

A003314

IFB NO. DACW29-95-B-0095



**US ARMY CORPS  
of ENGINEERS  
NEW ORLEANS DISTRICT**

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**Lake Pontchartrain, LA and Vicinity**

**Floodproofing Veterans Boulevard  
Bridges over 17th St. Canal**

Orleans and Jefferson Parishes, Louisiana

**Note:  
Previously advertised as DACW29-94-B-0121**

**Construction Solicitation  
and Specifications**

**21 June 1995**

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**PHONE INQUIRIES  
REGARDING THIS SOLICITATION SHOULD  
BE MADE TO THE FOLLOWING:**

**AREA CODE 504  
COLLECT CALLS NOT ACCEPTED**

**INFORMATION  
MRS. SHEILA ENCLADE  
862-1514**

**PLANS AND SPECIFICATIONS  
MRS. PAT PERKINS  
862-1120**



**DEPARTMENT OF THE ARMY**  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

SOLICITATION NO. DACW29-95-B-0095

21 JUNE 1995

FOR: LAKE PONTCHARTRAIN, LA. & VICINITY, FLOODPROOFING VETERANS  
BOULEVARD BRIDGES OVER 17TH STREET CANAL, ORLEANS AND JEFFERSON  
PARISHES, LA. ED-94-145

TO OPEN: 25 JULY 1995, 2:00 P.M., LOCAL TIME AT PLACE OF BID  
OPENING.

- I. NOTE THE AFFIRMATIVE ACTION PROGRAM REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.
- II. NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION. Bidders, offerors and applicants are cautioned to note the "Certification of Non-segregated Facilities" in the solicitation. Failure of a bidder or offeror to agree to the certification will render his bid or offer non-responsive to the terms of solicitations involving awards of contracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause.
- III. BIDS MUST PROVIDE FULL, ACCURATE AND COMPLETE INFORMATION AS REQUIRED BY THIS SOLICITATION AND ITS ATTACHMENTS. THE PENALTY FOR MAKING FALSE STATEMENTS IN BIDS IS PRESCRIBED IN 18 U.S.C. 1001. (FAR 52.214-4 APR 1984)

DESCRIPTION AND MAGNITUDE OF WORK: The work consists of constructing two precast concrete girder bridges on Veterans Blvd. over the 17th Street Canal; constructing approach slabs and asphalt overlays on bridge approaches, constructing floodwall ties and floodgates adjacent to the bridges, constructing a floodgate, constructing surface drain inlets and drain lines, constructing landscaping, demolition of existing bridge, riprap removal and dredging; site cleaning, fertilizing and seeding.

**CAUTION TO BIDDERS:** In delivery of hand-carried bids, bidders are cautioned to allow sufficient time for delays which may be encountered as a result of frequent trains which are subject to block all access roads to place of bid opening for various lengths of time. Such delays DO NOT permit acceptance or consideration of late bids.

**NOTE:** ALL WORK UNDER THESE SPECIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF EM 385-1-1 "CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL," DATED OCTOBER 1992.

SOLICITATION NO. DACW29-95-B-0095

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY,  
FLOODPROOFING VETERANS BOULEVARD BRIDGES OVER 17TH STREET CANAL,  
ORLEANS AND JEFFERSON PARISHES, LOUISIANA

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LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY,  
FLOODPROOFING VETERANS BOULEVARD BRIDGES OVER 17TH STREET CANAL,  
ORLEANS AND JEFFERSON PARISHES, LOUISIANA

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<b>SOLICITATION, OFFER, AND AWARD</b> (Construction, Alteration, or Repair)	1. SOLICITATION NO. DACW29-95-B-0095	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 06/21/95	PAGE OF PAGES

**IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.**

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. ED0000-4193-0145 A	6. PROJECT NO. DACW29-95-B-0095
7. ISSUED BY US ARMY ENGR DIST NEW ORLEANS PO BOX 60267 NEW ORLEANS LA 70160-0267	CODE ISSUE1	8. ADDRESS OFFER TO OFFER1 US ARMY ENGR DIST NEW ORLEANS ATTN CELMN-CT PO BOX 60267 NEW ORLEANS LA 70160-0267
9. FOR INFORMATION CALL:	A. NAME Sheila W. Enclade SC1	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (504) 862-1514

**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):

11. The Contractor shall begin performance within 10 calendar days and complete it within 630 calendar days after receiving  award,  notice to proceed. This performance period is  mandatory,  negotiable. (See \_\_\_\_\_.)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.)  
 YES  NO

12B. CALENDAR DAYS  
007

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8 by 1400 (hour) local time 07/25/95 (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 30 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15. TELEPHONE NO. (Include area code)
DUNS NO.	16. REMITTANCE ADDRESS (Include only if different than Item 14)
CODE	FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within \_\_\_ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

**AMOUNTS**

18. The offeror agrees to furnish any required performance and payment bonds.

**19. ACKNOWLEDGMENT OF AMENDMENTS**  
(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.									
DATE									

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20B. SIGNATURE	20C. OFFER DATE
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**AWARD (To be completed by Government)**

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM  26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO  <input type="checkbox"/> 10 U.S.C. 2304(c)( ) <input type="checkbox"/> 41 U.S.C. 253(c)( )
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26. ADMINISTERED BY New Orleans Area Office P. O. Box 60267 Foot of Prytania Street, Room 186 New Orleans, LA 70160-0267	CODE	27. PAYMENT WILL BE MADE BY Disbursing Officer U.S. Army Engineer District, New Orleans P. O. Box 60267 New Orleans, LA 70160-0267
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**CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE**

<input type="checkbox"/> <b>28. NEGOTIATED AGREEMENT</b> (Contractor is required to sign this document and return ___ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	<input type="checkbox"/> <b>29. AWARD</b> (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
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30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)
30B. SIGNATURE	31B. UNITED STATES OF AMERICA  BY
30C. DATE	31C. AWARD DATE

## SOLICITATION NO. DACW29-95-B-0095

## SECTION 00010 - BIDDING SCHEDULE

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY,  
FLOODPROOFING VETERANS BOULEVARD BRIDGES OVER 17TH STREET CANAL,  
ORLEANS AND JEFFERSON PARISHES, LOUISIANA

Item No.	Description	Estimated Quantity	Unit	Unit Price	Est. Amt.
0001.	Mobilization and Demobilization	Lump Sum	LS		
0002.	Demolition	Lump Sum	LS		
0003.	Maintenance of Traffic (Including Temporary Signing)	Lump Sum	LS		
0004.	Furnish and Deliver 24-Inch Prestressed Concrete Piles	6,832	LF		
0005.	Driving 24-Inch Prestressed Concrete Piles	6,832	LF		
0006.	Furnish and Deliver Steel H-Piles	2,128	LF		
0007.	Driving Steel H-Piles	2,128	LF		
0008.	Class A Concrete	Lump Sum	LS		
0009.	Class AA Concrete	Lump Sum	LS		
0010.	Precast, Prestressed Concrete Girders	Lump Sum	LS		
0011.	Miscellaneous Metalwork	Lump Sum	LS		
0012.	Asphaltic Concrete Pavement	Lump Sum	LS		
0013.	Floodwall Gate Near I-10	Lump Sum	LS		
0014.	Steel Sheet Piling	3,950	SF		
0015.	Driving Government Furnished Sheet Piling	Lump Sum	LS		
0016.	Furnish and Drive Test Piles	2	EA		
0017.	Pile Load Tests	2	EA		
0018.	Permanent Pavement Markings	Lump Sum	LS		
0019.	Drainage Structures	Lump Sum	LS		



SOLICITATION NO. DACW29-95-B-0095

SECTION 00010 - BIDDING SCHEDULE

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY,  
 FLOODPROOFING VETERANS BOULEVARD BRIDGES OVER 17TH STREET CANAL,  
 ORLEANS AND JEFFERSON PARISHES, LOUISIANA

Item No.	Description	Estimated Quantity	Unit	Unit Price	Est. Amt.
0020.	Landscaping	Lump Sum	LS		
0021.	Maintenance of Landscaping	Lump Sum	LS		
0022.	Detour Construction	Lump Sum	LS		
0023.	Dredging				
0023AA.	First 8,000 Cubic Yards	8,000	CY		
0023AB.	All Over 8,000 Cubic Yards	2,200	CY		
0024.	Erosion Control				
0024AA.	First 800 Linear Feet	800	LF		
0024AB.	All Over 800 Linear Feet	180	LF		
0025.	Standby Costs (Dredging)				
0025AA.	First 64 Hours	64	HR		
0025AB.	All Over 64 Hours	32	HR		
TOTAL					\$

Award will be made as a whole to one bidder.

NOTE: Bidders shall furnish unit prices for all items listed on schedule of bid items which require unit prices. If the bidder fails to insert a unit price in the appropriate blank for required items but does furnish an extended total or an estimated amount for such items, the Government will deem his unit price to be the quotient obtained by dividing the extended estimated amount for that line item by the quantity. IF THE BIDDER OMITTS BOTH THE UNIT PRICE AND THE EXTENDED ESTIMATED AMOUNT FOR ANY REQUIRED ITEM, HIS BID WILL BE DECLARED NON-RESPONSIVE. The quantities shown for Bid Items Nos. 0023AB, 0024AB and 0025AB are for evaluation purposes. Payment for these items will be made on the basis of the actual quantities used.

VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS. EFARS 12.402(100)--JUL 89. The Variations in Estimated Quantities - Subdivided Items clause is applicable to Items Nos. 0023, 0024 and 0025.

- a. Variation from the estimated quantity in the actual work performed under any second or subsequent sub-item or elimination of all work under such a second or subsequent sub-item will not be the basis for an adjustment in contract unit price.
- b. Where the actual quantity of work performed for Items Nos. 0023, 0024 and 0025 is less than 85% of the quantity of the first sub-item listed under such items, the Contractor will be paid at the contract unit price for that sub-item for the actual quantity of work performed and, in addition, an equitable adjustment shall be made in accordance with the clause FAR 52.212-11, Variations in Estimated Quantities.
- c. If the quantity of work performed under Items Nos. 0023, 0024 and 0025 exceeds 115% or is less than 85% of the total estimated quantity of the sub-items under that item, and/or if the quantity of work performed under the second sub-item or any subsequent sub-item under Items Nos. NONE exceeds 115% or is less than 85% of the estimated quantity of any such sub-item, and if such variation causes an increase or a decrease in the time required for performance of this contract the contract completion time will be adjusted in accordance with the clause FAR 52.212-11, Variations in Estimated Quantities.

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INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS

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SECTION 00100  
INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS

1

Information regarding bidding material, bid guarantee, and bonds.

INFORMATION REGARDING BIDDING MATERIAL, BID GUARANTEE, AND BONDS.

This invitation for Bids No. DACW29-95-B-0095, Consists of the attached: Instructions to Bidders, Solicitation, Offer and Award (Standard Form 1442), Bidding Schedule, Representations and Certifications, Special Clauses, Secretary of Labor Wage Determination Decision No. LA950013 Specifications, Contract Clauses, and Drawings as listed in paragraph 3 of Section 00800.

PROVISIONS TO BIDS OVER 25,000

The following provisions apply to bids in excess of \$25,000.00

(a) Bid Bonds. Each bidder shall submit with his bid a Bid Bond (Standard Form 24) with good and sufficient surety or sureties acceptable to the Government or other Bid Guarantee complying with FAR 52.228-1, in the penal sum of twenty percent (20%) of the bid price or \$3,000,000 whichever is lesser. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

(b) Performance and Payment Bonds. Within 7 days after the prescribed forms are presented to the bidder to whom award is made for signature, a written contract on the form prescribed by the specifications shall be executed and two bonds, each with good and sufficient surety or sureties acceptable to the Government furnished: namely a performance bond (Standard Form 25) and a payment bond (Standard Form 25A). The penal sums of such bonds will be as follows:

(1) Performance Bond. The penal sum of the performance bond shall equal one hundred percent (100%) of the contract price.

(2) Payment Bond.

a. When the contract is \$1,000,000 or less, the

penal sum will be fifty percent (50%) of the contract price.

b. When the contract price is in excess of \$1,000,000 but not more than \$5,000,000 the penal sum shall be forty percent (40%) of the contract price.

c. When the contract price is more than \$5,000,000, the penal sum shall be \$2,500,000.

Bonds shall be furnished by the Contractor to the Government prior to commencement of contract performance.

#### DRAWINGS

Sets of drawings, reduced to half-size and specifications will be furnished upon receipt of payment of \$35.00 per set. If individual plan sheets are requested, they will be furnished at the rate of \$.32 for half-size and \$1.40 for full size, for each sheet requested but with a minimum charge of \$1.00. The maximum charge shall not exceed the charge for a full set of plans. No refund of the payment for drawings will be made and the drawings need not be returned to the District Engineer. Additional copies of the specifications alone will be furnished an applicant at the rate of \$5.00 per copy. Payments shall be made by: company check, money order, or cashier check, and delivered to the Finance and Accounting Officer, U. S. Army Engineer District, New Orleans. Checks and money orders should be made payable to "FAO, USAED, New Orleans District".

SITE OF THE WORK

Bidders are advised that for purpose of applicability of Davis-Bacon Act and other contract labor standards provisions, "the site of the work" under the contract to be awarded pursuant to this Invitation may not be limited to the physical place(s) where the construction called for in the contract will remain when work on it has been completed. The "site of work" may include other adjacent or nearby property used by the Contractor or subcontractors during such construction. For example fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards, etc., will be considered part of the site of the work provided: they are dedicated exclusively or nearly so to the performance of the contract and are so located in proximity to the actual construction location that it would be reasonable to include them (1971 NOV).

ARITHMETIC DISCREPANCIES. (EFARS 14.1/90)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

(1) Obviously misplaced decimal points will be corrected:

(2) In case of discrepancy between unit price and extended price, the unit price will govern:

(3) Apparent errors in extension of unit prices will be corrected: and

(4) Apparent errors in addition of lump-sum and extended prices will be corrected:

(b) For the purposes of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, extensions, and totals arrived at by resolution of arithmetic discrepancies as

provided above and the bid will be so reflected on the abstract of bids.

#### PRE-AWARD INFORMATION

Each bidder shall, upon request of the Contracting Officer, furnish a statement of whether he is now or ever has been engaged in any work similar to that covered by the specifications herein, the dollar value thereof, the year in which such work was performed, and the manner of its execution, and giving such other information as will tend to show the bidder's ability to prosecute the required work. The "such other information" referred to above shall include but is not limited to the following:

(a) The name and address of the office or firm under which such similar work was performed.

(b) A list of key personnel available for the instant project and their qualifications.

(c) A copy of bidder's latest financial statement, including the names of banks or other financial institutions with which the bidder conducts business. If the financial statement is more than 60 days old, a certificate should be attached stating that the financial condition is substantially the same, or if not the same, the changes that have taken place. Such statement will be treated as confidential.

(d) A list of present commitments including the dollar value thereof, and name of office under which the work is being performed.

#### WORK TO BE PERFORMED BY CONTRACTOR'S OWN ORGANIZATION.

Within 7 days after award the successful bidder/contractor shall



furnish the Contracting Officer a description of the items of work which will be performed with its own forces and the estimated cost of those items.

(See paragraph 9 of Section 00800 contained in the Special Contract Requirements of the specifications.)

**EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (1982 JUNE OCE).**

Whenever a contact or modification of contract price is negotiated, the Contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance with the requirements of paragraph 4 of Section 00800, EQUIPMENT OWNERSHIP OPERATING AND EXPENSE SCHEDULE, contained in the Special Contract Requirements section of the specifications. A copy of EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" is available for review at the New Orleans District Office, Attn: Mrs. Sheila Enclade (telephone number 504-862-1514 or Mr. C. E. Settoon (telephone number 504-862-2726).

**PROGRAM DATA**

**AUTHORITY: Public Law 89-298**

**APPROPRIATION: 96 X 3122, Construction General**

MODIFICATIONS PRIOR TO DATE SET FOR OPENING BIDS.

The right is reserved, as the interest of the Government may require, to revise or amend the specifications and/or drawings prior to the date set for opening bids. Such revisions or amendments, if any, will be announced by an amendment or amendments to this Invitation for Bids. Copies of such amendments as may be issued will be furnished to all prospective bidders. If the revision or amendments are of a nature which require material changes in quantities or prices bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of the District Engineer will enable bidders to revise their bids. In such case, the amendments will include an announcement of the new date of opening bids.

GOVERNMENT'S PRIVILEGE IN MAKING AWARDS.

The Government further reserves the right to make award on any or all schedules of any bid, unless the bidder qualifies such bid by specific limitation; also to make award to the bidder whose aggregate bid on any combination of bid schedules is low. For the purpose of this Invitation for Bids, the word "item" shall be considered to mean "schedule".

INFORMATION CONCERNING THIS INVITATION OR THE AWARD.

Prospective bidders may submit inquiries concerning this invitation or award of the contact by writing the District Engineer, Department of the Army, New Orleans District, Corps of Engineers, P.O. Box 60267, New Orleans, LA 70160-0267 or by calling (COLLECT CALLS NOT ACCEPTED) Mrs. Sheila Enclade, Construction Service Branch, Contracting Division, Area Code (504) 862-1514 for information.

VALUE ENGINEERING.

Special attention is invited to the Contract Clause entitled "Value Engineering--Construction". The New Orleans District policy to authorize immediate payment to Contractors for their portion of VECP savings is an important step in providing adequate incentives to Contractors for their support of this program. Carefully review the contract documents for potential savings and submit ideas promptly upon award to maximize savings.

SIZE STANDARDS FOR SMALL BUSINESS CONCERNS.

The Standard Industrial Classification for the construction described herein is classified under the Standard Industrial Classification manual as Number 1629 . For purposes of this procurement a small business concern is defined as a concern whose average annual sales or receipts of the concern and its affiliates for the preceding three financial years has not exceeded \$17.0 million.

SCHEDULE H - Annual Receipts Size Standards  
For Purpose of Bidding For Construction  
Contracts - Special Trade Contractors

Census Classification Code	Industry, Subindustry, or Class of Products	Average 3-year Annual Receipts Size Standard (maximum in million)
1711	- Plumbing, Heating (Except Electric, and Air Conditioning	\$7
1721	- Painting, Paper Hanging, and Decorating	\$7
1731	- Electric Work	\$7
1741	- Masonry, Stone Setting, and other Stonework	\$7
1742	- Plastering, Drywall, Acoustical and Insulation Work	\$7
1743	- Terrazzo, Tile, Marble, and Mosaic Work	\$7

1751	- Carpentering and Flooring	\$7
1752	- Floor Laying and other Floor Work, not Elsewhere Classified	\$7
1761	- Roofing and Sheet Metal Work	\$7
1771	- Concrete Work	\$7
1781	- Water Well Drilling	\$7
1791	- Structural Steel Erection	\$7
1793	- Glass and Glazing Work	\$7
1794	- Excavating and Foundation Work	\$7
1795	- Wrecking and Demolition Work	\$7
1796	- Installation or Erection of Building Equipment, Not Elsewhere Classified	\$7
1799	- Special Trade Contractors, Not Elsewhere Classified	\$7

#### HARBOR MAINTENANCE FEE

Offerors or bidders contemplating use of U.S. ports in the performance of contract work are subject to paying a harbor maintenance fee as authorized under Section 1402 of the Water Resource Development Act of 1986 (Public Law 99-662). The fee imposed by the act is equal to a percentage (as set forth by the Act and amendments thereto) of the value of the commercial cargo involved. Firms performing work under U.S. Government contracts are not exempt from the act. Offerors and bidders are responsible for ensuring that the applicable fee and associated cost are taken into consideration in the preparation of their offer or bid.

Information pertaining to the act and a list of U.S. ports which subjects the cargo to the harbor maintenance fee may be obtained from local U.S. Customs Service Offices or by writing to the Director, User Fee Task Force, Division of Inspection and Control, Room 4132, U.S. Customs Service, 1301 Constitution Avenue, N.W., Washington, D.C. 20229.

NEGOTIATIONS AFTER SEALED BIDDING

(a) This clause applies if after bid opening the Contracting Officer determines that all otherwise acceptable bids received are at unreasonable prices, or only one bid is received and the Contracting Officer cannot determine the reasonableness of the bid price, or no responsive bid has been received from a responsible bidder; or the bids were not independently arrived at in open competition, were collusive, or were submitted in bad faith.

(b) The Government has the option to reject all bids received in response to the sealed bid advertisement and initiate negotiation. Negotiations will include soliciting offers from each responsible bidder that submits a bid in response to the Invitation for Bid.

(c) If after bid opening the Contracting Officer determines under (a) above that negotiations are in the best interest of the Government, the following steps will be followed:

(1) An amendment to the sealed bid advertisement will be issued to each responsible bidder changing the Invitation for Bid Number to a Request for Proposal Number. The amendment will also make any necessary changes to the scope of work.

(2) A cover letter signed by the negotiator will accompany the amendment explaining the procedures to be followed during negotiations.

LIEN ON REAL ESTATE

The following format, or any document substantially the same, shall be used by the surety and recorded in the local recorder's office when a surety pledges real estate on Standard Form 28, Affidavit of Individual Surety.

I/we agree that this instrument constitutes a lien in the amount of \$\_\_\_\_\_ on the property described in this lien. The rights of the United States Government shall take precedence over any subsequent lien or encumbrance until the lien is formally released by a duly authorized representative of the United States. I/we hereby grant the United States the power of sale of subject property, including the right to satisfy its reasonable administrative costs, including legal fees associated with any sale of subject property, in the event of contractor default if I/we otherwise fail to satisfy the underlying ( ) bid guarantee, ( ) performance bond, ( ) or payment bond obligations as an individual surety on solicitation/contract number \_\_\_\_\_. The lien is upon the real estate now owned by me/us described as follows:

(legal description, street address and other identifying description)

IN WITNESS HEREOF, I/we have hereunto affixed my/our hand(s) and seal(s) this \_\_\_\_ DAY OF \_\_\_\_ 19\_\_.

WITNESS:

\_\_\_\_\_(SEAL)

\_\_\_\_\_(SEAL)

I, \_\_\_\_\_, A Notary Public in and for the

(CITY) \_\_\_\_\_, (STATE) \_\_\_\_\_, do hereby certify

that \_\_\_\_\_, a party of parties to a certain Agreement

bearing the date \_\_\_\_ day of \_\_\_\_\_ 19\_\_, and hereunto annexed,

personally appeared before me, the said \_\_\_\_\_ being personally

well known to me as the person(s) who executed said lien, and

acknowledged the same to be his/her/their act and deed.

GIVEN under my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_.

\_\_\_\_\_  
NOTARY PUBLIC, STATE

My Commission expires:

#### QUANTITIES

Estimates of quantities involved in certain items of work for which bids are being solicited on a lump sum or job basis have been made for the use of the Government. Copies of these quantity estimates may be viewed/obtained by contacting the District Engineer, ATTN:

Mrs. Sheila Enclade , CELMN-CT-R, U.S. Army Engineer District, New Orleans, Foot of Prytania Street, P.O. Box 60267, New Orleans, LA 70160-0267. It is expressly understood that the accuracy of these estimates is in no way warranted and that the furnishing of this information to a bidder will not relieve him of his responsibility to estimate the quantities involved.

#### COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (DEC 1991)

(a) The Offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter CAGE before the number.

(b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Services Center (DLSC). The Contracting Officer will--

(1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;

(2) Complete section A and forward the form to DLSC; and

(3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS  
AND STANDARDS (DODISS) (MAR 1994)

Single copies of specifications cited in this solicitation may be obtained by submitting a written request to the supply point listed below. The request must contain the title of the specification, its number, date, applicable amendment(s), and the solicitation or contract number. A telephone order entry system is available with the use of a touch tone telephone. A Customer Number is required to use this system and may be obtained by written request to the address listed below or by telephone (215-697-2179). In case of urgency, telegraphic requests are acceptable. Voluntary standards, which are not available to Offerors and Contractors from Government sources, may be obtained from the organization responsible for their preparation, maintenance, or publication.

Standardization Document

Order Desk, Building 4, Section D

700 Robbins Avenue

Philadelphia, PA 19111-5094

Facsimile No.....215-697-2978

Telephone Order Entry System (TOES) Numbers.....215-697-1187 through  
and including 215-697-1197

(End of provision)

SOLICITATION DEFINITIONS--SEALED BIDDING (JUL 1987)

"Government" means United States Government.

"Offer" means "bid" in sealed bidding.

"Solicitation" means an invitation for bids in sealed bidding.

(End of provision)

AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by



facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

#### FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

(R 2-201(b)(xiii))

(R 1-2.201(a)(11))

#### SUBMISSION OF BIDS (DEC 1989)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(c) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(End of provision)

#### EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)  
(R SF 33A, Para 3, 1978 JAN)

LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (DEC 1989)

(a) Any bid received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it--

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of bids (e.g., a bid submitted in response to a solicitation requiring receipt of bids by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail or, if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service-Post Office To Addressee, not later than 5:00 P.M. at the place of mailing two working days prior to the date specified for receipt of bids. The term "working days" excludes weekends and U.S. Federal holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the bid wrapper or other documentary evidence of receipt maintained by the installation.

(e) The only acceptable evidence to establish the date of mailing of a

late bid, modification, or withdrawal sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice or telegram (including mailgram) received at any time before the exact time set for receipt of bids. If the solicitation authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision entitled "Facsimile Bids." A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

#### PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

- (1) Lump sum bidding;
- (2) Alternate prices;
- (3) Units of construction; or
- (4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation

authorizes their submission.

(End of provision)

(R SF 22, Para 5, 1978 FEB)

CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (FEB 1986)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(End of provision)

SIC CODE AND SMALL BUSINESS SIZE STANDARD (JAN 1991)

(a) The standard industrial classification (SIC) code for this acquisition is 1629.

(b) (1) The small business size standard is \$17.0 million.

(2) 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.

(End of provision)

BID GUARANTEE (APR 1984)

(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 offeror (bidder) shall furnish a bid guarantee in the form of a firm commitment, such as a bid bond, 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) 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 give a bond(s) as required by the solicitation within the time specified, the Contracting Officer may terminate the contract for default.

(d) Unless otherwise specified in the bid, the bidder will (1) allow 60 days for acceptance of its bid and (2) give bond within 10 days after receipt of the forms by the bidder.

(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)

(R 1-10.103-3)

(R 7-2003.25 1964 JUN)

#### SERVICE OF PROTEST (NOV 1988)

(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) or the General Services Administration Board of Contract Appeals (GSCA), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Mrs. Diane K. Pecoul  
Chief, Construction Service Branch  
Contracting Division  
Corps of Engineers  
P. O. Box 60267  
New Orleans, LA 70160-0267  
Telephone Number: (504) 862-2875

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

(End of provision)

PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

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. Chester Ashley Address: New Orleans Area Engineer P. O. Box  
60267, Suite 186 New Orleans, LA 70160-0267 Telephone: (504) 862-1200

(End of provision)

BANKRUPTCY (APR 1991)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail, written notification of the bankruptcy to the Contracting Office responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

END OF SECTION 00100

NOTICE TO CONTRACTOR

This solicitation contains two sets of goals for minority participation in construction crafts on this contract. They are the New Orleans Hometown Plan and the New Orleans Standard Metropolitan Statistical Area (SMSA).

Contractor will determine the goals applicable to him by the following:

Hometown Plan applies only to those contractors who are signatory to the Hometown Plan and utilizing crafts signatory to the plan.

New Orleans Standard Metropolitan Statistical Area (SMSA) applies to all contractors in the New Orleans SMSA area not signatory to the Hometown Plan, or utilizing crafts not signatory to the plan.

Federal Register/Vol. 45, No. 194/Friday, October 3, 1980

SOLICITATION PROVISION  
NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

The Bidder's attention is called to the "EQUAL OPPORTUNITY" and "LOCAL AFFIRMATIVE ACTION PLAN" clauses of the contract.

The acceptable ranges of minority manpower utilization, expressed in percentage terms, are as follows:

<u>Timetables</u>	<u>Goals for Minority Participation for Each Trade</u>	<u>Goals for Female Participation in Each Trade</u>
Indefinitely	20% - 23%	6.9%

The Bidder shall, within 5 days after a request therefor by the Contracting Officer of his duly authorized representative, submit the following information.

(a) A list of the construction trades he intends to use, either directly or through subcontractors at any tier, in the performance of work covered by this solicitation;

(b) A list of the labor organizations with which he has collective bargaining agreements and which are signatories to the Hometown Plan with respect to trades for which specific commitments to goals of minority manpower utilization are set forth in the Hometown Plan;

(c) A list of the labor organizations with which he has collective bargaining agreements and which are not signatories to the Hometown Plan or which are signatories thereto but with respect to trades for which no specific commitments to goals of minority manpower utilization are set forth in the Hometown Plan, and

(d) A list of all current construction work or contracts to which he is a party in any capacity in the covered area.

As used in this NOTICE and the contract to result from this solicitation:

(a) "Hometown Plan" or "Plan" means the NEW ORLEANS Plan, consisting of "An Agreement for Implementation of Employment of Minorities in the New Orleans Building Construction Industry."



- (b) "The covered area" means Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John, Lafourche, Plaquemines, Washington, Terrebonne, Tangipahoa\*, Livingston\*\* and St. James\*\*\* Parishes, Louisiana.
- (c) "Director, OFCC" means the Director, Office of Federal Contract Compliance, United States Department of Labor, or any person to whom he delegates authority; and
- (d) "Minority" means Negro, Spanish-surnamed American, Oriental, and American Indian, and includes both men and women.

\* Area covered is east of the Illinois Central Railroad.

\*\* Area covered is southeast of the line from a point of the Livingston & Tangipahoa Parish line adjacent from New Orleans and Baton Rouge.

\*\*\* Area covered is southeast of a line drawn from the town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL  
EMPLOYMENT OPPORTUNITY (APRIL 1984)

(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
SMSA Counties MS	19.2%	6.9%
SMSA Counties LA	31.0%	6.9%
Non-SMSA Counties	27.7%	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 Program 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 Director, Office of Federal Contract Compliance Programs, within 10 working days following award of a construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notifications shall list the -

- (1) Name, address, and telephone number of the subcontractor;
    - (i) Employer identification number of the subcontractor;
  - (2) Estimated dollar amount of the subcontract;
  - (3) Estimated starting and completion dates of the subcontract;
- and
- (4) 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 (FAR 52.222-23) Economic Area 113, New Orleans, LA as follows:

Standard Metropolitan Statistical Area

(SMSA) Counties:  
 0920 Biloxi - Gulfport, MS - - - - - 19.2%  
 MS Hancock; MS Harrison; MS Stone

5560 New Orleans, LA - - - - - 31.0%  
 LA Jefferson; LA Orleans; LA St. Bernard; LA St. Tammany

Non-Standard Metropolitan Statistical Area

(Non-SMSA) Counties - - - - - 27.7%  
 LA Assumption; LA Lafourche; LA Plaquemines; LA St. Charles;  
 LA St. James; LA St. John the Baptist; LA Tangipahoa;  
 LA Terrebonne; LA Washington; MS Forrest; MS Lamar; MS Marion;  
 MS Pearl River; MS Perry; MS Pike; MS Walthall

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REPRESENTATIONS & CERTIFICATIONS

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SECTION 00600  
REPRESENTATIONS & CERTIFICATIONS

1                                   DEFINITION OF SMALL BUSINESS CONCERN.

A. EXPLANATION OF TERM. "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 and size standards in 13 CFR 121.(FAR 19-101)

B. SIZE STANDARDS FOR CONSTRUCTION AND SPECIAL TRADES.

1. CONSTRUCTION. A concern is small if its average annual receipts for its preceding 3 fiscal years did not exceed \$17 million. However, if 75 percent or more of the work (in terms of dollar value) called for by the contract is classified in one of the industries, subindustries, or classes of products listed in this paragraph, the concern is small if its average annual receipts for its preceding 3 fiscal years did not exceed the size standard for that industry, subindustry, or class of products. (See Division C, "Contract Construction", of the SIC Manual.)

2. DREDGING. A concern is small if (1) its average annual receipts for its preceding 3 fiscal years did not exceed \$13.5 million, and (2) at least 40 percent of the yardage in the contract's plans and specifications is dredged with equipment owned by the concern or obtained from another small business dredging concern. (FAR 19.102-1)

2                                   DEBARRED OR SUSPENDED BIDDERS.

By entering into this contract, the Contractor certifies that neither he nor any person or firm who has an interest in the Contractor's firm is a person ineligible to be awarded Government contracts by virtue of being suspended or debarred in accordance with FAR subpart 9.4.

3                                   NONDOMESTIC CONSTRUCTION MATERIALS

As required by the contract clause entitled "BUY AMERICAN ACT - CONSTRUCTION MATERIALS (APR 1984)", the following is a list of items of Nondomestic Construction Materials the bidder proposes to use, showing

quantity, unit price, and intended use of each item:

Item	Quantity	Unit Price	Intended Use
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4

CONTRACTOR ESTABLISHMENT CODE (AUG 1989) (52.204-4)

In the block with its name and address, the offeror should supply the Contractor Establishment Code applicable to that name and address, if known, to the offeror. The number should be preceded by "CEC:" Offerors should take care to report the correct CEC and not a similar number assigned to the Offeror in a different system.

The CEC is a 9-digit code assigned to a contractor establishment that contracts with a federal executive agency. The CEC system is a contractor identification coding system which is currently the Dun and Bradstreet Data Universal Numbering System (DUNS). The CEC system is distinct from the Federal Taxpayer Identification Number (TIN) system.

The Government will obtain a Contractor Establishment Code for any awardee that does not have or does not know its CEC.

5

REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY (NOV 1990)

(a) Definitions. The definitions at FAR 3.104-4 are hereby incorporated in this provision.

(b) Certifications. As required in paragraph (c) of this provision, the officer or employee responsible for this offer shall

execute the following certification:

CERTIFICATE OF PROCUREMENT INTEGRITY

(1) I, \_\_\_\_\_, am the officer or employee responsible for the preparation of this offer and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certificate, I have no information concerning a violation or possible violation of subsection 27(a), (b), or (f) of the Office of Federal Procurement Policy Act, as amended+ (41.U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement.

(2) As required by subsection 27(e) (1) (B) of the Act, I further certify that, to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of \_\_\_\_\_ personally and substantially in the preparation or submission of this offer has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27 (a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: \_\_\_\_\_  
(Continue on plain bond paper if necessary and label Certificate of Procurement Integrity (Continuation Sheet), ENTER NONE IF NONE EXIST)

\_\_\_\_\_

\_\_\_\_\_

(4) I agree that, if awarded a contract under this solicitation, the certifications required by subsection 27(e) (1) (B) of the Act shall be maintained in accordance with paragraph (f) of this provision.

\_\_\_\_\_  
(Signature of the officer or employee responsible for the offer & date)

\_\_\_\_\_  
(Typed name of the officer or employee responsible for the offer)



+Subsections 27 (a), (b), and (d) are effective on December 1, 1990.  
Subsection 27(f) is effective on June 1, 1991.

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 TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

(c) (1) For procurement using sealed bidding procedures, the signed certifications shall be submitted by each bidder with the bid submission except for procurements using two-step sealed bidding procedure (see subpart 14.5). For those procurements, the certifications shall be submitted with submission of the step two sealed bids. A certificate is not required for indefinite delivery contracts (see Subpart 16.5) unless the total estimated value of all orders eventually to be placed under the contract is expected to exceed \$100,000.

(2) For contracts and contract modifications which include options, a certificate is required when the aggregate value of the contract or contract modification and all options (see 3.104-4(e)) exceeds \$100,000.

(3) Failure of a bidder to submit the signed certificate with its bid shall render the bid nonresponsive.

(d) Pursuant to FAR 3.104-9(d), the Offeror may be requested to execute additional certifications at the request of the Government. Failure of an Offeror to submit the additional certifications shall cause its offer to be rejected.

(e) A certification containing a disclosure of a violation or possible violation will not necessarily result in the withholding of award under this solicitation. However, the Government, after evaluation of the disclosure, may cancel this procurement or take any other appropriate actions in the interests of the Government, such as disqualification of the Offeror.

(f) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing contractor responsible for the offer may rely upon a one-time certification from each individual required to submit a certification to the competing contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the contractor. If a contractor decides to rely on a certification

executed prior to the suspension of section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that section 27 has been reinstated. These certifications shall be maintained by the Contractor for 6 years from the date a certifying employee's employment with the company ends or, for an agent, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

(g) Certifications under paragraphs (b) and (d) of this provision are material representations of fact upon which reliance will be placed in awarding a contract.

(End of provision)

6

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 or 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 being 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) above; 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) above \_\_\_\_\_

(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) above.

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

(End of provision)

7

52.203-4

CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984)

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror--  
[Note: The offeror must check the appropriate boxes. For interpretation of the representation, including the term "bona fide employee," see Subpart 3.4 of the Federal Acquisition Regulation.]

(1)  has,  has not employed or retained any person or company to solicit or obtain this contract; and

(2)  has,  has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a) (1) or (a) (2) is answered affirmatively, to promptly submit to the Contracting Officer--

(1) A completed Standard Form 119, Statement of Contingent or Other Fees, (SF 119); or

(2) A signed statement indicating that the SF 119 was previously submitted to the same contracting office, including the date and applicable solicitation or contract number, and representing that the prior SF 119 applies to this offer or quotation.

(End of provision)

(R 7-2002.1 1974 APR)

(R 1-1.505)

8 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 or who fails to file or amend the disclosure form to be filed or amended by 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)

9 52.204-3 TAXPAYER IDENTIFICATION (MAR 1994)

(a) Definitions.

"Common parent," as used in this solicitation 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.

"Corporate status," as used in this solicitation provision, means a designation as to whether the offeror is a corporate entity, an unincorporated entity (e.g., sole proprietorship or partnership), or a corporation providing medical and health care services.

"Taxpayer Identification Number (TIN)," as used in this solicitation provision, means the number required by the IRS to be used by the offeror in reporting income tax and other returns.

(b) All offerors are required to submit the information required in paragraphs (c) through (e) of this solicitation provision in order to comply with reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M and implementing regulations issued by the Internal Revenue Service (IRS). If the resulting contract is subject to the reporting requirements described in FAR 4.903, 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) 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 U.S. and does not have an office or place of business or a fiscal paying agent in the U.S.;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of a Federal, state, or local government;

Other. State basis. \_\_\_\_\_

(d) Corporate Status.

Corporation providing medical and health care services, or engaged in the billing and collecting of payments for such services;

Other corporate entity;

Not a corporate entity;

Sole proprietorship

Partnership

Hospital or extended care facility described in 26 CFR 501(c) (3) that is exempt from taxation under 26 CFR 501(a).

(e) Common Parent.

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

Name and TIN of common parent:

Name \_\_\_\_\_

TIN \_\_\_\_\_

(End of provision)

10 52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (MAY 1989)

(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, 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)

INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (DEC 1991)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts over the dollar limitation in section 13.000 of the Federal Acquisition Regulation, except those for commercial or commercial-type products.

(End of clause)

12 252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (SEP 1994)

(a) Definitions.

As used in this provision--

(1) "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)(1)(A)), to be a country the government of which has repeatedly provided support for 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, 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)

13 52.214-2 TYPE OF BUSINESS ORGANIZATION--SEALED BIDDING (JUL 1987)

The bidder, by checking the applicable box, represents that--

(a) It operates as  a corporation incorporated under the laws of the State of \_\_\_\_\_,  an individual,  a partnership,  a nonprofit organization, or  a joint venture; or

(b) If the bidder is a foreign entity, it operates as  an individual,  a partnership,  a nonprofit organization,  a joint venture, or  a corporation, registered for business in \_\_\_\_\_

(country)

(End of provision)

14 52.219-1 SMALL BUSINESS CONCERN REPRESENTATION (FEB 1995)

(a) Representation. The offeror represents and certifies as part of its offer that it is:  a small business concern,  not a small business concern.

(b) Definition.

"Small business concern," as used in this provision, 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 and size standards in this solicitation.

(c) 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 business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 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 a 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)

15 52.219-3 WOMEN-OWNED SMALL BUSINESS REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that it /\_/ is, /\_/ is not a women-owned small business concern.

(b) Definitions.

"Small business concern," as used in this provision, 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 and size standards in 13 CFR 121.

"Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(End of provision)

(R FPR Temp. Reg. 48 1978 DEC)

16 52.219-19 SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (JUL 1991)

(a) Definition.

"Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the standard industrial classification code assigned to a contracting opportunity.

(b) (Complete only if the Offeror has certified itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.)

The Offeror represents and certifies as part of its offer that it  is,  is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees	Avg. Annual Gross Revenues
<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51-100	<input type="checkbox"/> \$1,000,001-\$2 million
<input type="checkbox"/> 101-250	<input type="checkbox"/> \$2,000,001-\$3.5 million
<input type="checkbox"/> 251-500	<input type="checkbox"/> \$3,500,001-\$5 million
<input type="checkbox"/> 501-750	<input type="checkbox"/> \$5,000,001-\$10 million
<input type="checkbox"/> 751-1,000	<input type="checkbox"/> \$10,000,001-\$17 million
<input type="checkbox"/> Over 1,000	<input type="checkbox"/> Over \$17 million

(End of provision)

17 252.219-7000 SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (DoD CONTRACTS) (APR 1994)

(a) Definition. "Small disadvantaged business concern," as used in this provision, means a small business concern, owned and controlled by individuals who are both socially and economically disadvantaged, as defined by the Small Business Administration at 13 CFR Part 124, the

majority of earnings of which directly accrue to such individuals. This term also means a small business concern owned and controlled by an economically disadvantaged Indian tribe or Native Hawaiian organization which meets the requirements of 13 CFR 124.112 or 13 CFR 124.113, respectively. In general, 13 CFR Part 124 describes a small disadvantaged business concern as a small business concern--

- (1) Which is at least 51 percent unconditionally owned by one or more socially and economically disadvantaged individuals; or
- (2) In the case of any publicly owned business, at least 51 percent of the voting stock is unconditionally owned by one or more socially and economically disadvantaged individuals; and
- (3) Whose management and daily business operations are controlled by one or more such individuals.

(b) Representations. Check the category in which your ownership falls--

- Subcontinent Asian (Asian-Indian) American (U.S. citizen with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, or Nepal)
- Asian-Pacific American (U.S. citizen with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, U.S. Trust Territory of the Pacific Islands (Republic of Palau), the Northern Mariana Islands, Laos, Kampuchea (Cambodia), Taiwan, Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Republic of the Marshall Islands, or the Federated States of Micronesia)
- Black American (U.S. citizen)
- Hispanic American (U.S. citizen with origins from South America, Central America, Mexico, Cuba, the Dominican Republic, Puerto Rico, Spain, or Portugal)
- Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians, including Indian tribes or Native Hawaiian organizations)
- Individual/concern, other than one of the preceding, currently certified for participation in the Minority Small Business and Capital Ownership Development Program under Section 8(a) of the Small Business Act
- Other

(c) Certifications. Complete the following--

- (1) The offeror is  is not  a small disadvantaged business concern.
- (2) The Small Business Administration (SBA) has  has not  made a determination concerning the offeror's status as a small disadvantaged business concern. If the SBA has made a determination, the date of the determination was \_\_\_\_\_ and the offeror--  
 Was found by SBA to be socially and economically disadvantaged and no

circumstances have changed to vary that determination.

\_\_\_\_ Was found by SBA not to be socially and economically disadvantaged but circumstances which caused the determination have changed.

(d) Penalties and Remedies. Anyone who misrepresents the status of a concern as a small disadvantaged business for the purpose of securing a contract or subcontract shall--

- (1) Be punished by imposition of a fine, imprisonment, or both;
- (2) Be subject to administrative remedies, including suspension and debarment; and
- (3) Be ineligible for participation in programs conducted under authority of the Small Business Act.

(End of provision)

18 52.222-21 CERTIFICATION OF NONSEGREGATED FACILITIES (APR 1984)

(a) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(b) By the submission of this offer, the offeror certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this certification is a violation of the Equal Opportunity clause in the contract.

(c) The offeror further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will--

- (1) Obtain identical certifications from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;
- (2) Retain the certifications in the files; and
- (3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS  
OF NONSEGREGATED FACILITIES.

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract under which the subcontractor will be subject to the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

(End of provision)  
(R 7-2003.14(b)(1)(A) 1970 AUG)  
(R 1-12.803-10(d))

19 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (APR 1984)

The offeror represents that--

(a) It /\_/ has, /\_/ has not, participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114;

(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)  
(R 7-2003.14(b)(1)(B) 1973 APR)

20 52.223-1 CLEAN AIR AND WATER CERTIFICATION (APR 1984)

The Offeror certifies that--

(a) Any facility to be used in the performance of this proposed contract is /\_/ is not /\_/ listed on the Environmental Protection Agency (EPA) List of Violating Facilities;

(b) The Offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the EPA, indicating that any facility that the Offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and

(c) The Offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

(End of provision)  
(AV 7-2003.71 1977 JUN)  
(AV 1-1.2302-1)

21 52.223-5 CERTIFICATION REGARDING A DRUG-FREE WORKPLACE (JUL 1990)

(a) Definitions. As used in this provision,

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) By submission of its offer, the offeror, if other than an individual, who is making an offer that equals or exceeds \$25,000, certifies and agrees that, with respect to all employees of the offeror to be employed under a contract resulting from this solicitation, it will--no later than 30 calendar days after contract award (unless a longer period is agreed to in writing), for contracts of 30 calendar days or more performance duration; or as soon as possible for contracts of less than 30 calendar days performance duration, but in any case, by a date prior to when performance is expected to be completed--

(1) Publish a statement notifying such employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b) (1) of this provision;

(4) Notify such employees in writing in the statement required by subparagraph (b) (1) of this provision, that as a condition of continued employment on the contract resulting from this solicitation, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 calendar days after such conviction;

(5) Notify the Contracting Officer in writing within 10 calendar days after receiving notice under subdivision (b) (4) (ii) of this provision, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee; and

(6) Within 30 calendar days after receiving notice under subdivision (b) (4) (ii) of this provision of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Take appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b) (1) through (b) (6) of this provision.



(c) By submission of its offer, the offeror, if an individual who is making an offer of any dollar value, certifies and agrees that the offeror will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of the contract resulting from this solicitation.

(d) Failure of the offeror to provide the certification required by paragraphs (b) or (c) of this provision, renders the offeror unqualified and ineligible for award. (See FAR 9.104-1(g) and 19.602-1(a)(2)(i).)

(e) In addition to other remedies available to the Government, the certification in paragraphs (b) or (c) of this provision 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 Title 18, United States Code, Section 1001.

(End of provision)

22 252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions.

As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concern, as determined under regulations of the President.

(b) Certification.

By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

(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--

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

\_\_\_\_\_ 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)

END OF SECTION 00600

... the event you do not have a cage code, please complete Section B of DD Form 2051 and submit this form with your bid.

<b>REQUEST FOR ASSIGNMENT OF A COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE</b> <i>(See Instructions on Reverse)</i>			Form Approved OMB No. 0704-0275 Expires May 31, 1990
<b>SECTION A - TO BE COMPLETED BY INITIATOR</b>			
<b>1. REQUESTING GOVERNMENT AGENCY / ACTIVITY</b>			
<b>a. NAME</b>		<b>b. ADDRESS (Street, City, State and Zip Code)</b>	
<b>2. TYPE CODE REQUESTED (X one)</b>		<b>3. EXCEPTION CODES</b>	
a. TYPE A		a. CAO	
b. TYPE F		b. ADP	
<b>4. INITIATOR</b>			
<b>a. TYPED NAME (Last, First, Middle Initial)</b>		<b>b. OFFICE SYMBOL</b>	<b>c. SIGNATURE</b>
			<b>d. TELEPHONE NO.</b>
<b>SECTION B - TO BE COMPLETED BY FIRM TO BE CODED</b>			
<b>1. FIRM</b>			
<b>a. NAME (Include Branch of, Division of, etc.)</b>		<b>b. ADDRESS (Street, City, State and Zip Code)</b>	
<b>c. CAGE CODE (if previously assigned)</b>			
<b>2. IF FIRM PREVIOUSLY OPERATED UNDER OTHER NAME(S) OR OTHER ADDRESS(ES) SPECIFY THE PREVIOUS NAME(S) AND/OR ADDRESS(ES) (Use separate sheet of paper, if necessary)</b>		<b>3. PARENT COMPANY AND AFFILIATED FIRMS (X one, and complete as applicable)</b>	
		a. NONE	
		b. CURRENTLY AFFILIATED WITH OTHER FIRMS (List name(s) and address(es) of such firms on a separate sheet of paper)	
		c. PREVIOUSLY AFFILIATED WITH OTHER FIRMS (List name(s) and address(es) of such firms on a separate sheet of paper)	
<b>4. PRIMARY BUSINESS CATEGORY (X one)</b>		<b>5. DISADVANTAGED SMALL BUSINESS STATUS (X one)</b>	
a. MANUFACTURER		a. APPROVED BY SMALL BUSINESS ADMINISTRATION (SBA) FOR SECTION 8(a) PROGRAM	
b. DEALER/DISTRIBUTOR		b. OTHER DISADVANTAGED SMALL BUSINESS FIRM	
c. CONSTRUCTION FIRM		c. NOT DISADVANTAGED SMALL BUSINESS FIRM	
d. SERVICE COMPANY			
e. SALES OFFICE			
f. OTHER (Specify)			
		<b>6. NUMBER OF EMPLOYEES</b>	
		<b>7. WOMAN OWNED BUSINESS (X one)</b>	
		a. YES	
		b. NO	
		<b>8. STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE(S)</b>	
		a. PRIMARY	
		b. OTHER (Specify)	
<b>10. FIRM OFFICIAL</b>			
<b>a. TYPED NAME (Last, First, Middle Initial)</b>		<b>b. DATE SIGNED (YYMMDD)</b>	<b>c. SIGNATURE</b>
			<b>d. TELEPHONE NO.</b>

In the event you do not have a cage code, please complete Section B of DD Form 2051 and submit this form with your bid.

## INSTRUCTIONS FOR COMPLETING DD FORM 2051

### GENERAL NOTE FOR PERSONNEL PREPARING OR PROCESSING THIS REPORT

Coding must be as indicated in the instructions. In cases where specific coding instructions are provided, reference must be made to the Department of Defense Manual for Standard Data Elements, DoD 5000.12-M. Noncompliance with either the coding instructions contained herein or those published in referenced manual will make the organization which fails to comply responsible for required concessions in data base communication.

### SPECIFIC INSTRUCTIONS

SECTION A - TO BE COMPLETED BY THE INITIATING GOVERNMENT ACTIVITY	SECTION B - (Continued)
Item 1: Self-explanatory.	Item 4: Self-explanatory.
Item 2: Mark the type of code being requested. <ul style="list-style-type: none"> <li>a. Type A - Manufacturers Code which is used in the Federal Catalog System to identify a certain facility at a specific location which is a possible source for the manufacture and/or design control of items cataloged by the Federal Government; or,</li> <li>b. Type F - Non-manufacturers Code which is required for identifying an organization/function in MILSCAP. These are assigned to contractors which are non-manufacturers or are manufacturers not qualifying for a Type A Code.</li> </ul>	Item 5: A disadvantaged business firm is defined as a firm that is 51%, or more, owned, controlled, and operated by a person(s) who is socially and economically disadvantaged. "Controlled" is defined as exercising the power to make policy decisions. "Operated" is defined as actively involved in the day-to-day management of the firm.
	Item 6: Enter the number of employees. This number should include the employees of all affiliates.
Item 3: If applicable, enter the exception DoD Activity Address Code for the Servicing Contract Administration Office (CAO) or ADP point.	Item 7: A woman-owned business is defined as a firm that is 51%, or more, owned, controlled, and operated by a woman or women. "Controlled" and "Operated" are as defined in Item 5.
Item 4: Self-explanatory.	Item 8: The SIC Code is a Government Index used to identify business activity and indicates the function (manufacturer, wholesaler, retailer, or service) and the line of business in which the company is engaged. If multiple SIC Codes, indicate the primary first, next important, etc.
SECTION B - TO BE COMPLETED BY THE FIRM TO WHICH THE CODE WILL BE ASSIGNED	Items 9 and 10: Self-explanatory.
Items 1a and 1b: Self-explanatory.	<b>NOTE:</b> When any future changes are made to the coded facility; i.e., name change, location change, business sold or operations discontinued, etc., written notification stating the appropriate change should be sent to: <p style="text-align: center; margin-top: 20px;"> <b>Commander              Defense Logistics Services Center              ATTN: DLSC-FBA              Federal Center              74 North Washington              Battle Creek, MI 49017-3084</b> </p>
Item 1c: If a CAGE Code (Type A or Type F) was previously assigned, enter it in this block.	
Item 2: Self-explanatory.	
Item 3: If a block other than "None" is marked, identify the Parent company by a (P) beside the firm name.	

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1

BASIS FOR SETTLEMENT OF PROPOSALS (EFARS 49.113(100))

"Actual costs will be used to determine equipment cost for a settlement proposal submitted on the total cost basis under FAR 49.206-2b. In evaluating a termination settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

- (1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.
- (2) If equipment cost have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.
- (3) Recorded job costs adjusted for unallowable and unallocable expenses will be used to determine equipment operating expenses.
- (4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to provisions of FAR 31.205-11).
- (5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate."

DEFINITIONS (SEPT 1991)--ALTERNATE I (APR 1984)

(a) "Head of the agency" (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, including any deputy or assistant chief official of the agency; and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary.

(b) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related

determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(End of clause)

(R 7-503.1)

(R 7-602.1 1964 JUN)

(R 7-605.38)

(R 7-607.1)

(R 7-2101.1)

(R 1-7.602-1)

#### OFFICIALS NOT TO BENEFIT (APR 1984)

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit arising from it. However, this clause does not apply to this contract to the extent that this contract is made with a corporation for the corporation's general benefit.

(End of clause)

(R 7-103.19 1949 JUL)

(R 1-7.102-17)

#### GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) above, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as

determined by the agency head or a designee. (This subparagraph (c) (2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

(R 7-104.16 1952 MAR)

COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a Contractor and subject to the Contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

(R 7-103.20 1958 JAN)

(R 1-1.503)

(R 1-7.102-18)

RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1985)

(a) Except as provided in (b) below, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) above does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract.

(End of clause)

ANTI-KICKBACK PROCEDURES (OCT 1988)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor" as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any

kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from--

- (1) Providing or attempting to provide or offering to provide any kickback;
- (2) Soliciting, accepting, or attempting to accept any kickback; or
- (3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c) (1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold from sums owed a subcontractor under the prime contract the amount of the kickback. The Contracting Officer may order that monies withheld under subdivision (c) (4) (ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c) (4) (i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause,

including subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract.

(End of clause)

REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY--MODIFICATION  
(NOV 1990)

(a) Definitions. The definitions set forth in FAR 3.104-4 are hereby incorporated in this clause.

(b) The Contractor agrees that it will execute the certification set forth in paragraph (c) of this clause when requested by the Contracting Officer in connection with the execution of any modification of this contract.

(c) Certification. As required in paragraph (b) of this clause, the officer or employee responsible for the modification proposal shall execute the following certification:

CERTIFICATE OF PROCUREMENT INTEGRITY--MODIFICATION (NOV 1990)

(1) I, \_\_\_\_\_ [Name of certifier] am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d) or (f) of the Office of Federal Procurement Policy Act, as amended+ (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement \_\_\_\_\_ (contract and modification number).

(2) As required by subsection 27(e)(1)(B) of the Act, I further certify that to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of \_\_\_\_\_ [Name of Offeror] who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity--Modification (Continuation Sheet), ENTER "NONE" IF NONE EXISTS)

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[Signature of the officer or employee responsible for the modification proposal and date]

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[Typed name of the officer or employee responsible for the modification proposal]

+ Subsections 27(a), (b), and (d) are effective on December 1, 1990.

Subsection 27(f) is effective on June 1, 1991.

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 TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

(d) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer or bid, may rely upon a one-time certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the Contractor. If a Contractor decides to rely on a certification executed prior to the suspension of section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that section 27 has been reinstated. These certifications shall be maintained by the Contractor for a period of 6 years from the date a certifying employee's employment with the company ends or, for an agency, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

(e) The certification required by paragraph (c) of this clause is a material representation of fact upon which reliance will be placed in executing this modification.

(End of clause)

PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (SEP 1990)

(a) The Government, at its election, may reduce the price of a fixed-price type contract or contract modification and the total cost and

fee under a cost-type contract or contract modification by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or his or her designee determines that there was a violation of subsection 27(a) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in the FAR. In the case of a contract modification, the fee subject to reduction is the fee specified in the particular contract modification at the time of execution, except as provided in subparagraph (b) (5) of this clause.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts or contract modifications, by 10 percent of the initial contract price; 10 percent of the contract modification price; or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award or modification.

(c) The Government may, at its election, reduce a prime contractor's

price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JAN 1990)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (a) The awarding of any Federal contract.
- (b) The making of any Federal grant.
- (c) The making of any Federal loan.
- (d) The entering into of any cooperative agreement.
- (e) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the

following individuals who are employed by an agency:

(a) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(b) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(c) A special Government employee, as defined in section 202, title 18, United States Code.

(d) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the

District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay 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 in connection with any of the following covered Federal actions: 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; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure 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 in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b) (1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b) (3) (i) (A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the

application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b) (3) (i) (A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b) (1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b) (3) (ii) (A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline.

For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b) (3) (ii) (A) (1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b) (1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure

form previously filed by such person under subparagraph (c) (1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

STATUTORY PROHIBITION ON COMPENSATION TO FORMER DEPARTMENT OF DEFENSE  
EMPLOYEES (DEC 1991)



(a) Definitions. As used in this clause--

(1) "Armed Forces" means the uniformed military services, excluding the U.S. Coast Guard.

(2) "Compensation" means any payment, gift, benefit, reward, favor, or gratuity which is provided directly or indirectly for services rendered by the person accepting such payment, gift, benefit, reward, favor, or gratuity, and which has a fair market value in excess of \$250. Compensation is indirectly provided if it is paid to an entity other than the individual, specifically in exchange for services performed by the individual.

(3) "Defense contractor" means an entity (including affiliates and subsidiaries which clearly engage in the performance of Department of Defense (DoD) contracts) that contracts directly with the DoD to supply goods or services. "Defense contractor" does not include a State or local government.

(4) "Designated agency ethics official" means a DoD officer or employee who has been appointed to administer the provisions of the Ethics in Government Act, as amended.

(5) "Former DoD employee" means a person who served in the DoD in a civilian position for which the rate of pay was equal to or greater than the minimum rate of pay for grade GS-13 of the General Schedule, or served in the Armed Forces in a pay grade of 04 or higher.

(6) "Former DoD official" means--

(i) A former DoD employee who spent the majority of working days during the last two years of DoD service performing a procurement function relating to:

(A) A DoD contract, at a site or plant that was owned or operated by the Contractor, and which was the principal location of such person's performance of that procurement function; or

(B) A major defense system and, in the performance of such function, participated on any occasion personally and substantially in a manner involving decision making responsibilities with respect to a contract for that system through contact with the Contractor;

(ii) An individual who served in a civilian position for which the rate of pay is equal to or greater than the minimum rate of pay for a Senior Executive Service position or other executive position at the same or higher level, and an individual who served in the Armed Forces in the pay grade of 07 or higher, if such individual during the last two years of DoD service--

(A) Acted as one of the primary Government representatives in the

negotiation with a defense contractor of a DoD contractual action in an amount in excess of \$10 million; or

(B) Acted as one of the primary Government representatives in the negotiation of a settlement of an unresolved claim of such a defense contractor in an amount in excess of \$10 million. An unresolved claim shall be, for the purposes of this section, valued by the greater of the amount of the claim or the amount of the settlement.

(7) "Major defense contractor" means any business entity which, during the Government fiscal year preceding the Government fiscal year in which compensation was first provided to a former DoD employee, was awarded DoD contracts in a total amount of \$10 million or more.

(8) "Major defense system" means a combination of elements that will function together to produce the capability required to fulfill a mission need. Elements may include hardware, equipment, software, or any combination thereof, but exclude construction or other improvements to real property. A system shall be considered a major defense system if--

(i) The DoD is responsible for the system and the total expenditures (based on fiscal year 1980 constant dollars) for research, development, test and evaluation for the system, are estimated to exceed \$75 million or the eventual total expenditure for procurement is estimated to exceed \$300 million; or

(ii) The system is designated a major system by the head of the agency responsible for the system.

(9) "Negotiation" means exchanges of positions between representatives of the Government and a contractor with the view of reaching agreement regarding respective liabilities of the parties on a particular contract or claim. It includes deliberations regarding contract specifications, terms of delivery, allowability of costs, pricing of change orders, etc.

(10) "Primary Government representative" means, if more than one Government representative is involved in any particular transaction, the official or officials supervising the Government's effort in the matter. To act as a "representative" requires personal and substantial participation in the transaction, by personal presence, telephone conversation, or similar involvement with representatives of a Contractor.

(11) "Procurement-related function" (or "procurement function") means any function relating to--

(i) The negotiation, award, administration, or approval of a contract;

(ii) The selection of a Contractor;

(iii) The approval of a change in a contract;

(iv) The performance of quality assurance, operational and developmental testing, the approval of payment, or auditing under a contract; or

(v) The management of a procurement program.

(b) Prohibition on compensation. (1) 10 U.S.C. 2397b and 2397c prohibit a major defense Contractor from offering or providing any compensation valued in excess of \$250 to a former DoD official who left DoD service on or after April 16, 1987, and who, while employed by DoD, performed procurement-related functions in connection with that defense Contractor. This prohibition runs for the two year period beginning on the date of the official's separation from service in DoD.

(2) The Contractor, if a major defense Contractor, agrees not to provide, for the two year period, any compensation to the former DoD official.

(3) DoD employees may request from their Designated Agency Ethics Official (DAEO) a written opinion on the applicability of 10 U.S.C. 2397b prior to the acceptance of compensation. If the opinion of the DAEO is that the law is not applicable, and that the individual may accept compensation from the Contractor, there shall be a conclusive presumption that the offering and the acceptance of such compensation is not a violation of the statute.

(c) Report concerning former DoD employees. (1) The Contractor shall submit a separate written report, as described in paragraph (c)(2) of this clause, for each calendar year covered by this contract (extending through final payment) if the calendar year commenced after the end of a Government fiscal year in which the Contractor was awarded one or more DoD contracts aggregating \$10 million or more. In multidivisional corporations, the corporate headquarters, and each segment which contracts directly with the Government, shall report separately. Each report shall list those persons employed or otherwise compensated, who are former DoD employees who left service on or after April 16, 1987, if--

(i) They were compensated by the Contractor during the reporting period; and

(ii) The compensation was provided within two years after the person left service in the DoD.

(2) The report shall contain:

(i) Each person's name and the agency in which the person was employed or served on active duty during the last two years of service with DoD;

(ii) Each person's job title(s) during the last two years of service with DoD, and a list of major defense systems on which each person

performed any work;

(iii) A complete description (exclusive of proprietary information) of any work that each person is performing, or did perform, on behalf of the Contractor during the calendar year covered by the report. If the work is classified, the Contractor may use a generalized description which will not compromise its classified nature;

(iv) An identification of each major defense system on which each individual has performed any work on behalf of the Contractor.

(3) Submit each report not later than April 1 of the year following the end of the calendar year for which the report is being made. Send reports to the Office of the Assistant General Counsel (Legal Counsel), Standards of Conduct Office, ATTN: OAGC/LC, Pentagon, Washington, DC 20301-1600.

(4) A properly executed DD Form 1787 (Employment, Report of DoD and Defense Related) may be submitted to satisfy the reporting requirement as to any single person.

(5) The Contractor need not submit duplicate reports to the Government. Submission of a report meeting the requirements of this clause, under another, concurrent contract with DoD will satisfy the reporting requirement of this contract.

(d) Penalties for failure to comply--(1) Civil fines. A Contractor who knowingly offers or provides any compensation to a former DoD official in violation of the statute, and who knew or should have known that the acceptance of such compensation would be in violation of such statute, shall be subject to a civil fine, not to exceed \$500,000.

(2) Liquidated damages.

(i) For each knowing violation of the statutory prohibition on providing compensation, the Contractor agrees to pay to the Government as liquidated damages the greater of either \$100,000, or three times the total amount of compensation paid by the Contractor to the former DoD official during the period in which such compensation was in violation of the statutory prohibition.

(ii) Liability for liquidated damages under this clause survives final payment under this contract and may be recouped against payments due under other contracts with the Contractor.

(iii) Liquidated damages will be computed based upon the number of actual violations by the Contractor, and not on the number of contracts in which this clause appears.

(3) Administrative penalty. If the Contractor knowingly fails to file a report in accordance with paragraph (c) of this clause, the Contractor shall be subject to an administrative penalty not to exceed \$10,000. The

final determination of the penalty to be charged to the Contractor shall be made by the Secretary of Defense or designee after the Contractor is afforded an opportunity for an agency hearing on the record in accordance with agency hearing procedures. The Secretary's determination shall form a part of the record and shall be subject to judicial review under Chapter 7 of Title 5, United States Code.

(e) The rights and remedies under this clause are in addition to, and do not limit, any rights afforded the Government under this contract or as otherwise provided by law.

(End of clause)

SPECIAL PROHIBITION ON EMPLOYMENT (APR 1993)

(a) Definitions.

As used in this clause--

(1) "Arising out of a contract with the DoD" means any act in connection with--

(i) Attempting to obtain,

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of nolo contendere, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) 10 U.S.C. 2408 provides that any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from:

(1) Working in a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) Serving on the board of directors of any DoD Contractor or first-tier subcontractor; or

(3) Serving as a consultant to any DoD Contractor or first-tier subcontractor.

(c) Unless waived, the prohibition in paragraph (b) applies for five years from the date of conviction.

(d) 10 U.S.C. 2408 further provides that a defense Contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than

\$500,000 if convicted of knowingly--

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the Contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as--

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibitions in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify--

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and,

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding \$25,000.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Benefits Office, U.S. Department of Justice, telephone (202) 307-1065.

(End of clause)

#### PROHIBITION AGAINST RETALIATORY PERSONNEL ACTIONS (APR 1992)

(a) Definitions.

As used in this clause--

(1) "Appropriate Government official" means

(i) An officer or employee of the Department of Defense responsible for command, direct staff assistance to a commander, contract administration, program management, audit, inspection, investigation, or enforcement of any law or regulation relating to Government procurement or the subject matter of the contract;

(ii) A Member of Congress or an officer or employee of Congress, the

General Accounting Office, the Congressional Budget Office, or the Office of Technology Assessment; and

(iii) Any other officer or employee of the United States whose duties include the investigation or enforcement of any law, rule, or regulation relating to Government procurement or the subject matter of the contract.

(2) "Information concerning a contract" means information about cost, price, compliance with specifications, meeting the user's requirements, user safety, use or disposition of services, real property or personal property acquired under the contract, the procurement process (including competition, negotiation, award, and administration), and relationships with Government personnel, competitors, or subcontractors.

(b) Prohibition.

In accordance with 10 U.S.C. 2409a, the Contractor shall not discharge or otherwise discriminate against any employee with respect to the employee's compensation or terms and conditions of employment because the employee (or any person acting pursuant to a request of the employee) discloses to an appropriate Government official information concerning a defense contract, which information the employee reasonably believes evidences a violation of any Federal law or regulation relating to defense procurement or the subject matter of this contract.

(c) The Government will notify the Contractor upon receipt of any complaint filed under the provisions of this clause and Subpart 203.71 of the Defense FAR Supplement. The Contractor agrees to cooperate with the Government during its investigation of any such complaint.

(d) The Contractor shall inform all employees of--

- (1) The prohibitions of this clause;
- (2) Employees' rights under 10 U.S.C. 2409a; and
- (3) Availability of procedures implementing the statute.

(End of clause)

#### PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450(c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for

profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS  
DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (NOV 1992)

(a) The Government suspends or debar Contractors to protect the Government's interest. The Contractor shall not enter into any subcontract in excess of the small purchase limitation at FAR 13.000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed the small purchase limitation at FAR 13.000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principals, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Procurement Programs). The notice must include the following:

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Procurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Procurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.



(End of clause)

DISCLOSURE OF OWNERSHIP OR CONTROL BY A FOREIGN GOVERNMENT (SEP 1994)

(a) Definitions.

As used in this provision--

(1) Effectively owned or controlled means that a foreign government or any entity controlled by a foreign government has the power, either directly or indirectly, whether exercised or exercisable, to control the election, appointment, or tenure of the Offeror's officers or a majority of the Offeror's board of directors by any means, e.g., ownership, contract, or operation of law (or equivalent power for unincorporated organizations).

(2) Entity controlled by a foreign government--

(i) Means--

(A) Any domestic or foreign organization or corporation that is effectively owned or controlled by a foreign government; or

(B) Any individual acting on behalf of a foreign government.

(ii) Does not include an organization or corporation that is owned, but is not controlled, either directly or indirectly, by a foreign government if the ownership of that organization or corporation by that foreign government was effective before October 23, 1992.

(3) Foreign government includes the state and the government of any country (other than the United States and its possessions and trust territories) as well as any political subdivision, agency, or instrumentality thereof.

(4) "Proscribed information" means--

(i) Top Secret information;

(ii) Communications Security (COMSEC) information, except classified keys used to operate secure telephone units (STU IIIs);

(iii) Restricted Data as defined in the U.S. Atomic Energy Act of 1954, as amended;

(iv) Special Access Program (SAP) information; or

(v) Sensitive Compartmented Information (SCI).

(b) Prohibition on award.

No contract under a national security program may be awarded to an entity controlled by a foreign government if that entity requires access to proscribed information to perform the contract, unless the Secretary of Defense or a designee has waived application of 10 U.S.C. 2536(a).

(c) Disclosure.

The Offeror shall disclose any interest a foreign government has in the Offeror when that interest constitutes control by a foreign government as defined in this provision. If the Offeror is a subsidiary, it shall also disclose any reportable interest a foreign government has in any entity that owns or controls the subsidiary, including reportable interest concerning the Offeror's immediate parent, intermediate parents, and the ultimate parent. Use separate paper as needed, and provide the information in the following format:

Offeror's Point of Contact for Questions about Disclosure  
(Name and Phone Number with Country Code, City Code and  
Area Code, as applicable)

Name and Address of Offeror

Name and Address of Entity Controlled by a Foreign Government	Description of Interest, Ownership Percentage, and Identification of Foreign Government
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(End of provision)

DISCLOSURE OF COMMERCIAL TRANSACTIONS WITH THE GOVERNMENT OF A TERRORIST  
COUNTRY (SEPT 1994)

(a) Definitions.

