Boxboro,  
Burlington, Cambridge, Carlisle, Chelmsford, Concord, Dracut,  
Dunstable, Everett, Framingham, Hudson, Holliston, Hopkinton,  
Lexington, Lincoln, Littleton, Lowell, Malden, Marlboro, Maynard,  
Medford, Melrose, Natick, Newton, North Reading, Pepperell,  
Reading, Sherborn, Somerville, Stoneham, Stow, Sudbury,  
Tewksbury, Tyngsboro, Wakefield, Waltham, Watertown, Wayland,  
Westford, Wilmington, Winchester, Woburn); NORFOLK (Bellingham,  
Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Foxboro,  
Franklin, Medfield, Medway, Millis, Milton, Needham, Norfolk,  
Norwood, Plainville, Quincy, Sharon, Walpole, Wellesley,  
Westwood, Weymouth, Wrentham); PLYMOUTH (Hingham, Hull,  
Scituate); SUFFOLK

PLUMBERS	34.72	12.73
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\* PLUM0051E 09/01/2002

Rates	Fringes
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BARNSTABLE; BRISTOL; DUKES; NANTUCKET; NORFOLK (Avon, Holbrook,  
Randolph, Stoughton) PLYMOUTH( Remainder of County)

PLUMBERS & PIPEFITTERS	27.65	13.32
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\* PLUM0138A 09/01/2002

Rates	Fringes
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ESSEX (Ames, Andover, Beverly, Boxford, Byfield, Danvers, Essex,  
Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich,  
Lawrence, Manchester, Marblehead, Merrimac, Methuen, Middleton,  
Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley,  
Salem, Salisbury, Topsfield, Wenham, West Newbury)

PLUMBERS, PIPEFITTERS,

and STEAMFITTERS 29.17 12.95

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PLUM0537A 03/01/2002

	Rates	Fringes
MIDDLESEX (Arlington, Cambridge, Everett, Malden, Medford, Melrose, Reading, Wakefield, Winchester and Woburn); NORFOLK (Bellingham, Braintree, Brookline, Canton Cashasset, Dedham, Foxboro, Franklin, Millis, Milton, Sharon, Walpole, Westwood, and Wrenthan); PLYMOUTH (Hingham, Hull, Scituate); ESSEX (Lynn, Lynnfield, Nahant, Saugus, Swampscott); SUFFOLK (Boston and Chelsea)		

PIPEFITTERS 33.36 12.79

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TEAM0379A 06/01/2002

	Rates	Fringes
TRUCK DRIVERS:		
Group 1	23.48	9.46+A+B
Group 2	23.65	9.46+A+B
Group 3	23.72	9.46+A+B
Group 4	23.84	9.46+A+B
Group 5	23.94	9.46+A+B
Group 6	24.23	9.46+A+B
Group 7	24.52	9.46+A+B

POWER TRUCKS \$.25 DIFFERENTIAL BY AXLE  
TUNNEL WORK (UNDERGROUND ONLY) \$.40 DIFFERENTIAL BY AXLE  
HAZARDOUS MATERIALS (IN HOT ZONE ONLY) \$2.00 PREMIUM

TRUCK DRIVERS CLASSIFICATIONS

Group 1: Station wagons; panel trucks; and pickup trucks  
Group 2: Two axle equipment; & forklift operator  
Group 3: Three axle equipment and tireman  
Group 4: Four and Five Axle equipment  
Group 5: Specialized earth moving equipment under 35 tons other than conventional type trucks; low bed; vachual; mechanics, paving restoration equipment  
Group 6: Specialized earth moving equipment over 35 tons  
Group 7: Trailers for earth moving equipment (double hookup)

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Patriot's Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day
- B. PAID VACATION: Employees with 4 months to 1 year of service receive 1/2 day's pay per month; 1 week vacation for 1 - 5 years of service; 2 weeks vacation for 5 - 10 years of service; and 3 weeks vacation for more than 10 years of service

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REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

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-- End of Document Table of Contents --

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

1.1 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10

The Contractor shall be required to--

- (1) commence work under this contract within 15 calendar days after the date the Contractor receives the notice to proceed,
- (2) prosecute the work diligently, and
- (3) complete the entire work ready for use not later than 270 calendar days after the date the Contractor receives notice to proceed. Some items of work are to be completed in shorter durations and during specific time periods within the overall prosecution period. See Subpart "Work Sequence and Scheduling" in Section 01110 SUMMARY OF WORK for a detailed explanation of these specific requirements and limitations. The time stated for completion shall include final cleanup of the premises.

1.2 LIQUIDATED DAMAGES - CONSTRUCTION (Sept 2000) FAR 52.211-12

- (a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$700.00 for each calendar day of delay until the work is completed or accepted.
- (b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

1.3 TIME EXTENSIONS (Sept 2000) FAR 52.211-13

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

1.4 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000) DFARS 252.236-7001

- (a) The Government will provide to the Contractor, without charge, one set

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

of contract drawings and specifications, except publications incorporated into the technical provisions by reference. The drawings will be provided to the Contractor in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall-

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

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

(e) The work shall conform to the specifications, and to the contract drawings identified on the following index of drawings:

Sheet No.	Design File	Title
		REPAIR OF SECTOR GATES NEW BEDFORD/FAIRHAVEN HURRICANE BARRIER
1 of 5, G-1	NBFGBS.DGN	TITLE SHEET
2 of 5, G-2	NBFG001.S02	INDEX, NOTES, AND LEGEND
3 of 5, S-1	NBFS501.S03	STRUCTURAL DETAILS AND ELEVATIONS
4 of 5, S-2	NBFS502.S04	STRUCTURAL DETAILS AND PLANS
5 of 5, S-3	NBFS503.S05	STRUCTURAL DETAILS

Information Drawings Accompanying the Specification:

Information drawings are included in the project documents and are identified on an index found on Sheet 2. Information drawings are intended to show the original construction. Drawings are the property of the

Government and shall not be used for any purpose other than that intended by the specifications.

1.5 DESIGNATED BILLING OFFICE

Reference Contract Clause titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS" located in SECTION 00700, CONTRACT CLAUSES. The "designated billing office" will be the Construction Area Engineer, Resident Engineer or project office where the Contracting Officer Representative for this contract is located. The Contractor will be notified of the exact location of this office at the project preconstruction conference specified in Section 01110 SUMMARY OF WORK.

1.6 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE entitled, "DEFAULT (FIXED PRICE CONSTRUCTION)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied.

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

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

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

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

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
(9)	(7)	(5)	(3)	(1)	(1)
<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
(1)	(1)	(1)	(2)	(5)	(7)

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated

chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "DEFAULT (FIXED PRICE CONSTRUCTION)."

1.7 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSE titled "INSURANCE - WORK ON A GOVERNMENT INSTALLATION" the Contractor shall procure and maintain during the entire period of his performance under this contract the following kinds and minimum amounts of insurance:

<u>Type</u>	<u>Amount</u>
<u>Workmen's Compensation and Employers' Liability Insurance.</u> The Contractor shall comply with all applicable Workmen's Compensation Statutes and shall furnish evidence of Employers' Liability Insurance.	Not less than \$100,000
<u>General Liability Insurance</u> Bodily injury liability insurance on the comprehensive form of policy.	Minimum limits of \$500,000 per accident
<u>Automobile Liability Insurance</u> Bodily injury liability and property damage liability insurance on the comprehensive form of policy and shall cover the operation of all automobiles used in performance of the contract.	Minimum limits of \$200,000 per person and \$500,000 per accident for bodily injury and \$20,000 per accident for property damage.

1.8 WARRANTY OF CONSTRUCTION (MAR 1994) FAR 52.246-21 Alternate I

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements;  
or

(2) Any defect of equipment, material, workmanship, or design  
furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

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

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

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

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

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

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

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

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

1.9 OBSTRUCTION OF NAVIGABLE WATERWAYS DFAR 252.236-7002(DEC 1991)

(a) The Contractor shall-

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

(2) Give immediate notice, with description and locations of any such obstructions, to the Contracting Officer; and

(3) When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.

(b) The Contracting Officer may-

(1) Remove the obstructions by contract or otherwise should the Contractor refuse, neglect, or delay compliance with paragraph (a) of this clause; and

(2) Deduct the cost of removal from any monies due or to become due to the Contractor; or

(3) Recover the cost of removal under the Contractor's bond.

(c) The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence is limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 410 et.seq.).

1.10 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION  
(DEC 1991) DFARS 252.236-7004.

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract lump sum price for this item.

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

(2) The remaining 40 percent upon completion of demobilization.

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

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

(i) Actual mobilization costs at completion of mobilization;

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

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

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

1.11 QUANTITY SURVEYS (APR 1984) ALTERNATE 1 FAR 52.236-16

(a) Quantity surveys shall be conducted, and the data derived from  
these surveys shall be used in computing the quantities of work  
performed and the actual construction completed and in place.

(b) The Contractor shall conduct the original and final surveys and  
surveys for any periods for which progress payments are requested. All  
these surveys shall be conducted under the direction of a  
representative of the Contracting Officer, unless the Contracting  
Officer waives this requirement in a specific instance. The Government  
shall make such computations as are necessary to determine the  
quantities of work performed or finally in place. The Contractor shall  
make the computations based on the surveys for any periods for which  
progress payments are requested.

(c) Promptly upon completing a survey, the Contractor shall furnish the  
originals of all field notes and all other records relating to the  
survey or to the layout of the work to the Contracting Officer, who  
shall use them as necessary to determine the amount of progress  
payments. The Contractor shall retain copies of all such material  
furnished to the Contracting Officer.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01110

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SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

The general description below is given to indicate the approximate scope of this project only. It does not limit the work required under the project drawings and specifications.

The work of this project consists of miscellaneous rehabilitation work on the navigation gates and appurtenances at the New Bedford/Fairhaven Hurricane Barrier. Major work features include installation of stop gates and dewatering of navigation gate pockets, clearing silt, sand, and debris from the base of the gates, jacking of the gates to allow wheel repairs, gate wheel repairs or replacement, repairs to the timber fender system, concrete repairs, painting of steel, and miscellaneous repairs to steel components. Inspection and repair of stop gates is required. Repairs requiring underwater work include cleaning of stop gate guides, metal cutting, welding of metal shapes, painting, and inspections.

1.1.1 Project Site Photographs

Attached at the end of the specification document are photographs showing the approximate existing conditions at the site of the work. These photographs are included for informational purposes only; the Contractor shall verify existing conditions through his own efforts for bidding and construction purposes.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the 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

Progress Schedule; G, C.

In accordance with the contract provisions, the Contractor shall, within five (5) days after receipt by him of notice to proceed or as otherwise determined by the Contracting Officer, submit for approval a practicable progress schedule. When changes are authorized that result in contract time extensions, Contractor shall submit a modified chart for approval by the Contracting Officer.

SD-11 Closeout Submittals

Record Drawings; G, E.

Record drawings showing all deviations which have been made from the contract drawings shall be submitted to the Contracting Officer for approval at the completion of work. See paragraph RECORD DRAWINGS for record keeping and submittal requirements.

1.3 PROJECT/SITE CONDITIONS

1.3.1 Obstruction of Channel

The Government will not restrict vessels from the existing channel, except to the extent specified in the specifications and to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act approved 8 August 1917. The Contractor will be required to conduct the work in such manner as to obstruct navigation as little as possible. In those instances where the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of vessels, said plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon the completion of the work the Contractor shall promptly remove his plant, including ranges, buoys, piles, and other marks placed by him under the contract in navigable water or on the shore.

1.3.2 Channel Traffic

The traffic in New Bedford and Fairhaven Harbor and through the barrier consists of pleasure boats, passenger and dry cargo vessels, tankers, motor vessels and fishing vessels. During the calendar year 1995, the number of trips by vessels with drafts of less than 25 feet in and out of the harbor totaled 12,630 of which, over 98 percent were by vessels with a draft of less than 20 feet. This traffic is not expected to cause unreasonable interference with the work except in the case of large ocean-going tankers and cargo vessels which are almost one half the barrier width.

1.4 WORK HOURS, SEQUENCE AND SCHEDULING

1.4.1 Hours of Operations During Spring and Fall Periods

During the periods of 14 March to 11 April and 14 November to 12 December, the Contractor is permitted to perform work at the site 7 days per week and 24 hours per day. The Contractor shall give priority to performing work during daylight hours. These potential work hours have been considered in computing the performance time of this contract.

1.4.2 Hours of Operations During Other Times

Except during time periods identified in subpart "Hours of Operations During Spring and Fall Periods", work hours are from 7:00 a.m. through 4:30 p.m., Monday through Friday. The Contractor will not be permitted to work

on Saturday, Sunday or legal holidays unless otherwise authorized by the Contracting Officer. The exclusion of work on Saturday, Sunday and legal holidays has been considered in computing the performance time of this contract. The following legal holidays are observed:

January 1st  
Third Monday in January  
Third Monday in February  
Last Monday of May  
July 4th  
1st Monday of September  
2nd Monday of October  
11th of November  
Fourth Thursday of November  
25th of December

When one of the above designated legal holidays falls on a Sunday, the following Monday will be observed as a legal holiday. When a legal holiday falls on a Saturday, the preceding Friday is observed as a holiday. Requests to perform work at other times shall be made in writing to the Contracting Officer. Every effort will be made to accommodate such requests.

#### 1.4.3 Work Sequence

##### 1.4.3.1 General

There are certain essential criteria relative to the preparation of a work sequence and time schedule which the Contractor will be required to implement and follow during the prosecution of the work. Minor variations in the sequence of the items of work as specified may be made by the Contractor, provided such variations do not conflict with critical elements of the schedule. Proposed minor variations shall be noted on the progress charts submittal required by CONTRACT CLAUSE, entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS". Variations shall be approved by the Contracting Officer prior to implementation.

##### 1.4.3.2 Progress Schedule

The progress schedule shall be in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised.

##### 1.4.3.3 Work Specified Elsewhere

Certain other construction sequence and time period restrictions relative

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to particular items of work are specified in the applicable specification sections to which the work pertains, and as specified on the contract drawings.

1.4.3.4 Phased Construction Schedule

Within the overall prosecution period of 270 days, there are many items of work which must be performed during specific calendar dates and for durations shorter than 270 days. All of the work of the project is represented by the five group classifications identified below. These classifications were formulated based on the level of inoperability that is imposed on the sector gates, and the resulting impact to the flood control capabilities of the barrier as a whole. Generally, those work activities which impose the greatest impact on the functioning of the gates (highest risk to flood control function) have the shortest work durations. It is important that the work be performed in a manner that will result in the work being completed during the time periods specified in order to minimize the time that the gates will be out of operation. Regardless, in emergency situations, the gates are to be made operational within 36 hours (see Subpart "Operation of the Navigation Gate").

<u>Work Classification</u>	<u>Start Date</u>	<u>Finish Date</u>
1. Repair of West Sector Gate; repair of gate wheels and all other items of work which must be performed in a dewatered environment and which would render the sector gate immovable (disregarding the fact that the placement of the stoplogs temporarily prevents movement).	14 Mar 03	28 Mar 03
2. Repair of West Sector Gate; painting, concrete repairs, and all other items of work which must be performed in a dewatered environment but which would not render the sector gate immovable (disregarding the fact that the placement of the stoplogs temporarily prevents movement).	14 Mar 03	11 Apr 03
3. Repair of East Sector Gate; repair of gate wheels and all other items of work which must be performed in a dewatered environment and which would render the sector gate immovable (disregarding the fact that the placement of the stoplogs temporarily prevents movement).	14 Nov 03	28 Nov 03
4. Repair of East Sector Gate; painting, concrete repairs, and all other items of work which must be performed in a dewatered environment but which would not render the sector gate immovable (disregarding the fact that the placement of the stoplogs temporarily prevents movement).	14 Nov	12 Dec 03
5. All other work which does not require a dewatered environment and which has no effect	Within the overall	prosecution period

<u>Work Classification</u>	<u>Start Date</u>	<u>Finish Date</u>
on sector gate operability.		

1.4.4 Organization at the Site

1.4.4.1 General

The Contractor shall employ ample personnel and sufficient equipment to accomplish the work of this contract in the least amount of time, within the prosecution period specified in the SPECIAL CONTRACT REQUIREMENTS, Clause 1, and as specified in Subpart "Phased Construction Schedule" above.

1.4.4.2 Rate of Progress

Should the Contractor fail to maintain a satisfactory rate of progress, the Contracting Officer may require that additional personnel and equipment be placed on the work and that weekend, night, and overtime work be performed in order that the work be brought up to schedule and maintained.

1.5 CONTRACTOR USE OF PREMISES

1.5.1 Storage Areas

Area within the project limits is available for use by the Contractor, for work, storage of equipment, materials and trailers during the life of this contract. A site will be determined at a prework conference prior to commencing work. The Contractor shall confine his storage areas to the limits as designated or approved by the Contracting Officer and shall be responsible for the security of the areas. Upon completion of the contract, the Contractor shall remove all equipment and materials, except as otherwise specified, and restore the site to its original condition as approved by the Contracting Officer at no additional cost to the Government.

1.5.2 Work Limits

Work shall be restricted to the areas shown on the contract drawings in addition to any storage area assigned to this Contractor.

1.5.3 Contractor's Receipt of Supplies

The Contractor is responsible for all arrangements for the receipt of materials and supplies at the job site. Government personnel are not permitted to receive or sign for items delivered to the site.

1.5.4 Access to Work Site

Access to the project site is currently available for construction traffic.

1.6 GOVERNMENT-FURNISHED MATERIAL

Pursuant to "FAR 52.245-2, Government Property (Fixed Price Contracts)," the Government will furnish the following materials for installation by the Contractor: Gate wheel assemblies (5 each)

1.6.1 Pickup Schedule

Notify the Contracting Officer in writing at least 5 calendar days in advance of the date of pickup. Government personnel will load equipment onto the Contractor's truck. The Contractor is responsible for tie-downs, transportation to the work site, and off-loading. Pick up materials no later than 5 calendar days after the indicated pickup date.

1.6.2 Pickup Location

The materials are located in the warehouse of the U.S. Army Corps of Engineers Cape Cod Canal Field Office in Buzzards Bay, Massachusetts.

1.7 COORDINATION

1.7.1 Restrictions

(1) The Contractor will not be permitted to keep his marine plant in the Navigation Channel when he is not working.

(2) The Contractor will be required to move his marine plant out of the Navigation Channel whenever a large tanker, general cargo, or similar vessel requires passage through the barrier opening.

(3) Many fishing and pleasure craft pass through the barrier daily. The Contractor shall provide such traffic controls as necessary during the time his plant is in the Navigation Channel.

(4) The Contractor shall be required to move his equipment off and adjacent to the gates in the event it becomes necessary to operate the barrier gates due to coastal storms, hurricanes, or other reasons.

1.7.2 Warnings to Shippers and other Users of the Navigation Channel

The Contractor shall provide notification to all concerned of the manner in which the work of this project interferes with normal traffic through the hurricane barrier. This notice shall be made by the Contractor by publication in the "Local Notice to Mariners" issued by the Commander, First Coast Guard District, 408 Atlantic Avenue, Boston, MA 02210. The Coast Guard requires a minimum three weeks lead time, in writing, for publication of all notices.

1.7.3 Radio Monitoring

The Contractor's floating plant or other craft working in or adjacent to the harbor channel shall, at all times, monitor and transmit radio calls on VHF marine channels 13 and 16.

1.7.4 Salvaged Items

All items removed in order to install the new work and which are not required to be reinstalled, shall, unless otherwise specified, become the property of the Contractor and shall be removed from the site.

1.7.5 Work Restriction

No work will be permitted within a gate pocket after the pocket has been dewatered when an ocean-going tanker, cargo vessel or similar type and size vessel is passing through the barrier. The Contractor shall provide an approved method of notifying the workmen to leave the pocket.

1.7.6 Operation of the Navigation Gate

In the event it becomes necessary for the Government to operate the Navigation Gate because of coastal storms or hurricanes, the Contractor shall remove the stop gates from the guides and remove his plant from the navigation channel of the barrier within 36 hours of the time a notice is given by the Contracting Officer. The cost of maintaining and providing plant, equipment, and personnel in preparation for emergency removal of the stop gates shall be included in the unit price for Item No. 0002, "Install Stop Gates and Dewater Sector Gate Pocket". However, the cost of the emergency removal of the stop gates, including filling of the pocket, the subsequent replacement of the stop gates, the dewatering of the pocket to continue the work, and any damage to the new work, including painting performed by the Contractor and damages by the filling of the pocket, will be paid for under the adjustment changes clause of the contract.

1.8 PRECONSTRUCTION CONFERENCE

The Contracting Officer will conduct a preconstruction conference with key Contractor personnel. The purpose of the conference is to review contract requirements and to establish a working relationship between the Contractor's Staff and the Corps of Engineers personnel who will be closely associated with the project. During the conference, the Contracting Officer will inform the Contractor concerning Job Safety, Quality Control, Labor Relations, and Environmental Protection. The Contractor's Superintendent and Quality Control Representative shall attend this conference. All submittals which are ready for submission prior to start of work may be brought to the conference for distribution to the participating reviewers.

1.9 RECORD DRAWINGS

Maintain at the jobsite one set of full-size contract drawings marked to show any deviations which have been made from the contract drawings, including buried or concealed construction and utility features revealed during the course of construction. Record the horizontal and vertical location of all buried utilities that differ from the contract drawings. These drawings shall be available for review by the Contracting Officer at all times. Upon completion of the work, submit the original marked set of prints to the Contracting Officer for approval. Requests for partial payments will not be approved if the marked prints are not current, and request for final payment will not be approved until the marked prints are submitted to and approved by the Contracting Officer.

1.9.1 Preparation of Record Drawings

The entries shall be made in the jobsite set of prints at the time field

changes are made, pertinent information collected, or need for corrections established, as a continuing process during the life of the contract. As revised drawings are issued by the Contracting Officer, revised prints shall be introduced into the set to replace the superseded drawings and all applicable notations previously made on the superseded drawings transferred to the current prints. Carefully prepared sketches, not less than 8-1/2" x 11", may be used to depict changes or added information in lieu of notations on the actual prints. Staple sketches to the prints affected by the change. All plan views, sections, elevations, profiles, diagrams, details, or schedules affected by a change shall be marked up as required to reflect the change. All notations or changes made on the prints shall be in sufficient detail to clearly depict the change. Colored pens or pencils shall be used to make notations on the as-built prints as follows:

Red pen or pencil shall be employed to indicate added or corrected work or information.

Green pen or pencil shall be used to show the deleted or incorrectly depicted work or information.

Blue or black pen or pencil shall be used to show information not to be recorded on the drawings but included on the marked-up prints for explanatory or clarification purposes for the benefit of the Contracting Officer.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

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PART 3 EXECUTION (Not Applicable)

-- End of Section Table of Contents --

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the 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

Quantity Surveys.

Submit originals of all field notes and all other records relating to quantity surveys.

1.3 RELATED REQUIREMENTS

CONTRACT CLAUSE "Payments under fixed price construction contracts."

1.4 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BIDDING SCHEDULE and described below. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.5 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

1.6 BIDDING SCHEDULE - PAYMENT ITEMS

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

Payment items for the work of this contract on which the contract progress payments will be based are listed in the BIDDING SCHEDULE and are described below. All costs for items of work, which are not specifically mentioned to be included in a particular Bidding Schedule payment item, shall be included in the listed item most closely associated with the work involved.

a. Item No. 0001, Mobilization and Demobilization.

All costs for labor, equipment, and materials for mobilization and demobilization, in accordance with the specifications.

Unit of Measure: Lump Sum.

b. Item No. 0002, Inspect Stop Gates and Lifting Beams.

All costs for labor, equipment, and materials for the inspection of the stop gates and lifting beams, as shown on the contract drawings and in accordance with Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS, Section 05120 STOP GATES, LIFTING BEAMS, AND SECTOR GATE AND MISCELLANEOUS REPAIRS, and other appropriate sections of the specifications.

Unit of Measure: Lump Sum.

c. Item No. 0003, Install Stop Gates and Dewater Sector Gate Pockets.

All costs for labor, equipment, and materials for the installation and removal of the stop gates and one dewatering of one sector gate pocket as shown on the contract drawings and in accordance with Section 02170 DEWATERING, INSPECTION, AND MISCELLANEOUS REPAIRS, Section 02398 TIMBER FENDER REPAIRS, and other appropriate sections of the specifications.

Unit of Measure: Each.

d. Item No. 0004, Rehabilitate West Sector Gate.

All costs for labor, equipment, and materials for the rehabilitation of the West Sector Gate, which includes cleaning, inspection, access ladders, galvanized grates, cross-framing members, minor repairs to air and grease lines, silt moving, and concrete repairs within the gate pocket, and other incidental operations necessary to complete the work as shown on the contract drawings and in accordance with Section 02170 DEWATERING, INSPECTION, AND MISCELLANEOUS REPAIRS, Section 03730 REPAIR MORTARS FOR PATCHING, and other appropriate sections of the specifications.

b. Unit of Measure: Lump Sum.

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

e. Item No. 0005, Rehabilitate East Sector Gate.

All costs for labor, equipment, and materials for the rehabilitation of the East Sector Gate, which includes cleaning, inspection, access ladders, galvanized grates, cross-framing members, minor repairs to air and grease lines, silt moving, and concrete repairs within the gate pocket, and other incidental operations necessary to complete the work as shown on the contract drawings and in accordance with Section 02170 DEWATERING, INSPECTION, AND MISCELLANEOUS REPAIRS, Section 03730 REPAIR MORTARS FOR PATCHING, and other appropriate sections of the specifications.

b. Unit of Measure: Lump Sum.

f. Item No. 0006, Jacking of Sector Gate.

All costs for labor, equipment, and materials for two flooding and dewatering cycles, jacking and lowering of sector gate, and other incidental operations necessary to complete the work as shown on the contract drawings and in accordance with Section 02170 DEWATERING, INSPECTION, AND MISCELLANEOUS REPAIRS, Section 13000 JACKING OF SECTOR GATE AND INSTALLATION OF WHEEL ASSEMBLIES, and other appropriate sections of the specifications.

Unit of Measure: Each.

g. Item No. 0007, Replace Gate Wheel Assembly.

All costs for labor, equipment, and materials for transporting, delivering, and installing Government furnished gate wheel assemblies and other incidental operations necessary to complete the work as shown on the contract drawings and in accordance with Section 13000 JACKING OF SECTOR GATE AND INSTALLATION OF WHEEL ASSEMBLIES, and other appropriate sections of the specifications.

Unit of Measure: Each.

h. Item No. 0008, Replace Timber Fenders.

All costs for labor, equipment, and materials for replacing timber fenders as shown on the contract drawings and in accordance with Section 02398 TIMBER FENDER REPAIRS and other appropriate sections of the specifications.

Unit of Measure: Each.

i. Item No. 0009, Replace Timber Fender Brackets.

All costs for labor, equipment, and materials for replacing timber

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

fender brackets as shown on the contract drawings and in accordance with Section 02398 TIMBER FENDER REPAIRS and other appropriate sections of the specifications.

Unit of Measure: Each.

j. Item No. 0010, Concrete Repairs and Miscellaneous Repairs.

All costs for labor, equipment, and materials for gate seal placement, repairs to stair nosings in abutment stairwells, sump pump and piping replacement in the crossover tunnel and stairwells, and concrete repairs outside of dewatered areas as shown on the contract drawings and in accordance with Section 05120 STOP GATES, LIFTING BEAMS, AND SECTOR GATE AND MISCELLANEOUS REPAIRS, and other appropriate sections of the specifications.

Unit of Measure: Lump Sum.

k. Item No. 0011, Painting.

All costs for labor, equipment, and materials for all painting required by this project, including in the gate pockets and underwater painting, as shown on the contract drawings and in accordance with Section 09965 MAINTENANCE PAINTING SECTOR GATES, Section 02490 UNDERWATER WORK, and other appropriate sections of the specifications.

Unit of Measure: Lump Sum.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

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-- End of Section Table of Contents --

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

- SD-01 Preconstruction Submittals
- SD-02 Shop Drawings
- SD-03 Product Data
- SD-06 Test Reports
- SD-07 Certificates
- SD-10 Operation and Maintenance Data
- SD-11 Closeout Submittals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals 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 Contractor Quality

Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

#### 1.5 WITHHOLDING OF PAYMENT

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

#### PART 2 PRODUCTS (Not used)

#### PART 3 EXECUTION

##### 3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those 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 as those 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 (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. 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 manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

##### 3.2 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this register may not be all inclusive and additional

submittals may be required. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedule shall be coordinated.

### 3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 21 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

### 3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. 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 shall 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.

### 3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

#### 3.5.1 Procedures

Submit seven (7) copies of each submittal item with an attached ENG FORM 4025 Transmittal Form.

a. Construction/Operations Division ("C" Reviewer): A "C" in column "f" indicates that the submittal review action is by New England District (NAE) Construction/Operations Division. Send all such submittals to the project Resident or Area Engineer, as applicable.

b. Engineering/Planning Division ("E" Reviewer): An "E" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District (NAE) Engineering/Planning Division. Send all such submittals to the U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, Massachusetts 01742-2751.

c. Safety Office ("S" Reviewer): An "S" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District Safety Officer. Send all such submittals to the U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, Massachusetts 01742-2751.

#### 3.5.2 Information on Submittal Status

All Contractor requests for current status of submittal reviews shall be made through the Resident Engineer.

### 3.5.3 Deviations

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

### 3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

### 3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five copies of the submittal will be retained by the Contracting Officer and two copies of the submittal will be returned to the Contractor.

### 3.8 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

\_\_\_\_\_ Approved

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

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

-- End of Section --

**SUBMITTAL REGISTER**

CONTRACT NO.

TITLE AND LOCATION

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

CONTRACTOR

A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C T  N O	D E S C R I P T I O N	P A R A G R A P H  G #	C L O S E O U T  S E C T I O N	C O N T R A C T O R : S C H E D U L E D A T E S			C O N T R A C T O R A C T I O N		A P P R O V I N G A U T H O R I T Y				M A I L E D  T O  C O N T R A C T O R /  R E M A R K S		
						S U B M I T	B Y	B Y	A C T I O N	D A T E  O F  A C T I O N	D A T E  F O R W A R D I N G A U T H O R I T Y	D A T E  F O R W A R D I N G A U T H O R I T Y	D A T E  F O R W A R D I N G A U T H O R I T Y	D A T E  O F  A C T I O N		D A T E  O F  A C T I O N	
																	(g)
	01110		SD-01 Preconstruction Submittals														
			Progress Schedule	1.4.3.2	G C												
			SD-11 Closeout Submittals														
			Record Drawings	1.9	G E												
	01270		SD-01 Preconstruction Submittals														
			Quantity Surveys														
	01355		SD-01 Preconstruction Submittals														
			Environmental Protection Plan	1.7	G C												
	02170		SD-01 Preconstruction Submittals														
			Work Plan		G C												
	03200		SD-02 Shop Drawings														
			Concrete Reinforcement System		G C												
			SD-07 Certificates														
			Reinforcing Steel	2.1	G C												
	03610		SD-01 Preconstruction Submittals														
			Manufacturer's Literature		G C												
			SD-07 Certificates														
			Repair Materials	2.1	G C												
	03711		SD-01 Preconstruction Submittals														
			Manufacturer's Literature														
	03730		SD-01 Preconstruction Submittals														
			Repair Mortar	2.1.1	G C												
			Corrosion Inhibitor	2.1.3	G C												
			Job Reference List	1.5.1	G C												
			SD-07 Certificates														
			Materials	2.1	G C												

**SUBMITTAL REGISTER**

CONTRACT NO.

TITLE AND LOCATION

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

CONTRACTOR

A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C  S E C T	D E S C R I P T I O N	P A R A G R A P H  G #	G O V E R N M E N T  C L A S S I F I C A T I O N	C O N T R A C T O R : S C H E D U L E D A T E S			C O N T R A C T O R A C T I O N		A P P R O V I N G A U T H O R I T Y				M A I L E D  T O  C O N T R A C T O R /  R E M A R K S			
						S U B M I T	B Y	B Y	A C T I O N	D A T E O F	D A T E R C D F R O M	D A T E F W D T O A P P R A U T H	D A T E R C D F R O M O T H E R	D A T E R C D F R O M O T H E R		A C T I O N  C O D E	D A T E O F	D A T E R C D F R O M A P P R
	03736		SD-01 Preconstruction Submittals															
			Qualifications															
			Manufacturer's Data															
			SD-07 Certificates															
			Material Certificate		G C													
	03750		SD-01 Preconstruction Submittals															
			Batching and Mixing Equipment	2.1.4	G C													
			Formwork	2.1.5	G C													
			Test Patch	1.3.1	G C													
	05120		SD-02 Shop Drawings															
			Access Ladders		G C													
			SD-06 Test Reports															
			Field Welded Connections	3.2	G C													
			SD-07 Certificates															
			Monel Bolts, Nuts, and Washers	2.2	G C													
			Carbon Grade Steel	2.1.1	G C													
			Welder Qualifications															
			Diver/Certified Welding Inspector		G C													
			Qualifications															
			Fabrication	3.1														
	09965		SD-03 Product Data															
			Confined Space Procedures															
			Respiratory Protection Program															
			Ventilation Assessment															
			SD-06 Test Reports															

**SUBMITTAL REGISTER**

CONTRACT NO.

TITLE AND LOCATION						CONTRACTOR											
REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA						CONTRACTOR:			CONTRACTOR		APPROVING AUTHORITY						
A C T I V I T Y  N O	T R A N S M I T T A L  N O	S P E C I F I C A T I O N  N O	D E S C R I P T I O N	P A R A G R A P H  N O	G O V E R N M E N T  C L A S S I F I C A T I O N	SCHEDULE DATES			ACTION								M A I L E D  T O  C O N T R A C T O R  R E M A R K S
						SUBMIT	BY	BY	A C T I O N  C O D E	D A T E  O F  A C T I O N	D A T E  F W D  T O A P P R  A U T H	D A T E  F W D  T O O T H E R  R E V I E W E R	D A T E  R C D  F R O M  O T H E R  R E V I E W E R	A C T I O N  C O D E	D A T E  O F  A C T I O N	D A T E  R C D  F R O M  A P P R A U T H	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	09965		Specification and Proprietary Paints Inspection and Operation Records SD-07 Certificates Qualified Coating Thickness Gages														
	11211		SD-03 Product Data Materials and Equipment SD-06 Test Reports Tests SD-10 Operation and Maintenance Data Centrifugal Pump System	2.1	G E												
	13000		SD-01 Preconstruction Submittals Wheel Replacement Procedure Machine Shop Certification Gate Jacking Equipment		G C												

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## 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-R 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.<br>Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply<br>as noted with contract requirements. |
| D -- Will be returned by separate correspondence.                                             | G -- Other ( <i>Specify</i> )                                                       |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

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REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

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SECTION 01355

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 REFERENCES

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

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

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

### 1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

### 1.2.4 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

## 1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

## 1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

## 1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

## 1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office

that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, C

The Contractor shall submit the environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

- d. Description of the Contractor's environmental protection personnel training program.
- f. Drawings showing locations of proposed temporary material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials on the site.
- h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.
- j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:
1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.
  2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
  3. Training requirements for Contractor's personnel and methods of accomplishing the training.
  4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
  5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.
  6. The methods and procedures to be used for expeditious contaminant cleanup.
- k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal

facility's acceptance of the solid waste shall be attached to this plan during the construction.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water and clean-up water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

### 1.7.3 Appendix

Copies of environmental permits, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

### 1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work

under the contract.

#### 1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations requested by the Contractor from the drawings and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

#### 1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION

#### 3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

#### 3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications.

##### 3.2.1 Contractor Facilities and Work Areas

The Contractor's field offices and storage and staging areas shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved.

#### 3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. All water areas affected by construction activities shall be monitored by the Contractor.

### 3.3.1 Dewatering Operations

Construction operations for dewatering shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with Commonwealth of Massachusetts water quality standards and anti-degradation provisions.

### 3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

#### 3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

#### 3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

#### 3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

#### 3.4.4 Burning

Burning is prohibited on the project site.

### 3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

#### 3.5.1 Solid Wastes

Solid wastes shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off of the project site and dispose of it in

compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

#### 3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

#### 3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations.

The Contractor shall transport Contractor generated hazardous waste off of the project site within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

#### 3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed of in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.5.5 Waste Water

Waste water from construction activities shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off of the project site in accordance with all Federal, State, Regional and Local laws and regulations.

3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.7 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.8 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.9 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of endangered species and their habitat that are known to be in the area.

3.10 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities and other vestiges of construction prior to final acceptance of the work.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

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SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ACI INTERNATIONAL (ACI)  
P.O. Box 9094  
Farmington Hills, MI 48333-9094  
Ph: 248-848-3700  
Fax: 248-848-3701  
Internet: <http://www.aci-int.org>

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)  
One East Wacker Dr., Suite 3100  
Chicago, IL 60601-2001  
Ph: 312-670-2400  
Publications: 800-644-2400  
Fax: 312-670-5403  
Internet: <http://www.aisc.org>

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
1819 L Street, NW, 6th Floor  
Washington, DC 20036  
Ph: 202-293-8020  
Fax: 202-293-9287  
Internet: <http://www.ansi.org/>

Note --- Documents beginning with the letter "S" can be ordered from:

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Acoustical Society of America  
Standards and Publications Fulfillment Center  
P. O. Box 1020  
Sewickley, PA 15143-9998  
Ph: 412-741-1979  
Fax: 412-741-0609  
Internet: <http://asa.aip.org>  
General e-mail: [asa@aip.org](mailto:asa@aip.org)  
Publications e-mail: [asapubs@abdintl.com](mailto:asapubs@abdintl.com)

ASTM INTERNATIONAL (ASTM)

100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9585  
Fax: 610-832-9555  
Internet: <http://www.astm.org>

AMERICAN WELDING SOCIETY (AWS)

550 N.W. LeJeune Road  
Miami, FL 33126  
Ph: 800-443-9353 - 305-443-9353  
Fax: 305-443-7559  
Internet: <http://www.amweld.org>

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

P.O. Box 5690  
Grandbury, TX 76049-0690  
Ph: 817-326-6300  
Fax: 817-326-6306  
Internet: <http://www.awpa.com>

ASME INTERNATIONAL (ASME)

Three Park Avenue  
New York, NY 10016-5990  
Ph: 212-591-7722  
Fax: 212-591-7674  
Internet: <http://www.asme.org>

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)

933 N. Plum Grove Rd.  
Schaumburg, IL 60173-4758  
Ph: 847-517-1200  
Fax: 847-517-1206  
Internet: <http://www.crsi.org/>

HYDRAULIC INSTITUTE (HI)

9 Sylvan Way, Suite 180  
Parsippany, NJ 07054-3802  
Ph: 888-786-7744 or 973-267-9700  
Fax: 973-267-9055  
Internet: <http://www.pumps.org>

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)  
1300 N. 17th St., Suite 1847  
Rosslyn, VA 22209  
Ph: 703-841-3200  
Fax: 703-841-3300  
Internet: <http://www.nema.org/>  
E-mail: [jas\\_peak@nema.org](mailto:jas_peak@nema.org)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)  
1 Batterymarch Park  
P.O. Box 9101  
Quincy, MA 02269-9101  
Ph: 617-770-3000  
Fax: 617-770-0700  
Internet: <http://www.nfpa.org>

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)  
40 24th Street, 6th Floor  
Pittsburgh, PA 15222-4656  
Ph: 412-281-2331  
Fax: 412-281-9992  
Internet: <http://www.sspc.org>

U.S. ARMY CORPS OF ENGINEERS (USACE)

Order CRD-C DOCUMENTS from:  
U.S. Army Engineer Waterways Experiment Station  
ATTN: Technical Report Distribution Section, Services  
Branch, TIC  
3909 Halls Ferry Rd.  
Vicksburg, MS 39180-6199  
Ph: 601-634-2664  
Fax: 601-634-2388  
Internet: <http://www.wes.army.mil/SL/MTC/handbook/handbook.htm>

Order Other Documents from:  
USACE Publications Depot  
Attn: CEIM-SP-D  
2803 52nd Avenue  
Hyattsville, MD 20781-1102  
Ph: 301-394-0081  
Fax: 301-394-0084  
Internet: <http://www.usace.army.mil/publications>  
or <http://www.hnd.usace.army.mil/techinfo/index.htm>

U.S. DEPARTMENT OF DEFENSE (DOD)

Order DOD Documents from:  
National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
Ph: 703-605-6000  
FAX: 703-605-6900  
Internet: <http://www.ntis.gov>

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Order Military Specifications, Standards and Related Publications  
from:

Department of Defense Single Stock Point for (DODSSP)  
Defense Automation and Production Service (DAPS)  
Bldg 4D  
700 Robbins AV  
Philadelphia, PA 19111-5094  
Ph: 215-697-2179  
Fax: 215-697-1462  
Internet: <http://www.dodssp.daps.mil>

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)  
700 Pennsylvania Avenue, N.W.  
Washington, D.C. 20408  
Phone: 866-325-7208  
Internet: <http://www.archives.gov>

Order documents from:  
Superintendent of Documents  
U.S. Government Printing Office  
732 North Capitol Street, NW  
Washington, DC 20401  
Mailstop: SDE  
Ph: 866-512-1800 or 202-512-1800  
Fax: 202-512-2250  
Internet: <http://www.gpo.gov>  
E-mail: [gpoaccess@gpo.gov](mailto:gpoaccess@gpo.gov)

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SECTION 01451

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SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM D 3740 (1999b) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the total project costs.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable

to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

### 3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 14 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.

#### 3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume 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 various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- 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. (Laboratory facilities will be approved by the Contracting Officer.)

- 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 shall 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, has separate control requirements, and may be identified by different trades or disciplines, or it may 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 features under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.2 Acceptance of Plan

Acceptance of the Contractor's 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 his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

### 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting.

During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may 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.

### 3.4 QUALITY CONTROL ORGANIZATION

#### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of two years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

#### 3.4.3 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control 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. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary 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 drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 24 hours in advance of beginning the preparatory control 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 foreman 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 Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 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 work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure 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 required sample panels as 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 24 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 onsite, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, 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 nor conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is

unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

### 3.7 TESTS

#### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

#### 3.7.2 Testing Laboratories

##### 3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

##### 3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$1,400 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

### 3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

### 3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers, 696 Virginia Road, Concord, Massachusetts 01742-2751. Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

## 3.8 COMPLETION INSPECTION

### 3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

### 3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, 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/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or

specifications.

j. Contractor's verification statement.

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 covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. 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.

3.10 SAMPLE FORMS

A sample "Daily Construction Quality Control Report" is enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer 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.

Contractor/Sub. Name \_\_\_\_\_

DAILY CONSTRUCTION QUALITY CONTROL REPORT

Date: \_\_\_\_\_

Day: \_\_\_\_\_

Contract No: \_\_\_\_\_

Description and Location of Work: \_\_\_\_\_

\_\_\_\_\_

Tide: (high)      (low)      (high)      (low)      Sea Condition:

Weather: Temp:      Cloud condition      Wind speed/direction

Environmental Protection:

Management

Area of responsibility

- a. Consultant - \_\_\_\_\_
- b. Contractor - \_\_\_\_\_
- c. Subcontractor - \_\_\_\_\_
- d. Purveyor - \_\_\_\_\_
- e. Supplier - \_\_\_\_\_
- f. Technical Support - \_\_\_\_\_

1. WORK PERFORMED TODAY (Indicate location and description of work performed. Refer to work performed by individuals listed by letter above.) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Results of Surveillance (Include satisfactory work completed, or deficiencies with action to be taken.)

a. Preparatory Inspection: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. Initial Inspection: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. Follow-up Inspection: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Tests Required by Specifications, Performed, and the Results:

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

4. Verbal Instruction Received; (List any instructions given by Government personnel on construction deficiencies, retesting required, etc. and action.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Remarks: (Cover all conflicts in plans, specifications, or instructions.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. Safety Inspection (Report violations, corrective instruction given; and corrective actions taken.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. Quantities Completed;

Item #	Item #
Quantity:	Quantity:
-----	
Item #	Item #
Item #	Quantity:
-----	

8. Time

#	<u>LABOR</u>	<u>HOURS</u>	<u>EQUIPMENT</u>
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----

9. Additional Comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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.