"Government of a terrorist country" and "terrorist country" are defined in the Reporting of Commercial Transactions with the Government of a Terrorist Country clause of this solicitation.

(b) Disclosure.

(1) Section 843 of the National Defense Authorization Act for Fiscal Year 1994 (Pub. L. 103-160) requires offerors to disclose commercial transactions conducted with the government of a terrorist country. If this offer exceeds \$5,000,000, and if the Offeror has conducted such transactions, the Offeror shall disclose, in an attachment to its offer, each commercial transaction that it has conducted with the government of a terrorist country since February 28, 1994. The disclosure shall include--

- (i) Identification of the government with which each transaction was conducted; and
- (ii) The nature of each transaction.

- (2) This disclosure requirement does not apply to--
- (i) Transactions conducted by affiliates or subsidiaries of the Offeror; or
  - (ii) Payment or receipt of payment of a judgment or award ordered by a court or arbitral tribunal of competent jurisdiction.
- (End of provision)

REPORTING OF COMMERCIAL TRANSACTIONS WITH THE GOVERNMENT OF A TERRORIST COUNTRY (SEP 1994)

(a) Definitions.

As used in this clause--

- (1) "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)(1)(A)), as of 60 days before the contact award date, to be a country the government of which has repeatedly provided support for acts of international terrorism. As of the date of this clause, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(b) Reporting.

(1) In accordance with section 843 of the National Defense Authorization Act for Fiscal Year 1994 (Pub. L. 103-160), if this contract exceeds \$5,000,000, the Contractor shall report each commercial transaction that it conducts with the government of a terrorist country during the period of performance of this contract (but not beyond September 30, 1996).

- (2) This reporting requirement does not apply to--
- (i) Transactions conducted by affiliates or subsidiaries of the Contractor; or
  - (ii) Payment or receipt of payment of a judgment or award ordered by a court or arbitral tribunal of competent jurisdiction.
- (3) The Contractor shall submit reports in the following format:

Title of Report: Report of Commercial Transactions with the Government of a Terrorist Country

Date of Report:

Contract Number:

Contractor's Name and Address:  
Name and Telephone Number of Individual Submitting Report:  
Commercial Transactions with the Government of a Terrorist Country:

Country	Nature of Commercial Transaction
_____	_____
_____	_____

(4) The Contractor shall submit reports annually by September 30, but not beyond September 30, 1996. Each report shall include transactions conducted during the preceding one-year period of contract performance.

(5) The Contractor shall submit reports to:  
Deputy Director of Defense Procurement (Foreign Contracting),  
PDUSD (A&T) DP (FC), Washington, DC 20301-3060.

(End of clause)

#### VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

(End of clause)

(R 7-603.27 1968 APR)

#### SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

(R 7-602.46 1968 FEB)

AUDIT--SEALED BIDDING (APR 1985)

(a) Cost or pricing data. If the Contractor has submitted cost or pricing data in connection with the pricing of any modification to this contract, unless the pricing was based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation, the Contracting Officer or a representative who is an employee of the Government shall have the right to examine and audit all books, records, documents, and other data of the Contractor (including computations and projections) related to negotiating, pricing or performing

the modification, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data. In the case of pricing any modification, the Comptroller General of the United States or a representative who is an employee of the Government shall have the same rights.

(b) Availability. The Contractor shall make available at its office at all reasonable times the materials described in paragraph (a) above, for examination, audit, or reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the date of this contract, is incorporated by reference in its entirety and made a part of this contract.

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(c) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (c), in all subcontracts over \$10,000 under this contract, altering the clause only as necessary to identify properly the contracting parties and the contracting office under the Government prime contract.

(End of clause)

PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS--  
SEALED BIDDING (NOV 1994)

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, of more than the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.804-2(a)(1), except that this clause does not apply to any modification for which the price is--

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount

because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) above.

(c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which (1) the actual subcontract or (2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d) (1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2) (i) Except as prohibited by subdivision (d) (2) (ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is

entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a) (2); and

(2) For Department of Defense contracts only, a penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

(End of clause)

SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS--SEALED BIDDING  
(NOV 1994)

(a) The requirements of paragraphs (b) and (c) of this clause shall (1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.804-2(a)(1), and (2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.804-2(a)(1) when entered into, or pricing any subcontract modification involving aggregate increases and/or decreases in costs, plus applicable profits, expected to



exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.804-2(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless the price is--

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in subsection 15.804-4 of the Federal Acquisition Regulation that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.804-2(a)(1) when entered into.

(End of clause)

UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL DISADVANTAGED BUSINESS CONCERNS (FEB 1990)

(a) It is the policy of the United States that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

(c) As used in this contract, the term "small business concern" shall mean a small business as defined pursuant to section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto. The term "small business concern owned and controlled by socially and economically disadvantaged individuals" shall mean a small business concern (1) which is at least 51 percent unconditionally owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is unconditionally owned by one or more socially and economically disadvantaged individuals; and (2) whose management and daily business operations are controlled by one or more of such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one of these entities which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR 124. The Contractor shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, and other minorities, or any other individual found to be disadvantaged by the Administration pursuant to section 8(a) of the Small Business Act. The Contractor shall presume that socially and economically disadvantaged entities also include Indian Tribes and Native Hawaiian Organizations.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as either a small business concern or a small business concern owned and controlled by socially and economically disadvantaged individuals.

(End of clause)

SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN  
(JAN 1991)--ALTERNATE I (AUG 1989)

(a) This clause does not apply to small business concerns.

(b) "Commercial product," as used in this clause, means a product in regular production that is sold in substantial quantities to the general public and/or industry at established catalog or market prices. It also means a product which, in the opinion of the Contracting Officer, differs only insignificantly from the Contractor's commercial product.

"Subcontract," as used in this clause, means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, which separately addresses subcontracting with small business concerns and with small disadvantaged business concerns. If the bidder is submitting an individual contract plan, the plan must separately address subcontracting with small business concerns and with small disadvantaged business concerns with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be submitted within the time specified by the Contracting Officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business concerns and disadvantaged business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted;

(ii) Total dollars planned to be subcontracted to small business concerns; and

(iii) Total dollars planned to be subcontracted to small disadvantaged business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to (i) small business concerns and (ii) small disadvantaged business concerns.

(4) A description of the method used to develop the subcontracting goals in (1) above.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Automated Source System (PASS) of the Small Business Administration, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or

small and small disadvantaged business concerns trade associations).

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with (i) small business concerns and (ii) small disadvantaged business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business concerns and small disadvantaged business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause in this contract entitled "Utilization of Small Business Concerns and Small Disadvantaged Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) who receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility), to adopt a plan similar to the plan agreed to by the offeror.

(10) Assurances that the offeror will (i) cooperate in any studies or surveys as may be required, (ii) submit periodic reports in order to allow the Government to determine the extent of compliance by the offeror with the subcontracting plan, (iii) submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with the instructions on the forms, and (iv) ensure that its subcontractors agree to submit Standard Forms 294 and 295.

(11) A recitation of the types of records the offeror will maintain to demonstrate procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of its efforts to locate small and small disadvantaged business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated):

(i) Source lists, guides, and other data that identify small and small disadvantaged business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small or small disadvantaged business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating (A) whether small business concerns were solicited and if not, why not, (B) whether small disadvantaged

business concerns were solicited and if not, why not, and (C) if applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact (A) trade associations, (B) business development organizations, and (C) conferences and trade fairs to locate small and small disadvantaged business sources.

(v) Records of internal guidance and encouragement provided to buyers through (A) workshops, seminars, training, etc., and (B) monitoring performance to evaluate compliance with the programs' requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having company or division-wide annual plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business and small disadvantaged business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business and small disadvantaged subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business and small disadvantaged business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small and small disadvantaged business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small business or small disadvantaged business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master subcontracting plan on a plant or division-wide basis which contains all the elements required by (d) above, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided, (1) the master plan has been approved, (2) the offeror provides copies of the approved master plan and evidence of its approval to the Contracting Officer, and (3) goals and any

deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) (1) If a commercial product is offered, the subcontracting plan required by this clause may relate to the offeror's production generally, for both commercial and noncommercial products, rather than solely to the Government contract. In these cases, the offeror shall, with the concurrence of the Contracting Officer, submit one company-wide or division-wide annual plan.

(2) The annual plan shall be reviewed for approval by the agency awarding the offeror its first prime contract requiring a subcontracting plan during the fiscal year, or by an agency satisfactory to the Contracting Officer.

(3) The approved plan shall remain in effect during the offeror's fiscal year for all of the offeror's commercial products.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization of Small Business Concerns and Small Disadvantaged Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(End of clause)

#### UTILIZATION OF WOMEN-OWNED SMALL BUSINESSES (AUG 1986)

(a) "Women-owned small businesses," as used in this clause, means small business concerns that are at least 51 percent owned by women who are United States citizens and who also control and operate the business.

"Control," as used in this clause, means exercising the power to make policy decisions.

"Operate," as used in this clause, means being actively involved in the day-to-day management of the business.

"Small business concern," as used in this clause, 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 and size standards in 13 CFR 121.

(b) It is the policy of the United States that women-owned small

businesses shall have the maximum practicable opportunity to participate in performing contracts awarded by any Federal agency.

(c) The Contractor agrees to use its best efforts to give women-owned small businesses the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with the efficient performance of its contract.

(d) The Contractor may rely on written representations by its subcontractors regarding their status as women-owned small businesses.

(End of clause)

LIQUIDATED DAMAGES--SMALL BUSINESS SUBCONTRACTING PLAN (AUG 1989)

(a) "Failure to make a good faith effort to comply with the subcontracting plan," as used in this subpart, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business and Small Disadvantaged Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) If, at contract completion, or in the case of a commercial products plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled Small and Small Disadvantaged Business Subcontracting Plans, the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply, shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal or, in the case of a commercial products plan, that portion of the dollar amount allocable to Government contracts by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting

Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial products plans; i.e., company-wide or division-wide subcontracting plans approved under paragraph (g) of the clause in this contract entitled, Small Business and Small Disadvantaged Business Subcontracting Plan, the Contracting Officer of the agency that originally approved the plan will exercise the functions of the Contracting Officer under this clause on behalf of all agencies that awarded contracts covered by that commercial products plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled, Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that Government may have.

(End of clause)

SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN (DoD CONTRACTS) (MAY 1994)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small Business and Small Disadvantaged Business Subcontracting Plan, clause of this contract.

(a) Definitions.

"Historically black colleges and universities," as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions," as used in this clause, means institutions meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial products subcontracting plans, the term "small disadvantaged business," when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions, in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward



meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(1) Protege firms which are qualified organizations employing the severely handicapped; and

(2) Former protege firms that meet the criteria in Section 831(g) (4) of Pub. L. 101-510.

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(End of clause)

#### UTILIZATION OF LABOR SURPLUS AREA CONCERNS (APR 1984)

(a) Applicability. This clause is applicable if this contract exceeds the appropriate small purchase limitation in Part 13 of the Federal Acquisition Regulation.

(b) Policy. It is the policy of the Government to award contracts to concerns that agree to perform substantially in labor surplus areas (LSA's) when this can be done consistent with the efficient performance of the contract and at prices no higher than are obtainable elsewhere. The Contractor agrees to use its best efforts to place subcontracts in accordance with this policy.

(c) Order of preference. In complying with paragraph (b) above and with paragraph (c) of the clause of this contract entitled Utilization of Small Business Concerns and Small Disadvantaged Business Concerns, the Contractor shall observe the following order of preference in awarding subcontracts: (1) small business concerns that are LSA concerns, (2) other small business concerns, and (3) other LSA concerns.

(d) Definitions. "Labor surplus area," as used in this clause, means a geographical area identified by the Department of Labor in accordance with 20 CFR 654, Subpart A, as an area of concentrated unemployment or

underemployment or an area of labor surplus.

"Labor surplus area concern," as used in this clause, means a concern that together with its first-tier subcontractors will perform substantially in labor surplus areas. Performance is substantially in labor surplus areas if the costs incurred under the contract on account of manufacturing, production, or performance of appropriate services in labor surplus areas exceed 50 percent of the contract price.

(End of clause)

(R 1-1.805-3(a))

(R 7-104.20(a) 1981 MAY)

#### LABOR SURPLUS AREA SUBCONTRACTING PROGRAM (APR 1984)

(a) See the Utilization of Labor Surplus Area Concerns clause of this contract for applicable definitions.

(b) The Contractor agrees to establish and conduct a program to encourage labor surplus area (LSA) concerns to compete for subcontracts within their capabilities when the subcontracts are consistent with the efficient performance of the contract at prices no higher than obtainable elsewhere. The Contractor shall--

(1) Designate a liaison officer who will (i) maintain liaison with authorized representatives of the Government on LSA matters, (ii) supervise compliance with the Utilization of Labor Surplus Area Concerns clause, and (iii) administer the Contractor's labor surplus area subcontracting program;

(2) Provide adequate and timely consideration of the potentialities of LSA concerns in all make-or-buy decisions;

(3) Ensure that LSA concerns have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of offers, quantities, specifications, and delivery schedules so as to facilitate the participation of LSA concerns;

(4) Include the Utilization of Labor Surplus Area Concerns clause in subcontracts that offer substantial LSA subcontracting opportunities; and

(5) Maintain records showing (i) the procedures adopted and (ii) the Contractor's performance, to comply with this clause. The records will be kept available for review by the Government until the expiration of 1 year after the award of this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulations.

(c) The Contractor further agrees to insert in any related subcontract that may exceed \$500,000 and that contains the Utilization of Labor Surplus Area Concerns clause, terms that conform substantially to the language of this clause, including this paragraph (c), and to notify the Contracting Officer of the names of subcontractors.

(End of clause)

(R1-1.805-3(b))

(R 7-104.20(b) 1978 JUN)

CONVICT LABOR (APR 1984)

The Contractor agrees not to employ any person undergoing sentence of imprisonment in performing this contract except as provided by 18 U.S.C. 4082(c)(2) and Executive Order 11755, December 29, 1973.

(End of clause)

(R 7-104.17 1975 OCT)

(R 7-607.12 1975 OCT)

(R 1-12.204)

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT--OVERTIME COMPENSATION  
(MAR 1986)

(a) Overtime requirements. No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics (see Federal Acquisition Regulation (FAR) 22.300) shall require or permit any such laborers or mechanics in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than 1 1/2 times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(b) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in paragraph (a) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions set forth in paragraph (a)

of this clause in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in paragraph (a) of this clause.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer shall upon his or her own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same Prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same Prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in paragraph (b) of this clause.

(d) Payrolls and basic records. (1) The Contractor or subcontractor shall maintain payrolls and basic payroll records during the course of contract work and shall preserve them for a period of 3 years from the completion of the contract for all laborers and mechanics working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Nothing in this paragraph shall require the duplication of records required to be maintained for construction work by Department of Labor regulations at 29 CFR 5.5(a) (3) implementing the Davis-Bacon Act.

(2) The records to be maintained under paragraph (d) (1) of this clause shall be made available by the Contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit such representatives to interview employees during working hours on the job.

(e) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the provisions set forth in paragraphs (a) through (e) of this clause and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the provisions set forth in paragraphs (a) through (e) of this clause.

(End of clause)

DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b) (1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination.
- (ii) The classification is utilized in the area by the construction

industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(iv) With respect to helpers, such a classification prevails in the area in which the work is performed.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b) (2) and (b) (3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or

mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

#### WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

#### PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the

clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b) (1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.



(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form MH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b) (2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

#### APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not

registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage

rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

#### COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

#### SUBCONTRACTS (LABOR STANDARDS) (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination--Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b) (1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

#### CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

#### COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

#### DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees of their representatives.

(End of clause)

CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

EQUAL OPPORTUNITY (APR 1984)

(a) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with subparagraphs (b)(1) through (11) below. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(b) During performing this contract, the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for

employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.

(8) The Contractor shall permit access to its books, records, and accounts by the contracting agency or the Office of Federal Contract Compliance Programs (OFCCP) for the purposes of investigation to ascertain the Contractor's compliance with the applicable rules, regulations, and orders.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraph (b) (1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting agency may direct as a

means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)  
(R 7-103.18 1978 SEP)  
(R 1-12.803-2)  
(R 7-607.13 1978 SEP)

AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (APR 1984)

(a) Definitions.

"Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Director," as used in this clause, means Director, Office of Federal Contract Compliance Programs (OFCCP), United States Department of Labor, or any person to whom the Director delegates authority.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g) (1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:



(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g) (2) above.

(6) Disseminate the Contractor's equal employment policy by--

- (i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;
- (ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all onsite supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related

activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g) (1) through (16). The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g) (1) through (16), provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex,

or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) above, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Director shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

(o) Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

(R 7-603.60 1978 SEP)

**AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS**

(APR 1984)

(a) Definitions.

"Appropriate office of the State employment service system," as used in this clause, means the local office of the Federal-State national system of public employment offices assigned to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, Puerto Rico, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands.

"Openings that the Contractor proposes to fill from within its own organization," as used in this clause, means employment openings for which no one outside the Contractor's organization (including any affiliates, subsidiaries, and the parent companies) will be considered and includes any openings that the Contractor proposes to fill from regularly established "recall" lists.

"Openings that the Contractor proposes to fill under a customary and traditional employer-union hiring arrangement," as used in this clause, means employment openings that the Contractor proposes to fill from union halls, under their customary and traditional employer-union hiring relationship.

"Suitable employment openings," as used in this clause--

(1) Includes, but is not limited to, openings that occur in jobs categorized as--

- (i) Production and nonproduction;
- (ii) Plant and office;
- (iii) Laborers and mechanics;
- (iv) Supervisory and nonsupervisory;
- (v) Technical; and
- (vi) Executive, administrative, and professional positions compensated on a salary basis of less than \$25,000 a year; and

(2) Includes full-time employment, temporary employment of over 3 days, and part-time employment, but not openings that the Contractor proposes to fill from within its own organization or under a customary and traditional employer-union hiring arrangement, nor openings in an educational institution that are restricted to students of that institution.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a special disabled or Vietnam Era veteran. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified

special disabled and Vietnam Era veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion or transfer;
- (iv) Recruitment;
- (v) Advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all suitable employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service.

(3) The listing of suitable employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(5) Under the most compelling circumstances, an employment opening may not be suitable for listing, including situations when (i) the Government's needs cannot reasonably be supplied, (ii) listing would be contrary to national security, or (iii) the requirement of listing would not be in the Government's interest.

(d) Applicability. (1) This clause does not apply to the listing of employment openings which occur and are filled outside the 50 States, the District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands.

(2) The terms of paragraph (c) above of this clause do not apply to openings that the Contractor proposes to fill from within its own organization or under a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of its own organization or employer-union arrangement for that opening.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor (Director), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified special disabled and Vietnam Era veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Director to enforce the terms, including action for noncompliance.

(End of clause)

(R 7-103.27 1976 JUL)

AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS (APR 1984)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental handicap. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as--

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion or transfer;
- (iv) Recruitment;
- (v) Advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped individuals and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor (Director), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified physically and mentally handicapped individuals.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to



the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$2,500 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Director to enforce the terms, including action for noncompliance.

(End of clause)  
(R 7-103.28 1976 MAY)  
(R FPR Temp. Reg. 38)

EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE  
VIETNAM ERA (JAN 1988)

(a) The contractor shall report at least annually, as required by the Secretary of Labor, on:

(1) The number of special disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of special disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than March 31 of each year beginning March 31, 1988.

(d) The employment activity report required by paragraph (a) (2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a) (1) of this clause. Contractors may select an ending date:

(1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each contractor subject to the reporting requirements at 38 U.S.C. 2012(d) shall invite all special disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 2012 to identify themselves to the contractor. The invitation shall state that the information is

voluntarily provided, that the information will be kept confidential, that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 2012.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

CLEAN AIR AND WATER (APR 1984)

(a) "Air Act", as used in this clause, means the Clean Air Act (42 U.S.C. 7401, et seq.).

"Clean air standards," as used in this clause, means--

(1) Any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, work practices, or other requirements contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738;

(2) An applicable implementation plan as described in section 110(d) of the Air Act (42 U.S.C. 7410(d));

(3) An approved implementation procedure or plan under section 111(c) or section 111(d) of the Air Act (42 U.S.C. 7411(c) or (d)); or

(4) An approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 7412(d)).

"Clean water standards," as used in this clause, means any enforceable limitation, control, condition, prohibition, standard, or other requirement promulgated under the Water Act or contained in a permit issued to a discharger by the EPA or by a State under an approved program, as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317).

"Compliance," as used in this clause, means compliance with--

(1) Clean air or water standards; or

(2) A schedule or plan ordered or approved by a court of competent jurisdiction, the EPA, or an air or water pollution control agency under the requirements of the Air Act or Water Act and related regulations.

"Facility," as used in this clause, means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Contractor or

subcontractor, used in the performance of a contract or subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the EPA determines that independent facilities are collocated in one geographical area.

"Water Act," as used in this clause, means Clean Water Act (33 U.S.C. 1251, et seq.).

(b) The Contractor agrees--

(1) To comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, and all regulations and guidelines issued to implement those acts before the award of this contract;

(2) That no portion of the work required by this prime contract will be performed in a facility listed on the EPA List of Violating Facilities on the date when this contract was awarded unless and until the EPA eliminates the name of the facility from the listing;

(3) To use best efforts to comply with clean air standards and clean water standards at the facility in which the contract is being performed; and

(4) To insert the substance of this clause into any nonexempt subcontract, including this subparagraph (b) (4).

(End of clause)

(R 7-103.29 1975 OCT)

(R 1-1.2302)

#### DRUG-FREE WORKPLACE (JUL 1990)

(a) Definitions. As used in this clause,

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute

involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall--within 30 calendar days after award (unless a longer period is agreed to in writing for contracts of 30 calendar days or more performance duration), or as soon as possible for contracts of less than 30 calendar days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 calendar days after such conviction.

(5) Notify the Contracting Officer in writing within 10 calendar days

after receiving notice under subdivision (b) (4) (ii) of this clause, from an employee or otherwise receiving actual notice of such conviction.

The notice shall include the position title of the employee;

(6) Within 30 calendar days after receiving notice under subdivision (b) (4) (ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b) (1) through (b) (6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

#### DRUG-FREE WORK FORCE (SEP 1988)

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security, health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of Title 21 of the United States Code, the possession of which is unlawful under Chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid

prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the objectives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, the efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing--

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employee has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2.1 of Subpart B of the "Mandatory Guidelines

for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11 1988)), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such time as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing programs shall not apply to the extent they are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees that those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

(End of clause)

BUY AMERICAN ACT--CONSTRUCTION MATERIALS (MAY 1992)

(a) The Buy American Act (41 U.S.C. 10) provides that the Government give preference to domestic construction material.

"Components," as used in this clause, means those articles, materials, and supplies incorporated directly into construction materials.

"Construction materials," as used in this clause, means an article, material, or supply brought to the construction site for incorporation into the building or work. Construction material also includes an item brought to the site pre-assembled from articles, materials or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, which are discrete systems incorporated into a public building or work and which are produced as a complete system, shall be evaluated as a single and distinct construction material regardless of when or how the individual parts or components of such systems are delivered to the construction site.

"Domestic construction material," as used in this clause, means (1) an unmanufactured construction material mined or produced in the United States, or (2) a construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as the construction materials determined to be unavailable pursuant to subparagraph 25.202(a)(3) of the Federal Acquisition Regulation (FAR) shall be treated

as domestic.

(b) The Contractor agrees that only domestic construction material will be used by the Contractor, subcontractors, materialmen, and suppliers in the performance of this contract, except for foreign construction materials, if any, listed in this contract. (The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954, as amended, and Subpart 25.2 of the FAR).

(End of clause)

#### RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (MAY 1992)

(a) Unless advance written approval of the Contracting Officer is obtained, the Contractor shall not acquire for use in the performance of this contract--

(1) Any supplies or services originating from sources within the communist areas of North Korea, Vietnam, Cambodia, or Cuba;

(2) Any supplies that are or were located in or transported from or through North Korea, Vietnam, Cambodia, or Cuba; or

(3) Arms, ammunition, or military vehicles produced in South Africa, or manufacturing data for such articles.

(b) The Contractor shall not acquire for use in the performance of this contract supplies or services originating from sources within Iraq, any supplies that are or were located in or transported from or through Iraq, or any supplies or services from entities controlled by the Government of Iraq.

(c) The Contractor agrees to insert the provisions of this clause, including this paragraph (c), in all subcontracts hereunder.

(End of clause)

#### UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (AUG 1991)

(a) This clause applies only if the contract includes a subcontracting plan incorporated under the terms of the clause entitled, Small Business and Small Disadvantaged Business Subcontracting Plan. It does not apply to contracts awarded based on a subcontracting plan submitted and approved under paragraph (g) of the clause at 52.219-9.

(b) Definitions. As used in this clause:

"Indian organization" means the governing body of any Indian tribe (as



defined by 25 U.S.C. 1452(c)) or entity established or recognized by the governing body for the purposes of 25 U.S.C., Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership shall constitute not less than 51 percent of the enterprise.

(c) The Contractor agrees to use its best efforts to give Indian organizations and Indian-owned economic enterprises the (25 U.S.C. 1544) maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contractor may rely on the written representation of the Indian organization or Indian-owned economic enterprise.

(2) If the cost of subcontracting with an Indian organization or Indian-owned economic enterprise exceeds the cost of acquiring the supplies or services from a non-Indian source, the Contractor may request an adjustment to the following:

- (i) The estimated cost of a cost-type contract;
- (ii) The target cost of a cost-plus-incentive-fee prime contract;
- (iii) The target cost and ceiling price of a fixed-price incentive prime contract; or
- (iv) The price of a firm-fixed-price prime contract.

(3) The amount of the equitable adjustment to the prime contract shall be the lesser of--

- (i) The difference between the estimated cost, target cost or firm-fixed-price included in the subcontract initially awarded to the Indian organization or enterprise and the corresponding estimated cost, target cost or firm-fixed-price which would have been included in a subcontract with the otherwise low, non-Indian offeror; or
- (ii) Five percent of the estimated cost, target cost or firm-fixed-price included in the subcontract initially awarded to the Indian organization or enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(d) The Contracting Officer shall decide the amount of the adjustment and modify the contract accordingly. The Contracting Officer's decision is final and not subject to the Disputes clause of this contract.

(End of clause)

AUTHORIZATION AND CONSENT (APR 1984)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed \$25,000); however, omission of this clause from any subcontract, under or over \$25,000, does not affect this authorization and consent.

(End of clause)

(R 7-103.22 1961 JAN)

NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT  
(APR 1984)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or

claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

(R 7-103.23 1965 JAN)

#### PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

(End of clause)

(R 7-602.16 1964 JUN)

#### RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

(End of clause)

ADDITIONAL BOND SECURITY (APR 1984)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

- (a) Any surety upon any bond furnished with this contract becomes unacceptable to the Government;
- (b) Any surety fails to furnish reports on its financial condition as required by the Government; or
- (c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer.

(End of clause)

(R 1-7.103-2)

(R 1-7.602-17)

(R 7-103.9 1949 JUL)

(R 7-602.17 1976 OCT)

INSURANCE--WORK ON A GOVERNMENT INSTALLATION (SEP 1989)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

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

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

(End of clause)

PLEDGES OF ASSETS (FEB 1990)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

- (1) Pledge of assets; and
- (2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

- (1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

- (2) A recorded lien on real estate. The offeror will be required to provide--

- (i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

- (ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

- (iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS (SEP 1992)

In accordance with section 806(a)(3) of Pub. L. 102-190, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the

Contractor shall promptly provide a copy of such payment bond to the requestor.

(End of clause)

FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow

instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

(End of clause)

(AV 7-103.10(c) 1963 NOV)

(AV 1-11.401-3(a))

SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with Part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with Part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (APR 1989)

(a) The Government shall pay the Contractor the contract price as provided in this contract.

(b) The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of

quality established under the contract, as approved by the Contracting Officer. The Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a basis for determining progress payments, in such detail as requested by the Contracting Officer. In the preparation of estimates the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site may also be taken into consideration if--

(1) Consideration is specifically authorized by this contract; and

(2) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Along with each request for progress payments, the contractor shall furnish the following certification, or payment shall not be made:

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code; and

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

(d) If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and



(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in 31 U.S.C 3903(c)(1)) equal to interest on the unearned amount from the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(End of clause)

INTEREST (JAN 1991)

(a) Notwithstanding any other clause of this contract, all amounts, except amounts that are repayable and which bear interest under a Price Reduction for Defective Cost of Pricing Data clause, that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

- (1) The date fixed under this contract.
- (2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.
- (3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.
- (4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable

in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

#### ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

#### PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (MAR 1994)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or an electronic funds transfer is made. Definitions of pertinent terms are set forth in 32.902. All days referred to in this clause are calendar days, unless otherwise specified.

(a) Invoice Payments.

(1) For purposes of this clause, there are several types of invoice payments which may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. However, if the designated billing office fails to annotate the payment request with the actual date of receipt, the payment due date shall be deemed to be the 14th day after the date the Contractor's payment request is dated, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor; whichever is later. However, if the designated billing office fails to annotate the invoice with the date of actual receipt, the invoice payment due date shall be deemed to be the 30th day after the date the Contractor's invoice is dated, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(2) An invoice is the Contractor's bill or written request for payment under the contract for work or services performed under the contract. An invoice shall be prepared and submitted to the designated billing office. A proper invoice must include the items listed in subdivisions (a) (2) (i)

through (a) (2) (ix) of this clause. If the invoice does not comply with these requirements, the Contractor will be notified of the defect within 7 days after receipt of the invoice at the designated billing office. Untimely notification will be taken into account in the computation of any interest penalty owed the Contractor in the manner described in subparagraph (a) (4) of this clause:

- (i) Name and address of the Contractor.
- (ii) Invoice date.
- (iii) Contract number or other authorization for work or services performed (including order number and contract line item number).
- (iv) Description of work or services performed.
- (v) Delivery and payment terms (e.g., prompt payment discount terms).
- (vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).
- (vii) Name (where practicable), title, phone number, and mailing address of person to be notified in event of a defective invoice.
- (viii) For payments described in subdivision (a) (1) (i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.
- (ix) Any other information or documentation required by the contract.

(3) An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a) (3) (i) through (a) (3) (iii) of this clause are met, if applicable.

- (i) A proper invoice was received by the designated billing office.
- (ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.
- (iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority. This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or

about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a) (2) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a) (1) (ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to

disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) An interest penalty shall also be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the Contractor--

(i) Is owed an interest penalty;

(ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(b) Contract Financing Payments.

(1) For purposes of this clause, if applicable, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government, other than progress payments based on estimates of amount and value of work performed. Contract financing payments include advance payments and interim payments under cost-type contracts.

(2) If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the \_\_\_\_\_ day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified. For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) A payment clause which obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) An interest penalty clause which obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) The clauses required by paragraph (c) of this clause shall not be construed to impair the right of Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions which--

(1) Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Permit such withholding without incurring any obligation to pay a



late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause has been previously furnished to the subcontractor; and

(ii) A copy of any notice issued by a Contractor pursuant to subdivision (d) (3) (i) of this clause has been furnished to the Contracting Officer.

(e) If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to subparagraph (e) (1) of this clause;

(3) Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under subparagraph (e) (1) of this clause;

(4) Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under subdivision (e) (5) (i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a

progress payment, specifying--

(A) The amounts withheld under subparagraph (e) (1) of this clause;

and

(B) The dates that such withholding began and ended; and

(6) Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under subdivision (e) (5) (i) of this clause.

(f) (1) If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, then the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e) (6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under subdivision (f) (1) (i) of this clause.

(2) As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall pay the amount withheld under subdivision (f) (1) (ii) of this clause to such first-tier subcontractor, or shall incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) A written notice of any withholding shall be issued to a

subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost reimbursement claim may not include any amount for reimbursement of such interest penalty.

(End of clause)

REDUCTION OR SUSPENSION OF CONTRACT PAYMENTS UPON FINDING OF FRAUD (AUG 1992)

(a) 10 U.S.C. 2307(e) permits the head of the agency to reduce or suspend further payments to the Contractor upon a written determination by the agency head that substantial evidence exists that the Contractor's request for advance, partial, or progress payments is based on fraud. The provisions of 10 U.S.C. 2307(e) are in addition to any other rights or remedies provided the Government by law or under contract.

(b) Actions taken by the Government in accordance with 10 U.S.C. 2307(e)

shall not constitute an excusable delay under the Default clause of this contract or otherwise relieve the Contractor of its obligations to perform under this contract.

(End of clause)

DISPUTES (MAR 1994)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$50,000 is not a claim under the Act until certified as required by subparagraph (d) (2) below. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d) (1) A claim by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2) (i) Contractors shall provide the certification specified in subparagraph (d) (2) (iii) of this clause when submitting any claim--

(A) Exceeding \$50,000; or

(B) Regardless of the amount claimed, when using--

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows:

"I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$50,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$50,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) At the time a claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use ADR. When using arbitration conducted pursuant to 5 U.S.C. 575-580, or when using any other ADR technique that the agency elects to handle in accordance with the ADRA, any claim, regardless of amount, shall be accompanied by the certification described in subparagraph (d) (2) (iii) of this clause, and executed in accordance with subparagraph (d) (3) of this clause.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date that the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

PROTEST AFTER AWARD (AUG 1989)

(a) Upon receipt of a notice of protest (as defined in 33.101 of the FAR) the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(End of clause)

CERTIFICATION OF CLAIMS AND REQUESTS FOR ADJUSTMENT OR RELIEF (MAY 1994)

(a) Any contract claim, request for equitable adjustment to contract terms, request for relief under Pub. L. 85-804, or other similar request exceeding \$100,000 shall bear, at the time of submission, the following certificate given by an individual who has knowledge of the basis of the claim or request, knowledge of the accuracy and completeness of the supporting data, and knowledge of the claim or request:

I certify that the claim is made in good faith, that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

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(Official's Name)

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(Title)

(b) The certification in paragraph (a) of this clause requires full disclosure of all relevant facts, including cost and pricing data.

(c) The certification requirement in paragraph (a) of this clause does not apply to:

- (1) Requests for routine contract payments; for example, those for payment for accepted supplies and services, routine vouchers under cost-reimbursement type contracts, and progress payment invoices; or
- (2) Final adjustments under incentive provisions of contracts.

(d) In those situations where no claim certification for the purposes of 10 U.S.C. 2410e has been submitted prior to the inception of a contract dispute, a single certification, using the language prescribed by the Contract Disputes Act (41 U.S.C. 601 et seq.) but signed by an individual who is authorized to bind the contractor and who has knowledge of the basis of the claim or request, knowledge of the accuracy and completeness of the supporting data, and knowledge of the claim or request, will satisfy the certification requirements of both statutes.

(e) If this is a request for equitable adjustment under a substantially completed contract or a completed contract, the certification will be expanded to include the following:

This claim includes only costs for performing the alleged

change, and does not include any costs which have already been reimbursed or which have been separately claimed. All indirect costs claimed are properly allocable to the alleged change in accordance with applicable acquisition regulations. I am aware that the submission of a false claim to the Government can result in the assessment of significant criminal and civil penalties and fines.

(End of clause)

DIFFERING SITE CONDITIONS (APR 1984)

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

(R 7-602.4 1968 FEB)

(R 1-7.602-4)

SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)



(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

(R 7-602.14 1964 JUN)

(R 1-7.602-14)

(R 7-602.33 1965 JAN)

#### MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number,

shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

(R 7-602.9 1964 JUN)

#### SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

(R 7-602.12 1978 OCT)

(R 1-7.602-12)

#### PERMITS AND RESPONSIBILITIES (NOV 1991)

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

(End of clause)

OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

(R 7-602.15 1964 JUN)

(R 1-7.602.15)

PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site, and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities; including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

(R 7-602.34 1965 JAN)

(7-2101.13 1976 OCT)

#### OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

(R 7-602.35 1965 JAN)

USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

(R 7-602.39 1976 OCT)

(1-7.602.31)

CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

(R 7-602.40 1965 JAN)

(R 7-2101.21 1976 OCT)

ACCIDENT PREVENTION (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will (1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities; (2) avoid interruptions of Government operations and delays in project completion dates; and (3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall--

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(End of clause)

SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

(R 7-603.48 1965 JAN)

#### SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (APR 1984)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on

the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor.



Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(h) This clause shall be included in all subcontracts at any tier.

(End of clause)

(7-602.2 JUNE 1964 and 1-7.602-2)

(7-602.41 JAN 1965)

(7-602.47 APR 1966)

(7-602.54 OCT 1976 and 1-7.602-36)

#### MODIFICATION PROPOSALS--PRICE BREAKDOWN (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown--

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for--

- (i) Material;
- (ii) Labor;
- (iii) Equipment;
- (iv) Subcontracts; and
- (v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

(End of clause)

#### CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances, and source of the order and (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under

paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

#### PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR Part 31 and DFARS Part 231, in effect on the date of this contract, apply.

(End of clause)

#### SUBCONTRACTS (FIXED-PRICE CONTRACTS) (FEB 1995)

(a) This clause does not apply to firm-fixed-price contracts and fixed-price contracts with economic price adjustment. However, it does apply to subcontracts resulting from unpriced modifications to such contracts.

(b) "Subcontract," as used in this clause, includes but is not limited to purchase orders, and changes and modifications to purchase orders. The Contractor shall notify the Contracting Officer reasonably in advance of entering into any subcontract if the Contractor does not have an approved purchasing system and if the subcontract--

(1) Is proposed to exceed \$100,000; or

(2) Is one of a number of subcontracts with a single subcontractor, under this contract, for the same or related supplies or services, that in the aggregate are expected to exceed \$100,000.

(c) The advance notification required by paragraph (b) above shall include--

(1) A description of the supplies or services to be subcontracted;

(2) Identification of the type of subcontract to be used;

(3) Identification of the proposed subcontractor and an explanation of why and how the proposed subcontractor was selected, including the competition obtained;

(4) The proposed subcontract price and the Contractor's cost or price

analysis;

(5) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions;

(6) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract; and

(7) A negotiation memorandum reflecting--

(i) The principal elements of the subcontract price negotiations;

(ii) The most significant considerations controlling establishment of initial or revised prices;

(iii) The reason cost or pricing data were or were not required;

(iv) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(v) The extent, if any, to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and subcontractor; and the effect of any such defective data on the total price negotiated;

(vi) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(vii) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(d) The Contractor shall obtain the Contracting Officer's written consent before placing any subcontract for which advance notification is required under paragraph (b) above. However, the Contracting Officer may ratify in writing any such subcontract. Ratification shall constitute the consent of the Contracting Officer.

(e) Even if the Contractor's purchasing system has been approved, the Contractor shall obtain the Contracting Officer's written consent before placing subcontracts identified below: \_\_\_\_\_

(f) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination (1) of the acceptability of any subcontract terms or conditions, (2) of the acceptability of any subcontract price or of any amount paid under any subcontract, or (3) to relieve the Contractor of any responsibility for

performing this contract.

(g) No subcontract placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement subcontracts shall not exceed the fee limitations in subsection 15.903(d) of the Federal Acquisition Regulation (FAR).

(h) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(End of clause)

GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS) (DEC 1989)

(a) Government-furnished property. (1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall, upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property. (1) The Contracting Officer may, by written notice, (i) decrease the Government-furnished property provided or to be provided under this contract, or (ii) substitute other Government-furnished property for the property to be provided by the

Government, or to be acquired by the Contractor for the Government, under this contract. The Contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any--

(i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or

(ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property. (1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. However, special tooling accountable to this contract is subject to the provisions of the Special Tooling clause and is not subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities and special test equipment acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract--

(i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and

(ii) Title to all other material shall pass to and vest in the Government upon--

(A) Issuance of the material for use in contract performance;

(B) Commencement of processing of the material or its use in contract performance; or

(C) Reimbursement of the cost of the material by the Government,

whichever occurs first.

(d) Use of Government property. The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) Property administration. (1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) Access. The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) Risk of loss. Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the

Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for--

- (1) Any delay in delivery of Government-furnished property;
- (2) Delivery of Government-furnished property in a condition not suitable for its intended use;
- (3) A decrease in or substitution of Government-furnished property; or
- (4) Failure to repair or replace Government property for which the Government is responsible.

(i) Final accounting and disposition of Government property. Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this contract or delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as the Contracting Officer directs.

(j) Abandonment and restoration of Contractor's premises. Unless otherwise provided herein, the Government--

(1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and

(2) Has no obligation to restore or rehabilitate the Contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) Communications. All communications under this clause shall be in writing.

(l) Overseas contracts. If this contract is to be performed outside of the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

(End of clause)



GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (APR 1984)

(a) The Government shall deliver to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changes clause when--

- (1) The Contractor submits a timely written request for an equitable adjustment; and
- (2) The facts warrant an equitable adjustment.

(b) Title to Government-furnished property shall remain in the Government. The Contractor shall use the Government-furnished property only in connection with this contract. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1, Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

- (1) For reasonable wear and tear;
  - (2) To the extent property is consumed in performing this contract;
- or

(3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

(End of clause)

(R 7-104.24(f) 1964 NOV)

INSPECTION OF CONSTRUCTION (JUL 1986)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

- (1) Relieve the Contractor of responsibility for providing adequate quality control measures;
- (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;
- (3) Constitute or imply acceptance; or
- (4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (1) below.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work,

the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

PREFERENCE FOR PRIVATELY OWNED U.S.-FLAG COMMERCIAL VESSELS (APR 1984)--  
ALTERNATE II (APR 1984)

(a) When ocean transportation is required to bring supplies, materials, or equipment to the construction site from the United States either for use in performance of, or for incorporation in, the work called for by this contract, the Contractor shall use privately owned U.S.-flag commercial vessels to the extent that such vessels are available at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels.

(b) The Contractor shall not make any shipment exceeding 10 measurement tons (400 cubic feet) by vessels other than privately owned U.S.-flag commercial vessels without (1) notifying the Contracting Officer that U.S.-flag commercial vessels are not available at rates that are fair and reasonable for such vessels and (2) obtaining permission to ship in other vessels. If permission is granted, the contract price shall be equitably adjusted to reflect the difference in cost.

(c) (1) The Contractor shall submit one legible copy of a rated on-board

ocean bill of lading for each shipment to both (i) the Contracting Officer and (ii) the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590. Subcontractor bills of lading shall be submitted through the Prime Contractor.

(2) The Contractor shall furnish these bill of lading copies (i) within 20 working days of the date of loading for shipments originating in the United States, or (ii) within 30 working days for shipments originating outside the United States. Each bill of lading copy shall contain the following information:

- (A) Sponsoring U.S. Government agency.
- (B) Name of vessel.
- (C) Vessel flag of registry.
- (D) Date of loading.
- (E) Port of loading.
- (F) Port of final discharge.
- (G) Description of commodity.
- (H) Gross weight in pounds and cubic feet if available.
- (I) Total ocean freight revenue in U.S. dollars.

(d) Except for small purchases as described in 48 CFR 13, the Contractor shall insert the substance of this clause, including this paragraph (d), in all subcontracts or purchase orders under this contract.

(e) The requirement in paragraph (a) does not apply to--

- (1) Small purchases as defined in 48 CFR 13;
- (2) Cargoes carried in vessels of the Panama Canal Commission or as required or authorized by law or treaty;
- (3) Ocean transportation between foreign countries of supplies purchased with foreign currencies made available, or derived from funds that are made available, under the Foreign Assistance Act of 1961 (22 U.S.C. 2353); and
- (4) Shipments of classified supplies when the classification prohibits the use of non-Government vessels.

(f) Guidance regarding fair and reasonable rates for privately owned U.S.-flag commercial vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, Phone: 202-426-4610.

(End of clause)

(R 1-19.108-2(b))

(R 7-603.41 1979 JUN)

NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (DEC 1991)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor--

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause, including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties, in all subcontracts hereunder.

(End of clause)

VALUE ENGINEERING--CONSTRUCTION (MAR 1989)--ALTERNATE I (APR 1984)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated

reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

- (i) In deliverable end item quantities only; or
- (ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

- (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

- (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

- (3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

- (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

- (5) A prediction of any effects the proposed change would have on collateral costs to the agency.

- (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

- (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action. (1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The Contracting Officer's decision to accept or reject all or part of any VECP shall be final and not subject to the Disputes clause or otherwise subject to litigation under the Contract Disputes Act of 1978 (41 U.S.C. 601-613).

(f) Sharing. (1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 45 percent for fixed-price contracts or (ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable

development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(h) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract \_\_\_\_\_, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (APR 1984)--  
ALTERNATE I (APR 1984)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:



- (1) Stop work as specified in the notice.
  - (2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.
  - (3) Terminate all subcontracts to the extent they relate to the work terminated.
  - (4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
  - (5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.
  - (6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.
  - (7) Complete performance of the work not terminated.
  - (8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.
  - (9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (6) above; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid
- (c) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement

for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(d) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(e) Subject to paragraph (d) above, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (e) or paragraph (f) below, exclusive of costs shown in subparagraph (f) (3) below, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount. Paragraph (f) below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(f) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (e) above:

- (1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--
  - (i) The cost of this work;
  - (ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (i) above; and
  - (iii) A sum, as profit on (i) above, determined by the Contracting

Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(g) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (f) above, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(h) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(i) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (d), (f), or (k), except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (d) or (k), and failed to request a time extension, there is no right of appeal. If the Contracting Officer has made a determination of the amount due under paragraph (d), (f), or (k), the Government shall pay the Contractor (1) the amount determined by the Contracting Officer if there is no right of appeal or if no timely appeal has been taken, or (2) the amount finally determined on an appeal.

(j) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(k) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(1) (1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(m) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

(R 1-8.701)

(R 7-103.21(b) 1974 OCT)

(R 1.8-703)

(R 7-602.29(a) 1974 APR)

DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if-

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God or of the public enemy, (ii) acts of the Government in either its sovereign or contractual capacity, (iii) acts of another Contractor in the performance of a contract with the Government, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is

determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

(d) The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

(R 1-8.709-1)

(R 7-602.5 1969 AUG)

AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any \_\_\_\_\_ (48 CFR \_\_\_\_\_) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of clause)

(NM)

END OF SECTION 00700

SOLICITATION NO. DACW29-95-B-0095

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SECTION 00800 - SPECIAL CONTRACT REQUIREMENTS

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (FAR 52.212-3 - 1984 APR). The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 630 calendar days after the date of receipt by him of notice to proceed. The time stated for completion shall include final cleanup of the premises.

2. LIQUIDATED DAMAGES. (FAR 52.212-5 - 1984 APR).

a. If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$1,240.00 for each day of delay.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

3. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS. (DFARS 252.236-7001 - 1991 DEC).

a. The Government--

(1) Will provide the Contractor, without charge, five sets (unless otherwise specified) of large-scale contract drawings and specifications except publications incorporated into the technical specifications by reference;

(2) Will furnish additional sets on request, for the cost of reproduction; and

(3) May, at its option, furnish the Contractor one set of reproducible, or half-size drawings, in lieu of the contract drawings in paragraph a.(1) of this clause.

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; and

(4) Be responsible for any errors which might have been avoided by complying with this paragraph b.

c. Large scale drawings shall, in general, govern small scale drawings. Figures marked on drawings shall, in general, be followed in preference to scale measurements.

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

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

<u>Title</u>	<u>File No.</u>	and	<u>Drawing No.</u>
Lake Pontchartrain, LA and Vicinity High Level Plan, Floodproofing Veterans Boulevard Bridges Over 17th Street Outfall Canal, Orleans and Jefferson Parishes, LA	H-4-40359		1 thru 79

4. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE.  
(EFARS 31.105--JUL 89).

a. 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 from the Contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule," Region III. 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 retrospective pricing, the schedule in effect at the time the work was performed shall apply.

b. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d) (2) (ii) and FAR 31.205-36, and substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease-purchase or sale-leaseback arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated leases are allowable. Costs for major repairs and overhaul are unallowable.

c. When actual equipment costs are proposed and the total amount of the pricing action is over \$25,000, cost or pricing data shall be submitted on Standard Form 1411, "Contract Pricing Proposal Cover Sheet." By submitting cost or pricing data, the Contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate, complete and current.

NOTE: A copy of the manual can be obtained from the Government Printing Office (GPO) by calling (202) 783-3238. The cost will be \$9.50. (Stock number: Volume 3, # S/N-008-022-00256-1.)

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

a. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. Field notes, representative soil samples, field and laboratory test results, and other data on which this information is based are available at U.S. Army Engineer District, New Orleans, Corps of Engineers, Attn: CELMN-ED, Foot of Prytania Street, P.O. Box 60267, New Orleans, Louisiana 70160-0267, and access thereto may be had upon request.

b. Weather Conditions. Data on weather conditions may be obtained from the National Weather Service.

c. Transportation Facilities.

(1) The majority of the project is located at the Veterans Blvd. crossing of the 17th Street Canal, near the Orleans-Jefferson Parish border in Metairie, Louisiana. A required floodwall gate is located on the west levee of the Canal, immediately north of Interstate I-10. For further information on trucking regulations see the General Provision entitled "TRUCKING REQUIREMENTS".

(2) Access to the dredge disposal site shall be via the existing access road on the north side of Airline Highway as shown on the "Location Map" for "Dredge Disposal Site". The Contractor shall maintain the access road in its existing condition. Any damage that occurred due to the Contractor's activity shall immediately be restored at no extra cost to the Government.

6. LAYOUT OF WORK. (FAR 52.236-17--APR 1984). The Contractor shall lay out its work from Government-established base lines and benchmarks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

7. QUANTITY SURVEYS (FAR 52.236-16 - 1984 APR).

a. Quantity surveys will 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 Government shall conduct the original and final surveys and make the computations based on them. The Contractor shall conduct the surveys for any periods for which progress payments are requested and shall make the computations based on these surveys. All surveys conducted by the Contractor shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance.

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.

8. PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DFARS 252.236-7004 (b) (2) - 1991 DEC.).

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 (60%) of the lump sum price upon completion of the Contractor's mobilization at the work site.

(2) The remaining forty percent (40%) 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 (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--

(a) Actual mobilization costs at the completion of mobilization;

(b) Actual demobilization costs at the completion of demobilization; and

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

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

9. PERFORMANCE OF WORK BY CONTRACTOR (FAR 52.236-1 -1984 APR). The Contractor shall perform on the site, and with his own organization, work equivalent to at least twenty percent (20%) of the total amount of the work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract, if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

10. CONTINUING CONTRACTS (EFARS 52.232-5000)

(a) This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922, (33 US 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 "PAYMENT TO CONTRACTOR" clause or any other clause of this contract.

(b) The sum of \$100,000.00 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) calendar 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.

11. OBSTRUCTION OF NAVIGABLE WATERWAYS (DFARS 252.236-7002-DEC 91).

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.).

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

a. The Government will furnish to the Contractor the property identification in the Schedule to be incorporated or installed into the work or used in performing the contract. The listed property will be furnished f.o.b. railroad cars at the place specified in the contract Schedule or f.o.b. truck at the project site. The Contractor is required to accept delivery, pay any demurrage or detention charges, and unload and transport the property to the job site at its own expense. When the property is delivered, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer within 24 hours of delivery any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work at the expense of the Contractor, unless otherwise indicated in this contract.

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

SCHEDULE OF GOVERNMENT FURNISHED PROPERTY.

a. In lieu of the second and third sentences of paragraph a of the Special Contract Requirement entitled "IDENTIFICATION OF GOVERNMENT FURNISHED PROPERTY", the property listed below will be furnished to the Contractor at the East Jefferson Levee District (EJLD) Maintenance Yard located at 1135 Leasan Dr., Kenner, LA. The Government will furnish to the Contractor the property identified in the schedule below.

PROPERTY SCHEDULE

<u>Items</u>	<u>Quantity</u>
Frodingham 1B Steel Sheet Piling 14'-0" Long	28 Sheets

The Contractor is encouraged to visit the property location to obtain more information about the property. Visits of this type shall be coordinated with the New Orleans Area Office.

b. The Contractor shall notify the Contracting Officer five (5) days prior to proceeding to load and transport the Government-furnished property. The Contractor shall provide suitable equipment to load/unload the property at the warehouse. The Contractor shall then transport the property to the job site and unload.

c. The Contractor shall verify the quantity and condition of the property, and acknowledge receipt in writing to the Contracting Officer. In case of damage to the property, the Contractor shall report such damage to the Contracting Officer immediately. The damaged property shall be replaced by the Contractor at no cost to the Government.



General Decision Number LA950013

Superseded General Decision No. LA940013

State: Louisiana

Construction Type:  
HEAVY

County(ies):

JEFFERSON  
ORLEANS

ST BERNARD  
ST CHARLES

ST JOHN THE BAP  
ST TAMMANY

HEAVY CONSTRUCTION PROJECTS (Excluding Work on Treatment Plants)

Modification Number  
0

Publication Date  
02/10/1995

COUNTY(ies):

JEFFERSON  
ORLEANS

ST BERNARD  
ST CHARLES

ST JOHN THE BAP  
ST TAMMANY

SULA2026A 04/01/1990

	Rates	Fringes
<b>HEAVY CONSTRUCTION:</b>		
CARPENTERS	12.21	2.60
CONCRETE FINISHERS	13.22	1.68
ELECTRICIANS	12.62	1.68
<b>LABORERS:</b>		
Common	7.54	
PAINTERS	11.83	1.18
PIPELAYERS	8.29	
REINFORCING STEEL SETTERS	12.69	3.08
TRUCK DRIVERS	7.76	
<b>POWER EQUIPMENT OPERATORS:</b>		
Backhoes	10.37	
Bulldozers	10.00	
Front End Loaders	11.61	2.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Requests for additional classifications and wage rates may be submitted to the contracting officer after award, and may be approved only if: (1) the work to be performed by the classification requested is not performed by a classification in the wage determination; (2) the classification is utilized in the area by the construction industry; and (3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination (for the given area and type of construction). (See 29 CFR 5.5(a) (v)).

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In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

END OF GENERAL DECISION

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SECTION 01100 - GENERAL PROVISIONS

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SECTION 01100 - GENERAL PROVISIONS

1. CONTRACTOR QUALITY CONTROL (CQC).

a. General. The Contractor shall establish and maintain an effective quality control system in compliance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION". The quality control system shall consist of plans, procedures, and organization necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with contract requirements. The system shall cover construction operations both onsite and offsite, and shall be keyed to the proposed construction sequence.

b. Coordination Meeting. Before start of construction, the Contractor shall meet with the Contracting Officer (CO) or his authorized representative (COR) and discuss the Contractor's quality control system. 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 the Contractor's management and control with the Government's inspection. Minutes of the meeting shall be prepared and signed by both the Contractor and the CO or COR. The minutes shall become a part of the contract file. There may also be occasions when subsequent conferences will be called to reconfirm mutual understandings.

c. Quality Control Plan.

(1) General. The Government will consider an interim plan for the first 30 days of operation. However, the Contractor shall furnish for approval by the Government, not later than 15 days after receipt of Notice to Proceed, the Contractor Quality Control (CQC) Plan within which he proposes to implement the requirements of Contract Clause entitled "INSPECTION OF CONSTRUCTION". The plan shall identify personnel, procedures, instructions, records, and forms to be used. If the Contractor fails to submit an acceptable QC plan within the time herein prescribed, the CO or COR may refuse to allow construction to start if an acceptable interim plan is not furnished or withhold funds from progress payments in accordance with the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS" until such time as the Contractor submits an acceptable final plan.

(2) The Quality Control Plan. This plan shall include as a minimum, the following:

(a) A description of the quality control organization, including chart showing lines of authority and acknowledgement that the CQC staff shall implement the three phase

control system for all aspects of the work specified and shall report to the project manager or someone higher in the Contractor's organization.

(b) The name, qualifications, duties, responsibilities, and authorities of each person assigned a QC function.

(c) A copy of the letter to QC manager signed by an authorized official of the firm, which describes the responsibilities and delegates the authorities of the QC manager.

(d) Procedures for scheduling and managing submittals, including those of subcontractors, offsite fabricators, suppliers and purchasing agents.

(e) Control testing procedures for each specific test. (Laboratory facilities will be approved by the Contracting Officer).

(f) Reporting procedures including proposed reporting formats.

(g) A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements.

(3) 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 as necessary to obtain the quality specified.

(4) Notification of Changes. After acceptance of the QC plan, the Contractor shall notify the CO in writing of any proposed change. Proposed changes are subject to acceptance by the CO or COR.

d. Quality Control Organizations.

(1) CQC System Manager. The Contractor shall identify an individual, within his organization at the site of the work, who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. This CQC System Manager shall be approved by the CO or COR.

(2) Personnel. A staff shall be maintained under the direction of the system manager to perform all QC activities. The actual strength of the staff during any specific work period may vary to cover work phase needs, shifts, and rates of placement. The personnel of this staff shall be fully qualified by experience and technical training to perform their assigned responsibilities.

e. Submittals. Submittals shall be as specified in the General Provision entitled "SUBMITTALS" of this section. The CQC Organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

f. Control. Contractor Quality Control is the means by which the Contractor assures himself that his construction complies with the requirements of the contract plans and specifications. The controls shall be adequate to cover all construction operations, including both onsite and offsite fabrication, and will be keyed to the proposed construction sequence. The controls shall include at least three phases of control for all definitive features of work as follows:

(1) Preparatory Inspection Phase. This phase shall occur prior to beginning any work or any definable feature of work. It shall include a review of contract requirements; a check to assure that all materials and/or equipment have been tested, submitted and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed; and a physical examination of materials, equipment and sample work to assure that they conform to approved shop drawings or submittal data and that all materials and/or equipment are on hand. The Contracting Officer's Representative (COR) shall be notified at least 24 hours in advance of beginning any of the required action of the preparatory inspection. The Contractor must submit a written agenda of the topics to be discussed at the preparatory meeting on the day prior to the meeting date. The results of the preparatory inspections shall be documented by separate minutes prepared by the CQC representative and attached to the daily QC report. Subsequent to the preparatory phase and prior to commencement of work, the Contractor shall instruct applicable workers as to the acceptable level of workmanship required in his CQC plan in order to meet contract specifications.

(2) Initial Phase. This phase must be accomplished at the beginning of the definable feature of work. This phase shall include a check of preliminary work, verify full compliance, establish level of workmanship, resolve all differences, and check safety to include compliance with hazard analysis. The Contracting Officer's representative shall be notified at least 24 hours in advance of the inspection of the initial phase. Separate minutes of this phase shall be prepared by the CQC representative and attached to the daily QC Report. The initial phase should be repeated for each new crew to work on site, or if acceptable standards of workmanship are not being met.

(3) Follow-up Phase. Daily inspections shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The inspections shall be made a

matter of record in the CQC documentation as required below. Final follow up inspections shall be conducted and all deficiencies corrected prior to the start of additional work.

g. Tests.

(1) Testing Procedures. The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to contract requirements. The Contractor shall procure the services of an industry recognized testing laboratory or he may establish an approved testing laboratory at the project site. A list of tests which the Contractor is to perform shall be furnished as a part of the CQC plan to the Contracting Officer. The list shall give the test name, specification paragraph containing the test requirements, and the personnel and laboratory responsible for each type of test. The Contractor shall perform and record the following activities 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, including all of the test documentation requirements, have been prepared.

(2) Testing.

(a) Capability Check. The COR will have 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.

(b) Capability Re-Check. If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$1,500 to reimburse the Government for each succeeding re-check of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

(c) Project Laboratory. If the Contractor uses an on site testing laboratory, the COR will have the right to utilize the 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.

(d) Transportation of Samples for Testing. Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be coordinated with the CO for shipping instructions and delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For all Materials Except Painting Materials.

For delivery by mail:

Waterways Experiment Station  
P.O. Box 631  
Vicksburg, Mississippi 39180

For other deliveries:

Waterways Experiment Station  
3909 Halls Ferry Road  
Vicksburg, Mississippi

For Painting Materials.

For delivery by mail:

U.S. Army Construction  
Engineering Research Laboratory  
Interstate Research Park  
2902 Newmark Drive  
P.O. Box 4005  
Champaign, Illinois 61820

For Concrete Test Cylinders.

The samples (test cylinders) shall be delivered on Federal workdays between 7:30 A.M. and 3:00 P.M. to:

U.S. Army Corps of Engineers  
Soil Lab  
New Orleans District  
New Orleans, Louisiana 70160-0267

h. Completion Inspection. At the completion of all work or any increment thereof established by a completion time stated in the Special Contract Requirement entitled "COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK" or stated elsewhere in the specifications, the CQC System Manager shall conduct a completion inspection of the work and develop a 'punch list' of items which do not conform to the approved plans and specifications. Such a list shall be included in the CQC documentation as required by paragraph i. below and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or his



staff shall make a second completion inspection to ascertain that all deficiencies have been corrected and so notify the Contracting Officer's Representative. The completion inspection and any deficiency corrections required by this paragraph will be accomplished within the time stated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

i. Documentation.

(1) The Contractor shall maintain current records of quality control operations, activities, and tests performed including the work of suppliers and subcontractors. These records shall be on an acceptable form and shall include factual evidence that required activities or tests have been performed, including but not limited to the following:

- (a) Type and number of control activities and tests involved.
- (b) Results of control activities and tests.
- (c) Nature of defects, causes of rejection, etc.
- (d) Proposed remedial action.
- (e) Corrective actions taken.

In addition, these records shall indicate a description of trades working on the project, the numbers of personnel working, and the weather conditions encountered, and acknowledgement of instructions given by the Government Representative.

(2) These records shall cover both conforming and defective or deficient features and shall include a statement that supplies and materials incorporated in the work comply with the contract. Legible copies of these records shall be furnished to the CO daily.

j. Safety. The Contractor shall perform a daily safety inspection of the jobsite, equipment, or separate segments thereof. The inspection shall be performed by the Contractor's job supervisory staff, a company safety specialist, a safety consultant, or a safety representative of the compensation insurance carrier. The results shall be documented, along with any corrective action taken, on the quality control report or on a form attached to the quality control report, such as a Corps of Engineers Safety Inspection Checklist or insurance carrier's inspection format.

k. Notification of Noncompliance. The Contracting Officer will notify the Contractor of any noncompliance with the foregoing requirements. The Contractor shall, after receipt of such notice,

immediately take corrective action. Such notice, when delivered to the Contractor or his representative at the site of the work, 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 any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

1. Payment. Separate payment will not be made for providing and maintaining an effective Quality Control program as required above, and all costs associated therewith shall be included in the applicable unit prices or lump sum prices contained in the Bidding Schedule. (ER 1180-1-6)

2. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

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

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

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

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

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

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

c. Upon acknowledgement 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.

d. 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)". (ER 415-1-15 dated 31 Mar 89).

3. DAMAGE TO WORK. The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clauses entitled "PERMITS AND RESPONSIBILITIES." However, if, in the judgement of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane or tornado, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit price or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment pursuant to the Contract Clause entitled "CHANGES" will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

4. SAFETY PROVISIONS. The safety provisions as specified herein refer to the Oct 1992 edition of EM 385-1-1.

a. Accident Investigations and Reporting. Refer to EM 385-1-1, Section 0.1D. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or his representative within one working day after the accident occurs. A written report of all mishaps occurring on the project shall be submitted to the Contracting Officer's Representative within four calendar days following the incident. All data reported must be complete, timely and accurate. A follow-up report shall be submitted when the estimated lost time days differs from the actual lost time days.

b. Accident Prevention Program. Refer to Contract Clause entitled "ACCIDENT PREVENTION" of this contract. Within 15 days after receipt of Notice of Award of the contract, and at least 7

days prior to the prework conference, four copies of the Accident Prevention Program shall be submitted to the Contracting Officer for review and approval. The program shall be prepared in the following format:

(1) An executed LMN Form 385-7-R (Feb 94), Administrative Plan (available upon request), see TABLE 1-1 of EM 385-1-1.

(2) An executed LMN Form 385-6-R (Feb 94), Activity Hazard Analysis (available upon request), see of TABLE 1-1 EM 385-1-1.

(3) A copy of company policy statement regarding accident prevention.

(4) When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be included on LMV Form 414R, Fuel Oil Transfer, (available upon request). (Refer to 33 CFR 156).

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

c. Comprehensive Hazard Communication Program. The Contractor shall develop, implement, and maintain at the workplace a written, Comprehensive Hazard Communication Program (see Section 01.B of EM 385-1-1) that includes identification of potential hazards as prescribed in 29 CFR Part 1910.1200, effects of exposure and control measures to be used for chemical products and physical agents that may be encountered during the performance of work on this contract, provisions for container labeling, Material Safety Data Sheets, and employee training program, and other criteria in accordance with 29 CFR Part 1910.1200. Training shall include communication methods and systems to be used (i.e., voice, hand signals, radios or other means), and training in the use and understanding of material safety data sheets and chemical product hazard warning labels. Prior to bringing hazardous substances, as defined in 29 CFR 1910.1200, onto the job site, a copy of the Hazard Communication Program and the Material Safety Data Sheets of each substance shall be submitted to the Contracting Officer and made available to the Contractor's employees as part of his Accident Prevention Program.

d. Daily Inspections. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. Reports of daily inspections shall be maintained at the jobsite in accordance with subparagraph j of above General Provision entitled "CONTRACTOR QUALITY CONTROL". The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

(1) Phase(s) of construction underway during the inspection.

(2) Locations of areas where inspections were made.

(3) Results of inspections, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

e. Safety Sign. The Contractor shall furnish, erect, and maintain a safety sign at the site, as located by the Contracting Officer. The sign shall conform to the requirements of this paragraph and the drawing included at the end of this section. The lettering shall be black, the castle red, and the background white. Upon request, the Government will furnish two decals of the engineer castle. When placed on a floating plant, the sign may be half size. The sign shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of work. The data required shall be current.

f. Ground Fault Protection. Electrical equipment used on this contract shall be equipped with ground fault circuit interrupters in accordance with EM 385-1-1, Section 11.C.05.

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

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

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

(3) Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

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

(5) Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300-feet.

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

h. Safety Fence. The Contractor shall provide, erect, and maintain a temporary safety fence around the limits of work. The fabric for the safety fence shall be zinc coated hog wire mesh at least 39 inches in height. Posts shall be round wood posts and shall be at least 6 feet long, 3 1/2 inches in diameter, and may be untreated. Posts shall extend at least 39 inches above ground and shall be spaced at 10 feet on center. Swing gates shall be at least 12 feet wide by 39 inches high. The swing gate frame shall be fabricated of either 1 3/8 inch O.D. tubular steel, or 1/4 inch angle iron brace with an adjustable brace wire to prevent sagging. Gates shall be fitted with hinges and shall be supported by 1 3/8 inch O.D. tubular steel posts embedded in 3 feet of concrete. The fabric from the gates shall be the same as that for the fence. All gates shall be closed and padlocked at the end of each work day. When necessary, an owner of a facility located within the limits of work will obtain keys from the levee district. The Contractor shall provide and maintain on the fence "KEEP OUT" signs every 100 feet facing out from the work. Details of the safety fencing and location shall be submitted to the Contracting Officer for approval. No separate measurement or payment will be made for this work. Payment for all work associated with the safety fence shall be distributed amongst the existing bid items.

i. Means of Escape for Personnel Quartered, or Working on Floating Plant. Two means of escape shall be provided for assembly, sleeping, and messing areas on floating plants. For

areas involving 10 or more persons, both means of egress shall be through standard size doors opening to different exit routes. Where nine or fewer persons are involved, one of the means of escape may be a window (minimum dimensions 24-inches by 36-inches) which leads to a different exit route. Refer to Section 19 of EM 385-1-1.

j. Emergency Alarms and Signals.

(1) Alarms. Emergency alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure. A sufficient number of signaling devices shall be placed on each deck so that the sound can be heard distinctly at any point above the usual background noise. All signaling devices shall be so interconnected that actuation can occur from at least one strategic point on each deck.

(2) Signals.

(a) Fire Alarm Signals. The general fire alarm signal shall be in accordance with paragraph 97.13-15b of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Sub-Chapter I, 1 Sep 77 (CG 257).

(b) Abandon Ship Signals. The signal for abandon ship shall be in accordance with paragraph 97.13-15c of the reference cited in 4.10.2.1 above.

(c) Man-Overboard Signal. Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.

k. Hurricane Plan. A detailed plan for protection and evacuation of personnel and plant, in the event of an impending hurricane or storm, is required as an enclosure to the Contractor's Accident Prevention Program. This plan shall be submitted to the Contracting Officer, or his representative, for review prior to the preconstruction conference. The plan shall include at least the following:

(1) The time each phase of the plan will be put in effect. The time shall be the number of hours remaining for the storm to reach the worksite if it continues at the predicted speed and direction.

(2) The safe harbor for personnel and plant specifically identified.

(3) The name of the boat which will be used to move the plant, its type, capacity, speed, and availability.

(4) The estimated time necessary to move the plant to the safe harbor after movement is started.

1. Hazardous Energy Protection. The Contractor shall develop, implement and maintain at the workplace, a written Control of Hazardous Energy (Lockout/Tagout) System. Refer to Section 12 of EM 385-1-1.