---

Contractor Quality Control Representative

-- End of Section --

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SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

1.2 GENERAL REQUIREMENTS

1.2.1 Access to Operating Houses

The Contractor will have access to the Operating Houses only when accompanied by a representative of the Contracting Officer and only to perform the work required by this contract.

1.2.2 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the installation.

1.3 AVAILABILITY OF WATER AND ELECTRICITY

There is no government furnished water or electricity available at the project site. All water and electricity that is required by the Contractor in the prosecution of the work shall be furnished by the Contractor at his own expense.

1.3.1 Temporary Electrical Equipment and Connections

The Contractor, at his own expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and he shall remove them prior to final acceptance of the construction. All required temporary electrical equipment and lines shall be furnished, installed, connected, and maintained by the Contractor according to the EM 385-1-1, Section 11.D and shall be removed prior to final acceptance of the work. Materials and equipment need not be new, but must be in good repair and serviceable

condition. Periodic inspections of systems and devices will be made by the Contractor at intervals not to exceed one week.

#### 1.3.2 Temporary Construction Lighting

Notwithstanding the provisions of the EM 385-1-1, during construction and until final acceptance, all areas inside of gate pockets where work is underway shall be illuminated by means of temporary lights which provide an intensity equal to or greater than 20 foot candles. If the Contractor fails to provide and maintain the required illumination described above, the Contracting Officer may issue a stop order suspending all work in the improperly illuminated area or areas. No part of the time lost due to any such stop order shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

#### 1.3.3 Sanitation

Adequate field-type sanitary conveniences of a type approved for the use of persons employed on the work shall be provided, properly secluded from public observation, and maintained by the Contractor in such a manner as required or approved by the Contracting Officer. These conveniences shall be maintained at all times without nuisance. Upon completion of the work, the conveniences shall be removed by the Contractor from the premises, leaving the premises clean and free from nuisance. Project site toilet facilities located within the operating houses will not be available to Contractor's personnel.

#### 1.3.4 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

### 1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

#### 1.4.1 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.6 SECURITY

The Contractor shall be responsible for site security during the course of the work.

1.7 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers shall be neatly stacked.

1.8 RESTORATION OF STORAGE AREA

Remove temporary materials, equipment, services, and construction prior to completion of work. Clean and repair damage caused by installation or use of temporary facilities. Return site to pre-construction or better condition.

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SECTION 01525

SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- ANSI A10.14 (1991) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use
- ANSI Z359.1 (1992) Safety Requirements for Personal Fall Arrest Systems

ASME INTERNATIONAL (ASME)

- ASME B30.5 (1994) Mobile Cranes
- ASME B30.22 (1993) Articulating Boom Cranes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 10 (1995) Portable Fire Extinguishers
- NFPA 241 (1996) Safeguarding Construction, Alteration, and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

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

- 29 CFR 1910.94 Ventilation
- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
- 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response
- 29 CFR 1926.502(f) Warning Line Systems

1.1.1 Copies of Safety and Health Requirements Manual (EM 385-1-1)

Copies of EM 385-1-1 may be ordered at a cost of \$31.00 each (Check or Money Order only) from the following address:

U.S. Government Printing Office (GPO)  
Superintendent of Documents  
PO Box 371954  
Pittsburgh, PA 15250-7954

(GPO Stock Number for the manual is 0008-022-00-310-0)

The manual may be purchased by calling 202-512-1800 and using a credit card (Mastercard or Visa only). EM 385-1-1 may be viewed at the COE Technical Library, at 696 Virginia Road, Concord, MA 01742-2751. The Manual may also be viewed or downloaded free of charge via the Internet USACE Homepage <http://www.nae.usace.army.mil/> (<http://www.usace.army.mil>). Follow the organizational link to the Safety and Occupational Health Office.

1.2 DEFINITIONS

a. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

b. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.

c. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.

d. Medical Treatment. Medical treatment includes 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 prime contractor is the "controlling authority" for all work site safety and health of the subcontractors.

f. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

g. Qualified Person. One who, by possession of a recognized degree,

certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.

h. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:

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

(2) Lost Workday Cases, other than fatalities, that result in lost workdays, or

(3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

i. Safety Specialist. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety specialist, even though the QC has safety inspection responsibilities as part of the QC duties.

j. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.

k. Significant Accident. Any contractor accident which involves falls of (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.

l. 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.).

### 1.3 SUBMITTALS

The items listed in subpart "Submittal Items" below shall be submitted to the Contracting Officer for review and acceptance by the New England

District Safety Officer.

1.3.1 Submittal Items

The Contractor shall submit all items listed below. The Contracting Officer may request submittals in addition to those listed when deemed necessary to adequately describe the work and necessary safety controls. 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 (CQC) representative and shall be stamped, signed, and dated by the CQC representative certifying that the submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified.

1.3.2 Accepted Submittals

The acceptance of submittals shall not be construed as a complete check, but will indicate only that the submittal generally complies with regulatory requirements. Acceptance will not relieve the Contractor of the responsibility for compliance with EM 385-1-1. After submittals have been accepted, no resubmittal will be given consideration unless accompanied by an explanation as to why changes are necessary.

1.3.3 Unaccepted Submittals

The Contractor or his designated representative 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 shall be given promptly to the Contracting Officer.

1.3.4 Procedures

The items listed below shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES. For unforeseen work of an urgent nature, FAX or hand carry one copy of each submittal directly to the New England District Safety Officer.

1.3.5 Submittal Items

- a. Accident Prevention Plan (APP).
- b. Activity Hazard Analysis (AHA).
- c. Crane Reports: Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Crane Reports."

1.4 QUALITY ASSURANCE

1.4.1 Safety Specialist

Provide a Safety Specialist at the work site to perform safety management,

surveillance, inspections, and safety enforcement for the contractor. The Safety Specialist shall be the safety "competent person" as defined by EM 385-1-1. The Safety Specialist shall be at the work site at all times whenever work or testing is being performed, and shall conduct daily safety inspections. The Safety Specialist may have other duties other than safety management, inspections, and safety enforcement on this contract.

#### 1.4.2 Qualifications

##### a. Qualifications of Safety Specialist:

- (1) Ability to manage the on-site contractor safety program through appropriate management controls.
- (2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
- (3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
- (4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.

b. Qualification of Crane Operators. Crane operators shall meet the requirements in EM 385-1-1, Appendix G.

#### 1.4.3 Meetings

##### 1.4.3.1 Preconstruction Conference

The safety specialist shall attend the preconstruction conference.

##### 1.4.3.2 Meeting on Work Procedures

Meet with Contracting Officer to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control manager.

##### 1.4.3.3 Weekly Safety Meetings

In accordance with EM 385-1-1, Section 1, paragraph 01.B.03, at least once a month Contractor shall conduct a safety meeting for all supervisors and foremen. Additionally, at least one safety meeting per week shall be conducted by the foremen for all workers. After each safety meeting, a safety meeting report shall be completed. A copy of a suggested weekly safety meeting form is attached at the end of this section.

##### 1.4.3.4 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.

1.4.3.5 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.4.4 Certifications

1.4.4.1 Accident Prevention Plan (APP)

Submit the APP at least 10 calendar days prior to start of work at the job site, following Appendix A of EM 385-1-1. Make the APP site specific. Work at the job site will not be permitted until after the Government finds the APP acceptable.

1.4.4.2 Activity Hazard Analysis (AHA)

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. In accordance with contract quality control requirements each AHA will be reviewed during an on-site preparatory inspection.

1.4.5 Crane Reports

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

1.4.6 Crane Critical Lift Plan

Submit a crane critical lift plan, EM 385-1-1, Section 16, when crane loads meet or exceed 75 percent of the crane load capacity in any configuration, when lifts require the load to be lifted, swung or placed outside the view of the operator, when lifts are to be made with more than one crane, and when lifts involving non-routine or technically difficult rigging are required.

1.4.7 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering the project site under this contract. 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. 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 site have been trained not to bypass safety device (e.g., anti-two block devices) during lifting operations. These certifications shall be posted on the crane.

1.4.8 Corps of Engineers Safety and Health Inspectors

The presence of Corps of Engineers safety and health inspectors 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 and federal civilian employees.

1.5 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions of EM 385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of EM 385-1-1, some of which are listed below.

1.5.1 Contents of the Accident Prevention Plan

a. Name and safety related qualifications of safety specialist (including training and any certifications).

b. Qualifications of competent and of qualified persons.

c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.

d. Emergency response plan. Conform to EM 385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.

e. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract Clause "FAR 52.223-3, Hazardous Material Identification and Material Safety Data." And the following:

(1) Inventory of hazardous materials to be introduced to the site with estimated quantities.

(2) Plan for protecting personnel and property during the transport, storage and use of the materials.

(3) Emergency procedures for spill response and disposal, including a site map with approximate quantities on site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.

(4) Material Safety Data Sheets for inventoried materials not required in other section of this specification.

(5) Labeling system to identify contents on all containers on-site.

(6) Plan for communicating high health hazards to employees and adjacent occupants.

f. Hazardous Energy Control Plan. For hazardous energy sources, comply with EM 385-1-1, paragraph 12.A.07.

g. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with EM 385-1-1, paragraph 16.c.18.

h. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.

i. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.

j. 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.

k. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.

#### 1.6 ACTIVITY HAZARD ANALYSIS (AHA)

As required by EM 385-1-1, Section 01.A.10 and Figure 1-1, prepare an AHA for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, 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. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

#### 1.7 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

##### 1.7.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work. See EM 385-1-1, Section 21.A.02.b.

##### 1.7.2 Training

Institute a fall protection training program. As part of the Fall Hazard

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

### 1.8 DUTIES OF THE SAFETY SPECIALIST

- a. Ensure health and safety hazards are identified and corrected.
- b. Maintain applicable safety reference material on the job site.
- c. Maintain a log of safety inspections performed.
- d. Attend the pre-construction conference as required.
- e. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

### 1.9 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

- a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
- b. AHA.

### 1.10 SITE SAFETY REFERENCE MATERIALS

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

### 1.11 EMERGENCY MEDICAL TREATMENT

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

### 1.12 REPORTS

#### 1.12.1 Accident Reports

For recordable occupational injuries and illnesses, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the Accident Investigation Report form and provide to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide a copy of the Accident Investigation Report form (ENG FORM 3394) and instructions for completing the form.

#### 1.12.2 Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

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; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

### 1.12.3 Monthly Exposure Report

Submit a monthly exposure report to the Contracting Officer. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

### 1.12.4 OSHA Citations and Violations

Provide the Contracting Officer with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

### 1.12.5 Crane Notification

Notify the Contracting Officer at least 15 days prior to bringing crane equipment on-site so that the Contracting Officer may arrange for additional quality assurance spot checks.

## PART 2 PRODUCTS

## PART 3 EXECUTION

### 3.1 CONSTRUCTION

Comply with EM 385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

#### 3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Contracting Officer upon written request by Contractor.

#### 3.1.2 Unforeseen Hazardous Material

If material that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2,

Differing Site Conditions."

### 3.2 PERSONNEL PROTECTION

#### 3.2.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.

#### 3.2.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

##### 3.2.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". 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 such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

##### 3.2.2.2 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.

##### 3.2.2.3 Existing Anchorage

Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

### 3.3 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. Stair towers or ladders built into scaffold systems in accordance with EM 385-1-1, Appendix J are required for work platforms greater than 20 feet in height. Contractor shall ensure that employees that are qualified to perform scaffold erection. 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 plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Care shall be given to ensure scaffold systems are not overloaded. Outrigger 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.

### 3.4 EQUIPMENT

#### 3.4.1 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 manufacturers printed instructions.

#### 3.4.2 Weight Handling Equipment

- a. Cranes must be equipped with:
  - (1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,
  - (2) or Load-Moment Indicating Devices (LMIs).
  - (3) Anti-two-block prevention devices.
  - (4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
  - (5) Boom Length Indicator (for telescoping booms).
  - (6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
  - (7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.
- b. The Contractor shall notify the Contracting Officer, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.
- 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 manufacturers recommended

procedures.

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

e. 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.

f. 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 ASME B30.5 or ASME B30.22 as applicable.

g. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.

h. 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 cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

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

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

k. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations (refer to EM 385-1-1 Appendix H for copies).

l. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), EM 385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.

m. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.

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

o. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.

p. 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.

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

q. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by Contracting Officer personnel.

r. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the Contracting Officer.

s. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

### 3.5 CRYSTALLINE SILICA

Grinding of construction materials containing crystalline silica shall comply with OSHA regulations, such as 29 CFR 1910.94, and 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.

### 3.6 HOUSEKEEPING

#### 3.6.1 Clean-up

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

#### 3.6.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

### 3.7 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

### 3.8 FIELD QUALITY CONTROL

#### 3.8.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 01451 CONTRACTOR QUALITY CONTROL.

### 3.9 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

#### 3.9.1 Safety Gas Containers

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

-- End of Section --

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

WEEKLY SAFETY MEETING

CENAE

Date Held \_\_\_\_\_

Time \_\_\_\_\_

SUBJECT: CONTRACT NO. DACW33-99-C-00\_\_\_\_ - WEEKLY SAFETY MEETING

CONTRACTOR \_\_\_\_\_

PERSONNEL PRESENT

| Contr. | Sub. | Govt. |

Date and Time Held: \_\_\_\_\_

Conducted By: \_\_\_\_\_

| \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |

All persons attending the meeting must sign the bottom or back of this form.

Subjects discussed (Note, delete, or add):

EM 385-1-1, Section: \_\_\_\_\_

Accident Prevention Plan \_\_\_\_\_ Individual Protective Equipment \_\_\_\_\_

Prevention of Falls \_\_\_\_\_ Back Injury/Safe Lifting Techniques \_\_\_\_\_

Fire Prevention \_\_\_\_\_ Sanitation, First Aid, Waste Disposal \_\_\_\_\_

Tripping Hazards \_\_\_\_\_ Clean-up - trash, nails in lumber \_\_\_\_\_

Staging, Ladders, Concrete Forms, Safety Nets \_\_\_\_\_

Hand Tools, Power Tools, Machinery, Chain Saws \_\_\_\_\_

Equipment Inspection & Maintenance (Zero Defects) \_\_\_\_\_

Hoisting Equipment, Winch and Crane Safety \_\_\_\_\_

Ropes, Hooks, Chains and Slings \_\_\_\_\_

Vehicle Operation Safety \_\_\_\_\_

Electrical Grounding, Temporary Wiring, GFCI \_\_\_\_\_

Lockouts/Safe clearance procedures  
(electrical, pressure, moving parts) \_\_\_\_\_

Welding, Cutting \_\_\_\_\_ Excavation Hazard/Rescue \_\_\_\_\_

Loose Rock/Steep Slopes \_\_\_\_\_ Explosives \_\_\_\_\_

Water Safety \_\_\_\_\_ Boat Safety \_\_\_\_\_

HAZMAT, Toxic hazards, MSDS, respiratory, ventilation \_\_\_\_\_

Other Items of concern specific to this contract:

CQC Rep. Signature \_\_\_\_\_

CE Inspector \_\_\_\_\_

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CF:

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DIVISION 02 - SITE WORK

SECTION 02170

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SECTION 02170

DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS

PART 1 GENERAL

1.1 REFERENCES (Not applicable.)

1.2 GENERAL REQUIREMENTS

This section covers miscellaneous items of site work not covered in other sections of these specifications. The work consists of providing all plant, labor, equipment and materials (except equipment specified herein to be Government furnished) and in performing all operations in connection with the miscellaneous items of site work, complete as specified in this section.

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Work Plan; G, C.

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

1.4 SYSTEM DESCRIPTIONS

1.4.1 Stop Gate System for Dewatering Sector Gates

The stop gate system, including stop gates, lifting beams and related accessories, is shown on the information drawings. The drawings also show the relationship of the various parts of the system when the stop gates are installed within the sector gates. The stop gates, lifting beams and accessories are constructed of regular and extra strength structural steels. Each gate is completely assembled. The Contractor shall take all precautions as required during handling and storage to prevent the rubber seals and springs from being held in a compressed state when not in the dewatering position. The following data on stop gate weight is furnished for the information of the Contractor. All the lifting beams weigh less than 2000 pounds each.

Per Stop Gate

Dead Weight Type	Submerged Weight (lbs.)	Closing Friction (lbs.)	(lbs. approx.)
I & IA	9500	8100	2450
II & IIA	6000	5300	2450
III & IIIA	4000	3500	2450

1.4.2 Gated Conduits

There are two gated conduits through the dike as shown on the information drawings. Each conduit consists of two separate gate passages, for a total of four. The gate passages are provided with stop log slots at both ends. Stop logs are stored at the jobsite.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 STOP GATES

3.1.1 Inspection and Repair of Stop Gates and Accessories

The gates, lifting beams, and accessories are in storage at the jobsite within a fenced area as shown on the information drawings. The gates were last used for the purpose of a major rehabilitation of the sector gates during 1997 and have been in storage at this location for approximately six years. The Contractor shall carefully remove the gates, etc., disconnecting and removing all connections, wire ropes, timbers, blocking and boards, etc. The Contractor, accompanied by a Government structural inspector, shall carefully inspect the stop gates and accessories to determine if repairs are required. The Contractor shall be responsible for making this inspection, performing all necessary repairs required as a result of the inspection, and having the gates ready for installation at the proper time. The Contractor shall provide all materials and labor to make sure the gate wheels and latching devices operate properly, and the gates are ready for installation. An equitable adjustment shall be made to the contract for all repairs required as a result of this inspection. Repairs shall be made as specified in Section 05120 STOP GATES, LIFTING BEAMS AND SECTOR GATE AND MISCELLANEOUS REPAIRS. The Contractor shall thoroughly grease all wheels on the stop gates and stop gate lifting beams prior to installation. Except as shown on the information drawings, all items of equipment required to remove and return gates to storage shall be provided by the Contractor. All storage items shall be carefully removed and stored in the fenced area ready for use in returning the gates to storage after the work is completed.

3.1.2 Inspection and Cleaning of Stop Gate Guides

Prior to installation of the stop gates in either sector gate, the Contractor shall retain divers to inspect the condition of the gate guides and sills of the sector gate leaf to determine if rust, sediment, debris or marine growth will interfere with installation of the gates. The Contractor shall clean the guide and sill surfaces so that the stop gates will properly seal the openings such that the gate pocket can be dewatered until all required inspections and repairs are completed. Significant effort will be required to clean rust and scale from the guides in the splash zone (between timbers 2 and 5). The cleaning of the guides and sills shall be completed prior to the dates that installation of the gates are required.

In addition, after cleaning is complete, all web to flange welds on the gate guides which are located under the water surface shall be visually inspected by a certified weld inspector who is also a diver. Any deficiencies shall be documented and brought to the immediate attention of the Contracting Officer.

Diving operations, which are required for cleaning and inspection work described in this section shall be conducted in accordance with Section 02490 UNDERWATER WORK.

#### 3.1.3 Inspection and Cleaning of Pocket Sluice Gates and Guides

Contractor's divers shall also inspect the condition of the 2-foot square pocket sluice gates, guides and sills to determine if rust, sediment, debris, or marine growth will interfere with complete closure of the gates.

The Contractor shall clean the gate, guide, and sill surfaces so that the pocket gates will properly seal the openings such that the gate pocket can be dewatered until all required inspections and repairs are completed. The cleaning of the pocket gates, guides, and sills shall be completed prior to the dates that installation of the stop gates are required. Pocket gates are shown on NBF-1-1131, sheet 101 of the information drawings.

#### 3.1.4 Installation of Stop Gates

The stop gates shall be installed when the sector gate leaves are in the open position (gates within the pockets). The west sector gate shall be rehabilitated first. The stop gates shall be installed in the sector gate leaf, using the Government owned lifting beams and accessories. The Contractor shall provide all other temporary equipment required to place and later remove the stop gates. The Contractor shall remove a portion of the gate catwalk and railing to allow placement of the Type III stop gates.

The stop gates shall be inspected by divers during installation to insure that they fit accurately and are in proper alignment in the gate guides before pumping begins.

#### 3.1.5 Returning Stop Gates to Storage

Upon completion of rehabilitation work on the sector gates, the stop gates shall be cleaned with fresh water, and all wheels shall be greased via existing pressure lubricating fittings. Any damage to stop gates and accessories caused by transportation and handling shall be repaired. After

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

repairs, cleaning and greasing are complete, the stop gates shall be returned to storage as indicated on the applicable information drawing.

### 3.2 DEWATERING

After installation of the stop gates in the west sector gate, the gate pocket shall be carefully dewatered, and shall be kept in a dewatered condition until the gate leaf has been inspected by the Government, and all contract required work in and below the splash zone is completed. The dewatering pump shall be installed in the gate pocket sump which is shown on information drawing NBF-1-1105, Sheet 75. The sump shall be cleared of silt and debris by divers prior to pump installation. The Contractor shall provide submersible pumps capable of creating a minimum draw down pumping rate in excess of 5,000 gpm against an initial static discharge head of 25 feet, in order to properly seat the rubber stop gate seals and prevent the inflow of water. Should pumping at this rate prove ineffective, due to insufficient cleaning of the gate guides and sill surfaces, additional pumping capacity shall be provided as necessary for the gates to seal. The Contractor shall provide equipment to ascertain actual pumping rate (gpm) and discharge head provided by the dewatering pumps. This data shall be recorded in 1/2 hour intervals during the dewatering period and recorded on daily quality control reports. After all work on the west sector gate has been completed and the pocket has been flooded, the stop gates shall be removed, and at the time specified in Section 01110 SUMMARY OF WORK, the stop gates shall be installed in the east sector gate and that gate pocket dewatered as specified above.

### 3.3 CLEARING OF SILT, SAND AND DEBRIS IN SECTOR GATE POCKETS

All existing silt, sand and debris which may interfere with sector gate jacking, wheel replacement operations, and air and lubrication systems inspections shall be cleared from around the bottom of the sector gate arc.

A clamshell bucket shall be provided to muck out areas near the gate wheels. All cleared material shall be removed from the work area and deposited in another area of the gate pocket.

#### 3.3.1 Personnel Protection

Sediment sampling performed in the past has indicated that silt material in the gate pockets is contaminated with PCB's to a level no greater than 6.8 parts per million (ppm). This level of contamination is not considered hazardous and will require no special handling other than protection against skin contact. See Section 01525 GENERAL SAFETY REQUIREMENTS for other safety related requirements.