5. INSPECTOR'S FIELD OFFICE.

a. The Contractor shall furnish, throughout the contract period, for the exclusive use of the Government employees, a temporary waterproof building, or trailer, to be utilized as a field office. It shall be conveniently located at the site of construction and shall be independent of any building, or trailer, used by the Contractor. Toilet facilities and potable water shall be provided within the Inspector's office. It shall be equipped with approved electrical wiring, private telephone service, a telephone answering machine, at least one ceiling lamp receptacle, at least one double convenience outlet, and the required switches and fuses, to provide 110-volt power for lighting and operating a laptop computer and printer. It shall be equipped with an air conditioning unit to provide cooling in warm or hot weather, and a heater, properly installed and vented in accordance with the National Fire Protection Association Code, for heating in cold weather, as required. The Contractor shall make the necessary arrangements to obtain or to generate the power required to operate the air conditioning unit, lights, and laptop computer and printer, and the power or fuel required for the heater, and shall bear the cost thereof. A drafting table providing a working surface having dimensions of at least 4-feet by 6-feet (which may consist of a piece of plywood, at least 3/4-inch thick, hinged to a wall of the building with hinged legs) shall be installed in the building. The building shall have a built-in locker, extending from the floor to the ceiling, having dimensions of at least 2-feet by 5-feet, with a shelf 12-inches from the top, and one door equipped with two hinges, a hasp and a padlock. All exterior doors and window frames of the building shall be equipped with iron security guards. The door shall also be equipped with butt hinges and a cylinder lock. One draftsman's stool, two strong chairs and one desk shall be provided. The building or trailer shall conform to the following minimum requirements:

Ceiling height, not less than	6-feet 9-inches
Floor space, no less than	240 square feet
Windows, not less than	2
Doors, outside	1
Rooms	1

Screens over doors and windows; walls and ceilings shall be insulated; and interior walls finished.



b. The building, or trailer, shall be removed by the Contractor after completion of all work under this contract and before final acceptance thereof. No separate payment will be made for furnishing, maintaining, providing the prescribed utilities, and removing the inspector's field office, but the cost of the same shall be distributed throughout the existing bid items. In the event the Contractor fails to furnish the required facilities, the Government may elect to procure the required facilities and deduct all costs from amounts due or to become due under this contract.

c. The Contractor shall provide daily janitorial services for this and other buildings at the site throughout the life of the contract. The cost of this service shall be distributed throughout the existing bid items and there shall be no separate payment.

6. CONSTRUCTION SIGNS. The use of signs to identify Corps managed or supervised design, construction, and rehabilitation projects - both for military and civil works is an important part of efforts to keep the public informed of Corps work. For this purpose, a construction project sign package has been adopted. This package consists of a project identification sign.

a. The sign shall be displayed and mounted for reading by passing viewers. The sign placement location will be designated by the Contracting Officer.

b. The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

c. Panels are fabricated using HDO plywood with dimensional lumber uprights and bracing. The sign faces are non-reflective vinyl.

d. All legends shall be die-cut or computer-cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown in Appendix A thru D to this section.

e. Mounting and fabrication details, and a display of this sign is shown in Appendix A thru D.

f. Special applications or situations not covered in these guidelines shall be referred to the Contracting Officer.

g. See Appendix A thru D at the end of this section for the construction project sign package.

NOTE: Project sign is not required on jobs that are less than 120 days. Additionally, when placed on a floating plant, the sign may be half size. The sign shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of the work. The data required shall be current.

h. Project Sign Information. Refer to page 16.2 of Appendix A.

(1) Legend Group 1, Corps relationship to project:

"Construction Supervised by:" \_\_\_\_\_

(2) Legend Group 2:

"U.S. ARMY CORPS OF ENGINEERS"

"NEW ORLEANS DISTRICT."

(3) Legend Group 3, Project Title:

FLOODPROOFING VETERANS BLVD. BRIDGES

(4) Legend Group 4, Project Locations:

ORLEANS AND JEFFERSON PARISHES, LOUISIANA

(5) Legend Group 5, Contractor:

\_\_\_\_\_  
\_\_\_\_\_

(6) Legend Group 6, Project Sponsor:

EAST JEFFERSON LEVEE DISTRICT

ORLEANS LEVEE DISTRICT

7. RIGHTS-OF-WAY.

a. Rights-of-way for construction purposes will be furnished by the Government without cost to the Contractor, as shown on Sheet No 3 of the contract drawings. If the right-of-way for access is used by the Contractor, he shall be required to do all work necessary to make such right-of-way suitable for traveling to and from the work site. Upon completion of the contract work, any such access roadway and right-of-way furnished by the Government shall be left in a condition satisfactory to the Contracting Officer.

b. The Contractor shall procure, without expense or liability to the Government, all additional lands, access roads, or rights-of-way desired for his own convenience in the performance of the work. The Contractor shall notify the Contracting Officer of his intention and, if required by the Contracting Officer, secure clearances from both the Louisiana State Historical Preservation Office and the Louisiana Archaeological and Antiquities Commission. Any agreements or

permits with levee boards, parishes, or political subdivisions for moving material and equipment will also be the responsibility of the Contractor. Any delays to the Contractor resulting from delays in procuring such additional lands, access roads, right-of-way, or permits for moving material and equipment for his own use will not be made a basis of any claim for increase in the cost or time of performance of the work. The Contractor shall make his own investigations to determine the conditions, restrictions, and difficulties which may be encountered in the transportation of material and equipment to the work site.

8. SUBMITTALS. Within 15 days after receipt of notice to proceed, the Contractor shall complete and submit to the Contracting Officer, in duplicate, submittal register ENG Form 4288 listing all submittals and dates. In addition to those items listed on ENG Form 4288, the Contractor shall furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes. In preparing the document, adequate time (minimum of 30 days or more) will be allowed for review and approval and possible resubmittal. Scheduling shall be coordinated with the approved progress schedule. The Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. Copies of updated or corrected listings shall be submitted to the Contracting Officer upon request, in the quantity specified. Payment will not be made for any material or equipment which does not comply with contract requirements. (ER 415-1-10 Jun 1991).

NOTE: The submittal listing in tabular form, of technical items the Contractor shall submit to the Contracting Officer, as indicated in the contract requirements is attached at the end of this section. This register is not necessarily complete, and the Contractor shall be responsible for developing a comprehensive register.

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

10. ENVIRONMENTAL LITIGATION.

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the Contract Clause entitled "SUSPENSION OF WORK". The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

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

11. UTILITIES AND IMPROVEMENTS.

a. All known utilities within the limits of the work, such as pipes, communication lines, power lines, etc., that would interfere with construction work will be removed, modified or relocated by local interests or utility companies at no cost to the Contractor unless otherwise noted in the plans and/or specifications. The Contractor, however, shall cooperate with the authorities or company representatives and shall conduct his operations in such manner as to result in a minimum of inconveniences to the owners of said utilities. The Contractor shall notify each utility owner by certified mail 45 days prior to the date utilities must be moved. Followup notifications shall be sent by certified mail 15 days and 72 hours prior to the date utilities must be moved. A list of required utility relocations and modifications is given on Drawing No. 60. The Contractor shall provide a copy of these notifications to the Contracting Officer.

b. Any unidentified pipes or structures which may be found within the limits of the work during the course of construction shall not be disturbed nor shall construction or excavation be performed at these locations unless and until approved by the Contracting Officer. Payment for ordered excavation, if any, will be made in accordance with the Contract Clause entitled "DIFFERING SITE CONDITIONS".

12. PERMISSIBLE HOURS OF OPERATION. The Contractor shall limit his hours of operation to the hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday.

Prior to 7:00 a.m., the Contractor shall NOT:

- start up any equipment.
- have any trucks - delivery, service, hauling, etc. - arrive at the job site. Trucks shall remain on designated truck routes until 7:00 a.m.

13. HANDBOOK FOR CONCRETE AND CEMENT (CRD-C). The handbook for concrete and cement can be obtained from U.S. Army Engineer Waterways Experiment Station, ATTN: Publications Specification, Information Services Branch, P.O. Box 631, Vicksburg, Mississippi 39180.

Complete Ed. (Vol. 1 and 2) \$10.00

Supplements and revisions to the Handbook are sold on a subscription basis at the price of \$8.00 per year per copy of Handbook. Separate CRD-C Specifications are available for distribution without charge in limited quantities only.

14. AGGREGATE SOURCES.

a. Concrete aggregates meeting the quality requirements of these specifications have been produced from the sources listed below:

<u>Producer</u>	<u>Nearest Town to Pit*</u>	<u>Pit Designation</u>
A. B. Chisum Gravel Co.	Sicily Island, LA	A. B. Chisum Sand & Gravel
American Sand & Gravel Co.	Hattiesburg, MS	Plant A
American Sand & Gravel Co.	Hattiesburg, MS	Plant E
B & B Gravel, Inc.	Grangeville, LA	Hornsby Pit
Blain Sand & Gravel, Inc.	Crystal Spring, MS	Harris Pit (Gallman Pit)
D. & J. Construction	Aimwell, LA	Aimwell Pit
Dravo Basic Materials Co., Inc.	Smithland, KY	Three Rivers Quarry
Feliciana Sand & Gravel Co.	Jackson, LA	Harvey Pit
Feliciana Sand & Gravel Co.	Jackson, LA	Mckowen Pit
Feliciana Sand & Gravel Co.	Jackson, LA	Thompson Pit
Jackson Ready-Mix Concrete Co.	Crystal Springs, MS	Pit # 715-11
Lambert Gravel Co., Inc.	Bains, LA	G-2 (Butler Pit)
Louisiana Industries, Inc.	DeRidder, LA	Anacoco Creek Plant
Louisiana Industries, Inc.	Grangeville, LA	Dinkman Plant
Louisiana Industries, Inc.	Grangeville, LA	Hatcher Plant
Louisiana Industries, Inc.	Grangeville, LA	Hornsby Plant
Louisiana Industries, Inc.	Grangeville, LA	Odom Plant
Louisiana Industries, Inc.	Ball, LA	Paradise Plant
Louisiana Industries, Inc.	Perryville, LA	Perryville Plant

Louisiana Industries, Inc.	Enon, LA	Price Plant
Louisiana Industries, Inc.	Woodworth, LA	Woodworth Plant
Mears Sand & Gravel Co.	Watson, LA	Penny & Easterly Leases
Mid-State Material Co., Inc.	Woodworth, LA	Woodworth Plant
Quick Sand & Gravel, Inc.	Watson, LA	Easterly lease
Rebel Sand & Gravel Co.	Watson, LA	Plant 6
Rebel Sand & Gravel Co.	Watson, LA	Plant 6c
Rebel Sand & Gravel Co.	Watson, LA	Plant 9
Reed Crushed Stone Co., Inc.	Gilbertsville, KY	Gilbertsville Quarry
Standard Gravel Co.	Pearl River, LA	Nicholson Plant (Nic-7)
Standard Gravel Co. (C-10 & CZ-30 Leases)	Enon, LA	Enon Pit
Thomas Sand & Gravel Co., Inc.	Grangeville, LA	Carter #2 Pit
T. L. James & Co., Inc.	Pearl River, LA	Pit # 1
T. L. James & Co., Inc.	Pearl River, LA	Pit # 2

\* "Nearest Town to Pit" according to LDOTD Official State Highway Map.

Further information on these pits can be obtained from the Geology Section of the U. S. Army Corps of Engineers District Office in New Orleans.

b. Concrete aggregates may be furnished from any of the above listed sources or at the option of the Contractor may be furnished from any other source designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated and as specified in Section 03301.

c. After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish aggregates. If the Contractor proposes to furnish aggregates from a source or from sources not listed above, he may designate only a single source or single combination of sources of aggregates. If a source for coarse and/or fine aggregate so designated by the Contractor is not approved for use by the Contracting Officer, the Contractor may not submit for approval other sources but shall furnish the coarse and/or fine aggregate, as the case may be, from a source listed above at no additional cost to the Government.

d. Approval of a source of concrete aggregate is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials do not conform to the quality requirements of ASTM C 33-86 (CRD-C 133), Concrete Aggregates. Aggregate gradations shall be in accordance with the specified requirements of Section 03301. Materials produced from any source, including those listed above, shall also meet all the requirements of Section 03301 of the Technical Specifications.

e. It is the Contractor's responsibility to determine that the aggregate source or combination of sources selected is capable of supplying the quantities and gradations needed and at the rates needed to maintain the scheduled progress of the work. The inability of a source or combination of sources to maintain the necessary volume shall not be the basis for any claim for a time extension.

15. SIGNAL LIGHTS. The Contractor shall display signal lights and conduct his operations in accordance with U. S. Coast Guard regulations governing lights and day signals to be displayed, as set forth in Commandant, U. S. Coast Guard Instruction M16672.2, Navigation Rules, International - Inland (COMDTINST M16672); 33 CFR 81, Appendix A (International); and 33 CFR 84 through 33 CFR 90 (Inland) as applicable.

16. STATE TAXES.

a. The bid submitted in response to this Invitation shall not include any amount whatever for payment of any of the following taxes, fees or charges:

(1) The Louisiana "Severance Tax" imposed by LSA R.S. 47:631 and made applicable to the dredging of fill material from rivers and bodies of water within the State of Louisiana by the Severance Tax Regulations promulgated by the Collector of Revenue dated 31 March 1968.

(2) Any amounts claimed by the Louisiana Department of Wildlife and Fisheries for the privilege of removing fill from the water bottoms of the State of Louisiana.

b. If the Contractor is required to pay or bear the burden of any tax, fee, or charge described in paragraphs a(1) and/or a(2) above, the contract prices shall be increased by the amount which the Contractor is required to pay to the State of Louisiana; provided, however, that no increase in contract price shall be made for any liability the Contractor may incur as a result of his fault or negligence or his failure to follow the instructions of the Contracting Officer(CO).

c. The Contractor shall promptly notify the Contracting Officer of all matters pertaining to taxes, fees, or charges as described herein which reasonably may be expected to affect the contract price and shall at all times follow the directions and instructions of the Contracting Officer in regard to the payment of such taxes, fees, or charges.

d. Before any increase in contract price becomes effective in accordance with the provisions of this clause, the Contractor shall warrant in writing that no amount of such taxes, fees, or charges was included in the contract price as a contingency reserve or otherwise.

e. In addition to the costs allowed by subparagraph b, the Contracting Officer may also allow an increase in contract price for costs or expenses which accrue to the Contractor as a result of any directions or instructions received from the CO.

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

18. TRUCKING REQUIREMENTS. The following requirements will apply to trucking operations on this project:

a. The Contractor is to provide a portable timber ramp at the curb of each access site. The timber ramp shall not extend more than 12 inches into the street and shall be removed from the street each night or during periods when there is no loading activity.

b. Upon completion of work at the access site, the Contractor shall repair the access site to remove all evidence that the site was used as an area of truck access. All debris and dead vegetation shall be cleared from the site and disposed of in accordance with 02210-5. The area shall then be graded to drain to the street and then fertilized and seeded in accordance with Section 02720. Care shall be exercised to prevent damage to existing curbs, but if so damaged, they shall be repaired/replaced to the satisfaction of the Contracting Officer.

c. Trucks used for hauling shall not exceed the weight limits specified by the Louisiana Department of Transportation and Development or the New Orleans Department of Streets, nor shall they exceed 24 cubic yards in capacity. Weight limits for trucks operating on the streets of the City of New Orleans are provided in Appendix E at the end of these General Provisions.

d. The streets between the loading areas and designated truck routes shall be kept clean of mud from tires, etc. Prior to leaving access sites, the wheels and undercarriage of every truck shall be sufficiently clean so as to prevent tracking mud onto these streets. When deemed necessary and so directed by the Contracting Officer, the Contractor shall be required to hose off or otherwise clean off the wheels and the undercarriage of the trucks in order to achieve a sufficiently clean condition. The Contracting Officer shall have sole discretion as to what is considered a sufficiently clean condition. The Contractor shall have on the job site or immediately accessible, a sweeper and sufficient personnel to sweep the streets twice each day during trucking operations. At the end of each day and as directed by



the Contracting Officer, the Contractor shall be required to scrape up any residual mud tracked by the trucks' tires and hose down the streets. The streets shall be scraped clean before any hosing is done.

e. The Contractor shall perform, under the supervision of the Contracting Officer, periodic inspections of the drains along the above referenced streets, in order to make sure they are not becoming clogged.

f. Trucks travelling between the access locations and designated truck routes shall not exceed a speed of 15 m.p.h.. Random speed checks will be made by enforcement agencies throughout the duration of the project.

g. The Contractor shall be required to take immediate action to clean up any spilled haul material on any street between the loading areas and disposal sites. Failure to do so may result in having construction activities shut down by the Contracting Officer, until all spillage is cleaned up.

h. Violation of any of the above conditions may result in a "Stop Work" order or suspension of hauling permits until violations are corrected and procedures instituted to prevent further violations.

i. No separate measurement or payment will be made for any of the requirements of this section. Payment will be distributed amongst the other bid items to which the work is incidental.

19. VIBRATION MONITORING. An independent testing laboratory, retained by the Orleans Levee Board, will monitor vibrations during pile driving operation. The Contractor shall notify the Contracting Officer and the Orleans Levee Board by certified mail at least 15 days prior to starting pile driving operations.

20. ORDER OF WORK.

a. Stage 1.

- (1) Mobilization.
- (2) Conduct pile tests and determine pile order lengths.
- (3) Order and fabricate piling and concrete girders.
- (4) Perform required clearing and grubbing.

b. Stage 2, Phase 1. (Stage 2 shall begin at a time such that all activities of the subsequent phases can be continued without delay).

- (1) Install traffic control plan for construction Phase 1.
- (2) Demolish outer portions of existing bridges.
- (3) Remove the outer portions of riprap and dredge the outer portions of the canal to the outside edge of the existing bridge line (approximately 55 feet from the project centerline).
- (4) Remove sheet pile and cap shown as to be removed on demolition plan.

c. Stage 2, Phase 2.

- (1) Construct outer portions of required concrete girder bridges. Girders shall not be set in the structure before they are six months old.
- (2) Epoxy grout all shear keys.
- (3) Install tie rods.
- (4) Pour outer portions of diaphragms between girder ends.
- (5) Construct exterior barriers.
- (6) Install abutment/approach slab blocks.
- (7) Construct asphalt tapers for detour roadways.

d. Stage 2, Phase 3.

- (1) Shift traffic control devices as required for construction Phase 3. This shifts traffic to the concrete girder bridges.
- (2) Remove remaining portions of existing bridges.
- (3) Dredge canal under bridges.
- (4) Construct inside portion of required concrete girder bridges.
- (5) Epoxy grout shear keys.
- (6) Install tie-rod couplers and remaining tie rods.
- (7) Pour remaining portions of diaphragms between girder ends.

(8) Construct interior barriers.

(9) Overlay medians for detour cross-overs.

e. Stage 2, Phase 4.

(1) Shift traffic control devices as required for construction Phase 4. This shifts all traffic to the eastbound concrete girder bridge.

(2) Place 5" min. concrete overlay and traffic barrier and bicycle railing on westbound bridge.

(3) Construct approach slabs and asphalt overlay for westbound bridge approaches.

f. Stage 2, Phase 5.

(1) Shift traffic control devices as required for construction Phase 5. This shifts all traffic to the westbound concrete girder bridge.

(2) Place 5" min. concrete overlay and traffic barrier and bicycle railing on eastbound bridge.

(3) Construct approach slabs and asphalt overlay for eastbound bridge approaches.

g. Stage 2, Phase 6.

(1) Shift traffic control devices as required for construction Phase 6. This shifts traffic to its final configuration.

(2) Complete construction of curb and gutter, landscaping, and floodwalls and gates.

(3) Install permanent pavement markings.

(4) Remove traffic control devices.

(5) Complete site clean-up.

No phase shall commence until the previous phase has been completed in its entirety.

21. AGENCY CONTACT POINTS.

a. Levee Districts. The work area includes two levee agencies, the Orleans Levee District and East Jefferson Levee District. Any work involving the levees or other flood protection should be coordinated with the appropriate district.

(a) Orleans Levee District. Contact Mr. Stevan Spencer (243-4000).

(b) East Jefferson Levee District. Contact Mr. Vic Landry (733-0087).

b. 17th Street Canal. The 17th Street Canal is a drainage waterway and drainage flow cannot be obstructed. Any work in or involving the canal should be coordinated with the New Orleans Sewerage and Water Board. Contact Mr. Jim Parker (585-2260).

c. Highways. Veterans Memorial Blvd. is a major public thoroughfare. Work affecting the roadway shall be coordinated with the Jefferson Parish Department of Public Works or the Louisiana Department of Transportation and Development.

(a) Jefferson Parish Department of Public Works. For roadway work in Jefferson Parish, contact Mr. Jose Gonzales (736-6506).

(b) Louisiana Department of Transportation and Development. For roadway work in Orleans Parish, contact Mr. John Evanco (436-9100).

(c) In the event of traffic detours or temporary road closings, notify the Jefferson Parish Sheriff's Office, Traffic Enforcement Division. Contact Col. Roy Gentile (465-1460). Call 9-1-1 to alert all emergency services. Note that 9-1-1 must be called separately for Jefferson and Orleans Parishes.

d. Traffic. For work affecting traffic or traffic control devices in Jefferson Parish, contact the Jefferson Parish Department of Public Works, Traffic Engineering Division. In Orleans Parish, contact the Louisiana Department of Transportation and Development.

(a) Jefferson Parish Department of Public Works. For work in Jefferson Parish, contact Mr. Lee Daspit (736-6530).

(b) Louisiana Department of Transportation and Development. For work in Orleans Parish, contact Mr. Chris Morvant (436-9100).

e. Sewer, Water, and Storm Drainage. Drainage work required under this contract shall tie into existing storm drainage system, and crosses other existing utilities. Detour roadways may also impact these utilities. A water main crosses Veterans Blvd. near Bellaire in Orleans Parish. Work affecting these systems shall be coordinated with the Jefferson Parish Department of Public Works or the New Orleans Sewerage and Water Board.

(a) Jefferson Parish Department of Public Works. For work in Jefferson Parish, contact Mr. Ali Pirsahely (736-6506).

(b) New Orleans Sewerage and Water Board. For work in Orleans Parish, contact Mr. Joe Becker (942-3880) for sewer and Mr. Ali Fathi (942-3870) for water.

f. Telephone. A telephone line (aerial and underground) runs along the north side of Veterans Blvd. An existing aerial telephone line crosses Veterans Blvd. in Orleans Parish and must be relocated by the utility to allow detour construction. Work around and affecting this line shall be coordinated with South Central Bell. Contact Mr. Sidney Arceneaux (245-5747).

g. Electric Utilities. Removal and replacement of light poles in the Veterans Blvd. median will require coordination with electric utilities. For work in Orleans Parish, contact New Orleans Public Service, Inc. For work in Jefferson Parish, contact Louisiana Power and Light.

(1) New Orleans Public Service, Inc.. Contact Mr. David Cook (595-3889).

(2) Louisiana Power and Light. Contact Mr. Ken Martinez (595-3873).

(3) In addition, a Sewerage and Water Board electric feeder crosses Veterans Blvd. at Bellaire in Orleans Parish. Contact Mr. Clayton Perret (865-0455).

h. Transit. Two transit systems use Veterans Blvd.. Prior to work affecting transit stops or routing, contact:

(1) Regional Transit Authority. Contact Mr. Eric Stevens (243-3778).

(2) Jefferson Parish Transit Department. Contact Ms. Jeanne Schiro (736-6411).

i. Parkways. For coordination of landscaping and vegetation of medians and right-of-ways, contact the Jefferson Parish Parkway Department or the New Orleans Parkways and Parks Commission.

(1) Jefferson Parish Parkway Department. Contact Mr. Warren Philip (349-5800).

(2) New Orleans Parkways and Parks Commission. Contact Mr. Skip Treme, and for work involving tree trimming and/or root pruning contact Mr. Bob Richards (286-2100).

j. Gas Utilities. A gas line crosses Veterans Blvd. near Bellaire in Orleans Parish.

(1) New Orleans Public Service, Inc.. Contact Mr. Mike Fricke (595-3581).

k. Dredging. For matters concerning dredging and dredge material disposal, contact the Sewerage and Water Board of New Orleans.

(1) New Orleans Sewerage and Water Board. Contact Mr. Don Crowder (585-2271).

22. HURRICANE PROTECTION. The Contractor is hereby notified that in the event of an approaching hurricane he shall, at the direction of the Contracting Officer, have crews working around the clock to close any gaps in the existing flood protection system within the limits of the jobsite. This includes backfilling of open excavations adjacent to the flood protection system. The Contractor may also be directed to clear work areas for use by the Orleans Levee District or East Jefferson Levee District for their flood protection preparation. Payment for these operations, if required, will be made by an equitable adjustment under the Contract Clause entitled "CHANGES".

23. VIDEOTAPE DOCUMENTATION. The Contractor shall be responsible for videotaping existing conditions prior to any construction operation and conditions following construction. This videotape shall be a VHS or 8mm videotape and shall be done by the Contractor in the presence of the Contracting Officer's Representative.

a. The Contractor shall document conditions within the construction right-of-way and on the streets used for truck access to the job site.

b. The Contractor shall provide a copy of the videotape to the Contracting Officer.

24. PAYMENT FOR MATERIALS STORED OFFSITE. Pursuant to the Contract Clause entitled "PAYMENTS UNDER FIXED PRICED CONSTRUCTION CONTRACTS" materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to those materials which have been approved, if required by the Technical Specifications; those materials which have been fabricated to the point where they are identifiable to an item of work required under this contract. Such payment will be made only after receipt of paid or receipted invoices or invoices with cancelled check showing title to the items in the prime contractor

and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered offsite is limited to the following items:

1. Precast, Prestressed 24" Concrete Piles.
2. Precast, Prestressed Concrete Girders.

**SUBMITTAL REGISTER**  
(ER 415-1-10)

TITLE AND LOCATION		FLOOD PROOFING VETERANS BLVD. BRIDGES JEFFERSON PARISH, LOUISIANA															CONTRACT NO.																																																																																																																																																						
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TRANS- MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL												CLASS- IFICATION			CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION		GOVERNMENT ACTION		REMARKS																																																																																																																																													
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	1	01100-10.11	SAFETY FENCE SHOP DRAWINGS	X	X																																																																																																																																																																		
	2	01100-16	COMMERCIAL WARRANTY	X	X																																																																																																																																																																		
	3	01100-21	UTILITY OWNER'S NOTIFICATION											X																																																																																																																																																									
	4	01100-24	AGGREGATE SOURCES										X																																																																																																																																																										
	5	01100-29d	TRUCKING	X																																																																																																																																																																			
	6	01100-33	VIDEOTAPE DOCUMENTATION															X																																																																																																																																																					
	7	01431-5	NOTICE OF INTENT AND POLLUTION PREVENTION PLAN																																																																																																																																																																				
	8	01431-7	DISPOSAL OF DEBRIS	X																																																																																																																																																																			
	9	01571-5.1	TRAFFIC CONTROL INSPECTION REPOR										X			X																																																																																																																																																							
	10	02070-4.1	DEMOLITION PLAN	X																X																																																																																																																																																			
	11	02222-3.5	PLAN OF PROPOSED SHORING	X																																																																																																																																																																			
	12	02315-4.1	H-PILE EQUIPMENT DESCRIPTIONS	X																																																																																																																																																																			
	13	02315-4.2	H-PILE SHOP DRAWINGS	X	X																X																																																																																																																																																		
	14	02315-4.3	H-PILE DELIVERY, STORAGE, AND HANDLING PLANS	X	X																																																																																																																																																																		

NOTE: THIS REGISTER IS NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A COMPREHENSIVE REGISTER.



**SUBMITTAL REGISTER**  
(ER 415-1-10)

CONTRACT NO.

**TITLE AND LOCATION** FLOOD PROOFING VETERANS BLVD. BRIDGES  
JEFFERSON PARISH, LOUISIANA

**CONTRACTOR**

**SPECIFICATION NUMBER**

TRANS-MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL													CLASSIFICATION	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION		GOVERNMENT ACTION		REMARKS		
				D	I	S	R	S	R	C	A	E	N	O	G	A		R	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT		CODE	DATE
				A	R	N	C	H	A	P	R	M	C	F	L	V		P									
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x				
	15	02315-4.4	H-PILE PLACEMENT PLANS	X										X													
	16	02315-4.5	H-PILE DRIVING RECORDS										X														
	17	02315-4.5	H-PILE SPLICES	X	X																						
	18	02355-4.1	PILE TEST PROCEDURE AND EQUIPMENTS	X																							
	19	02355-4.2.1	TEST PILE DRIVING RECORDS								X	X															
	20	02355-10	PILE TEST REPORTS							X		X															
	21	02362-5.1.1	PILE DRIVING EQUIPMENT	X																							
	22	02362-5.1.2	CUTTING OF PILES	X																							
	23	02362-5.1.3	DELIVERY, STORAGE AND HANDLING	X																							
	24	02362-5.1.5	CONCRETE MIX	X									X														
	25	02362-5.1.6	CURING OF PILES	X																							
	26	02362-5.2.1	SHOP DRAWINGS	X																							
	27	02362-5.2.2	PILE PLACEMENT AND TOLERANCES	X																							
	28	02362-5.3	CERTIFICATES OF COMPLIANCE								X	X															

NOTE: THIS REGISTER IS NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A COMPREHENSIVE REGISTER.

SUBMITTAL REGISTER (ER 415-1-10)																				CONTRACT NO.				
TITLE AND LOCATION FLOOD PROOFING VETERANS BLVD. BRIDGES JEFFERSON PARISH, LOUISIANA																	CONTRACTOR			SPECIFICATION NUMBER				
TRANS- MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL												CLASSI- FICATION	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION		GOVERNMENT ACTION		REMARKS
				D A T A	D R A W I N G S	I N S T R U C T I O N S	S P E C I F I C A T I O N S	R E C O R D S	R E F E R E N C E S	S P E C I F I C A T I O N S	R E Q U I R E D M A T E R I A L S	I N S T R U C T I O N S	O P E R A T I O N S	G E N E R A L R E Q U I R E M E N T S	P E R M I T T I N G S	R E V I E W R Y	R O E N V I S I T A T I O N	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	S U B M I T T E D	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	
	29	2362-5.4.1	PILE DRIVING RECORDS	X											X									
	30	02362-5.4.2	PILE DRIVING RECORDS FORM							X			X											
	31	02411-5.1	SHEETPILE DRIVING EQUIPMENT	X						X					X									
	32	02411-5.2	SHEET PILING SHOP DRAWINGS	X											X									
	33	02411-5.3	SHEET PILING MATERIALS TEST CERTIFICATES							X			X											
	34	02411-5.4	SHHET PILING DRIVING RECORDS										X	X										
	35	02482-3	DREDGING PLAN	X																				
	36	02510-4.1	MATERIAL DOCUMENTATION							X														
	37	02510-4.2	PLANTS & EQUIPMENT DOCUMENTATIO							X														
	36	02510-4.3	ASPHALT TESTING LABORATORY	X										X										
	39	02510-5	BASE COURSE MATERIAL & ASPHALTIC CONCRETE MIX DESIGN	X											X									
	40	02521-4.1	CONCRETE CURBS & GUTTER MATERIA CERTIFICATION	X						X														
	41	02550-5	POLYETHYLENE FILM	X											X									
	42	02845-4.1	PAVEMENT MARKINGS TEST REPORTS							X														

ENG FORM 4288, May 91

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**SUBMITTAL REGISTER**  
(ER 415-1-10)

CONTRACT NO.

**TITLE AND LOCATION** FLOOD PROOFING VETERANS BLVD. BRIDGES  
JEFFERSON PARISH, LOUISIANA

CONTRACTOR

SPECIFICATION NUMBER

TRANSMITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL														CLASSIFICATION	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION			GOVERNMENT ACTION		REMARKS			
				O	D	I	S	B	R	C	S	R	I	O	G	A	R		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE				
				A	R	N	G	H	A	P	R	M	C	F	L	V	P											V		
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x							
	43	02935-5.1	WEIGHT TICKETS & QUANTITATIVE ANALYSIS REPORT OF BULK FERTILIZER							X																				
	44	02935-6.1	FERTILIZER INVOICES							X																				
	45	02935-6.2	SEED INVOICES & CERTIFICATES							X																				
	46	02935-6.3	MULCH SAMPLES											X																
	47	03101-3.1	CONCRETE FROMWORK SHOP DRAWIN	X	X																									
	48	03101-3.2	CONCRETE FORMWORK MANUFACTURER'S LITERATURE	X													X													
	49	03150-4.1	WATERSTOP TESTING	X									X																	
	50	03150-6.4	LONGITUDINAL WATERSTOP SPLICE	X												X														
	51	03151-3.1	STRIP SEAL JOINTS MATERIAL CERTIFICATION	X								X																		
	52	03151-3.2	STRIP SEAL SHOP DRAWINGS	X													X													
	53	03210-5.1	REINFORCING STEEL SHOP DRAWINGS	X													X													
	54	03210-5.2	REINFORCING STEEL TEST REPORTS									X		X	X															
	55	03210-5.3	REINFORCING STEEL DISPOSITION RECORDS													X														
	56	03210-7.3	REINFORCING STEEL MECHANICAL SPLICES											X																

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**SUBMITTAL REGISTER**  
(ER 415-1-10)

SUBMITTAL REGISTER (ER 415-1-10)											CONTRACT NO.		CONTRACTOR	SPECIFICATION NUMBER			REMARKS																				
TITLE AND LOCATION				FLOOD PROOFING VETERANS BLVD. BRIDGES JEFFERSON PARISH, LOUISIANA																																	
TRANS-MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL							CLASSIFICATION			CONTRACTORS SCHEDULE DATES				GOVERNMENT ACTION		GOVERNMENT ACTION																	
				D	A	R	A	S	H	A	C	T	E	A	R	E		E	A	E	O	N	O	P	E	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE				
				I	R	D	E	R	I	L	R	R	R	O	E	R	O	E	E	E	R	R	R	R	R									R			
N	U	U	M	T	F	E	D	M	N	V	W	E	E	D	R																						
				G	C	L	E	S	I	S	S	A	T	I	O	N	T																				
				S	T	E	N	C	A	T	I	O	N	T																							
				O	N	S																															
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x														
	57	03301-5.1.1	CONCRETE MIX	X					X				X																								
	58	03301-5.1.2	CEMENT & POZZOLAN						X	X					X																						
	59	03301-5.1.3	AGGREGATES	X											X																						
	60	03301-5.1.4	WATER	X											X																						
	61	03301-5.2.1	IMPERVIOUS SHEET CURING MATERIAL							X					X																						
	62	03301-5.2.2	AIR-ENTRAINING ADMIXTURE							X					X																						
	63	03301-5.2.3	OTHER CHEMICAL ADMIXTURES							X					X																						
	64	03301-5.2.4	CEMENTITIOUS PAINT	X											X																						
	65	03301-5.2.5	CURING COMPOUND						X						X																						
	66	03301-5.3.1	BATCH PLANT	X											X																						
	67	03301-5.3.2	MIXERS	X											X																						
	68	03301-5.3.3	CONVEYING EQUIPMENT	X											X																						
	69	03301-5.3.4	PLACING	X											X																						
	70	03301-5.3.5	CURING	X											X																						

ENG FORM 4288, May 91

(Proponent CEMP-CE)

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**SUBMITTAL REGISTER**  
(ER 415-1-10)

TITLE AND LOCATION FLOOD PROOFING VETERANS BLVD. BRIDGES JEFFERSON PARISH, LOUISIANA														CONTRACTOR				CONTRACT NO.						
TRANS- MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL											CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION		GOVERNMENT ACTION		REMARKS		
				D	I	S	R	C	S	R	I	G	A	R	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN- MENT	CODE		DATE	
				A	N	H	A	E	P	M	C	F	L	V										P
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	
	71	03301-5.3.6	COLD-WEATHER REQUIREMENTS	X											X									
	72	03301-5.3.7	HOT-WEATHER REQUIREMENTS	X											X									
	73	03301-7.5.2.1	CONCRETE LABORATORY	X					X	X	X													
	74	03301-7.5.2.2	TRIAL MIXTURES TEST RESULTS	X									X											
	75	03301-14.2.1	MIXER UNIFORMITY						X															
	76	03401-5.1	SHOP DRAWINGS		X										X									
	77	03401-5.2	TEST REPORTS						X						X									
	78	03401-5.3	DISPOSITION RECORDS									X	X											
	79	03401-5.4	EQUIPMENT DESCRIPTIONS & CERTIFICATIONS	X						X					X									
	80	03401-5.5	CONCRETE CYLINDER TESTS									X			X									
	81	03401-5.6	TENSIONING & DETENSIONING RECORD									X			X									
	82	03401-6.1	PRECAST CONCRETE MIX & CURING OPERATION	X											X									
	83	03401-6.3	MECHANICAL SPLICES	X											X									
	84	03401-6.4	WATERSTOPS	X											X									

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**SUBMITTAL REGISTER**

(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION FLOOD PROOFING VETERANS BLVD. BRIDGES JEFFERSON PARISH, LOUISIANA				CONTRACTOR														SPECIFICATION NUMBER					
TRANS-MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL														REMARKS					
				CLASSIFICATION																			
				D	A	R	N	C	T	E	A	R	I	O	G	A	R		CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION	
A	T	A	S	H	A	P	R	M	C	F	L	V	P	V	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
	85	03401-8.5	GIRDER END COATING	X											X								
	86	03402-4.1	BICYCLE RAILING SHOP DRAWINGS	X											X								
	87	03601-4.1	FLOODWALL EXPANSION JOINTS	X									X										
	88	03601-4.1	MATERIAL CERTIFICATION EOPXY & GROUT MATERIAL CERTIFICATION	X									X										
	89	03601-4.2	EPOXY & GROUT TESTING RESULTS							X													
	90	03601-5.2	EPOXY GROUT	X											X								
	91	03601-6.3	TIE ROD EPOXY GROUT PROCEDURE	X											X								
	92	05501-4.1	MISCELLANEOUS METALWORK MATERI CERTIFICATION	X									X										
	93	05501-5.1	MISCELLANEOUS METALWORK MATERI SHOP DRAWINGS	X											X								
	94	05520-5	FLOODWALL GATE SHOP DRAWINGS	X											X								
	95	05831-4.1	ELASTOMERIC BEARING PAD MATERIAL CERTIFICATION	X									X										
	96	05831-4.2	ELASTOMERIC BEARING PAD TESTING RESULTS										X										
	97	09940-4.1	SAFETY & HEALTH STATEMENTS							X					X								
	98	09940-4.2	AIRBORNE SAMPLING REPORTS									X			X								

ENG FORM 4288, May 91

(Preponent CEMP-CE)

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**SUBMITTAL REGISTER**  
(ER 415-1-10)

CONTRACT NO.

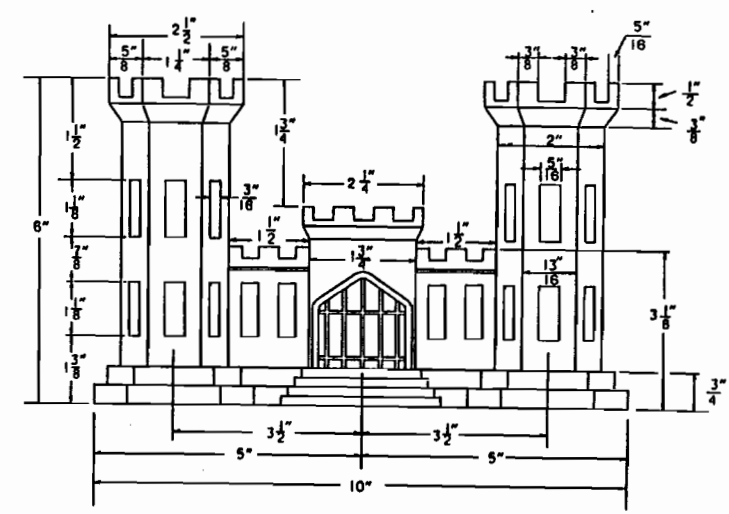
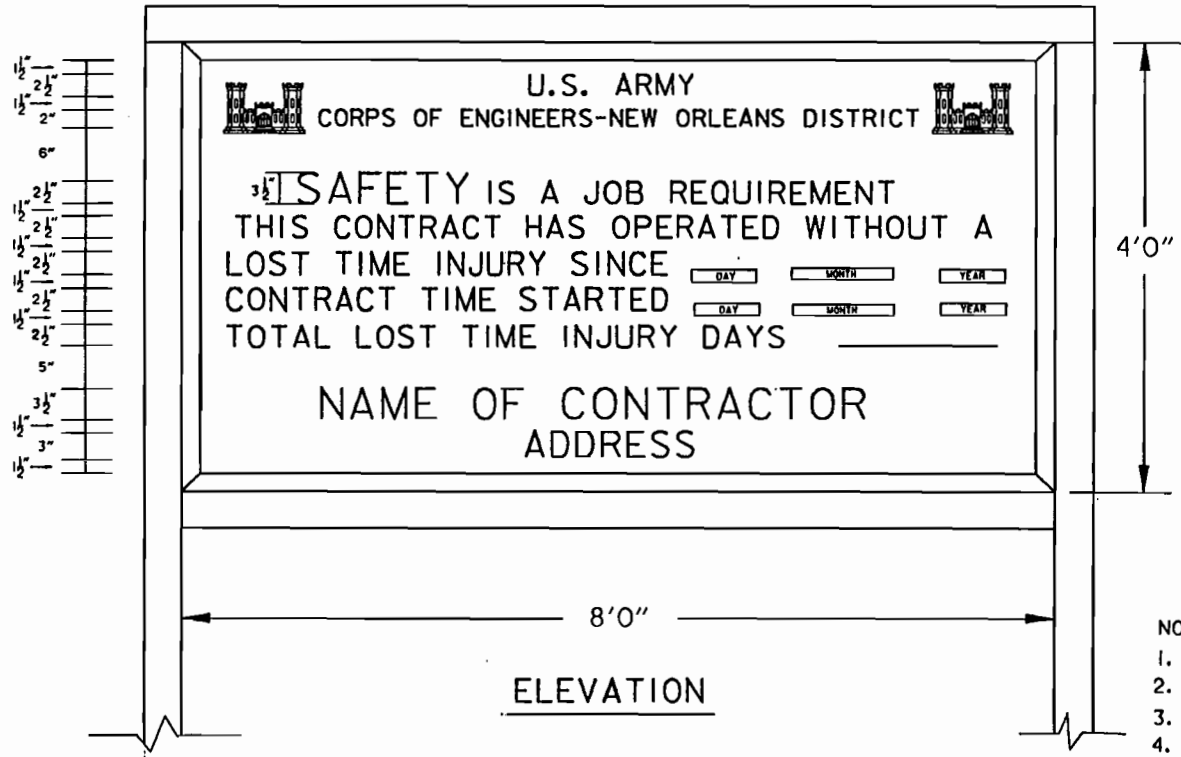
TITLE AND LOCATION FLOOD PROOFING VETERANS BLVD. BRIDGES  
JEFFERSON PARISH, LOUISIANA

CONTRACTOR

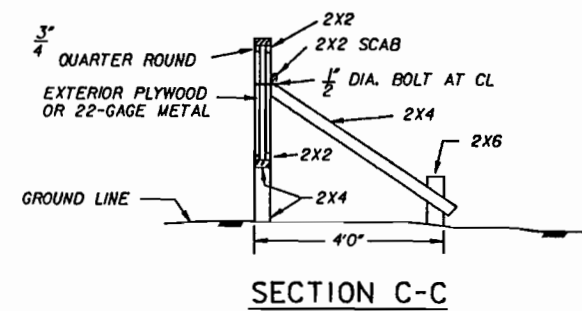
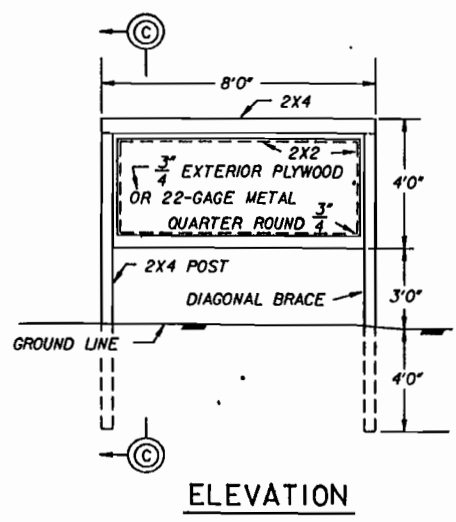
SPECIFICATION NUMBER

TRANS-MITTAL NO.	ITEM NUMBER	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL														CLASSIFICATION	CONTRACTORS SCHEDULE DATES			GOVERNMENT ACTION		GOVERNMENT ACTION		REMARKS		
				D	A	R	N	C	S	R	C	S	R	I	O	G	A		R	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT		CODE	DATE
				A	T	A	S	H	A	P	R	M	C	F	L	V	P		V									
e	b	c	d	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x						
	99	09940-4.3.1	SPECIAL PAINT FORMULAS								X				X													
	100	09940-4.3.2	INGREDIENTS FOR SPECIAL PAINT FORMULAS								X				X													
	101	09940-4.3.3	PAINTS & THINNERS								X				X													
	102	09940-4.3.4	PROPRIETY BRANDS OF PAINTS						X						X													
	103	09940-4.4	PAINTING PLAN	X	X										X													

NOTE: THIS REGISTER IS NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A COMPREHENSIVE REGISTER.



- NOTES:
1. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A DURABLE SIGN AS SHOWN.
  2. WOOD IN CONTACT WITH GROUND SHALL BE TREATED LUMBER.
  3. ALL EXPOSED SURFACES SHALL BE WHITE HOUSE PAINT.
  4. LETTERING SHALL BE BLACK.
  5. ENGINEER CASTLE SHALL BE RED. DECALS FURNISHED BY GOVERNMENT MAY BE USED IN LIEU OF DETAIL.
  6. 22 GA. STEET METAL MAY BE USED IN LIEU OF PLYWOOD.



SCALE: NONE

1 FEB 1992

U S ARMY ENGINEER DISTRICT NEW ORLEANS  
CORPS OF ENGINEERS  
NEW ORLEANS LOUISIANA

SAFETY SIGN





Below are two samples of the construction project identification sign showing how this panel is adaptable for use to identify either military (top), or civil works projects (bottom). The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large

4' x 4' section of the panel on the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full Corps signature (reverse version) is to be screen printed Communications Red on the white background.

page: Mounting and fabrication details are provided on page 16.4.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

~~This sign is to be placed with the Safety-Performance Sign shown on the following~~

**Legend Group 1:** One- to two-line description of Corps relationship to project.

Color: White  
Typeface: 125" Helvetica Regular  
Maximum line length: 19"

**Legend Group 2:** Division or District Name (optional). Placed below 10.5" Reverse Signature (6" Castle).

Color: White  
Typeface: 125" Helvetica Regular

**Legend Group 3:** One- to three-line project title legend describes the work being done under this contract.

Color: Black  
Typeface: 3" Helvetica Bold  
Maximum line length: 42"

**Legend Group 4:** One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).

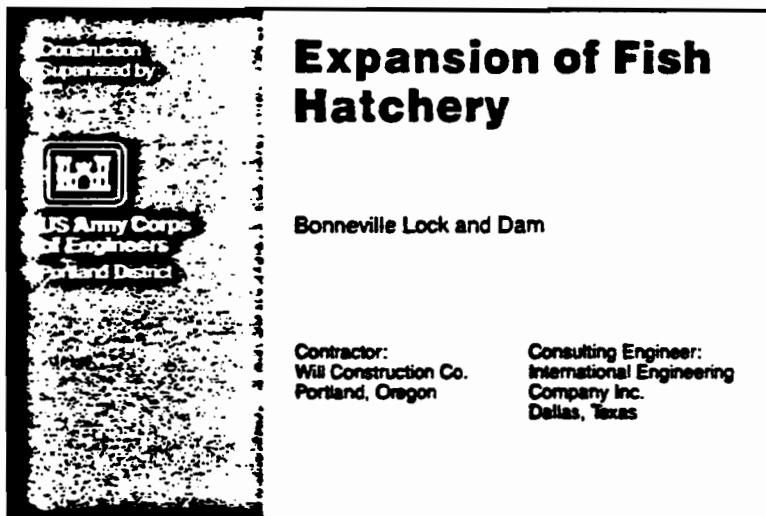
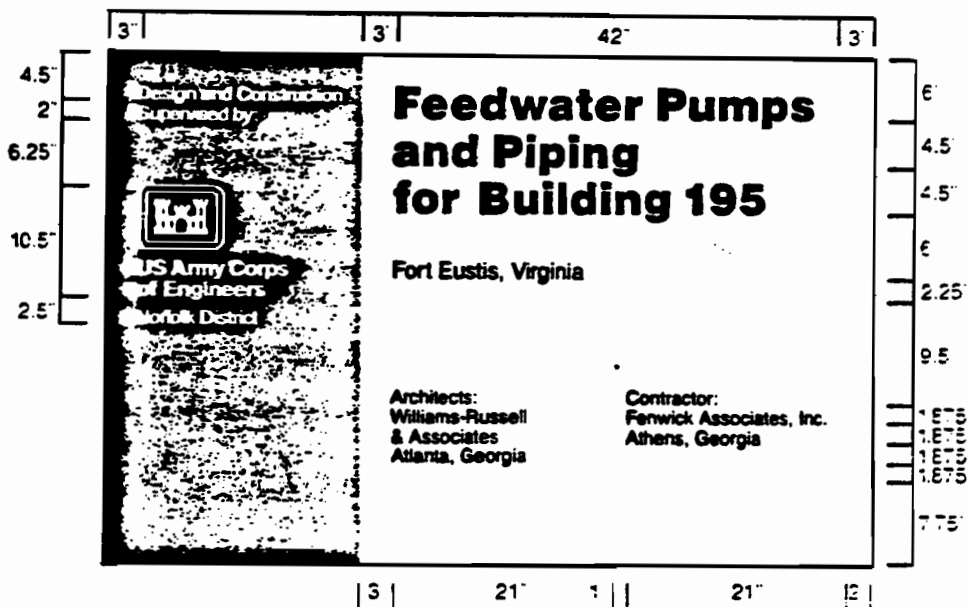
Color: Black  
Typeface: 15" Helvetica Regular  
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

**Legend Groups 5a-b:** One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.

Color: Black  
Typeface: 125" Helvetica Regular  
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4' x 6"	4' x 4"	HDO-3	48"	WH-RD/BK

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

pages 16.2-3. Detailed specifications for HDO plywood panel preparation are provided in Appendix B.

For additional information on the proper method to prepare sign panel graphics, contact the District sign coordinator.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16.2-3.

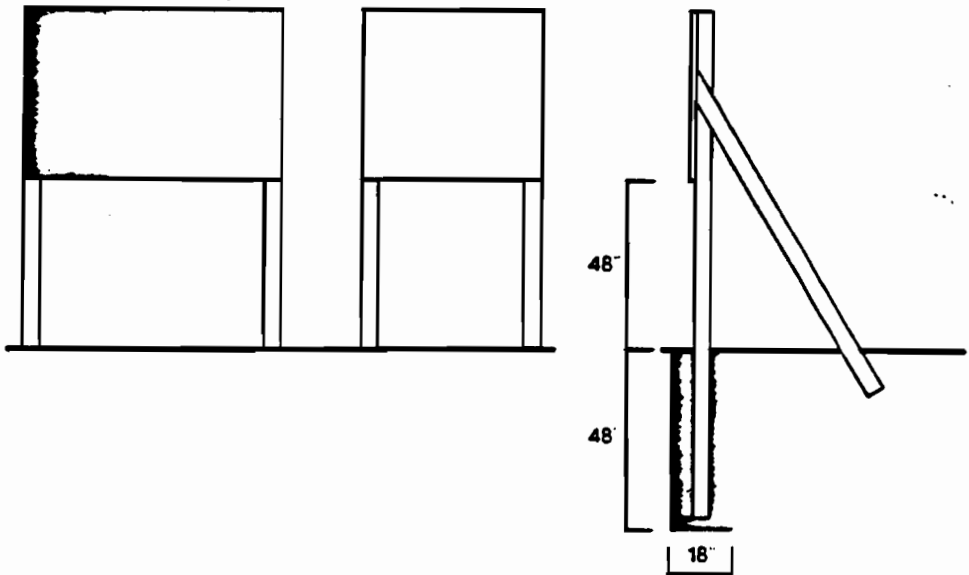
The 2' x 4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5").

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

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

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

Assemble sign panel and uprights. Embed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.



Construction Project Sign Legend Group 1: Corps Relationship

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

Legend Group 2: Division/District Name

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

Legend Group 3: Project Title

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

Legend Group 4: Facility Name

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

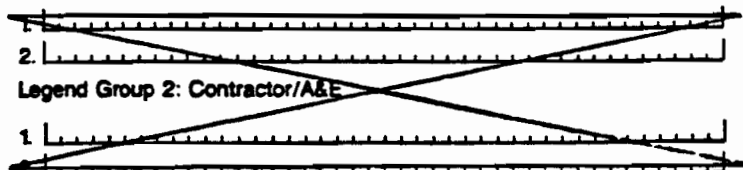
Legend Group 5a: Contractor/A&E

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

Legend Group 5b: Contractor/A&E

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

~~Safety Performance Sign Legend Group 1: Project Title~~



**Specifications: General Conditions  
(Cont'd.)**

**6. Engineering Criteria (Cont'd)**

The required footing size and depth as specified in the two right columns of the diagram below, will depend on the criteria listed in the aforementioned columns. Use the diagram to select the appropriate footing configuration. Any conditions that go beyond the criteria shown below shall be engineered on a site-by-site basis.

**Footing Diagram**

Post Size	Frost Depth	Post Number	HAGL	Panel Size (sq. ft.)	Panel Height	Footing Cross Section	Footing Depth
4" x 4", 4" x 6", 6" x 6"	0" - 30"	1	42"	≤9	≤4' - 6"	1' - 6"	2' - 6"
					>4' - 6"	1' - 6"	4' - 0"
				>9	na	1' - 6"	4' - 0"
		60"	≤7	≤3' - 6"	1' - 6"	2' - 6"	
				>3' - 6"	1' - 6"	4' - 0"	
			>7	na	1' - 6"	4' - 0"	
	2	42"		≤20	≤5' - 0"	1' - 6"	2' - 6"
					>5' - 0"	1' - 6"	4' - 0"
				>20	na	1' - 6"	4' - 0"
		60"	≤16	≤4' - 0"	1' - 6"	2' - 6"	
				>4' - 0"	1' - 6"	4' - 0"	
			>16	na	1' - 6"	4' - 0"	
4" x 4", 4" x 6", 6" x 6"	30" - 36"	1	42"	≤10	≤5' - 0"	1' - 6"	3' - 0"
					>5' - 0"	1' - 6"	4' - 0"
				>10	na	1' - 6"	4' - 0"
		60"	≤9	≤4' - 6"	1' - 6"	3' - 0"	
				>4' - 6"	1' - 6"	4' - 0"	
			>9	na	1' - 6"	4' - 0"	
	2	42"		≤24	≤6' - 0"	1' - 6"	3' - 0"
					>6' - 0"	1' - 6"	4' - 0"
				>24	na	1' - 6"	4' - 0"
		60"	≤20	≤5' - 0"	1' - 6"	3' - 0"	
				>5' - 0"	1' - 6"	4' - 0"	
			>20	na	1' - 6"	4' - 0"	
4" x 4", 4" x 6", 6" x 6"	36" - 48"	1,2	na	na	na	1' - 6"	4' - 0"
6" x 8", 9" x 9"	0" - 48"	1,2,3	na	na	na	2' - 0"	4' - 0"

1.1 Sign

1. Materials

Panel shall be fabricated from HDO plywood, 60-60 non-oiled resin impregnated fiber, black in color. All Douglas Fir exterior marine-grade, to meet product standard PSI-83; or all exterior plywood PSI-83 group 1, with B grade veneers on both sides. Each panel should be edge-branded marine-grade HDO EXT PSI-83; or HDO B-B G I EXT PSI-83, 7 PLY.

Panel shall be .75" thick unless otherwise specified. Panel dimensions shall have a tolerance of  $\pm .125$ ". No cleats or joints shall be permitted for panels with a dimension smaller than or equal to 10'-5".

Panel shall have corners with a safety radius of .187" unless otherwise specified.

Edges shall be rounded or beveled to a radius of .09375".

All surfaces shall be flat and smooth. Core gaps to be filled with polyester body filler, Bondo, or approved equal. Finish-sand all edges and panel face. Back surface shall be sanded with 50-60 grit sand paper.

All drilling shall be done with high-speed drills, using solid backing to avoid chipping.

All cutting shall be done with high-speed saws. Rotary saw blades to be carbide tipped. Power saws shall have little or no set and as much lead as possible. Blades on table saws shall not extend more than 1", and not less than .5" through panel. Panels will be fed through slowly to avoid damage to overlay.

Panel to be stored shall be stacked flat on a clean surface in an enclosed and well-ventilated area; do not store on concrete surfaces.

Wood frame shall be constructed of construction heart Redwood lumber. Dimension length of frame 2" longer than finished panel, to create a reveal. Lumber sizes vary depending on post dimensions.

Post Size	Lumber
6"	2" x 4"
9"	4" x 4"
12"	4" x 4"

Intermediate support members shall be installed for large size panels.

Panel Size	Support Member(s)
0'-0" to 5'-11"	0
6'-0" to 11'-11"	1
12'-0" to 17'-11"	2
18'-0" and up	3

Metal frame shall be fabricated from Aluminum 6061-T6 "Z" bar, 3" x 2.6875" x 2.6875". Construction, attachment and placement is described on specific sign panel pages where reinforcement may be required.

Solid post shall be fabricated of one piece construction heart Redwood lumber, per grading rules of the California Redwood Association, or better. For dimensions larger than 4" x 4", treated Douglas Fir No.1 or better; Southern Yellow Pine No.1 or better shall be used. All post sizes shall be .5" less than nominal dimensions, and will be sanded smooth prior to finishing. All materials shall be well-seasoned and free of any defects. Douglas Fir and Yellow Pine shall be weathered a minimum of one (1) year after installation prior to stain application.

Glue-laminated post can be used as an alternate for dimensions 4" x 6" or larger and shall be constructed of clear heart, kiln-dried Redwood only.

All complete sign panel and post assemblies must be pre-drilled and assembled in the shop prior to shipment to check alignment and ensure proper fit once installed. Panels manufactured as separate units shall be pre-drilled with hardware inserted in place.

1.2 Hardware

Panel attachment to post or brace shall be 3/8" socket head cap screws, 3/8" washers and 4-prong straight barrel T-nuts. T-nut to be countersunk and back-filled with Bondo, or approved equal, flush to front of panel. Cap screw head to be countersunk a minimum of .25" below the surface of post.

Panel attachment to frame shall be - 2" x 2" aluminum keyhole receiving plate, to be attached to panel with four (4) No.12 flat head wood screws. A slot of .5" deep shall be routed to receive hex bolt. - .375" lag bolt with .5625" hex head and .5625" hex nut. Bolt shall be threaded through frame leaving .125" of shaft expos-

ed on either side after attaching hex nut. Panel with keyholes is hung on hex head or nut. Four (4) keyholes shall be used per panel for dimensions up to 8'-0". Larger panels must use six (6) plates per panel.

Wood frame assembly hardware shall be 2" x 2" or 3" x 3" aluminum angle bracket, to be attached to frame with six (6) .375" lag bolts, or approved equal.

Wood frame attachment hardware shall be .5" x 6" lag bolts to attach frame to sign posts.

**1.3 Laminates**

Adhesive for post construction and duplex HDO panels shall be phenolic resornicol moisture resistant, or approved equal. Application must be performed within 15 minutes between the first glue application and the final setting of the clamps. The surface of each joint face shall be completely covered with adhesive.

Air temperature shall be between 70-90 degrees Fahrenheit during drying of

boards, glue application and curing process. Lumber to be dried not less than 24 hours prior to gluing.

Moisture contents of lumber to be glued shall be between 12-15%, with a 3% margin between wettest and driest piece.

Surface joints shall be smooth and true, free from machine joining marks and chipped or loosened grain.

**1.4 Finishes**

Paint shall be Benjamin Moore No.120-60 poly-silicone enamel, or approved equal. Apply one (1) coat to the back and edge of the panel as a primer, prior to application of retro-reflective sheeting, and one (1) coat after application to seal the edge. Sheeting shall be masked before painting, and shall be removed immediately after enamel application. A minimum of 4±.25 mil. dry film thickness shall be applied (two generous coats). Front of panel where retro-reflective sheeting will be applied shall not be painted.

Stain shall be semi-transparent waterproof, anti-bacterial redwood stain to match Corps Brown, Olympic brand redwood stain No. 715, or approved equal. Apply with brush or roller to posts. Stain shall be thoroughly mixed prior to and during application to ensure even pigmentation. Posts will be dried a minimum of 24 hours prior to shipping.

Paint room facilities shall be well-ventilated, dust-free and enclosed. Air temperature shall not be less than 65 degrees Fahrenheit during application of paint.

Cleaning of the panels shall be performed prior to application of paint or retro-reflective sheeting, to remove parting agent on panel surface. Areas to be painted shall be scrubbed with petroleum hydrocarbon solvent, Toluene, Social No. 1, or approved equal, using an abrasive synthetic fiber pad. Wipe the surface clean with mineral spirits.

Finished sanding shall be performed prior to the application of the first and second coat of paint. Paint must be thoroughly dried before sanding. All sanding residue shall be removed from the sign with tack cloth. Do not sand panel after applying the second coat of finish paint.

**2. Graphics**

**2.1 Retro-reflective sheeting**

Background and legend shall be engineer grade, premium quality, wide angularity enclosed lens retro-reflective material to meet or exceed the standards of:

- General Services Administration, Federal Supply Service specification *L-S-300-C, Reflectivity 1*

- U.S. Department of Transportation, Federal Highway Administration, *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects*, current edition *FP-85 Sections 633.06 and 718.01*

Background and legend shall use sheeting from the same manufacturer. Mixing of sheeting from different manufacturers shall not be permitted.

No more than twelve (12) months will have elapsed from date of purchase to the date of application.

Background application to HDO Plywood shall be as described by the manufacturer and approved by the designated representative of the Corps of Engineers. Corps Brown and all highway colors may be either pressure-sensitive or heat-activated applied. Special waterway colors are only available with pressure-sensitive adhesive.

Panels shall be covered with one unspliced sheet, unless the dimension is

larger than 48" in vertical direction.

Splices shall be positioned so as not to fall within legends. Top piece shall overlap bottom piece by a minimum of .5", but not more than .75". Spliced sheets shall be color matched.

Background shall be adhered to front of sign panel prior to legend application.

Legend application shall be as described by the manufacturer and approved by the designated representative of the Corps of Engineers and may be either pressure-sensitive or heat-activated applied. No loose or curled edges, bubbles or blisters shall be permitted.

Legend shall be adhered to sign panel after application of background sheeting.

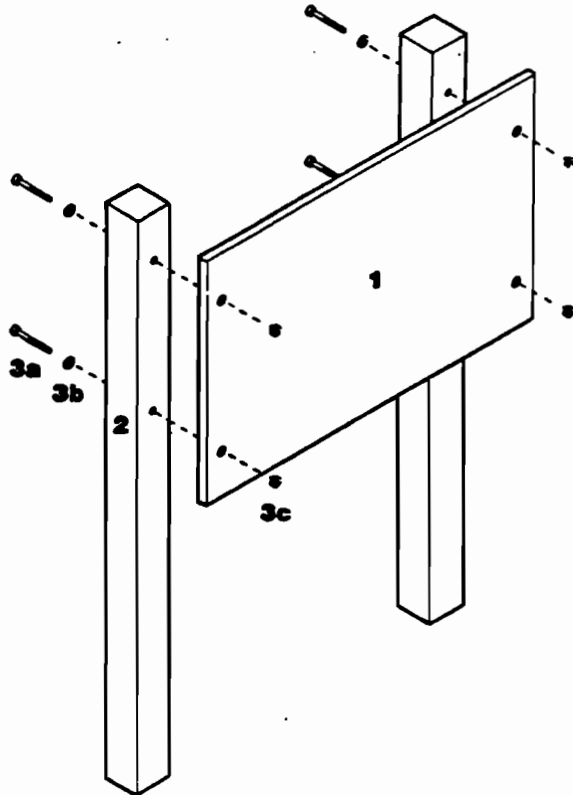
Top edge treatment shall be Avery No.961, 3M No.639 clear film 3" wide, or approved equal. Film shall be applied in 24" strips, beginning from each outside edge and taping toward center of sign. Film shall overlap at least 2" at each joint.

Heat-activated sheeting shall be double-cycled through the vacuum applicator, one time when applying the background sheeting and one time when applying the legend.

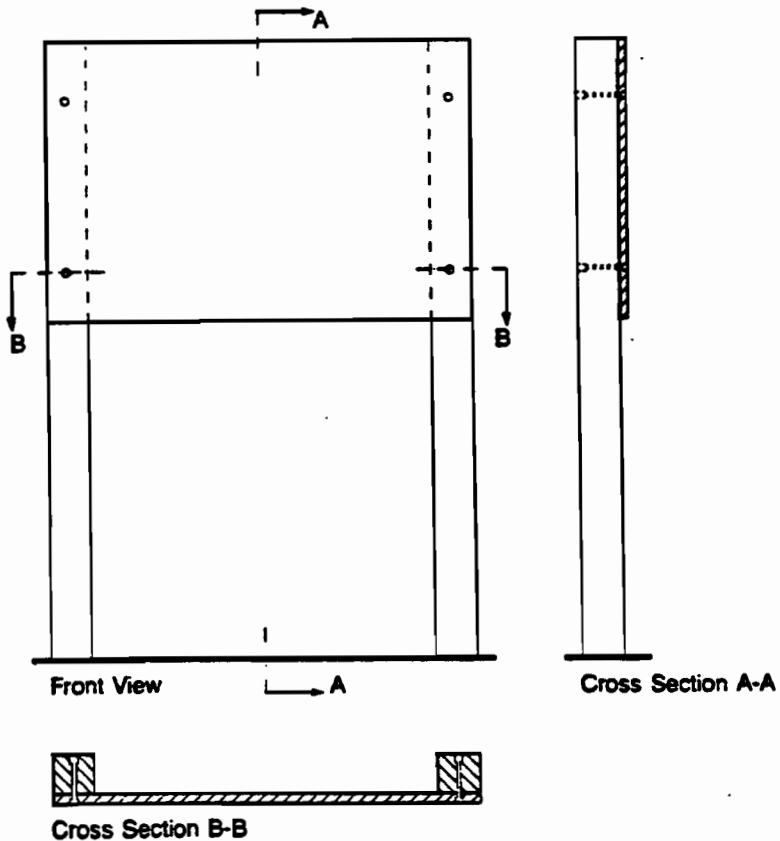
~~All items listed below shall conform to material specifications as described on page B.4-4b for HDO plywood signs, unless otherwise instructed on this page.~~

- 1 Panel, .75" thick.
- 2 Solid or glue laminated post, 4" x 4", 4" x 6", 6" x 8", or 8" x 8". Post size shown here reflects the HAGL and does not include the footing under ground. For footing see page B.2a-b.
- 3a-c Panel attachment hardware. For attachment see detail 5, page B.7-2.

~~NOTE: Double-faced signs shall be installed identical to single-faced signs, with a second sign panel mounted flush to the back of the sign post, see detail 6, page B.7-2. After mounting, cover socket head cap screw with circular patch of retro reflective sheeting matching panel sign face.~~



Exploded View



~~All items listed below shall conform to material specifications as described on page B.4-4a for HDO plywood signs, unless otherwise instructed on this page.~~

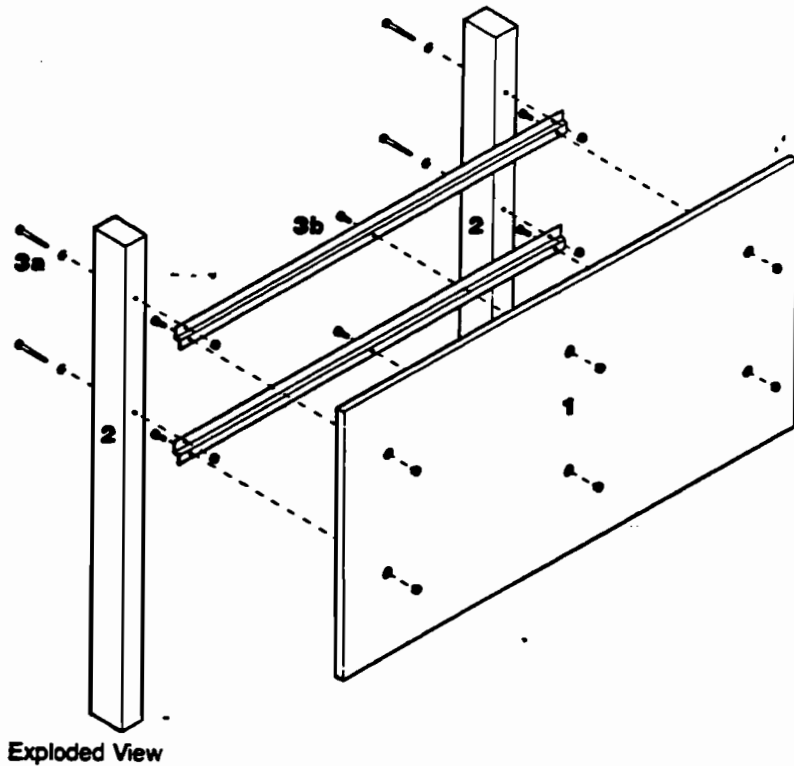
**1** Panel, .75" thick. Panel may require reinforcement, using a "Z" bar attached to the back of the sign panel. See page B.4-4a for further specifications. Splices shall be fabricated as per manufacturers' instructions. In case a splice occurs at location of a "Z" bar, apply .75" HDO back piece(s) to act as full-length shims at location of other "Z" bar(s).

**2** Solid or glue laminated post, 4" x 4", 4" x 6", 6" x 6", or 6" x 8". Post size shown here reflects the HAGL and does not include the section under ground. For footing and numbers of posts see pages B.2a-b and B.4-4a. An additional third post shall be positioned equally between the two other posts.