### 3.4 BLAST CLEANING OF SECTOR GATE

The Contractor shall thoroughly clean marine growth from exterior surfaces of all sector gate wheel assemblies, trunnion assemblies and wheel lubrication and air jetting system pipelines. Thorough cleaning is necessary to allow for a complete inspection of these parts. Cleaning shall be accomplished by means of an appropriately sized water blasting system provided by the Contractor. Surfaces to be painted shall be cleaned in accordance with Section 09965 MAINTENANCE PAINTING SECTOR GATES.

3.5 INSPECTION AND TESTING OF AIR JETTING SYSTEMS AND LUBRICATION SYSTEMS

3.5.1 General

All portions of the existing air jetting system and the lubrication systems for the sector gate wheels and trunnions at each gate leaf shall be inspected and tested by the Contractor as directed and supervised by the Contracting Officer's authorized representative. The inspection and testing shall be performed in the dry as specified below to insure that the systems do not leak and that all materials and items of equipment function properly. The inspection and testing will be performed after the gate skirts have been removed, the components have been cleaned of marine growth, and the silt, sand and debris have been cleared away from the gate wheels.

3.5.2 Inspection and Leakage Testing

The Contractor together with an authorized representative of the Contracting Officer shall conduct a visual inspection of all portions of the air jetting system and compressor houses and wheel and trunnion lubrication lines. The location and nature of corrosion or other defects and any items in need of repair shall be noted. Government personnel will start and operate the compressors.

(1) Air jetting systems shall be tested for leaks and proper operation by operating the system compressors and checking all unions and pipe joints for leaks. The air nozzles located at the wheels shall be removed and quantity of air flow observed at the end of the pipe.

(2) The wheel and trunnion pin lubrication systems shall be tested for leaks and proper operation by pumping lubricant into each lubrication line at the fittings located at the top truss of each gate. Leaks in the lines and whether or not the lubricant reaches the wheels and trunnions shall be noted. Pumping equipment and lubricant materials will be furnished, without cost, to the Contractor by the Government.

3.5.3 Repairs

Air or lubricant leaks which are easily repaired by tightening or remaking the joint, shall be repaired by the Contractor at no additional cost to the Government. The trunnion grease lines are shown on information drawing NBF-1-1140. Other repairs and/or replacements shall be performed by the Contractor as directed by the Contracting Officer, and an equitable adjustment will be made to the contract to cover the cost of such work.

3.6 CLEANING OF GATED CONDUITS

All four gate passages in the two gated conduits shall be thoroughly cleaned of silt, sand, debris, and marine growth. Contractor shall insert Government supplied stop logs into both ends of one gate passage and provide pumps of sufficient size to dewater the gate passage and maintain it in a dewatered state during cleaning. Marine growth shall be cleaned from walls and floor, with particular attention given to sluice gates and

gate guides. All silt, sand, debris and marine growth shall be removed from the gate passage and disposed of in an area well away from either end of the conduit. After one gate passage is thoroughly cleaned, the stop logs shall be removed and inserted in the next gate passage which shall then be cleaned in the same manner. Following cleaning of all four gate passages, the stop logs shall be removed and returned to storage as directed by the Contracting Officer. It is estimated that there are approximately 25 cubic yards of sediment in each gate passage.

#### 3.6.1 Railing Replacement

The 2-inch diameter pipe railings located on top of the harborside and oceanside headwall abutments of Gated Conduit No.1 and Gated Conduit No. 2 shall be removed and replaced with galvanized pipe railings of the same size and dimensions. Pipe railing locations for Gated Conduit No. 1 are shown on Sheet 45 of Reference Drawing NBF-1-1075 and for Gated Conduit No. 2 on Sheet 47 of Reference Drawing NBF-1-1077.

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SECTION 02398

TIMBER FENDER REPAIRS

PART 1 GENERAL

1.1 REFERENCES

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

ASME INTERNATIONAL (ASME)

ASME B18.22.1 (1998) Plain Washers

ASTM INTERNATIONAL (ASTM)

ASTM A 36 (1993A) Structural Steel

ASTM A 153/A 153M (1998) Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 307 (1997) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength

ASTM A 563 (1997) Carbon and Alloy Steel Nuts

ASTM C 881 (1990) Epoxy-Resin-Base Bonding Systems for Concrete

ASTM D 2000 (1999) Rubber Products in Automotive Applications

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C2 (1996) Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes

AWPA M4 (1996) Care of Preservative-Treated Wood Products

1.2 DELIVERY AND STORAGE

Close-stack treated timber and lumber material in a manner that will prevent long timbers or preframed material from sagging or becoming crooked. Keep ground under and within 5 feet of such timbers free of weeds, rubbish, and combustible materials. Protect materials from weather.

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

Handle treated timber with ropes or chain slings without dropping, breaking outer fibers, bruising, or penetrating surface with tools. Do not use cant dogs, peaveys, hooks, or pike poles. Protect timber and hardware from damage.

### 1.3 RESPONSIBILITY FOR ERRORS

The Contractor shall be responsible for making all field measurements before fabrication. Error of detailing, fabrication and for correct fitting of the structural components shall be the responsibility of the Contractor.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Timbers

Timbers for fenders shall be either Coastal Douglas Fir Select Structural grade or Southern Yellow Pine No. 1 Dense grade. All timbers shall be stress rated with a bending stress rating of 1,550 psi. All dimensions shall be field verified by the Contractor prior to cutting and application of preservative treatment.

#### 2.1.2 Preservative Treatment

All timbers shall be treated in accordance with AWPA C2 for salt water use, with 2.5 pounds per cubic foot (lb/CF) of CCA (Chromated Copper Arsenate) in the outer 0.6 inches. Fenders shall be dressed to size, notched, and bored prior to treatment.

#### 2.1.3 Bolts and Studs

Bolts and studs shall conform to ASTM A 307, Grade A. Bolts shall be galvanized by the hot-dip process in accordance with ASTM A 153/A 153M, as applicable.

#### 2.1.4 Nuts

Carbon steel nuts shall conform to ASTM A 563, Grade A, hex style. Nuts shall be galvanized by the hot-dip process in accordance with ASTM A 153/A 153M, as applicable.

#### 2.1.5 Washers

Washers shall conform to ASME B18.22.1, Type B. Washers shall be galvanized by the hot-dip process in accordance with ASTM A 153/A 153M, as applicable.

#### 2.1.6 Rubber Fenders

Fenders shall be the size and shape shown on the information drawings and shall conform to ASTM D 2000 4CA 720 C32 F19 G11 L14.

2.1.7 Lag Bolts

Lag bolts shall be as shown on the information drawings.

2.1.8 Epoxy Adhesive

High strength epoxy adhesive shall conform to ASTM C 881, Type IV, Grade 3 epoxy.

2.1.9 Steel Plates

Steel plates for fender support brackets shall be sized as indicated and shall conform to ASTM A 36.

PART 3 EXECUTION

3.1 CONSTRUCTION

Cut, bevel, and face timbers prior to plant preservative treatment. In addition to the contract clause entitled "Accident Prevention" provide protective equipment for personnel fabricating, field treating, or handling materials treated with creosote. Installed timbers and supports shall match existing construction (as shown on information drawing sheet 116) to the greatest extent possible.

3.1.1 Abutment Timber Fender

Existing damaged or deteriorated timber fenders located at the abutments (as shown on information drawing sheet 78) shall be removed and replaced and shall become the property of the Contractor. Existing connection hardware and rubber fendering shall be reused to the extent possible. Damaged or missing hardware shall be replaced with the materials specified and an equitable adjustment will be made to the Contract. New timbers shall be furnished and installed by the Contractor.

3.1.2 Sector Gate Timber Fenders

Damaged and deteriorated timber fenders at the sector gates shall be removed and replaced with new timber fenders furnished by the Contractor. Additional fenders removed for bracket replacement work will be inspected and evaluated as to their suitability for reinstallation. Timber fenders not suitable for reinstallation shall be replaced with new timber fenders furnished by the Contractor. Reoved timber fenders not suitable for reinstallation shall become the property of the Contractor and shall be removed from the project site. All new and reused timber fenders shall have galvanized pipe sleeves installed through the bolt holes during installation, as shown on the contract drawings. Existing connection hardware and rubber fendering shall be reused to the extent possible. Damaged or missing hardware shall be replaced with the materials specified and an equitable adjustment will be made to the Contract.

3.1.3 Fastening

Vertical bolts shall have nuts on the lower end. Where bolts are used to

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

fasten timber to concrete or timber to steel, bolt members together when they are installed and retighten immediately prior to final acceptance of contract. Provide bolts having sufficient additional threading to provide at least 3/8 inch per foot thickness of timber for future retightening.

### 3.1.4 Repair of Fender Supports

At each gate, perform an inspection of steel supports of fender supports. All steel support plates (3/4 inch thick) and stiffener plates (1/2 inch thick) with 15% or more section loss shall be replaced with new support plates and stiffener plates.

## 3.2 FIELD TREATMENT

### 3.2.1 Timberwork

Field treat cuts, bevels, notches, refacing and abrasions made in the field in treated piles or timbers in accordance with AWPA M4. Trim cuts and abrasions before field treatment. Paint depressions or openings around bolt holes, joints, or gaps including recesses formed by counterboring, with hot creosote oil; and after bolt or screw is in place, fill with hot pitch or a bitumastic compound.

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SECTION 02490

UNDERWATER WORK

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Location of Diving Operations

The location of services to be performed under this contract is in and around the navigation channel of the New Bedford Hurricane Barrier, New Bedford, MA.

1.1.2 Underwater Work

Provide necessary services and equipment to perform underwater inspections and repair tasks.

1.1.3 Types of Diving Operations

The surface supplied air mode of diving shall be used for all underwater work.

1.1.4 Underwater Work Tasks

Underwater tasks to be performed under this contract are as follows:

a. Diving tasks required for "Repairs to Stop Gate Guides" include the following. All diving associated with this work item will be performed within the navigation channel:

(1) At each gate, perform an underwater inspection of timber fenders and steel supports for the fenders. All steel support plates (3/4 inch thick) and stiffener plates (1/2 inch thick) with 15% or more section loss shall be marked and recorded for replacement with new support plates and stiffeners. Timber fenders with loose, cracked, or deteriorated sections shall be marked and recorded for replacement with new timber fenders.

(2) Remove existing deteriorated support plates and stiffeners identified by the underwater inspection, and replace with new plates and stiffeners.

(3) Remove existing deteriorated timber fenders identified by the underwater inspection, and replace with new timber fenders and bolted connections.

b. Diving tasks required for gate dewatering and rehabilitation:

West Sector Gate:

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(1) Inspect and clean sector gate guides and sills prior to installation of stop gates. Prior to dewatering of the sector gate, divers shall inspect, remove, and replace with identical materials any deteriorated or missing components of the gate guide seals at Stop Gate Guide location G-7 for the west sector gate. Rubber seals will be furnished by the Government. These components include the keeper plate, guide flange rubber seal, and all attachment hardware as shown on Sheet 116 of Reference Drawing NBF-1-1146, Detail - H.

(2) Inspect the installed sector stop gates for proper fit prior to dewatering. Report condition of the installed stop gates to the Contracting Officer.

(3) Monitor jacks during gate lifting procedure. Adjust jack locknuts and insert shims to verify gate position.

(4) Monitor jacks during gate lowering procedure. Adjust jack locknuts and insert shims to verify gate position.

East Sector Gate:

(6) Inspect and clean west sector gate guides and sills prior to installation of stop gates. Prior to dewatering of the sector gate, divers shall inspect, remove, and replace with identical materials any deteriorated or missing components of the gate guide seals at Stop Gate Guide location G-7 for the east sector gate. Rubber seals will be furnished by the Government. These components include the keeper plate, guide flange rubber seal, and all attachment hardware as shown on Sheet 116 of Reference Drawing NBF-1-1146, Detail - H.

(7) Inspect west sector stop gates in place prior to dewatering.

(8) Monitor jacks during gate lifting procedure. Adjust jack locknuts and insert shims to verify gate position.

(9) Monitor jacks during gate lowering procedure. Adjust jack locknuts and insert shims to verify gate position.

c. Diving tasks required for maintenance painting of the sector gates include the following. All diving associated with this work item will be performed within the navigation channel:

(1) The surface areas of the sector gates that were inaccessible with the gates in the dewatered gate pockets shall be inspected by underwater divers, after the gates are repaired and placed back in service. Paint failure areas identified by the underwater inspection shall be cleaned and painted underwater as specified in this section. Each gate will be moved out into the channel a few feet to perform the inspection and underwater painting.

(2) Paint failure areas identified by the underwater inspection shall be cleaned and painted underwater as specified in Section 09965 MAINTENANCE PAINTING SECTOR GATES. Each gate will be moved out into

the channel a few feet to perform the inspection and underwater painting.

## 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.

### U.S. ARMY CORPS OF ENGINEERS (USACE)

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

The Manual may be viewed or downloaded free of charge via the Internet at the New England District Homepage <http://www.nae.usace.army.mil/> under "Advertised Solicitations."

## 1.3 SUBMITTALS

The items listed in Article "Submittal Items" below shall be submitted to the Contracting Officer for review and acceptance by the New England District Diving Coordinator.

### 1.3.1 Accepted Submittals

The acceptance of submittals by the District Diving Coordinator shall not be construed as a complete check, but will indicate only that the submittal generally complies with regulatory requirements. Acceptance will not relieve the Contractor of the responsibility for compliance with EM 385-1-1, Section 30. After submittals have been accepted by the District Diving Coordinator or his designated representative, no resubmittal will be given consideration unless accompanied by an explanation as to why changes are necessary.

### 1.3.2 Unaccepted Submittals

The Contractor or his designated representative shall make all corrections required by the District Diving Coordinator 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 shall be given promptly to the Contracting Officer and the District Diving Coordinator.

### 1.3.3 Submittal Procedure

Submittals shall be made as follows:

#### 1.3.3.1 Procedures

Submit three (3) copies of each submittal item to the Contracting Officer for review by the District Diving Coordinator. For work of an urgent nature, FAX or hand carry a copy of a complete dive plan. In extreme

situations, review actions may take place at the dive site, just prior to the dive operation.

#### 1.3.3.2 District Diving Coordinator Review

Review action on all submittals is by the New England District Diving Coordinator, Mr. George Norton, Telephone Number 978-318-8870, FAX Number 978-318-8606, EMAIL george.h.norton@usace.army.mil.

#### 1.3.3.3 Information on Submittal Status

All Contractor requests for current status of submittal reviews shall be made through the Project Resident Engineer.

#### 1.3.3.4 Deviations

For submittals which include proposed deviations requested by the Contractor, the Contractor shall set forth in writing the reason for the deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

#### 1.3.4 Government Accepted Submittals

Upon completion of review of submittals requiring District Diving Coordinator acceptance, the submittals will be identified as having received acceptance by being so noted and dated. Two copies of the submittal will be retained by the District Diving Coordinator and one copy of the submittal will be returned to the Contractor.

#### 1.3.5 Information Only Submittals

Normally submittals for information only will not be returned. Acceptance of the District Diving Coordinator 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 comply with these specifications and will not prevent the Contracting Officer from requiring contract compliance.

#### 1.3.6 Submittal Items

The Contractor shall submit all items listed below. The District Diving Coordinator may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the particular work order. 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 (CQC) representative and shall be stamped, signed, and dated by the CQC representative certifying that the submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified.

##### 1.3.6.1 Contractor Safe Practices Manual

The Contractor shall develop and maintain a safe practices manual. The safe practices manual shall contain all of the information required by 29 CFR 1910.420 and the additional information as specified below. This manual shall encompass the Contractor's entire diving program and be available at all times at the dive location to each dive team member and the Government representative. The safe practices manual shall include the items listed in paragraph 30.A.11 of EM 385-1-1, Section 30, and verification of dive team qualifications and experience. Verification of dive team qualifications and experience includes divers, diving supervisor, and tenders. Evidence that each dive team member has current certification in cardiopulmonary resuscitation (CPR) and first aid shall be submitted. A lack of experience or qualifications to perform the tasks stated in the scope of work will be cause for rejection or cessation of operations.

#### 1.3.6.2 Site Specific Diving Operational Plans

A site specific diving operations plan shall be developed for each separate diving operation. This plan shall be submitted to the District Diving Coordinator for review and acceptance, prior to commencement of diving operations. The accepted plan shall be at the diving location at all times and be made available to the Government diving inspector upon request. As a minimum, the plan shall contain the information required by EM 385-1-1, Section 30, Paragraph 30.A.13. For medical requirements, see COE EM 385-1-1, Section 30, Paragraph 30.A.12.

#### 1.4 REGULATORY REQUIREMENTS

All diving operations performed under this contract shall comply with EM 385-1-1, Section 30, dated 3 Sep 96.

The New England District may elect to implement and enforce more stringent diving requirements than stated in the above reference, but under no circumstances will the operational requirements be less than specified in the reference.

##### 1.4.1 Policy

It is the policy of the Corps of Engineers that all contract diving operations be conducted in a prudent manner that will provide for maximum efficiency and minimize the potential for personal injury, loss of life, occupational illness and/or property damage. The New England District, Corps of Engineers will not utilize divers if the objective can be more safely and efficiently accomplished by another means, e.g., using remote controlled television systems in lieu of divers.

#### 1.5 DIVING INSPECTION AND MONITORING

All Contractor diving operations will be inspected or monitored by the New England District Diving Coordinator or a designated representative who holds a current Corps of Engineers diving inspection certification. Diving shall not be permitted unless a Corps of Engineers certified diving inspector is present on-site, unless the District Diving Coordinator has granted permission for off-site monitoring. Off-site monitoring will only

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be granted after an initial on-site inspection to verify the Contractors compliance with EM 385-1-1, Section 30. Dive operation monitoring consists of occasional telephone contact with the Contractor's on-site dive supervisor and occasional site inspections. Failure to adhere to these requirements will be considered a serious violation of this contract and cause for an immediate stop-work order issued by the Contracting Officer.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

ACI 318/318R (1995) Building Code Requirements for Structural Concrete and Commentary

ASTM INTERNATIONAL (ASTM)

ASTM A 185 (1994) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement

ASTM A 615/A 615M (1996a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

ASTM A 706/A 706M (1995b) Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)

CRSI MSP-1 (1996) Manual of Standard Practice

1.2 SUBMITTALS

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

SD-02 Shop Drawings

Concrete Reinforcement System; G, C.

Detail drawings showing reinforcing steel placement, schedules, sizes, grades, and splicing and bending details. Drawings shall show support details including types, sizes and spacing.

SD-07 Certificates

Reinforcing Steel; G, C.

Certified copies of mill reports attesting that the reinforcing steel furnished contains no less than 25 percent recycled scrap steel and meets the requirements specified herein, prior to the installation of reinforcing steel.

1.3 DELIVERY AND STORAGE

Reinforcement and accessories shall be stored off the ground on platforms, skids, or other supports.

PART 2 PRODUCTS

2.1 REINFORCING STEEL

Reinforcing steel shall be deformed bars conforming to ASTM A 615/A 615M or ASTM A 706/A 706M, grades and sizes as indicated.

2.2 WELDED WIRE FABRIC

Welded wire fabric shall conform to ASTM A 185.

2.3 WIRE TIES

Wire ties shall be 16 gauge or heavier black annealed steel wire.

2.4 SUPPORTS

Bar supports for formed surfaces shall be designed and fabricated in accordance with CRSI MSP-1 and shall be steel or precast concrete blocks. Precast concrete blocks shall have wire ties and shall be not less than 4 inches square when supporting reinforcement on ground. Precast concrete block shall have compressive strength equal to that of the surrounding concrete. Where concrete formed surfaces will be exposed to weather or where surfaces are to be painted, steel supports within 1/2 inch of concrete surface shall be galvanized, plastic protected or of stainless steel. Concrete supports used in concrete exposed to view shall have the same color and texture as the finish surface. For slabs on grade, supports shall be precast concrete blocks, plastic coated steel fabricated with bearing plates, or specifically designed wire-fabric supports fabricated of plastic.

2.5 ANCHORS

Anchors for repair areas shall be powder-actuated fasteners manufactured specifically for insertion into concrete.

PART 3 EXECUTION

3.1 REINFORCEMENT

Reinforcement shall be fabricated to shapes and dimensions shown and shall conform to the requirements of ACI 318/318R. Reinforcement shall be cold

bent unless otherwise authorized. Bending may be accomplished in the field or at the mill. Bars shall not be bent after embedment in concrete. Safety caps shall be placed on all exposed ends of vertical concrete reinforcement bars that pose a danger to life safety. Wire tie ends shall face away from the forms.

#### 3.1.1 Placement

Reinforcement shall be free from loose rust and scale, dirt, oil, or other deleterious coating that could reduce bond with the concrete.

Reinforcement shall be placed in accordance with ACI 318/318R at locations shown plus or minus one bar diameter. Concrete coverage shall be as indicated or as required by ACI 318/318R. If bars are moved more than one bar diameter to avoid interference with other reinforcement, conduits or embedded items, the resulting arrangement of bars, including additional bars required to meet structural requirements, shall be approved before concrete is placed.

#### 3.1.2 Splicing

Splices of reinforcement shall conform to ACI 318/318R and shall be made only as required or indicated. Splicing shall be by lapping or by mechanical connection, except that lap splices shall not be used for bars larger than No. 11 unless otherwise indicated. Lapped bars shall be placed in contact and securely tied or spaced transversely apart to permit the embedment of the entire surface of each bar in concrete. Lapped bars shall not be spaced farther apart than one-fifth the required length of lap or 6 inches. Mechanical butt splices shall be in accordance with the recommendation of the manufacturer of the mechanical splicing device. Butt splices shall develop 125 percent of the specified minimum yield tensile strength of the spliced bars or of the smaller bar in transition splices. Bars shall be flame dried before butt splicing. Adequate jigs and clamps or other devices shall be provided to support, align, and hold the longitudinal centerline of the bars to be butt spliced in a straight line.

#### 3.2 WELDED-WIRE FABRIC PLACEMENT

Welded-wire fabric shall be placed in repair areas as indicated and tied to anchors. Fabric placement at joints shall be as indicated. Lap splices shall be made in such a way that the overlapped area equals the distance between the outermost crosswires plus 2 inches. Laps shall be staggered to avoid continuous laps in either direction. Fabric shall be wired or clipped together at laps at intervals not to exceed 4 feet. Fabric shall be positioned by the use of supports.