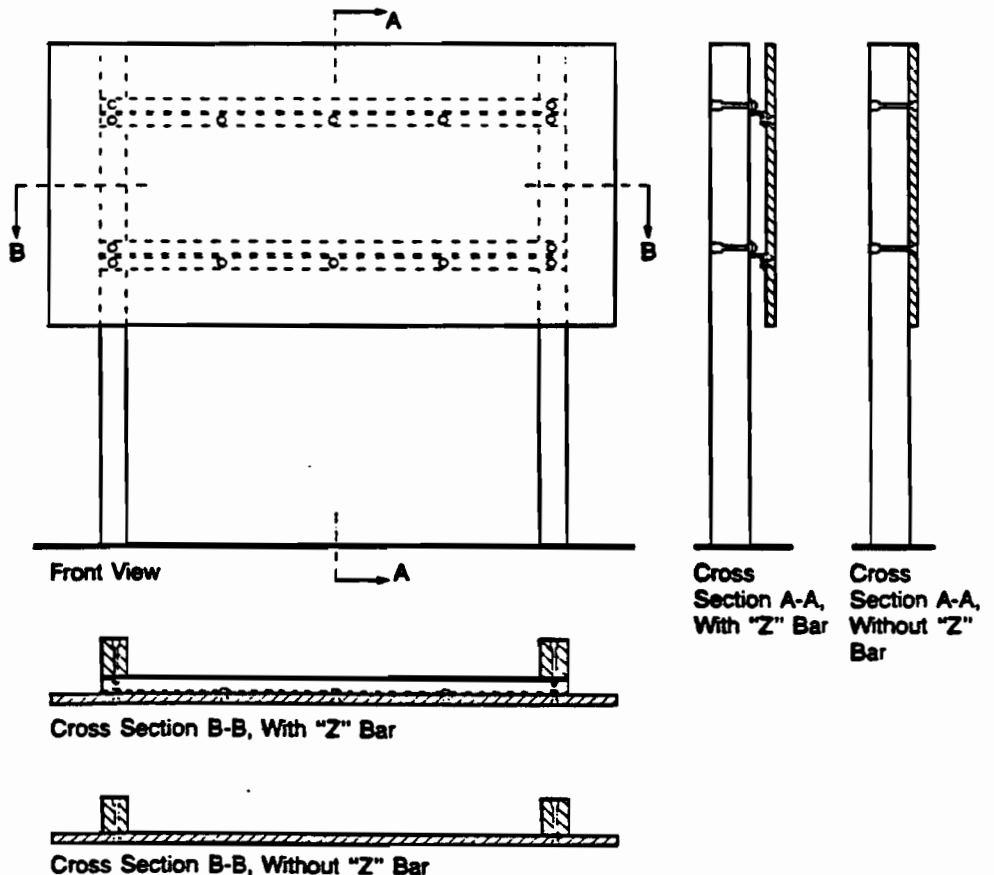
**3a** Panel attachment hardware, .375" socket head cap screws, .375" washers and 4-prong straight barrel T-nuts. T-nut to be countersunk and backfilled with Bondo or approved equal, flush to front of panel. Cap screw head to be countersunk a minimum of .25" below the surface of post. For attachment, see detail 5, page B.7-2.

**3b** Additional panel hardware, 3" x 2.6875" x 2.6875" "Z" bar .25" thick, .375" washers, .375" hex nuts, .25" 4-prong T-nuts, and .25" hex head cap screws. To be used when "Z" bar is applied for reinforcement, as specified in the diagram on page B.4-4a. For attachment, see detail 8, page B.7-3.

**NOTE:** Sign construction and panel attachment varies with panel size. For correct placement see following page B.4-4a.

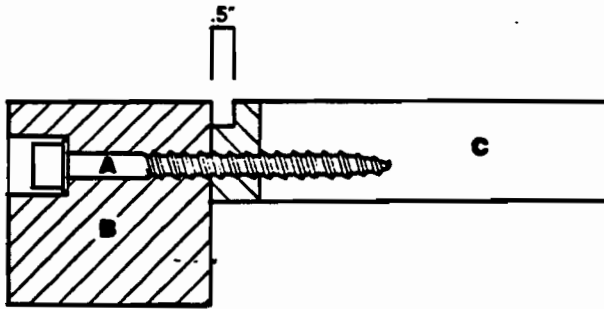


Exploded View



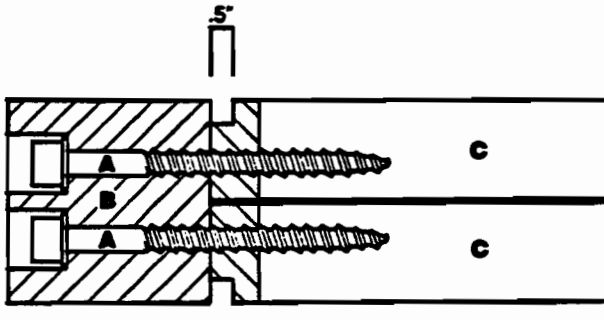
**Detail 3**

- A** .3125" socket head cap screw and .3125" washer, countersunk at least .25" from the surface of the sign post.
- B** Solid or glue laminated post.
- C** Sign panel with 2" x 1.25" routed endstrip creating a .5" reveal.



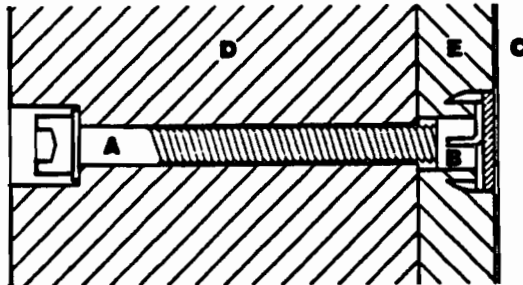
**Detail 4**

- A** .3125" socket head cap screw and .3125" washer, countersunk at least .25" from the surface of the sign post.
- B** Solid or glue laminated post.
- C** Sign panel with 2" x 1.25" routed endstrip creating a .5" reveal.



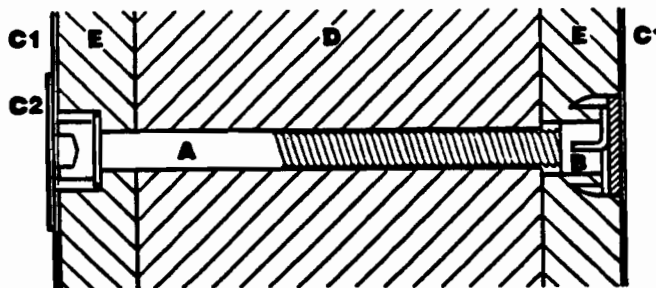
**Detail 5**

- A** .375" socket head cap screws and .375" washer, countersunk at least .25" from the surface of the sign post.
- B** .375" 4-prong straight barrel T-nut, countersunk and back-filled with Bondo or approved equal, flush to the front of the panel.
- C** Retro-reflective sheeting, applied after insertion of the hardware to the sign panel.
- D** Solid or glue laminated post.
- E** HDO sign panel.



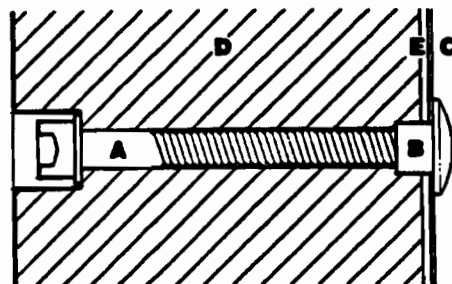
**Detail 6**

- A** .375" socket head cap screw and .375" washer, countersunk flush to the front of the sign panel.
- B** .375" 4-prong straight barrel T-nut, countersunk and back-filled with Bondo or approved equal, flush to the front of the panel.
- C1** Retro-reflective sheeting, applied after insertion of the hardware to the sign panel.
- C2** Retro-reflective circular patch matching panel sign face.
- D** Solid or glue laminated post.
- E** HDO sign panel.



**Detail 7**

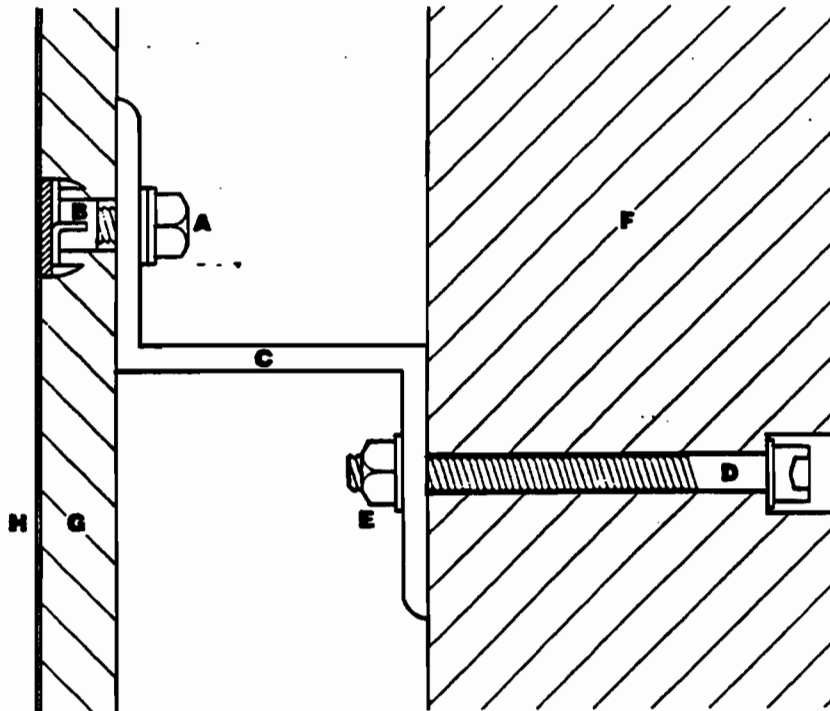
- A** .375" socket head cap screw and .375" washer, countersunk at least .25" from the surface of the sign face.
- B** .375" metal or plastic capped nut.
- C** Retro-reflective sheeting.
- D** Solid or glue laminated post.
- E** Aluminum sign panel.





**Detail 8**

- A** .25" stainless steel hex head cap screw with .25" flat stainless steel and .25" PVC washer.
- B** .25" 4-prong straight barrel T-nut, countersunk and back-filled with Bondo or approved equal, flush to the front of the panel.
- C** 3" x 2.6875" x 2.6875" aluminum 6061-T6 "Z" bar, .25" thick.
- D** .375" socket head cap screw and .375" washer, countersunk at least .25" from the surface of the sign post.
- E** .375" zinc-plated hex nut with .375" zinc-plated flat washer.
- F** Glue laminated or solid post.
- G** HDO sign panel.
- H** Retro-reflective sheeting, applied after insertion of the hardware to the sign panel.



**Signature: Use of Negative (Reverse)  
Reproduction Art for Signs**

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A 4" reverse version of the Corps of Engineers Communication Mark/Signature is shown on the inside of this foldout. This artwork has been prepared for applications to signage only and is not intended for other applications.

Some notes to remember when using the Mark:

- Reproduce art for signs using a distortion-free photo-mechanical process. Do not re-size the art by hand.
- Enlarge or reduce the Mark as a complete unit. Do not re-assemble as parts.

The height and width of sign panels for most of the signs in this manual are based on the size of the lettering (legend size) and length of the longest message line. The legend size, known as A, is determined by the viewing distance required. Using the sign format grid for the given

sign type, the panel height can then be established.  
 Legend length depends on the amount and length of words in the legend. Standardized signs have established legends; their lengths have been measured and the panel widths calculated. The dimen-

sions are shown in the matrix for each sign. For site specific signs (identification and directionals), legend lengths must be calculated on an individual basis. The system explained below will accurately determine the length of a given legend.

**Step 1:** Using the worksheet for the appropriate typeface (Helvetica Bold, page D.3; Helvetica Medium, page D.5), write out the legend, placing one character in each of the legend squares. A character is a letter-form, number or punctuation mark. Leave a blank space between each word. Write out the legend exactly as it will appear on the sign panel, using upper and lower case letters.

Letter-space																				
Legend	J	.		P	e	r	c	y		P	r	i	e	s	t					
Letter-width																				

Letter-space																				
Legend		D	a	m		k		L	a	k	e									
Letter-width																				

**Step 2:** In the space under each letter, put in the corresponding letter-width dimension from the table on the left of the worksheet. In the area above the space between letters, put in the value from the letter-spacing matrix for that typeface, (Helvetica Bold, page D.8; Helvetica Medium, page D.12). Note that some of the values in the matrix are negative. Below the blank space between words, put the value for the spacing square for that typeface (Helvetica Bold, .63, Helvetica Medium, .44). Treat the spacing square like any other character, putting in the appropriate letter-space from the matrix before and after it.

Letter-space		.23	.09	.36	.19	.23	.14	.05	.23	.36	.19	.23	.23	.19	.09	.33				
Legend		J	.		P	e	r	c	y		P	r	i	e	s	t				
Letter-width		1.48	.56	.63	1.77	1.58	1.06	1.52	1.64	.63	1.77	1.06	.55	1.56	1.47	1.0				

Letter-space		.36	.19	.33	.36	.23	.05	.36	.19	.33	.05									
Legend			D	a	m		k		L	a	k	e								
Letter-width		.63	1.89	1.52	2.42	.63	2.0	.63	1.48	1.52	1.56	1.56								

**Step 3:** Add up all of the values in the top and bottom squares for each word. For long legends, it is helpful first to make subtotals for each word and word-space, mark them down, and then total all of the word lengths plus the word-spaces. This way, if the legends must be placed on more than one line, or the line break changes, the calculations for the new lines will be simple.

Letter-space		.23	.09	.36	.19	.23	.14	.05	.23	.36	.19	.23	.23	.19	.09	.33				
Legend		J	.		P	e	r	c	y		P	r	i	e	s	t				
Letter-width		1.48	.56	.63	1.77	1.58	1.06	1.52	1.64	.63	1.77	1.06	.55	1.56	1.47	1.0				
					2.27		1.1		8.18		1.24			6.69						

Letter-space		.36	.19	.33	.36	.23	.05	.36	.19	.33	.05									
Legend			D	a	m		k		L	a	k	e								
Letter-width		.63	1.89	1.52	2.42	.63	2.0	.63	1.48	1.52	1.56	1.56								
		1.94		6.95		1.24	2.0	1.06		6.73										

**Step 4:** Add up all of the subtotals, both words and word-spaces. Divide this sum by 2. The result represents the legend length in relationship to A, legend size.

Total : 40.2  
 $40.2 \div 2 = 20.1 A$

**Step 5:** To determine panel sizes for identification signs, use the worksheet on page D.4. For directional signs, use the worksheet on page D.6. For other signs, multiply the legend length by the legend size, A, to be used on the sign; round off to the nearest .125". This total will be the actual legend length. Refer to the appropriate grid to determine the actual panel size.

If  $A = 4'$  ;  $20.1 \times 4' = 80.4'$   
 Round off to  $80.5'$

Upper case	Lower case
A 2.08	a 1.52
B 1.80	b 1.59
C 1.94	c 1.52
D 1.89	d 1.59
E 1.70	e 1.58
F 1.58	f 1.03
G 1.94	g 1.55
H 1.81	h 1.52
I 0.63	i 0.55
J 1.48	j 0.55
K 2.02	k 1.58
L 1.48	l 0.56
M 2.16	m 2.42
N 1.83	n 1.53
O 2.03	o 1.60
P 1.77	p 1.58
Q 2.05	q 1.59
R 1.80	r 1.06
S 1.78	s 1.47
T 1.73	t 1.00
U 1.83	u 1.52
V 1.92	v 1.64
W 2.77	w 2.48
X 2.16	x 1.61
Y 2.06	y 1.64
Z 1.73	z 1.38

Letter-space																			
Legend	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Letter-width																			

Letter-space																			
Legend	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
Letter-width																			

Letter-space																			
Legend	t	u	v	w	x	y	z												
Letter-width																			

Letter-space																			
Legend	1	2	3	4	5	6	7	8	9	0									
Letter-width																			

Letter-space																			
Legend	!	@	#	\$	%	&	'	(	)	*	+	,	-	.	:	;	<	>	?
Letter-width																			

Letter-space																			
Legend	!@#	\$%&	'( )	*+ ,	- .	: ;	< >	? ,	0	1	2	3	4	5	6	7	8	9	0
Letter-width																			

Numerals	Punctuation
1 1.05	! 1.63
2 1.63	@ 2.00
3 1.63	# 0.89
4 1.72	\$ 0.56
5 1.69	% 0.56
6 1.72	& 0.56
7 1.55	
8 1.69	
9 1.69	
0 1.75	

Letter-space																			
Legend	1	2	3	4	5	6	7	8	9	0									
Letter-width																			

Letter-space																			
Legend	!	@	#	\$	%	&	'	(	)	*	+	,	-	.	:	;	<	>	?
Letter-width																			

Spacing Square  
□ 0.63

Letter-space																			
Legend	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Letter-width																			

Letter-space																			
Legend	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
Letter-width																			

Upper case	Lower case
A 1.81	a 1.34
B 1.64	b 1.45
C 1.88	c 1.41
D 1.70	d 1.44
E 1.51	e 1.47
F 1.45	f 0.84
G 1.88	g 1.44
H 1.64	h 1.33
I 0.44	i 0.38
J 1.3	j 0.39
K 1.75	k 1.44
L 1.40	l 0.39
M 2.00	m 2.16
N 1.66	n 1.33
O 1.94	o 1.52
P 1.53	p 1.45
Q 1.94	q 1.45
R 1.59	r 0.83
S 1.67	s 1.31
T 1.66	t 0.88
U 1.61	u 1.30
V 1.70	v 1.36
W 2.56	w 2.10
X 1.78	x 1.48
Y 1.70	y 1.42
Z 1.70	z 1.27

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Numerals	Punctuation
1 0.91	\$ 1.63
2 1.44	& 1.78
3 1.53	- 0.78
4 1.59	: 0.44
5 1.53	, 0.44
6 1.59	. 0.44
7 1.41	
8 1.59	
9 1.56	
0 1.66	

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Spacing Square  
□ 0.44

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

Letter-space																							
Legend	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Letter-width																							

In cases where computer-generated letter systems are not available, a letter-spacing guide and legend preparation system may be obtained through the Corps national sign coordinator.

The Corps letter-spacing guide uses a transparent letter assembly system. Letters, numerals and punctuation are printed on separate pieces of acetate. The

capital letters are 2" high; the lower case letters and punctuation are at their corresponding sizes. The legends are assembled at this capital letter height and photographically enlarged or reduced to create camera-ready artwork for any size sign. The acetate cells can be re-used indefinitely.

On the letter cells, printed above and

below the letters are alignment lines with marks indicating the right and left outermost edges of each letter (see illustration a). The illustrations and instructions below will explain how to use the cells.

Please be sure to indicate the weight of Helvetica required (Bold, Medium, Regular) when requesting a set of cells.

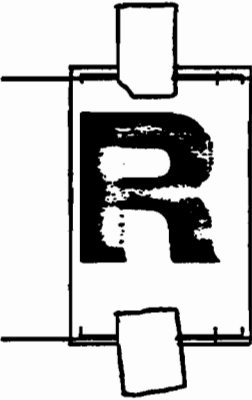


Illustration a



Illustration b

**Recreation**

Illustration c

**Letter-spacing Guide Instructions**

**Step 1:** Draw two horizontal parallel lines, 3.5" apart and long enough to accommodate the words to be assembled. These lines will serve as a guide for aligning the corresponding lines on the acetate cells.

**Step 2:** Tape the first letter in place by aligning the lines on the acetate cells with the lines drawn in step one.

**Step 3:** Tape each subsequent letter in place by referring to the letter-spacing matrix for that typestyle: Helvetica Bold (page D.9),

Helvetica Medium (page D.12), and Helvetica Regular (page D.15).

**Example:** The first letter is capital "R". The next is a lower case "e". The matrix for Helvetica Bold on page D.9 indicates that the proper space between the "R" and the "e" is .19". Place the mark on the left side of the "e" .19" from the mark on the right side of the "R" cell. The next letter is a "c". The space between a "c" and an "e" is .19". Place the "c" so the left mark is .19" from the "e". Be sure that the lines above and below the letters are aligned with the lines drawn on the page.

Continue taping down all of the letters in place inserting the values shown in the matrix

between each letter.

Please note that a few of the values in the matrix are negative (such as "A" to "w"). In this case, the left mark of the "w" is to the left of the right mark of the "A", a distance of .13". Some values are zero (such as "v" to "e"). In this case, the left mark in the "e" will sit directly on the right mark of the "v"

**Step 4:** The taped acetate letters are then photographed with a photostat camera and the track lines are blocked out on the film negative. Illustration c shows the finished piece of photostat art.

To place one word after another with the proper word-space, place the spacing square (□), with the spacing indicated on the matrix, after the last letter of the first word, as shown in Illustration a below. Place the first letter of the second word the appropriate distance from the square,

as indicated in the matrix (Illustration b). After the first letter of the second word is in place, remove the square (Illustration c).



Illustration a

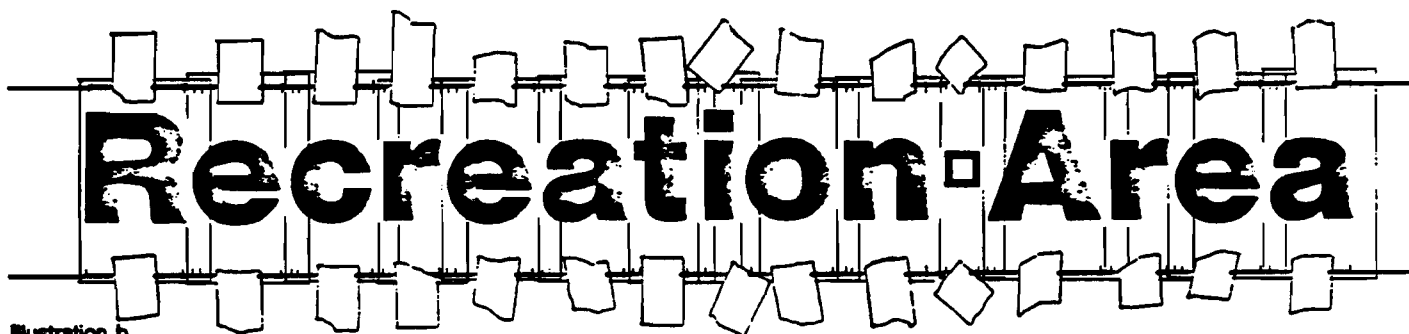


Illustration b

**Recreation Area**

Illustration c

Flush left alignment: When making a flush left alignment between two lines of type, a visual compensation must be made for certain letter forms. For example, if a line of type begins with a capital "N" and a second line of type begins with a capital "C", the second line will have to be positioned farther to the left than the first line in order to appear as though it is aligning (see Illustration d). All letters that require a compensation have a special increment on the letter cell marked "FL" for flush left (see Illustration e).

**No Fish Cleaning**

Flush Left Alignment

Illustration d

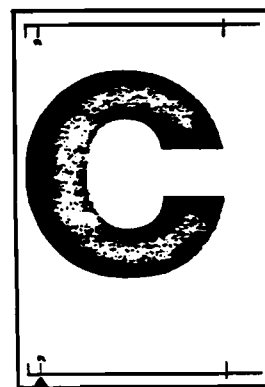


Illustration e

This typestyle is used for the legends of identification, recreation area, and industrial safety signs and as a headline typeface for construction, boundary and interpretive signs. Refer to each respective section for examples of its use on the various types of signs.

A full display of this alphabet is shown on the inside of this foldout. For use of the letter-spacing guide, follow instructions on pages D.7 and 8.

Use only the Helvetica Bold typeface as specified in this manual. Do not substitute another typestyle or any other typeface when preparing signs that specify Helvetica Bold.

Use only the specified methods for typesetting. All enlargements and/or reductions are to use a high-quality photographic process. All letter forms are to be sharp, crisp, and distortion-free.

	od go qs	bh jk	mp ru	vy	n	x	z	1	2	356 890	4	7	8	-	:	\$	□	DE FGH IJK LM NOP QRS TUV WXYZ	AW	A	J	T	Y	
aghmnqu	.23	.33	.33	.14	.19	.19	.28							.28	.28	.28	.38							
bceops	.19	.23	.23	.05	.09	.05	.19							.23	.23	.23	.28	.28	.19	.05	.05	.14	-.05	-.19
vwy	.05	.23	.19	.05	.19									.09	.05	.23	.23							
tz	.19	.33	.33	.23	.19		.28							.19	.28	.28	.33							
ix	.05	.28	.19	.09	.14									.0	.23	.23	.33							
r	.14	.23	.23	.19	.14									.14	.09	.23	.28							
dij	.23	.32	.32	.19	.23	.23	.33							.28	.28	.28	.38							
14	.28	.37	.37	.28	.28	.23	.33	.28	.28	.32	.28			.23	.23	.23	.38							
2356890	.19	.33	.33	.23	.19	.09	.19	.19	.19	.23	.23	.19		.19	.23	.33	.33							
7	.05	.23	.19	.14				.05	.05	.14	.05	.28		.14	.14	-.05	.38							
&																	.05							
-	.23	.28	.28	.09	.19	0	.23	.23	.23	.09	.23	.19					.19							
..								.14	.23	.28	.09	.33					.09							
:								.28	.23	.33	.19	.33					.09							
\$								.28	.28	.23	.28	.28												
□	.28	.38	.38	.28	.28	.23	.33	.28	.28	.33	.28	.23	.19	.23	.23	.23	.38	.23	.23	.19	.19	.28	.14	
GHJMNU	.28	.38	.38	.28	.28	.23	.33	.28	.28	.33	.28			.23										
BCDOQS	.19	.23	.23	.14	.19	.09	.19	.19	.14	.19	.19			.09										
R	.19	.23	.23	.14	.19	.09	.19	.19	.14	.19	.19			.19										
VW	.05	.23	.09	.05				-.05	.05					.14										
KX	.0	.19	.05	0				0	0					.09										
A	.05	.19	.19	-.09	0	.09	.19	.05	-.09	.19	0			.14										
E	.19	.33	.33	.19	.23	.19	.28	.19	.19	.28	.23			.23										
F	.05	.28	.19	.19				.05	.19					.09										
L	.19	.28	.23	.14				.19	.14					.23										
P	.05	.23	.19	.14				.05	.14					.14										
T	.05	.28	.19	.14				-.05	.14					.14										
Y	.19	.14	0	-.09	0	-.14	-.09	-.19	-.09	.09	0			.18										
Z	.23	.33	.28	.19				.23	.19					.23										



This typeface is used for secondary legends on interpretive, boundary and construction signs with Helvetica Bold primary legends. Helvetica Regular is also used on all building interior signs and as a text face for interpretive signs and exhibit captions.

A full display of this alphabet is shown on the inside of this foldout.

Use only the Helvetica Regular typeface as specified in this manual. Do not substitute another typestyle or any other typeface when preparing signs that specify Helvetica Regular.

Use only the specified methods for typesetting. All enlargements and/or reductions are to use a high-quality photographic process. All letter forms are to be sharp, crisp, and distortion-free.

	bc	de	fg	hi	jk	lm	no	rs	t	v	w	x	y	z	1	2	3	4	5	6	7	8	9	0	DE	FG	HI	JK	LM	NO	RS	T	V	W	X	Y	Z
ghmnu	.28	.38	.38	.19	.23	.23	.33					.28	.28	.28										.38													
bceops	.23	.28	.28	.09	.19	.09	.23						.19	.14	.19									.33	.33	.23	0	.09	.19	-.09	-.14						
vwy	.09	.28	.23	.14	.19	.14	.19						.09	-.09	.09									.28													
ftz	.19	.33	.33	.23	.23	.19	.23						.14	.19	.23									.38													
lx	.09	.23	.19	.05	.09	.09	.14						-.14	.19	.19									.33													
r	.14	.23	.23	.14	.19	.09	.14						0	.09	.19									.28													
dlij	.28	.38	.38	.23	.28	.23	.33						.28	.28	.28									.38													
14	.33	.38	.38	.28	.33	.28	.33	.33	.33	.28	.33	.33	.28	.28	.33									.38	.38	.28	.28	.28	.28	.28	.33	.23					
2356890	.19	.33	.33	.23	.19	.23	.23	.19	.19	.23	.23	.23	.14	.19	.28									.38													
7	.05	.23	.19	.09			.05	.05	.09	.09	.33	.19	-.19	.09									.33														
&																							.14														
-	.23	.28	.28	.14	.14	0	.09	.23	.23	.14	.09	.14											.38														
..							.19	.28	.19	.09	.14												.14														
:							.19	.28	.23	.19	.23												.14														
\$							.28	.28	.23	.23	.28												.28														
□	.33	.38	.38	.28	.33	.28	.33	.33	.38	.28	.33	.33	.28	.38	.28								.28														
GHUMNU	.33	.38	.38	.28	.33	.28	.33	.33	.28	.33	.33	.28											.28														
BCDOQS	.23	.28	.28	.19	.23	.09	.19	.23	.19	.19	.23												.05														
R	.23	.33	.33	.19			.23	.19															.23														
VW	0	.28	.14	0			0	0						.19																							
KX	.05	.19	.19	-.09			.05	-.09						.19																							
A	.09	.23	.23	-.09	.04	.09	.19	.09	-.09	.19	.04			.19																							
E	.19	.28	.28	.09	.19	.14	.23	.19	.09	.23	.19			.28																							
F	0	.23	.09	0			0	0						.14																							
L	.14	.33	.19	.09			.14	.09						.28																							
P	.05	.23	.19	.09			.05	.09						.19																							
T	.09	.28	.09	-.14			-.09	-.14						.14																							
Y	.14	.18	.05	-.14	0	-.14	-.09	-.14	-.14	.09	0			.14																							
Z	.14	.33	.23	.05			.14	.05						.28																							

## MOTOR VEHICLES AND TRAFFIC

### **Section 38-169. Weight limits.**

Except by permit as provided in Section 38-169.1, no truck, tractor or trailer shall be operated on the streets of the City if the following are exceeded:

(a) The total gross weight of any vehicle or combination of vehicles shall not exceed eighty-eight thousand (88,000) pounds; and no vehicle or combination of vehicles shall exceed its license gross weight.

(b) No tire mounted on any axle attached to any vehicle or combination of vehicles shall impose a greater weight on the surface of a highway than six hundred fifty (650) pounds per inch width of tire.

(c) The total gross weight of any single axle attached to any vehicle and equipped with low pressure pneumatic tires shall not exceed twenty thousand (20,000) pounds.

(d) The total gross weight of any tandem axle or tandem steering axle attached to any vehicle and equipped with low pressure pneumatic tires shall not exceed thirty-four thousand (34,000) pounds.

(e) The total gross weight of any tridum axle attached to any vehicle and equipped with low pressure pneumatic tires shall not exceed forty-two thousand (42,000) pounds.

(f) The total gross weight of any single axle or any single steering axle attached to any vehicle and equipped with high pressure pneumatic, solid rubber or cushion tires shall not exceed eighteen thousand (18,000) pounds.

(g) The total gross weight of any tandem axle or any tandem steering axle attached to any vehicle and equipped with high pressure pneumatic, solid rubber or cushion tires shall not exceed thirty-two thousand (32,000) pounds.

(h) The total gross width on any trailer shall not exceed forty thousand (40,000) pounds, regardless of the number or type of axles under it.

(i) Further, no vehicle with more than two (2) axles shall be permitted on any of the streets within the city other than those listed as truck routes, except that travel to or from points

of origin or destination shall be permissible via the shortest practicable route between such point of origin or destination, and the nearest street listed as a truck route.

When traveling on such designated streets, every motor truck, tractor, or trailer shall be driven as near to the right hand curb of the roadway as is practicable under existing conditions. (M.C.S., Ord. No. 3816, § 1, 6-6-68; M.C.S., Ord. No. 6752, § 3, 5-4-78.)

**Section 38-169.1. Permits for excess weight, width, height, and length.**

Whenever it shall be necessary to transport a single article which cannot be divided and which exceeds the total weight, width, height, or length allowable by this article, it may be done only after the issuance of a special permit by the Director of Streets. When application for a permit is made, the Director of Streets is authorized to impose conditions upon the issuance of such permits and to make requirements upon their use, such as the date, time of day, routes, and speed limit, the furnishing of a bond with good and solvent surety to protect the city from all liability and damage resulting from the use of such permits, and accompaniment of the shipment by proper escort, police or otherwise, all at the expense of the user, and such other conditions or requirements as the Director of Streets deems necessary and proper. In addition, the Director of Streets, prior to the issuance of a permit, shall collect from the applicant one hundred dollars (\$100.00) for an annual permit or ten dollars (\$10.00) for a single-trip permit. (M.C.S., Ord. No. 3816, § 1, 6-6-68; M.C.S., No. 7476, § 1, 2-7-80.)

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## SECTION 01431 - ENVIRONMENTAL PROTECTION

1. SCOPE. The work covered by this section consists of furnishing all labor, materials and equipment, and performing all work required for the prevention of environmental pollution during and as the result of construction operations under this contract except for those measures set forth in other provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to man; or degrade the utility of the environment for esthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and involves noise, solid waste-management and management of radiant energy and radioactive materials, as well as other pollutants.

### 2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for environment protection to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

(1) Submit plan of Environment Pollution Control (include in the plan, the inclosed Pollution Prevention Plan requirements).

(2) Procure applicable Federal, State, and local regulations on pollution control.

(3) Air Pollution - checks made on dust, smoke, noise.

(4) Water Pollution - checks made on disposal of water, oil, etc.

(5) Land Pollution - checks made on disposal of debris, restoration of temporary construction sites, etc.

(6) Monitoring in accordance with the National Pollution Discharge Elimination System (NPDES).

(7) Training course for employees.

2.2 Reporting. The original and two copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. Format of report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. APPLICABLE REGULATIONS. In order to prevent, and to provide for abatement and control of any environmental pollution arising from construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with the National Pollution Discharge Elimination System (NPDES) General Permit requirements, all applicable Federal, State, and Local laws, and regulations concerning environmental pollution control and abatement.

4. NOTIFICATION. The Contracting Officer will notify the Contractor in writing of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. 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 any such stop orders shall be made the subject of a claim for extension of time or for excess cost of damages by the Contractor.

5. NPDES STORM WATER DISCHARGE RULE. This project is authorized to discharge storm water associated with construction activity under the terms and conditions imposed by EPA's National Pollutant Discharge Elimination System storm water general permit. A Notice of Intent (NOI) and our Pollution Prevention Plan (PPP) tailored to the construction site is attached at the end of this section. The Contractor shall complete, sign, and submit the NOI to the Environmental Protection Agency (EPA) forty-eight (48) hours before the start of construction and shall comply with all applicable pollution prevention controls, monitoring, and reporting requirements.

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

7. IMPLEMENTATION. Within 10 days after receipt of notice to proceed, or otherwise directed below, the Contractor shall:

(1) Submit in writing his proposals for implementing environmental pollution control and disposal of debris.

(2) Meet with representatives of the Contracting Officer to develop mutual understanding relative to compliance with this provision and administration of the environmental pollution control program.

(3) Submit a signed copy of the NPDES NOI before conducting any professional service identified in the storm water pollution prevention plan.

## 8. PROTECTION OF LAND RESOURCES.

8.1 General. The land resources with the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. The Contractor shall confine his construction activities to areas defined by the plans or specifications. The following additional requirements are intended to supplement and clarify the requirements of Contract Clauses for "PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS", "OPERATIONS AND STORAGE AREAS", and "CLEANING UP".

8.2 Prevention of Landscape Defacement. Except in areas to be cleared and as provided in paragraph 8.3, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without the approval of the Contracting Officer. Felling of trees shall be performed in such a manner as to avoid damage to trees to be left standing. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's operations or equipment; he shall protect adequately such trees. Earth that is displaced into uncleared areas shall be removed. All monuments and markers shall be protected before beginning operations near them. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. Trees that are scarred shall be immediately painted with an acceptable tree wound paint. Any trees which are damaged beyond restoration shall be removed and disposed of as directed in paragraph 13.

8.3 Temporary Excavation and Embankments. If the Contractor proposes to construct temporary roads or embankments and excavation for plant and/or work areas, he shall obtain approval of the Contracting Officer prior to start of such temporary work.

8.4 Post-Construction Cleanup or Obliteration. The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials upon completion of construction. The Contractor will be required to restore the construction area to near natural conditions which will permit the growth of vegetation.

8.5 Recording and Preserving Historical and Archeological Finds. All items having any apparent historical or archeological interest which are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall immediately report the find to the Contracting Officer so that the proper authorities may be notified.

8.6 Protected Side Erosion Control During Construction. Prior to the beginning of construction, the Contractor shall provide protected side erosion control by placing bales of hay, weighing at least 50 pounds minimum, end to end, parallel and adjacent to the safety fence as shown on the drawings. Specific hay bale locations shall be as directed by the Contracting Officer. The bales of hay should be placed and anchored with steel hooks to keep them from moving. Should the levee slope be damaged by the installation or removal of the hay bales, it shall be fertilized, seeded and mulched in accordance with Section 02935, "FERTILIZING, SEEDING AND MULCHING". The Contracting Officer shall decide if the levee is acceptable or damaged. Other erosion control methods, if approved by the Contracting Officer, will be allowed. The Contractor shall maintain the protected side erosion protection (hay bales) throughout the life of the contract or until requirements are met such that the hay bales may be removed. The hay bales shall be removed by the Contractor only at the direction of the Contractor Officer. After removal, hay bales shall be disposed of by the Contractor off-site.

## 9. PROTECTION OF WATER RESOURCES.

9.1 Contamination of Water. The Contractor shall not pollute lakes, ditches, rivers, bayous, canals, groundwater, waterways, or reservoirs with fuels, oils, bitumens, calcium chloride, insecticides, herbicides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be a detriment to outdoor recreation.

9.2 Disposal of Materials. The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., within the right-of-way limits shall be such that harmful debris will not enter lakes, ditches, rivers, bayous, canals, groundwater, waterways, or reservoirs by erosion, and thus prevent the use of the area for recreation or present a hazard to wildlife.

9.3 Erosion Control. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures such as berms, dikes, drains, hay bales, erosion control fences or curtains, or sedimentation basins, if required to meet the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall not exceed that necessary to perform the work. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridges shall be installed. Any temporary culverts or bridges shall be removed upon completion of the project. Fills and waste



area shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

9.4 Washing and Curing Water. Water used in embankment material processing, aggregate processing, concrete curing, foundation and concrete lift cleanup, cementitious paint preparation and other waste waters (except riprap removal and dredging waste waters) shall not be allowed to reenter the outfall canal if an increase in the turbidity of the outfall canal will result therefrom. The Contractor shall be solely responsible for removing from within the canal all wash, curing, and waste waters derived from sources either within or outside the canal.

10. RESERVED.

11. PROTECTION OF FISH AND WILDLIFE. The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area which are critical to fish or wildlife.

12. JANITOR SERVICES. The Contractor shall furnish daily janitorial services for all the offices, shops, laboratories, or other buildings being used by the Contractor or Government employees, whether existing or Contractor furnished, and perform any required maintenance of the facilities and grounds during the life of the contract. Toilet facilities shall be kept clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations but will be accomplished only when the buildings are in daily use. Services shall be accomplished to the satisfaction of the Contracting Officer. The Contractor shall also provide daily trash collection and cleanup of the buildings and adjacent outside areas, snow removal as required, and shall dispose of all discarded debris, aggregate samples and concrete test cylinders in a manner approved by the Contracting Officer.

13. DISPOSAL OF CLEARED AND GRUBBED MATERIAL AND OTHER DEBRIS. All debris resulting from construction operations on this contract shall be disposed of in accordance with paragraph 02210-5.

14. MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION. During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. Early in the construction period the Contractor shall conduct a training course that will emphasize all phases of environmental protection.

15. REPORTING OF POLLUTION SPILLS. In the event that an oil spill or chemical release occurs during the performance of this contract, the Contractor is required to contact the National Response Center, telephone number 1-800-424-8802 as soon as possible, or if telephone communication is not possible, the nearest U.S. Coast Guard office may be contacted by radio to report the spill, (33 CFR 153.203). The Contractor shall comply with any instructions from the responding agency concerning containment and/or cleanup of the spill.

16. MEASUREMENT

16.1 Environmental Protection. No separate measurement will be made for environmental protection.

16.2 Protected Side Erosion Control. Protected side erosion control will be measured per linear foot of erosion control satisfactory placed.

17. PAYMENT.

17.1 Environmental Protection. Payment for all items of work specified in this section except for protected side erosion control will be distributed throughout the existing bid items.

17.2 Applicable Protected Side Erosion Control. Payment for protected side erosion control as specified in paragraph 8.6 will be made at the applicable contract unit price per linear foot for "Erosion Control". Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing all operations necessary for protected side erosion control, including the placement and maintenance of hay bales throughout the contract period, final dressing clean-up and offsite disposal of the hay bales.

## POLLUTION PREVENTION PLAN

The Contractor shall review the Pollution Prevention Plan for compliance. In addition, the Contractor shall ascertain that his subcontractors have reviewed the plan, and that they comply with its provisions. The Pollution Prevention Plan is as follows:

(1) The project is located in Jefferson Parish and Orleans Parish, Louisiana, at the Veterans Blvd. crossing of the 17th Street Canal. The approximate latitude and longitude of the project site is 30°00'00" and 90°07'29", respectively. The work consists of construction of two 225-foot long concrete girder bridges, with related work on the bridge approaches. Also included is construction of floodwall sections along the canal adjacent to the bridges, and dredging of the 17th Street Canal at the bridge locations and disposal of dredge material at the I-10/Causeway Blvd. interchange.

(2) The total project area is approximately 16 acres. The project site consists of existing roadway and bridge structures, adjacent levees, grass roadway shoulders, interstate interchange medians, and the canal bottom. The floodsides of the existing levees drain into Lake Pontchartrain. Floodside drainage is covered under the Lake Pontchartrain and Vicinity Environmental Impact Statement (EIS) and Section 404 of the Clean Water Act (CWA). On the protected side of the existing levees, storm water drains into either the Jefferson Parish, Louisiana, Drainage Department system or the Orleans Parish, Louisiana, Sewerage and Water Board system. These systems use existing drainage pumping stations and discharge into Lake Pontchartrain.

(3) The Contractor will provide erosion protection by placing hay bales adjacent to the safety fence.

(4) Upon completion of earthwork, the affected areas shall be fertilized, seeded, and mulched.

(5) The estimated runoff coefficient for the grassed area of the site is 0.3. The estimated runoff coefficient for the paved portion of the project site is 1.0.

(6) Lake Pontchartrain is the receiving water body.

NPDES  
FORM



United States Environmental Protection Agency  
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity Under the NPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with industrial activity in the State identified in Section II of this form. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Facility Operator Information

Name: U.S. ARMY, CORPS, OF, ENGINEERS, . . . Phone: 504 862 2657

Address: P.O. BOX, 60267, . . . Status of Owner/Operator:  F

City: NEW ORLEANS, . . . State: LA ZIP Code: 70160-0267

II. Facility/Site Location Information

Name: VETERANS, BLVD, BRIDGES, . . . Is the Facility Located on Indian Lands? (Y or N)

Address: VETERANS, BLVD, AT, 17TH, ST, CANAL, . . .

City: METAIRIE, . . . State: LA ZIP Code: . . .

Latitude: 310010010 Longitude: 9100729 Quarter: . . . Section: . . . Township: . . . Range: . . .

III. Site Activity Information

MS4 Operator Name: JEFFERSON, & ORLEANS, PARISHES, . . .

Receiving Water Body: LAKE, PONCHARTRAIN, . . .

If You are Filing as a Co-permittee, Enter Storm Water General Permit Number: . . . Are There Existing Quantitative Data? (Y or N)  Is the Facility Required to Submit Monitoring Data? (1, 2, or 3)  I

SIC or Designated Activity Code: Primary: 1629 2nd: 1622 3rd: . . . 4th: . . .

If This Facility is a Member of a Group Application, Enter Group Application Number: . . .

If You Have Other Existing NPDES Permits, Enter Permit Numbers: . . .

IV. Additional Information Required for Construction Activities Only

Project Start Date: 080194 Completion Date: 123195 Estimated Area to be Disturbed (in Acres): . . . 6 Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans? (Y or N)  Y

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: GREGORY, S. KUTHER, . . .

Date: 10.6.19.4

Signature: Gregory Kuth LLC Acting Cdr

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SECTION 01521 - TEMPORARY ROADWAY CONSTRUCTION

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SECTION 01521 - TEMPORARY ROADWAY CONSTRUCTION

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing temporary asphaltic concrete roadway in accordance with these specifications and the contract drawings. Required temporary roadway work involves the construction of temporary asphalt tapers at the bridge approaches, and paving of the Veterans Blvd. medians for detour crossovers. Included in this item is all preparatory work, such as clearing and placing of base course material in areas to be paved, detour paving, and removal of base course and detour paving at the completion of construction. The Contractor shall note that the construction of asphaltic concrete sidewalks shall conform to the requirements of this section, but is paid under a separate item.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Permanent Roadway Construction. Section 02510, "PERMANENT ROADWAY CONSTRUCTION".

2.2 Signing and Striping. Section 02845, "SIGNING AND STRIPING".

2.3 Demolition. Section 02070, "DEMOLITION".

2.4 Maintenance of Traffic. Section 01571, "MAINTENANCE OF TRAFFIC DURING CONSTRUCTION".

2.5 Landscaping. Section 02950, "LANDSCAPING".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD), and applicable Supplemental Specifications.

301	Class I Base Course
501	Asphaltic Concrete Mixture
503	Asphaltic Concrete Equipment and Processes
504	Asphaltic Tack Coat
1002	Asphaltic Materials and Additives

1003.06(a) Aggregates  
1003.06(a)(11) Mineral Filler  
1003.08 Bedding Material

4. QUALITY CONTROL.

4.1 Material Certification. The Contractor shall provide material documentation to certify that all materials conform to the requirements of LSSRB Sections 301, 1002, 1003.06(a), 1003.06(a)(11), and 1003.08.

4.2 Equipment and Processes. The Contractor shall provide documentation to the Contracting Officer to verify that all asphaltic concrete plants and equipment conform to the requirements of LSSRB Section 503.

4.3 Testing. No material testing of completed paving shall be required for temporary roadway construction.

5. MATERIALS. The Contractor shall submit his proposed base course material and asphaltic concrete mix designs to the Contracting Officer for approval prior to construction. Base course material shall conform to the requirements of LSSRB Section 301.

6. EQUIPMENT AND PROCESSES. All asphaltic concrete plants, equipment, and processes shall conform to the requirements of LSSRB Section 503.

7. CONSTRUCTION.

7.1 Surface Preparation and Base Course Placement. Areas of temporary detour construction shall be cleared and base course material placed to the required elevation before surfacing. Base course material shall be compacted in accordance with LSSRB Section 301.10.

7.2 Demolition. Existing obstructions and curb and gutter shall be removed as necessary for temporary roadway construction. See Section 02070.

7.3 Overlay. Fill material shall be overlaid with a 3-inch thick asphaltic concrete wearing course. Overlay procedure shall conform to the requirements of LSSRB Sections 501.03-501.08. Contractor shall certify the Contracting Officer that overlay surface tolerances meet the requirements of Table 1 of LSSRB Section 501.

7.4 Veterans Blvd. Median. Existing utilities in the Veterans Blvd. median shall be removed, protected, or modified prior to construction of temporary detour roadways. These include

light poles (remove, store in a secure location, and replace), landscaping sprinkler system (remove), water valves (protect), and a drainage inlet (modify). These items shall be restored at the completion of construction. Any damage to existing utilities and facilities shall be repaired at no additional cost to the Government. An asphalt overlay adjacent to the median shall be provided by the Contractor to construct smooth pavement transitions during the detour phases. Maximum transition grades shall be 8%.

7.5 Removal. All temporary base course material and detour paving shall be removed at the completion of construction. The affected areas shall be restored in conformance with the requirements of Section 02935 or Section 02950 as appropriate.

8. MEASUREMENT. No separate measurement will be made for temporary roadway construction.

9. PAYMENT. Payment for furnishing and installing temporary detour roadways as specified here above (except pavement for sidewalk) shall be made under the contract lump sum price for "Detour Construction". Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work, including work in the Veterans Blvd. median as specified in paragraph 7.4. Payment for Maintenance of Traffic is described in Sections 01571. Payment for sidewalk shall be included in the contract lump sum price for "Landscaping."



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SECTION 01571 - MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

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SECTION 01571 - MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for maintaining the safe and expeditious movement of traffic through the construction zone during construction in accordance with these specifications and the contract drawings. This includes, but is not limited to, providing, installing, maintaining, adjusting and inspecting signs, barricades, flashing-arrow panels and temporary barriers, as well as providing flagmen as necessary.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Temporary Detour Construction. Section 01521, "TEMPORARY ROADWAY CONSTRUCTION".

2.2 Signing and Striping. Section 02845, "SIGNING AND STRIPING".

2.3 Coordination. See the General Provision entitled "AGENCY CONTACT POINTS."

2.4 Roadway Construction. Section 02510, "PERMANENT ROADWAY CONSTRUCTION".

2.5 Permanent Pavement Markings. Section 02581, "PLASTIC PAVEMENT MARKINGS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Manual of Uniform Traffic Control Devices (MUTCD) (Louisiana).

4. TRAFFIC CONTROL DEVICE PLAN.

4.1 Traffic Control Device Plan. A traffic control device plan (TCDP) for the different phases of the bridge construction is shown on drawings. Any significant changes in that plan shall meet the requirements of the MUTCD and shall be submitted to the Contracting Officer for approval prior to implementation or adopting any changes.

5. QUALITY CONTROL.

5.1 Inspection. The Contractor shall be responsible for implementing the traffic control device plan shown on the drawings or as approved subsequently. The Contractor shall inspect the construction site at the beginning and end of each day, all

throughout the contract, to assure that the traffic control devices are in compliance with the approved plan. Further, the Contractor shall submit an inspection report prepared by a qualified traffic engineer at the beginning and end of each construction phase, after implementation of each significant change, and at the end of each month to the Contracting Officer. All deficiencies detected shall be immediately corrected by the Contractor at no additional cost to the Government.

5.2 Video Taping. The Contractor shall provide a weekly VHS or 8 mm video taping showing a drive through the project area illustrating the traffic control devices and operating conditions at the site. The tape shall show the date and time of the recording. At the conclusion of construction, video tapes shall become the property of the Government.

## PART 2 - PRODUCTS

6. MATERIALS. Materials for maintenance of traffic shall comply with the requirements of Sections 01521, 02581, and 02845.

6.1 Temporary Barriers. Temporary barriers shall conform to the details shown in the contract drawings. Barriers shall be fitted with reflectors or reflective material. Double-face yellow reflectors shall be used on barriers which separate opposing traffic. Single-face silver reflectors shall be used on right-side applications. One reflector device shall be used per each barrier section.

## PART 3 - EXECUTION

7. NOTIFICATIONS. The contractor shall provide at least 96 hours notification to the Contracting Officer of the necessity to close any portion of a roadway carrying vehicles or pedestrians so that the Contracting Officer can coordinate such closings with the affected agencies at least 72 hours in advance. The Contractor should note that requests for closures may not be approved. The Contractor shall inform the Contracting Officer immediately of any vehicular or pedestrian safety or efficiency problem incurred as a result of construction of the project. The Contracting Officer will then consult with the affected traffic agency on the problem and its resolution.

8. EMERGENCY OPERATIONS. The Contractor is advised that Veterans Blvd. is an emergency evacuation route. During times of public emergencies, such as hurricanes, the Contractor shall coordinate the maintenance of traffic work with the Contracting Officer and affected traffic agencies to minimize disruption to evacuation traffic. This may require major shifts of signs and temporary barriers with consequent disruption to project construction. Payment will be made as an equitable adjustment under the Contract Clause entitled "CHANGES".

9. MEASUREMENT. No separate measurement will be made for maintenance of traffic work.

10. PAYMENT. Payment for maintenance of traffic work will be included under the contract lump sum price for "Maintenance of Traffic (Including Temporary Signing)", which shall constitute full compensation for furnishing all plant, labor, services, material, traffic engineering services, videotaping, flagmen services, and equipment required to perform the work as specified herein above.

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SECTION 02070 - DEMOLITION

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## SECTION 02070 - DEMOLITION

1. SCOPE. The work covered by this section consists of furnishing all equipment, material and labor to perform all operations necessary for demolition, removal, and disposal of existing structures, specified herein below in accordance with these specifications and the contract drawings. Demolition includes removal and disposal of the existing bridge structure, portions of the adjacent roadways, curb, gutter, and asphalt sidewalks, pulling and disposing of portions of existing sheet piling, and cutting and removing sections of existing sheet pile wall.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Environmental Protection. Section 01431, "ENVIRONMENTAL PROTECTION".

2.2 Clearing and Grubbing. Section 02210, "CLEARING AND GRUBBING".

2.3 Existing Utilities. See the General Provision entitled "AGENCY CONTACT POINTS".

3. QUALITY CONTROL.

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

(1) Demolition. Location and identification of all items to be demolished, percentage of demolition completed, and methods of demolition. This includes methods of pulling foundation piles and sheet pile walls.

(2) Safety Protection and Access. Procedures for assuring the safety of persons and property subject to damage and injury resulting from demolition operations. Provisions for maintenance of access around the site of demolition work.

(3) Disposition of Materials. Method and location of disposition; and damage to existing structures or improvements.

3.2 Reporting. The original and two copies of those records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of this report shall be prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

4. GENERAL REQUIREMENTS. The Contractor shall ensure the work covered herein is performed in a safe and orderly manner. The Contractor shall submit his demolition procedures for approval to the Contracting Officer. The use of explosives will not be permitted.

4.1 Submittals. A minimum of 30 days prior to commencement of the work, the Contractor shall submit for approval his proposed plan to accomplish the work specified herein. This proposal shall include but not be limited to the following:

(1) Demolition. Methods and equipment to be used.

(2) Protection of New Construction. Methods and equipment used to ensure the new construction is not damaged during demolition operations.

(3) Protection of Persons and Property. Methods for maintaining safety of persons, vehicles, and other property in the vicinity of the construction site during demolition. This includes protection of vehicles and pedestrians from flying debris. Also included is any required coordination with affected utilities or agencies.

(4) Holding Site. Location and method of supporting items to temporarily stored.

(5) Disposition Site. Documentation demonstrating the disposal site is in compliance with all applicable Federal, State and local laws.

5. EXECUTION. The Contractor shall remove:

(1) The existing Veterans Blvd. bridges in phases.

(2) Portions of the adjacent roadways and asphalt sidewalks as shown in the contract drawings.

(3) Sections of curb and gutter as described in the contract drawings.

(4) Sections of sheet pile wall as shown in the contract drawings.

5.1 Veterans Blvd. Bridges. The existing bridges in their entirety, including superstructure, approach slabs, abutments, bent caps, and foundation piling shall be removed in phases as shown on drawings. The holes left by the abutment piling shall be filled with a cement-sand-bentonite slurry as specified in paragraph 02411-9.5. Existing sheet piles under the bridge abutments shall be cut-off at E1.3.0. The cut-off sections of the piling shall be removed and disposed of. Plans of the existing bridges are included in the contract drawings.

5.2 Adjacent Roadways. The adjacent roadways at the ends of each bridge shall be removed to allow for construction of approach slabs. This demolition shall be done after traffic has been shifted to the other side of the roadway. Existing guard rails shall be removed as well.

5.3 Curb and Gutter. Existing curb and gutter shall be removed as tabulated in the contract drawings. This demolition is to allow construction of approach slabs, permanent roadway, and temporary detours. Curb and gutter to be removed shall be sawcut for the full depth of the roadway section.

5.4 Sheet Pile Wall. Short sections of sheet pile wall, adjacent to the bridge abutments as shown in the contract drawings, shall be pulled and removed. Holes left by the pulling operation shall be filled with cement-sand-bentonite slurry as specified in paragraph 02411-9.5.

5.5 Clearing and Grubbing. For information on this work, see Section 02210.

6. DISPOSAL OF MATERIALS. All removed material as specified herein above and shown on drawings shall become property of the Contractor and shall be disposed of by removal from the site as specified in paragraph 02210-5.

7. MEASUREMENT. No separate measurement will be made for demolition.

8. PAYMENT. Payment for demolition will be made under the contract lump sum price for "Demolition". Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work specified here above and in Section 02210, "CLEARING AND GRUBBING".



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SECTION 02210 - CLEARING AND GRUBBING

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7.	PAYMENT	02210-3

SECTION 02210 - CLEARING AND GRUBBING

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for the clearing and grubbing of the areas specified, and for the removal and disposal of all cleared and grubbed materials, and for the filling of all holes caused by grubbing operations, all as specified herein.

2. QUALITY CONTROL. The Contractor shall establish and maintain quality control for clearing and grubbing operations to assure compliance with contract requirements, and maintain records of his quality control for all construction operations including but not limited to the following:

(1) Clearing and Grubbing. Station to station limits, transverse clearing and grubbing limits from applicable centerline; percentage of area complete; type of material.

(2) Disposition of Removed Materials. Method and location of disposition; damage to timber or improvements which are not to be removed.

2.1 The original and two copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. GENERAL REQUIREMENTS. All clearing and grubbing work for construction of the floodwall and floodgates shall be completed in advance of bridge, and permanent and temporary roadways, construction. If regrowth of vegetation occurs after clearing and before construction, the Contractor will be required to clear the area again prior to construction, and no additional payment will be made for this additional clearing. Grubbing work shall be completed prior to construction in the affected area.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

4. CLEARING AND GRUBBING.

4.1 Cleaning. Clearing, unless otherwise specified, shall consist of the complete removal above the ground surface of brush, vegetation, and similar debris, as well as felling, trimming and removal of trees designated in the drawings.

4.1.1 Borrow areas shall be cleaned to the extent necessary to provide materials free from unsuitable material as described in paragraph 02222-5.4.

4.2 Grubbing. Grubbing, unless otherwise specified, shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots. Material to be grubbed shall be removed to a depth of 18 inches below existing ground. Grubbed areas shall be backfilled with suitable material and compacted to conform to the original surface.

4.2.1 Grubbing of borrow areas will be required to the extent necessary to provide materials free from unsuitable matter as described in paragraph 02222-5.4.

4.3 Vegetation. Vegetation to be removed shall consist of grass, bushes, weeds and trees designated on the drawings.

4.4 Areas to be Cleared and Grubbed. All areas to be filled, excavated, or overlaid with temporary asphalt paving shall be cleared (and grubbed as required) Areas to be cleared and grubbed also include borrow areas.

## 5. DISPOSAL OF DEBRIS.

5.1 General. All debris resulting from clearing and grubbing operations shall be disposed of by removal from the site. The Contractor shall make a reasonable effort to channel merchantable material into the commercial market to make beneficial use of materials resulting from clearing and grubbing operations.

5.2 Removal from Site of Work. The Contractor will remove all of the debris from the site of the work. Such disposal shall comply with all applicable Federal, State, and Local laws. The Contractor shall, at his option, either retain for his own use or dispose of by sale or otherwise, such materials of value. The Government is not responsible for the protection and safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work. If debris from clearing and grubbing operations is placed on adjacent property, the Contractor shall obtain, without cost to the Government, additional right-of-way for such purposes. Such material shall be so placed as not to interfere with roads, drainage or other improvements, and in such a manner as to eliminate the possibility of its entering into channels, ditches, or streams. The Contractor shall submit written evidence to the Contracting Officer that he has obtained from the property owner permission for disposal of material on the owner's property. The written evidence shall consist of an authenticated copy of the conveyance under which the Contractor acquired the property rights and access therein, prepared and executed in accordance with the laws of the State of Louisiana. If temporary rights are obtained

by the Contractor, then the period of time shall coincide with the Special Contract Requirement entitled "COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK" hereof, plus any extension authorized under Contract Clause entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)", subparagraph (b) (1). However, delay resulting from acquisition of additional rights-of-way for alternate disposal areas will not qualify as excusable delays.

5.3 Windrows. All debris from borrow areas may be placed in a windrow at the edge of the riverside borrow pits. The debris shall be placed in a neat windrow or piles with the tree limbs trimmed sufficiently to make the windrow as small as practicable. No debris or cleared or grubbed material shall extend beyond the clearing limit.

5.4 Burying. If the Contractor elects to bury the debris, the area available for burial shall be in the borrow pits disposal area as shown on the drawings. No material shall be buried within 20-feet of any standing timber. All material disposed of by burying shall be covered with a minimum of 18-inches of earth. The Contractor will be allowed to bury unburned debris which has been determined by the Contracting Officer to be unburnable and other material remaining after the initial burning operation has been completed. The area available for burial will be on property for which the Contractor has obtained right-of-way for such purposes as specified in paragraph 5.2. All material disposed of by burying shall be covered with a minimum of 18-inches of earth.

6. MEASUREMENT. No separate measurement will be made for clearing and grubbing.

7. PAYMENT. Payment for all items of work specified for clearing and grubbing will be included in the contract lump sum price for "Demolition", except that clearing and grubbing work at the dredge material disposal site and at the borrow area site shall be included in the contract unit price per cubic yard for "Dredging".

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SECTION 02222 - STRUCTURAL EXCAVATION AND BACKFILL

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SECTION 02222 - STRUCTURAL EXCAVATION AND BACKFILL

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, labor, materials, equipment, and performing all operations necessary for stockpiling materials, structural excavation and backfill, and excavation in borrow area and all other incidental work specified herein or as shown on the drawings.

2. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by reference thereto.

2.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LADOTD) and Applicable Supplemental Specifications.

711.02	Riprap
1019.01	Geotextile Fabric

2.2 American Society for Testing and Materials (ASTM) Standard.

D 698-91	Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort
D 1556-90	Density of Soil in Place by the Sand-Cone Method
D 2216-90	Laboratory Determination of Water, (Moisture) Content of Soil and Rock
D 2922-91	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D 3740-92	Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as used in Engineering Design and Construction
D 4318-84	Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

2.3 U.S. Army Corps of Engineers Laboratory Soils Testing Manual.

EM 385-1-1	Safety and Health Requirements Manual
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### 3. QUALITY CONTROL.

3.1 General. The Contractor shall establish and maintain quality control for structural excavation and backfill, and excavation in borrow area operations to assure compliance with contract requirements and maintain records of his quality control for all construction operations including but not limited to the following:

(1) Equipment. Type, size, and suitability for construction of the prescribed work.

(2) Structural Excavation. Check grade, slopes, and dimensions for compliance with design sections.

(3) Grade Tolerances. Check fills to determine if placement conforms to prescribed grade and design section.

(4) Construction. Layout, maintaining existing drainage, moisture control, thickness of layers, spreading and compacting.

(5) Classification of soils, placing and compacting of structural fill, and density tests.

(6) Control Testing.

(a) Contractor Testing. The Contractor shall perform all control testing such as soil classification, control compaction curves, and in-place density. The Contractor shall perform as a minimum, the specified number of each of the tests to assure compliance with contract requirements. Testing shall be performed by a Government approved testing agency or organization. Criteria used for obtaining Government approval shall be in accordance with ASTM D 3740. Tests performed shall be pursued in such a manner that the results are obtained and furnished to the Government within 24 hours. No additional payment will be made for control testing required in this paragraph. The following tests are required to provide adequate control:

1. Soil Classification Tests. Determination of soil classification shall be in accordance with the Unified Soil Classification System. Atterberg Limits Test required for soil classification shall be performed in accordance with ASTM D 4318. One (1) Atterberg test shall be obtained from the sample material used for each control compaction curve and one (1) shall be obtained from the sample material used for each in-place density test at each abutment. An Atterberg test shall be obtained for each in-place density test at panel 1 and 2, panel 3, panel 4, panel 5 and 6, panel 7 and 8, only if the material from the in-place density test differs from the material used for the control compaction curves. If the Nuclear Method is used, the material to be tested shall come from within a radius of 12 inches of the

center of the in-place density test site. The soil classification obtained from in-place density tests will serve as the basis for determining the applicable control compaction curves.

2. Control Compaction Curves - Compacted Fills. Control compaction curves shall be established in accordance with ASTM D 698, (Standard Proctor Density Tests). Two (2) control compaction curves will be required for each type of random material from each source. Where construction operations result in blending of several types of material prior to or during fill placement within the design sections, two control compaction curves will be required for each resulting blend of material and will be utilized in lieu of those required for the "unblended materials". The average of the two tests shall be the controlling optimum moisture content and maximum density, subject to verification by the Contracting Officer.

3. In-Place Density Tests. In-place density tests for compacted fill material shall be made in accordance with ASTM D 2922 (Nuclear Method) or ASTM D 1556 (Sand Cone Method). The minimum frequency for performing the density tests and shall be one density test per lift of structural rill placed at each abutment and one density test for every other lift placed at each panel. Lifts which are placed on the opposite sides of the panel will be considered as individual lifts for each side of the panel. The location of the test shall be representative of the area being tested or as directed by the Contracting Officer. Density tests performed in accordance with ASTM D 2922 (Nuclear Method) shall be verified by in place density test results obtained from ASTM D 1556 (Sand Cone Method). One verification test will be required for every ten nuclear density tests performed. The nuclear test and the verification test shall be conducted concurrently at the same site and on the same material.

4. Moisture Content Tests. Moisture content tests at each density test location shall be taken to assure compliance with requirements for fill placement with the design sections as specified in paragraph 5.2. Determination of moisture content shall be performed in accordance with ASTM D 2216 in conjunction with the ASTM D 1556 sand cone in-place density test and ASTM D 2922 nuclear in-place density test.

5. In addition to the above frequency of tests, additional tests are required as follows:

a. Where the Contracting Officer's representative has reason to doubt the adequacy of the compaction or moisture control.

b. Where special compaction procedures are being used.



c. When embankment materials change substantially, the Contracting Officer may direct additional testing.

d. Areas not meeting the specified density shall be retested at no additional cost to the Government, after corrective measures have been applied.

(7) Borrow Areas. Location, station limits, actual and allowable depths, drainage, and substitute borrow areas. Before and after excavation, the Contractor shall perform, plot and submit to the Contracting Officer compliance cross sections at maximum 50 foot intervals within the borrow areas with the theoretical sections superimposed thereon.

3.2 Reporting. The original and two copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

#### PART 2 - PRODUCTS

4. RIPRAP. Riprap protection shall be provided at bridge abutments as shown on the contract drawings. Geotextile fabric (filter cloth) shall be new and conform to the requirements of LSSRB Section 1019.01 (Geotextile Fabric). Riprap shall be Class 30 lbs and shall conform to the requirements of LSSRB 711.02 (Riprap). Tolerance shall be plus 2 inches and minus 0 inches. Placement of riprap shall not be dropped more than 12 inches. If dropping damages the filter fabric, riprap shall be placed onto the filter fabric without dropping. One (1) copy of the gradation test results shall be furnished to the Contracting Officer.

#### PART 3 - EXECUTION

##### 5. STRUCTURAL EXCAVATION AND BACKFILL.

5.1 General. The Contractor shall make all excavations required for the construction of the abutments, floodwall, and gate structures and for removal of obstructions on or near the surface which prevent driving piles to their required penetration. The Contractor shall design and provide all necessary shoring, bracing, sheeting, underpinning, and supports as may be required for the work. The Contractor shall also provide sumps, pumps, or ditches which may be required to dewater the excavations. Suitable material from required structural excavation shall be used in the structural backfill. Material classified by the Unified Soil Classification System (as shown on the Soil Boring Legend) as gravels (GW, GP, GM) and sands (SW, SP, SM) shall not be used. Materials determined to be unsuitable by the Contracting Officer shall be ordered wasted.

5.2 Structural Backfill. Structural backfill is defined as suitable fill material which is placed within the limits of the structural excavation and the final grade as indicated on the drawings and as herein specified. The Contractor shall backfill all excavations to final grade. Structure fill shall be placed in successive layers not to exceed 8 inches and fully compacted to 95 percent maximum density as determined by ASTM D-698. Structural fill shall be within 5 percentage points above or 3 percentage point below the optimum moisture content as determined by ASTM D 698. Fill material which is outside of this range will not be permitted. When the surface of any compacted layer is too smooth to bond properly to the succeeding layer, it shall be disked or scarified to a depth of three inches before the next layer is placed thereon. Material for structure fill shall be obtained from the required structure excavation and, if required, from borrow area and shall be free from unsuitable material. Structural fill shall not be placed in water or upon frozen ground. Excess material from the structural excavation, which is not required as fill on any other area of the project, shall become the property of the Contractor, and shall be removed from the site at no additional cost to the Government. Structural fill shall not be placed against concrete structures for a minimum of 14 days after the concrete is placed. The Contractor may, at his expense, place fill sooner if he furnishes and tests cylinders to demonstrate that the concrete has achieved 75 percent of its design capacity.

5.2.1 Equipment - Hand Tampers. Hand tamping shall be used in the compaction of structural fill within three feet of any structure and near structures where vehicular equipment cannot be used. These hand tampers should be power driven, hand operated type.

5.3 Uncompacted Fill. Uncompacted fill at the dredge disposal site shall be placed in approximately horizontal layers not exceeding 3 feet in thickness. The layers shall be uniformly spread, distributed, and otherwise manipulated during placement to such an extent that individual loads of material deposited on the fill will not remain intact, and large, open voids in the fill will be eliminated. Layers shall be started full out to the slope stakes, and shall be carried in lifts approximately horizontal and parallel to the centerline with sufficient crown or slope to provide satisfactory drainage during construction. Lifts shall be placed in a manner which prevents shrinkage cracks and open voids from developing in previously placed lifts.

5.4 Unsuitable Materials. Materials which are classified as unsuitable structural fill are defined as material containing organic matter, sticks, branches, roots, brick, concrete, rock, and other debris.

5.4.1 Frozen Materials. Under no circumstances shall frozen earth, snow or ice be placed in the fill. The Contracting Officer may require the wasting of frozen material.

5.5 Dressing. The fill shall be brought to not less than the prescribed design section at all points. Unreasonable roughness of surface shall be dressed out to permit fertilizing and seeding operations.

5.6 Shoring. The Contractor shall provide all necessary shoring, bracing, sheeting, underpinning, and/or supports as may be required for the construction of the abutments, floodwall and flood gates. A design and the method of installing the proposed shoring shall be submitted to the Contracting Officer for approval at least 30 days prior to its actual intended use. Upon completion of the structure, the Contractor shall remove the shoring at the direction of the Contracting Officer or his representative. The void created by the shoring removal shall be backfilled and the surface area shall be treated to match the existing surface prior to the installation of the shoring. Excavations more than 5 feet deep shall be shored unless shown otherwise on the drawings. Also, the Contractor shall meet the requirements on shoring specified in "EM 385-101, Section on Excavation".

## 6. EXCAVATION IN BORROW AREAS.

6.1 General. The Contractor shall submit an excavation plan in writing for approval by the Contracting Officer, allowing 30 days for review, and shall not begin excavation until the Contracting Officer's approval has been received. The plan shall contain, as a minimum, the following:

(1) The Contractor's proposed methods for draining and keeping dry during excavation the borrow areas excavated under this contract.

(2) The Contractor's proposed methods for draining borrow areas excavated under this contract which may be flooded by high river stages.

(3) The Contractor's proposals for making optimum use of available borrow, including the Contractor's proposed methods for smoothing the bottom of the borrow pits after having completed use of the pits.

(4) A plan for stockpiling embankment material before it is transported to the project site to include locations, stockpile heights, slopes and limits.

6.2 Clearing Borrow Areas. Borrow areas shall be cleared to the extent necessary to provide materials free from unsuitable matter as described in paragraph 5.4. Certain stumps and areas containing masses of organic matter or other unsuitable material may be left in place upon approval of the Contracting Officer.

6.3 Unsuitable Materials. Materials from borrow areas which, as defined in paragraph 5.4, are unsuitable for structure backfill and containment dike, will be ordered wasted and shall be disposed of in abandoned portions of the borrow pit. The material shall be shaped so that its surface is free from abrupt changes in grade and shall be sloped to drain. Where possible, unsuitable materials in borrow areas shall not be removed.

## 7. GOVERNMENT FURNISHED BORROW AREAS.

7.1 Use of Bonnet Carre Spillway as Borrow Area. Government-furnished borrow and stockpile areas for exclusive use in the performance of this contract have been established in the Bonnet Carre Spillway at the location and within the respective limits shown on the drawings. Borrow and stockpiling from this source shall be performed in accordance with applicable notations on the drawings and as provided in these specifications. No stockpiling of material at right angles to the spillway axis will be permitted between 1 January and 30 June. Sand haulers' permits grant a permittee 20 calendar days in which to remove equipment and stockpiled sand from his tract after the date of receipt of notice from the Government to vacate a tract. The Contractor shall give written notice to the Contracting Officer that will allow at least 30 calendar days for affected sand hauler permit termination and grant unobstructed occupancy of the borrow area to the Contractor. Should the Contractor elect not to use this Government-furnished source of borrow or any portion of it, he may be required to relinquish any or all portions of this borrow area for resumption of permitted sand removal or use by other Government contractors. Excavation grade shall be to slope and depth shown on drawings. For excavation in the Bonnet Carre Spillway borrow area, a tolerance of one foot above or below the prescribed grade and cross section shown will be permitted. To maximize the suitable clay yield of the borrow area for structural backfill, stripping of overlaying materials in advance of clay removal shall be limited to two weeks and erosion from stockpiles of unsuitable material shall be diked or ditched to drain away from suitable borrow material. The Contractor shall maintain a minimum of 10 feet between the toe of unsuitable material and top of the borrow area cut. Stockpiles of clay shall be limited to a two week supply between January 1 and June 30 of each year to assure opportunity for removal and conservation of materials in the event operation of the spillway becomes necessary. A permittee may be allowed to remove stripped material, provided that removal does not interfere with contract work. River water may seep through the Bonnet Carre' Structure when the river stage

at 'Bonnet Carre' is at elevation +16.0 NGVD or above, and if and when spillway operation requires demobilization and remobilization in the Bonnet Carre Spillway borrow area, and equitable adjustment under the Contract Clause entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)" of the Contract Clauses will be made. The Contractor shall cooperate and coordinate his use of mutual haul road with others.

7.2 Borrow Areas Requirements. Borrow areas shall conform to requirements prescribed herein and as shown on the drawings. The permissible depths in the borrow areas are indicated on the drawings, but the right is reserved in accordance with the Contract Clause entitled "CHANGES", to modify the permissible depths in accordance with subsurface conditions determined as work proceeds. The bottom of the pits excavated under this contract shall be left relatively smooth. Abrupt changes in grade shall be avoided. The borrow areas excavated under this contract shall be drained and kept dry during excavation, as excavation will not be permitted in water nor shall excavated material be scraped, dragged or otherwise moved through water. Drainage of borrow areas shall be accomplished by ditching, sump pumping or other approved methods. The borrow areas excavated under this contract and flooded from high river stages shall be drained and allowed to dry as quickly as practicable after the high river stage has passed. Abrupt changes in borrow area alignment shall be avoided. To make optimum use of available borrow, the excavation of the borrow areas, shall be made continuous throughout the length of the borrow areas to the permissible borrow depths, and at the width necessary to provide the required quantity of suitable material, and in such manner that all suitable available material within the required width will be utilized.

## 8. EXCAVATION IN CONTRACTOR-FURNISHED BORROW AREAS.

8.1 General. The Contractor, at his option, may utilize borrow areas other than those indicated, provided that their location and dimensions are approved by the Contracting Officer, and the character of the material therein, as indicated by Government-selected tests of soil samples performed by an approved independent laboratory at the Contractor's expense, is equal to or better than the Government-furnished borrow material; and provided that he has submitted written evidence to the Contracting Officer that he has obtained property rights and access to the material therein. All necessary data herein described shall be submitted to the Government as one request in a single package. The written evidence shall consist of an authenticated copy of the conveyance under which the Contractor acquired the property rights and access thereto, prepared and executed in accordance with the laws of the State of Louisiana. Substitute borrow pit soil borings, witnessed by a Government representative, shall be furnished by the Contractor at a spacing that will adequately define the material in the pit, but in no case shall the borings be spaced greater than 500 feet on centers. Borings taken along the proposed borrow

pit boundary shall be located no farther than one-half of the boring spacing in the pit or 250 feet, whichever is less. The borings shall be extended at least 5 feet below the depth of planned excavation. Soil samples shall be classified in accordance with the Unified Soil Classification system and shall include water content determinations based on dry weight on representative soil samples, taken at each 2.5 feet of depth. These representative soil samples shall be submitted to an approved laboratory properly labeled and sealed in an airtight container to preserve the natural water content for laboratory determination. The resulting classification and water content determination and borrow pit boring logs shall be submitted to the Contracting Officer for determination of the suitability of the material for construction use. A plan view outlining the limits of the proposed substitute borrow pit and borrow boring locations shall be submitted to the Contracting Officer. Cross sections shall be taken at a maximum of 200 feet intervals over the proposed area of excavation lines superimposed. If temporary rights are obtained by the Contractor, then the period of time should coincide with the Special Contract Requirement entitled "COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK", hereof, plus a reasonable time for any extension granted for completion of the work. The Contracting Officer reserves the right to approve or disapprove the use of Contractor-furnished borrow areas located in woodlands or wetlands based on the location of the areas and a determination of the overall impact the proposed excavation will have on the environment. The substitute borrow material shall be free of deleterious chemicals which would impede satisfactory growth of grass as provided in Section 02935, "FERTILIZING, SEEDING AND MULCHING". The Contractor shall have a certified public or private agronomist test the alternate borrow pit fill material and prescribe whatever modification may be necessary to Section 02935, "FERTILIZING, SEEDING AND MULCHING", of this specification so as to insure a satisfactory growth of grass. All cost associated with testing and modification to Section 02935 shall be borne at the Contractor's expense. No time extension in contract completion shall be granted for delays incurred in obtaining Contractor-furnished borrow areas. The Contractor shall be solely responsible for any and all damages, claims for damages, and liability of any nature whatsoever arising from or growing out of the use of borrow areas other than those furnished by the Government. If material in substitute borrow areas is determined by the examination of submitted soil samples, to be as permeable or less permeable than material in the borrow areas indicated, the substitute borrow material may be used in levee embankment provided the quality of the material is otherwise satisfactory. However, if the material in substitute borrow areas is more permeable than materials in the borrow areas indicated, the substitute borrow material shall not be used in levee embankment regardless of its quality. Approval of location and dimensions of substitute borrow areas shall neither relieve the Contractor from the obligation to furnish satisfactory material, nor in any way

commit the Government either to acceptance of unsatisfactory material, or to responsibility for the character, quantity, or availability of material in such substitute borrow areas.

8.1.1 Equipment. The Contractor shall provide the types of equipment as necessary to perform the required excavation according to the in situ conditions of the borrow areas.

8.1.2 An Environmental Assessment must be prepared for all Contractor-furnished borrow areas to determine the impact the proposed excavation will have on the environment. This assessment will be prepared by the Government. The Contractor shall furnish a map of the borrow areas at a 1:24,000 scale to the Contracting Officer, and shall allow three months for the assessment to be completed and for compliance to be documented.

8.1.3 The Contractor is responsible for determining that significant cultural resources are not impacted by the proposed excavation. Normally, such a determination will require a field investigation by a professional archeologist. The field investigation consists of an inspection of the proposed borrow area, including access roads, adequate to determine if any cultural resources eligible for listing in the National Register will be impacted. The Contractor shall provide a written report on the results of the field investigation to the Contracting Officer. Prior to approval of the Contractor-furnished borrow area, the written report will be evaluated by the Contracting Officer and the Corps' cultural resources specialists to determine the adequacy of the cultural resources investigation to discharge the Corps' cultural resource responsibilities. Should the Contractor believe that a field investigation of the borrow area is not necessary to determine that no cultural resources will be impacted, he shall present his justification to the Contracting Officer. Should the Contracting Officer determine that a field investigation is necessary, the above outlined procedures shall be followed. Consultations with the Louisiana State Historic Preservation Officer (SHPO) and all other required consultations will be performed by the Corps' cultural resources specialists. All costs of mitigation of adverse effects to cultural resources, if required, shall be borne by the Contractor.

## 9. MEASUREMENT AND PAYMENT.

9.1 Structural Excavation and Backfill. Unless otherwise specified elsewhere, no separate measurement or payment will be made for "Structural Excavation and Backfill" as defined under this section. All costs associated with this item shall be included in the contract lump sum price for "Class A Concrete", except excavation for and construction of dredge disposal area containment dike, which shall be included in the applicable contract unit price per cubic yard. Payment shall constitute full

compensation for furnishing all plant, labor, equipment and material for performing structural excavation, backfill, temporary stockpiling, and all other cost incidental thereto.

9.2 Waste Materials. Materials ordered wasted by the Contracting Officer will be measured for payment by the cubic yard, and quantities will be determined by the average end area method. The basis of measurement will be a survey of the area prior to excavation and second survey of the same area after completion of the excavation. Payment for materials ordered wasted will be made by an equitable adjustment under the provision entitled "CHANGES" of the Contract Clauses.

9.3 Excavation and Backfill. Excavation and backfill required for the modification or relocation of existing utilities shown on utility plan, and that falls outside of the limits of construction shown on the drawings will not be paid for separately, but will be included in the contract price for the items of work which are incidental thereto.



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SECTION 02315 - STEEL H-PILING

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## SECTION 02315 - STEEL H-PILING

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, labor, and materials and performing all operations in connection with the installation of steel H-piles in accordance with these specifications and applicable drawings.

### 2. QUALITY CONTROL.

2.1 List of Requirements. Requirements for materials, tests, machinery, workmanship, and other measures for quality control shall be as specified and shown in the drawings. The Contractor shall provide continuous inspection of all operations for quality control and record the results for submitting to the Contracting Officer to show compliance with the contract requirements. The Contractor's quality control records shall include but not be limited to the following items:

- (1) materials;
- (2) delivery, storage, and handling;
- (3) placing (location, alignment, etc.);
- (4) driving records;
- (5) cutting;
- (6) record keeping; and,
- (7) splices.

3. APPLICABLE PUBLICATIONS. The following American Society for Testing and Materials (ASTM) standards of the issues listed, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

A588-91a                      High-Strength Low Alloy Structural Steel with  
50 ksi Minimum Yield Point to 4 in. Thick

### 4. SUBMITTALS.

4.1 Equipment Descriptions. The Contractor shall submit descriptions of pile driving equipment, delivery, storage and handling methods, placement plans, driving records, quality control records, and other submittals to the Contracting Officer for approval as required. Submittals shall be adequately detailed to thoroughly depict intended methods or processes. Submittals not satisfactory to the Contracting Officer will be rejected. Complete descriptions of pile driving equipment, including

hammers, power packs, extractors, leads, and other appurtenances shall comply with the requirements of paragraph 7.1 and shall be submitted for approval at least 30 days prior to commencement of work.

4.2 Shop Drawings. Shop drawings for piles shall provide details and dimensions of all shop and field fabrications.

4.3 Delivery, Storage, and Handling Plans. Plans for the proposed methods of delivery, storage, and handling of piles shall comply with the requirements of paragraphs 6.1 and 6.2 and shall be submitted for review and approval at least 30 days prior to delivery of piles to the job site.

4.4 Placement Plans. Placement plans shall show the proposed methods for controlling the location and alignment of piles as required in paragraph 7.2.2 and shall be submitted for review and approval at least 30 days prior to delivery of piles to the job site.

4.5 Driving Records. Original records of pile driving operations for each pile driven shall be submitted daily. Recorded data for piles shall include the data specified in paragraph 7.2.3, unusual driving conditions, interruptions or delays during driving, and any other pertinent information. The format for driving records shall be in accordance with the format provided by the Contracting Officer.

4.6 Quality Control Records. Original quality control records, including records of any corrective actions, shall be submitted weekly.

## 5. MATERIALS.

5.1 Steel. Steel for H-piles shall conform to the requirements of ASTM A588.

5.2 H-Piles. H-piles shall be HP14x73 sections as shown in the drawings and shall have standard square ends unless otherwise directed. Lengths of piles shall be determined as specified in paragraph 7.2.1.

5.3 Pile Splices. Pile splices shall be made with continuous groove welds. Splice details shall be submitted to the Contract Officer for approval prior to construction.

## 6. DELIVERY, STORAGE, AND HANDLING.

6.1 Delivery and Storage. Delivery and storage plans shall be submitted for approval as specified in paragraph 4.3. Piles shall be stacked during delivery and storage so that each pile is maintained in a straight position and is supported every 10 feet

or less along its length (ends inclusive) to prevent exceeding the maximum permissible camber or sweep. Piles shall not be stacked more than 5 feet high unless approved by the Contracting Officer.

6.2 Handling. The method of handling piles shall be submitted for approval as required in paragraph 4.3. Piles shall be lifted using a cradle or multiple point pick-up to ensure that the maximum permissible camber or sweep is not exceeded due to insufficient support, except that a one-point pick-up may be used for lifting piles that are not extremely long into the driving leads. Point pick-up devices shall be of the type that clamp to both pile flanges at each pick-up point. Holes may be burned in the flanges or webs of piles above the cutoff length for lifting piles into the leads. Piles shall not be dragged across the ground. The Contractor shall inspect the camber, sweep, web, and flanges of piles for damage before transporting them from the site storage area to the driving area. Camber and sweep shall be checked by placing piles on a firm, level surface and rotating them. The maximum permissible camber and/or sweep shall be 2 inches over the length of the pile. The Contracting Officer will check piles for damages and excessive camber or sweep immediately prior to placement in the driving leads. Damaged piles or piles with camber or sweep exceeding 2 inches will be rejected for use and replaced at no additional cost to the Government.

## 7. INSTALLATION.

7.1 Pile Driving Equipment. The Contractor shall select the proposed pile driving hammer and driving system as specified and submit it to the Contracting Officer for approval as required in paragraph 4.1. Final approval of the proposed hammer and driving system is subject to the satisfactory completion and approval of pile tests. Changes in the selected pile driving system will not be allowed after the system has been approved by the Contracting Officer except as directed by the Contracting Officer. No additional contract time will be allowed for Contractor proposed changes in the approved driving system.

7.1.1 Pile Driving Hammers. Pile driving hammers shall be of the impact type hammer.

7.1.1.1 Impact Hammers. Impact hammers shall be steam, air, or diesel hammers of the single acting, double-acting, or differential acting type. The size or capacity of hammers shall be as recommended by the manufacturer for the pile weight and soil formation to be penetrated. Boiler, compressor or engine capacity shall be sufficient to operate hammers continuously at the full rated speed. Hammers shall have a gage to monitor hammer bounce chamber pressure for diesel hammers or pressure at the hammer for air and steam hammers. This gage shall be operational during the driving of piles and shall be mounted in an accessible location for monitoring by the Contractor and the Contracting Officer. The Contractor shall provide bounce chamber pressure gage correction

tables and charts for the type and length of hose to be used with the pressure gage to the Contracting Officer. The Contractor shall submit the following information for each impact hammer proposed:

- (1) make and model;
- (2) ram weight (pounds);
- (3) anvil weight (pounds);
- (4) rated stroke (inches);
- (5) rated energy range (foot-pounds);
- (6) rated speed (blows per minute);
- (7) steam or air pressure, hammer, and boiler and/or compressor (pounds per square inch);
- (8) rated bounce chamber pressure curves or charts, including pressure correction chart for type and length of hose used with pressure gage (pounds per square inch);
- (9) pile driving cap, make, and weight (pounds);
- (10) cushion block, dimensions, and material type; and,
- (11) power pack description.

A scale (inches) shall be fixed to the hammer's ram guide and a pointed indicator on the ram, near the scale, to allow a reading of the ram drop (see diagram on page 02362-16). Installation of both scale and indicator shall be in such a manner that the drop of the ram can be read by observing the highest and the lowest position of the indicator and scale. Both the scale and the indicator shall be easily legible to observers on the ground during operations. The Contractor shall record the ram drop of the pile hammer when recording the blows per foot as specified in the Pile Driving Record.

7.1.1.2 Vibratory Hammers. The use of vibratory hammers will not be allowed.

7.1.2 Pile Driving Leads. Impact hammers shall be supported and guided with fixed extended leads or fixed underhung leads. Two intermediate supports for the pile in the leads shall be provided to reduce the unbraced length of the pile during driving and pulling.

7.1.3 Pile Extractors. Pile extractors may be vibratory and/or impact pile driving hammers. Impact hammers are required for pulling piles not extractable with vibratory hammers.

7.1.4 Jetting Equipment. Jetting shall not be allowed.

## 7.2 Permanent Piles.

7.2.1 Lengths. The estimated quantities of piles listed in the unit price schedule to be furnished by the Contractor are given for bidding purposes only. The Contracting Officer will determine the actual lengths of piles required to be driven below cutoff elevation for the various locations in the work and will furnish the Contractor a quantities list indicating lengths and locations of all piles to be furnished and placed. This pile length determination will be made from the results of pile tests.

7.2.2 Placement. Pile placement plans shall be submitted for approval as required in paragraph 4.4. Piles shall be placed accurately in the correct location and alignments, both laterally and longitudinally, and to the vertical lines as shown in the drawings. The Contractor shall establish a permanent base line during pile driving operations to provide for inspection of pile placement by the Contracting Officer. The base line shall be established prior to driving permanent piles and shall be maintained during the installation of the permanent piles. Prior to driving and with the pile head seated in the hammer, the Contractor shall ensure that each pile has been aligned correctly and that the orientation of the web about the center line of the pile is as shown in the drawings. A final lateral deviation from the correct location at the cutoff elevation of not more than 3 inches will be permitted for vertical piles. A final variation in alignment of not more than 1/4-inch per foot of longitudinal axis will be permitted. A final variation in rotation of the pile about the center line of the web of not more than 7.5 degrees will be permitted. The correct relative position of all piles shall be maintained by the use of templates or by other approved means. Piles not located properly or exceeding the maximum limits for rotation, lateral deviation, and/or variation in alignment shall be pulled and redriven at a location directed by the Contracting Officer at no additional cost to the Government.

7.2.3 Driving. Piles shall not be driven within 100 feet of concrete less than 7 days old nor within 30 feet of concrete less than 28 days old unless otherwise authorized by the Contracting Officer. A complete and accurate driving record of piles shall be compiled and submitted as required in paragraph 4.5. The driving record for impact hammers shall include pile dimensions and location, pile identification number, date driven, original pile length, tip elevation, description of hammer used, rate of hammer operation, length of bounce pressure hose, number of blows required for each foot of penetration throughout the entire length of each pile and for each inch of penetration in the last foot of penetration, total driving time in minutes and seconds for each pile, and other pertinent information as required or requested by the Contracting Officer. When driving long piles of high-slenderness ratio, special precautions shall be taken to ensure against overstressing and leading away from a plumb or true position. Permanent and test piles shall be driven with hammers

of the same model and manufacturer, same energy and efficiency, and using the same driving system. The hammers shall be operated at all times at the speed and under the conditions recommended by the manufacturer subject to the approval of the Contracting Officer. Once pile driving has begun, all conditions (such as alignment, batter, cushions, etc.) shall be kept constant. Each pile shall be driven continuously and without interruption until the required depth of penetration has been attained. Deviation from this procedure will be permitted only when driving is stopped by causes that reasonably could not have been anticipated. The controlling depth of penetration will be determined by the Contracting Officer. Jetting shall not be used to assist driving piles. A pile that cannot be driven to the required depth because of an obstruction shall be pulled and redriven or shall be cut off and abandoned, whichever is directed by the Contracting Officer. When driving piles in clusters or under conditions of relatively close spacing, observations shall be made to determine heave. Heaved piles shall be backdriven to the original depth of penetration without additional cost to the Government. Piles damaged or impaired for use during driving shall be pulled and replaced with new piles or shall be cut off and abandoned and new piles driven as directed by the Contracting Officer without additional cost to the Government. The Contracting Officer may require that any pile be pulled for inspection. Piles pulled at the direction of the Contracting Officer and found to be in suitable condition shall be redriven at a location directed by the Contracting Officer and payment therefore will be made in accordance with paragraph 9.4.1. Piles pulled at the request of the Contracting Officer and found to be damaged shall be replaced by new piles at the Contractor's expense. After piles are driven, they shall be cut off square at the indicated cutoff elevation. Any voids occurring around piles shall be backfilled with a cement-sand-bentonite slurry as specified in paragraph 02411-9.5.

7.2.4 Pile Splicing. The fabrication and welding procedures for splicing piles shall be as shown in the drawings. Ends of the piles to be spliced shall be square so that full contact can be made between the abutting flanges and webs. Squaring, where required, shall be done by saw cutting or flame cutting with a straight edge.

## 8. MEASUREMENT.

8.1 Furnishing and Delivering. Permanent piles will be measured for payment for furnishing and delivering by the linear foot of piles required as determined by the Contracting Officer and furnished to the Contractor. No payment will be made for lengths of piles exceeding required lengths.

8.2 Driving. Permanent piles will be measured for payment for driving on the basis of lengths, to the nearest tenth of a linear foot, along the axis of each pile acceptably in place below the elevation shown in the drawings.

9. PAYMENT.

9.1 Furnishing and Delivering. Payment for furnishing and delivering the required lengths of permanent H-piles will be made at the applicable contract unit price per linear foot for "Furnish and Deliver Steel H-Piles," with price and payment constituting full compensation for all costs of furnishing and delivering piles to the work site.

9.2 Driving. Payment for driving permanent piles, measured as specified in paragraph 8.2, will be made at the applicable contract unit price per linear foot for "Driving Steel H-Piles," with price and payment constituting full compensation for costs of handling, driving, measuring heave, re-driving heaved piles, cutting off piles at the cutoff elevation, compiling and submitting pile driving records, backfilling voids around piles, and any other items incidental to driving piles to the required elevation.

9.3 Cutoffs. Costs of cutting piles and removing the cutoff portions from the site shall be included in the applicable contract unit price for the payment item covered in paragraph 9.1.

9.4 Pulled Piles.

9.4.1 Undamaged Piles. Piles pulled at the direction of the Contracting Officer and found to be undamaged will be paid for as follows:

(1) The cost of furnishing and delivering piles will be included in the contract unit price per linear foot for "Furnish and Deliver H-Piles".

(2) The cost of driving piles will be included in the contract unit price per linear foot for "Driving Steel H-Piles".

(3) The cost of pulling piles will be paid for at twice the applicable contract unit price for linear foot for "Driving Steel H-Piles".

(4) The cost of re-driving piles will be included in the contract unit price per linear foot for "Driving Steel H-Piles".

9.4.2 Damaged Piles. No payment will be made for furnishing, delivering, driving, pulling, and disposing of piles pulled and found to be damaged. New piles replacing damaged piles will be paid for at the applicable contract unit price for items covered in paragraphs 9.1 and 9.2.

9.5 Filling Voids Around Driven Piles. No separate payment will be made for backfilling voids around piles with fill material. All costs in connection therewith shall be included in the contract unit price for driving piles covered in paragraph 9.1.



9.6 Pile Splices. No separate payment will be made for piles splices. Costs for piles splices shall be included in payment for "Furnish and Deliver Steel H-Piles".

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SECTION 02355 - PILE LOAD TESTS

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, labor, and materials, and performing all operations in driving, testing, pulling, and removing of prestressed, precast concrete and steel H-piles, in accordance with these specifications and as shown on the drawings. Test methods described herein are generally in accordance with ASTM D 1143. The Contractor shall submit his plan for conducting compression tests to the Contracting Officer for approval a minimum of 15 days prior to the beginning of the tests. The test pile site is located on the drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Prestressed Concrete Piling. Section 02362, "PRESTRESSED CONCRETE PILING".

2.2 Steel H-Piling. Section 02315, "STEEL H-PILING".

3. APPLICABLE PUBLICATIONS. The following publications, referred to thereafter by basic designation only, form a part of this specification to the extent indicated:

3.1 American Society for Testing and Materials (ASTM).

D 1143-87                      Method of Testing Piles Under Static Axial Compressive Load

A252-90                      Welded and Seamless Steel Pipe Piles

4. QUALITY CONTROL.

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

(1) Facilities and personnel providing for installation and reading by the Contractor of all measuring devices.

(2) Compression test (pile number, location); loading frames and description (number, size, type, and location of supporting piles); sequence and method of loading; records of measurements, and driving records.

4.2 Reporting. The original and two copies of these records and tests, as well as records of corrective action taken, shall be furnished to the Government daily. Format of reports other than test data shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

4.2.1 The Contractor shall furnish all data from each pile tested within 24 hours after completion of each test. Blow counts shall be recorded for each foot of each test pile and, in addition, the Contractor shall complete revised LMN Form 1119 (Pile Driving Report) and furnish copies to the Contracting Officer. The Pile Driving Report shall include, but not necessarily be limited to, unusual driving conditions, interruptions or delays during driving and any other information considered pertinent. Pile test data shall be recorded for all items shown in paragraph 10. Copies of these forms shall also be furnished to the Contracting Officer.

## PART 2 - PRODUCTS

### 5. TYPES AND PROPERTIES.

5.1 Types. Concrete piles shall conform to requirements of Section 02362. Steel H-piles shall conform to the requirements of Section 02315. Tip elevations are shown on the drawings.

5.2 Properties. Pile properties shall conform to the requirements of Section 02362 for concrete piles and Section 02315 for steel piles.

## PART 3 - EXECUTION

### 6. PLACING TEST PILE.

6.1 Test piles TP1 and TP2 shall be driven vertically to the tip elevation and at the locations shown on the drawings. A variation from the vertical of not more than 1/4-inch per foot of longitudinal axis will be permitted. Any pile driven and not meeting the above requirements shall be pulled and redriven by the Contractor at no additional cost to the Government.

6.2 Test Pile TP2 shall be driven within a casing extending to El. -20. The casing shall be excavated to elevation -20.0 prior to driving the test pile. Casing shall be 42 inch OD x 0.5-inch thick steel pipe conforming to ASTM A252, Grade 1.

7. DRIVING TEST PILE. The service pile driving procedures specified in Sections 02362 and 02315 also apply to the driving of test piles. The hammer used for driving the test piles shall be the same hammer that will be used to drive the service piles.

## 8. TEST PILE LOADING.

8.1 Scope. This part covers procedures for testing vertical foundation piles to determine the response of the pile to a static compressive load applied axially to the pile. Determination of the allowable compression load for the pile is made by the incremental loading and measurement of the pile deformation.

### 8.1.1 Reserved.

8.1.2 Compression Test. Test piles TP1 and TP2 shall be furnished in the lengths required and driven as directed by the Contracting Officer at the location shown on the drawings. A minimum time period of 21 days shall be allowed to elapse between driving of the piles and the initiation of a compression test. There will be no payment nor additional time granted for delays incurred between driving of test piles and initiation of pile tests.

8.2 General Procedures. The Contractor shall provide and be responsible for furnishing all necessary apparatus, measuring equipment, and personnel to install, test, and extract the test piles described within this specification in its entirety. The recording and reporting of all data shall be the responsibility of the Contractor. However, the Contracting Officer's representative shall have free access to the pile test data at any time. A Government representative (engineer) will be present during the load tests. The Contractor shall provide the Contracting Officer 72 hours notice prior to initiating each pile load test in order that arrangements may be made to have a Government representative present during the test. The reduction, analysis, and interpretation of the test data will be accomplished by Government personnel after completion of each pile test. Additional pile tests may be required as determined by the Contracting Officer. In order to prevent disturbances to the instrumentation readings, construction activities, equipment movement, or operation of construction equipment, will not be permitted within 200 feet of any load test in progress.

8.3 Loading Frames. For illustration purposes, the loading frames for applying known compressive loads to a pile are shown on the drawings. Loading frames shall be constructed so that the loads are applied axially to minimize eccentric loading. Design considerations such as sizes, numbers, and material of specific beams, support piles, bearing plates, etc., shall be the responsibility of the Contractor and subject to approval of the Contracting Officer. Included with his plan for conducting the tests, the Contractor shall submit computations used in the design of the loading frame. The computations shall be certified by a registered professional engineer. For the compression test, a steel bottom bearing plate of appropriate thickness for the loads involved shall not be less than the size of the pile butt, nor less than the area covered by the base of the hydraulic jack. A

top bearing plate shall have a size not less than the load cell head, nor less than the total width of the reactor beam(s). The support piles for the loading frame shall be placed as far from the test piles as practicable, but in no case less than a clear distance of 8-feet (2.4 m). The box or platform shall be loaded with any suitable material such as soil, rock, concrete, steel, or water filled tanks with a total weight (including that of the test beams(s) and box or platform) at least 10 percent greater than the anticipated maximum test load. The anticipated maximum test load is three times the service load. Service loads are shown on the drawings.

8.4 Apparatus for Applying Pile Load and Measuring Movement. All equipment related to the load test (extensometers, level, load cell, hydraulic jack, scales, mirrors, etc.) and testing shall be furnished and operated by the Contractor. Typical apparatus setup is depicted on the drawings. The hydraulic jack shall be equipped with a pressure reading gage calibrated in tons and with a ram having a spherical bearing head to minimize eccentric loading. The jack shall be capable of maintaining constant loads between load changes and shall be calibrated prior to the test so that the load applied is controllable to within 5 percent. The load cell (non-self-leveling) shall be an electric strain gage type equipped with a readout device. Load cells shall be calibrated prior to the test to an accuracy within 2 percent of the applied load. The changing and maintaining of loads on each test pile shall be done utilizing the load cell as the primary loading device and pressure gage on the jack as a backup. However, both readings shall be recorded. Extensometers shall be used to measure pile movement and shall have dial gages with stems having at least a 3-inch (76 mm) travel, or sufficient gage blocks shall be provided to allow this travel with shorter gage stems. Gages shall be read to an accuracy of 0.001-inch (0.025 mm). Smooth bearing surfaces perpendicular to the direction of the measurements shall be provided for by the gage stems. The hydraulic jack, load cell, and extensometers shall be calibrated both before the start and after the completion of the testing program, by a certified testing laboratory for both the loading and unloading cycles and calibration curves furnished to the Contracting Officer. The calibration curves shall be load cell strain readings versus load in tons. In developing the calibration curves, the load cell shall be placed above the jack in the testing machine and the loads shall be applied through the ram to the load cell to the testing machine in the actual working manner of the field loading system. Two reference beams, one on each side of the pile, shall be independently supported with supports firmly embedded in the ground at a clear distance of not less than 8-feet (2.5 m) from the test pile, and 7 to 8 feet (2.1 to 2.5 m) from the support piles. Reference beams shall be of sufficient stiffness to prevent excessive deflections. Reference beam stakes shall have 5-feet (1.5 m) minimum penetration. If steel reference beams are used, one end of each beam shall be free to move as the length of the beams change with temperature variations. As a backup to the

extensometers, an engineer's level and scale shall be used to check the movement of the test pile. The level shall also be used to check the movement of the support piles. Scales used to measure pile movements shall read to 1/64th of an inch or to 0.01 inch (0.25 mm). Target rods shall read 0.001 foot (0.3 mm). All dial gages, scales, and reference points shall be clearly marked with a reference number or letter to assist in recording data accurately. Readings from the surveyor's level may be taken on a target rod or a scale and shall be referenced to two permanent benchmarks located outside the immediate test area or the surveyor's level shall be mounted on an object of fixed elevation (for example, a driven pile) outside of the immediate test area. Readings shall be taken on two fixed points or scales on opposite sides of the pile or pile cap or on a single fixed point or scale in the center of the pile top or pile cap. Readings shall be taken on a sufficient number of support piles and on the reference beams to establish if there is any movement. A tarpaulin of minimum dimension of 12-feet x 12-feet shall be installed by the Contractor to protect at all times the instrumentation, measuring system, and prevent adverse temperature variations.

8.5 Loading Procedure and Measurement of Pile Movement. The anticipated service loads for the test are shown on the drawings. After the test piles are driven, the Contractor shall allow a time period of not less than 21 days to elapse before loading the test piles. Apply loads to the piles in increments of 25 percent of the anticipated service load until 200 percent of the service load is reached or until failure, whichever ever occurs first. The rate of application and removal of load shall be 2 tons per minute. The Contractor shall take readings of time, load, and movement and record them for each load increment or load decrement. When the 25 percent increment has been reached, the Contractor shall maintain the load for 2 hours and readings shall be taken at the 2 minute, 8 minute, 15 minute, 30 minute, 60 minute, and 120 minute intervals. After the application of loads equal to 50, 100, and 150 percent of the test load, remove the applied load in each case in decrements equal to the loading increments with 20 minutes between decrements. After removing each total applied load, reapply the load to the previous load level in increments equal to 50 percent of the test load with 20 minutes between increments. When the previous load level has been obtained, increase load in 25 percent increments to the next load level. When 200 percent of the service load has been applied and failure has not occurred, allow the 200 percent service load to remain on the pile for 24 hours, except in the event that the average rate of settlement is greater than 0.01 in/hour, hold the total load on the pile for 48 hours. During this time, readings shall be taken every hour. After the required holding time, remove the load in decrements of 50 percent of the service load with 1 hour between decrements. After the load has been applied and removed in accordance with the above, reload the pile to 200 percent of the service load in increments of 50 percent, allowing 20 minutes between increments.

The Contractor shall then increase the load in increments of 10 percent of the service load until failure occurs or the applied load reaches 300 percent of the service load. The time lapse between increments shall be 20 minutes. If failure does not occur, hold the full load for 2 hours at which time remove the load in four equal decrements, allowing 20 minutes between decrements. For purposes of stopping pile tests in progress, failure is achieved when the full extent of the extensometers is reached. If failure occurs before the load reaches 300 percent of the service load then the load shall be removed in 4 equal decrements allowing 20 minutes between decrements. Test apparatus shall not be removed from the pile until approval is received from the Government representative. To illustrate the loading and pile measurement procedures, a sample test schedule is provided following this paragraph.

SAMPLE OF COMPRESSION PILE TEST SCHEDULE

<u>Load (Tons)</u>	<u>Elapsed Time</u>	<u>Incremental Time</u>	<u>Remarks</u>
0	0:00	-----	
16.3	0:04	4 min.	25% service load
	0:06	2 min.	
	0:12	8 min.	
	0:19	15 min.	
	0:34	30 min.	
	1:04	60 min.	
	2:04	120 min.	
32.5	2:08	4 min.	50% service load
	2:10	2 min.	
	2:16	8 min.	
	2:23	15 min.	
	2:38	30 min.	
	3:08	60 min.	
	4:08	120 min.	
16.3	4:12	4 min.	Decrement 25%
	4:32	20 min.	
0	4:36	4 min.	Decrement 25%
	4:56	20 min.	
32.5	5:03	7 min.	Increment 50%
	5:23	20 min.	
48.8	5:27	4 min.	75% service load
	5:29	2 min.	
	5:35	8 min.	
	5:42	15 min.	
	5:57	30 min.	
	6:27	60 min.	
	7:27	120 min.	



SAMPLE OF COMPRESSION PILE TEST SCHEDULE

<u>Load (Tons)</u>	<u>Elapsed Time</u>	<u>Incremental Time</u>	<u>Remarks</u>		
65.0	7:31	4 min.	100% service load		
	7:33	2 min.			
	7:39	8 min.			
	7:46	15 min.			
	8:01	30 min.			
	8:31	60 min.			
	9:31	120 min.			
48.8	9:35	4 min.	Decrement 75%		
	9:55	20 min.			
32.5	9:59	4 min.	Decrement 50%		
	10:19	20 min.			
0	10:26	7 min.	Decrement 0%		
	10:46	20 min.			
	10:53	7 min.			
32.5	11:13	20 min.	Increment 50%		
	11:20	7 min.			
65.0	11:40	20 min.	Increment 100%		
	11:44	4 min.			
81.3	11:46	2 min.	125% service load		
	11:52	8 min.			
	11:59	15 min.			
	12:14	30 min.			
	12:44	60 min.			
	13:44	120 min.			
	97.5	13:48		4 min.	150% service load
		13:50		2 min.	
		13:56		8 min.	
		14:03		15 min.	
15:28		30 min.			
14:48		60 min.			
15:48		120 min.			
81.3	15:52	4 min.	Decrement 125%		
	16:12	20 min.			
65.0	16:16	4 min.	Decrement 100%		
	16:36	20 min.			
32.5	16:43	7 min.	Decrement 50%		
	17:03	20 min.			
0	17:10	7 min.	Decrement 0%		
	17:30	20 min.			
	17:37	7 min.			
32.5	17:57	20 min.	Increment 50%		
	18:04	7 min.			
65.0	18:24	20 min.	Increment 100%		
	18:31	7 min.			
97.5	18:51	20 min.	Increment 150%		



SAMPLE OF COMPRESSION PILE TEST SCHEDULE

<u>Load (Tons)</u>	<u>Elapsed Time</u>	<u>Incremental Time</u>	<u>Remarks</u>
143.0	3:39	2 min.	Increment 220%
	3:59	20 min.	
149.5	4:01	2 min.	Increment 230%
	4:21	20 min.	
156.0	4:23	2 min.	Increment 240%
	4:43	20 min.	
162.5	4:45	2 min.	Increment 250%
	5:05	20 min.	
169.0	5:07	2 min.	Increment 260%
	5:27	20 min.	
175.5	5:29	2 min.	Increment 270%
	5:49	20 min.	
182.0	5:51	2 min.	Increment 280%
	6:11	20 min.	
188.5	6:13	2 min.	Increment 290%
	6:33	20 min.	
195.0	6:35	2 min.	Increment 300%
	6:55	20 min.	
	7:15	40 min.	
	7:35	60 min.	
	7:55	80 min.	
	8:15	100 min.	
	8:35	120 min.	
145.3	8:45	10 min.	
	9:05	20 min.	
97.5	9:15	10 min.	
	9:35	20 min.	
48.8	9:45	10 min.	
	10:05	20 min.	
0	10:15	10 min.	
	10:35	20 min.	END OF TEST

Loading and unloading time increments have been rounded upward to the nearest whole minute. Service load = 65.0 tons (SAMPLE).

8.7 Additional Load Cycles. Any load cycles not accomplished in accordance with these specifications shall be redone at the direction of the Contracting Officer.

9. TEST MEASUREMENT. Measurements of compression loads, deflections and settlements, of the test piles and reports on all test piles shall be made by the Contractor. The lengths of prestressed concrete and steel service piles as determined by the result of the load tests shall be determined by the Contracting Officer and furnished to the Contractor within 25 days after receipt of the last test report.

10. REPORTS. The report of the load test shall include the following items where applicable:

10.1 General.

- (1) Project Identification
- (2) Location

10.2 Pile Installation Equipment.

- (1) Make, model, type, and size of hammer
- (2) Weight of hammer and ram
- (3) Stroke of ram
- (4) Rated energy and operating speed of hammer
- (5) Type and thickness of capblocks and pile cushions
- (6) Weight and dimensions of drive-cap and follower

10.3 Test and Support Piles.

- (1) Identification of test pile(s)
- (2) Type of piles
- (3) Pile material including basic specifications
- (4) Dimensions of pile
- (5) Pile weight as driven
- (6) Date cast (precast)
- (7) Concrete strength of pile when driven and test  
(approximate)
- (8) Reinforcement used
- (9) Effective prestress
- (10) Which piles vertical-batter
- (11) Degree of batter
- (12) Driven length
- (13) Embedded length

(14) Tested length, and

(15) Final elevation of piles butt referenced to fixed datum (identify datum)

#### 10.4 File Installation - Test and Support.

(1) Date driven

(2) Date concreted (cast-in-place)

(3) Pre-excavation or jetting - depth, size, pressures, duration, etc.

(4) Operating of hammer during final driving

(5) Driving log, blows per foot

(6) Final penetration resistance, blows per inch

(7) Description of special installation procedures used,  
and

(8) Notation of any unusual occurrences during  
installation

#### 10.5 File Testing.

(1) Date tested

(2) Type of test pile

(3) Type of load application apparatus

(4) Number of support piles of each test

(5) Instrumentation used to measure pile movement

(6) Special testing procedures used

(7) Temperature and weather conditions during test

(8) Tabulation of all load-time-movement reading

(9) Gages, scales, and reference points identified

(10) Adjustment made to field data and explanation

(11) Notation of any unusual occurrences during test,  
and

(12) Test jack and other required calibration reports

11. REMOVAL OF PILES. After the pile tests are completed and accepted at each site, all support piles, test piles, and casing shall be pulled and removed from the test site. The remaining holes in the ground shall be filled to within 2 feet of the ground surface with the cement-bentonite-sand slurry specified in 02411-9.5. The upper 2 feet of the hole shall be filled with earth.

12. MEASUREMENT AND PAYMENT.

12.1 Furnishing and Driving Test Pile. No separate measurement will be made for furnishing and driving test piles. Payment for two (2) test piles and all costs in connection therewith will be included in the contract unit price for "Furnish and Drive Test Piles". Price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and materials for furnishing and driving test piles; furnishing, driving, excavating, and removing of steel casing for test pile TP2; and all operation incidental thereto.

12.2 Pile Test. Pile tests will be measured by the number of pile test performed. Payment for pile test will be made at the contract unit price for "Pile Load Tests". Price and payment shall include calibration of the extensometers, load cell, and hydraulic jack; placing and removing test loads and test equipment; backfilling pulled pile holes; and all operations incidental thereto.

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SECTION 02362 - PRESTRESSED CONCRETE PILING

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, labor, and materials, and performing all operations in connection with the manufacture and installation of precast concrete piles in accordance with these specifications and applicable drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 File Load Tests. Section 02355, "PILE LOAD TESTS".

2.2 Steel H-Piling. Section 02315, "STEEL H-PILING".

3. APPLICABLE PUBLICATIONS. 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.

3.1 American Concrete Institute (ACI).

SP-66 (1988) ACI Detailing Manual

3.2 American Society For Testing And Materials (ASTM).

A 82-90a	Steel Wire, Plain, for Concrete Reinforcement
A 416-90a	Uncoated Seven-Wire Stress-Relieved Steel Strand Prestressed Concrete
A 615-92b	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
A 616-92	Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
A 617-90	Axle-Steel Deformed and Plain Bars for Concrete Reinforcement
A 706-92b	Low-Alloy Steel Deformed Bars for Concrete Reinforcement
C 33-92a	Concrete Aggregates
C 150-92	Portland Cement
C 260-86	Air-Entraining Admixtures for Concrete
C 494-90	Chemical Admixtures for Concrete



- C 595-93 Blended Hydraulic Cement
- C 618-93 Fly Ash and Raw or Calcined Natural Pozzolan for Uses as a Mineral Admixture in Portland Cement
- D 4945-89 Method for High-Strain Dynamic Testing of Piles

3.3 American Welding Society, Inc. (AWS).

- D1.4-90 Structural Welding Code - Reinforcing Steel

3.4 Prestressed Concrete Institute (PCI).

- MNL 116-85 Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products

3.5 Corps Of Engineers (COE).

- CRD-C 400-63 Water for Use in Mixing or Curing Concrete

3.6 State of Louisiana, Department of Transportation And Development(LDOTD), Louisiana Standard Specifications For Roads And Bridges(LSSRB) 1992 Edition.

- Section 1003.02 Aggregates for Portland Cement Concrete and Mortar

3.7 Mississippi State Highway Department (MSHD), Mississippi Standard Specifications For Road And Bridge Construction (MSSRBC). 1990 Edition.

- Section 703.02 Fine Aggregate for Portland Cement Concrete

- Section 703.03 Coarse Aggregate for Portland Cement Concrete

4. QUALITY CONTROL.

4.1 General. The Contractor shall establish and maintain quality control for pile manufacturing and driving operations, assure compliance with contract specifications and maintain quality control records for all construction operations including, but not limited to, the following:

- (1) Testing and/or gradation of aggregates and compressive strength of concrete as required, including batched proportions.

(2) Setting and bracing of forms and checkout just prior to concrete placement, including accurate placement of reinforcing steel.

(3) Stressing of prestressing strands.

(4) Casting, handling and storage of precast, prestressed piling.

(5) Curing method and duration.

(6) Driving of all piles. The pile driving records shall include the pile number or identification, location, size, length, elevation of tip, cut-off and top of pile, number of blows and ram-drop (in inches) required for each foot of penetration throughout the entire length of the pile, and the number of blows per inch for the last 18 inches of penetration. The record shall include the type and size of the hammer, the rate of operation, the type and dimensions of driving helmet, the cap-block and pile cushion used. The location and elevation of any obstruction or unusual occurrence encountered during driving shall be recorded and immediately reported to the Contracting Officer. His directed action shall also be recorded.

4.2. Reporting. The original and two copies of these records and reports, as well as corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL."

5. SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals with an "FIO" designation are for information only. The following shall be submitted.

5.1 Data.

5.1.1 Pile Driving Equipment; GA. Complete descriptions of pile driving equipment, including hammers, power packs, extractors, leads, preboring equipment, driving helmets, pile cushions, cap blocks and other appurtenances shall comply with the requirements of paragraph 12 and shall be submitted for approval at least 30 days prior to commencement of work.

5.1.2 Cutting of Piles; GA. Plans for the proposed method of driving head removal and cutting of piles shall comply with the requirements of paragraph 13.4, shall be submitted for approval 30 days prior to the start of pile driving.

5.1.3 Delivery, Storage and Handling; GA. Plans for the proposed methods of delivery, storage and handling of piles shall comply with the requirements of paragraph 7, and shall be submitted for approval at least 30 days prior to delivery of piles to the job site.

5.1.4 Reserved.

5.1.5 Concrete Mix; FIO. Concrete mixture proportions specified in paragraph 10.4, shall be submitted prior to casting piles.

5.1.6 Curing of Piles; GA. Methods and details for curing piles specified in paragraph 10.8 shall be submitted for approval prior to casting piles.

5.2 Drawings.

5.2.1 Shop Drawings; GA. Shop drawings shall show pile dimensions and fabrication details, including forms, reinforcement, build-ups, embedded or attached lifting devices, pick-up and support points, and shall be submitted for approval at least 30 days prior to commencement of work.

5.2.2 Pile Placement and Tolerances; GA. Pile placement plans as specified in paragraph 13.2, shall be submitted for approval at least 30 days prior to delivery of piles to the job site.

5.3 Certificates of Compliance; FIO. Certificates of compliance for admixtures, aggregates, cement and pozzolan shall be submitted along with concrete mix proportions. Manufacturer's literature indicating conformance may be submitted for admixtures. Aggregate source and gradation information must be submitted for aggregates. Certificates of compliance shall also be submitted for reinforcement and prestressing steel.

5.4 Records.

5.4.1 Pile Driving Records; FIO. Original records of pile driving operations for each permanent pile driven shall comply with the requirements of paragraph 13.3.1, and shall be submitted daily.

5.4.2 Pile Driving Records Form; GA. A form for recording the data required in paragraph 13.3.1 shall be submitted for approval 30 days prior to commencement of work.

6. QUALIFICATIONS. The precast concrete manufacturing plant shall be certified by the Prestressed Concrete Institute, Plant Certification Program, or establish a quality control program based on PCI MNL 116, prior to the start of production.

7. DELIVERY, STORAGE, AND HANDLING.

7.1 General. Piles shall be stored, handled and transported in accordance with PCI MNL-116 except as follows. Methods used for handling and storage of piles shall be such that the piles are not subjected to excessive bending stress, cracking, spalling or other

injury. Pile pick-up points shall be located where shown on the drawings and shall be verified by the fabricator. Piles which are damaged during delivery, storage or handling to the extent they are rendered unsuitable for the work, in the opinion of the Contracting Officer, will be rejected and shall be removed from the work site at no cost to the Government.

7.2 Delivery and Storage. Piles shall be held at the plant until 10 days after the minimum 28-day compressive strength is obtained or 14 days after casting, if the 28-day compressive strength is obtained, whichever occurs first. Storage areas for piles shall be stabilized, and suitable foundations provided, so differential settlement or twisting of the pile does not occur. Stacked piles shall be separated and supported by dunnage placed across the full width of each bearing point, the dunnage placed in vertical planes, and the stacks limited to 5 feet in height unless otherwise approved. Each pile shall be stacked in a straight position and supported every 10 feet or less along its length (ends inclusive) to prevent excessive sweep in the pile.

7.3 Handling. Piles shall be lifted by means of a suitable bridle or slings attached to the pile at the marked pickup points. Unless special lifting devices are attached for pick-up, pick-up points shall be plainly marked on all piles after removal of the forms. Alternate pickup methods or locations shall be subject to approval by the Contracting Officer. Dragging of piles across the ground will not be permitted. The Contractor shall inspect each pile for sweep and structural damage, such as cracking and spalling, before transporting them from the storage site to the driving area. Sweep shall be checked by placing the pile on a firm level surface and rotating the pile. Sweep shall be limited to 2 inches over the length of the pile. The Contractor shall again check the pile for excessive sweep and damage immediately prior to placement in the driving leads. Piles having excessive sweep shall be rejected.

8. REGULATORY REQUIREMENTS. The Contractor shall comply with LSSRB, Section 1003.02; or MSSRBC, Sections 703.02 and 703.03.

## PART 2 - PRODUCTS

### 9. MATERIALS.

9.1 Admixtures. Chemical admixtures shall conform to ASTM C 494. Air-entraining admixture shall conform to ASTM C 260. Calcium chloride or admixtures containing chlorides or nitrates shall not be used. Admixtures, if used, shall be at no additional cost to the Government.

9.2 Aggregates. Aggregates shall conform to ASTM C 33, Class 3M, except as specified otherwise herein. Gradation requirements of the state highway department requirements specified in paragraph 8, in lieu of those stated in ASTM C 33 will be permitted. Fine aggregates from different sources of supply shall not be mixed or stored in the same stock pile, or used alternately in the same concrete mix or the same structure without approval. The fineness modulus of fine aggregate shall not be less than 2.40 or greater than 3.0.

9.3 Cement. Portland cement shall conform to ASTM C 150, Type II, III (8% maximum C<sub>3</sub>A), or V, low alkali. Blended hydraulic cement shall conform to ASTM C 595, Type IS-(MS), IP-(MS), I(PM)(MS) or P(MS).

9.4 Pozzolan. Pozzolan shall conform to ASTM C 618, Class C or F. If pozzolan is used, it will be limited to a maximum of 25% by absolute volume of the total cementitious material.

9.5 Prestressing Steel. Prestressing steel shall be seven-wire, 1/2 inch diameter, low relaxation steel strand conforming to the requirements of ASTM A 416, Grade 270. Steel shall be free from grease, oil, wax, paint, soil, dirt, loose rust, kinks, bends, and other defects.

9.6 Reinforcing Steel. Non-prestressed reinforcing steel shall conform to ASTM A 615, A 616 including Supplementary Requirements, A 617, or A 706, Grade 60.

9.7 Ties and Spirals. Steel for ties and spirals shall conform to ASTM A 82.

9.8 Water. Water for mixing concrete shall be fresh, clean, drinkable and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or steel. Undrinkable water may be used if it meets the requirements of CRD C-400. Time of set for concrete made with undrinkable water may vary from one hour earlier to one and one-half hours later than a control sample made with distilled water.

## 10. FABRICATION.

10.1 Prestressed Concrete Piles. Piles shall be uniformly square. Corners shall be chamfered 3/4 inch, or, in lieu of chamfering, may be rounded to a 1 inch radius. Prestressed concrete piles shall be 24 inches square, with a 12-inch diameter internal void as indicated on the drawings. Piles shall be cast as monolithic units of homogenous concrete and pretensioned with prestressing steel. Manufacturing requirements for piles shall conform to PCI MNL-116 except as modified herein. The Contractor shall notify the Contracting Officer 1 week prior to the date casting of piles is to begin.

10.2 Forms. Forms shall be of steel, well braced and stiffened against deformation, accurately constructed, watertight, and supported on unyielding concrete casting beds. Form surfaces shall be within 1/4-inch of a true plane in a length of 50 feet. Forms shall permit movement of the pile without damage during release of the prestressing force.

10.3 Reinforcement and Embedments. Reinforcing steel, prestressing steel, and embedded items shall be accurately positioned in the forms and secured to prevent movement during concrete placement. Steel shall have a minimum concrete cover of 2 inches. Reinforcing steel details shall conform to ACI SP-66. Welding of reinforcing steel shall be in accordance with AWS D1.4.

10.4 Concrete Mix. The concrete mix shall be selected by the Contractor to have an ultimate compressive strength of 6000 psi at 28 days (90 days if fly ash is used) and a slump of 1 to 3 inches. The water-cement ratio (by weight) shall be held to the minimum consistent with workability required for placement but in no case shall it exceed 0.45. Concrete shall be air entrained with a minimum of 4 percent and a maximum of 6 percent air entrainment, accomplished by use of an additive at the mixer. Nominal maximum size coarse aggregate shall be 1 inch. Once production begins, changes to the mix will not be permitted without a written submittal of the proposed changes.

10.5 Concrete Work. Concrete shall not be deposited in the forms until the placement of the reinforcement and anchorages has been inspected and approved by the Contracting Officer. Conveying equipment shall be cleaned thoroughly before each run and the concrete conveyed from the mixer to the forms as rapidly as practicable using methods that will not cause segregation or loss of ingredients. Concrete shall be deposited as nearly as practical in its final position in the forms. At any point in conveying, the free vertical drop of the concrete shall not exceed 3 feet. Chuting will be permitted if the concrete is deposited into a hopper before being placed in the forms. Concrete that has segregated in conveying shall be removed. Each pile shall be produced of dense concrete with smooth surfaces. Vibrator heads shall be smaller than the minimum distance between steel pretensioning. Side forms shall not be removed until concrete has attained 4500 psi compressive strength. Dimensional tolerances shall conform to PCI MNL-116. The ends of all piles and corners of square piles shall be chamfered 3/4 inches or, in lieu of chamfering, may be rounded to a 1 inch radius.

10.6 Pretensioning. Anchorages for tensioning the prestressing steel shall be an approved type. The tension to which the steel is to be pretensioned shall be measured by the elongation of the steel and also by the jack pressure reading on a gauge or by the use of an accurately calibrated dynamometer. The gauge or dynamometer shall have been calibrated by a calibration laboratory approved by the Contracting Officer within 12 months of

commencing work and every 6 months thereafter during the term of the contract. Means shall be provided for measuring the elongation of the steel to the nearest 1/4 inch. The applied load determined from elongation measurements shall be computed using load-elongation curves for the steel used. When the difference between the results of measurement and gauge reading is more than 5 percent, the cause of the discrepancy shall be corrected. The tensioning steel shall be given a uniform prestress prior to being brought to design prestress. The same initial prestress shall be induced in each unit when several units of prestressing steel in a pile are stretched simultaneously.

10.7 Detensioning. Releasing of prestressing force in pretensioned piles shall be performed in a manner that minimizes eccentricity of prestress. Tension in the strands shall be released from the anchorage gradually. In no case shall the stress be released after casting without approval by the Contracting Officer. The transfer of prestressing force shall be done when the concrete has reached a compressive strength of not less than 4500 psi. The prestressing steel shall be cut or ground flush with the pile ends.

10.8 Curing of Piles. Piles shall be cured in accordance with the provisions contained in PCI MNL-116 except as follows. The maximum rate of heat gain shall not exceed 40 degrees Fahrenheit per hour and the maximum concrete temperature shall not exceed 165°F during the curing cycle. Curing shall be continued until the concrete has attained a minimum compressive strength of 4500 psi as determined by the concrete test cylinders.

10.9 Splices. Splicing of piles will not be allowed unless required pile lengths exceed 110 feet. Splice details shall be as shown in the contract drawings.

## 11. MANUFACTURING CONTROLS.

11.1 General. Testing shall be performed by an approved commercial testing laboratory or by an approved laboratory maintained by the manufacturer of the material. Minimum requirements for testing during manufacture shall be as required in PCI MNL 116 except as modified herein.

11.2 Concrete Cylinders. A minimum of 4 standard 6-inch by 12-inch concrete test cylinders per casting bed shall be made to indicate transfer and 28-day strengths.

11.3 Testing by Government. Facilities shall be made available to the Contracting Officer for making and testing any additional test cylinders required.

## PART 3 - EXECUTION

12. PILE DRIVING EQUIPMENT. The Contractor shall select the proposed pile driving equipment as specified and submit it to the Contracting Officer for approval. Equipment approval will be based on wave equation analysis and the engineering judgement of the Contracting Officer. Final approval of the proposed equipment is subject to the satisfactory completion and approval of pile test results. Changes in the selected pile driving equipment will not be allowed after the equipment has been approved by the Contracting Officer except as directed by the Contracting Officer. No additional contract time will be allowed for Contractor proposed changes in the equipment.

12.1 Pile Driving Hammers. Pile driving hammers shall be of the impact type and capable of satisfying the requirements of paragraph 13.3.2. Hammers shall be steam, air, or diesel hammers of the single acting, double-acting, or differential acting type. The size or capacity of hammers shall be as recommended by the manufacturer for the pile type, weight and soil formation to be penetrated. Boiler, compressor, or engine capacity shall be sufficient to operate hammers continuously at the full rated speed so that a single-acting hammer obtains a full upward stroke of the ram, a double-acting hammer operates at or near the blows per minute at which the hammer is rated, and a differential type hammer obtains a slight rise of the hammer base during each upward stroke. Hammers shall have a gage to monitor hammer bounce chamber pressure for diesel hammers or pressure at the hammer for air and steam hammers. This gage shall be operational during the driving of piles and shall be mounted in an accessible location for monitoring by the Contractor and the Contracting Officer. The Contractor shall provide bounce chamber pressure gage correction tables and charts for the type and length of hose to be used with the pressure gage to the Contracting Officer. The following information for each hammer proposed shall be submitted:

- (1) Make and model
- (2) Ram weight (pounds)
- (3) Anvil weight (pounds)
- (4) Weight of the moving parts of the hammer (pounds)
- (5) Rated stroke (inches)
- (6) Rated energy range (foot-pounds)
- (7) Rated speed (blows per minute)
- (8) Steam or air pressure, hammer, and boiler and/or compressor (pounds per square inch)



(9) Rated bounce chamber pressure curves or charts, including pressure correction chart for type and length of hose used with pressure gage (pounds per square inch)

(10) Power pack description

12.1.1 A scale (inches) shall be fixed to the hammer's ram guide and a pointed indicator on the ram, near the scale, to allow a reading of the ram drop (see diagram at the end of this section). Installation of both scale and indicator shall be in such a manner that the drop of the ram can be read by observing the highest and the lowest position of the indicator and scale. Both the scale and the indicator shall be easily legible to observers on the ground during operations. The Contractor shall record the ram drop of the pile hammer when recording the blows per foot as specified in the Pile Driving Record.

12.2 Pile Driving Leads. Leads shall align the pile and hammer concentrically, and maintain the pile in proper position and alignment throughout driving. Hammers shall be supported and guided with fixed extended leads. For driving battered piles, hammers shall be supported and guided with fixed extended leads capable of achieving the batters shown on the plans. The leads shall be of sufficient length to fully accommodate the combined length of the pile and hammer. Two intermediate pile supports shall be provided in the leads to reduce the unbraced length of the pile during driving and pulling.

12.3 Driving Helmets and Pile Cushions. A driving helmet including a pile cushion shall be used between the top of the pile and the ram to prevent impact damage to the pile. The driving helmet and pile cushion combination shall be capable of protecting the head of the pile, minimizing energy absorption and dissipation, transmitting hammer energy uniformly over the top of the pile and preventing excessive tensile stresses from developing in the concrete during driving. The driving helmet shall fit loosely around the top of the pile so that the pile is not restrained by the helmet if the pile tends to rotate during driving. The pile cushion may be of solid wood or of laminated construction, shall completely cover the top surface of the pile, and shall be retained by the driving helmet. Minimum thickness of the pile cushion shall be 3 inches and the thickness shall be increased so as to be suitable for the size and length of pile, character of subsurface material to be encountered, hammer characteristics, and the required driving resistance. The following information for each hammer proposed shall be submitted:

(1) Pile driving helmet, make, and weight (pounds)

(2) Pile cushion material, type, proposed thickness, modulus of elasticity and coefficient of restitution

12.4 Cap Blocks. The cap block, or hammer cushion used between the driving cap and the hammer ram may be a solid hardwood block with grain parallel to the pile axis and enclosed in a close fitting steel housing or may consist of aluminum and approved industrial type plastic laminate discs stacked alternately in a steel housing. Steel plates shall be used at the top and the bottom of the capblock. The capblock shall be replaced if it has been damaged, highly compressed, charred, or burned, or has become spongy or deteriorated in any manner. If a wood capblock is used, it shall not be replaced during the final driving of any pile. Under no circumstances will the use of small wood blocks, wood chips, rope, or other material permitting excessive loss of hammer energy be permitted. The proposed hammer cushion make-up including material type, dimensions, modulus of elasticity and coefficient of restitution shall be submitted.

12.5 Pile Extractors. Impact hammers are required for pulling piles.

### 13. INSTALLATION.

#### 13.1 Reserved.

13.2 Pile Placement and Tolerances. Foundation preparation (removal of unsuitable material and rip rap) shall be completed in an area prior to driving permanent piles within that area. A pile placement plan shall be developed to show the installation sequence and the methods proposed for controlling the location and alignment of piles. Piles shall be placed accurately in the correct location and alignment, both laterally and longitudinally, and to the vertical or batter lines indicated. The Contractor shall establish a permanent base line during pile driving operations to provide for inspection of pile placement by the Contracting Officer. The base line shall be established prior to driving permanent piles and shall be maintained during the installation of the permanent piles. Prior to driving and with the pile head seated in the hammer, the Contractor shall check each pile for correct alignment. The alignment of battered piles shall be checked and monitored during driving with an accurate batter board level. A final lateral deviation from the correct location at the cutoff elevation of not more than 3 inches will be permitted. A vertical deviation from the correct cutoff elevations shown on the drawing of not more than 1 inch will be permitted. A final variation in alignment of not more than 1/4 inch per foot of longitudinal axis will be permitted. A final variation in rotation of the pile about its center line of not more than 7.5 degrees will be permitted. The correct relative position of all piles shall be maintained by the use of templates or by other approved means. Piles not located properly or exceeding the maximum limits for rotation, lateral deviation, and/or variation in alignment shall be pulled and redriven at a directed location.

13.3 Pile Driving. Piles shall not be driven within 100 feet of concrete less than 7 days old nor within 30 feet of concrete less than 28 days old, unless otherwise authorized. Driving shall not result in cracking, crushing or spalling of concrete. The Contracting Officer shall be notified 30 days prior to the date driving is to begin.

13.3.1 Driving Records. The driving record shall include pile dimensions and location, pile identification number, date driven, original pile length, cut off and tip elevations, batter alignment, description of hammer used, rated hammer energy, observed drop and rate of hammer operation (blows per minute), air or steam pressure at the hammer or bounce chamber pressure, length of pressure hose, penetration under the combined weight of the pile and hammer, number of blows required for each foot of penetration throughout the entire length of each pile and for each inch of penetration in the last foot of penetration, time for start and finish of driving, total driving time in minutes and seconds for each pile, cushion information including changes during driving and any other information as required or requested. The record shall also include information such as unusual driving conditions, interruptions or delays during driving, observed pile damage, heave detected in adjacent piles, records of restriking, depth and description of voids formed adjacent to the pile and any other pertinent information. The format of the form shall be submitted for approval.

13.3.2 Penetration Criteria. Piles shall be driven to the required depth of penetration as determined from the pile tests. The maximum permissible blow count shall be limited to 8 blows per inch, for the last 12 inches of penetration or established from wave equation analysis so that stresses in the pile are limited to 0 psi in tension and .85 times the compressive strength in compression.

13.3.3 Driving. Permanent piles and test piles shall be driven with hammers of the same model and manufacturer, same energy and efficiency, and using the same driving system. The hammer shall be operated at all times at the speed and under the conditions recommended by the manufacturer subject to the approval of the Contracting Officer. Once pile driving has begun, conditions such as alignment and batter shall be kept constant. Each pile shall be driven continuously and without interruption until the required depth of penetration has been attained. Deviation from this procedure will be permitted only for necessary changes to the pile cushion or whenever driving is stopped by causes that reasonably could not have been anticipated. Pile cushion changes will be considered necessary whenever the cushion has become highly compressed, charred, burned or deteriorated. Changes to the cushion will not be allowed near the end of driving. A pile that cannot be driven to the required depth because of an obstruction, as indicated by a sudden unexplained change in blow count and drifting, shall be pulled and redriven or

shall be cut off and abandoned, whichever is directed. A pile which can not be driven to the required tip elevation because the maximum permissible blow count or driving stress is exceeded shall be reported to the Contracting Officer and he will direct the Contractor to cutoff, or pull and redrive the pile, and may direct corrective measures be performed. Corrective measures may include adding a pile at an adjacent location. Observations shall be made to detect heave in accordance with paragraph 13.3.4. After piles are driven, the driving head or any excess pile above the cutoff elevation shall be removed in accordance with paragraph 13.4.

13.3.4 Heaved Piles. When driving piles in clusters or under conditions of relatively close spacing, observations shall be made to detect heave of adjacent piles. Heaved piles shall be restruck to the criteria established by the Contracting Officer.

13.3.5 Pulled Piles. Piles damaged or impaired for use during driving shall be pulled and replaced with new piles, or shall be cut off and abandoned and new piles driven as directed. The Contracting Officer may require that any pile be pulled for inspection. Piles pulled at the direction of the Contracting Officer and found to be in suitable condition shall be redriven at a directed location.

13.3.6 Jetting. Jetting of piles will not be permitted.

13.3.7 Predrilling. Predrilling shall be accomplished by a wet rotary method using a 3-blade fishtail bit. The diameter of the predrilled hole shall not exceed two-thirds of the side dimension of the square pile. The depth of the predrill shall not extend below elevation -48.0.

13.4 Cutting of Piles. Driving head removal or cutting of piles shall not be permitted until heaved piles are restruck to criteria established by the Contracting Officer. Methods shall not damage that portion of the pile or reinforcement to be left in place. The use of explosives will not be permitted. Driving heads and cut off lengths shall be removed from the site upon completion of the work.

13.5 Build Ups. The Contracting Officer may direct the Contractor to repair pile tops damaged during driving by use of a reinforced concrete build-up.

#### 14. MEASUREMENT.

14.1 Furnishing and Delivering. Permanent prestressed concrete piles will be measured for payment for furnishing and delivering by the linear foot of piles required below the cutoff elevation as indicated.

14.2 Driving. Permanent prestressed concrete piles will be measured for payment for driving on the basis of lengths, to the nearest tenth of a linear foot, along the axis of each pile acceptably in place below the cutoff elevation shown on the drawings.

15. PAYMENT.

15.1 Furnishing and Delivering. Payment for furnishing and delivering the required lengths of permanent prestressed concrete piles will be made at the contract unit price per linear foot for "Furnish and Deliver 24-Inch Prestressed Concrete Piles". Price and payment shall constitute full compensation for all costs of furnishing and delivering piles to the work site. No payment will be made for the driving head or lengths of piles exceeding required lengths. No payment will be made for misplaced piles or piles damaged during delivery, storage, handling, or driving to the extent that they are rendered unsuitable for the work, in the opinion of the Contracting Officer.

15.2 Driving. Payment for driving permanent prestressed concrete piles, measured as specified in paragraph 14 will be made at the contract unit price per linear foot for "Driving 24-Inch Prestressed Concrete Piles". Price and payment shall constitute full compensation for costs of handling, driving, measuring heave, redriving heaved piles, cutting off piles at the cutoff elevation or driving head removal and removing from the work site, compiling and submitting pile driving records, and any other items incidental to driving piles to the required elevation.