#### 3.3 ANCHOR INSTALLATION

Anchors shall be installed at the locations indicated and at right angles to the surface. Anchors shall be accurately positioned.

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SECTION 03610

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SECTION 03610

JOINT REPAIRS

PART 1 GENERAL

1.1 SUMMARY

Furnish all material, labor, tools and equipment to repair all joints in the crossover tunnel between the east and west abutments, as indicated on the contract drawings and specified herein.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the 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

Manufacturer's Literature; G, C.

The Contractor shall submit the manufacturer's printed literature, including all mixing and application instructions for sealer and for parge coat mortar.

SD-07 Certificates

Repair Materials; G, C.

The Contractor shall submit a certificate of compliance stating that all material proposed for use meets all of the specified requirements.

1.3 GENERAL REQUIREMENTS

Ambient and surface temperature must be a minimum of 45 degrees F and rising or a maximum of 85 degrees F and falling at the time of the application. Materials shall be stored between 60 - 85 degrees F and protected from freezing.

1.4 QUALITY ASSURANCE

The Contractor shall verify to the Contracting Officer sufficient experience in concrete repair work as specified in Section 03730 REPAIR MORTARS FOR PATCHING, subpart QUALITY ASSURANCE.

1.5 DELIVERY, STORAGE AND HANDLING

1.5.1 Delivery

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Deliver the specified product in original, unopened containers with the manufacturer's name, labels, product identification and batch numbers.

1.5.2 Storage and Handling

Store and condition the specified products as recommended by the manufacturer.

PART 2 PRODUCTS

2.1 REPAIR MATERIALS

2.1.1 Polyurethane Chemical Grout

Polyurethane chemical grout shall be as specified in Section 03736  
POLYURETHANE CHEMICAL GROUT.

PART 3 EXECUTION

3.1 JOINT REPAIRS

Joint repairs, in general, shall be in accordance with Section 03736  
POLYURETHANE CHEMICAL GROUT.

3.2 APPLICATION

All material application shall be in accordance with the applicable  
specification sections.

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SECTION 03711

CONCRETE CLEANING

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section consists of furnishing all material, equipment and labor as necessary to clean all salt deposits, efflorescence, and other similar staining from the gate pocket walls, the interior stairwell walls, and in the crossover gallery, as indicated herein and as shown on the contract drawings.

1.2 REFERENCES (Not Applicable)

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Manufacturer's Literature.

Submit manufacturer's current printed literature on the commercial cleaner proposed for use.

1.4 QUALITY CONTROL - TEST APPLICATION

The Contractor shall perform a test application of the cleaning system intended for use to clean the specified surfaces. The test area should be located as directed by the Contracting Officer, and shall approximate as closely as possible, conditions under which actual cleaning will be performed.

1.5 ACCEPTANCE

Test application shall be continued until a final product which is acceptable to the Contracting Officer is achieved. The intended final condition is a clean concrete surface with all salt deposits, efflorescences, etc., removed with no harmful effects to the concrete.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 General

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The majority of work shall be accomplished with a high pressure water blast system and associated equipment.

### 2.1.2 Concrete Cleaner

If the use of a concrete cleaner is required, a commercial grade cleaner, manufactured specifically for the intended purpose shall be used. The product shall be in no way harmful to the concrete, and shall not diminish the bonding of concrete and repair mortars.

### 2.1.3 Scraping Tools

If required, small scraping tools shall be used to supplement the cleaning.

## PART 3 EXECUTION

### 3.1 AREAS TO BE CLEANED

Cleaning shall be performed on all areas of concrete which show evidence of efflorescence and staining in the east and west abutment stairwells, and areas exhibiting efflorescence and staining in the crossover tunnel and the trench drains in the tunnel.

### 3.2 CLEANING; GENERAL

All salt deposits, efflorescence, etc., shall be cleaned from joints, cracks and wall surfaces, by high pressure water blasting, mechanical scraping, commercial concrete cleaner or a combination thereof, as proposed by the Contractor and approved by the Contracting Officer.

### 3.3 METHODS OF CLEANING

#### 3.3.1 High Pressure Water Blasting

High pressure water blasting operation shall be performed with the proper equipment, in a safe manner, so as to remove all staining without harmful effects to the concrete surfaces.

#### 3.3.2 Scraping

Mechanical scraping, if used, shall be performed with metal scrapers, wire brushes or similar hand tools, followed by flushing with fresh, clean water. Mechanical scraping may also be used in combination with commercial cleaners.

#### 3.3.3 Commercial Cleaner

##### 3.3.3.1 General

If use of a commercial cleaner is required or selected, the dilution rate shall be as recommended by the manufacturer and the cleaner shall be tested on areas determined by the Contracting Officer, as indicated in paragraph QUALITY CONTROL - TEST APPLICATION, until the proper dilution rate and application rates are acceptable.

3.3.3.2 Application

Application shall be as recommended by the manufacturer, however, general procedures shall be as follows:

- a. Prewet a large area.
- b. Cleaner shall be applied freely using a soft fibered masonry washing brush or low pressure (40 psi) spray, and allowing cleaner to remain on surfaces for 1 to 2 minutes depending on drying conditions. Cleaner shall not be allowed to dry into the surface.
- c. Cleaner shall be reapplied and the surface scrubbed or scraped as required using wood blocks, other non-metallic scraping devices, or scraping devices recommended by manufacturer.
- d. Surface shall be thoroughly rinsed with fresh, clean water.

3.4 RECLEANING

Prior to final acceptance, any surfaces not meeting accepted quality of workmanship established through test application, shall be recleaned to the satisfaction of the Contracting Officer.

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SECTION 03730

REPAIR MORTARS FOR PATCHING

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section of the specifications consists of the use of a heavy duty repair mortar to patch spalled areas and repair deteriorated concrete.

1.2 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM C 78	(1984) Test Method for Flexural Strength of Concrete
ASTM C 109	(1990) Test Method for Compressive Strength of Hydraulic Cement Mortars
ASTM C 157	(1993) Length Change of Hardened Hydraulic-Cement Mortar and Concrete
ASTM C 309	(1994) Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 348	(1986) Test Method for Flexural Strength of Hydraulic Cement Mortars
ASTM C 496	(1990) Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
ASTM C 882	(1987) Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Repair Mortar; G, C.

The Contractor shall submit the manufacturer's printed literature, component mixing instructions, and application instructions on all repair mortars.

Corrosion Inhibitor; G, C.

The Contractor shall submit the manufacturer's printed literature, component mixing instructions, and application instructions on the epoxy resin/portland cement corrosion inhibitor.

Job Reference List; G, C.

The Contractor shall submit a job reference list stating the required qualifications as specified below.

#### SD-07 Certificates

Materials; G, C.

The contractor shall submit a certificate of compliance stating that the materials proposed for use meet all of the specified requirements.

### 1.4 GENERAL REQUIREMENTS

The minimum ambient and surface temperatures must be a minimum of 45 degrees F and rising at the time of application. The material shall be stored at 65-80 degrees F. Keep components from freezing. If frozen, discard. Do not use solvent based curing compounds.

### 1.5 QUALITY ASSURANCE

#### 1.5.1 Job Reference List

The Contractor shall verify to the Contracting Officer that he has sufficient experience in concrete repair work in general, and in the application of repair mortars. A job reference list providing the following information: a minimum of five recently completed projects of similar concrete repair work, brief description of each project, and a point of contact for each. Point of contact should include referenced person's name, current address and phone number. At the discretion of the Contracting Officer, technical instruction from the manufacturer, including on-site guidance during performance of the work, may be substituted for not fully satisfying the experience requirement, or may be required in addition to the experience criteria.

#### 1.5.2 Prewrite Conference

The Contractor shall arrange with the materials manufacturer to have the services of a competent Technical Representative available to attend a prework conference with the Contractor and the Government Representative prior to the start of any repair work. The purpose of the prework

conference is to ensure that the Contractor understands all aspects of the repair material, its properties and application procedures. The Technical Representative must be fully qualified to perform the work and shall be subject to the approval of the Government Representative. The Government Representative shall be present at the prework conference to review any administered details associated with the contract.

1.5.3 On-Site Guidance

The Contractor shall also arrange to have the service of the same Technical Representative available at the work site, prior to the start of work, to ensure that the work crews are thoroughly familiar with, and capable of, all mixing and application procedures. He shall remain at the job site after work commences and shall continue to oversee and instruct as necessary, until the Contractor, the Technical Representative, and the Government Representative are satisfied that the crew is totally capable of all aspects of successful material application. The Technical Representative shall provide the Government Representative with a written report of each site visit.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Horizontal and Vertical Repair Mortar

Horizontal and vertical repair mortar shall be a prepackaged blend of portland cement, graded aggregate (3/8 inch maximum) and additives. It shall be formulated for use as spall or full depth repair on horizontal and formed vertical and/or overhead surfaces.

2.1.2 Properties of Repair Mortars

2.1.2.1 Compressive Strength

Compressive Strength, in accordance with ASTM C 109

	<u>Horiz/Vert Repair Mortar</u>
24 hours (minimum)	3000 psi
7 days (minimum)	5000 psi
28 days (minimum)	7000 psi

2.1.2.2 Splitting Tensile Strength

Splitting Tensile Strength at 28 days (min.), in accordance with ASTM C 496:

Horiz/Vert Repair Mortar: 500 psi.

2.1.2.3 Flexural Strength

Flexural Strength at 28 days (minimum), in accordance with ASTM C 78:

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Horiz/Vert Repair Mortar: 750 psi.

2.1.2.4 Bond Strength

Bond Strength at 28 days (Modified), (minimum), in accordance with ASTM C 882:

Horiz/Vert Repair Mortar: 2000 psi.

2.1.2.5 Drying Shrinkage

Shrinkage @ 28 days in/in (maximum), in accordance with ASTM C 157:

Horiz/Vert Repair Mortar: 0.1%

2.1.3 Corrosion Inhibitor

For use on any exposed reinforcing or embedded steel. The corrosion inhibitor shall be an epoxy resin/portland cement adhesive which is fast setting and is capable of coating reinforcing steel and non- structural steel to prevent corrosion. The material shall in no way decrease the bond strength between the reinforcing steel and the repair mortar, or between the repair surface and the repair mortar.

2.1.4 Properties of Corrosion Inhibitor

2.1.4.1 Flexural Strength

ASTM C 348.  
28 day 1000 psi (min)

2.1.4.2 Splitting Tensile Strength

ASTM C 496.  
28 day 1000 psi (min)

2.1.4.3 Bond Strength

@ 14 Days, ASTM C 882  
(1) 2 hours open time: 2500 psi (min)  
(2) 24 hours open time: 200 psi (min)

2.1.4.4 Material Characteristics

(1) Pot life: 90 minutes @72 degrees F.  
(2) Contact time: 24 hours  
(3) Material shall not produce a vapor barrier.

2.1.5 Acceptable Products

- a. Horizontal and Vertical Repair Mortar: "Masterpatch 240 CR" as manufactured by Masterbuilders (Chemrex), or approved equal.
- b. Corrosion Inhibitor: "Emaco P24", by Masterbuilders (Chemrex), or

approved equal.

PART 3 EXECUTION

3.1 AREAS TO BE REPAIRED

3.1.1 Spalls and Joint Deterioration

All spalls and joint deterioration as indicated on the contract drawings and specified herein, and identified during the sounding process, shall be repaired as specified.

3.1.2 Deteriorated Concrete Adjacent to Cracks

All deteriorated concrete adjacent to cracks shall be repaired as specified in Section 03610 JOINT REPAIRS, using methods and materials specified herein as required.

3.2 PREPARATION

3.2.1 Sounding

All deteriorated concrete areas indicated on the contract drawings shall be sounded to verify the extent of deterioration and unsound concrete.

3.2.2 Concrete Removal

At all areas to be patched, all loose, unsound and deteriorated concrete shall be removed by combination of saw cutting and mechanical and/or hand removal methods as approved by the Contracting Officer. Concrete removal shall be performed in such a manner that the exterior edges of each repair are sound, neat and approximately 90 degrees to the surface, with no feather edges. A one inch minimum saw cut shall be made around the entire perimeter of areas to be repaired.

3.2.3 Reinforcing Steel

Where reinforcing steel is exposed for more than half of the bar diameter, the concrete shall be removed to provide 1 inch clearance behind the bar. All rust, loose material, and contaminants shall be removed from exposed bars by sand blasting or similar approved method. Reinforcing shall be measured at an area where no corrosion is present, and compared with the area having the greatest loss of material. All bars with a cross sectional loss of 25% or greater shall be replaced with new reinforcing steel of the same size. Where bars are to be replaced, the deteriorated section of the bar shall be cut out and concrete removed along the uncorroded length of bar, as necessary, to allow the new bar to lap the existing bar by 30 bar diameters at each end. New bars shall be tied to existing bars with 16 gauge steel tie wire.

3.2.4 Inspection of Prepared Surfaces

All prepared concrete surfaces and exposed reinforcing steel shall be inspected by the Government Representative prior to the application of any

repair materials. No material application will be allowed to surfaces which do not meet these specifications and the manufacturer's preparation requirements. No material application will be performed until the surface preparation work has been approved by the Government Representative.

### 3.3 MIXING

Mixing shall be manually or mechanically as required for the quantity of material being mixed. All batching shall be as recommended by the manufacturer.

### 3.4 APPLICATION

#### 3.4.1 Application of Corrosion Inhibitor

Corrosion inhibitor shall be applied to any exposed reinforcing steel, and miscellaneous embedded steel, according to the recommendations of the manufacturer.

#### 3.4.2 Application of Horizontal and Vertical Repair Mortar

This material shall be applied by the form and pump method for all vertical applications.

### 3.5 CURING

Curing with a fine mist of water, wet burlap, or water based (non-solvent) curing compound meeting ASTM C 309, for a minimum of seven days, shall be required unless specifically recommended otherwise by the Manufacturer. The application rate for curing compound shall be double the manufacturer's recommended rate to avoid plastic shrinkage cracks. Method of curing to be approved by the Government Representative.

### 3.6 CLEANING

Remove repair mortars from tools and mixing equipment with water. Cured material can only be removed mechanically.

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SECTION 03736

POLYURETHANE CHEMICAL GROUT

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SECTION 03736

POLYURETHANE CHEMICAL GROUT

PART 1 GENERAL

1.1 SUMMARY

The work to be done includes furnishing all labor, materials and equipment necessary to seal joints in the crossover tunnel between the east and west abutments, as specified.

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 the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 73	(1999) Calcium Silicate Face Brick (Sand-lime Brick)
ASTM D 1622	(1998) Apparent Density of Rigid Cellular Plastics
ASTM D 1623	(1978) Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
ASTM D 2126	(1994) Response of Rigid Cellular Plastics to Thermal and Humid Aging
ASTM D 2127	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2842	(1997) Water Absorbption of Rigid Cellular Plastics

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Qualifications.

The Contractor shall verify or demonstrate to the Contracting

Officer that he has sufficient experience in the application of this type of material. Documentation shall be in the form of references from previously completed work of a similar nature. Provide a list of previous work experience using this material. The list shall include for whom the work was done, the approximate date of the work, and a work description and point of contact.

Manufacturer's Data.

Submit manufacturer's current printed literature on the specified product.

#### SD-07 Certificates

Material Certificate; G, C.

Provide a certificate of compliance that the material meets all specified requirements.

## PART 2 PRODUCTS

### 2.1 MATERIAL

#### 2.1.1 General

The polyurethane liquid chemical grout shall be a two-component, high-solids, hydrophobic polymer of the type which is applied in a crack or open joint by use of an injection packer. It shall be non-toxic. The material shall expand 20 times its original volume and shall cure to a closed cell polyurethane foam.

#### 2.1.2 Components A and B

Component A is the base resin. Component B, the accelerator, shall be able to control the reaction time from 3 to 30 seconds. The catalyzed grout should not react until it contacts water.

#### 2.1.3 Packers

Packers are required for either manual or automatic application. Packers shall be as required by the manufacturer.

#### 2.1.4 Performance Criteria

##### 2.1.4.1 Properties of the Mixed Polyurethane Grout

- (1) Pot Life: approximately 5 hours.
- (2) Mixed Viscosity: Component A approximately 500 cps. Component B approximately 100 cps.
- (3) Color: Light amber.

##### 2.1.4.2 Properties of the Cured Polyurethane Grout

- (1) Tensile Properties (ASTM D 1623, 1 day).

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- a. Tensile Strength: 15.5 psi, min.
- b. Elongation: +25%, min.
- (2) Shear Strength (ASTM C 73, 1 day): 11.7 psi, min.
- (3) Shrinkage (ASTM D 2126): 0%.
- (4) Water Absorption.
  - a. (ASTM D 2127, 1 day): 0.04 lb./ft. sq.
  - b. (ASTM D 2842, 1 day): 0.09 lb./ft. sq.
- (5) Density (ASTM D 1622): 4.2 lb./cubic ft.

### 2.1.4.3 Acceptable Product

"SikaFix HH" as manufactured by Sika Corporation, Lyndhurst, New Jersey, or approved equal.

## PART 3 EXECUTION

### 3.1 SURFACE PREPARATION

All joints must be clean and sound, with moisture present. All dust, laitance, grease, foreign particles, disintegrated materials, etc., must be removed.

### 3.2 MIXING

Slowly combine Component B (accelerator) with 5 gallons of Component A and mix thoroughly for about 2 minutes with low speed (400-600 RPM) drill and paddle until material is uniform in color.

### 3.3 APPLICATION

#### 3.3.1 Drilling

Drill 5/8" or greater diameter holes along the sides of the joint at a 45 degree angle to intersect the joint midway through the substrate. Holes shall be staggered along the opening with spacing to allow the travel of the grout between packers and to fill the opening to a maximum. Install the injection packers in holes.

#### 3.3.2 Pumping Grout

Pump grout at a minimum of 250 psi into or behind fissures and voids which are allowing water infiltration. Pump for 45 seconds and wait to allow material to flow into all of the openings. Watch for material flow and water movement to appear on the surface. When movement stops, begin injection at the next packer. When sealing vertical cracks or joints, start at the bottom and work up vertically.

3.4 CLEAN UP

Completely flush pump and hoses. Use sharp sided tool such as putty knife or trowel to remove excess material from walls, floors, etc. Wait for material to cure before removing. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

-- End of Section --

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SECTION 03750

FORM AND PUMP REPAIRS

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section of the specifications consists of the use of the form and pump method of placing repair mortar. This method consists of pumping the mixed repair materials via pump hose connected to the formwork, until the cavity is filled and pressurized. All repair patches shall be applied by the form and pump method.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the 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

Batching and Mixing Equipment; G, C.

The Contractor shall submit all manufacturer's literature, specifications, operating procedures, etc., for the repair pumping system.

Formwork; G, C.

The Contractor shall submit all aspects of the formwork prepared for use.

Test Patch; G, C.

The Contractor shall submit the proposed location for the test patch, including all prepared procedures for applying a test patch.

1.3 QUALITY ASSURANCE

1.3.1 Test Patch

To ensure that the placing method is adequate and that an adequate bond is achieved between the patch and the prepared substrate, the placement of a test patch is required. Prior to the application of any further repair patches, the test patch shall be tested and approved by the Contracting Officer.

1.3.1.1 Location of Test Patch

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The location of the test patch shall be as proposed by the Contractor and approved by the Contracting Officer. The location shall be in an area requiring repair. The intent is to incorporate the final accepted patch into the overall work.

### 1.3.1.2 Size

The area of the test patch shall be a minimum of five square feet.

### 1.3.1.3 Application Method

The test patch shall be applied and cured in exactly the same manner as specified for final production repairs.

### 1.3.1.4 Acceptance

After a minimum of two weeks time, the patch shall be thoroughly sounded by the Contracting Officer in the presence of the Contractor and a representative of the material manufacturer. The patch will be considered acceptable if, upon sounding, no hollow sound or other evidence of lack of bonding is noted.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Horizontal and Vertical Repair Mortar

Horizontal and vertical repair mortars shall be as specified in Section 03730 REPAIR MORTARS FOR PATCHING

#### 2.1.2 Reinforcement

Reinforcement shall be as specified in Section 03200 CONCRETE REINFORCEMENT.

#### 2.1.3 Curing Materials

Curing materials shall be as specified in Section 03730 REPAIR MORTARS FOR PATCHING.

#### 2.1.4 Batching and Mixing Equipment

Equipment shall be a high pressure, low volume concrete repair pump using the swing tube operating principle meeting the following criteria:

- Five cubic yards per hour capacity, minimum
- Maximum concrete pressure, 1330 psi
- Dual pumping cylinders, 3 inches by 16 inches, hardened chrome, with the ability to be run in reverse
- Hopper shall be 11 cubic feet, minimum, with grate and clean out opening
- Mixer shall be a 10 cubic foot, minimum, hydraulic paddle with hydraulic "lift and dump" capability

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

- Hydraulic pump shall be a variable flow axial piston
- The swing tube pump shall be equipped with a pressure reducing valve to reduce the hydraulic pumping pressure and allow the pressure on the forms to be reduced if needed.
- All necessary pipeline, couplings, gaskets, valves, hoses, airlines, etc., shall be supplied with the mixing unit.

### 2.1.5 Formwork

Forms shall be either job built or manufactured form systems to conform to the desired contours of the area to be formed.

## PART 3 EXECUTION

### 3.1 SURFACE PREPARATION

Unsound concrete shall be mechanically removed to the limits indicated, removing a minimum of 2 inches (unless noted otherwise) of concrete facing and continuing removal (if necessary) to exposed sound substrate. The substrate shall have a minimum amplitude of 1/4 inch. The maximum size of chipping hammers shall be 15 pounds to reduce micro fractures.

### 3.2 STEEL PLACEMENT

When surface preparation is completed, all steel reinforcement shall be placed as shown on the drawings or as indicated herein.

### 3.3 PREPLACEMENT INSPECTION

The surfaces shall be inspected to verify their acceptability to receive the repair material. The area around reinforcement shall be such that placement and clearance around the steel will permit complete encasement. The forms shall be verified to be braced against vibration and constructed to permit escape of air.