15.3 Pulled Piles.

15.3.1 Undamaged Piles. Piles pulled at the direction of the Contracting Officer and found to be undamaged will be paid for as follows:

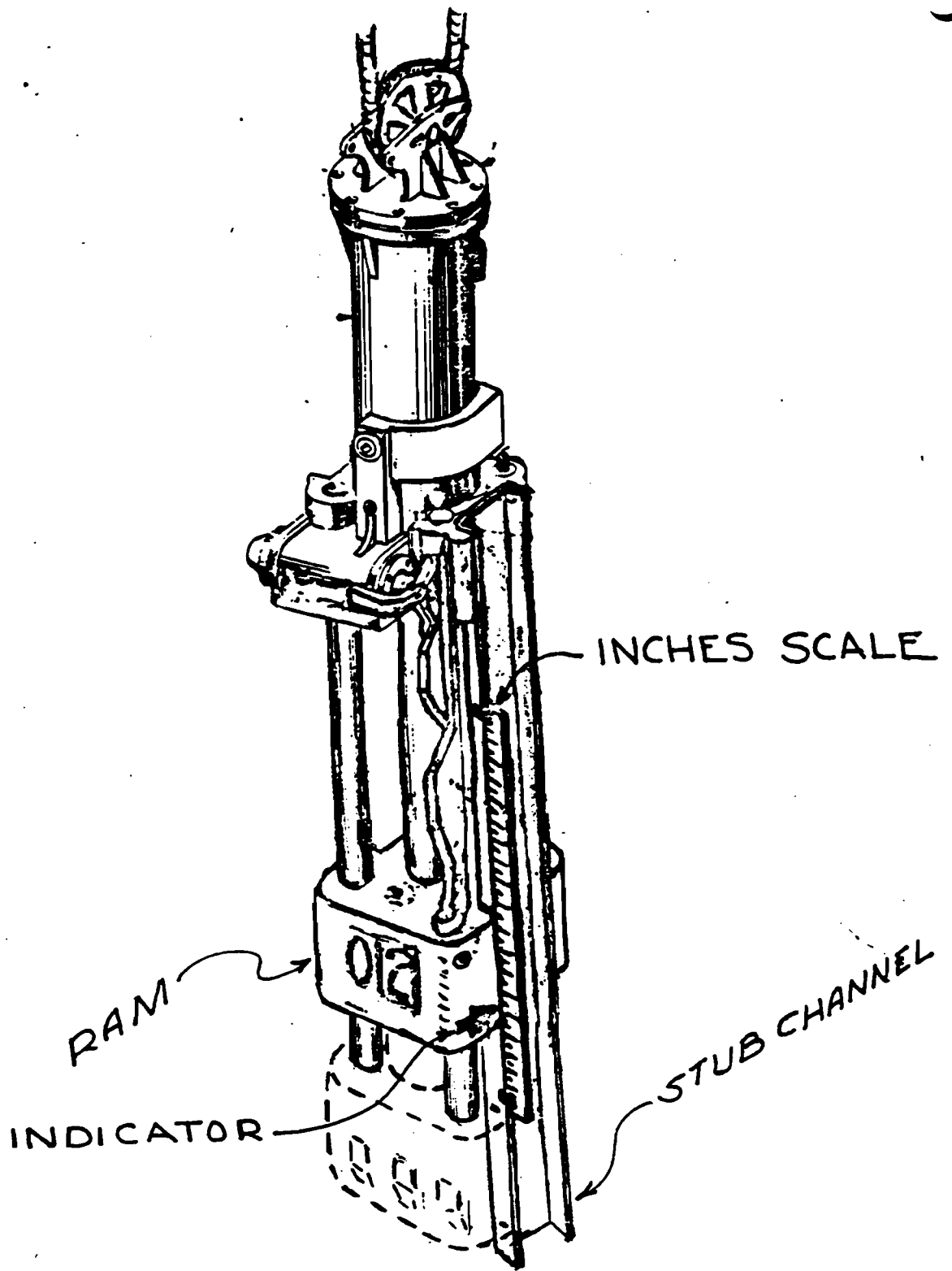
15.3.1.1 The cost of furnishing and delivering piles will be included in the contract unit price per linear foot for "Furnish and Deliver 24-Inch Prestressed Concrete Piles".

15.3.1.2 The cost of driving piles will be included in the contract unit price per linear foot for "Driving 24-Inch Prestressed Concrete Piles".

15.3.1.3 The cost of pulling piles will be paid for at twice the contract unit price per linear foot for "Driving 24-Inch Prestressed Concrete Piles".

15.3.1.4 The cost of redriving piles will be included in the contract unit price per linear foot for "Driving 24-Inch Prestressed Concrete Piles".

15.3.2 Damaged Piles. No payment will be made for furnishing, delivering, driving, pulling, and disposing of piles pulled and found to be damaged. New piles replacing damaged piles will be paid for at the applicable contract unit price for items covered in paragraphs 15.1 and 15.2.



PILE HAMMER

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SECTION 02411 - STEEL SHEET PILING

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, labor and materials and performing all operations in connection with the installation of Contractor furnished and Government furnished steel sheet piling in accordance with these specifications and applicable drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Metalwork Fabrication. Section 05501, "MISCELLANEOUS METALWORK".

3. APPLICABLE PUBLICATIONS. The following American Society for Testing and Materials (ASTM) standards of the issues listed below and referred to thereafter by basic designation only form a part of this specification to the extent indicated by the references thereto:

A 36-91	Structural Steel
A 325-92a	Structural Bolts, Steel, Heat Treated, 120/105 Minimum Tensile Strength
A 328-90	Steel Sheet Piling

4. QUALITY ASSURANCE. Requirements for material tests, workmanship and other measures for quality assurance shall be as specified herein and in Section 05501, "MISCELLANEOUS METALWORK".

4.1 Materials Tests. Sheet piling and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property requirements prior to delivery to the site.

5. SUBMITTALS. The Contractor shall submit descriptions of sheet piling driving equipment, shop drawings, test procedures, test reports and certificates, sheet piling driving records and other submittals to the Contracting Officer for approval as required. Submittals and associated work not satisfactory to the Contracting Officer will be rejected.

5.1 Equipment Descriptions. Complete descriptions of sheet piling driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

5.2 Shop Drawings. Shop drawings for sheet piling, including fabricated sections, shall be submitted for approval and shall show complete piling dimensions and details, driving sequence and location of installed piling. Shop drawings shall

include details and dimensions of templates and other temporary guide structures for installing piling, and shall provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

5.3 Materials Test Certificates. Materials test certificates shall be submitted for each shipment and identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, section properties, heat analysis number, chemical composition, mechanical properties and mill identification mark.

5.4 Driving Records. Records of the sheet piling driving operations shall be submitted after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations of installed piling. The format for driving records shall be approved by the Contracting Officer.

## 6. QUALITY CONTROL.

6.1 General. The Contractor shall establish and maintain quality control for pile driving operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to, the following:

- (1) Accurate location, alignment and plumbness of piling.
- (2) Full and proper engagement of interlocks.
- (3) Driving (pile hammer and rate of operation).
- (4) Final position; depth of penetration; tip and cut-off elevations.
- (5) Uplift and vertical tolerances after driving.
- (6) Location and elevation of any obstruction encountered and action directed by Contracting Officer.
- (7) Pulled piles and re-driving.
- (8) Length of cover plate and weld size.
- (9) Manufacture and driving of fabricated sections.
- (10) Cutting and splicing (welding).
- (11) Stockpiling and storage.
- (12) Removal and disposal of damaged piles.

6.2 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

7. DELIVERY, STORAGE AND HANDLING. Materials delivered to the site shall be new and undamaged and shall be accompanied by certified test reports. The manufacturer's logo and mill identification mark shall be provided on the sheet piling as required by the referenced specifications. Sheet piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of sheet piling should also facilitate required inspection activities.

## PART 2 - MATERIALS

### 8. MATERIALS.

8.1 Steel for sheet piling shall conform to the requirements of ASTM A 328. Sheet piling, including special fabricated sections, shall be of the type and dimensions indicated on the drawings, and be of a design such that when in place they will be continuously interlocked throughout their entire length. All Contractor furnished sheet piling shall be provided with standard pulling holes located approximately 4 inches below the top of the pile, unless otherwise shown or directed. Twenty-eight (28) sheets of Frodingham 1B sheet piling, each 14 feet long, shall be furnished by the Government. Piling shall have the properties equivalent to those listed in the following table:

PROPERTIES OF SECTIONS

TYPE OF SECTION	NOMINAL WEB THICKNESS (INCHES)	SECTION MODULUS (IN. <sup>3</sup> /FT. OF WALL)	MOMENT OF INERTIA (IN. <sup>4</sup> /FT. OF WALL)	NOMINAL SECTION DEPTH (IN.)	MINIMUM INTERLOCK STRENGTH (LBS/LIN IN.)	THEORETICAL DRIVING WIDTH (IN.)
PS 31	.50	2.0	3.23	----	16,000	19.69
FRODINGHAM 1B	.375	10.5	27.6	5.25	-----	15.75
PMA 22	.375	----	----	3.5	-----	19.65

8.1.1 Substitute Sheet Pile Sections. The Contractor may elect to substitute for the sheet piling shown on the contract drawings and specified above, except for the Frodingham 1B sheet piling, in accordance with paragraph 8.1.1.1 below. Combinations of substitute piling types shall not be permitted.

8.1.1.1 At no additional cost to the Government, new steel sheet piling conforming to ASTM A 328, with a minimum material thickness of 0.5 inches, a maximum overall width of 26 inches and meeting the following section properties, may be substituted in kind for the listed sections:

SECTION DESIGNATED ON CONTRACT DRAWINGS	SUBSTITUTE SECTION	
	MINIMUM SECTION MODULUS (IN. <sup>3</sup> /FT. OF WALL)	NOMINAL DEPTH (INCHES)
PS 31	2.0	-----
PMA 22	18.1	9.0

8.1.1.2 When proposing substitute piling, the Contractor shall submit, for approval, the following items at no additional cost to the Government:

(1) Complete shop drawings of the proposed sections showing the dimensions and details of the alternate piling including all fabricated and corner sections.

(2) A complete layout of the alternate sheet piling. The joint locations, cap transitions and gate monolith lengths shall remain unchanged. It shall be the Contractor's responsibility to make any adjustments necessary in his formwork so that the architectural treatment of the concrete is properly maintained.

8.1.2 All new sheet piling shall be provided in full lengths.

8.2 Fabricated Sections. Fabricated sections, including special corners, transition, piles and tee sections shall conform to the requirements stated herein, the details shown on the drawings and the piling manufacturer's recommendations for fabricated sections. Metalwork fabrication for sheet piling sections shall conform to the requirements of Section 05501. Steel plates and angles used to fabricate the special sections shall conform to ASTM A 36. All bolts shall conform to ASTM A325, Type 1.

### PART 3 - EXECUTION

#### 9. INSTALLATION.

##### 9.1 Placing and Driving.

9.1.1 Placing. Any excavation required within the area where sheet pilings are to be installed shall be completed prior to placing sheet pilings. Pilings shall be carefully located as

shown on the drawings. Pilings shall be placed as true to line as possible. Suitable temporary wales, templates, or guide structures shall be provided to insure that the piles are placed and driven to the correct alignment. Piles shall be placed in a plumb position with each pile interlocked with adjoining piles for its entire length, so as to form a continuous diaphragm throughout the length of each run of piling wall. Interlocks shall be properly engaged.

9.1.2 Driving. All Contractor and Government furnished piles shall be driven to the depths shown on the drawings and shall extend to the cut-off elevation indicated. A tolerance of 1½ inches above or below the indicated cut-off elevation will be permitted. Pilings shall be driven by approved methods so as not to subject the pilings to damage and to insure proper interlocking throughout their lengths. Pile hammers shall be maintained in proper alignment during driving operations by use of leads or guides attached to the hammer. A protecting cap shall be employed in driving, when required, to prevent damage to the tops of pilings. Pilings damaged during driving or driven out of interlock shall be removed and replaced. All piles shall be driven without the aid of a water jet. Adequate precautions shall be taken to insure that piles are driven plumb. Sheet piling shall not be driven more than 1/4 inch per foot out of plumb in the plane of the wall nor more than 1/8-inch per foot out of plumb perpendicular to the plane of the wall. If at any time the forward or leading edge of the piling wall is found to be out-of-plumb more than 1/4-inch per foot in the plane of the wall or 1/8-inch per foot perpendicular to the plane of the wall, the assembled piling shall be driven to the required depth and tapered pilings shall be provided and driven to interlock with the out-of-plumb leading edge or other approved corrective measures shall be taken to insure the plumbness of succeeding pilings. The maximum permissible taper for any tapered piling shall be 1/4 inch per foot of length. Unless specifically indicated otherwise, each run of piling wall shall be driven to grade progressively from the start and, and pilings in each run shall be driven alternately in increments of depth to the required depth or elevation. On each day of sheet pile driving, the Contractor shall stab only the number of piles that can be driven to grade by the end of the day, and all piling stabbed shall be driven to grade by the end of each working day except that the last two piles may remain tapered up to receive the next day's piles. No pile shall be driven to a lower elevation than those behind it in the same run except when the piles behind it cannot be driven deeper or in areas where there will be wall penetrations or obstructions are encountered. In this case, piling will be allowed to remain above final grade until the obstruction is removed or the penetration completed. Alternately, if it is determined that an obstruction cannot be removed, the Contractor shall make such changes in design alignment of the pile structure as may be deemed necessary by the Contracting Officer to insure the adequacy and stability of the structure. Payment for the additional labor and materials

necessitated by such changes will be made by and equitable adjustment in accordance with the Contract Clause entitled "CHANGES". If the piling next to the one being driven tends to follow below final grade, it may be pinned to the next adjacent piling. The Contractor is advised that buried stumps or similar debris may be encountered periodically on the sheet pile wall alignment and appropriate consideration should be given to hard driving conditions should they occur. Piles shall not be driven within 100 feet of concrete less than 7 days old nor within 30 feet of concrete less than 28 days old.

9.1.3 Emergency Locking System on Pile Driving Head. All pile driving equipment shall be equipped so as to prevent piles from falling when a single or multiple power failure occurs after the pile driving head is attached to the pile. The jaws of vibratory hammers shall be equipped with devices such that upon loss of hydraulic pressure, the jaws will not release the pile.

9.2 Cutting Off and Splicing. Piles extending above grade in excess of the specified tolerance, and which cannot be driven deeper, shall be cut off to the required grade. The Contractor shall also trim the tops of piles excessively battered during driving, when directed to do so, at no cost to the Government. Cut-offs shall become the property of the Contractor and shall be removed from the worksite. Piles driven below the elevations indicated for the top of piles and piles which, because of damaged heads, have been cut off to permit further driving and are then too short to reach the required top elevation, shall be extended to the required top elevation by welding an additional length, when directed, without cost to the Government. Should splicing of additional lengths be necessary, the splice shall consist of an approved butt joint with a weld that fully penetrates the web. Welded extensions shall be a minimum of 6 inches in length. Piles adjoining spliced piles shall be full length unless otherwise approved. When piles are to be driven in sections and spliced together, they shall be delivered on site in full lengths and cut for splicing only after delivery. Only those portions of the originally uncut pile shall be spliced together to form the final in-place full-length pile. Splices for these piles shall conform to the details shown on the drawings. Welding of splices shall conform to the requirements of Section 05501. Ends of pilings to be spliced together shall be squared before splicing to eliminate dips or camber. Pilings shall be spliced together with concentric alignment of the interlocks so that there are no discontinuities, dips or camber at the abutting interlocks. Spliced pilings shall be free sliding and able to obtain the maximum swing with contiguous pilings. The Contractor may cut holes in the piles for bolts, rods, drains or utilities at locations and of sizes shown on the drawings or as directed. All cutting shall be done in a neat and workmanlike manner. Bolt holes in steel piling shall be drilled or may be burned and reamed by approved methods which will

not damage the remaining metal. Holes, other than bolt holes, shall be reasonably smooth and of the proper size for rods and other items to be inserted.

9.3 Inspection of Driven Piling. The Contractor shall inspect the interlocked joints of driven pilings extending above ground. Pilings found to be damaged or driven out of interlock shall be removed and replaced.

9.4 Pulling and Redriving. The Contractor may be required to pull selected piles after driving, for test and inspection, to determine the condition of the piles. Any pile so pulled and found to be damaged to the extent that its usefulness in the structure is impaired shall be removed from the work and the Contractor shall furnish and drive a new pile to replace the damaged pile. Piles pulled and found to be in satisfactory condition shall be redriven.

9.5 Void Backfill. Where voids adjacent to the steel sheet piling are induced by pile driving operations or caused by the removal of existing piling, the Contractor shall pump out all seepage and rain water and backfill with a cement-sand-bentonite slurry. The slurry shall consist of one part cement, two parts bentonite, and three parts sand mixed with sufficient water to produce a slurry liquid enough to thoroughly fill voids but have no less than 12 pounds of solids per gallon. The sand portion of the slurry shall meet the following gradation:

SAND GRADATION

<u>U.S. STANDARD SIEVE SIZE</u>	<u>REQUIRED PERCENT PASSING BY WEIGHT</u>
3/8 Inch	100
No. 4	100 - 90
No. 200	20 - 0

10. QUANTITIES. The estimated quantities of sheet piling listed in the unit price schedule of the contract as to be furnished by the Contractor are given for bidding purposes only. Sheet piling quantities for payment shall consist of the square feet of piling acceptably installed. This quantity shall consist of the lengths of piles furnished and driven below the elevations indicated for the top of piles times the length along the wall alignment as shown on the drawings. The Contractor shall note that the Government will supply a portion of the required sheet piling, as described in the Special Contract Requirement entitled "IDENTIFICATION OF GOVERNMENT-FURNISHED PROPERTY".

11. MEASUREMENT AND PAYMENT.

11.1 Measurement.

11.1.1 Driven Steel Sheet Piling (Contractor Furnished Sheet Piling). Measurement of driven steel sheet piling will be by the square foot of piling acceptably installed. The length of each pile driven will be measured to the nearest tenth of a linear foot and converted to square feet for payment purposes. Square footage shall be determined by multiplying the number of piles times the measured length acceptably driven below the cut-off elevation shown on the drawings times the theoretical driving width of the pile. The number of piles paid for shall not exceed the number of piles indicated on the approved shop drawings. The length driven below the tip elevation shown on the drawings will not be measured for payment unless overdriving is directed by the Contracting Officer.

11.1.1.1 Cutting, handling, fabricating and driving of Government furnished sheet piling will not be measured for payment.

11.1.2 Pulled Piles. Piles ordered pulled will be measured for payment by the square foot. Square footage will be determined by multiplying the theoretical driving width of the pile by the length pulled above the cut-off elevation shown on the drawings. Redriving of such piles, when required, shall be measured for payment by the square foot, which shall be determined by multiplying the theoretical driving width of the pile by the length redriven below the cut-off elevation shown on the drawings.

11.1.3 Fabricated Piles. The fabricated piles shall not be measured for payment, but shall be included in the wall length measurement.

11.1.4 Void Backfill. The sheet piling void backfill will not be measured for payment.

11.1.5 Painting. The painting of sheet piling will not be measured for payment.

11.2 Payment.

11.2.1 Sheet Piling. Payment for the Contractor furnished steel sheet piling, acceptably installed and measured in accordance with paragraph 11.1, will be made at the applicable contract unit price per square foot for "Steel Sheet Piling". Price and payment shall constitute full compensation for fabricating, furnishing, handling, driving, cutting holes, backfilling voids, and all other work incidental to acceptably installing the steel sheet piling.



11.2.1.1 Payment for cutting, handling, fabricating and driving of Government furnished sheet piling at the locations shown on the drawings will be made at the contract lump sum price for "Driving Government Furnished Sheet Piling". Price and payment shall include all costs of handling, cutting, fabricating and driving the Government furnished sheet piling.

11.2.2 Fabricated Piles and Rolled Corners. No separate payment will be made for the transition piles or the rolled corners and all costs associated with fabricating, furnishing, delivering, and installing them shall be included in the contract unit cost for "Steel Sheet Piling".

11.2.3 Cut-Offs and Splices. Cut-offs and/or splices which are not required under the original terms of this contract but become necessary to construct the sheet pile structures as shown on the drawings and as specified herein, and which are necessitated due to Contractor negligence in any procedure required to install such structures shall be provided at no additional cost to the Government. Cut-offs and/or splices of this type which are required through no fault of the Contractor shall be paid for by lump sum payments of \$10.00 per cut-off and \$25.00 per splice. Additionally, the portion of a Contractor furnished pile which is cut off when the Contractor is deemed to be not at fault, shall be paid for at 75 percent of the applicable contract unit price for the amount measured in accordance with paragraph 11.1.

11.2.4 Pulled Piles. Contractor furnished piles which are directed to be pulled and found to be in good condition will be paid for at the contract price for furnishing and driving the pile in its original position. The cost of pulling will be paid for at 25 percent of the contract unit price and when such piles are redriven, the cost of redriving will be paid for at 25 percent of the contract unit price for that portion of the pile acceptably redriven below the cut-off elevation. When piles are pulled and found to be defective and/or damaged due to Contractor negligence, no payment will be made for originally furnishing and driving such piles, nor for the operation for pulling. Piles replacing defective or damaged piles will be paid for at the applicable contract unit price. Piles which are pulled and found to be damaged through no fault of the Contractor, will be paid for at the applicable contract unit price for originally installing the damaged pile plus 25% of the applicable contract unit price for the cost of pulling. Subsequently, when a new pile is furnished and driven, it shall be paid for at the applicable contract unit price.

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SECTION 02482 - DREDGING AND RIPRAP REMOVAL

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SECTION 02482 - DREDGING AND RIPRAP REMOVAL

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for removal and disposal of riprap, filter cloth and dredge material in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Demolition. Section 02070, "DEMOLITION".

2.2 Environmental Protection. Section 01431, "ENVIRONMENTAL PROTECTION".

2.3 Structural Excavation and Backfill. Section 02222, "STRUCTURAL EXCAVATION AND BACKFILL".

2.4 Agency Contact Points. See the General Provision entitled "AGENCY CONTACT POINTS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

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Geotextile Fabric

4. QUALITY CONTROL. The Contractor shall submit a dredging plan to the Contracting Officer for approval prior to the start of dredging work. This plan shall address the equipment and techniques to be used in riprap removal and dredging and proper disposal of removed material, including details of the truck wash down area. The Contractor shall particularly address environmental protection requirements in the dredging plan. A tolerance of  $\pm 0.5$  feet will be allowed in the final dredged section.

5. SURVEYS. Immediately upon completion of dredging, the Contractor shall survey, plot and submit compliance cross-section plots of the canal. Cross-sections shall be taken at locations corresponding to the Government's original soundings. They shall be plotted by the Contractor on a minimum scale of 1 inch equals 10 feet horizontally and 1 inch equals 5 feet vertically with the theoretical design cross-section and allowable grade tolerances superimposed thereon.

6. DREDGING AND RIPRAP REMOVAL.

6.1 Method and Operations. Dredging and riprap removal shall be conducted as described in these specifications and to the limits shown in the contract drawings.

6.1.1 Bucket dredging (or other mechanical dredging technique) shall be the only method of dredging allowed.

6.1.2 Dredging and riprap removal shall not be permitted from the levees or bridges. Dredging shall be performed from barges only.

6.1.3 Any damage to levees during dredging operations shall be repaired by the Contractor at no cost to the Government.

6.1.4 No dredging excavation will be permitted while Pump Station No. 6 is in operation. Other concurrent work may be performed. Upon notification by the Contracting Officer's Representative (COR), the Contractor shall cease all dredging excavation within the 17th Street Canal and shall prepare and place all dredging excavation labor and equipment on standby status. All dredging equipment and barges shall be anchored or secured against displacement by the canal flow to prevent damage to existing/new construction. All standby costs for cessation of dredging shall be measured and paid in accordance with paragraphs 9.1 and 10.1. Standby costs are limited to the directed periods between 7:00 A.M. and 7:00 P.M., Monday through Saturday, ONLY. Dredging excavation may resume when the COR has determined that all flow in the canal has ceased.

6.1.5 The Contractor shall be required to initially deposit all removed material onto a barge that is designed to allow excess water to drain from the dredge material. Filter cloth shall be separated from dredge material on the barge. Filter cloth shall be rinsed with canal water for cleaning prior to removal from the site.

6.1.6 All removed filter cloth shall become the property of the Contractor and shall be removed from the site. All removed dredge material shall be hauled to the appointed disposal site in accordance with paragraph 7. Filter cloth shall not be disposed of at the dredge disposal site. Trucks used for hauling removed material shall not be allowed to travel on the levees outside of the limits of work.

6.2 Character of Material to be Removed. The material to be removed from the canal includes sand, silt, clay, shell, filter cloth, and riprap. Logs, stumps and other obstructions may be present. Existing riprap has a maximum stone weight of approximately 36 pounds. Dredge material may be contaminated with petroleum hydrocarbons.

6.3 Temporary Truck Wash Rack. The Contractor shall design, submit to the CO for approval, and provide a hard-surfaced truck wash rack to be located at all points of ingress egress from the construction site onto Veterans Boulevard during the riprap/canal dredging operation to reduce the amount of mud/debris transported onto public roads. One (1) additional wash rack shall be located on the north end of the Airline Highway Washkey bridge for the dredge disposal site. All trucks utilized for the riprap removal and canal dredging shall be pressure washed on the wash racks prior to departing the construction sites. The wash racks shall be sized and located within the designated rights-of-way per the Contractor's proposed equipment and construction site layout.

6.3.1 The hard-surfaced truck racks may consist of a Contractor designed steel grated structure, wooden timber crane mats, or equivalent method.

6.3.2 All truck wash rack waste water and sediment shall be intercepted before draining offsite. The water shall be returned to the 17th Street and Airline Highway canals and the sediment removed and disposed of in the designated disposal area.

6.3.3 Additionally, a mechanical sweeper shall be stationed onsite and shall immediately clean Veterans Boulevard highway of debris carried onto the highway by trucks that have been washed.

6.3.4 Upon completion of the dredging operation, the Contractor shall remove the temporary truck wash racks and restore the site per Section 02935, "FERTILIZING, SEEDING AND MULCHING", or Section 02950, "LANDSCAPING".

## 7. DISPOSAL.

7.1 General. As described in paragraph 6.1.6, all filter cloth shall become the property of the Contractor, who is responsible for its disposal off-site. Removed dredge material shall be disposed in accordance with paragraph 7.3. All hauling shall be done in accordance with paragraph 7.2.

7.2 Hauling. All removed dredge material and riprap, including debris, shall be hauled in water tight trucks with secured binders on tailgates to the disposal site. The hauler shall be a registered solid waste transporter. Registration may be obtained from the Louisiana Department of Environmental Quality for a fee of \$100.00 plus \$20.00 per truck. Trucks used for hauling shall not exceed the weight limits specified by the Traffic Engineering Division of Jefferson Parish for Jefferson Parish streets, the Department of Streets of Orleans Parish for Orleans Parish streets, and the Louisiana Department of Transportation and Development for state highways. The route for trucks carrying dredge material to disposal sites shall avoid residential streets and be approved by the Contracting Officer. The Contractor shall be required to take immediate action to clean

up any spilled dredge material on any street between the loading areas and disposal site. Failure to do so may result in having construction activities shut down by the Contracting Officer until all spillage is cleaned up. If necessary to prevent littering streets, trucks hauling dredge material will be prohibited from being loaded above water level lines. Loose material shall be washed off trucks prior to leaving the dredge site or disposal site. Hauling dredged material on public highways shall be allowed between 9:00 A.M. and 3:00 P.M. only.

7.3 Dredge Material Disposal Site. The removed dredge material shall be hauled to the disposal site shown in the contract drawings. No dredge material shall be deposited anywhere other than the appointed disposal site. Plans of the dredging material disposal site and procedures are included in the drawings.

7.3.1 Dredge Material Disposal Site Preparation. Prior to disposal of any dredging material, a containment dike shall be formed around the disposal area, as shown in the plans. Material for the containment dike shall be from the government provided borrow area as shown in plans and described in paragraphs 02222-6 and 02222-7.

8. BRIDGES. The Contractor shall exercise extreme caution while dredging and removing riprap underneath and adjacent to the bridges to avoid damage to the superstructure or substructure of the bridges. To prevent undermining of the existing bridge substructure, no dredging shall be allowed under the existing bridges until traffic is shifted to the prestressed concrete bridge (the beginning of Construction Phase 3). Limited riprap removal shall be allowed during Construction Phase 2 to permit driving of bridge foundation piling.

9. MEASUREMENT. Dredging shall be paid by the cubic yard, based on the cross-section surveys taken before construction and after dredging. Quantities will be computed using the average end area method. In computing quantities for payment, areas will be computed to the nearest tenth of a square foot and volumes will be computed to the nearest cubic yard. The stone pad and wash rack operation shall not be measured for payment.

9.1 Standby costs for cessation of dredging excavation will be measured on an hourly basis to the nearest one-half hour increment as directed by the COR and as limited by paragraph 6.1.4.

10. PAYMENT. Payment for dredging, riprap and filter cloth removal and disposal, including disposal site preparation, and excavation of borrow area (paragraphs 02222-6 and 02222-7) shall be made under the applicable contract unit price per cubic yard for "Dredging". Price and payment shall constitute full compensation for furnishing all plant, labor, material and

equipment required to perform the work as specified herein above, and constructing the containment dike, truck wash rack and stone pad specified herein above and as shown on the drawings.

10.1 Payment for all standby costs associated with cessation of dredging excavation operations will be paid for at the contract unit price per hour for "Standby Costs (Dredging)". Price and payment shall constitute full compensation for the costs of preparation, anchoring and placement of dredging excavation labor, equipment and materials on standby status due to the cessation of dredging during the period of operation of Pumping Station No. 6 as directed by the COR.

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SECTION 02510 - PERMANENT ROADWAY CONSTRUCTION

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SECTION 02510 - PERMANENT ROADWAY CONSTRUCTION

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing permanent asphaltic concrete roadway and adjacent embankment in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Detour Roadway Construction. Section 01521, "TEMPORARY ROADWAY CONSTRUCTION".

2.2 Pavement Markings. Section 02581, "PLASTIC PAVEMENT MARKINGS".

2.3 Signing and Striping. Section 02845, "SIGNING AND STRIPING".

2.4 Existing Utilities. See the General Provision entitled "AGENCY CONTACT POINTS."

2.5 Curb and Gutter. Section 02521, "CONCRETE CURBS AND GUTTERS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD), and Applicable Supplemental Specifications.

203	Excavation and Embankment
301	Class I Base Course
501	Asphaltic Concrete Mixtures
503	Asphaltic Concrete Equipment and Processes
504	Asphaltic Tack Coat
1002	Asphaltic Materials and Additives
1003.06 (a)	Aggregates for Asphaltic Mixtures
1003.06 (a) (11)	Mineral Filler

#### 4. QUALITY CONTROL.

4.1 Material Certification. The Contractor shall provide material documentation to certify that all materials conform to the requirements of LSSRB Sections 203.06, 301.02, 1002 and 1003.06(a).

4.2 Equipment and Processes. The Contractor shall provide documentation to the Contracting Officer to verify that all asphaltic concrete plants and equipment conform to the requirements of LSSRB Section 503.

4.3 Testing. The completed paving shall be tested in accordance with the requirements of LSSRB Sections 501.09 and 501.12, except that tests shall be conducted by an approved testing laboratory (not by the Government) with results provided to the Contracting Officer within 24 hours. Dimensional requirements for finished paving shall conform to the requirements of LSSRB Section 501.11.

5. MATERIALS. The Contractor shall submit his proposed base course material and asphaltic concrete mix designs to the Contracting Officer for approval prior to construction.

6. EQUIPMENT AND PROCESSES. All asphaltic concrete plants, equipment, and processes shall conform to the requirements of LSSRB Section 503.

#### 7. CONSTRUCTION.

7.1 Base Course for Widening. Required base course for shoulder taper widening shall be mixed and placed in accordance with the requirements of LSSRB Sections 301.05, 301.06 and 301.10. Asphaltic base course shall conform to the requirements of LSSRB Section 501.

7.2 Existing Pavement Preparation. Existing pavement shall be sawcut to a minimum depth of 1½ inches at the end of the required overlay. The existing roadway to be overlaid shall be scarified to a depth of 1½ inches over the entire length of overlay. Before asphaltic overlay is placed, an asphaltic tack coat shall be applied in accordance with LSSRB Section 504.

7.3 Overlay. Existing pavement and asphaltic base course on shoulder widenings shall be overlaid with an asphaltic concrete binder course and a 1½ inches asphaltic concrete wearing course as shown in the contract drawings. Overlay procedure shall conform to the requirements of LSSRB Sections 501.03-501.08. The Contractor shall perform surface tolerance tests as described in LSSRB Section 501.10 in the presence of the Contracting Officer's representative to verify surface tolerance acceptability.

7.4 Curbs and Gutters. Curb and gutter construction shall conform to the requirements of Section 02521.

7.5 Embankment. Embankment construction for permanent roadway work shall conform to the requirements of LSSRB Section 203.07. Borrow material, if required, shall be obtained from a source approved by the Contracting Officer.

7.6 Pavement Markings. After all overlay work is complete, permanent pavement markings shall be placed in conformance to the requirements of Sections 02581 and 02845.

8. MEASUREMENT. No separate measurement will be made for permanent asphaltic concrete pavement construction.

9. PAYMENT. Payment for furnishing and installing permanent asphaltic concrete pavement shall be made under the contract lump sum price for "Asphaltic Concrete Pavement". Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work. Payment for permanent pavement markings is described in Sections 02581 and 02845. Payment for curbs and gutters is described in Section 02521.

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SECTION 02521 - CONCRETE CURBS AND GUTTERS

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SECTION 02521 - CONCRETE CURBS AND GUTTERS

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing concrete curbs and gutters in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Concrete Formwork. Section 03101, "FORMWORK FOR CONCRETE".

2.2 Reinforcing Steel. Section 03210, "REINFORCING STEEL".

2.3 Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

2.4 Roadway Construction. Section 02510, "PERMANENT ROADWAY CONSTRUCTION".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

707	Curbs and Gutters
1005.01	Preformed Joint Fillers
1005.02	Poured and Extruded Joint Sealant
1005.03	Preformed Elastomeric Compression Joint Seals

4. QUALITY CONTROL. The Contractor shall provide documentation to certify that all concrete meets the requirements of Section 03301, and that joint fillers and sealers meet the requirements of LSSRB Sections 1005.01, 1005.02 or 1005.03.

5. MATERIALS. Concrete for curbs and gutters shall be Class A and conform to the requirements of Section 03310. Joint fillers and sealers shall conform to the requirements of LSSRB Sections 1005.01, 1005.02 or 1005.03.

6. CONSTRUCTION. Construction of concrete curbs and gutters shall conform to the requirements of Sections 03101, 03210, and 03301 and LSSRB Sections 707.03, 707.05, 707.07, and 707.10.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated therewith will be included in the contract lump sum price for "Class A Concrete". Payment will constitute full compensation for furnishing all plant, labor, equipment and materials, and performing the work in accordance with these specifications.

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SECTION 02550 - APPROACH SLABS

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SECTION 02550 - APPROACH SLABS

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing concrete approach slabs, bolster blocks, year plates, and joints in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Concrete Reinforcement. Section 03210, "REINFORCING STEEL".

2.2 Structural Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

2.3 Permanent Roadway Construction. Section 03601, "PERMANENT ROADWAY CONSTRUCTION".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

301.10	Compacting and Finishing
813	Concrete Approach Slabs
1003.08	Bedding Material
1005	Joint Materials for Pavements and Structures

4. QUALITY CONTROL.

4.1 Material Certification. The Contractor shall meet all requirements in Section 03210 for reinforcing steel and Section 03301 for cast-in-place structural concrete.

4.2 Testing Requirements. The Contractor shall perform material tests and provide results to the Contracting Officer in accordance with the requirements of Section 03210 for reinforcing steel and Section 03301 for cast-in-place structural concrete.

5. MATERIALS. Concrete for approach slabs shall be Class A. Aggregate for base shall conform to LSSRB Section 1003.08. Polyethylene film shall have a minimum 6 mil thickness. Film type shall be approved by the Contracting Officer prior to



construction. Closed cell polyethelene shall conform to LSSRB Section 1005.01(e). Preformed compression seal shall conform to LSSRB Section 1005.3.

## 6. CONSTRUCTION.

6.1 Approach Slabs. Construction of concrete approach slabs shall conform to the requirements of LSSRB Section 813. Base compaction shall be in accordance with LSSRB Section 301.10.

6.2 Bolster Block and Joint. Backfill for concrete bolster block shall be case course material, compacted as specified in Section 02510. Concrete work for bolster block shall be as specified in Section 03101. Provide three layers of 15 lb. tar paper between bolster block and approach slab. Dowel bars shall be A 36 steel (see Section 05501). Expansion cap shall allow for approach slab movement. Joint material shall be installed using adhesives compatible with the materials.

6.3 Year Plates. Year plates shall be located and constructed as shown on the drawings.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated therewith will be included in the contract lump sum price for "Class A Concrete". Payment will constitute full compensation for furnishing all plant, labor, equipment and materials, and performing the work in accordance with these specifications.

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SECTION 02581 - PLASTIC PAVEMENT MARKINGS

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SECTION 02581 - PLASTIC PAVEMENT MARKINGS

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for providing and installing plastic pavement markings in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Roadway Construction. Section 02510, "PERMANENT ROADWAY CONSTRUCTION".

2.2 Signing and Striping. Section 02845, "SIGNING AND STRIPING."

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

732	Plastic Pavement Markings
1015.10	Thermoplastic Pavement Markings
1015.11	Preformed Plastic Pavement Markings

4. QUALITY CONTROL.

4.1 Material Certification. The contractor shall provide material documentation certifying compliance with the requirements of LSSRB Sections 1015.10 and 1015.11 for all plastic pavement markings.

5. INSTALLATION. Installation of plastic pavement markings shall conform to the requirements of LSSRB Section 732.03. Markings shall be located as shown in the drawings.

6. MEASUREMENT. No measurement shall be made for plastic pavement markings.

7. PAYMENT. Payment for furnishing and installing plastic pavement markings will be included under the contract lump sum price for "Permanent Pavement Markings". Price and payment will constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work. For additional work requirements for this bid item, see Section 02845.

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SECTION 02720 - DRAINAGE STRUCTURES

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing required drainage structures and modifying existing drainage structures in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Roadway Construction. Section 02510, "PERMANENT ROADWAY CONSTRUCTION".

2.2 Existing Utilities. See the General Provision entitled "AGENCY CONTACT POINTS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD), and Applicable Supplemental Specifications

701	Culverts and Storm Drains
702	Manholes, Junction Boxes, and Catch Basins
726	Bedding Material
1006	Concrete and Plastic Pipe
1016	Precast Reinforced Concrete Drainage Units

4. QUALITY CONTROL.

4.1 Material Certification. The contractor shall provide material documentation to certify that all materials conform to the requirements LSSRB Section 1006 and 1016.

PART 2 - PRODUCTS

5. MATERIALS. Bedding materials for drainage structures shall conform to the requirements of LSSRB Section 726. Reinforced concrete pipe shall conform to the requirements of LSSRB Section 1006. Catch basins shall conform to the requirements of LSSRB Section 1016.

PART 3 - EXECUTION

6. CONSTRUCTION.

6.1 Flowlines. Flowlines for drainage structures are shown on the contract drawings.

6.2 Excavation. Excavation for drainage structures shall conform to the requirements of LSSRB Section 701.03.

6.3 Connections to Existing Drainage Structures. The required drainage system will connect to existing drainage structures at four locations as shown on the drawings. Existing drainage structures shall be modified and reconstructed in accordance with the standards shown in the contract drawings.

6.4 Conduit Bedding, Laying and Joining. Conduit bedding shall form to LSSRB Section 701.04. Conduit laying shall conform to LSSRB Section 701.05. Conduit joining shall conform to LSSRB Section 701.06.

6.5 Backfill. Backfill procedure and testing requirements shall conform to LSSRB Section 701.08.

6.6 Conflicts with Existing Utility Lines. The required drainage system crosses several existing utility lines. Crossing locations are shown on the contract drawings. Existing utility owners shall be notified 45 days prior to construction of drainage system crossing.

7. MEASUREMENT. No separate measurement will be made for drainage structures or related materials.

8. PAYMENT. Payment for furnishing and installing drainage structures, including excavation and backfill, will be made under the contract lump sum price for "Drainage Structures". Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work.

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SECTION 02845 - SIGNING AND STRIPING

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SECTION 02845 - SIGNING AND STRIPING

1. SCOPE. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with applying reflective white or yellow paint for pavement striping in accordance with plan details, the Manual of Uniform Traffic Control Devices (MUTCD), installing traffic signs, with accessories and posts, all in conformity with the requirements shown on the plans and contained in these specifications.

2. QUALITY CONTROL.

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

(1) Paint Striping. Quality of paint, preparation of surface to be striped, curing of asphaltic concrete prior to striping, coverage and accuracy of placing.

(2) Signs. Inspection of all off-site fabricated materials, locating, aligning and installing signs and clean-up.

(3) Equipment. Selection of proper equipment to produce satisfactory results of paint striping and roadway traffic signs mounting at the correct location and elevations.

2.2 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. APPLICABLE PUBLICATIONS. The following publications, referred to thereafter by basic designation only, form a part of this specification to the extent indicated:

3.1 State of Louisiana Highway Specifications and Testing Procedures Manual. State of Louisiana, Department of Transportation and Development (DOTD), Office of Highways, Louisiana Standard specifications for Roads and Bridges, (LSSRB), 1992 Edition.

3.2 American Society for Testing and Materials (ASTM).

D 2371-85 (1990) Test Method for Pigment Content of Reducible Paints

D 1644-88 Test Method for Nonvolatile Content of Varnishes



- D 1475-90 Test Method for Density of Paint, Varnish, Lacquer, and Related Products
- D 711-89 Test Method for No-Pick-Up time of Traffic Paint
- D 52-81 (1990) Test Method for Consistency of Paints Using the Stormer Viscometer
- D 215-91 The Chemical Analysis of White Linseed Oil Paints
- E 1347-90 Color and Color Difference Measurement by Tristimulus (Filter) Colorimetry

3.3 Federal Specifications (Fed. Spec.).

- TT-P-115F Paint, Traffic (Highway, White and Yellow)

3.4 Manual on Uniform Traffic Control Devices (Louisiana) (MUTCD).

4. SUBMITTALS.

4.1 Test Reports. The Contractor shall submit certified test reports verifying material test and results as specified herein. Reports shall be furnished for each shipment and shall be identified with specific lots. The reports shall be submitted to the Contracting Officer prior to use of the material in the work.

PART 2 - PRODUCTS

5. MATERIALS.

5.1 Sign and Marker Sheeting. Sheeting material for sign panels, delineators, barricades and other markers shall conform to Section 1015 of LSSRB. Reflective sheeting material shall be either Type I or Type II, as specified; if not specified, either Type I or II may be furnished.

5.2 Ferrous Metal. Ferrous metals shall conform to Subsection 1015.02(a) of LSSRB. Reinforcing steel shall conform to Section 03210. All ferrous metal, except reinforcing steel, shall be galvanized in accordance with Section 811 of LSSRB.

5.3 Aluminum. Aluminum alloys for structural members shall conform to Subsection 1015.02(b) of LSSRB. Aluminum sign panels shall conform to Subsection 1015.04(a) of LSSRB.

5.4 Fittings. Structural bolts, nuts and washers and miscellaneous hardware shall conform to Subsection 1015.02 of LSSRB.

5.5 Flexible Sign Posts. Flexible posts for small signs, markers and delineators shall conform to Subsection 1015.03 of LSSRB.

5.6 Color. Yellow shall match Federal 595A, color 33538, white shall be a clean bright, untinted binder. The white paint shall contain a minimum of 1.0 pound per gallon of titanium dioxide conforming to ASTM D 476, TYPE I, II, III or IV.

5.7 Aklyd Traffic Paint. This material shall be a rapid-setting compound suitable for use with hot application equipment.

5.8 Water Borne Traffic Paint. This material shall be a rapid-setting water borne compound suitable for use with hot applicator equipment.

5.9 Thermoplastic Striping. Thermoplastic striping may be used in place of hot-applied paint for striping. See Section 02581.

## 6. EQUIPMENT (PAINT STRIPING).

6.1 Selection of proper equipment to produce satisfactory results within the following requirements shall be the responsibility of the Contractor. Equipment shall satisfy the following:

(1) Be of a type that will permit traffic to pass safely within the limits of the roadway surface and shoulder while the unit is operating.

(2) Designed for placement of both solid and broken line stripes of the spacing shown on the plans with square, neat stripe ends.

(3) Provide a method for cleaning the surface of dust just prior to placement of striping material.

(4) Provide for drop-on application of glass spheres.

(5) The spray machine shall provide accurate regulation of the application rate and shall have a tachometer or other approved device to insure uniform paint application at the designated rate. It shall be adjustable for applying 1, 2, or 3 adjacent lines simultaneously at the specified spacing equipped with a device capable of following a control line. Operation of the unit shall be such that paint will not be spattered or blown on another stripe. The unit shall be so designed that paint will be properly agitated while in operation.

(6) A trailing vehicle equipped with a flashing arrow board.

6.2 Surface Preparation. Surfaces to be striped shall be cleaned of materials that would reduce adhesion of paint to pavement. Cleaning shall be done by approved methods and surfaces shall be kept clean until application of paint.

6.3 Weather Limitation. No paint striping shall be done if:

- (1) the air is foggy or misty;
- (2) the pavement surface has not thoroughly dried;
- (3) the air or surface temperature is below 50°F; or,
- (4) wind or other condition causes a film of dust to be deposited on the surface after cleaning and before striping can be done or causes displacement of striping material.

## 7. APPLICATION.

7.1 Permanent markings shall be located as shown in the contract drawings. Broken line individual intervals will not be marked. No striping material shall be applied over a guide stringline.

7.2 Paint Preparation. Immediately before application, paints shall be agitated and mixed thoroughly to a uniform consistency, free from lumps or agglomerates. Paints shall be kept covered to retain volatiles. Paints shall not be thinned without approval.

7.3 Application Rate. Paint shall be applied at the rate required to provide striping of the specified width at the thickness of 15 wet limits.

7.4 Glass Beads. Glass Beads shall be applied at the same time, but in a separate operation, at the rate of  $6 \pm \frac{1}{2}$  pounds of beads per gallon of binder. Beads shall be applied to the binder before final set has occurred and accomplished in such a manner as to provide uniform coverage of the stripe. Beads shall be applied to the paint immediately after it has been applied to the pavement. Beads shall be applied by compressed air of sufficient pressure to cause embedment of the beads throughout the thickness of the paint. Guns for the bead application shall be of an approved type and care shall be taken to prevent loss of beads due to side spray or nonembedment. Paint may be heated in heat exchangers to accelerate drying, but shall not be heated to a temperature exceeding 140°F.

7.5 Tolerance. A tolerance of +1/2 inch or -1/8 inch from the specified width will be allowed, provided the variation is gradual. Lines not meeting these tolerances shall be removed at no additional cost to the Government.

7.6 Protection of Traffic. The Contractor shall furnish and place all necessary temporary warning and directional signs to direct and protect the traveling public during marking operation.

## 8. FABRICATION OF SIGN PANELS AND MARKERS.

8.1 General. Unless otherwise permitted, metal fabrication including shearing, cutting and punching of holes shall be completed prior to surface treatment of metal and application of sheeting. Metal panels shall be cut to size and shape and shall be free of buckles, warps, dents, cockles, burrs and defects resulting from fabrication. Surface of sign panels shall be flat. Splice plates joining sign panels shall not extend behind horizontal sills. Aluminum panels shall be 0.080 inch thick.

8.2 Surface Treatment. Surface treatment shall be as specified herein or in accordance with approved recommendations of the reflective sheeting manufacturer.

### 8.3 Degreasing.

(1) Vapor Degreasing: Panels shall be immersed in a saturated vapor of trichloroethylene or perchloroethylene. Trademark printing shall be removed with lacquer or a controlled alkaline cleaning system.

(2) Alkaline Degreasing: Panels shall be immersed in a tank containing alkaline solutions, controlled and titrated to the solution manufacturer's specifications. Immersion time shall depend upon the amount of contaminants present and thickness of metal.

### 8.4 Etching.

(1) Acid Etch: Etch in a 6 to 8 percent phosphoric acid solution at 100°F; rinse thoroughly with running water followed by hot water tank rinse.

(2) Alkaline Etch: Etch precleaned aluminum surface etching material controlled by titration, using time, temperature and concentration specified by solution manufacturer. Rinse thoroughly. Remove smut with an acidic, chromium compound solution specified by solution manufacturer and thoroughly rinse in an alkaline.

8.5 Drying. Dry panels with forced hot air drier. Panels shall be handled with clean canvas gloves or by other approved methods between cleaning and etching operations and sheeting application. Cleaned panels shall be protected from grease, oil or other contaminants prior to application of reflective sheeting.

## 8.6 Hazard Markers and Delineators.

8.6.1 Hazard Markers. Hazard markers shall be silver reflectorized material conforming to Subsection 1015.05 and low gloss black nonreflectorized material conforming to Subsection 1015.06 or 1015.07 of LSSRB mounted on 0.080 inch thick aluminum panels.

8.6.2 Delineators. Delineators shall be reflective sheeting (silver, red or yellow, as specified) conforming to Subsection 1015.05 of LSSRB applied to properly treated base panels, punched or sheared to specified dimensions for rigid steel posts; or applied directly to flexible posts.

8.7 Packaging. Before being packed, signs shall be allowed to stand for at least 12 hours after completion of paint screening. Signs shall be slip-sheeted and packed in such manner as to insure their arrival at destination in an undamaged condition. Packaged signs shall not be permitted to become wet in storage or shipment.

## PART 3 - EXECUTION

9. EXISTING SIGNS. Existing signs affected by construction shall be inventoried and located by the Contractor. Affected signs shall be removed and properly stored during construction by the Contractor. The Contractor shall restore these signs to their original locations or locations directed by the Contracting Officer upon completion of the project construction. Any damage to the signs shall be repaired or replaced at no additional cost to the Government.

## 10. CONSTRUCTION REQUIREMENTS.

10.1 Construction Stakes. Sign locations will be determined and staked by the Contractor for approval by the Contracting Officer. Locations which are obviously improper because of topography, existing appurtenances or other conflicting conditions will be adjusted to the closest desirable location. The Contractor shall determine elevations for post length determinations at the established sign location.

## 10.2 Sign Positioning.

10.2.1 Road Edge Signs. Road edge signs shall be constructed with sign faces vertical. Sign faces located less than 30 feet from the edge of travel lane shall be placed at a 93 degree angle from the center of travel lane, and sign faces located 30 feet or more from the edge of travel lane shall be placed at an 87 degree angle from the center of travel lane. Where lanes divide or on curves or grades, sign faces shall be oriented so as to be most effective both day and night and avoid specular reflection.

10.2.2 Delineator and Hazard Marker Assemblies. These assemblies shall be placed at least 2 feet beyond the outer edge of the roadway shoulder, 2 feet beyond the face of curb, or in the line of guard rail.

10.2.3 Vertical and Horizontal Clearances. In ground installations, signs shall be constructed to a minimum height of 6 feet above the edge of pavement to the bottom of signs. If, however, a secondary sign is mounted below another sign, the secondary sign shall be at least 4 feet above pavement edge. Minimum horizontal clearance from edge of roadway to any ground sign or the nearest vertical member of an overhead sign structure shall be as shown on the plans or as directed.

10.2.4 Footings. Posts for ground mounted signs may be driven; no footings will be required.

11. ACCEPTANCE OF SIGNS. After installation of signs is complete, the Contracting Officer along with his authorized representative will inspect the signs, both day and night. The inspection will consist of sign faces, mounts, installations, hardware and all matters relating to the requirements of this section along with applicable plans and standards. Color match, uniformity and spacing of legend, specular glare, and sign type and design will be inspected for conformance to plans and specifications. If specular reflection is apparent on any sign, its positioning shall be adjusted by the Contractor to eliminate this condition. Signs shall be clean at the time of inspection and reflective sheeting shall be free of cuts, scratches, breaks or other defects which might allow moisture to infiltrate and damage reflective cells. Nonstandard or otherwise unacceptable signs and traffic control devices shall be replaced or repaired as directed.

In lieu of removing and replacing new sign faces that have been rejected, sign overlay panels conforming to 729.05(c) of LSSRB may be used to correct the deficiencies at the expense of the Contractor.

12. MEASUREMENT AND PAYMENT. No separate measurement will be made for signing and striping. Payment for temporary signing and striping will be made at the contract lump sum price for "Maintenance of Traffic (Including Temporary Signing)". Payment for permanent striping and signing, including removal, storage, and replacement of existing signs, will be made at the contract lump sum price for "Permanent Pavement Markings". Prices and payment shall constitute full compensation for furnishing all plant, labor, material and equipment, performing all operations necessary for signing and striping, and adhering to all safety and health provisions, as specified in U. S. Army Corps of Engineers, Health and Safety Manual EM 385-1-1.

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## SECTION 02935 - FERTILIZING, SEEDING AND MULCHING

1. SCOPE. The work provided for herein consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for finished dressing, fertilizing, seeding and hydro-mulch application to areas as specified herein and as indicated on the drawings. Fertilizing, seeding and mulching shall be performed upon completion of construction in the affected area. The period of the year in which fertilizing, seeding and mulching operations are performed in a particular area will determine the seeding specification in Table I which shall be followed for that area. Only one of the seeding specifications listed in Table I will be required for each particular area.

### 2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for finished dressing, fertilizing, seeding and mulching operations and shall maintain records of his quality control for all construction operations including, but not limited to, the following:

(1) Preparation of Ground Surface. Location and quality of finished dressing, including necessary clearing, filling, or dressing out of washes, smoothness and uniformity of surfaces, and time of year.

(2) Fertilizing. Quality of materials. Areas fertilized, quantity applied, and method of application.

(3) Seeding. Quality and type of seed, area covered, rate of application, quantity of seed used, and method of distribution.

(4) Mulching. Quality of materials, area mulched, quantity applied, method of application.

(5) Maintenance and Repair. Location and type of maintenance problems and remedial treatment performed.

(6) Watering. Quality of water, area watered, quantity applied, and method of application.

2.2 Reporting. The original and two copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".



3. AREAS TO BE TREATED. Fertilizing, seeding and mulching shall be performed on all disturbed areas within the construction limits and on all newly constructed embankments as indicated on the drawings. Fertilizing, seeding and mulching will not be required for areas shown on the drawings to be sodded.

4. COMMENCEMENT, PROSECUTION, AND COMPLETION.

4.1 General. Preparation of the ground surface, fertilizing, seeding and mulching operations shall be accomplished during the applicable growing season as specified in Table I.

4.2 Sequence of Work. The sequence of operations for work prescribed in this section, except mowing, shall be as follows:

- (1) Preparation of ground surface.
- (2) Fertilizing.
- (3) Seeding.
- (4) Hydromulching.
- (6) Watering.

Fertilizing, seeding and mulching operations shall commence upon completion of embankment construction and construction operations in the affected zone.

PART 2 - PRODUCTS

5. MATERIALS.

5.1 Fertilizer. Fertilizer shall be uniform in composition and free-flowing. The fertilizer shall meet the requirements for commercial fertilizer and shall contain, per acre, 60 pounds of available nitrogen, 60 pounds of available phosphorous, and 60 pounds of available potash. The fertilizer shall be delivered to the site in bags or other convenient containers or delivered in bulk. If delivered in bags or containers, the fertilizer shall be fully labeled in accordance with the applicable state fertilizer laws and shall bear the name, tradename or trademark, and warranty of the producer. Should the commercial fertilizer be furnished in bulk, the Contractor shall furnish certified weight tickets and a certified quantitative analysis report, in triplicate, from a recognized testing laboratory certifying the nutrient ratio of the materials. In the event the commercial fertilizer is delivered to the job site in the original containers, unopened, the analysis report shall not be required.

5.2 Soil for Repairs. For fill of areas to be repaired, soil shall be of a quality at least equal to that which exists in areas adjacent to the area to be repaired. Soil used shall be

relatively free from roots, stones, and other materials that hinder grading, planting, and maintenance operations and shall be free from objectionable weed seeds and toxic substances.

5.3 Seed. Seed labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act shall be furnished by the Contractor. Seed shall be furnished in sealed, standard containers unless written exception is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. The specifications for seeds shall conform to the following and areas shall be seeded at the following rates:

Table I

<u>Seeding Period and Grasses to be Used</u>	<u>Minimum Purity%</u>	<u>Minimum Germination%</u>	<u>Minimum Rate Lbs/Acre</u>
2 March - 14 September			
Hulled common Bermuda grass	95	87	50
15 September - 1 March			
Unhulled common Bermuda grass	95	87	50
Ryegrass	97	82	35

5.4 Water. Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass. Wood cellulose fiber mulch shall be applied along with fertilizer and seed as hydro-mulch application.

5.5 Wood Cellulose Fiber Mulch. Wood cellulose fiber mulch with tackifier for use with hydraulic application equipment shall consist of wood cellulose fiber. The mulch shall be processed to contain no growth or germination inhibiting factors, and dyed an appropriate color to facilitate visual metering of application of the materials. The mulch material shall be supplied in packages having a net weight not in excess of 100 pounds. The mulch fiber shall contain not in excess of 10 percent moisture, air dry weight basis. The fiber shall be manufactured so that after addition and agitation in slurry tanks with water, and any other additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry, and that when hydraulically sprayed on the ground, the material will form a blotter-like ground cover which, after application, will allow the absorption of moisture and allow rainfall or mechanical watering to percolate to the underlying soil. The Contractor shall be prepared to submit, on request, certification from the supplier that laboratory and field testing of the product has been accomplished, and that the product meets the foregoing requirements.

6. SUBMITTALS AND SAMPLES. The Contractor shall submit the following items in accordance with the General Provision entitled "SUBMITTALS".

6.1 Fertilizer. Duplicate signed copies of invoices from suppliers shall be furnished. Invoices shall show quantities and percentage of nitrogen, phosphorus, and potash. Upon completion of the project, a final check of the total quantity of fertilizer used will be made against total area treated, and if minimum rates of application have not been met, an additional quantity of material sufficient to make up the minimum application rate shall be distributed as directed.

6.2 Seed. The Contracting Officer shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and is at least equal to the requirements specified in paragraph 5.3. This certification shall be obtained from the supplier and shall be furnished on or with all copies of seed invoices.

6.3 Mulch. Representative samples of the materials proposed for use shall be submitted for approval.

## 7. SPECIAL EQUIPMENT.

7.1 Wood Cellulose Fiber Mulch Spreader. Hydraulic equipment used for the application of slurry of prepared wood pulp shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing up to 300 pounds of fiber for each 1000 gallons of water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with hydraulic spray nozzles that will provide even distribution of the slurry on the various slopes to be mulched. The slurry tank shall have a minimum capacity of 1,000 gallons and shall be mounted on a traveling unit, which may be either self-propelled or drawn by a separate unit, that will place the slurry tank and spray nozzles near the areas to be mulched so as to provide uniform distribution without waste. The Contracting Officer may authorize equipment with a smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform seat over the surface of the area to be mulched.

## PART 3 - EXECUTION

### 8. PREPARATION OF GROUND SURFACE.

8.1 General. Equipment, in good condition, shall be provided for the proper preparation of the ground and for handling and placing all materials. Equipment shall be approved by the Contracting Officer before work is started.

8.2 Clearing. Prior to grading and tilling, vegetation and debris that may interfere with fertilizing, seeding and mulching operations shall be mowed, cleared, grubbed, and raked; and shall be disposed of satisfactorily, as specified in Section 02210, "CLEARING AND GRUBBING".

8.3 Grading. Previously established grades and slopes shall be maintained in a true and even condition on the areas to be fertilized and seeded and mulched. Necessary repairs to previously graded areas shall be repaired with material as described in paragraph 5.2. Where grades have not been established, the areas shall be graded as shown, or as directed by the Contracting Officer, and all surfaces shall be left in a true and even condition.

8.4 Tillage. After the areas required to be fertilized, seeded and mulched have been brought to the specified grades, the soil shall be tilled to a depth of at least 2 inches by plowing, disking, harrowing, or other approved method until the condition of the soil is acceptable. The work shall be performed only during periods when, in the opinion of the Contracting Officer, beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. Undulations or irregularities in the surface to be fertilized, seeded and mulched shall be dressed before the next specified operation.

## 9. APPLICATION OF FERTILIZER.

9.1 Fertilization of Areas to be Seeded. Fertilizer, as specified in paragraph 5.1, shall be distributed uniformly over areas to be seeded and shall be incorporated into the soil to a depth of at least 2 inches by disking, harrowing, or other acceptable methods. Incorporation of fertilizer may be part of the operation specified in paragraph 8.4.

## 10. SEEDING.

10.1 General. The applicable seed shall be sown at the rate and time as indicated in Table I, unless otherwise directed in writing. A satisfactory method of sowing shall be employed, using approved mechanical power-drawn seeders, mechanical hand-seeders, broadcast-seeders, or other approved methods. When delays in operations extend the work beyond the most favorable planting season for the species designated, or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be halted as directed by the Contracting Officer and resumed only when conditions are favorable or when approved alternative or corrective measures and procedures have been effected. If inspection during or after seeding operations

indicates that areas have been left unplanted or other areas have been skipped, additional seed shall be applied if so directed by the Contracting Officer.

10.2 Hydraulic Seeding. Seeds shall be combined with fertilizer and mulch and applied uniformly with equipment meeting the requirements of paragraph 7.

10.3 Damage To Seeding. The Contractor shall be fully responsible for any damage to the seeded areas caused by his operations. Areas that become damaged as a result of poor workmanship or failure to meet the requirements of the specifications may be ordered repaired and reseeded to specification requirements, without additional cost to the Government.

## 11. APPLYING AND ANCHORING MULCH.

11.1 Wood Cellulose Fiber Mulch. Wood cellulose fiber mulch, as specified in paragraph 5.5, shall be applied uniformly on the soil at the rate of 1800 pounds per acre during the seeding operation with equipment as specified in paragraph 7.

12. WATERING. Watering shall be required for all seeded areas except when natural precipitation has provided the necessary moisture. Watering shall be done in a manner which will prevent erosion due to the application of excessive quantities, and the watering equipment shall be a type that will prevent damage to the finished surface. A minimum amount of required moisture would be the equivalent of two (2) one (1) inch rains per week. If more water is needed, it is the responsibility of the Contractor to provide it.

13. MOWING. The seeded areas shall be mowed with approved mowing equipment for the first time when the vegetation becomes 4 inches tall. The seeded areas shall be mowed to a height of 2 to 3 inches. After the first mowing, the seeded areas shall be mowed with approved mowing equipment to a height of 3 to 4 inches whenever the height of vegetation becomes 6 to 8 inches. When the amount of cut grass is heavy, it shall be removed to prevent destruction of the underlying turf. The Contractor shall be responsible for mowing until the physical completion of all items of the contract.

14. TURF ESTABLISHMENT PERIOD. The Contractor shall produce dense, vigorous, well established turf and shall maintain areas until final acceptance of the work by the Contracting Officer. Maintenance shall include, but not be limited to, the preparation and reseeding or sodding of any bare areas, proper watering, refilling of rain-washed gullies and rutted areas, refertilizing and mowing. Any areas which fail to show a uniform stand of grass shall be reworked and reseeded at the Contractor's expense with the same seed as originally used thereon, and such reseeding shall

be replaced until all required areas are covered with a satisfactory stand of grass. A satisfactory stand of grass is defined as a cover of living grass in which gaps larger than 4 inches do not occur at the time of acceptance by the Contracting Officer. A final inspection of the seeded areas will be made by the Contracting Officer. No plant material or turf will be accepted unless it is alive and healthy and all related work conforms to the plans and specifications.

15. MEASUREMENT. No separate measurement will be made for fertilizing, seeding, and mulching.

16. PAYMENT. Payment for fertilizing, seeding and mulching will be included in the contract lump sum price for "Landscaping", except that fertilizing, seeding and mulching at the dredge material disposal site shall be included in the contract unit price per cubic yard for "Dredging". Prices and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment and performing the work, including any necessary repairs, in accordance with these specifications.

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SECTION 02950 - LANDSCAPING

PART 1 - GENERAL

1. SCOPE. The work covered by the specifications consists of furnishing all plant, labor, equipment, materials, insurance, licenses, permits and taxes required for execution and completion of landscaping work and related items indicated on the drawings and/or specified herein. The work to be performed includes, but is not limited to, the following:

- (1) Provide protection for existing plants to be retained on the site.
- (2) Furnish topsoil and all other materials incidental to planting operations.
- (3) Finish grading - fill low areas in beds and grade for proper drainage.
- (4) Furnish and plant trees, shrubs, sod, grasses, ground covers, and amend soil.
- (5) Construct sidewalk and irrigation system as shown on drawings.
- (6) Provide maintenance as specified herein.
- (7) Guarantee all new plant material and planting methods specified herein.
- (8) Submit to the Contracting Officer for transmittal to the Landscape Architect, all data required by this section.

2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for all operations to assure compliance with contract requirements and maintain records of his quality control for all construction operations.

2.2 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. APPLICABLE PUBLICATIONS. The following publications listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:



- 3.1 American Society for Testing and Materials (ASTM).  
D 2607-69 Peats, Mosses, Humus and Related Products
- 3.2 Federal Specifications (Fed. Spec.).  
O-F-241D Fertilizers, Mixed, Commercial
- 3.3 American National Standards Institute (ANSI).  
Z60.1-86 Nursery Stock
- 3.4 American Joint Committee on Horticultural Nomenclature (AJCHN) Publication.  
2nd Edition-1942 Standardized Plant Names

#### 4. SOURCE INSPECTIONS.

4.1 Plant Materials. Plant materials will be inspected by the Contracting Officer and Landscape Architect at the growing site and tagged or otherwise approved for delivery. Such inspection does not preclude right of rejection at the project site.

4.2 Topsoil. The source of topsoil will be inspected by the Contracting Officer and Landscape Architect to determine the acceptability of the topsoil and the depth to which it is to be stripped.

#### 5. SUBMITTALS.

5.1 Samples. The Contractor shall submit representative samples of peat moss, fertilizer, topsoil and 10 pounds of organic mulch to be used in the project to the Contracting Officer for approval before work is started.

5.2 Certificates Of Conformance Or Compliance. Before delivery, notarized certificates attesting that plant materials and fertilizers meet the requirements specified, shall be submitted in triplicate to the Contracting Officer for approval.

5.3 Certified Laboratory Test Reports. In addition to the submittal of certificates specified herein, certified copies, in triplicate, of the reports of all tests listed below and required in reference publications for the following materials shall be submitted for approval:

- (1) Offsite topsoil for pH
- (2) Peat - for classification, total nitrogen, moisture, ash and organic matter, sand content, pH.

The testing shall have been performed by an independent laboratory approved by the Contracting Officer within 6 months of submittal of reports for approval. Test reports on a previously tested material shall be accompanied by notarized certificates from the manufacturer certifying that the material is of the same type, quality, manufacture, and make to be used for this contract.

5.4 Manufacturer's Literature. Manufacturer's literature on antidesiccant shall be submitted to the Contracting Officer for approval.

5.5 Maintenance Instruction. Prior to the end of the maintenance period, 3 copies of written instructions for year round maintenance and care of installed plants shall be furnished to the Contracting Officer by the Contractor.

5.6 Licenses. Licenses of the Contractor shall be submitted, in triplicate, to the Contracting Officer.

## 6. DELIVERY.

6.1 The Contractor shall notify the Contracting Officer of the delivery schedule in advance so the plant material may be inspected upon arrival at the jobsite. Unacceptable plant material shall be removed from the jobsite immediately.

6.2 Plants shall be protected during delivery to prevent damage to the root balls or desiccation of leaves.

6.3 Fertilizer and chemicals for pH adjustment shall be delivered to the site in the original, unopened containers bearing the manufacturer's guaranteed chemical analysis, name, tradename or trademark, and in conformance to state and Federal law. In lieu of containers, fertilizer and chemicals for pH adjustment may be furnished in bulk and a certificate indicating the above information shall accompany each delivery.

## 7. STORAGE.

7.1 Plants not installed on the day of arrival at the site shall be stored and protected as follows:

(1) Outside storage shall be shaded and protected from the wind.

(2) Plants stored on the project shall be protected from drying out at all times by covering the balls or roots with moist sawdust, wood chips, shredded bark, peat moss, or other similar mulching material.

(3) Plants, including those in containers, shall be kept in a moist condition until planted by watering with a fine mist spray.

(4) Plants stored more than three days after delivery will be rejected by the Contracting Officer.

7.2 Chemicals for pH adjustment and fertilizer shall be kept in dry storage away from contaminants.

7.3 Storage of materials shall be in areas designated or as approved by the Contractor Officer.

8. HANDLING. Care shall be taken to avoid damaging plants being moved from the nursery or storage area to the planting site. Balled and burlapped plants shall be handled carefully to avoid cracking or breaking the earth ball. Plants shall not be handled by the trunk or stems. Plants shall be protected from freezing or drying out by a covering of burlap, tarpaulin, or mulching material during transportation from the heeling-in bed to the planting site. Damaged plants will be rejected and shall be removed from the site.

## PART 2 - PRODUCTS

### 9. PLANTS.

9.1 Plants shall conform to the varieties specified in the plant legend and be true to botanical names as listed in AJCHN Standardized Plant Names. Plants shall be in accordance with ANSI Z60.1 except as otherwise stated in the specifications or shown on the plans. Where the drawings or specifications are in conflict with ANSI Z60.1, the drawings and specifications shall prevail.

9.2 Planting stock shall be well-branched and well-formed, sound, vigorous, healthy, and free from disease, sun-scald, windburn, abrasion, and harmful insects or insect eggs and shall have healthy, normal and unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed, of uniform habit of growth, with straight boles or stems and free from objectionable disfigurements. Evergreen trees and shrubs shall have well developed symmetrical tops with typical spread of branches for each particular species or variety. Ground covers and vines shall be vigorous, have the number and length of runners and clump size specified, and be the proper age for the grade of plants specified. Only vines and ground cover plants well established in removable containers, integral containers, or formed homogeneous soil section shall be used. Plants shall have been grown under climatic conditions similar to those in the locality of the project. Plants budding into leaf or having soft growth shall be sprayed with an anti-desiccant at the nursery and collecting field before digging.

9.3 The minimum acceptable sizes of all plants, measured before pruning and with branches in normal position, shall conform to the measurements indicated. Plants larger in size than specified may be used with the approval of the Contracting Officer with no change in the contract price. If larger plants are used, the ball of earth or spread of roots shall be increased in accordance with ANSI Z60.1. Do any necessary pruning only at time of planting.

9.4 The Contractor shall facilitate inspection and identification by labeling trees and bundles or containers of the same shrub, ground cover, or vine with a durable waterproof label and weather-resistant ink. Labels shall state the correct plant name and size as specified in the list of required plants. Labels shall be securely attached to plants, bundles, and containers of plants and shall be legible for 60 days after delivery to the planting site.

9.5 Plants shall be nursery grown unless otherwise indicated and shall conform to the requirements and recommendations of ANSI Z60.1. Plants shall be dug and prepared for shipment in a manner that will not cause damage to branches, shape, and future development after planting.

9.6 Balled and burlapped (B&B) plants shall have ball sizes and ratios conforming to ANSI Z60.1. Plants shall be balled with firm, natural balls of soil. B&B plants shall be wrapped firmly with burlap, strong cloth, or plastic and tied. Plants will not be accepted if the ball is cracked or broken before or during planting operations.

9.7 Container grown plants shall have sufficient root growth to hold the earth intact when removed from containers but shall not be root bound.

9.8 Substitutions shall be made only when a plant (or its alternates as specified) is not obtainable and the Contracting Officer authorizes a change order providing for use of the nearest equivalent obtainable size or variety of plant having the same essential characteristics with an equitable adjustment of the contract price. If all other requirements are met, container-grown instead of balled and burlapped or bare-root plants, may be furnished.