### 3.4 APPLICATION

All concrete reinforcement and formwork shall be in place and accepted by the Contracting Officer. Substrate shall be prepared as shown on the drawings and as described herein. A "trap door" or other means to saturate the concrete surface shall be provided. The repair material shall be pumped into the form starting at the bottom. Pumping shall continue until a 3 to 5 psi increase in normal line pressure occurs. At that time, pumping shall stop. The form shall not deflect. The process may involve multiple valve systems to complete the work. Forms shall be vibrated during pumping. All vents shall be capped when a steady flow is evident. Forms may be stripped when appropriate, or the forms may be used to complete the curing process. If forms are stripped earlier, the curing process specified in Section 03730 REPAIR MORTARS FOR PATCHING shall be used.

### 3.5 PROTECTION

Surrounding areas shall be protected from material spillage or from

REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

leakage. All excess material shall be cleaned from surrounding areas.

-- End of Section --

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SECTION 05120

STOP GATES, LIFTING BEAMS, AND SECTOR GATE AND MISCELLANEOUS REPAIRS

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

- |           |                                                                                                  |
|-----------|--------------------------------------------------------------------------------------------------|
| AISC-04   | (1989) Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design |
| AISC S329 | (1985) Allowable Stress Design Specification for Structural Joints Using ASTM A325 or A490 Bolts |

ASTM INTERNATIONAL (ASTM)

- |                   |                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| ASTM A 6/A 6M     | (1998a) General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling |
| ASTM A 36/A 36M   | (1997; Rev. A) Carbon Structural Steel                                                          |
| ASTM A 307        | (1997) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength                                |
| ASTM A 563        | (1997) Carbon and Alloy Steel Nuts                                                              |
| ASTM A 572/A 572M | (1999; Rev. B) High-Strength Low-Alloy Columbium-Vanadium of Structural Steel                   |
| ASTM F 844        | (1998) Washers, Steel, Plain (Flat), Unhardened for General Use                                 |

AMERICAN WELDING SOCIETY (AWS)

- |          |                                                                             |
|----------|-----------------------------------------------------------------------------|
| AWS A2.4 | (1993) Standard Symbols for Welding, Brazing and Nondestructive Examination |
| AWS D1.1 | (1994) Structural Welding Code - Steel                                      |
| AWS QC1  | (1988) Standard for AWS Certification of                                    |

Welding Inspectors

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(1996) Safety and Health Requirements  
Manual

1.2 GENERAL REQUIREMENTS

Structural steel fabrication and erection shall be performed by an organization experienced in structural steel work of equivalent magnitude. The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of structural members. Substitution of sections or modification of connection details will not be accepted unless approved by the Contracting Officer. AISC-04 shall govern the work. Welding shall be in accordance with AWS D1.1. High-strength bolting shall be in accordance with AISC S329. Note that all steel surfaces of the sector gates and stop gates are coated with coal-tar epoxy.

1.3 SUBMITTALS

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

SD-02 Shop Drawings

Access Ladders; G, C.

Shop and erection details including members (with their connections) not shown on the contract drawings. Welds shall be indicated by standard welding symbols in accordance with AWS A2.4.

SD-06 Test Reports

Field Welded Connections; G, C.

SD-07 Certificates

Monel Bolts, Nuts, and Washers; G, C.

Carbon Grade Steel; G, C.

Certified copies of mill test reports for ASTM A 36/A 36M and ASTM A 572/A 572M structural steel, and other related structural steel items.

Welder Qualifications.

Certified copies of welder qualifications test records showing qualification in accordance with AWS D1.1.

Diver/Certified Welding Inspector Qualifications; G, C.

Certified copies of current or previous certification as an AWS Certified Welding Inspector (CWI) in accordance with the provisions of AWS QC1 or an engineer or technician who, by training or experience, or both, in metals fabrication, inspection and testing, is competent to perform inspection of the work.

Fabrication.

A copy of the AISC certificate indicating that the fabrication plant meets the specified structural steelwork category.

#### 1.4 STORAGE

Material shall be stored out of contact with the ground in such manner and location as will minimize deterioration.

### PART 2 PRODUCTS

#### 2.1 STRUCTURAL STEEL

##### 2.1.1 Carbon Grade Steel

Carbon grade steel shall conform to ASTM A 36/A 36M. Carbon grade steel shall be used for timber fender support plates and stiffeners, gate seals (WT 10.5 x 41.5) and cross framing member (6[10.5]).

#### 2.2 MONEL BOLTS, NUTS, AND WASHERS

Monel bolts, nuts, and washers shall be made of either Monel Alloy R-405 (conforming to Fed. Spec. QQ-N-281) or Monel Alloy K-500 (conforming to Fed. Spec. QQ-N-286). Nuts and bolts shall be manufactured to dimensions specified in ANSI B 18.2.1, for Heavy Hex Structural Bolts.

#### 2.3 CARBON STEEL BOLTS

Carbon steel bolts shall conform to ASTM A 307, Grade A with carbon steel nuts conforming to ASTM A 563, Grade A.

#### 2.4 NUTS DIMENSIONAL STYLE

Carbon steel nuts shall be Hex Style when used with ASTM A 307 bolts.

#### 2.5 WASHERS

Plain steel washers shall conform to ASTM F 844.

#### 2.6 WELDING

All welding shall be performed in accordance with AWS D1.1. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1. All welding shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal. The electrode, electrode-

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

flux combination, and grade of weld metal shall conform to the appropriate AWS Specification for the base metal and welding process being used. All welds shall be prequalified as described in AWS D1.1, Subsection 5.1.

### 2.7 FIELD CUTTING OF STRUCTURAL STEEL

All field cutting of structural steel (including underwater cutting) shall use a carbon-air arc process, or approved equal.

## PART 3 EXECUTION

### 3.1 FABRICATION

Fabrication shall be in accordance with the applicable provisions of AISC-04. Fabrication and assembly shall be done in the shop to the greatest extent possible. The fabricating plant shall be certified under the AISC quality certification program for Category II structural steelwork. Ends shall be square within the tolerances for milled ends specified in ASTM A 6/A 6M. Structural steelwork, except surfaces to be field welded shall be prepared for painting in accordance with the AISC-04 and primed with the specified paint.

### 3.2 FIELD WELDED CONNECTIONS

Field welded structural connections shall be completed before load is applied. Field welded connections shall be tested in accordance with AWS D1.1. Copies of test reports shall be submitted to the Contracting Officer's Representative.

### 3.3 REPLACEMENT OF SECTOR GATE ACCESS LADDERS

The Contractor shall field verify required dimensions and fabricate and install new access ladders at the location show on the Contract Drawings. There is one ladder per sector gate that requires replacement. The ladders shall be designed according to requirements in EM 385-1-1, Appendix J. The Contractor shall submit the proposed ladder design for approval prior to installation.

The Contractor shall provide galvanized welded bar grating panels to fit the area of landing at the base of each sector gate access ladder. The Contractor shall field verify required dimensions for the size of the grates. The grates shall be installed and anchored according to the manufacturer's guidelines. Grates shall be the same type (  $\frac{3}{4}$ " x  $\frac{3}{16}$ " bearing bars) as shown on Sheet 105 of reference drawing NBF-1-1135.

### 3.4 REPLACEMENT OF GATE SEALS

The steel vertical gate seals attached at the gate pocket abutment walls at both sector gates shall be removed and replaced as shown on the Contract Drawings. The gate seal locations are shown on Sheet 111 of reference drawing NBF-1-1141 under "PLAN-HORIZ. GIRDER EXTENSION - TRUSS II, OPEN POSITION". Paint per specifications.

### 3.5 REPLACEMENT OF CROSS FRAMING MEMBERS FOR WALKWAY

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

The existing cross framing members of the walkway in the vicinity of the trunnion at each sector gate shall be replaced in-kind. There is one member to replace at each sector gate. The location of these members is shown on the Contract Drawings.

### 3.6 STAIR NOSINGS IN ABUTMENT STAIRWELLS

Loose metal stair nosings in the abutment stairwells shall be reanchored to the concrete stair treads. Missing nosing pieces shall be replaced with identical materials. The Contractor shall submit stair nosing manufacturer's information and method of anchoring for approval by the Contracting Officer.

### 3.7 REPAIRS TO STOP GATES

Stop gates are stored in an area adjacent to the west side of the New Bedford Barrier. The thirty-five stop gates are stored in stacks, with the skin side up. The Contractor shall ensure that the stop gates are in good condition prior to use. The Contractor along with a structural engineer representative from the Government, shall carefully inspect the stop gates, including welds. Any deficiencies shall be corrected prior to using the stop gate in question.

### 3.8 REPAIRS TO LIFTING BEAMS

There are three lifting beams which are stored in the same area as the stop gates adjacent to the west side of the New Bedford Barrier. The Contractor, along with a structural engineer representative from the Government, shall carefully inspect the lifting beams, including welds. Deficiencies shall be corrected prior to use of the lifting beam.

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REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

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SECTION 09965

MAINTENANCE PAINTING SECTOR GATES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Surfaces To Be Inspected and Spot Painted

- a. All previously painted surfaces of each sector gate, stop log and the steel grating stairway in each gate pocket shall be thoroughly inspected for bare metal areas, rust spots, paint blisters, under film corrosion and any surface area, regardless of size, where the existing paint system has otherwise thinned out or failed. The two stop gates that support the limit switches and the exposed accessible surfaces of the gate seals shall also be inspected for corrosion. Marine growth in and below the tide zone shall be removed by scraping or by high pressure water blasting as necessary to properly examine the the surfaces for paint failure areas. Should there by any doubt regarding the soundness of any existing painted surface, resolution will be by the Contracting Officer. All paint failure areas discovered by this cleaning survey inspection shall be marked or otherwise identified for spot cleaning and painting. See also article "CLEANING AND PREPARATION OF SURFACES TO BE PAINTED."
- b. Steel surfaces within the tide zone are heavily corroded and will require extensive blast cleaning and repainting over relatively large areas.
- c. All paint system failure areas determined by the inspection while the gates are in the dewatered gate pockets shall be spot cleaned and painted in strict accordance with the requirements of these specifications.
- d. Areas of the sector gates that are inaccessible in the dewatered gate pockets shall be inspected by underwater divers after the gates are repaired, including maintenance painting, and placed back in service. Each gate will be moved out into the channel a few feet as necessary to perform the inspection. Underwater operations shall be performed in accordance with Section 02490 UNDERWATER WORK.
- e. Paint failure areas identified by the underwater inspection shall be cleaned and painted underwater as specified in this section. Each gate will be moved out into the channel a few feet as necessary to perform the underwater painting work. Underwater operations shall be performed in accordance with Section 02490 UNDERWATER WORK.
- f. All previously painted surfaces of the sector gates and stop gates that are damaged as a result of the Contractor's operations shall be spot cleaned and spot refinished as specified in this Section.
- g. All new steel items to be incorporated in the work shall be cleaned and

painted as specified in this Section.

#### 1.1.2 Original Paint System

The gates and appurtenances were originally painted with Tarsol Standard, which was applied to a minimum thickness of 20 mils. Horizontal Truss No. II was cleaned and repainted using coal-tar epoxy (C-200) in 1971, 1976, and again in 1982. The gates were spot cleaned and spot painted in 1990 using a zinc-rich epoxy primer on bare steel areas and a C-200 finish coat.

#### 1.1.3 Condition of Existing Paint System

Paint failure and rusting is not uniform on the sector gates and may vary widely over a given area. However, the majority of coating failure has occurred in the splash zone and in difficult to clean locations such as the joints and crevices of built up members. It is anticipated that from 10 to 15 percent of the surface area of each sector gate structure is heavily corroded and will require complete cleaning to the "Commercial Blast Cleaning Grade" as specified in Article "Surface Preparation".

#### 1.1.4 Paint Formulations

Primer for application to bare steel only shall be a zinc-rich-Epoxy-Polyamide conforming to these specifications. Top coat shall be Corps of Engineers coal-tar epoxy C-200 or commercial equivalent. Where paint must be applied underwater, the coating shall be an approved epoxy specifically designed for underwater application.

#### 1.1.5 Surfaces Not To Be Painted

Wheel assemblies and related parts shall not be painted. Non-Ferrous metal items, including monel lubrication piping and fittings, shall not be painted. Electrical equipment and conduits shall not be painted. Galvanized surfaces shall not be cleaned and painted.

#### 1.1.6 Operational Restrictions

The Contractor shall provide adequate heating and dehumidifying equipment to ensure that the surfaces to be painted are dry enough and warm enough to be painted as specified in this section. The Contractor shall provide adequate ventilation and proper clothing and equipment for personnel to ensure their safety. Adequate hearing protection shall be provided for personnel exposed to continuous high level noise. Goggles, masks and respirators shall be subject to the approval of the Contracting Officer.

#### 1.1.7 Unsatisfactory Work

If, before the final acceptance of the entire work covered under this contract, it should be found that surfaces specified to be painted have not been properly cleaned in accordance with these specifications or that surfaces have been coated with impure or unauthorized paint, such surfaces shall be thoroughly cleaned and repainted as originally specified, at no additional expense to the Government. No mechanical item shall be painted in such manner that it is prevented from operating properly.

1.1.8 Responsibility for Damages

The Contractor shall be responsible for damages to existing structures or other items resulting from his painting operation. All items damaged by the Contractor shall be cleaned, repaired or replaced as directed by the Contracting Officer.

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

ANSI Z358.1 (1990) Emergency Eyewash and Shower Equipment

ASTM INTERNATIONAL (ASTM)

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

ASTM D 4417 (1993; R 1999) Field Measurement of Surface Profile of Blast Cleaned Steel

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 16 (1991) Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint

SSPC SP 1 (1982) Solvent Cleaning

SSPC SP 3 (1995) Power Tool Cleaning

SSPC SP 5 (1994) White Metal Blast Cleaning

SSPC SP 6 (1994) Commercial Blast Cleaning

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-DTL-24441 (Rev C, Supplement 1) Paint,  
Epoxy-Polyamide, General Specification for

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
	Quality Monitoring
	National Pollutant Discharge Elimination System

1.3 SUBMITTALS

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

In addition to the items listed below, the Contractor shall submit an Accident Prevention Plan in accordance with the requirements of Section 01525 SAFETY REQUIREMENTS.

SD-03 Product Data

Confined Space Procedures

The Contractor shall submit detailed written standard operating procedures for confined spaces in accordance with 29 CFR 1910.146 and EM 385-1-1, Section 6I, and as further described in this paragraph.

a. The procedures shall include certificates of calibration for all testing and monitoring equipment. The certificates of calibration shall include: type of equipment, model number, date of calibration, firm conducting calibration, and signature of

individual certifying calibration.

b. The procedures shall include methods of inspection of personal protective equipment prior to use.

c. The procedures shall include work practices and other engineering controls designed to reduce airborne hazardous chemical exposures to a minimum.

d. The procedures shall include specification of the design and installation of ventilation systems which shall provide adequate oxygen content and provide for the dilution of paint solvent vapor, lead, and other toxic particulates within the confined space. In addition, the contractor shall include plans to evaluate the adequacy of air flow patterns.

#### Respiratory Protection Program

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.

#### Ventilation Assessment

The contractor shall submit a plan to provide ventilation assessment as required by paragraph PAINT APPLICATION, subparagraph VENTILATION.

#### SD-06 Test Reports

##### Specification and Proprietary Paints

For products that are specified to be applied in accordance with the manufacturer's recommendations the Contractor shall submit the paint producers product data sheet or other written instructions for those products. 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.

#### Inspection and Operation Records

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

##### Qualified Coating Thickness Gages

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

#### 1.4 QUALIFICATIONS

##### 1.4.1 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 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.

##### 1.5.1 Abrasive Blasting

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

###### 1.5.1.1 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.

###### 1.5.1.2 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

## REPAIRS TO SECTOR GATES, NEW BEDFORD BARRIER, MA

plugs and/or ear muffs) providing a noise reduction rating of at least 20 dBA or as needed to provide adequate protection.

### 1.5.2 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.

### 1.5.3 Cleaning with Solvents

#### 1.5.3.1 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).

#### 1.5.3.2 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.

### 1.5.4 Mixing Epoxy Formulations

#### 1.5.4.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear fpm of capture velocity measured at the point where the curing agent and resin contact during mixing.

#### 1.5.4.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1.

#### 1.5.4.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy or polyurethane resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

#### 1.5.4.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy or polyurethane resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

### 1.5.5 Paint Application

#### 1.5.5.1 Ventilation

When using solvent-based paint in confined spaces, ventilation shall be provided to exchange air in the space at a minimum rate of 5,000 cubic feet per minute per spray gun in operation. It may be necessary to install both a mechanical supply and exhaust ventilation system to effect adequate air changes within the confined space. All air-moving devices shall be located and affixed to an opening of the confined space in a manner that assures that the airflow is not restricted or short circuited and is supplied in the proper direction. Means of egress shall not be blocked. Ventilation shall be continued after completion of painting and through the drying phase of the operation. If the ventilation system fails or the concentration of volatiles exceeds 10 percent of the LEL (except in the zone immediately adjacent to the spray nozzle), painting shall be stopped and spaces evacuated until such time that adequate ventilation is provided.

An audible alarm that signals system failure shall be an integral part of the ventilation system. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

#### 1.5.5.2 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 duct work shall be electrically bonded and the bonded assembly shall be grounded.

#### 1.5.5.3 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.

#### 1.5.5.4 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.

#### 1.5.6 Health Protection

##### 1.5.6.1 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.

##### 1.5.6.2 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 facepiece 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-facepiece 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(es)/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-facepiece 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.

##### 1.5.6.3 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 life lines, body harnesses, or other means of personnel removal shall be used during confined-space work.

#### 1.6 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-facepiece 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.

#### 1.7 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 physicians reevaluation statement.

#### 1.8 ENVIRONMENTAL PROTECTION

In addition to the requirements of Section 01355 ENVIRONMENTAL PROTECTION the Contractor shall comply with the following environmental protection

criteria.

#### 1.8.1 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. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas. All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation. All blast debris shall be collected and disposed of off site in accordance with Federal, State and local regulations.

#### 1.9 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

#### 2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

#### 2.2 PAINT FORMULATIONS

Special paint formulas shall comply with the following:

##### 2.2.1 Formula C-200a, Coal Tar-Epoxy (Black) Paint

The paint shall conform to SSPC Paint 16 manufactured with Type 1 pitch. In addition to standard labeling, container labels shall include the term, Corps of Engineers Formula C-200a.

##### 2.2.2 Underwater Coating Product

Underwater paint shall be "Hycote 151" (Black) manufactured and distributed by Somay Products, Inc., 4301 N.W. 35th Avenue, Miami, Florida 33142-4382, Technical Service: (305) 633-6333

Customer Orders: (888) 2-4-SOMAY  
Fax: (305) 638-5524  
E-Mail:paint@somay.com.

The underwater paint is a two-component, polyamine-cured epoxy coating.

### PART 3 EXECUTION

#### 3.1 CLEANING SURVEYS

Before surface preparation begins on any given area of the sector gates, the Contractor shall make a complete and thorough examination of all surfaces of the gates, including underwater surveys as specified, to determine the location and extent of corrosion and paint failure visually evident. This survey shall be conducted in the presence of the Contracting Officer Representative at the site. The surveys shall be performed by using hand tools, power tools, and chipping hammers on suspect areas located by a close-up visual examination of every surface of every member. The approximate limits of paint failure and corrosion areas located by the surveys, which are not visually obvious, shall be delineated by chalk or spray paint lines. Following the cleaning surveys, all paint failure and corrosion locations shall be power tool cleaned or blast cleaned as specified in paragraph "Surface Preparation" below. See also Article GENERAL REQUIREMENTS.

#### 3.2 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

##### 3.2.1 General Requirements

The intent of the cleaning operations is to remove all corrosion and all paint which shows evidence of corrosion including blistering, peeling, cracking, brittleness or general disintegration. It is not intended that sound, adherent old paint be removed unless it is excessively thick or inflexible. When cleaning, the removal of existing paint shall be expanded until an area of completely intact, firm and adhering paint film is attained. The edges of remaining tight paint film shall be feathered out, using power tools if necessary, so that the surface will have a smooth appearance when repainted. Any remaining paint in a cleaned area shall have sufficient adhesion so that it cannot be lifted as a layer by inserting the blade of a dull putty knife under it. Due to varying degrees of corrosion at different locations on the gate structures, the rate and degree of cleaning shall be varied from one area to the next in order to achieve the desired end condition. The majority of coating failure on the gates has occurred at the crevices and joints of built-up members; such areas are difficult to clean. Meticulous surface preparation to the specified grade in those difficult areas is a contract requirement and will be strictly enforced. The Contractor shall "dwell" on those excessively corroded areas which require special attention. Gratings shall be removed as necessary to properly clean and paint supporting steel. Most areas identified by the cleaning survey for surface preparation will require extensive cleaning to achieve the specified grade of surface preparation. A cleaning system shall be established by the Contractor whereby he can mobilize and properly clean any member at any location on each gate structure.

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.

### 3.2.2 Ferrous Surfaces Within the Dewatered Gate Pockets

a. All paint failure areas including bare metal areas, rust spots, paint blisters, areas of underfilm corrosion and any surface areas where the existing paint system has otherwise thinned out or failed shall be cleaned by means dry blasting to a commercial grade. Power tool cleaning to a commercial grade will be permitted for areas that are inaccessible to dry blasting, as approved by the Contracting Officer. Power tool cleaning shall conform to the requirements of SSPC SP 3. Commercial blast cleaning shall conform to the requirements of SSPC SP 6. Welds and adjoining surfaces of new ferrous metal items to be installed in the work 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. All surfaces shall be primed as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. Cleaning and priming of new ferrous metal items to be installed in the work shall be done in the shop unless otherwise directed or permitted.

b Intact existing paint areas surrounding the bare metal areas for a minimum distance of 4 inches shall be prepared to receive paint by dry blasting and power tool cleaning. The blast stream or cleaning tool shall dwell upon these intact paint areas for a time sufficient to feather out the existing coating and roughen the existing paint surface.