9.9 The Contractor shall protect plants against drying out at all times. They shall be kept in the shade, well protected with soil, wet moss, or other acceptable material and well watered. Plants shall be planted within three days after delivery. Any plant not planted within three days after delivery shall be rejected by the Contracting Officer.

9.10 Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled from the bottom of the ball only.

## 10. MATERIALS.

10.1 Topsoil. Topsoil shall be furnished by the Contractor and shall be a natural, friable soil containing a liberal amount of humus and representative of productive soils in the vicinity. It shall be obtained from well-drained areas and shall be free of any admixture of subsoil, stones, lumps, clods of hard earth, brush, weeds, plants or their roots, and other extraneous material. The pH range shall be 5.5 to 6.5. Topsoil that does not meet the pH range shall be amended by the addition of pH adjusters prior to use. The top soil must be retested and lab results furnished to the Contracting Officer for approval. See paragraph 5.3(1).

### 10.2 pH Adjusters.

10.2.1 Lime. Lime shall be agricultural limestone and shall be ground to such fineness that at least 50 percent will pass a 100-mesh sieve and at least 98 percent will pass a 20-mesh sieve.

10.2.2 Aluminum Sulfate. Aluminum sulfate shall be commercial grade.

### 10.3 Soil Conditioners.

10.3.1 Peat. Peat shall be a natural product of sphagnum moss, peat or peat moss derived from a freshwater site conforming to Fed. Spec. Q-P-166, except as otherwise specified herein.

10.3.2 Sand. Sand shall be clean and free of toxic materials.

10.4 Planting Soil Mixture. The planting soil mixture shall be composed of 1 part topsoil, 1 part peat, and 1 part sand.

10.5 Fertilizer. Fertilizer shall be commercial grade and uniform in composition and shall conform to applicable state and Federal regulations. Granular fertilizer shall conform to Fed. Spec. O-F-241, Type I, Level B, and shall bear the manufacturer's guaranteed statement of analysis. Granular fertilizer shall contain a minimum percentage by weight of: 15 percent nitrogen (of which 50 percent shall be organic), 5 percent available phosphoric acid, and 10 percent potash. Fertilizer shall be stored in a weatherproof storage place and in a manner that it will be kept dry and its effectiveness not impaired.

10.6 Mulch. Organic mulch material shall be shredded cypress bark.

10.7 Reserved.

10.8 Tree Wound Dressing. Tree wound dressing shall be a black asphalt base antiseptic paint.

10.9 Steel Edging. Steel edging shall be 1/8-inch x 4 inches, Ryerson or equal, painted green.

10.10 Staking Materials.

10.10.1 Stakes for supporting trees shall be straight, rough sawn hardwood, as shown in this specification section.

10.10.2 Guy wires shall be pliable 12 gauge galvanized steel.

10.10.3 Rubber hose shall be 3/4-inch diameter, 2 ply, black corded hose.

### PART 3 - EXECUTION

11. GENERAL EXECUTION. Landscaping shall be done with the approval of the Contracting Officer. All tree work shall be performed under the supervision of Contracting Officer or his representative. Tree work shall be performed by a licensed arborist. A permit shall be obtained from the Parkway and Park Commission for tree work in Orleans Parish. This permit is issued by the Tree Division and is free of charge. For coordination with local parkway agencies, see the General Provision entitled "AGENCY CONTACT POINTS".

12. LAYOUT. Plant material locations and bed outlines shall be staked on the project site by the Contractor and approved by the Contracting Officer before any plant pits or beds are dug. The Contracting Office may adjust plant material locations to meet field conditions.

13. EXCAVATION FOR PLANTING.

13.1 Prior to excavating for plant pits and beds, the area shall conform to the lines and grades shown on the plans and the location of any underground utilities shall be verified by the Contractor and the Contracting Officer. Damage to utility lines shall be repaired at the Contractor's expense. If lawns have been established prior to planting operations, the surrounding turf shall be covered before excavations are made in a manner that will protect turf areas. Existing trees, shrubbery, and/or beds that are to be preserved shall be barricaded in a manner that will effectively protect them during planting operations.

13.2 Rocks and other underground obstructions shall be removed to a depth necessary to permit proper planting according to plans and specifications. If underground utilities, construction, or solid rock ledges are encountered, other locations may be selected by the Contracting Officer.

13.3 Plant pits may be dug by any method approved by the Contracting Officer provided that the pits have vertical sides and flat bottoms. When pits are dug with an auger and the sides of the pits become glazed, the glazed surface shall be scarified. No heavy objects or machinery shall be allowed on areas after the subgrade has been prepared, unless the above process is repeated before topsoil is spread. The minimum allowable dimensions of plant pits shall be: 6 inches deeper than the depth of ball or the depth of base roots; for ball or root spreads up to 2 feet, pit diameters shall be twice the root spread; for ball or root spreads from 2 to 4 feet, pit diameters shall be 2 feet greater; for ball or root spreads over 4 feet, pit diameters shall be 2-1/2 times the ball or root spread.

13.4 Existing soil to be replaced in plant beds shall be excavated to a depth of 12 inches and replaced with planting soil mixture or topsoil. Plant beds shall be brought to a smooth and even surface conforming to establishing grades.

13.5 Weed Cloth. Weed cloth (weed inhibitor) shall be used in all beds. The weed barrier shall be applied below the cypress on the surface of planting soil mixture. The Contractor shall provide total coverage in all beds. All plants, including ground cover, shall be planted through this weed barrier.

13.6 Excess topsoil shall be used to form watering basins around plants, as specified or removed from the project site.

#### 14. SETTING PLANTS.

14.1 All root balls shall be sprayed with a root stimulant prior to setting. Balled and burlapped, and container-grown plants shall be set plumb and held in position until sufficient soil has been firmly placed around roots and ball. Plants shall be upright and positioned to render the best appearance or relationship to adjacent structures. Plants shall be set in relation to surrounding grade so that they are even with the depth at which they were grown in the nursery, collecting field, or container. Ground cover beds shall have a minimum depth of six inches. After preparation of subgrade as specified, the Contractor shall fill the bed with planting soil mixture consisting of 3 parts topsoil, 1 part peat moss, and fertilizer at the rate of 3 pounds of specified fertilizer per cubic yard of soil mix. Plants shall evenly spaced at indicated distances, so as to produce a uniform effect. Water ground cover plantings immediately after planting. Care shall be taken to avoid

contaminating the mulch with the planting soil. Balled and burlapped trees and plant material shall not be planted between April 1 and November 15.

14.2 Balled and burlapped stock shall be backfilled with planting soil mixture to approximately half the depth of the ball and then tamped and watered. Excess burlap and tying materials shall be carefully removed or folded back. If plastic wrap is used in lieu of burlap, it shall be completely removed before the placement of backfill. The remainder of backfill of planting soil mixture shall be tamped and watered. Earth saucers or water basins shall be formed around isolated plants.

14.3 Container grown stock shall be removed from containers in such a way so as to prevent damage to root system of plant. Planting shall be completed as specified herein under balled and burlapped plants.

#### 15. STAKING AND GUYING.

15.1 The Contracting shall stake and guy immediately after planting. Trees shall stand plumb after staking and guying unless otherwise specified.

15.2 Each tree shall have three hardwood stakes each 3 inches diameter x 6 feet, evenly spaced three feet into the ground far enough away from the earthen saucers so as not to interfere with the ball of the tree. The Contractor shall attach each stake to the tree by double stranded #12 galvanized wire encased in a collar of 3/4-inch diameter rubber hose around the trunk of the tree. Each guy wire shall be flagged with a bright color plastic non-fading flagging halfway between the wood stake and the rubber collar. A six inch galvanized turnbuckle shall be attached to each guy wire directly below the flagging tape.

16. PRUNING. New or transplanted plant material shall be pruned in the following manner: Dead and broken branches shall be removed. Deciduous trees and shrubs shall be pruned to reduce the total amount of anticipated foliage by one-fourth to one-third. Typical growth habit of individual plants shall be retained with as much height and spread as is practicable. Cuts shall be made with sharp instruments, and shall be flush with the trunk or adjacent branch to ensure elimination of stubs. "Headback" cuts at right angles to the line of growth shall not be permitted. Trees shall not be poled or the leader removed. Trimmings shall be removed from the site. Cuts 1/2-inch diameter and larger shall be painted with the specified tree wound dressing. The Contractor shall identify existing trees that require pruning to clear construction activity and have them pruned prior to beginning the construction activity.



17. FERTILIZATION.

17.1 The Contractor shall use commercial fertilizer as specified and shall be applied at the following rate:

(1) Trees: 1 lb. per inch caliper.

(2) Shrubs: ½ lb. per foot of height of shrub.

(3) Groundcover: 3½ lb. per 100 sq. ft. of ground area. Spread uniformly by an approved method, and mix thoroughly into the prepared bed to a depth of 4 inches.

17.2 The Contractor shall place fertilizer within the diameter of plant saucer and work into the upper layer of planting soil.

17.3 If any fertilizer adheres to plants, it shall be carefully flushed off.

18. FINISHED GRADING. After the subgrade soil has been prepared, spread topsoil to a depth of 1 inch minimum, lightly compact by roller and then finely rake. Rake by hand in areas adjacent to walks, pavings, structures, plants, etc. No topsoil shall be spread in a muddy condition. Provide allowance for natural settlement. The finished surface shall be smooth, finely textured, free of all sticks, debris, rubbish, etc., and shall conform to the lines and grades indicated on the Drawings and/or as directed by the Contracting Officer.

19. EDGING PLANT BEDS OR INDIVIDUAL PLANTS. Beds or individual plants shall be edged with Ryerson or equal steel edging, 1/8 inch thick x 4 inches, painted green. Bed shape shall be as indicated on the plans. Individual plant pits shall be circular in shape.

20. MULCHING.

20.1 Mulching. Mulching shall take place within 48 hours after planting. A Grade A cypress mulch shall be used.

20.2 Placing Organic Material. A mulch of shredded cypress shall be spread to a uniform thickness of 3 inches.

20.3 Mulch shall be kept out of the crown of shrubs and off walks and other structures.

21. RESTORATION AND CLEAN-UP. Excess and waste material shall be removed daily. When planting in an area has been completed, the area shall be cleared of all debris, spoil piles, and containers. Where existing grass areas have been damaged or scarred during planting operations, the Contractor shall restore disturbed areas to their original condition at his expense.

## 22. MAINTENANCE.

22.1 General. The Contractor, prior to planting of any plant, shall submit to the Contracting Officer for approval a maintenance schedule. The schedule shall indicate the plant name, purchase date, planting date, and required maintenance, protection and watering cycle during the maintenance period. The schedule shall also indicate the proposed means and methods of maintenance. During the maintenance period, the Contractor shall submit a plant status report at the end of each quarter. The status report shall describe plant purchase and planting dates, condition of plants, and action taken by the Contractor to maintain plants in a healthy condition.

22.2 Maintenance operations shall begin immediately after the date of provisional acceptance of plants, and shall continue for 12 months until the final inspection and acceptance of the plants. Plants shall be kept in a healthy, growing condition by watering, mulching, fertilizing, pruning, cultivating, spraying as necessary to keep all plants free of insects and disease, resetting plants to proper grades or upright position, and any other necessary operations for promotion of root growth and plant life so that all planting is in a satisfactory condition. Plant saucers and beds shall be kept free of weeds, grass, and other undesired vegetation during the maintenance period. Plants shall be watered in accordance with the amounts and procedures given in paragraph 26.1.

23. PROTECTION. Protect all existing shrubs and trees, planting areas, plant and lawn areas at all times against trespassing and damage of any kind for the duration of this Contract. Protect all plant materials adjacent to the limits of construction. If any plants become damaged or injured by the construction activity, treat or replace them as directed by the Landscape Architect at no extra cost to the Government. No work shall be done within, adjacent to, or over any plant or planting area without proper safeguards and protection to the plant material.

23.1 Contractors shall not attach signs, barricades, equipment or materials to trees or plant materials.

23.2 The Contractor shall erect a wooden barricade along the dripline of the trees within the construction area to avoid damaging existing and new trees and plant materials. Vehicles and materials are not allowed within the barricades.

23.3 No track vehicles or heavy equipment will be allowed to work within the driplines of trees or plant materials.

23.4 No materials or equipment shall be stored within the driplines of any trees or plant materials.

23.5 No equipment may be cleaned or repaired under the driplines of trees or plant materials.

23.6 Grade changes, either excavating or filling shall not exceed two (2) inches within the driplines of the trees.

24. TRANSPLANTING TREES. Removal of trees shall be accomplished by the use of a tree spade. Burlap and a wiremesh basket shall be used to support each tree and its roots and to keep the soil around the roots moist. Pruning shall be done after the tree is securely balled. After pruning, an anti-dessicant shall be sprayed on foliage. After removal and pruning, trees shall be treated as new plant material.

25. PLANT MAINTENANCE PERIOD. An initial inspection shall be performed by the Contracting Officer after all plants are in place and have been installed in accordance with the plans and specifications. Request for such initial inspection must be submitted by the Contractor at least 10 days prior to the anticipated date. This initial inspection will facilitate the date of provisional acceptance being set. The maintenance period shall begin on the day of provisional acceptance specified herein, and will end on the day of final inspection, but shall be a minimum of one (1) year in duration and shall include a complete plant growing season.

25.1 Provisional Acceptance. After initial inspection, the Contracting Officer will notify the Contractor in writing, of acceptance of the work stating the date of the provisional acceptance, and the necessary corrections that is required for a provisional acceptance.

25.2 Plant Guarantee. All plants shall be guaranteed to be alive and healthy as determined by the Contracting Officer during and at the end of the maintenance period. The plants shall be free of dead branches, dead branch tips, and shall bear foliage of a normal density, size and color.

25.3 Replacement. Replacement of plants that were not supplied by the Contractor but were relocated under this contract and that die for any reason other than improper handling during transplanting and/or lack of proper care will not be required. Loss through Contractor negligence, however, shall require replacement in kind and size per specification and shall be at the Contractor's expense.

## 26. CARE OF PLANTS DURING MAINTENANCE PERIOD.

26.1 During the plant maintenance period, the Contractor shall water all plants as necessary to maintain an adequate supply of moisture within the root zone. An adequate supply of moisture is estimated to be the equivalent of two inches of absorbed water per week that is delivered at weekly intervals in the form of

natural rain or is augmented as required by periodic waterings. Water shall not be applied with a force sufficient to displace mulch and shall not be applied so quickly that it cannot be absorbed by the mulch and plants.

26.2 Plants shall be pruned and mulch replaced as required.

26.3 The tree stakes shall be plum and guy wires will have a protecting rubber hose around the tree trunk to protect the tree.

26.4 Eroded plant saucers shall be repaired as required.

26.5 In plant beds, grass and weeds shall not be allowed to reach a height of 3 inches before being completely removed, including the root growth. When plants are in groups other than cultivated beds, the Contractor shall not permit grass or other vegetation between them to become more than 5 inches in height.

26.6 Other work, such as spraying with approved insecticides and fungicides to control pests, shall be done to ensure plant survival in a healthy growing condition.

26.7 Plants shall be fertilized at least once during the period of establishment between the dates of November 1 and March 1. Fertilizer shall be applied as per manufacturer's recommendations.

26.8 Dead plants shall be removed immediately at the Contractor's expense. Dead plants shall be replaced as soon as possible after removal of dead plants. The maintenance period for these replacements shall run concurrent with the original 12 month period and stipulation in paragraph 22.7 with the longest time period prevailing. Replacement shall be in accordance with paragraph 14 and standard horticultural practice. The Contractor will not be responsible for theft or damage to plants by vehicles or vandalism following completion and approval of the installation portion of the planting contract.

## 27. TERMINATION OF THE PLANT MAINTENANCE PERIOD.

27.1 A secondary inspection by the Contractor and the Contracting Officer will be held at the end of eighth month from the date of the beginning of the plant maintenance period. This inspection will determine plant acceptability and the number of replacements required. Alternate or substitute varieties of plants shall be used only if approved by the Contracting Officer.

27.2 A final inspection of all plants will be held 120 days after the day of secondary inspection, or 120 days after the replacement planting has been completed. A 120-day guarantee period will be required for all replacement plants.

27.3 The maintenance period will end on the date of the final inspection and the final inspection will be considered final acceptance provided the Contractor has complied with the following requirements:

(1) Dead, missing, and defective plant material shall have been replaced as directed by the Contracting Officer. Otherwise, final acceptance will be delayed until such replacements have been satisfactorily accomplished.

(2) Plant beds and plant saucers shall have been properly mulched and shall be free of weeds.

(3) Remedial measures directed by the Contracting Officer to ensure plant survival shall have been carried out.

(4) Plant material shall have been fertilized as required prior to acceptance.

(5) The tree stakes shall be plum and guy wires shall have a protecting rubber hose around the tree trunk to protect the tree.

## 28. FINAL ACCEPTANCE.

28.1 General. Inspection for final acceptance shall be as described in paragraph 27.2. Prior to this inspection all plants shall be fertilized. Fertilization shall be either by top dressing at 3.5 pounds per 100 square feet of plant pit or bed area. Formula for the application shall be 15N-5P-10K. The purpose of the inspection will be for the acceptance of the contract work, including maintenance but exclusive of replacement. After inspection, the Contractor will be notified in writing of acceptance of the plants subject to the guarantee. If there are any deficiencies in the maintenance, the Contractor will be notified and the work subject to re-inspection before acceptance. The Contractor shall continue to water all plants the equivalent of two inches of absorbed water per week during the plant maintenance period, and through final acceptance.

29. SIDEWALK CONSTRUCTION. Sidewalks shall be constructed in the locations shown in the contract drawings. Exact location is subject to adjustment by the Contracting Officer during construction. The sidewalk details shall be as shown in the contract drawings. Materials and construction requirements shall be those given in Section 01521, "TEMPORARY ROADWAY CONSTRUCTION." Demolition and removal of portions of existing walks is included in this work.

30. IRRIGATION SYSTEM. An irrigation system is required in the Veterans Blvd. median west of the bridge. Layout and equipment requirements for this system are included in the drawings. Typical details for the irrigation system are shown at the end of this specification section.

31. SODDING FOR MEDIAN LANDSCAPING. Sodding is required as part of the landscaping of the Veterans Blvd. median west of the bridge. Centipede grass sod shall be used in these areas.

31.1 Sod containing a good cover of growing or living grass shall be furnished by the Contractor. Living grass is defined as grass that is seasonably dormant during a cold or dry season and capable of renewing growth after the dormant period. Each piece of sod shall have an area of not less than 16 square inches and shall have not less than 2 inches of earth to the roots. At least 85 percent of the plants in the sod shall be grass. Sod shall be procured from areas having growing conditions similar to those areas on which the sod is to be used. Sod shall be furnished that is relatively free of weeds and undesirable plant, stone, roots, and other materials that hinder the development and maintenance of sod. Vegetation more than 5 inches in height shall be cut to 3 inches or less. Cut vegetation exceeding 5 inches in length shall be removed before the sod is lifted. When the sod is cut, the height of the grass shall not exceed 5 inches. Sod shall be cut to provide an average thickness of 4.5 inches.

31.2 Sod shall be fertilized and watered after placement in the median area. Sod is also included in the 12 month guarantee period.

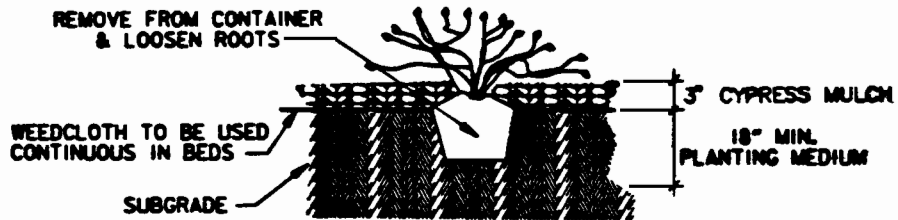
## 32. MEASUREMENT AND PAYMENT.

32.1 Measurement. No separate measurement will be made for the material and work covered under this section.

### 32.2 Payment.

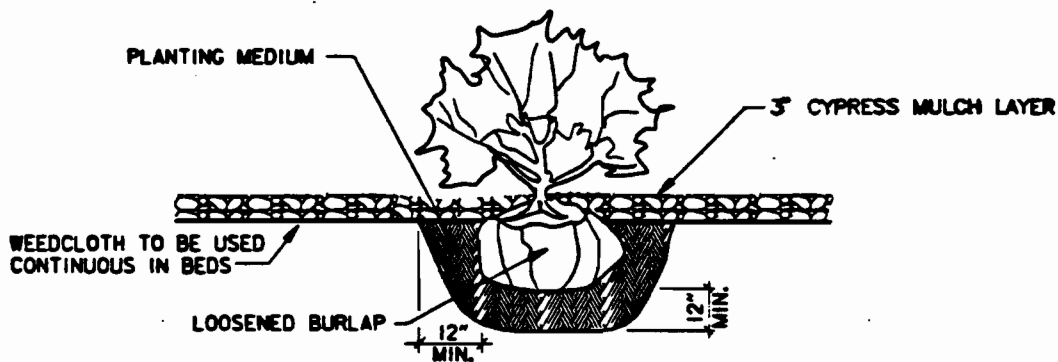
32.2.1 Costs for the material and work covered under this section shall be included in the contract lump sum price for "Landscaping". Price and payment shall constitute full compensation for furnishing all materials, and for performing all work in connection with the protection of existing plants, construction of sidewalks, installation of irrigation system, relocation and transplant of designated trees, and planting of new shrubs, plant material, and trees. Price and payment shall also constitute full compensation for fertilizing, seeding and mulching as specified in paragraph 02935-16.

32.2.2 Payment for maintenance of new and relocated plants during the maintenance period and required plant replacements specified above will be made at the contract lump sum price for "Maintenance of Landscaping". Price and payment shall constitute full compensation for material, plants and labor provided for maintenance specified above.



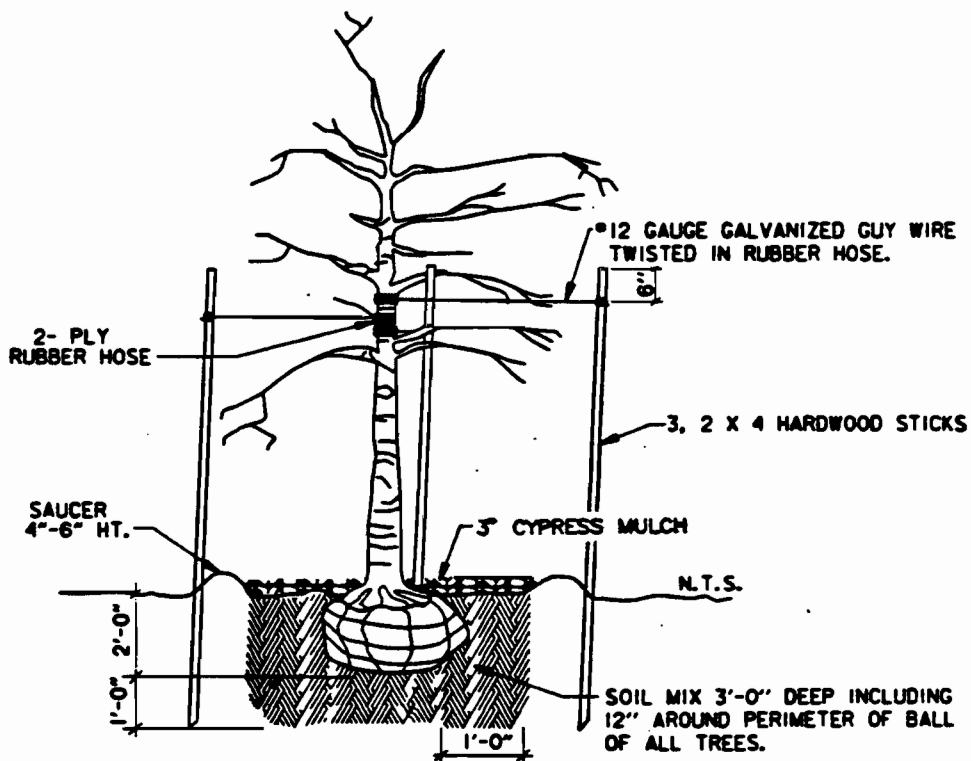
**GROUND COVER PLANTING DETAIL**

N.T.S.



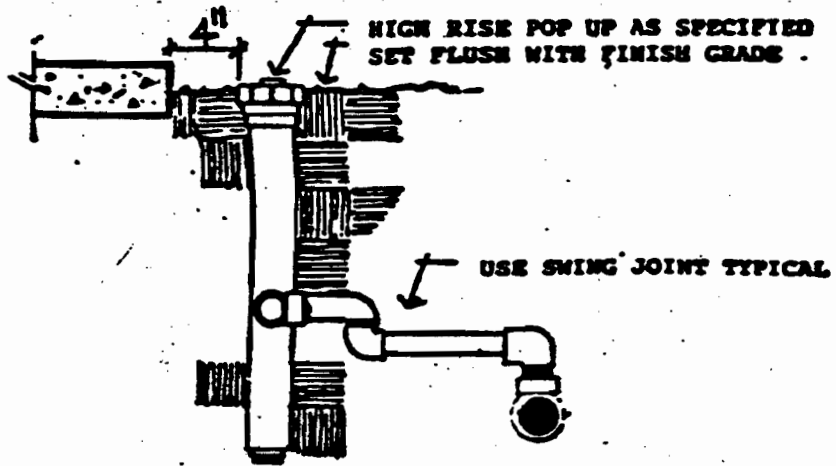
**SHRUB PLANTING DETAIL (B&B)**

N.T.S.

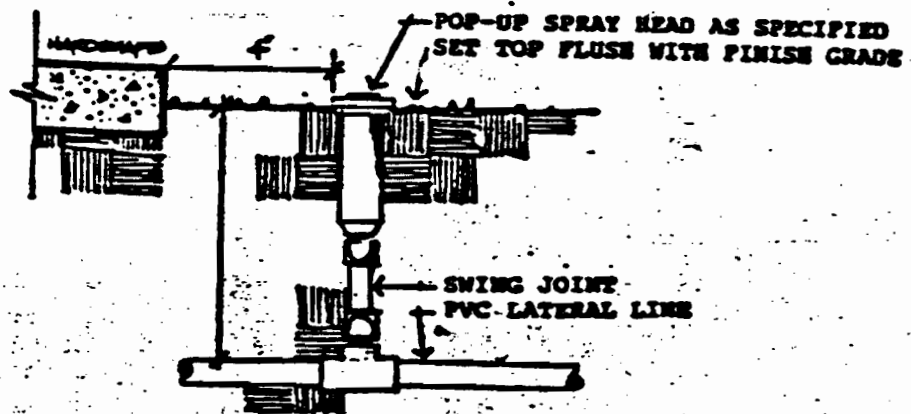


**SINGLE TRUNK TREE PLANTING DETAIL**

N.T.S.

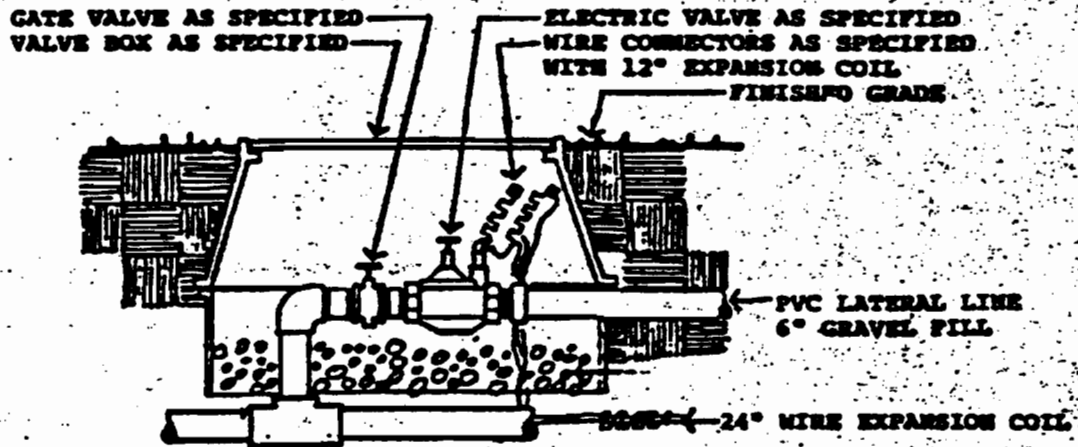


**TYPICAL HIGH RISE POP-UP DETAIL - NO SCALE**

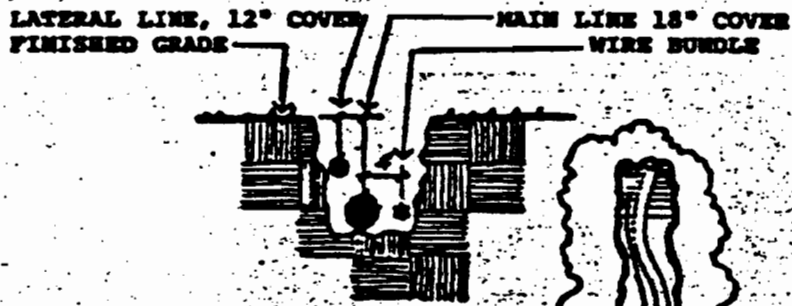


**TYPICAL POP-UP SPRAY HEAD - NO SCALE**

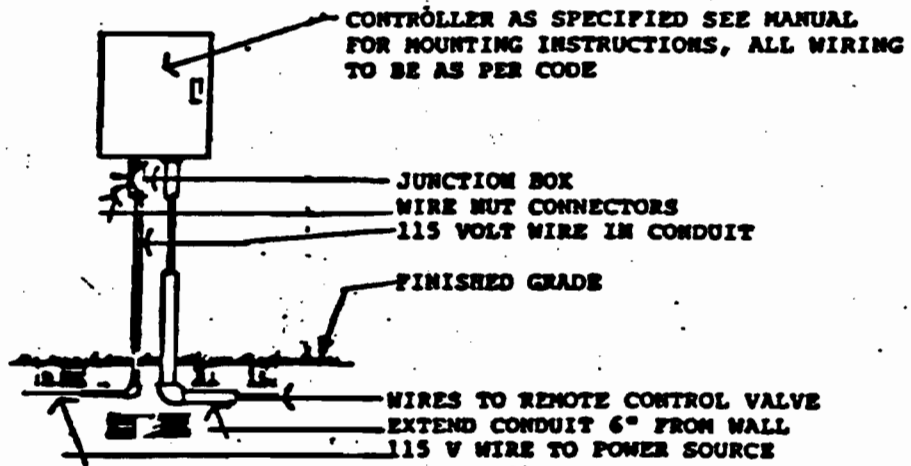




TYPICAL ELECTRIC VALVE DETAIL - NO SCALE



PIPE SHALL REST FIRMLY ON TRENCH BOTTOM.  
 BUNDLE WIRE AT 20' INTERVALS. SNAKE PIPE  
 IN TRENCH FROM SIDE TO SIDE. DO NOT STACK  
 PIPES IN TRENCH.



CONTROLLER

NO SCALE

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SECTION 03101 - FORMWORK FOR CONCRETE

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SECTION 03101 - FORMWORK FOR CONCRETE

PART 1 - GENERAL

1. RELATED WORK SPECIFIED ELSEWHERE.

1.1 Reinforcing Steel. Section 03210, "REINFORCING STEEL".

1.2 Structural Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

1.3 Expansion Joints and Waterstops. Section 03150, "EXPANSION JOINTS AND WATERSTOPS".

2. APPLICABLE PUBLICATIONS. The following publications, referred to thereafter by basic designation only, form a part of this specification to the extent indicated:

2.1 American Concrete Institute (ACI) Standards.

ACI 347R-88                      Recommended Practice for Concrete Formwork

2.2 American Society for Testing and Materials (ASTM) with Corresponding CRD Standard Indicated where Available.

A 446-91                      Steel Sheet, Zinc-Coated (Galvanized) by Hot Dip Process, Physical (Structural) Quality

2.2 U.S. Department of Commerce, National Bureau of Standards (NBS) Product Standard.

PS 1-83                      For Construction and Industrial Plywood

3. SUBMITTALS.

3.1 Shop Drawings. Drawings and design computations for all formwork required shall be submitted at least 45 days before either fabrication on site or before delivery of prefabricated forms. The drawings and data submitted shall include the type, size, quantity and strength of all materials of which the forms are to be made; the plan for jointing of facing panels; details affecting the appearance, type and location of form ties; and the assumed design values and loading conditions. The submittals are also required when prefabricated forms are bought or rented by the Contractor from a supplier. If reshoring is permitted, the method, including location, order and time of erection and removal shall also be submitted.

3.2 Manufacturer's Literature. Manufacturer's literature shall be submitted for plywood, concrete form hard board, form accessories, form lining, prefabricated forms, and form coating proposed for use.

## PART 2 - PRODUCTS

4. DESIGN. The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor. The submittals shall include the member properties, allowable material stresses and form dimensions. The computations shall include the design of individual members for stress and deflection load diagrams are also required. The approval of the design is required before any concrete is placed. The formwork shall be designed for loads, lateral pressure and allowable stresses in accordance with Chapter 2 of ACI Standard 347R. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete and shall have sufficient rigidity to maintain specified tolerances. For Class A or Class F finish, the design shall be made to limit deflection of facing material between studs as well as deflection of studs and wales to 0.0025 times the span.

### 5. MATERIALS.

5.1 Forms. Forms shall be fabricated with facing materials that produce the specified construction tolerance requirements of 03301-4.2 and the surface requirements of 03301-4.3.

5.1.1 Class "A" Finish (Floodwalls). This class of finish shall apply to all exterior formed surfaces not covered by backfill except those covered in paragraph 5.1.3. The form facing material shall be composed of new, well-matched tongue and groove lumber; or new plywood panels conforming to NBS Product Standard PS-1, Grade B, Concrete Form, Class I; High Density Overlay, all Exterior Type. The Grade B Side shall be stamped as such and shall face the concrete.

5.1.2 Class "D" Finish (Floodwalls). This class of finish shall apply to all surfaces covered by backfill. The sheathing may be of wood or steel.

5.1.3 Class "F" Finish (Floodwalls). This class of finish shall be obtained by use of textured form liners on the portion of floodwall designated in the contract drawings to have a fractured rib finish. The form liners shall be such as Greenstreak Pattern No. 367, or equal, and shall be furnished as one continuous piece without splice, and shall be used in accordance with the manufacturer's recommendations.

5.2 Form Accessories. Ties and other similar form accessories to be partially or wholly embedded in the concrete shall be of a commercially manufactured type. After the ends or end fasteners have been removed, the embedded portion of metal ties shall terminate not less than 2-inches from any concrete surface either exposed to view or exposed to water. Plastic snap ties may be used in locations where the surface will not be exposed to view. Form ties shall be constructed so that the ends

or end fasteners can be removed without spalling the concrete. Safety factors for form ties, anchors and hangers shall comply with the standards of ACI 347R, Table 2.4. The use of tapered ties is not allowed.

5.3 Form Coating. Form Coating shall be a commercial formulation of satisfactory and proven performance that will not bond with, stain or adversely affect concrete surfaces and will not impair subsequent treatment of concrete surfaces depending upon bond or adhesion nor impede the wetting of surfaces to be cured with water or curing compounds.

### PART 3 - EXECUTION

**\*\* NOTE: SLIP FORMING SHALL NOT BE ALLOWED \*\***

6. INSTALLATION. Forms shall be mortar tight, properly aligned and adequately supported to produce concrete surfaces meeting the surface requirements of 03301-4.3, and conforming to construction tolerance of 03301-4.2. Where concrete surfaces are to be permanently exposed to view, joints in form panels shall be arranged to provide a pleasing appearance. Where forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the completed surface so as to obtain accurate alignment of the surface and to prevent leakage of mortar. All possible efforts shall be made to minimize the occurrence of butt joints in the forms. Forms shall not be reused if there is any evidence of surface wear and tear or defects which would impair the quality of the surface. All surfaces of forms and embedded materials shall be cleaned of any mortar from previous concreting and of all other foreign material before concrete is placed in them. The failure of a form or any system used in conjunction with a form in the placement of a floodwall or structural unit that in any way affects the integrity of the form or tolerance of the floodwall or structural unit shall necessitate the immediate removal of the form and any concrete placed prior to the failure. All costs for removal, clean up and salvage of reinforcing shall be borne by the Contractor. Any material removed shall not be returned to service until it has been satisfactorily shown to the Contracting Officer or his representative that the cause for the failure has been corrected and proper steps have been added to the Contractor's Quality Control Plan to prevent a recurrence.

7. CHAMFERING. All exposed joints, edges and external corners shall be chamfered by molding placed in the forms unless the drawings specifically state that chamfering is to be omitted or as otherwise specified. When wood chamfering strips do not prevent leakage of paste or water, an elastomeric type shall be employed. Chamfered joints shall not be permitted where earth or rock fill is placed in contact with concrete surfaces. Chamfered

joints shall be terminated a sufficient distance outside the limit of the earth or rock fill so that the end of the joints will be clearly visible.

8. COATING. Forms for exposed or painted surfaces shall be coated with form oil or a form-release agent before the form or reinforcement is placed in final position. The coating shall be used as recommended in the manufacturer's printed or written instructions. Forms for unexposed surfaces may be wet with water in lieu of coating immediately before placing concrete, except that in cold weather with probable freezing temperatures coating shall be mandatory. Surplus coating on form surfaces and coating on reinforcing steel and construction joints shall be removed before placing concrete. Coatings that discolor concrete or are incompatible with their concrete materials are prohibited.

9. REMOVAL. Forms shall not be removed without approval of the Contracting Officer and all removal shall be accomplished in a manner which will prevent injury to the concrete. Forms shall not be removed before the expiration of the minimum time indicated below, except as otherwise directed or specifically authorized. When conditions of the work are such as to justify the requirement, forms will be required to remain in place for a longer period.

9.1 Inspection of Concrete Placement. The Contractor shall place the first monolith in its entirety and remove the formwork as indicated in paragraph 9 prior to placing concrete in any other monolith. The Contractor shall notify the Contracting Officer immediately after the forms are removed so that an on-site inspection of the concrete work can be made. No patching or repair shall be permitted until after the inspection is made. Curing operations shall not be altered. Recommendations, as a result of the inspection, shall be made part of the Contractor's Quality Control for all future concrete work.

9.2 Unsupported Concrete. Formwork for walls, columns, sides, base slabs, and other vertical type forms not supporting the weight of concrete shall not be removed in less than 18 hours of cumulative time, not necessarily consecutive, after concrete placement is completed during which the temperature of the air surrounding the concrete is above 50°F.

## 10. QUALITY CONTROL.

10.1 Forms, embedded items, ties and other accessories as specified in paragraph 5.2, shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify to the Contracting Officer that they are ready to receive concrete. Inspection of forms for concrete shall include a detailed evaluation of leakage control measures, type and application of release agent, and form cleanliness to avoid dirt transfer to the concrete.

10.2 Reporting. The results of each inspection shall be reported in writing and shall include, but not limited to, the following:

- (1) removal of extraneous material from forms;
- (2) check of joints for mortar tightness;
- (3) type of form material required for the concrete finish;
- (4) falsework and/or bracing;
- (5) alignment, tolerances, and dimensions;
- (6) chamfering; and,
- (7) form coating.

The original and two copies of these reports, as well as corrective action taken, shall be furnished to the Government daily.

11. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for formwork and all costs in connection therewith shall be included in the applicable contract lump sum prices for "Class A Concrete" or "Class AA Concrete", except that formwork for the floodwall gates near I-10 shall be included in the contract lump sum price for "Floodwall Gate Near I-10".



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SECTION 03150 - EXPANSION JOINTS AND WATERSTOPS

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SECTION 03150 - EXPANSION JOINTS AND WATERSTOPS

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for forming expansion joints, and providing and installing waterstops in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Prestressed Concrete Bridge Girders. Section 03401, "PRECAST PRESTRESSED CONCRETE BRIDGE GIRDERS".

2.2 Cast-in-Place Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 U.S. Army Corps of Engineers Handbook for Concrete and Cement (CRD) Specifications.

CRD-C 513-74 Rubber Waterstops

CRD-C 572-74 Polyvinylchloride Waterstops

3.2 American Society for Testing and Materials (ASTM) Standards. (With corresponding U.S. Army Corps of Engineers Handbook for Concrete and Cement (CRD) Specifications where indicated.)

D 1751-83 Preformed Expansion Joint Filler for Concrete  
(CRD-C 508) and Structural Construction (Non-extruding and Resilient Bituminous Types)

D 1752-84 Preformed Sponge Rubber and Cork Expansion  
(CRD-C 509) Joint Fillers for Concrete Paving and Structural Construction

4. QUALITY CONTROL.

4.1 Material Testing. The Contractor shall submit waterstop and splice samples for inspection and testing by and at the expense of the Government. Samples shall be identified to indicate manufacturer, type of material, and size and quantity of material and shipment represented. Each material sample shall be a piece not less than 12 inch long cut from each 200 feet of finished waterstop furnished, but not less than a total of four linear feet of each type and size furnished. For spliced segments of waterstops to be installed in the work, one splice sample of

each size and type for every 50 splices made in the factory and every 10 splices made at the job site shall be furnished for inspection and testing. The splice samples shall be made using straight run pieces with the splice located at the mid-length of the sample and finished as required for the installed waterstop. The total length of each splice sample shall be not less than 12 inches long. Test samples shall be furnished at least 75 days prior to the installation of waterstops in the work. Samples shall be visually inspected and tested for compliance with CRD-C 513 or CRD-C 572, as applicable. Testing of waterstops shall be performed by the Waterways Experiment Station (WES). If a sample fails to meet the specification requirements, new samples shall be provided and the cost of retesting will be deducted from payments due the Contractor at the rate of \$650.00 per material sample retested.

4.2 Qualifications for Splicing Procedures for Waterstops. Procedures for splicing waterstops shall be demonstrated in the presence of the Contracting Officer for approval.

4.2.1 Non-Metallic Waterstops. Procedures and performance qualifications for splicing non-metallic waterstops shall be demonstrated by the manufacturer at the factory and the Contractor at the job site by each making three splice samples of each size and type of finished waterstop for inspection, testing, and subsequent approval.

4.3 Material Certification, Expansion Joint Filler.

4.3.1 Material Certification. The Contractor shall provide material documentation to certify that all expansion joint filler materials are in compliance with the applicable specifications.

## PART 2 - PRODUCTS

### 5. MATERIALS.

5.1 Premolded Expansion Joint Filler Strips. Premolded expansion joint filler strips shall conform to ASTM D 1751 or ASTM D 1752, Type I or resin impregnated fiberboard conforming to the physical requirements of ASTM D 1752.

5.2 Non-Metallic Waterstops. Rubber waterstops shall conform to CRD-C 513. Polyvinylchloride waterstops shall conform to CRD-C 572.

## PART 3 - EXECUTION

6. INSTALLATION. Joint locations and details, including materials and methods of installation of joint fillers and waterstops, shall be as specified, shown the drawings and as directed. In no case shall any fixed metal be continuous through an expansion joint.

6.1 Waterstops. Waterstops shall be installed at the locations shown to form a continuous water-tight diaphragm. Waterstops shall be carefully and correctly positioned during installation to eliminate faulty installation that may result in joint leakage. Adequate provision shall be made to support and completely protect the waterstops during the progress of the work. Any waterstop punctured or damaged shall be repaired or replaced. The concrete shall be thoroughly consolidated in the vicinity of a waterstop. Suitable guards shall be provided to protect exposed projecting edges and ends of partially embedded waterstops from damage when concrete placement has been discontinued.

6.2 Expansion Joints. Premolded filler strips shall be accurately positioned and secured against displacement to clean, smooth concrete surfaces. Material used to secure premolded fillers to concrete shall not harm the concrete. The groove shall be thoroughly cleaned of all laitance, curing compound, foreign materials, and protrusions of hardened concrete. Any dust shall be blown out of the groove with oil-free compressed air.

6.3 Splices. Joints in waterstops shall be spliced together by qualified splicers using the approved splicing procedures to form a continuous watertight diaphragm.

6.3.1 Non-Metallic Waterstops. Waterstop ends to be joined shall be carefully cut to insure good alignment and contact between joined surfaces. The continuity of the characteristic features of the cross section shall be maintained across the splice.

6.3.1.1 Rubber Waterstops. Splices shall be vulcanized in accordance with the manufacturer's recommendations.

6.3.1.2 Polyvinylchloride Waterstops. Splices shall be made by heat sealing the adjacent surfaces in accordance with the manufacturer's written recommendations. A thermostatically controlled electric source of heat shall be used to make all splices. The correct temperature at which splices should be made will differ with the material concerned but the applied heat should be sufficient to melt but not char the splices. Waterstops shall be reformed at splices with a remolding iron with ribs or corrugations to match the pattern of the waterstop. The spliced area, when cooled and bent by hand in as sharp an angle as possible, shall show no sign of separation.

6.4 Longitudinal Waterstop Splices Between Girders. Waterstops between girders shall be lap spliced and sealed. The splice procedure shall be in accordance with the manufacturer's recommendation and shall be submitted to the Contracting Officer for approval prior to construction.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs in connection therewith shall be included in the contract unit or lump sum prices for the items of work to which the work is incidental. Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment required to perform the work.

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SECTION 03151 - STRIP SEAL JOINTS

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## SECTION 03151 - STRIP SEAL JOINTS

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for providing and installing strip seal joints in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Structural Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

2.2 Approach Slabs. Section 02550, "APPROACH SLABS".

2.3 Miscellaneous Metalwork. Section 05501, "MISCELLANEOUS METALWORK".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Dept. of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

1005.05 Strip Seal Joint

4. QUALITY CONTROL.

4.1 Material Certification. The contractor shall provide material documentation certifying compliance with the requirements of LSSRB Section 1005.05 and those given in the strip seal drawings. Manufacturer's documentation and installation information shall be provided to the Contracting Officer for approval of strip seal joint system.

4.2 Shop Drawings. The contractor shall submit shop drawings for strip seal joints to the Contracting Officer for approval prior to fabrication.

5. FABRICATION. Fabrication of strip seal joints shall be in accordance with the shop drawings and comply with the requirements of Section 05501.

6. INSTALLATION.

6.1 General. Joints shall be free of loose rust, and shall be thoroughly clean and dry at the time of installation. Joint seal glands shall be installed in accordance with the manufacturer's recommendations. Lubricant-adhesive shall comply with the manufacturer's recommendations.

6.2 Stretching. Stretching of the seal gland shall be minimal. When the installation procedures appear to cause stretching, random checks shall be made. Frequency and thoroughness of checks shall be as directed by the Contracting Officer. Maximum allowable stretch shall be 5%. When maximum limits are exceeded, and the lubricant-adhesive has chemically set, the seal shall be completely removed and cleaned, the joint recleaned and reinstallation made at no additional cost to the Government.

6.3 Lubricant-Adhesive. The lubricant-adhesive shall be applied just prior to installation of the joint gland and shall be sufficient to completely cover the contact surfaces of the steel extrusion and the seal glands. Installation shall be done in a manner that least disturbs the lubricant-adhesive. Dilution of the lubricant-adhesive shall not be allowed.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated therewith shall be included in the contract lump sum price for "Class A Concrete". Payment shall constitute full compensation for furnishing all plant labor, equipment and materials, and performing the work in accordance with these specifications.



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SECTION 03210 - REINFORCING STEEL

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SECTION 03210 - REINFORCING STEEL

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for providing and placing steel bars and accessories for concrete reinforcement.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Formwork. Section 03101, "FORMWORK FOR CONCRETE".

2.2 Joints. Section 03150, "EXPANSION JOINTS AND WATERSTOPS".

2.3 Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

3.1 American Concrete Institute (ACI) Standards.

ACI 318-89 Building Code Requirements for Reinforced Concrete

SP-66 ACI Detailing Manual - 1980

3.2 American Society for Testing and Materials (ASTM) Standards.

A 615-92b Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

E 8-93 Tension Testing of Metallic Materials

4. QUALITY CONTROL.

4.1 Materials Tests. The Contractor shall have required material tests performed by an approved laboratory to demonstrate that the materials are in conformance with the specifications. Tension tests shall be performed on full cross section specimens in accordance with ASTM E 8, using a gage length that spans the extremities of specimens with welds or sleeves included. Tests shall be at the Contractor's expense.

4.2 General. The Contractor shall establish and maintain quality control for proper installation of all work covered in this section to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

- (1) Minimum concrete cover of reinforcement steel.
- (2) Number, size, and location of bar placement.
- (3) Maintaining adequate splicing lengths where required.

4.3 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

5. SUBMITTALS. The Contractor shall submit the following items to the Contracting Officer for informational purposes only:

5.1 Shop Drawings. The Contractor shall prepare and submit complete shop drawings to the Contracting Officer for approval in accordance with the specified requirements. Shop drawings shall include details of bar supports showing types, sizes, spacing, and sequence.

5.2 Test Reports. Certified test reports of reinforcement steel showing that the steel complies with the applicable specifications shall be submitted to the Contracting Officer by the Contractor. Reports shall be furnished for each steel shipment and identified with specific lots prior to placement.

5.3 Disposition Records. A system of identification which shows the disposition of specific lots of approved materials in the work shall be established and submitted to the Contracting Officer before completion of the contract.

## 6. MATERIALS.

### 6.1 Reinforcing Steel.

6.1.1. Billet-Steel Bars. Billet-steel bars shall conform to ASTM A 615, Grade 60 for bar sizes 3 through 11, including the following requirements:

(1) Tension test specimens shall be bars of full cross section as rolled for all sizes.

(2) The bend test requirements shall be based upon 180 degree bends of full size bars for all grades of steel. The bend diameters for bend tests shall be as indicated in the following table and shall be measured on the inside of bars:

<u>Bar Size</u>	<u>Maximum Diameter</u>
#3, #4 and #5	4 bar diameters
#6, #7 and #8	5 bar diameters
#9, #10 and #11	5 bar diameters

## 6.2 Reinforcing Steel Accessories.

6.2.1 Bar Supports. Bar supports shall conform to ACI Publication SP-66. Bar supports for formed surfaces exposed to view or to be painted shall be plastic protected wire, stainless steel, or precast concrete bar supports. Precast concrete supports shall be wedge-shaped, not larger than 3½ x 3½ inches, of thickness equal to that indicated for concrete cover, and shall have an embedded hooked tie-wire for anchorage. If formed surface is exposed to view, precast concrete supports shall be the same quality, texture, and color as the finish surface.

6.2.2 Wire Ties. Wire ties shall be 16-gage or heavier black annealed wire.

7. INSTALLATION. Reinforcement steel and accessories shall be placed as specified and as shown on contract drawings and approved shop drawings. Holes cut in steel sheet piling for passing reinforcing bars shall not exceed 2 inches in diameter. Where holes fall in the web of the steel sheet pile, the hole shall be slotted 4 inches horizontally to accommodate passing the reinforcing bars. Placement details of steel and accessories not specified or shown on the drawings shall be in accordance with ACI 315, ACI Publication SP-66 and or ACI 318 or as directed by the Contracting Officer. Steel reinforcement shall be fabricated to shapes and dimensions shown, placed where indicated within the specified tolerances, and adequately supported during concrete placement. At the time of concrete placement all steel shall be free from loose, flaky rust, scale (except tight mill scale), mud, oil, grease, or any other coating that might reduce the bond with the concrete.

7.1 Hooks and Bends. Reinforcement bars may be mill or field bent. All steel bars shall be bent cold unless otherwise authorized. No steel bars partially embedded in concrete shall be field bent unless indicated on the drawings or otherwise authorized. All hooks or bends shall be in accordance with ACI 318.

## 7.2 Placing Tolerances.

7.2.1 Spacing of Bars. Bars shall be spaced as indicated on the drawings or as otherwise directed. The spacing between adjacent bars and the distance between layers of bars may not vary from the indicated position by more than one bar diameter nor more than one inch, whichever is less.

7.2.2 Concrete Cover. The minimum and maximum concrete cover of main reinforcement steel shall be as shown on the drawings.

7.3 Splicing. Splices in reinforcement steel shall be as specified, shown on the drawings or as directed by the Contracting Officer. Bars may be spliced at alternate or additional locations at no additional cost to the Government, subject to the approval of the Contracting Officer. Except as provided herein, all splicing shall be in accordance with approved splicing procedures and the requirements of ACI 318. Bars larger than No. 11 shall be spliced with mechanical connectors or butt welded in accordance with ACI 318. The splice shall be submitted to the Contracting Officer for approval.

7.3.1 Lap Splices. Lap splices shall be used only for bars smaller than size #14. Bar laps may be placed in contact and securely tied or may be spaced transversely apart to permit the embedment of the entire surface of each bar in concrete, but lapped bars shall not be spaced farther apart than one-fifth the required length of lap or 6-inches. Lengths of laps for bars shall conform to the requirements of ACI 318, except when otherwise shown on the drawings.

8. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs in connection therewith will be included in the contract lump sum price for the item of work to which the work is incidental.

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SECTION 03301 - CAST-IN-PLACE STRUCTURAL CONCRETE

PART 1 - GENERAL

1. RELATED WORK SPECIFIED ELSEWHERE.

1.1 Expansion Joints For Floodwalls. Section 03150.

1.2 Reinforcing Steel. Section 03210.

1.3 Formwork for Concrete. Section 03101.

2. REFERENCE STANDARDS AND APPLICABLE PUBLICATIONS. The following publications, referred to thereafter by basic designation only, form a part of this specification to the extent indicated:

2.1 American Concrete Institute (ACI) Standards with Corresponding CRD Standard Indicated Where Available.

ACI 211.1-91 (CRD-C99)	Selecting Proportions for Normal, Heavyweight and Mass Concrete
ACI 305R-91	Hot Weather Concreting
ACI 318-89 (Rev. 1992)	Building Code Requirements for Reinforced Concrete

2.2 American Society for Testing and Materials (ASTM) with Corresponding CRD Standard Indicated Where Available.

C 29-91 (CRD-C 106)	Unit Weight and Voids in Aggregate
C 31-91 (CRD-C 11)	Making and Curing Concrete Test Specimens in the Field
C 33-92a (CRD-C 133)	Concrete Aggregates
C 39-86 (CRD-C 14)	Compressive Strength of Cylindrical Concrete Specimens
C 42-90a (CRD-C 27)	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 70-79 (CRD-C 111)	Surface Moisture in Fine Aggregates
C 94-92a (CRD-C 31)	Ready-Mixed Concrete
C 127-88 (CRD-C 107)	Specific Gravity and Absorption of Coarse Aggregate
C 128-93 (CRD-C 108)	Specific Gravity and Absorption of Fine Aggregate

C 136-92 (CRD-C 103)	Sieve Analysis of Fine and Coarse Aggregates
C 143-90a (CRD-C 5)	Slump of Portland Cement Concrete
C 150-92 (CRD-C 201)	Portland Cement
C 171-92 (CRD-C 310)	Sheet Materials for Curing Concrete
C 172-90 (CRD-C 4)	Sampling Freshly Mixed Concrete
C 192-90a (CRD-C 10)	Making and Curing Concrete Test Specimens in the Laboratory
C 231-91b (CRD-C 41)	Air Content of Freshly Mixed Concrete by Pressure Method
C 260-86 (CRD-C 13)	Air-Entraining Admixtures for Concrete
C 309-93 (CRD-C 304)	Liquid Membrane-Forming Compounds for Curing Concrete
C 441-89 (CRD-C 257)	Effectiveness of Mineral Admixtures in Preventing Excessive Expansion of Concrete Due to the Alkali-Aggregate Reaction
C 494-90 (CRD-C 87)	Chemical Admixtures for Concrete
C 566-89 (CRD-C 113)	Total Moisture Content of Aggregate by Drying
C 595-93 (CRD-C 203)	Blended Hydraulic Cements
C 597-83 (CRD-C 51)	Pulse Velocity Through Concrete
C 618-93 (CRD-C 255)	Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
C 803-90 (CRD-C 83 59)	Penetration Resistance of Hardened Concrete
C 805-85 (CRD-C 22)	Rebound Number of Hardened Concrete
C 1017-90 (CRD-C 88)	Chemical Admixtures for Use in Producing Flowing Concrete
C 1064-86 (CRD-C 3)	Temperature of Freshly Mixed Portland Cement Concrete



C 1077-92 (CRD-C 553) Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

C 1107-91a (CRD-C 621) Packaged Dry, Hydraulic Cement Grout (Non-Shrinkable)

D 75-87 (CRD-C 155) Sampling Aggregates

2.3 Concrete Plant Manufacturer's Bureau (CPMB).

9th Revision (CRD-C 95) Concrete Plant Standards (1 Jan 90)

2.4 National Institute of Standards and Technology (NIST).  
Formerly National Bureau of Standards.

Handbook 44 Specifications, Tolerance and Other  
1992 Edition Technical Requirements for Commercial  
Weighing and Measuring Devices

2.5 U.S. Army Corps of Engineers Handbook for Cement and  
Concrete (CRD-C).

94-66 Surface Retarders

100-75 Sampling Concrete Aggregate and Aggregate  
Sources and Selection of Material for  
Testing

104-80 Calculation of Fineness Modulus of  
Aggregate

112-69 Surface Moisture in Aggregate by Water  
Displacement

143-62 Meters for Automatic Indication of  
Moisture in Fine Aggregate

400-63 Water for Use in Mixing or Curing  
Concrete

521-81 Frequency and Amplitude of Vibrators for  
Concrete

2.6 Louisiana Standard Specifications for Roads and Bridges  
(LSSRB) 1992 Edition, State of Louisiana, Department of  
Transportation and Development (LDOTD).

805.13 Concrete Surface Finishes

1003.02 Aggregates for Portland Cement Concrete  
and Mortar

### 3. QUALITY ASSURANCE.

#### 3.1 Preconstruction Sampling and Testing.

3.1.1 Aggregates. The aggregate sources listed in the General Provision entitled "AGGREGATE SOURCES" have been determined to be capable of producing materials of a quality acceptable for this project. Proposed materials produced from similar strata, or of similar quality as those originally tested, will be approved. If the Contractor proposes to furnish aggregates from a source not listed in the General Provision entitled "AGGREGATE SOURCES", samples consisting of not less than 500 pounds of each size coarse aggregate and 300 pounds of fine aggregate taken under the supervision of the Contracting Officer in accordance with CRD-C 100 shall be delivered to the Waterways Experiment Station (3909 Halls Ferry Road) in Vicksburg, MS within 15 days after notice to proceed. Sampling and shipment of samples shall be at the Contractor's expense. From 90 to 120 days will be required to complete evaluation of the aggregates. Testing by and at the expense of the Government will be in accordance with the applicable CRD or ASTM test methods. Tests to which aggregate may be subjected are specific gravity, absorption, cycles of freezing and thawing in concrete, alkali-aggregate reaction, organic impurities, and any other test necessary to demonstrate that the aggregate is of a quality that is at least equivalent to those sources listed in the General Provision entitled "AGGREGATE SOURCES".

3.1.2 Cementitious Materials, Admixtures. At least 60 days in advance of concrete placement, the Contractor shall notify the Contracting Officer of the source of materials, along with sampling location, brand name, type, and quantity to be used in the manufacture and/or curing of the concrete.

3.1.2.1 Air-Entraining Admixture or other chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing will be retested at the expense of the Contractor when directed by the Contracting Officer and will be rejected if test results indicate non-compliance with paragraph 6.3.

3.2 Construction Testing By Government. The Government will sample and test aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor necessary to procure the representative test samples in the presence of the Contracting Officer or his representative. Samples of aggregates will be obtained at the point of batching in accordance with ASTM D 75. Concrete will be sampled in accordance with ASTM C 172. When cylinders are molded, slump and air content will be determined in accordance with ASTM C 143 and ASTM C 231, respectively. Test samples for each class of concrete will be taken at least once every 8-hour shift or for every 150 cubic yards placed, whichever requires more samples. From each sample,

three compression test specimens will be made in accordance with ASTM C 31. Compression test specimens will be protected and cured while in the field in accordance with paragraphs 9.1 and 9.2 of ASTM C 31. If cylinders are not delivered to the testing laboratory within 24 to 48 hours, they will be submerged in a water tank provided by the Contractor, where the surrounding water temperature is maintained by the Contractor at 73.4°F (plus or minus 3°F). Cylinders that are cured in these water storage tanks shall be delivered to the testing laboratory within 6 days after molding so that 7-day testing can be performed. The number of days that the cylinders were cured in a water tank shall be noted in the remarks space of LMN FORM 853-R (May 86) by field personnel. Cylinders will be transported in accordance with ASTM C 31. Compression testing will be performed in accordance with ASTM C 39. One cylinder will be tested at 7 days for information and two will be tested at 28 days (90 days if pozzolan is used) for acceptance.

#### 4. EVALUATION AND ACCEPTANCE.

4.1 Concrete Strength. The strength of the concrete will be considered satisfactory so long as the averages of all sets of three consecutive test results equals or exceeds the specified compressive strength,  $f'_c$ , and no individual test (average of two companion cylinders) result falls below  $f'_c$  by more than 500 pounds per square inch. Additional analysis or testing may be required at the Contractor's expense when the strength of the concrete in the structure is considered potentially deficient.

4.1.1 Investigation of Low-Strength Test Results. When any individual strength test of standard-cured companion test cylinders falls below  $f'_c$  by more than 500 pounds per square inch or if tests of field-cured cylinders indicate deficiencies in protection and curing, steps shall be taken to assure that the load-carrying capacity of the structure is not jeopardized. Nondestructive testing in accordance with ASTM C 597, C 803, or C 805 may be permitted by the Contracting Officer to determine the relative strengths at various locations in the structure as an aid in evaluating concrete strength in place or for selecting areas to be cored. Such tests, unless properly calibrated and correlated with other test data, shall not be used as a basis for acceptance or rejection.

4.1.2 Testing of Cores. When the strength of concrete in place is considered potentially deficient, cores shall be obtained and tested in accordance with ASTM C 42. At least three representative cores shall be taken from each member or area of concrete in place that is considered potentially deficient. The location of cores will be determined by the Contracting Officer to least impair the strength of the structure. If the concrete in the structure will be dry under service conditions, the cores shall be air dried (temperature 60°F to 80°F, relative humidity less than 60 percent) for 7 days before testing and shall be

tested dry. If the concrete in the structure will be more than superficially wet under service conditions, the cores shall be tested after moisture conditioning in accordance with ASTM C 42. Concrete in the area represented by the core testing will be considered adequate if the average strength of the cores is equal to at least 85 percent of the specified strength requirement and if no single core is less than 75 percent of the specified strength requirement.

4.1.3 Load Tests. If the core tests are inconclusive or impractical to obtain or if structural analysis does not confirm the safety of the structure, load tests may be directed by the Contracting Officer in accordance with the requirements of Chapter 20 of ACI 318. Concrete work evaluated by structural analysis or by results of a load test shall be corrected in a manner satisfactory to the Contracting Officer. All investigations, testing, load tests, and correction of deficiencies will be performed and approved by the Contracting Officer at the expense of the Contractor, except that if all concrete is found to be in compliance with the plans and specifications, the cost of investigations, testing, and load tests will be at the expense of the Government.

4.2 Construction Tolerances. Variation in alignment, grade, and dimensions of the structures from the established alignment, grade, and dimensions shown on the drawings shall be within the tolerances specified in the following table:

For bridges:

(1) Departure from established alignment	.....	1 inch
(2) Departure from established grades	.....	1/2 inch
(3) Variation from the plumb in the lines and surfaces of walls	Exposed, in 10 ft..	1/2 inch
(4) Variation in cross-sectional dimensions of walls	.....	1/4 inch

Floodwalls:

Wall and Slab	Minus.....	1/4 inch
	Plus.....	1/2 inch

4.3 Surface Requirements. The surface requirements for the classes of finish required by 03101-5.1, shall be as hereinafter specified. Allowable irregularities are designated "abrupt" or "gradual" for purposes of providing for surface variations. Offsets resulting from displaced, misplaced, or mismatched forms, or sheathing, or by loose knots in sheathing, or other similar form defects, shall be considered "abrupt" irregularities. Irregularities resulting from warping, unplaneness, or similar uniform variations from planeness, or true curvature, shall be considered "gradual" irregularities. "Gradual" irregularities

will be checked for compliance with the prescribed limits with a 5-foot template, consisting of a straightedge for plane surfaces and a shaped template for curved or warped surfaces. In measuring irregularities, the straightedge or template may be placed anywhere on the surface in any direction, with the testing edge held parallel to the intended surface.

CLASS OF FINISH	IRREGULARITIES (MAXIMUM ALLOWED)	
	ABRUPT, INCHES	GRADUAL, INCHES
A	1/8	1/4
D	1	1
Textured Form Liner (Class F)	1/8	1/4

4.4 Appearance. Permanently exposed surfaces shall be cleaned, if stained or otherwise discolored, by a method that does not harm the concrete and that is approved by the Contracting Officer.

## 5. SUBMITTALS.

### 5.1 Test Reports.

5.1.1 Concrete Mixture Proportions. Concrete mixture proportions shall be determined by the Contractor in accordance with the requirements in paragraph 7, and submitted for information only. The quantities of all ingredients per cubic yard and nominal maximum coarse aggregate size that will be used in the manufacture of each quality of concrete shall be stated. Proportions shall indicate the weight of cement, pozzolan (if used) when used, and water; and weights of aggregates in a saturated surface-dry condition; and the quantities of admixtures. The submission shall be accompanied by test reports from a laboratory complying with ASTM C 1077 which show that proportions thus selected will produce concrete of the qualities indicated. The submission shall provide information specified in paragraph 7.5, and paragraph 7.3. Concrete compression strength results submitted shall include specific gravity and absorption of fine and coarse aggregates determined by ASTM C 128 and ASTM C 127, respectively; slump; air content; and concrete temperature. No substitution shall be made in the source or type of materials used in the work without additional tests to show that the new materials and quality of concrete are satisfactory.

5.1.2 Cement and Pozzolan. Cement and pozzolan will be accepted on the basis of the manufacturer's certification of compliance, accompanied by mill test reports, stating that materials meet the requirements of the specification under which they are furnished. Certification and mill test reports shall be

from current production and be representative of the particular lot furnished. No cement or pozzolan shall be used until notice of acceptance has been given by the Contracting Officer. Cement and pozzolan will be subject to check testing from samples obtained at the mill, at transfer points, or at the project site, as scheduled by the Contracting Officer, and such sampling will be by or under the supervision of the Government at its expense. Material not meeting specifications shall be promptly removed from the site of work.

5.1.3. Aggregates. Information identifying the aggregate source to be used along with gradation tests for fine and coarse aggregates shall be submitted for approval. The gradation test for fine aggregate shall include the No. 8 and No. 30 sieve sizes.

5.1.4 Water. The name of the source of mixing and curing water (and documentation that mixing water meets CRD-C 400, if undrinkable) shall be submitted for conformance with paragraph 6.5.

## 5.2 Manufacturer's Certificate.

5.2.1 Impervious-Sheet Curing Materials. Impervious-sheet curing materials shall be certified for compliance with all specification requirements.

5.2.2 Air-Entraining Admixture. Air-entraining admixture shall be certified for compliance with all specification requirements.

5.2.3 Other Chemical Admixtures. Other chemical admixtures shall be certified for compliance with all specification requirements.

5.2.4 Cementitious Paint. Cementitious paint shall be certified for compliance with the specification requirements of paragraph 6.6.

5.2.5 Curing Compound. Curing compound shall be certified for compliance with all specification requirements.

## 5.3 Review of Plant, Equipment, and Methods.

5.3.1 Batch Plant. Details of the data on concrete plant shall be submitted for review by the Contracting Officer for conformance with paragraphs 8.1 and 8.2.

5.3.2 Mixers. The make, type, and capacity of concrete mixers proposed for mixing concrete shall be submitted for review by the Contracting Officer for conformance with paragraphs 8.1 and 8.3. The results of the initial mixer uniformity tests as required in paragraph 14.2.12 shall be submitted at least 5 days prior to the initiation of placing.

5.3.3 Conveying Equipment. A description of the methods and equipment for transporting, handling, and depositing the concrete shall be submitted for review by the Contracting Officer for conformance with paragraph 9.

5.3.4 Placing. A description of all placing equipment and methods shall be submitted for review by the Contracting Officer for conformance with paragraph 11.

5.3.5 Curing. A description of the curing media, equipment and methods to be used shall be submitted for review by the Contracting Officer for conformance with paragraph 13.

5.3.6 Cold-Weather Requirements. If concrete is to be placed under cold-weather conditions, a description of the proposed materials, methods, and protection shall be submitted for approval by the Contracting Officer for conformance with paragraphs 11.3 and 13.4.

5.3.7 Hot-Weather Requirements. If concrete is to be placed under hot-weather conditions, A description of the proposed materials and methods shall be submitted for approval by the Contracting Officer for conformance with paragraphs 11.4 and 12.1.1.

## PART 2 - PRODUCTS

### 6. MATERIALS.

6.1 Cementitious Materials. Cementitious materials shall be portland cement or portland-pozzolan cement, or portland cement in combination with pozzolan, and shall conform to appropriate specifications listed below. Usage for architectural concrete shall be restricted to one color and one type.

6.1.1 Portland Cement. ASTM C 150, Type I or II, low alkali, except the maximum amount of C<sub>3</sub>A in Type I cement shall be 15 percent.

6.1.2 High-Early-Strength Portland Cement. ASTM C-150, Type III, low alkali used only when specifically approved in writing.

6.1.3 Portland-Pozzolan Cement. ASTM C 595, Type IP with Table 2 mortar expansion limits.

6.1.4 Pozzolan. Pozzolan shall conform to ASTM C 618, Class C or F, with the alkali requirements of Table 2, the optional requirements for multiple factor, drying shrinkage, and uniformity of Table 2A.

6.1.5 Pozzolan-Modified Portland Cement. ASTM C 595, Type I (PM) with Table 2 mortar expansion limits.

6.2 Aggregates. Aggregates shall be produced from the sources and under the conditions described in paragraph 3.1.1 and the General Provision entitled "AGGREGATE SOURCES". Fine and coarse aggregates shall conform to the grading requirements of either ASTM C 33 or LSSRB 1003.02. The quality of all aggregates shall conform to ASTM C 33. The nominal maximum size shall be as listed in paragraph 7.2.3.