### 3.2.3 Ferrous Surfaces To be Cleaned and Painted Underwater

a. The welds of the new underwater fender brackets shall be cleaned and painted underwater as specified in this section. All paint failure areas identified by the cleaning survey including bare metal areas, rust spots, paint blisters, areas of underfilm corrosion and any surface areas where the existing paint system has otherwise thinned out or failed shall be

cleaned to receive underwater paint. Underwater cleaning shall be performed by ultra high pressure water blasting, in excess of 15,000 psi and with injection of 30 mesh sand. Power tools shall be used as necessary to feather out the existing coating. Underwater cleaning shall be carried out by water blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete removal of failed paint and corrosion. Power tool cleaning shall conform to the requirements of SSPC SP 3. All surfaces shall be underwater painted as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces.

b Intact existing paint areas surrounding the bare metal areas for a minimum distance of 4 inches shall be prepared to receive underwater paint by waterblasting or power tool cleaning. The cleaning tool shall dwell upon these intact paint areas for a time sufficient to feather out the existing coating and roughen the existing paint surface.

#### 3.2.4 New Ferrous Items

New fabricated Ferrous surfaces shall be dry blast-cleaned to SSPC SP 5. The blast profile, unless otherwise specified, shall be 1.5 to 2.5 mils 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. Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 5 shall be cleaned 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. New ferrous metal items may be mill or shop cleaned. 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 damaged areas shall be cleaned and coated in a manner to make them equivalent to adjacent, undamaged paint surfaces.

### 3.3 PAINT APPLICATION

#### 3.3.1 Cleaning and Surface Preparation

Surfaces to be painted shall be cleaned and prepared before applying paint.

New steel items shall be blast cleaned to the Near-White Metal grade in accordance with the Steel Structures Painting Council (SSPC) SP-5.

Underwater surface shall be ultra high pressure waterblasted and power tool cleaned. Surfaces where the existing finish is damaged to exposed metal and surfaces that have been heated for straightening shall be prepared for painting by the following method:

(1) Intact paint areas surrounding the bare metal areas cleaned to the Commercial grade shall be brush-off blast cleaned or power tool cleaned for a minimum of 4 inches. The blast stream or cleaning tool shall dwell upon these intact paint areas for a time sufficient to feather out the edges, remove surface soils and roughen the paint surface.

(2) Prime all exposed bare metal surfaces with the zinc rich epoxy paint, being careful not to overlap onto existing intact coal-tar epoxy surfaces.

(4) Soften the roughened surface of the intact coal-tar-epoxy coating by wiping it with cloths dampened with 1-methyl-2-pyrrolidone. The solvent may be applied to the surface by fog spraying followed by wiping, but any puddles of solvent must be mopped up immediately after they form. Paint shall be applied in not less than 15 minutes or more than 3 hours after the solvent treatment. Coal-tar-epoxy paint shall not be applied to any existing painted surface that has not been thoroughly roughened by brush-off blast cleaning or power tool cleaning and softened with solvent.

### 3.3.2 General Application Requirements

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.

### 3.3.3 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 removed from the site and replaced with materials less than 1 year old.

#### 3.3.4 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.

#### 3.3.5 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.

#### 3.3.6 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.

#### 3.3.7 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.

#### 3.3.7.1 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.

#### 3.3.8 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, overspray, or foreign matter by means of airblast, 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.

#### 3.3.9 Drying Time Prior to Immersion

Minimum drying periods for epoxy systems after final coat prior to immersion shall at least 5 days.

#### 3.3.10 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.

3.3.11 Coal Tar-Epoxy (Black) Paint (Formula C-200a)

3.3.11.1 Mixing

Component B shall be added to previously stirred Component A and thoroughly mixed together with a heavy-duty mechanical stirrer just prior to use. The use of not more than 1 pint of xylene thinner per 1 gallon of paint will be permitted to improve application properties and extend pot life. The pot life of the mixed paint, extended by permissible thinning, may vary from 2 hours in very warm weather to 5 or more hours in cool weather. Pot life in warm weather may be extended by precooling the components prior to mixing; cooling the mixed material; and/or by slow, continuous stirring during the application period. The mixed material shall be applied before an unreasonable increase in viscosity takes place.

3.3.11.2 Application

Spray guns shall be of the conventional type equipped with a fluid tip of approximately 0.09 inch in diameter and external atomization, seven-hole air cap. Material shall be supplied to the spray gun from a bottom withdrawal pot or by means of a fluid pump; hose shall be 1/2 inch in diameter. Atomization air pressure shall not be less than 80 psi. High-pressure airless spray equipment may be used only on broad, simply configured surfaces. Brush application shall be with a stiff-bristled tool heavily laden with material and wielded in a manner to spread the coating smoothly and quickly without excessive brushing. The coverage rate of the material is approximately 110 square feet per gallon per coat to obtain 20 mils (dry thickness) in a two-coat system. The paint shall flow together and provide a coherent, pinhole-free film. The direction of the spray passes (or finish strokes if brushed) of the second coat shall be at right angles to those of the first where practicable.

3.3.11.3 Subsequent Coats

Except at the high temperatures discussed later in this paragraph, the drying time between coal tar-epoxy coats shall not be more than 72 hours, and application of a subsequent coat as soon as the undercoat is reasonably firm is strongly encouraged. Where the temperature for substrate or coating surfaces during application or curing exceeds or can be expected to exceed 125 degrees F as the result of direct exposure to sunlight, the surfaces shall be shaded by overhead cover or the interval between coats shall be reduced as may be found necessary to avoid poor intercoat adhesion. Here, poor intercoat adhesion is defined as the inability of two or more dried coats of coal tar-epoxy paint to resist delamination when tested aggressively with a sharp knife. Under the most extreme conditions involving high ambient temperatures and sun-exposed surfaces, the drying

time between coats shall not exceed 10 hours, and the reduction of this interval to a few hours or less is strongly encouraged. Where the curing time of a coal tar-epoxy undercoat exceeds 72 hours of curing at normal temperatures, 10 hours at extreme conditions, or where the undercoat develops a heavy blush, it shall be given one of the following treatments before the subsequent coat is applied:

- a. Etch the coating surface lightly by brush-off blasting, using fine sand, low air pressure, and a nozzle-to-surface distance of approximately 3 feet.
- b. Remove the blush and/or soften the surface of the coating by wiping it with cloths dampened with 1-methyl-2-pyrrolidone. The solvents may be applied to the surface by fog spraying followed by wiping, but any puddles of solvent must be mopped up immediately after they form. The subsequent coat shall be applied in not less than 15 minutes or more than 3 hours after the solvent treatment.

#### 3.3.11.4 Ambient Temperature

Coal tar-epoxy paint shall not be applied when the receiving surface or the ambient air is below 50 degrees F nor unless it can be reasonably anticipated that the average ambient temperature will be 50 degrees F or higher for the 5-day period subsequent to the application of any coat.

#### 3.3.11.5 Safety

In addition to the safety provisions in paragraph SAFETY AND HEALTH PROVISIONS, other workmen as well as painters shall avoid inhaling atomized particles of coal tar-epoxy paint and contact of the paint with the skin.

#### 3.3.12 Underwater Paint Application

Underwater paint shall be applied to waterblasted steel surfaces by paint brush, paint roller, by power brush or power roller, as recommended by the coating manufacturer.

##### 3.3.12.1 Safety

Underwater paint contains epoxy resins and curing agents which are potential irritants to the skin and respiratory system. Manufacturer's directions and recommendations for occupational health protection shall be carefully followed. Material safety data sheets shall be obtained from the coating manufacturer.

#### 3.4 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.

##### 3.4.1 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation

of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.4.2 System No. 6-A-Z

b. Epoxy zinc-rich primer 19B shall be applied to the bare metal areas in accordance with the manufacturer's directions in a single, half-lapped spray coat or by brush to an average dry film thickness of a minimum of 3.0 mils. The thickness at any point shall not be less than 2.5 mils or greater 8 mils for the primer. After a minimum drying period of 6 hours and no more than 96 hours, at least two coats of coal tar epoxy paint shall be applied to the primed areas with a 4 inch overlap onto the existing roughened and softened coal tar-epoxy paint to provide a minimum thickness at any point of 16 mils for the completed system. 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 coal tar-epoxy paint. The specified film thicknesses shall be attained in any event, and any additional coats needed to attain specified thickness shall be applied at no additional cost to the Government.

3.4.3 Underwater Paint

"Hycote 151" underwater paint shall be applied in accordance with the manufacturer's directions in a single coat to an average dry film thickness of a minimum of 30.0 mils. The thickness at any point shall not be less than 20.0 mils or greater 40.0 mils. The specified film thicknesses shall be attained, and any additional coats needed to attain specified thickness shall be applied at no additional cost to the Government.

3.4.4 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. Paint spillage and painting activity damage shall be promptly repaired.

3.5 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.

3.6 PAINTING SCHEDULES

SYSTEM NO. 6-A-Z

Items or surfaces to be coated include all paint failure areas identified by the specified cleaning survey.

SURFACE PREPARATION	1st & 2nd COAT	3rd COAT	4th COAT
Commercial blast cleaning	MIL-DTL-24441 /19B	Coal tar- epoxy C-200a (black)	Coal tar- epoxy C-200a (black)

UNDERWATER PAINTING SYSTEM

Items or surfaces to be coated include all underwater paint failure areas identified by the specified cleaning survey.

SURFACE PREPARATION	1st COAT
Commercial blast cleaning	Hycote 151 Black

-- End of Section --

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SECTION 11211

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SECTION 11211

PUMPS: WATER, CENTRIFUGAL

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

- |                   |                                                                              |
|-------------------|------------------------------------------------------------------------------|
| ASTM A 123/A 123M | (1997; Rev. A) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products |
| ASTM A 153/A 153M | (1998) Zinc Coating (Hot-Dip) on Iron and Steel Hardware                     |
| ASTM A 307        | (1997) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength             |

ASME INTERNATIONAL (ASME)

- |            |                                                                 |
|------------|-----------------------------------------------------------------|
| ASME B1.1  | (1989) Unified Inch Screw Threads (UN and UNR Thread Form)      |
| ASME B16.1 | (1998) Cast Iron Pipe Flanges and Flanged Fittings              |
| ASME B40.1 | (1991) Gauges - Pressure Indicating Dial Type - Elastic Element |

HYDRAULIC INSTITUTE (HI)

- |            |                                        |
|------------|----------------------------------------|
| HI 1.1-1.5 | (1994) Standards for Centrifugal Pumps |
|------------|----------------------------------------|

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

- |           |                              |
|-----------|------------------------------|
| NEMA MG 1 | (1998) Motors and Generators |
|-----------|------------------------------|

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- |         |                                 |
|---------|---------------------------------|
| NFPA 70 | (1999) National Electrical Code |
|---------|---------------------------------|

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

- |               |                                        |
|---------------|----------------------------------------|
| SSPC Paint 21 | (1991) White or Colored Silicone Alkyd |
|---------------|----------------------------------------|

Paint

SSPC Paint 25

(1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (Without Lead and Chromate Pigments)

1.2 GENERAL REQUIREMENTS

1.2.1 Standard Products

Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate equipment that has been in satisfactory waterworks operation at least 2 years prior to bid opening. Equipment shall be supported by a service organization that is, in the opinion of the Contracting Officer, reasonably convenient to the jobsite. Pumps and motors of the same types shall each be the product of one manufacturer.

1.2.2 Description

The pumps shall be vertical centrifugal water pumps of the type indicated and specified. The driving units for the pumps shall be electric motors as specified.

1.2.3 Safety Requirements

Gears, couplings, projecting set-screws, keys, and other rotating parts, so located that any person can come in close proximity thereto, shall be fully enclosed or properly guarded.

1.2.4 Nameplates

Pumps and motors shall have a standard nameplate securely affixed in a conspicuous place showing the manufacturer's name, address, type or style, model, serial number, and catalog number. In addition, the nameplate for each pump shall show the capacity in gpm at rated speed in rpm and head in feet of water. The nameplate for each electric motor shall show at least the minimum information required by 10.38 NEMA MG 1. Such other information as the manufacturer may consider necessary to complete identification shall be shown on the nameplate.

1.2.5 Electrical Work

Electrical motor driven equipment specified herein shall be provided complete with motors, motor starters, and controls. Electrical characteristics shall be as specified. Motor starters shall be provided complete with properly sized thermal overload protection in each phase and other appurtenances necessary for the motor control specified. Each motor shall be of sufficient capacity to drive the equipment at the specified capacity without exceeding the nameplate rating of the motor when operating at proper electrical system voltage and frequency. Manual or automatic control and protective or signal devices required for the operation herein specified and any control wiring required for controls and devices but not shown on electrical plans shall be provided under this section of the

specifications.

#### 1.2.6 Selection Criteria

Pumps shall be designed using hydraulic criteria based upon actual model developmental test data. Pumps shall be selected at a point within the maximum efficiency for a given impeller casing combination. Deviations within 3 percent of maximum efficiency are permissible, provided the lesser efficiency is not less than the scheduled efficiency. Pumps having impeller diameters larger than 90 percent of the published maximum diameter of the casing or less than 15 percent larger than the published minimum diameter of the casing will be rejected. Acceptable maximum impeller diameter calculations shall not be based on percentage of impeller diameter range for a given casing.

#### 1.2.7 Verification of Dimensions

The Contractor shall become familiar with all details of the work, verify all dimensions in the field and shall advise the Contracting Officer of any discrepancy before performing the work.

#### 1.3 SUBMITTALS

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

##### SD-03 Product Data

Materials and Equipment; G, E.

Manufacturer's descriptive data and technical literature, performance charts and curves for all impeller sizes for a given casing, catalog cuts, and installation instructions.

##### SD-06 Test Reports

Tests; G, C.

Test reports showing all field tests performed to prove compliance with the specified performance criteria, upon completion and testing of the installed system. Each test report shall indicate the final position of controls.

##### SD-10 Operation and Maintenance Data

Centrifugal Pump System.

Two complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment. Instructions shall include, but not be limited to, the following:

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- a. System layout showing piping, valves, and controls.
- b. Approved wiring and control diagrams.
- c. Operating and maintenance instructions for each piece of equipment, including lubrication instructions and troubleshooting guide.
- d. Manufacturer's bulletins, cuts, and descriptive data; and parts list and recommended spare parts.

1.4 DELIVERY AND STORAGE

All equipment delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variations, dirt and dust, or other contaminants.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Materials and equipment shall be as specified below and as shown, and shall be suitable for the service intended. Materials and equipment shall be new and unused, except for tests. Where two or more pieces of equipment performing the same function are required, they shall be duplicate products of the same manufacturer.

2.2 CENTRIFUGAL WATER PUMPS

2.2.1 General

The pumps shall be centrifugal, single-stage, vertical cantilever type with level controls, designed for sump pump service. Discharge shall be piped to above the base plate.

2.2.2 Pump Construction

Except as below specified, centrifugal water pumps shall be constructed in accordance with the Hydraulic Institute HI 1.1-1.5.

2.2.3 Pump Characteristics

Pump Characteristics shall be as follows:

Capacity:	70 gallons per minute
TDH:	70 feet
Speed:	1750 rpm
Sump Pit:	3'x 3' x 2.5' deep
Pumped Liquid:	Water at 50 degrees F.

Exist. Disch. Pipe: Steel 2-1/2" Diameter

#### 2.2.4 Pump Casings

The casings shall be designed to permit replacement of wearing parts. Pump casings shall be of uniform quality and free from blowholes, porosity, hard spots, shrinkage defects, cracks and other injurious defects. Defects in casings shall not be repaired except when such work is approved and is done by or under the supervision of the pump manufacturer, and then only when the defects are small and do not adversely affect the strength or use of the casing. Casings shall be single or double volute with flanged piping connections conforming to ASME B16.1, Class 125. The direction of shaft rotation shall be conspicuously indicated. The casing shall have tapped openings for air venting, and draining. Drain openings in the volute, intake, or other passages capable of retaining trapped water shall be located in the low point of such passages. A strainer of sufficient size shall be bolted to the pump casing over the intake.

#### 2.2.5 Impellers

Impellers shall be of enclosed design and shall be constructed of bronze, carefully finished with smooth water passageways, and shall be statically and dynamically balanced. Impellers shall be securely keyed to the pump shaft. Provisions shall be made for vertical impeller adjustment above the base plate.

#### 2.2.6 Wearing Rings

Wearing rings of bronze shall be provided for the pump casing. Casing rings shall be securely fixed in position to prevent rotation. Rings shall be renewable and designed to ensure ease of maintenance.

#### 2.2.7 Shaft

Shaft shall be of high grade steel, accurately machined, and shall be of sufficient size and strength to perform the work required. Shafts shall be the closed type and shall be adequately provided with alignment bearings.

#### 2.2.8 Couplings

Couplings shall be of the heavy-duty flexible type, keyed and locked to the shaft. Disconnecting the couplings shall be accomplished without removing the driver half or the pump half of the couplings from the shaft. Flexible couplings shall not be used to compensate for misalignment of pump.

#### 2.2.9 Balance

All rotating parts of the equipment shall operate throughout the required range without excessive end thrust, vibration, or noise. Defects of this type that cannot be eliminated by installation adjustments will be sufficient cause for rejection of the equipment. Pump impeller assemblies shall be statically and dynamically balanced to within 1/2 percent of  $W$  times  $R$  squared, where  $W$  equals weight and  $R$  equals impeller radius. Shaft

construction shall be substantial to prevent seal or bearing failure due to vibration. Total shaft peak-to-peak dynamic deflection measured by vibrometer at pump-seal face shall not exceed 2.0 mils under shutoff-head operating conditions. Flow from 1/4 inch iron pipe size (ips) pipe shall be provided during testing.

#### 2.2.10 Packing Seals

Packing shall be non-asbestos. Pump shall be shipped to the site without the packing inserted and shall be packed onsite in the presence of the pump or packing manufacturer's representative. At no time during startup or run-in shall the gland drip less water than 80 drops per minute. After not less than 40 operating hours and upon permission of the Contracting Officer, leakage rate may be reduced to 50 drops per minute or to the rate recommended by packing manufacturer.

##### 2.2.10.1 Gland

Gland shall be split-bronze type with AISI 18-8 stainless steel eyebolts and pins or studs. Hex-nuts shall be bronze or nongalling stainless steel.

##### 2.2.10.2 Stuffing boxes

Stuffing boxes exposed to below atmospheric pressure at any operating condition, including starting, shall be provided with a water seal. Water seal shall consist of nonferrous lantern ring or a seal cage and required connections to the pump case.

#### 2.2.11 Bearings

Bearings shall be ball or roller type, and the main bearings shall take all radial and end thrust. Pumps that depend only on hydraulic balance to overcome end thrust will not be acceptable.

#### 2.2.12 Lubrication

Bearings shall be either oil-bath type or grease type. Pumps with oil-lubrication systems shall be designed so that all shaft bearings will be isolated from the pumped liquid. An automatic sight feed oiler shall be provided on a suitable mounting bracket with connection to the shaft tube. Grease type bearings shall be provided with fittings for a grease gun and, if the bearings are not easily accessible, with grease tubing extending to convenient locations. The grease fittings shall be of a type that prevent over lubrication and the buildup of pressure injurious to the bearings.

#### 2.2.13 Base Plates

Vertical-shaft pumps shall be provided with complete mounting suitable for the type of pump furnished, with the base for the pump separate from the base of the driving unit. The drainage structure shall collect the packing box leakage and shall have a 1/2 inch NPT connection to connect it to a drain. A custom made, 46-inch by 48-inch by 3/8-inch thick diamond plate galvanized steel base plate/sump cover plate with 12-inch diameter access hole and cover shall be provided for each pump to replace existing steel

plates. The Contractor is responsible for exact dimensioning of new plates.

#### 2.2.14 Cocks, Plugs, and Accessories

The pumps shall be equipped with air cocks, drain plugs, and discharge pressure gauges. Discharge pressure gauges shall be mounted on existing discharge piping. Gauges, equipped with a shutoff cock and snubber, shall conform to ASME B40.1, and shall be calibrated in pounds per square inch, and feet of water in not more than 1 psi, and 5 foot increments. Gauge ranges shall be appropriate for the particular installation. Normal operating discharge pressures of the pump shall be indicated on the mid-point range of the gauges.

#### 2.2.15 Piping Connections

The pump discharge shall be provided with connections of suitable size and suitably arranged for existing piping. Piping shall be installed to preclude the formation of air pockets.

#### 2.2.16 Finish

Pump shall have painted or enameled finish as is standard with the manufacturer.

### 2.3 ELECTRICAL EQUIPMENT

Electrical motor driven equipment herein specified shall be provided complete with motors, motor starters, and controls. Motor controls, equipment, and wiring shall be in accordance with NFPA 70.

#### 2.3.1 Electric Motors

Each electric motor-driven pump shall be driven by a totally-enclosed fan cooled continuous-duty electric motor. Motor shall have a 1.15 service factor. Motors shall be squirrel-cage induction motors having normal-starting-torque and low-starting-current characteristics, and shall be of sufficient size so that the nameplate horsepower rating will not be exceeded throughout the entire published pump characteristic curve. Motor bearings shall provide smooth operations under the conditions encountered for the life of the motor. Adequate thrust bearing shall be provided in the motor to carry the weight of all rotating parts plus the hydraulic thrust and shall be capable of withstanding upthrust imposed during pump starting. Motors shall be rated 460 volts, 3 phase, 60 Hz and such rating shall be stamped on the nameplate. Motors shall conform to NEMA MG 1.

#### 2.3.2 Control Equipment

Pumps shall be provided with heavy duty float switch to start pumps on high water level and stop pumps on low water level. Pumps shall also be provided with a three-position "MANUAL-OFF-AUTOMATIC" selector switch in cover. A high water alarm shall be provided for the New Bedford side pump wired to a flashing light in the operating house above.

### 2.4 EQUIPMENT APPURTENANCES

#### 2.4.1 Attachments

All necessary bolts, nuts, washers, bolt sleeves, and other types of attachments for the installation of the equipment shall be furnished with the equipment. Bolts shall conform to the requirements of ASTM A 307 and nuts shall be hexagonal of the same quality as the bolts used. Threads shall be clean-cut and shall conform to ASME B1.1. Bolts, nuts, and washers specified to be galvanized or not otherwise indicated or specified, shall be zinc coated after being threaded, by the hot-dip process conforming to ASTM A 123/A 123M, or ASTM A 153/A 153M as appropriate. Bolts, nuts, and washers specified or indicated to be stainless steel shall be Type 316.

#### 2.4.2 Equipment Guards

Equipment driven by open shafts, belts, chains, or gears shall be provided with all-metal guards enclosing the drive mechanism. Guard shall be constructed of galvanized sheet steel or galvanized woven wire or expanded metal set in a frame of galvanized steel members. Guards shall be secured in position by steel braces or straps which will permit easy removal for servicing the equipment. The guards shall conform in all respects to all applicable safety codes and regulations.

#### 2.4.3 Tools

A complete set of all special tools which may be necessary for the adjustment, operation, maintenance, and disassembly of all equipment shall be furnished. Special tools are considered to be those tools which because of their limited use are not normally available, but which are necessary for the particular equipment. Special tools shall be high-grade, smooth, forged, alloy, tool steel. All tools shall be delivered at the same time as the equipment to which they pertain. The Contractor shall properly store and safeguard such tools until completion of the work, at which time they shall be delivered to the Contracting Officer.

#### 2.4.4 Shop Painting

All motors, pump casings, and similar parts of equipment customarily finished in the shop shall be thoroughly cleaned, primed, and given two finish coats of paint at the factory in accordance with the recommendations of the manufacturer. Ferrous surfaces not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

Each pump and motor shall be installed in accordance with the written instructions of the manufacturer.

#### 3.2 TESTS

After installation of the pumping units and appurtenances is complete,

operating tests shall be carried out to assure that the pumping installation operates properly. Each pumping unit shall be given a running field test in the presence of the Contracting Officer for a minimum of 30 minutes. Contractor shall provide a suitable water source to allow complete testing of both pumps. Pumping units shall be operated at their rated capacity. The Contractor shall provide an accurate and acceptable method of measuring the discharge flow. Tests shall assure that the units and appurtenances have been installed correctly, that there is no objectionable heating, vibration, or noise from any parts, and that all manual and automatic controls function properly. If any deficiencies are revealed during any tests, such deficiencies shall be corrected and the tests shall be reconducted.

### 3.3 FIELD PAINTING

Stainless steel, galvanized steel, and nonferrous surfaces shall not be painted.

#### 3.3.1 Touch-Up Painting

Factory painted items requiring touching up in the field shall be thoroughly cleaned of all foreign material and shall be primed and topcoated with the manufacturer's standard factory finish.

#### 3.3.2 Exposed Ferrous Surfaces

Exposed ferrous surfaces shall be painted with two coats of enamel paint conforming to SSPC Paint 21. Factory primed surfaces shall be solvent-cleaned before painting. Surfaces that have not been factory primed shall be prepared and primed with one coat of SSPC Paint 25 or in accordance with the enamel paint manufacturer's recommendations.

### 3.4 MANUFACTURER'S REPRESENTATIVE

The Contractor shall obtain the services of a manufacturer's representative experienced in the installation, adjustment, and operation of the equipment specified. The representative shall supervise the installation, adjustment, and testing of the equipment.

-- End of Section --

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SECTION 13000

JACKING OF SECTOR GATE AND INSTALLATION OF WHEEL ASSEMBLIES

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SECTION 13000

JACKING OF SECTOR GATE AND INSTALLATION OF WHEEL ASSEMBLIES

PART 1 GENERAL

1.1 REFERENCES

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

ASME INTERNATIONAL (ASME)

ASME B4.1 (1967; R 1999) Preferred Limits and Fits  
Cylindrical Parts

ASME B46.1 (1995) Surface Texture (Surface Roughness,  
Waviness and Lay)

1.2 GENERAL REQUIREMENTS

This section covers the jacking system and procedure to lift and lower the sector gate and removal and replacement of sector gate wheel assemblies with new Government furnished wheel assemblies. The work consists of providing all plant, labor, equipment and materials (except equipment specified herein to be Government furnished) and in performing all operations in connection with the work, complete as specified in this section.

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Wheel Replacement Procedure; G, C.

The Contractor shall prepare and submit a wheel replacement procedure, which he intends to implement to accomplish the work of this section. The proposed replacement procedure shall include a description of the jacking equipment, jacking procedure, wheel removal and replacement and allocated time periods for each critical work element. Review and approval of the proposed replacement procedure by the Contracting Officer shall be accomplished prior to commencement of work at the site.

Machine Shop Certification; G, C.

The Contractor shall provide certification that the selected machine shop is qualified to perform the specified work and that it is capable of providing quick turnaround of required work.

Gate Jacking Equipment; G, C.

The Contractor shall provide information on equipment to be used in jacking up the sector gate.

1.4 SYSTEM DESCRIPTION

Details of the sector gates, stop gates, and jacking equipment and procedure are shown in the information drawings located in Appendix A of these specifications.

1.5 MACHINE SHOP QUALIFICATIONS

The Contractor's choice of machine shop where Government furnished wheel bushings are to be milled will be subject to the approval of the Contracting Officer prior to commencement of work. The machine shop shall be selected to provide rapid turnaround of specified work. The machine shop shall be experienced in the machining of bronze parts and shall have equipment necessary to work within the specified tolerances.

1.6 HANDLING OF WHEEL ASSEMBLIES

Government furnished wheel assemblies and related parts shall be handled in such a manner that they will not be damaged or deformed. In the event of damage, the Contractor shall immediately make all repairs or replace the damaged parts as necessary. The wheel assemblies are stored in the warehouse of the U.S. Army Corps of Engineers Cape Cod Canal Field Office in Buzzards Bay, MA. The Contractor shall transport the wheel assemblies from this location to the jobsite and shall unload them at the jobsite.

1.6.1 Disposition of Existing Wheel Assemblies

All existing wheels and related parts which are not to be reinstalled shall become the property of the Contractor and shall be disposed of by the Contractor in accordance with Section 01355 ENVIRONMENTAL PROTECTION.

1.7 REQUIRED SEQUENCE OF CONSTRUCTION

Critical items of work necessary to accomplish installation of the new wheel assemblies at each sector gate shall be performed in the following sequence:

Note: Repair of timber fenders at sector gates and abutments and concrete repair work in the stairwells and crossover tunnel shall be performed after dewatering and rehabilitation of the WEST sector gate and prior to dewatering and rehabilitation of the EAST sector gate.

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- (1) Jog west sector gate leaf towards the channel so as to create a gap of approximately one inch between the gate struts and the embedded struts. Struts are shown on information drawings NBF-1-1134 and NBF-1-1139. Use divers to install two foot square Teflon pads on the four gate struts. Return sector gate to the closed position.
- (2) Install stop gate system in west leaf of sector gate in accordance with Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS these specifications.
- (3) Government personnel will remove the cathodic protection system as necessary for the Contractor to perform the miscellaneous items of contract work. Strings of anodes in the vicinity of the sector gate skin plate will be removed as necessary to provide clearance between truss members to allow for lowering and raising articles from the gate pocket.
- (4) Dewater gate pocket in accordance with Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS.
- (5) At sector gate wheel assemblies (El.-36), remove existing wheel guards and sector gate skirting. Match-mark items for reinstallation in same location where removed. Remove these items from the gate pocket and store for reinstallation.
- (6) Remove silt which has accumulated on the sill of the gate pocket (El.-39) along the arc length of Horizontal Girder V and over a width sufficient to provide adequate work area. Also, remove silt that has accumulated on the web plates of Horizontal Girders II, III, IV, & V. Dispose of silt removed from these areas in center of gate pocket.
- (7) Clean all six wheel assemblies and inspect each wheel assembly with Contracting Officer present.
- (8) Sandblast and paint gate in accordance with Section 09965 MAINTENANCE PAINTING SECTOR GATES.
- (9) Perform steps 1 through 6 of sector gate lifting operation as described in Paragraph 3.2.2 of this section entitled "Gate Lifting Operation".
- (10) Flood gate pocket by opening 24-inch diameter hand operated sluice gate.
- (11) Perform steps 7 through 12 of sector gate lifting operation as described in Paragraph 3.2.2 of this section entitled "Gate Lifting Operation".
- (12) Dewater gate pocket as per Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS. Make sure 24-inch sluice gate is closed during this operation.
- (13) As a precautionary measure, install hardwood blocking under Horizontal Girder V as directed by the Contracting Officer.

(14) Remove specified existing wheel assembly parts as directed by the Contracting Officer and install new Government furnished parts in accordance with procedures listed in Paragraph 3.3 of this section entitled "GATE WHEEL REPLACEMENT OPERATION". The Contractor shall complete the removal and repair/replacement of one wheel and wheel assembly part at a time in order to minimize the extent of disassembly.

The Contracting Officer may approve working on more than one wheel at a time if the Contractor demonstrates his ability to efficiently complete one wheel and wheel assembly.

(15) Remove hardwood blocking installed at Step 13.

(16) Flood gate pocket as described in step 10.

(17) Lower new wheel assemblies on to track in accordance with sector gate lowering operation as described in Paragraph 3.2.3 of this section entitled, "Gate Lowering Operation".

(18) Dewater gate pocket as per Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS.

(19) Remove jacks and pedestals. Reinstall wheel guards and sector gate skirting removed at Step 5.

(20) Flood gate pocket as described in step 10 and remove stop gates.

(21) Jog sector gate towards the channel, remove Teflon pads from sector gate struts with divers and then return sector gate to the fully closed position.

(22) Repeat steps 1 through 21 on west leaf of sector gate.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT - JACKING SYSTEM

#### 2.1.1 General

The equipment used for the jacking system shall be suitable for safely jacking each sector gate as necessary to perform the replacement of wheel assemblies as specified. Details of the equipment proposed and the methods to be applied shall be submitted to the Contracting Officer for review. The Contracting Officer retains the right to reject any equipment or products if, in his opinion, they are not suitable to meet the intent of this section.

#### 2.1.2 Jacking System Components

Details shown on the Information Drawings and jacking procedure listed in Paragraph 3.2 of this section are based upon the jacking equipment listed below. All items of the system shall be new or in a factory reconditioned state. The systems shall include, but not necessarily be limited to the following components:

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<u>Quantity</u>	<u>Description</u>
3	300 Ton, 2" Stroke Locknut Jacks - Model 14116-LNJ-3002C-SBP manufactured by Richard Dudgeon, Inc.
5	100 Ton, 4" Stroke Locknut Jacks - Model 14117-LNJ-1004B manufactured by Richard Dudgeon, Inc.
7	Spherical Bearing Plates Model 13296 - 250 SBP manufactured by Richard Dudgeon, Inc.
5	Hand Pumps, 2 speed, 2 gal, 4-way valve.
5	1/4" ID, 3 wire, 100 ft. Hydraulic Hoses & Quick Disconnects.
3	1/4" ID, 3 wire, 20 ft. Hydraulic Hoses & Quick Disconnects.
5	1/4" ID, 3 wire, 6 ft. Hydraulic Hoses & Quick Disconnects.
5	Manifolds with Load holding Valve and Gauge Tee.
3	Quick Disconnect Jack Tees.
5	Certified gauges, 10,000 psi, 4" dial, quick disconnect.

(Note: The required quantities listed above are one greater than the actual number that is needed in service, so that one spare unit for each item will be at the job site.)

2.1.2.1 Source for Equipment

All specified jacking equipment is available from the following source:

Richard Dudgeon, Inc.  
Bridgeport, Connecticut  
Tel. (203) 336-4459  
Fax. (203) 333-8417

2.1.2.2 Substitutions

Subject to the approval of the Contracting Officer, jacking equipment other than that specified may be used provided the following conditions are met:

- (1) Jacks shall have equal or greater capacity and stroke than those specified.
- (2) Jacks shall have locknuts, or other suitable mechanical locks.
- (3) All equipment shall be compatible with spatial constraints.

2.1.2.3 Additional Items Required for Jacking System

The following miscellaneous minor items are required for the jacking system:

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- (1) Six steel pedestals required to support jacks. These pedestals will provided by the Government and are presently stored at a different facility. They will be delivered to the jobsite by the Government.
- (2) Four square Teflon pads, each measuring approximately 2' x 2' x 1/4" thick.
- (3) Twelve pieces of masonite board measuring approximately 6" x 6" x 1/4" thick.
- (4) Three pieces of bar stock 1/2" diameter x 12" long (to facilitate turning locknut rings on jacks).
- (5) Three 3/8" thick shim plates and three 0.10" thick shim plates (for making measurements during jacking procedure).
- (6) Six 1/4" thick semi-circular shim plates and six 1/2" thick semi-circular shim plates for making measurements during jacking procedure.

### PART 3 EXECUTION

#### 3.1 MACHINE WORK

##### 3.1.1 General

All tolerances, allowances, and gages for metal fits between non-threaded, cylindrical parts shall conform to ASME B4.1 for the class of fit as shown or otherwise required. Where fits are not shown they shall be suitable as determined by the Contracting Officer. Tolerances for machine-finished surface shall be as shown on the contract drawings. Finished contact or bearing surfaces shall be true and exact to secure full contact. All surfaces shall be finished with sufficient smoothness and accuracy to insure proper operation when assembled.

##### 3.1.2 Finished Surface

When surface finishes are indicated on the drawings or specified herein the symbols used or finishes specified shall be in accordance with ASME B46.1. Flaws such as deep scratches, ridges, holes, cracks or checks which will make the part unsuitable for the intended use will be cause for rejection and replacement of the item at no additional cost to the Government.

#### 3.2 SECTOR GATE JACKING PROCEDURE

##### 3.2.1 General

- (1) The intent of the following paragraphs is to set forth procedures for lifting and then lowering the arc end of the sector gate by 3/4 inches in order to accomplish replacement of the gate wheels.
- (2) The specified lifting operation steps 7 through 12 and the entire

lowering operation shall be performed with the gate pocket flooded. In order to accomplish these operations, the services of a minimum of two (2) underwater divers shall be required. Also, radio equipment shall be provided such that communication can be made between the Contractor who will be coordinating the lifting and lowering operations from atop the concrete abutment of the sector gate (El.+20) and the divers who will be monitoring the jacking points (El.-39).

(3) During the lifting operation, the Contractor also shall coordinate with the Contracting Officer who will be monitoring the clearance between the gate drive sprocket and the lower keeper plate of the drive rack (El.+17). The Contracting Officer will provide further instructions should a clearance problem arise.

(4) Prior to the actual jacking operation, the Contractor shall assemble all equipment according to the schematic diagrams shown on the Information Drawings. Equipment shall be operated in any convenient location to insure familiarization and proper functioning. During this setup, the divers who will be employed shall be present so as to be instructed on what their duties will be during the actual operations.

### 3.2.2 Gate Lifting Operation

The specific steps for the lifting operation shall be as follows:

(At this point, gate pocket is dewatered. See Section 02170 DEWATERING, INSPECTION AND MISCELLANEOUS REPAIRS.)

(1) Install pedestals and jacks at the prescribed locations shown on the Information Drawings. (Note: Prior to installing jacks, liberally coat threaded length of piston with grease.)

(2) Place spherical bearing plates and 1/4 inch thick masonite boards on top of jacks. The gap between masonite board, closed jack and underside of structure should be no greater than 1/4 inches (with jack closed). If greater, insert appropriate shims.

(3) Connect hydraulic circuits.

(4) Close pump release and load holding valves.

(5) Cycle hand pumps until all gauges read 1,000 psi. Stop pumping.

(6) Lower locknut rings completely.

(At this point, the Contractor shall flood the gate pocket.)

(7) Resume pumping simultaneously at all points. As each point reaches a maximum gauge pressure (i.e., when continued pumping does not increase gauge pressure), stop pumping. At this time, load has been transferred from supporting wheel assemblies to the jacks.

(8) Divers shall lower lock rings completely.

(9) It is the intent to raise the structure simultaneously at all jacking points in 3 intervals of 1/4 inch each while maintaining approximately equal extension on the jacks. To do this it will be necessary to count the number of full cycles on each hand pump. For 1/4 inch extension at the single 300 ton jacks, 40 cycles are required. For 1/4 inch extension at the twin jacking points (two 100 ton jacks), 57 cycles are required.

(a) Divers shall verify that the load has actually been transferred to each jack. This shall be done by pumping a few cycles at each point until a diver can insert a 0.10 inch thick shim between the top of the cylinder and the locknut ring.

(b) Begin coordinated pumping so that all points will reach 1/4 inches extension at approximately the same time. Stop pumping.

(10) Divers shall verify that each jack has attained correct lift by inserting 1/4 inch semi-circular shim. Remove shim.

(11) Repeat step 9b for second 1/4 inch lift. (Divers shall insert 1/2 inch semi-circular shim to verify lift. Remove shim.) Repeat step 9b again for final lift. (Divers shall insert 1/2 inch plus 1/4 inch semi-circular shims to verify lift. Remove shims.)

(12) When a total of 3/4 inches has been attained, divers shall turn locknut rings all the way down. Divers shall then verify that each wheel actually has been lifted off the track by inserting a 3/8 inch thick shim between the bottom of wheel and top of track. Open pump release valves. By tapping on handles, slightly crack open load holding valves and gently bleed pressure out of system. Load is now transferred to locknut rings. Divers shall verify again that each wheel has been lifted off the track by inserting a 3/8 inch thick shim.

### 3.2.3 Gate Lowering Operation

The specific steps for the lowering operation shall be as follows:

(At this point, the Contractor shall flood the gate pocket.)

(1) Close pump release and load holding valves.

(2) Pump until load is removed from locknut rings (i.e., until a diver can insert a 0.10 inch thick shim between the top of the cylinder and the locknut ring). Stop pumping.

(3) Divers shall turn locknut rings up 1/4 inch using semi-circular shims as gauge.

(4) When all points are ready, open pump release valves.

(5) At Contracting Officer's direction, slowly crack open load holding valves simultaneously and gradually bleed pressure down.

(6) Structure has been lowered 1/4 inch.

- (7) Repeat steps 1 through 6 to lower structure in 1/4 inch intervals.
- (8) After structure has been lowered 3/4 inches , close pump release and load holding valves.
- (9) Pump until divers verify that load is off locknut rings. Stop pumping.
- (10) Raise locknut rings completely.
- (11) Open pump release valve. Slowly crack load holding valves and gradually bleed pressure down in gauges.
- (12) Load should now be transferred to wheel assemblies.

#### 3.2.4 Removal of Jacks from Gate Pocket

- (1) Since specified jacks are gravity return types and considering the long lengths of hose involved, it may be necessary to force the piston down to allow for their removal. This can easily be achieved by turning the locknut rings down 1 or 2 threads, inserting a pinch bar between the ring and the structure and prying the piston down sufficiently so that jacks can be slid out.
- (2) After completion of work on the first leaf of the sector gates, jacks should be thoroughly cleaned. Remove locknut rings and fully extend piston, Remove all grease from units and put a light coat of oil on all base metal surfaces. Collapse jacks completely and replace locknut ring. Immediately prior to second lifting operation, extend pistons completely and again apply a liberal coating of grease along entire thread length.

### 3.3 GATE WHEEL REPLACEMENT OPERATION

#### 3.3.1 General

The parts to be removed and replaced at each wheel are as follows: (Parts are shown on information drawings NBF-1-1133 and NBF-30, Sheet 1.)

- 1 - Bushing Housing Mark No. 103-2 (Reuse existing part.)

Wheel assemblies (Replace with new parts.)

- 1 - Wheel Mark No. 103-3
- 1 - Shaft Mark No. 103-4
- 2 - Bushing Mark No. 103-5
- 2 - Sleeves Mark No. 103-6
- 4 - Washers Mark No. 103-7
- 2 - O-Ring Seals
- 2 - Retaining Rings

#### 3.3.2 Existing Wheel Assembly Parts

The existing parts to be replaced shall become the property of the Contractor and shall be disposed of in accordance with Section 01355 ENVIRONMENTAL PROTECTION.

3.3.3 New Government Furnished Wheel Assembly Parts.

All new Government furnished parts will be furnished to the Contractor completely fabricated, machined and ready for installation. There are five partial wheel assemblies. Each partial assembly consists of a wheel (Mark No. 103-3), shaft (Mark No. 103-4), and two sleeves (Mark No. 103-6). These partial wheel assemblies and remaining wheel assembly parts shall be installed as shown on information drawing NBF-1-1133.

3.3.4 Wheel Removal and Replacement Procedure

(1) Disconnect lubrication line at existing Bushing Housing Mark No. 103-2.

(2) Remove existing parts which are to be reinstalled by unscrewing the eight existing Cap Screws Mark No. 103-15. (Note: No adjustments are to be made to existing Hex Head Bolts Mark No. 103-12 or Jacking Screws Mark No. 103-13.)

(3) As the existing Bushing Housing Mark No. 103-2 are removed, attach a tag to each to identify whether it is the inside or outside half of the assembly.

(4) Deliver the new Bushings Mark No. 103-5 and the existing Bushings Mark No. 103-5 still encased in the existing Bushing Housings Mark No. 103-2 to the selected machine shop. Each wheel assembly required two Bushing Housings and two Bushings.

(5) At the machine shop, the existing Bushings Mark No. 103-5 shall be pressed out of the existing Bushing Housings Mark No. 103-2 and the bore hole diameters of the housings accurately measured. New Bushings Mark No. 103-5 shall have their outside diameters machined down to a diameter of 0.004 to 0.008 inches greater than the bore hole diameter of the respective Bushing Housing and shall be finished to a 63 micro-inch surface. New Bushings shall then be press fit into the Bushing Housings.

(6) Return all parts to the jobsite.

(7) Fit together new wheel assemblies and Bushing Housings with Bushings and secure the assembly in place by reinstalling the existing Cap Screws Mark No. 103-15.

(8) Reconnect lubrication lines and lubricate bushings.

3.4 FIELD TESTS

After all work on the sector gate is completed and inspected, the gate pocket shall be flooded and the stop gate system removed. Government personnel will open and close the gate several times and will measure gate

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operating parameters to verify that the gate is operating smoothly along a level plane.

-- End of Section --

## APPENDIX A

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Photo 1 – Support beams and non-existent grates at steel ladder landing of west sector gate, typical of east sector gate.



Photo 2 – Typical paint condition, Truss II.  
Note pitting and minor section loss at top flange.



Photo 3 – Failed concrete patch at west gate pocket, typical of east gate pocket.



Photo 4 – Efflorescence along east gate pocket construction joint.



Photo 5 – Typical concrete joint deterioration in tunnel. Heavy efflorescence and sealant is loose in some areas.



Photo 6 – West gate pocket and sector gate in open position (within the pocket).



Photo 7 – Typical configuration of gate guide beam. Note typical paint condition fender support plate on outside face of beam.



Photo 8 – West gate pocket and sector gate (in open position), typical of east gate. Note location and configuration of timber fenders attached to gate guide beams and abutments.

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