6.3 Chemical Admixtures. Chemical admixtures to be used, when required or permitted, shall conform to the appropriate specification listed below:

6.3.1 Air-Entraining Admixture. ASTM C 260.

6.3.2 Water-Reducing or Retarding Admixtures. ASTM C 494, Type A, B, or D.

6.3.3 High-Range Water Reducer. ASTM C 494, Type F or G. The admixture may be used only when approved by the Contracting Officer, such approval being contingent upon particular mixture control as described in the Contractor's Quality Control Plan.

6.4 Curing Materials.

6.4.1 Impervious-Sheet Curing Materials. ASTM C 171, type optional, except polyethylene film, if used, shall be white opaque.

6.4.2 Membrane-Forming Curing Compound. ASTM C309, Type 1-D or 2, Class A.

6.5 Water. Water for mixing and curing shall be fresh, clean, drinkable, and free of injurious amounts of oil, acid, salt, sugar, or alkali, except that undrinkable water may be used if it meets the requirements of CRD-C 400.

6.6 Cementitious Paint. All cementitious paint shall conform to Fed. Spec. A-A-1555. Cementitious paint shall be prepared and applied in accordance with the manufacturer's written recommendations. Uniform color shall be maintained by use of only one mixture without any changes in materials or proportions for any structure or portion of structure which is exposed to view or on which a special finish is required. The cementitious paint finish shall be a Thoroseal base coat and a Thoro coat top coat unless an approved equal is used. On the Orleans Parish side, the areas enclosed by the recessed notches on the protected side of the cap are to be Thoro #8587 Buckskin, coarse finish or approved equal. All other locations on the cap are to be Thoro #8510 Pearl Grey smooth finish, or approved equal. On the Jefferson Parish side, all portions of the floodwall other than those designated as "Class F finish" are to be Thoro # 8510 Pearl Gray smooth finish, or approved equal.



7. MIXTURE PROPORTIONING.

7.1 General. For each portion of the structure, mixture proportions shall be selected so that the following strength and water-cement ratio requirements are met. Classes of concrete are used as described below:

CONCRETE CLASS	APPLICATION
Class "A"	Substructure elements including bent caps and abutments; drainage structures; approach slabs and barriers; floodwalls; and curb and gutter
Class "AA"	Superstructure deck and bridge barriers.

7.2 Properties.

7.2.1 Strength. Specified compressive strength,  $f'_c$ , Class "AA" Concrete: 4200 psi at 28 days. Class "A" Concrete: 3800 psi at 28 days.

7.2.2 Maximum Water-Cementitious Ratio. Maximum water-cement ratio shall be: Class "A" Concrete: 0.53. Class "AA" Concrete: 0.48.

7.2.3 Nominal Maximum-Size Coarse Aggregate. Nominal maximum-size coarse aggregate shall be either 1-1/2 or 1 inches except 3/4-inch nominal maximum-size coarse aggregate shall be used when any of the following conditions exist: (1) the narrowest dimension between sides of forms is less than 7-1/2 inches; the depth of the slab is less than 4-1/2 inches; the minimum clear spacing between reinforcing and sheet piling is less than 2 inches; or the minimum clear spacing between reinforcing is less than 2 inches; (2) for the concrete with architectural a treatment as indicated in paragraph 02550-12.2.1.

SIEVE	PERCENT PASSING
1-1/2" (or 1")	100
1" (or 3/4" as noted above)	90-100
1/2"	25-60
No. 4	0-10
No. 8	0-5
No. 200	0-1

7.2.4 Air Content. Air content as determined by ASTM C 231 shall be between 5 and 7 percent.

7.2.5 Slump. The slump shall be determined in accordance with ASTM C 143 and shall be within the range of 2 to 4 inches. Where placement by pump is approved, the slump shall not exceed 6 inches and shall remain within a 3-inch band.

7.2.6 Pozzolan Content. If pozzolan is used, it shall be limited to a maximum of 35 percent by absolute volume of the total cementitious materials.

7.3 Determining Standard Deviation. Test records from which a standard deviation is calculated shall:

(1) represent materials, quality control procedures, and conditions similar to those expected at the proposed work;

(2) not be from a project where the allowable changes in materials and/or proportions were more restricted than for the proposed work;

(3) represent concrete produced to meet a specified strength or strengths,  $f'_c$ , within 1000 psi of that specified for the proposed work;

(4) consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests;

(5) be from different batches;

(6) be the average of strengths from two cylinders made from the same sample of concrete and tested at the age indicated in paragraph 7.2; and

(7) be from concrete that was produced within one year of the time when concrete placement is expected to begin for the proposed work.

7.3.1 For 30 Test Records. Use an unmodified standard deviation and calculate  $f_{CR}$  as specified in paragraph 7.4.1.

7.3.2 For 15 to 29 Test Records. Where a concrete production facility does not have 30 test records, but does have a record based on 15 to 29 consecutive tests, a modified standard deviation may be established as the product of the standard deviation based on 15 to 29 tests and modification factor from the following table. Calculate  $f_{CR}$  as specified in paragraph 7.4.1.

NUMBER OF RECORDS*	MODIFICATION FACTOR FOR STANDARD DEVIATION
15	1.16
20	1.08
25	1.03
30 or more	1.00

\* Interpolate for intermediate numbers of records.

7.3.3 For Less Than 15 Test Records. No standard deviation is needed. Calculation of  $f_{cr}$  shall be as specified in paragraph 7.4.2.

7.4 Required Average Compressive Strength,  $f_{cr}$ . In meeting the strength requirements specified in paragraph 7.2.1, the selected mixture shall have proportions so as to produce an  $f_{cr}$  exceeding  $f'_c$  as indicated below.

7.4.1 For 15 to 30 Records. If a standard deviation is calculated as specified in paragraph 7.3.1 or paragraph 7.3.2,  $f_{cr}$  shall be determined based on the value of  $f'_c$  and the standard deviation,  $S$ , as follows:

STANDARD DEVIATION, $S$	REQUIRED AVERAGE COMPRESSIVE STRENGTH, $f_{cr}$ (PSI)
Less than or equal to 505	$f'_c + 1.34 S$
Greater than 505	$f'_c + 2.33 S - 500$

7.4.2 For less than 15 Records. When a concrete production facility does not have field strength test records for calculation of standard deviation,  $f_{cr}$  shall be determined based on the value of  $f'_c$  as follows:

SPECIFIED COMPRESSIVE STRENGTH, $f'_c$ (PSI)	REQUIRED AVERAGE COMPRESSIVE STRENGTH, $f_{cr}$ (PSI)
Less than 3000	$f'_c + 1000$
3000-5000	$f'_c + 1200$
Greater than 5000	$f'_c + 1400$

7.5 Documenting Average Strength. Documentation that proposed concrete proportions produce the required average strength,  $f_{cr}$ , determined in paragraph 7.4 shall be based on previous field experience (paragraph 7.5.1) or laboratory trial batches (paragraph 7.5.2).

7.5.1 Field Experience. Required average strength can be documented by field experience if compressive strength test records consisting of not less than 10 consecutive tests and encompassing a period of not less than 60 days are used. Test records shall represent similar materials to those proposed and similar conditions to those expected. Changes in materials, conditions, and proportions within the test record shall not have been more closely restricted than those for the proposed work.

7.5.2 Laboratory Trial Batches. The laboratory used to develop information required by this section shall comply with ASTM C 1077.

7.5.2.1 Representative Samples. Representative samples of concrete materials proposed for this project and a copy of this section of the contract specifications entitled "CAST-IN-PLACE STRUCTURAL CONCRETE" shall be delivered to the laboratory that performs the concrete proportioning at least 60 days (120 when pozzolan used) before concrete placement is expected to begin. Samples of approved aggregates shall be obtained in accordance with the requirements of ASTM D 75. Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by manufacturer's test reports indicating compliance with applicable specification requirements. When all of these materials have been delivered, the name, address, and phone number of this laboratory and a list of the sources and types of all concrete materials shall be submitted to the Contracting Officer.

7.5.2.2 Trial Mixtures. Trial mixtures having proportions, consistencies, maximum slump and maximum air content suitable for the work shall be made based on ACI 211.1, using at least three different water-cementitious ratios which will produce a range of strengths encompassing those required for the work. The target water-cementitious ratios required in paragraph 7.2.2 include the total weight of cement plus pozzolan, converted from absolute volume as described in ACI 211.1. Trial mixtures shall be designed in accordance with the procedure in ACI 211.1, Chapter 6, using the absolute volume basis for determining the required amount of fine aggregate. Format for submittal of mixture proportions shall be in accordance with ACI 211.1, paragraph 7.3.7.2. The dry rodded weight per cubic foot of the coarse aggregate determined according to ASTM C 29; the fineness modulus of the fine aggregate determined according to CRD-C 104; and the yield, slump and air content shall be reported. For each water-cement ratio at least three test cylinders for each test age shall be tested at 7 and 28 days in accordance with ASTM C 39. From

these test results a curve shall be plotted and submitted showing the relationship between water-cement ratio and strength at design age.

### PART 3 - EXECUTION

#### 8. PRODUCTION EQUIPMENT.

8.1 Capacity. The batching and mixing equipment shall have a capacity of at least 30 cubic yards per hour.

8.2 Batching Plant. Batching plant shall conform to the requirements of the Concrete Plant Standards of CPMB and as specified; however, rating plates attached to batch plant equipment are not required.

8.2.1 Equipment. The batching controls shall be semiautomatic, or automatic. The semiautomatic batching system shall be provided with interlocks such that the discharge device cannot be actuated until the indicated material is within the applicable tolerance. The batching system shall be equipped with an accurate recorder or recorders that meet the requirements of the Concrete Plant Standards of CPMB. Separate bins or compartments shall be provided for cement, pozzolan, and each size group of aggregate. Aggregates shall be weighed either in separate weigh batchers with individual scales or cumulatively in one weigh batcher on one scale. Aggregate shall not be weighed in the same batcher with cement, or pozzolan. If both cement and pozzolan are used, they may be weighed cumulatively provided that the portland cement is weighed first. If weighed, water shall not be weighed cumulatively with another ingredient. Water batcher filling and discharging valves shall be so interlocked that the discharge valve cannot be opened before the filling valve is fully closed. An accurate mechanical device for measuring and dispensing each admixture shall be provided. Each dispenser shall be interlocked with the measuring and discharging operation of the water so that each admixture is separately measured and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Admixtures shall not be combined prior to introduction in water or sand. The plant shall be arranged so as to facilitate the inspection of all operations at all times. Suitable facilities shall be provided for obtaining representative samples of aggregates from each bin or compartment.

8.2.2 Scales. The weighing equipment shall conform to the applicable requirements of NIST Handbook 44, except that the accuracy shall be plus or minus 0.2 percent of scale capacity. The Contractor shall provide standard test weights and any other auxiliary equipment required for checking the operating performance of each scale or other measuring devices. The tests shall be made at the frequency required in paragraph 14.2.4 and in the presence of a Government inspector.

### 8.2.3 Batching Tolerances.

8.2.3.1 Weighing Tolerances. Whichever of the following tolerances is greater shall apply, based on required scale reading.

MATERIAL	PERCENT OF REQUIRED WEIGHT	PERCENT OF SCALE CAPACITY
Cementitious Materials	±1	±0.3
Aggregate	±2	±0.3
Water	±1	±0.3
Admixture	±3	±0.3

8.2.3.2 Volumetric Tolerances. For volumetric batching equipment, the following tolerances shall apply to the required volume of material being batched:

Water: Plus or minus 1 percent.

Admixtures: Plus or minus 3 percent.

8.2.4 Moisture Control. The plant shall be capable of ready adjustment to compensate for the varying moisture content of the aggregates and to change the weights of the materials being batched. An electric moisture meter complying with the provisions of CRD-C 143 shall be provided for measuring moisture in the fine aggregate. The sensing element shall be arranged so that the measurement is made near the batcher charging gate of the sand bin or in the sand batcher.

### 8.3 Mixers.

8.3.1 General. The mixers shall not be charged in excess of the capacity recommended by the manufacturer. The mixers shall be operated at the drum or mixing blade speed designated by the manufacturer. The mixers shall be maintained in satisfactory operating condition, and the mixer drums shall be kept free of hardened concrete. Should any mixer at any time produce unsatisfactory results, its use shall be promptly discontinued until it is repaired.

8.3.2 Concrete Plant Mixers. Concrete plant mixers shall be tilting, non-tilting, horizontal shaft, or vertical-shaft type, or pugmill type and shall be provided with an acceptable device to lock the discharge mechanism until the required mixing time has elapsed. The mixing time and uniformity shall conform to all the paragraphs in ASTM C 94 applicable to central-mixed concrete.

8.3.3 Truck Mixers. Truck mixers, the mixing of concrete therein, and concrete uniformity shall conform to the requirements of ASTM C 94. A truck mixer may be used either for complete mixing (transit-mixed) or to finish the partial mixing done in a stationary mixer (shrink-mixed). Each truck shall be equipped with two counters from which it will be possible to determine the number of revolutions at mixing speed and the number of revolutions at agitating speed.

## 9. CONVEYING EQUIPMENT.

9.1 General. The conveying equipment shall have a capacity of at least 30 cubic yards per hour. Concrete shall be conveyed from mixer to forms as rapidly as practicable and within the time interval in paragraph 11.2 by methods that will prevent segregation or loss of ingredients. Any concrete transferred from one conveying device to another shall be passed through a hopper that is conical in shape and shall not be dropped vertically more than 8 feet, except where suitable equipment is provided to prevent segregation and where specifically authorized.

9.2 Buckets. The interior hopper slope shall be not less than 58 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least 5 times the nominal maximum size aggregate, and the area of the gate opening shall be not less than 2 square feet. The maximum dimension of the gate opening shall not be greater than twice the minimum dimension. The bucket gates shall be essentially mortar tight when closed and may be manually, pneumatically, or hydraulically operated except that buckets larger than 2 cubic yards shall not be manually operated. The design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each discharge position.

9.3 Transfer Hoppers. Concrete may be charged into nonagitating hoppers for transfer to other conveying devices. Transfer hoppers shall be capable of receiving concrete directly from delivery vehicles and have conical-shaped discharge features. The machine shall be equipped with a hydraulically operated gate and with a means of external vibration to effect complete and easy discharge. Concrete shall not be held in nonagitating transfer hoppers more than 30 minutes.

9.4 Trucks. Truck mixers operating at agitating speed or truck agitators used for transporting plant-mixed concrete shall conform to the requirements of ASTM C 94. Nonagitating equipment may be used for transporting plant-mixed concrete over a smooth road when the hauling time is less than 15 minutes. Bodies of nonagitating equipment shall be smooth, watertight, metal containers specifically designed to transport concrete, shaped with rounded corners to minimize segregation, and equipped with gates that will permit positive control of the discharge of the concrete.

9.5 Chutes. When concrete can be placed directly from a truck mixer, agitator, or nonagitating equipment, the chutes attached to this equipment may be used. A discharge deflector shall be used when required by the Contracting Officer. Separate chutes and other similar equipment will not be permitted for conveying concrete except when specifically approved.

9.6 Belt Conveyors. Belt conveyors may be used when approved. Such conveyors shall be designed and operated to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete at the transfer points and the point of placing. Belt conveyors shall be constructed such that the idler spacing shall not exceed 36 inches. If concrete is to be placed through installed horizontal or sloping reinforcing bars, the conveyor will discharge concrete into a hopper through a pipe or elephant trunk that is small enough in diameter and long enough to extend through the reinforcing bars. In no case shall concrete be discharged to free fall through the reinforcing bars.

9.7 Pump Placement. Concrete may be conveyed by positive displacement pump when approved. The pumping equipment shall be piston or squeeze pressure type. The pipeline shall be rigid steel pipe or heavy duty flexible hose. The inside diameter of the pipe shall be at least 3 times the nominal maximum-size coarse aggregate in the concrete mixture to be pumped but not less than 4 inches. The maximum-size coarse aggregate shall not be reduced to accommodate the pumps. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the concrete pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms.

## 10. PREPARATION FOR PLACING.

10.1 Embedded Items. Before placement of concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Embedded items (sheet pile, rebars, shear studs, waterstops) shall be free of oil, dirt, and other foreign matter such as loose coatings of rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into voids.



10.2 Concrete on Earth Foundations. Earth surfaces upon which concrete is to be placed shall be clean, damp, and free from frost, ice, and standing or running water. Prior to placement of concrete, the earth foundation shall have been satisfactorily compacted in accordance with the provisions of Section 02222.

10.3 Construction Joint Treatment.

10.3.1 General. Concrete surfaces to which other concrete is to be bonded shall be prepared for receiving the next lift or adjacent concrete by cleaning with either air-water cutting, sandblasting, or high pressure water jet. The surfaces of construction joints shall be kept continuously wet for the first 12 hours during the 24-hour period prior to placing concrete.

10.3.2 Cleaning.

10.3.2.1 Air-Water Cutting. Air-water cutting of a construction joint shall be performed at the proper time and only on horizontal construction joints. The surface shall be cut with an air-water jet to remove all laitance and to expose clean, sound, mortar and coarse aggregate, but not so as to undercut the edges of the larger particles of aggregate. The air pressure used in the jet shall be 100 pounds per square inch plus or minus 10 pounds per square inch, and the water pressure shall be just sufficient to bring the water into effective influence of the air pressure. When approved by the Contracting Officer, a retarder complying with the requirements of CRD C 94 may be applied to the surface of the lift in order to prolong the period of time during which air-water cutting is effective. Prior to receiving approval, the Contractor shall furnish samples of the material to be used and shall demonstrate the method to be used in applications. After cutting, the surface shall be washed and rinsed as long as there is any trace of cloudiness of the wash water. The surface shall again be washed just prior to placing the succeeding lift. Where necessary to remove accumulated laitance, coatings, stains, debris, and other foreign material, sandblasting will be required as the last operation before placing the next lift.

10.3.2.2 High-Pressure Water Jet. A stream of water under a pressure of not less than 3,000 pounds per square inch may be used for cleaning. Its use shall be delayed until the concrete is sufficiently hard so that only the surface skin or mortar is removed and there is no undercutting of coarse aggregate particles. Where the cleaning occurs more than 2 days prior to placing the next lift or where work in the area subsequent to the cleaning causes dirt or debris to be deposited on the surface, the surface shall be cleaned again as the last operation prior to placing the next lift. If the water jet is incapable of a satisfactory cleaning, the surface shall be cleaned by sandblasting.

10.3.2.3 Sandblasting. When employed in the preparation of construction joints, sandblasting shall be performed as the final operation completed before placing the following lift. The operation shall be continued until all accumulated laitance, coatings, stains, debris, and other foreign materials are removed. The surface of the concrete shall then be washed thoroughly to remove all loose materials. The surface shall again be washed just prior to placing the succeeding lift.

10.3.2.4 Waste Disposal. The method used in disposing of waste water employed in cutting, washing, and rinsing of concrete surfaces shall be such that the waste water does not stain, discolor, or affect exposed surfaces of the structures, or damage the environment of the project area. The method of disposal shall be subject to approval.

10.3.2.5 Surface Condition. Construction joints shall be coated with epoxy in accordance with Section 03601 prior to placement of the next lift.

## 11. PLACING.

11.1 General. The placing equipment shall have a capacity of at least 30 cubic yards per hour. Concrete placement will not be permitted when, in the opinion of the Contracting Officer, weather conditions prevent proper placement and consolidation. Concrete shall be deposited as close as possible to its final position in the forms, and in so depositing, there shall be no vertical drop greater than 5 feet except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it may be effectively consolidated in horizontal layers 1-1/2 feet or less in thickness with a minimum of lateral movement. The amount deposited in each location shall be that which can be readily and thoroughly consolidated. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of cold joints while concrete is being placed.

11.2 Time Interval Between Mixing and Placing. Concrete shall be placed within 30 minutes after discharge into nonagitating equipment. When concrete is truck mixed or when a truck mixer or agitator is used for transporting concrete mixed by a concrete plant mixer, the concrete shall be delivered to the site of the work, and discharge shall be completed within 1-1/2 hours after introduction of the cement to the aggregates. When the length of haul makes it impossible to deliver truck-mixed concrete within these time limits, batching of cement and a portion of the mixing water shall be delayed until the truck mixer is at or near the construction site.

11.3 Cold-Weather Placing. Concrete shall not be placed without a procedure approved in accordance with paragraph 5.3.6 when the concrete is likely to be subjected to freezing

temperatures before the expiration of the curing period. The ambient temperature of the space adjacent to the concrete placement and surfaces to receive concrete shall be above 32°F. The placing temperature of the concrete having a minimum dimension less than 12 inches shall be between 55°F and 75°F. The placing temperature of the concrete having a minimum dimension greater than 12 inches shall be between 50°F and 70°F. Heating of the mixing water or aggregates will be required to regulate the concrete-placing temperatures. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salt, chemicals, or other materials shall not be mixed with the concrete to prevent freezing.

11.4 Hot-Weather Placing. Concrete shall be properly placed and finished with approved procedures in accordance with paragraph 5.3.7. The concrete-placing temperature shall not exceed 90°F. Cooling of the mixing water and/or aggregates will be required to obtain an adequate placing temperature. An approved retarder shall be used to facilitate placing and finishing when concrete temperatures exceed 85°F. Steel forms and reinforcement shall be cooled prior to concrete placement when steel temperatures are greater than 120°F. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete-placing temperature.

11.5 Consolidation. Immediately after placement, each layer of concrete, including flowing concrete, shall be consolidated by internal vibrating equipment. Vibrators shall not be used to transport concrete within the forms. Hand spading may be required with internal vibrating along formed surfaces permanently exposed to view. Vibrating equipment shall at all times be adequate in number of units and power to properly consolidate the concrete. A spare vibrator shall be kept on the job site during all concrete placing operations. A spare vibrator shall be kept on the job site during all concrete placing operations. Form or surface vibrators shall not be used unless specifically approved. Vibrators of the proper size, frequency, and amplitude shall be used for the type of work being performed in conformance with the following requirements:

APPLICATION	HEAD DIAMETER INCHES	FREQUENCY VPM	AMPLITUDE INCHES
Thin walls, beams, etc.	1½ - 2½	9,000 - 13,500	0.02 - 0.04
General construction	2 - 3½	8,000 - 12,000	0.025 - 0.05

The frequency and amplitude shall be within the range indicated in the table above as determined in accordance with paragraph 14.2.9. The vibrator shall be inserted vertically at uniform spacing over the entire area of placement. The distance between insertions

shall be approximately  $1\frac{1}{2}$  times the radius of action of the vibrator. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding layer if such exists. It shall be held stationary until there is a general cessation in escape of large bubbles of entrapped air at the surface of the concrete (generally 5 to 15 seconds) and then withdrawn slowly at about 3 inches per second.

## 12. FINISHING.

### 12.1 Unformed Surfaces.

12.1.1 General. The ambient temperature of spaces adjacent to surfaces being finished shall be not less than 50°F. In hot weather when the rate of evaporation of surface moisture, as determined by use of Figure 2.1.5 of ACI 305R, may reasonably be expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or wet covering with a light-colored material shall be made in advance of placement. These protective measures shall be taken as quickly as finishing operations will allow. All unformed surfaces that are not to be covered by additional concrete or backfill shall have a float finish, unless a trowel finish is specified, and shall be true to the elevation shown on the drawings. Surfaces to receive additional concrete or backfill shall be brought to the elevation shown on the drawings and left true and regular. Exterior surfaces shall be sloped for drainage unless otherwise shown on the drawings or as directed. Joints shall be carefully made with a jointing or edging tool. The finished surfaces shall be protected from stains or abrasions.

12.1.2 Float Finish. Surfaces shall be screeded and darried or bullfloated to bring the surface to the required finish level with no coarse aggregate visible. No water, cement, or mortar shall be added to the surface during the finishing operation. The concrete, while still green but sufficiently hardened to bear a man's weight without more than about a 1/4 inch indentation, shall be floated to a true and even plane. Floating may be performed by use of suitable hand floats or power-driven equipment. Hand floats shall be made of magnesium or aluminum. Tolerance for a floated finish shall be true plane within 5/16 inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

12.1.3 Trowel Finish. A trowel finish shall be applied to the top surfaces of all walls. Concrete surfaces shall be finished with a float finish, and after surface moisture has disappeared, the surface shall be troweled to a smooth, even, dense finish free from blemishes including trowel marks. Tolerance shall be true planes within 5/16 inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

12.2 Formed Surfaces. Within 24 hours after form removal, all fins and loose materials permanently exposed to view shall be removed and all tie rod holes and defective concrete repaired. All voids and honeycombs exceeding 1/2 inch in diameter permanently exposed to view and all tie-rod holes, permanently exposed to view shall be reamed or chipped and filled with dry-pack mortar. Defective areas larger than 36 square inches in any surface, permanently exposed or not, shall be delineated in a rectangular shape by a saw cut a minimum depth of 1 inch. All defective concrete in the delineated area shall be removed and replaced with carefully placed and compacted concrete. The cement used in the mortar or concrete for all surfaces permanently exposed to view shall be a blend of portland cement and white cement properly proportioned so that the final color when cured will be the same as adjacent concrete. Temperature of the concrete, ambient air, replacement concrete, or mortar during remedial work including curing shall be above 50°F. The prepared area shall be dampened, brush-coated with a neat cement grout or with an approved epoxy resin, and filled with mortar or concrete. The mortar shall consist of 1 part cement to 2-1/2 parts fine aggregate. The quantity of mixing water shall be the minimum necessary to obtain a uniform mixture and to permit placing. Mortar shall be thoroughly compacted in place and struck off to adjacent concrete. Replacement concrete shall be drier than the usual mixture and thoroughly tamped into place and finished. Forms shall be used if required. Metal tools shall not be used to finish permanently exposed surfaces. The patched areas shall be cured and protected in accordance with paragraph 13.

12.2.1 General. Surfaces, unless other type of finish is specified, shall be left with the texture imparted by the forms except that defective surfaces shall be repaired as described in paragraph 12.2. Other types of finishes shall be applied to the following structures or portions of structures:

BRIDGE STRUCTURE:

TYPE OF FINISH	STRUCTURE OR PORTION OF STRUCTURE
LSSRB Section 805.13 Class 2A, Special Surface	Barriers and ends of bent caps
LSSRB Section 805.13 Class 6, Bridge Deck Finish	Bridge deck and approach slabs
LSSRB Section 805.13 Class 1, Ordinary Surface	All other bridge concrete

FLOODWALLS:

TYPE OF FINISH	STRUCTURE OR PORTION OF STRUCTURE
Class "F" Finish	Floodwalls on Jefferson Parish Side of Canal

FLOODWALLS: Continued

TYPE OF FINISH	STRUCTURE OR PORTION OF STRUCTURE
Class "A" Finish	Floodwalls on Orleans Parish Side of Canal
Coating of waterproof cementitious paint finish	The top and both sides of the caps to a limit 12 inches below the ground elevation.

Cementitious paint shall be in accordance with paragraph 12.2.3

Unless painting of surfaces is required, uniform color of the concrete shall be maintained by use of only one mixture without changes in materials or proportion for any structure or portion of structure that is exposed to view or on which a special finish is required. The form panels used to produce the finish shall be orderly in arrangement, with joints between panels planned in approved relation to openings, corners, and other architectural features. Forms shall not be reused if there is any evidence of surface wear or defects that would impair the quality of the surface.

12.2.2 Class "F" Finish. See 03101-5.1.3 for Class "F" Finish.

12.2.3 Cementitious Paint Finish of Floodwall. As approved by the Contracting Officer and after all required patching, cleaning, and correction of major imperfections have been completed, concrete floodwall surfaces to be finished shall be given a cementitious paint finish as hereinafter described unless the manufacturer recommends differently. The finish shall not be applied before the initial 7 day moist curing period is complete. The temperature of the air adjacent to the surface shall be less than 50°F for 24 hours prior to and following the application of the finish. If the temperature of the air adjacent to the surface is above 90°F, the surface shall be cooled prior to the application of the finish by hosing with clean water until it reaches a temperature of 85°F. The finish for any area shall be completed in the same day and the limits of the finished area shall be made at corners or monolith joints. The surfaces to be finished must be structurally sound, clean and free from dirt,

form marks, loose mortar particles, paint, films, protective coatings, efflorescence, laitance, etc. The cementitious paint finish shall consist of dampening the surface ahead of the cementitious paint application with clean water. As a base coat, cementitious paint shall be applied at a rate of two pounds per square yard of surface area. The top coat shall be applied at a rate of 75-100 square feet per gallon. The coating shall be uniform completely filling all pits, air bubbles, and surface voids.

### 13. CURING AND PROTECTION.

13.1 General. All concrete shall be cured by an approved method for a period of 7 days. Water used to cure concrete shall be in accordance with paragraph 6.5. Immediately after placement, concrete shall be protected from premature drying, extremes in temperatures, rapid temperature change, and mechanical injury. All materials and equipment needed for adequate curing and protection shall be available and in working order at the placement site prior to the start of concrete placement. Concrete shall be protected from the damaging effects of rain for 12 hours and from flowing water for 14 days (7 days for Type III cement). Concrete shall be shielded from direct rays of the sun for 3 days. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time.

13.2 Moist Curing. Moist-cured concrete shall be maintained continuously (not periodically) wet for the entire curing period. Vertical surfaces shall be cured using soaker hoses, fog sprayers or sprinklers. Burlap may be used to assist moist curing provided that the wall and the burlap are kept continuously saturated, including nights and weekends, and the burlap is kept in contact with the concrete being cured. If water or curing materials stain or discolor concrete surfaces that are to be permanently exposed, they shall be cleaned as required in paragraph 4.4. Where wooden form sheathing is left in place during curing, the sheathing shall be kept wet at all times. Horizontal surfaces may be moist cured by ponding, by covering with a minimum uniform thickness of 2 inches of continuously saturated sand, or by covering with saturated nonstaining burlap or cotton mats.

13.3 Membrane Curing. Concrete may be cured with an approved during compound in lieu of moist curing except that membrane curing will not be permitted on any surface to which a sack-rubbed or cementitious paint finish is to be applied, on any surface containing protruding steel reinforcement, or on abrasive aggregate finish.

13.3.1 Pigmented Curing Compound. A pigmented-type curing compound may be used on surfaces that will not be exposed to view when the project is completed. Membrane curing shall not be used on surfaces that are to receive any subsequent treatment depending on adhesion or bonding to the concrete. A nonpigmented-type

curing compound, containing a fugitive dye, may be used on surfaces that will be exposed to view when the project is completed.

13.3.2 Application. The curing compound shall be applied to formed surfaces immediately after the forms are removed and prior to any patching or other surface treatment except the cleaning of loose sand, mortar, and debris from the surface. The surfaces shall be thoroughly moistened with water, and the curing compound applied as soon as free water disappears. The curing compound shall be applied to unformed surfaces as soon as free water has disappeared. The curing compound shall be applied in a two-coat continuous operation by approved motorized power-spraying equipment operating at a minimum pressure of 75 pounds per square inch, and at a uniform continuous coverage of not more than 400 square feet per gallon for each coat. The second coat shall be applied perpendicular to the first coat. Concrete surfaces that have been subject to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage herein specified. All concrete surfaces on which the curing compound has been applied shall be adequately protected for the duration of the entire curing period from pedestrian and vehicular traffic and from any other cause that will disrupt the continuity of the curing membrane.

13.4 Impervious-Sheet Curing. The following concrete surfaces may be cured using impervious sheets: horizontal surfaces only. All surfaces shall be thoroughly wetted and be completely covered with waterproof paper, polyethylene film, or polyethylene-coated burlap having the burlap thoroughly water-saturated before placing. The covering shall be laid with light-colored side up. The covering shall be lapped not less than 12 inches and securely weighted down or shall be lapped not less than 4 inches and taped to form a continuous cover with completely closed joints. The sheets shall be weighted to prevent displacement so that they remain in contact with the concrete during the specified length of curing. Coverings shall be folded down over exposed edges of slabs and secured by approved means. Sheets shall be immediately repaired or replaced if tears or holes appear during the curing period.

13.5 Cold Weather. When the daily outdoor low temperature is less than 32°F, the temperature of the concrete shall be maintained above 40°F for the first 7 days after placing. In addition, during the period of protection removal, the air temperature adjacent to the concrete surfaces shall be controlled so that concrete near the surface will not be subjected to a temperature differential of more than 25°F as determined by observation of ambient and concrete temperatures indicated by suitable thermometers furnished by the Government as required and installed adjacent to the concrete surface and 2 inches inside the surface of the concrete. The installation of the thermometers shall be made by the Contractor at such locations as may be directed.



## 14. CONTRACTOR QUALITY CONTROL.

14.1 General. The Contractor shall perform the inspection and tests described in paragraph 14.2, and based upon the results of these inspections and tests, he shall take the action required in paragraph 14.3 and submit reports as required in paragraphs 14.3 and 14.4. The laboratory performing the tests shall conform with ASTM C 1077. The individuals who sample and test concrete or the constituents of concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I.

### 14.2 Inspection Details and Frequency of Testing.

#### 14.2.1 Fine Aggregate.

14.2.1.1 Grading. At least once during each shift in which concrete is being delivered, there shall be one sieve analysis and fineness modulus determination in accordance with ASTM C 136 and CRD-C 104, respectively, for the fine aggregate or for each fine aggregate, if it is batched in more than one size or classification. The location at which samples are taken may be selected by the Contractor as the most advantageous for control. However, the Contractor is responsible for delivering fine aggregate to the mixer within specification limits. Results of tests shall be reported in writing.

14.2.1.2 Moisture Content. When in the opinion of the Contracting Officer the electric moisture meter is not operating satisfactorily, at least four tests for moisture content shall be conducted in accordance with either ASTM C 70, C 566, or CRD-C 112 during each 8-hour period of mixing plant operation. The times for the tests shall be selected randomly within the 8-hour period. An additional test shall be made whenever the slump is shown to be out of control or excessive variation in workability is reported by the placing foreman. When the electric moisture meter is operating satisfactorily, at least two direct measurements of moisture content shall be made per week to check the calibration of the meter.

#### 14.2.2 Coarse Aggregate.

14.2.2.1 Grading. At least once during each shift that concrete is being delivered, there shall be a sieve analysis in accordance with ASTM C 136 for each size group of coarse aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for production control. However, the Contractor is responsible for delivering the aggregate to the mixer within specification limits. A test record of samples of aggregate taken shall show the results of the five most recent tests including the current test. The Contractor may adopt limits for control coarser than the specification limits

for samples taken other than at the batch plant bins to allow for degradation during handling. Results of tests shall be reported in writing.

14.2.2.2 Moisture Content. A test for moisture content of each size of coarse aggregate in accordance with ASTM C 566 or CRD-C 112 shall be made at least once a shift. When two consecutive readings for smallest size coarse aggregate differ by more than 1.0 percent, frequency of testing shall be increased to that specified for fine aggregate in paragraph 14.2.1.2. These results shall be used to adjust the added water in the control of the batch plant.

14.2.3 Deleterious Substances. When in the opinion of the Contracting Officer a problem exists in connection with deleterious substances in fine or coarse aggregates, tests shall be made in accordance with ASTM C 33 at a frequency not less than one per week. Results of tests shall be reported in writing.

#### 14.2.4 Scales.

14.2.4.1 Weighing Accuracy. The accuracy of the scales shall be checked by test weights at least once a month for conformance with the applicable requirement of paragraph 8.2.2. Such tests shall also be made whenever there are variations in properties of the fresh concrete that could result from batching errors. Results of tests shall be reported in writing.

14.2.4.2 Batching and Recording Accuracy. Once a week the accuracy of each batching and recording device shall be checked during a weighing operation by noting and recording the required weight, recorded weight, and the actual weight batched. The Contractor shall provide the necessary calibration devices and confirm that the admixture dispensers described in paragraph 8.2.1 are operating properly. Results of tests shall be reported in writing.

14.2.5 Batch-Plant Control. The measurement of all constituent materials including cement, pozzolan, each size of aggregate, water, and admixtures shall be continuously controlled. The aggregate weights and amount of added water shall be adjusted as necessary to compensate for free moisture in the aggregates. The amount of air-entraining admixture shall be adjusted to control air content within specified limits. A report shall be prepared indicating type and source of cement used, type and source of pozzolan used, amount and source of admixtures used, aggregate source, the required aggregate and water weights per cubic yard, amount of water as free moisture in each size of aggregate, and the batched aggregate and water weights per cubic yard for each class of concrete batched during plant operation. The report shall be furnished to the Contracting Officer.

#### 14.2.6 Concrete.

14.2.6.1 Air Content. At least two tests for air content shall be made on randomly selected batches of each class of concrete during each 8-hour period of concrete production or at least once a day when concrete is placed. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Government inspector. Tests shall be made in accordance with ASTM C 231. For concrete having a nominal maximum aggregate size of 1 or 1-1/2 inches, the average of each set of two tests shall be plotted on a control chart on which the average is set at 5.5 percent and the upper and lower control limits at 7 and 4 percent, respectively. For concrete having a nominal maximum aggregate size of 3/4-inch, the average shall be set at 6.0 percent and the upper and lower control limits at 7.0 and 5.0 percent, respectively. The control charts shall be furnished to the Contracting Officer.

14.2.6.2 Slump. At least two slump tests shall be made on randomly selected batches of each class of concrete during each day's concrete production in accordance with ASTM C 143. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Government inspector. The average of each set of two tests shall be plotted on a control chart on which the upper and lower limits are set 1.5 inches above and below the mid-range value. The range shall be plotted on a control chart on which the upper control limit is 3.0 inches. The control chart shall be furnished to the Contracting Officer.

14.2.7 Preparation for Placing. Foundation or construction joints, forms, and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify to the Contracting Officer that they are ready to receive concrete. The results of each inspection shall be reported in writing.

14.2.8 Placing. The placing foreman shall supervise all placing operations, shall determine that the correct quality of concrete or grout is placed in each location as directed by the Contracting Officer, and shall be responsible for measuring and recording concrete temperatures, ambient temperature, weather conditions, placement time, placement duration, yardage placed, and placement method. Concrete temperatures shall be determined in accordance with ASTM C 1064. A report shall be furnished in writing to the Contracting Officer.

14.2.9 Vibrators. The frequency and amplitude of each vibrator shall be determined in accordance with CRD-D 521 prior to initial use and at least once a month when concrete is being placed. Additional tests shall be made when a vibrator does not appear to be adequately consolidating the concrete. The frequency shall be determined while the vibrator is operating in concrete

with the tachometer being held against the upper end of the vibrator while almost submerged and just before the vibrator is withdrawn from the concrete. The amplitude shall be determined with the head vibrating in air. Two measurements shall be taken, one near the tip and another near the upper end of the vibrator head, and these results averaged. The make, model, type, and size of the vibrator and frequency and amplitude results shall be reported in writing.

#### 14.2.10 Curing.

14.2.10.1 Moist Curing. At least once each calendar day during the curing period, an inspection shall be made of all areas subject to moist curing. The surface moisture condition shall be reported in writing.

14.2.10.2 Curing Compound. No curing compound shall be applied until it has been verified that the compound is properly mixed and ready for spraying. At the end of each operation, the quantity of compound used and the area of concrete surface covered shall be reported, and the rate of coverage in square feet per gallon shall be computed. The report shall be state whether coverage is uniform.

14.2.10.3 Impervious-Sheet Curing. At least once calendar day during the curing period, an inspection shall be made of all areas being cured using imperious sheets. The condition of the covering and the tightness of the laps and tapes shall be noted and recorded.

14.2.11 Protection. At least once each calendar day during the curing period, an inspection shall be made of all areas subject to cold-weather protection. Deficiencies shall be noted. During removal of protection, measurement of concrete and ambient temperatures shall be recorded at least hourly. A report shall be furnished in writing to the Contracting Officer.

#### 14.2.12 Mixer Uniformity.

14.2.12.1 Concrete Plant Mixer. At the start of concrete placing, and at least once every 6 months when concrete is being placed, uniformity of concrete shall be determined. The tests shall be performed in accordance with ASTM C 94. Whenever adjustments in mixer or increased mixing times are necessary because of failure of any mixer to comply, the mixer shall be retested after adjustment. Results of tests shall be reported in writing.

14.2.12.2 Truck Mixers. At the start of concrete placing and at least once every 6 months when concrete is being placed, uniformity of concrete shall be determined in accordance with ASTM C 94. The truck mixers shall be selected randomly for testing. When satisfactory performance is found in one truck mixer, the

performance of mixers of substantially the same design and condition of blades may be regarded as satisfactory. Results of tests shall be reported in writing.

### 14.3 Action Required.

#### 14.3.1 Fine Aggregate.

14.3.1.1 Grading. When the amount passing any sieve is outside the specification limits, the fine aggregate shall be immediately resampled and retested. If there is another failure on any sieve, the fact shall immediately be reported to the Contracting Officer, and immediate steps shall be taken to rectify the situation.

14.3.1.2 Moisture. Whenever the moisture content of the fine aggregate changes by 0.5 percent or more, the scale settings for the fine-aggregate batcher and water batcher shall be adjusted directly or by means of a moisture compensation device.

14.3.2 Coarse Aggregate Grading. When the amount passing any sieve is outside the specification limits, the coarse aggregate shall immediately be resampled and retested. If the second sample fails on any sieve, that fact shall be reported to the Contracting Officer. Where two consecutive moving averages of five tests are outside specification limits, that fact shall be reported to the Contracting Officer, and immediate steps shall be taken to correct the grading.

14.3.3 Deleterious Substances. When the results for a deleterious substance are outside the specification limit, the aggregate shall be resampled and retested for the deleterious substance that failed. If the second sample fails, that fact shall be reported to the Contracting Officer. When material finer than No. 200 sieve for coarse aggregate exceeds the specification limit, immediate steps, such as washing or other corrective actions, shall be initiated.

14.3.4 Scales. Whenever either the weighing accuracy or batching accuracy is found not to comply with specification requirements, the plant shall not be operated until necessary adjustments or repairs have been made. Discrepancies in recording accuracies shall be corrected immediately.

#### 14.3.5 Concrete.

14.3.5.1 Air Content. Whenever points on the control chart approach the upper or lower control limits, an adjustment should be made in the amount of air-entraining admixture batched. If a single test result is outside the specification limit, such adjustment is mandatory. As soon as practical after each adjustment, another test shall be made to verify the correctness of the adjustment. Whenever a point falls above the upper control

limit for range, the dispenser shall be calibrated to ensure that it is operating correctly and with good reproducibility. Whenever two consecutive points for either average or range are outside the control limits, the Contracting Officer shall be notified. Whenever the air content departs from the specified range, the concrete shall not be delivered to the forms.

14.3.5.2 Slump. Whenever points on the control chart approach the upper or lower control limits, an adjustment should be made in the batch weights of water and fine aggregate. The adjustments are to be made so that the total free water does not exceed that amount specified in the approved mixture proportions based on the free water available with the fine aggregate and that amount of water batched. If the adjustments to the batch weights of water and fine aggregate do not satisfactorily produce the required slump, the mixture shall be reportioned to meet the specified criteria and resubmitted to the Contracting Officer for approval. When a single slump is outside the control limits, such adjustment is mandatory. As soon as practical after each adjustment, another test shall be made to verify the correctness of the adjustment. Whenever the slump exceeds the upper limit stipulated in paragraph 7.2.5, the concrete shall not be delivered to the forms. Whenever two consecutive slump tests, made during a period when there was no adjustment of batch weights, produce a point on the control chart for range above the upper control limit, the slump shall be considered to be out of control, and the additional testing for aggregate moisture content required in paragraph 14.2 shall be undertaken.

14.3.6 Placing. The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators in working order and with competent operators are available. Placing shall not be continued if any pile of concrete is inadequately consolidated. If any batch of concrete fails to meet the temperature requirements, immediate steps shall be taken to improve temperature controls.

#### 14.3.7 Curing.

14.3.7.1 Moist Curing. When a daily inspection report lists an area of inadequate curing, the required curing period for that area shall be extended by 1 day.

14.3.7.2 Curing Compound. When the coverage rate of curing compound is less than that specified or when the coverage is not uniform, the entire surface shall be sprayed again.

14.3.7.3 Impervious-Sheet Curing. When a daily inspection report lists any tears, holes, or laps of joints that are not completely closed, the tears and holes shall promptly be repaired or the sheets replaced, the joints closed, and the required curing period for those areas shall be extended by 1 day.

14.3.8 Protection. When any concrete temperature during the period of protection or protection removal fails to comply with the specifications, that fact shall be reported to the Contracting Officer, and immediate steps shall be taken to correct the situation.

14.3.9 Mixer Uniformity. When a mixer fails to meet mixer uniformity requirements, either the mixing time shall be increased or adjustments shall be made to the mixer until compliance is achieved.

14.4 Reports. All results of tests shall be reported as required. Each report shall include the updating of control charts covering the entire period from the start of the construction season through the current week. During periods of cold-weather protection, reports of pertinent temperatures shall be made daily. These requirements do not relieve the Contractor of the obligation to report certain failures immediately as required in preceding paragraphs. Such reports of failures and the action taken shall be confirmed in writing in the routine reports. The Contracting Officer has the right to examine all Contractor quality control records.

15. MEASUREMENT. No separate measurement will be made for cast-in-place concrete (Class A or Class AA) specified herein above.

16. PAYMENT. Payment for concrete will be made at the applicable contract lump sum price for "Class A Concrete" and "Class AA Concrete", except that concrete for the floodgate near I-10 will be included in the contract lump sum price for "Floodwall Gate Near I-10". Price and payment shall include the cost of all labor, materials, and the use of all equipment and tools required to complete the concrete work, including steel reinforcement, formwork, the application of a cementitious paint finish to the floodwall cap and all other items incidental thereto.

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SECTION 03401 - PRECAST PRESTRESSED CONCRETE GIRDERS

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, labor and materials, and shop drawings and performing all operations in connection with the manufacture and installation of precast prestressed concrete girders, in accordance with these specifications.

2. QUALITY CONTROL.

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

- (1) materials;
- (2) forms;
- (3) placement;
- (4) curing;
- (5) strength;
- (6) tensioning; and,
- (7) erection.

2.2 Reporting. The original and two copies of these records and tests, as well as corrective action taken, shall be furnished to the Government daily. Format of the report shall be as specified in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. RELATED WORK SPECIFIED ELSEWHERE.

3.1 Formwork for Concrete. Section 03101.

3.2 Reinforcing Steel. Section 03210.

3.3 Expansion Joints and Waterstops. Section 03150.

3.4 Miscellaneous Metalwork. Section 05500.

4. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto:

4.1 American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges (SSHB), 15th Edition, 1992, amended by the Interim Specifications, Bridges, 1993.

4.2 Louisiana Standard Specifications for Roads and Bridges, (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and development (LDOTD).

4.3 American Society for Testing and Materials (ASTM), with Corresponding CRD Standard Indicated where Available.

A 416-90a	Uncoated Seven-Wire Strand for Prestressing Concrete
C 31-91 (CRD-C 11)	Making and Curing Concrete Test Specimens in Field
C 39-86 (CRD-C 14)	Compressive Strength of Cylindrical Concrete Specimens

4.4 Prestressed Concrete Institute (PCI).

MNL 116 (1985 Edition)	PCI Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products, Third edition
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## 5. SUBMITTALS.

5.1 Shop Drawings. Complete shop drawings for all prestressed concrete work shall be submitted to the Contracting Officer for approval at least 45 days prior to commencement of the work. The shop drawings shall show complete details including formwork, inserts, reinforcing steel, size and type of tensioning elements and anchorages, sequence of stressing, method of curing, quality of concrete, camber, erection details and methods, and complete stressing calculations, including steel and concrete stresses.

5.2 Test Reports. Certified test reports of required material tests conforming to the applicable provisions of related work sections shall be submitted to the Contracting Officer by the Contractor prior to use of the materials in the work. Reports shall be furnished for each shipment and shall be identified with specific lots.

5.3 Disposition Records. A system of identifying which shows the disposition of specific lots of approved tested materials in the work shall be established and submitted to the Contracting Officer before completing the contract.

5.4 Equipment Descriptions and Certifications. Descriptions of tensioning jacks, gages, dynamometers, load cells or other devices for measuring stressing load, certified calibration records for each set of jacking equipment, and testing curves for stress measurement gages which show that the gages have been calibrated for the jacks for which they are used shall be submitted for approval prior to start of the tensioning operations.

5.5 Concrete Cylinder Tests. Complete records of cylinder tests as described or referred to in paragraph 8.2 shall be submitted to the Contracting Officer for approval prior to use of girders on the project.

5.6 Tensioning and Detensioning Records. Complete records of tensioning and detensioning conforming to the requirements of paragraph 10 shall be submitted to the Contracting Officer by the Contractor, prior to use of girders on the project.

## PART 2 - PRODUCTS

### 6. MATERIALS.

6.1 Cement, Aggregates, Water, Admixtures, and Reinforcing Steel. Portland cement shall be type I and shall conform to the applicable requirements of subsection 1001.01 of the Louisiana Standard Specifications for Roads and Bridges. Water and admixtures shall conform to the requirements of Section 03301. Reinforcing steel shall conform to the requirements of Section 03210. The 28 day compressive strength of concrete for prestressed girders shall be 6,000 pounds per square inch. The concrete mixes shall conform to the requirements of Louisiana Standard Specifications for Roads and Bridges Section 901, Table 1 for structural concrete, Class P(M). Aggregate shall conform to LSSRB Section 1003.02(b)(1), Grade F. The mixes and curing operation shall be submitted for approval. The use of calcium chloride or any admixture containing chloride or nitrites will not be allowed.

6.2 Prestressing Steels. Prestressing steel shall be low relaxation and shall conform to the requirements of ASTM A 416, Grade 270, 1/2 inch strand diameter as shown on the drawings. Initial tension in the strands shall be 30,980 pounds.

6.3 Waterstops. Waterstops cast into the girders shall meet the requirements of Section 03150 and be submitted to the Contracting Officer for approval prior to fabrication.

7. FORMWORK. Forms for pretensioned members shall be constructed to permit movement of the member without damage during release of the pretensioning force. Forms shall remain in place until the girders are removed from the casting bed. The use of steel forms on concrete founded casting beds is required. Forms

shall be made and maintained true to the grade, alignment and dimensions shown on the drawings. Form joints shall be smooth and tight. Beds and forms shall be thoroughly cleaned before reuse.

### PART 3 - EXECUTION

#### 8. PRECAST PRESTRESSED CONCRETE CONSTRUCTION.

8.1 Fabrication. Fabrication of precast prestressed concrete girders shall follow the applicable provisions of PCI MNL-116 and the American Association of State Highway and Transportation Officials Standard Specifications for Highway Bridges except as specified herein. Shop drawings must be approved by the Contracting Officer before any fabrication is begun. Unless otherwise shown on the contract drawings, the following dimensional tolerances of members will govern:

Length of girders	± 1/2 inch
Width	± 1/4 inch
Depth (Over-all)	+1/2 inch; -1/4 inch
Horizontal Alignment: (Deviation from a straight line parallel to C/L of member)	1/8 inch per 10 feet but not greater than 3/4" between two adjacent members when erected
Tendon Position	± 1/4 inch CG of strand group and individual tendons
Position of Handling Devices	± 6 inches
Beam Ends-Deviation square	Horizontal ± 1/4 inch from Vertical ± 1/8 inch per foot of girder depth
Bearing Area Deviation from	± 1/8 inch Plane
Stirrup Bars-Longitudinal	± 1 Inch Spacing

8.2 Casting. The concrete girders shall be cast on level, tight platforms, constructed to prevent settlement during the casting and curing operations. Once casting has started it shall be carried on as a continuous operation until the girder is completed. Voids shall be securely anchored to prevent movement during casting. All concrete shall be thoroughly compacted by internally vibrating, spading and rodding during the placing operation and it shall be thoroughly worked around the reinforcement and into the corners of the forms. The intensity of vibration shall be sufficient to cause the concrete to flow and settle into place. Vibration shall be applied uniformly over the

length of the girder and shall be of sufficient duration to insure thorough compaction of the concrete. Spading and rodding during the placing operation shall supplement the vibration. Surfaces shall be free from detrimental porosity or honeycomb. Small areas of honeycomb which are purely surface in nature, extending to a depth of no more than 1 inch, may be repaired in the manner directed. Honeycomb extending to the plane of reinforcing will be cause for rejection. The Contractor shall make a minimum of nine standard 6-inch by 12-inch concrete test cylinders in accordance with the provisions of ASTM C31. A minimum of three test cylinders shall be made at three times during each placement; the first time early in the placement, the second time in the middle of the placement and the third time near the end of the placement. The use of special embedded or attached lifting devices shall be subject to approval of the Contracting Officer. Lifting devices shall be located within 3 feet of the ends of the girder.

8.3 Curing. All girders shall be steam cured in accordance with the applicable requirements of Standard Specifications for Highway Bridges of the American Association of Highway and Transportation Officials. Curing shall be continued until the concrete has attained a minimum compressive strength of 6,000 psi for the crane service bridge girders as tested in accordance with the requirements of ASTM C39. Each test shall include each placement in accordance with the provisions of paragraph 8.2. All cylinders will be made and tested by Contractor and witnessed by the Contracting Officer's representative. Facilities shall be made available to the Contracting Officer's representative for making any additional test cylinders required by the Contracting Officer. Concrete test cylinders shall be cured at the same location, under identical conditions, and by the identical method used to cure the girders from which the samples were taken. The girders shall not be shipped from the plant site until the full compressive strength of 6,000 psi has been attained.

8.4 Prestressing. Prestress force shall be determined by measuring hydraulic jack pressure with a calibrated pressure gage or by the use of an accurately calibrated dynamometer. The prestress force shall be checked by accurately measuring tendon elongation between 1,000-pounds and the 30,980 pound applied prestress forces. Elongation requirements shall be obtained from load-elongation curves for the steel used and the applied prestress force shall be computed from the measured elongation. If the difference between the computed force and the measured jack force exceeds 5 percent, the cause of the discrepancy shall be ascertained and corrected. The prestressing strands shall be cut prior to reducing the temperature of the steam.

8.5 Girder Ends. The ends of all girders shall be coated with a protective coating approved by the Contracting Officer.

8.6 Top Surface Treatment. The top surface of all girders shall be clean, free of laitance and intentionally roughened in the transverse direction to a full amplitude of approximately 1/4 inch.

8.7 Marking. All precast units shall be plainly marked and identified for ready correlation with corresponding test specimens. Pickup points shall be plainly marked on all units. Units shall be marked to identify the top face and the position on the placement drawings. Units designed specifically to be erected adjacent to other units with which they are to function shall be adequately match-marked before removal from the casting bed.

8.8 Finish. All bottom surfaces of the girders shall receive a Class 8 finish in accordance with the Louisiana Standard Specifications for Roads and Bridges, Section 805.13. All shear key sides to receive a class 4 finish followed by pressure washing. Exterior side surfaces of edge girders shall receive a Class 2 Rubbed Finish.

9. ERECTION. Points of support used in handling, transportation, storage and erection of members shall be as close as practical to the final points of bearing and shall be located within 3 feet of the ends of the girder. All erection details including shoring and bracing shall be clearly shown on the shop drawings. Extreme care shall be taken during storage, hoisting and handling to prevent cracking and damage. Members damaged during handling, storage or erection shall be replaced by the Contractor at his expense. Girders shall be at least six months old before being set in the bridge superstructure.

10. SPAN INSTALLATION. After all girders for Phase 2 construction have been set, the shear keys between the girder shall be filled with epoxy grout. After the epoxy grout has set, longitudinal waterstops between girders shall be spliced. Blockouts between girder shall then be filled with epoxy grout.

10.1 After blockouts are grouted, tie rods shall be installed and stressed to 5,000 pounds tension. Concrete diaphragms at the girder ends shall then be placed.

10.2 Special care shall be taken in placing diaphragm concrete to insure proper consolidation in this congested area.

10.3 After the remaining girders have been set during Phase 3, the shear key grouting, water stop splices, and blockout grouting between girders shall be performed as above. (Tie rod blockouts shall not be filled). Tie rods shall be placed for the Phase 3 girders and coupled to the rods from Phase 2. Rods shall be stressed from the inside of the bridge to 5,000 pounds tension.

10.4 Following this, concrete diaphragms between girder ends shall be placed. Tie rod holes shall be epoxy grouted. Tie rod blockouts shall be patched in accordance with paragraph 03301-12.2.

11. INSPECTION. The Contractor's facilities shall be open for inspection by the Contracting Officer at any time. The Contractor shall maintain full and accurate records of all materials incorporated into prestressed concrete. Manufacturer's test reports shall be submitted on all tendon steels and anchor assemblies, reinforcing steels, cement, admixtures, and curing materials. All concrete and cement testing shall be as provided herein and Section 03301. Complete tensioning records shall be maintained and furnished to the Contracting Officer prior to erection, as specified in paragraph 5.4.5 of PCI MNL-116.

12. MEASUREMENT AND PAYMENT. No separate measurement will be made for the work covered under this section. Payment will be made at the contract lump sum price for "Precast, Prestressed, Concrete Girders". Price and payment shall constitute full compensation for furnishing all plant, labor, equipment and materials, and performing the work in accordance with these specifications.

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SECTION 03402 - BARRIER RAILING

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SECTION 03402 - BARRIER RAILING

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for constructing bridge barrier railing in accordance with these specifications and the contract drawings. Two types of barrier are required: traffic barrier with attached bicycle railing, and flood protection barrier, which has a traffic protection face but extends higher than the traffic barrier to tie into the flood protection at the ends of the bridge.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Reinforcing Steel. Section 03210, "REINFORCING STEEL".

2.2 Structural Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

2.3 Waterstops. Section 03150, "EXPANSION JOINTS AND WATERSTOPS".

2.4 Metalwork. Section 05501, "MISCELLANEOUS METALWORK".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

810 Bridge Railings and Barriers

3.2 American Society for Testing and Materials (ASTM).

A53-90b Specification for Pipe, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

4. QUALITY CONTROL.

4.1 Material Certification. The contractor shall provide documentation to certify that all concrete meets the requirements of Section 03301, steel pipe meets the requirements of ASTM A53, and waterstops meet the requirements of Section 03150.

4.2 Testing Requirements. The Contractor shall perform material tests for concrete in accordance with the requirements of Section 03301.

5. MATERIALS. Concrete for bridge barrier railing shall be Class AA and conform to the requirements of Section 03301. Steel pipe for bicycle railing shall conform to ASTM A53. Waterstops shall conform to the requirements of Section 03150.

6. FABRICATION. Fabrication of bicycle railing shall conform to the requirements of LSSRB Section 810.07 and Section 05501. Bicycle railing shall be galvanized in accordance with Section 05501. Shop drawings for bicycle railing shall be submitted to the Contracting Officer for approval prior to fabrication.

7. CONSTRUCTION. Construction of concrete barrier railing shall conform to the requirements of Section 03301 and LSSRB Section 810.04. LSSRB Section 810.6 shall not apply.

8. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated therewith will be included in the contract lump sum price for "Class AA Concrete". Price and payment shall constitute full compensation for furnishing all plant, labor, equipment and materials, and performing the work in accordance with these specifications.

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SECTION 03601 - EPOXY AND EPOXY GROUT

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for providing and placing epoxy and epoxy grout in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Cast-in-Place Concrete. Section 03301, "CAST-IN-PLACE STRUCTURAL CONCRETE".

2.2 Prestressed Concrete Girders. Section 03401, "PRECAST PRESTRESSED CONCRETE BRIDGE GIRDERS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

805.06 Construction Joints

1003.02 Aggregates for Portland Cement Concrete and Mortar

1017 Epoxy Systems

4. QUALITY CONTROL.

4.1 Material Certification. The contractor shall provide material documentation certifying compliance with the requirements of LSSRB Section 1017 for all epoxy systems.

4.2 Test Requirements. The contractor shall provide test results to demonstrate compliance with the requirements of LSSRB Section 1017.02(e).

5. EPOXY SYSTEMS. Epoxy systems and grout mixtures shall be submitted to the Contracting Officer for approval prior to construction. Epoxy shall be used in accordance with manufacturer's recommendations. Particular attention shall be paid to temperature requirements in the manufacturer's recommendations.

5.1 Construction Joints. Epoxy for construction joints shall be Type II, Grade B epoxy adhesive as described in LSSRB Section 1017.02.

5.2 Epoxy Grout. Epoxy for epoxy grout mix shall be Type II, Grade B. Fine aggregates shall conform to the requirements of LSSRB Section 1003.02. Grout mix shall be submitted to the Contracting Officer for approval prior to construction.

6. CONSTRUCTION.

6.1 Construction Joints. Epoxy use at construction joints shall conform to the requirements of LSSRB Section 805.06.

6.2 Shear Keys. Keyways shall be clean and dry prior to the application of epoxy grout. Sealing material shall be used between the girders below the keyway to prevent loss of epoxy grout. All girder keyways in a span shall be grouted prior to tightening of tie rods.

6.3 Tie Rods. Annular space around tie rods shall be epoxy grouted after tie rods are tightened. Grout shall be injected in a way to maximize filling of annular space. Grouting procedure shall be submitted to the Contracting Officer for approval prior to construction.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs in connection therewith will be included in the contract unit price or lump sum price for the items of work to which the work is incidental.

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SECTION 05501 - MISCELLANEOUS METALWORK

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SECTION 05501 - MISCELLANEOUS METALWORK

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, equipment, materials and labor for providing, fabricating, and installing anchor bolts, tie rods, floodwall gates, and all other miscellaneous metalwork items in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Steel Sheet Piles. Section 02411, "STEEL SHEET PILING".

2.2 Strip Seal Joints. Section 03151, "STRIP SEAL JOINTS".

2.3 Barrier Railing. Section 03402, "BARRIER RAILING".

2.4 Painting. Section 09940, "PAINTING".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 American Society for Testing and Materials (ASTM) Standards.

A36-91	Structural Steel
A123-89a	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
A263-92	Corrosion-Resisting Chromium Clad Steel Plate, Sheet and Strip
A276-92	Stainless and Heat-Resisting Steel Bars and Shapes
A307-92a	Carbon Steel Bolts and Studs, 60,000 psi Tensile
A325-92a	Structural Bolts, Steel, Heat-Treated, 120/105 ksi Minimum Tensile Strength
A722-90	Uncoated High-Strength Steel Bar for Prestressing Concrete
D2000-90	Rubber Products in Automotive Applications

3.2 American Welding Society (AWS).

D1.1-90	Structural Welding Code - Steel
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4. **QUALITY CONTROL.** The Contractor shall provide material documentation certifying material compliance with the requirements of all applicable specifications.

5. **SUBMITTALS.**

5.1 **Shop Drawings.** The Contractor shall prepare and submit for approval complete shop drawings and descriptive literature showing details of all miscellaneous metalwork items required as indicated in the specifications or on the contract drawings.

PART 2 - PRODUCTS

6. **FABRICATED AND MANUFACTURED ITEMS.**

6.1 **General.** Fabrication and placement of all fabricated items shall be as indicated on the drawings and shall conform to the applicable provisions of this section. The Contractor may propose use of the prefabricated gates instead of fabricating units, subject to the approval of the Contracting Officer.

6.2 **Corrosion Resistant Steel.** Corrosion resistant steel shall conform to ASTM A276, Type 304. High strength corrosion resistant steel shall conform to ASTM A 276, Type 431. Corrosion resistant steel bolts, nuts and washers shall conform to the applicable provisions of paragraph 6.5.7 except that the material shall be corrosion-resistant steel.

6.3 **Galvanizing.** Hot-dip galvanizing or zinc coating applied on products fabricated from rolled, pressed, or forged steel shapes, plates, bars, and strips shall comply with ASTM A 123. Weight of coatings shall be as designated in Table 1 of the ASTM specification for class and thickness of material to be coated, but in no case shall it be less than 1.25 oz. per square foot.

6.4 **Materials, Bridge Structure.**

6.4.1 **Anchor Bolts.** Anchor bolts shall be of the size indicated in the contract drawings and conform to ASTM A307. Anchor bolts shall be furnished with nuts and washers. Anchor bolts shall be galvanized after fabrication in conformance with ASTM A123.

6.4.2 **Tie Rods.** Tie rods for use with prestressed concrete girders shall be 1" diameter and shall conform to the requirements of ASTM A722, Type II, as manufactured by DYWIDAG, or equal. Anchorages and couplings shall be in accordance with the manufacturer's recommendations. Installation shall be in accordance with the design drawings and the manufacturer's recommendations.



## 6.5 Material, Floodwall Gates.

6.5.1 Seal Plates. Seal plates shall be solid corrosion-resistant steel of the sizes and dimensions indicated on the drawings.

6.5.1.1 Splicing. Seal Plates shall not be spliced.

6.5.1.2 Seal Retaining Bars. Seal retaining bars shall be solid corrosion-resistant steel of the sizes and dimensions indicated on the drawings. Seal retaining bars shall not be spliced.

6.5.2 Hinges. The hinges shall be the prison type, full mortise, swaged, steel with steel pin, Item No. BB852 as manufactured by Stanley, or equal.

6.5.3 Bicycle Lock. The bicycle locks shall be No. 8029A21 Long Shackle Laminated Brass Padlock, keyed alike, as shown in McMaster-Carr Supply Co., Catalog 91, or equal for use at floodwall gates.

6.5.4 Eye Hook. The eye hook for latching devices shall be a 1-1/2 ton (safe working load) as manufactured by Crosby-Laughlin, catalog No. 950-5, Item No. 320A (Alloy Steel), or equal. Eye hooks shall be hot-dip galvanized.

6.5.5 Plastic Sealant. This sealant shall conform to the applicable provisions of Federal Specification SS-S-00210 "Sealing Compound, Preformed Plastic, for Expansion Joints and Pipe Joints".

6.5.6 Standard Turnbuckles. Standard turnbuckles for latching devices shall be 3/4" by 6", corrosion resistant steel, Item No. M-10-ST, by Holloway Louisiana or equal.

### 6.5.7 Bolts, Nuts and Washers.

6.5.7.1 General. All nuts shall be equipped with washers where indicated on the drawings. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. The finished shank of each bolt shall be long enough to provide full bearing and washers shall be used to provide full grip when the nut is tightened.

6.5.7.2 Bolts. Bolts, including anchor bolts and fitted bolts, shall conform to the applicable provisions of Federal Specification FF-B-575, Type 4, standard thread, size as noted, and carbon steel or ASTM A 325 unless indicated otherwise on the drawings or in other section of the specifications.

6.5.7.3 Nuts. Nuts shall conform to the applicable provisions of Federal Specification FF-N-836, Type II, Style II, standard thread, size as noted, and carbon steel or ASTM A 325 unless indicated otherwise on the drawings or in another section of the specifications.

6.5.7.4 Washers. Washers shall conform to the applicable provisions of Federal Specification FF-W-92, Type A, Grade I, Class A, unless indicated otherwise on the drawings or in another section of specifications.

6.5.7.5 Corner Protection Angles. Gate column corner protection angles shall be fabricated from steel conforming to ASTM A 36, except that minimum yield strength shall be 33,000 psi, the maximum tensile strength shall be waived, and the maximum allowable manganese content shall be 1.40 percent. Installation shall conform to the details shown on the drawings. The continuous edges of the exposed face shall not have a vertical or continuous horizontal distortion from a straight line greater than 0.025-inch per foot of length. Distortion for any single section shall not exceed 1/4-inch. When there is a warp in the installed angles greater than 1/16-inch, an extra anchor shall be installed at the proper location to draw the section into position. Joints between abutting sections shall be square and the butting ends shall be sawed or otherwise made smooth and regular.

### PART 3 - EXECUTION

#### 7. STRUCTURAL FABRICATION.

7.1 Material. Material must be straight before being laid off or worked. Sharp kinks or bends shall be cause for rejection of the material. Bends, except for minor details, shall be made by approved dies, press brakes or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in such a manner as not to destroy the original properties of the metal. Flame cutting of material other than structural steel shall be subject to approval and, where proposed, shall be indicated on shop drawings submitted to the Contracting Officer. Shearing shall be accurately done and all portions of the work shall be neatly finished. Corners shall be square and true unless otherwise shown on the drawings. Re-entrant cuts shall be filleted to a minimum radius of 3/4-inch unless otherwise approved. Finished members shall be free from twists, bends and open joints. Bolts, nuts and screws shall be tight.

7.2 Dimensional Tolerances for Structural Work. Dimensions shall be measured by means of an approved calibrated steel tape of approximately the same temperature as the material being measured at the time of measurement. The overall dimensions of an assembled structural unit shall be within the tolerances as specified in the section of these specifications for the item of

work. Except as required to meet the requirements above, an allowable variation of 1/32-inch is permissible in the overall length of component members with both ends milled; individual component members without milled ends shall not deviate from the dimensions shown on the drawings by more than 1/16-inch for members 30 feet or less in length.

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

7.4 Gate Latching Device. The gate latching devices shall be fabricated, assembled, and installed in accordance with the details and materials shown on the drawings. Bicycle type locks, with all locks keyed alike, shall be included. Threads shall be lubricated before operation.

7.5 Hinges. The gate hinges shall be fabricated, assembled, and installed in accordance with the details and materials shown on the drawings. Lubrication fittings shall be pressure type with throat or surface check. Lubrication fittings and grease seals shall be commercial grade.

## 8. WELDING.

### 8.1 Structural Steel.

8.1.1 General. Unless otherwise authorized or specified, welding of structural steel shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal. Welding, unless otherwise specified or authorized, shall conform to the applicable provisions of AWS D1.1.

8.1.2 Welding Equipment. All items of welding equipment shall conform to the requirements of AWS D1.1.

8.1.3 Filler Metal. The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures to be furnished by the Contractor. To maintain low moisture of low hydrogen electrodes, a controlled temperature storage oven shall be used at the job site as prescribed by Article 4.5 of AWS D1.1.

8.1.4 Qualification of Welders and Welding Operators. Welding operators, welders, and tack welders shall be qualified and requalified if necessary for the particular type of work to be done. Qualification shall be in accordance with Section 5 of AWS D1.1, MIL-STD-00248 or Section IX of the ASME Boiler and Pressure Vessel Code. The Contractor shall certify by name to the Contracting Officer the welders and welding operators so qualified, including the date of qualification and code and procedures under which qualified. Prior qualification may be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require the welder or welding operator to repeat the qualifying tests when, in the opinion of the Contracting Officer, his work indicates a reasonable doubt as to proficiency. In such cases, he shall be recertified, as above, if he successfully passes the retest; otherwise, he shall be disqualified until he has successfully passed a retest. All expenses in connection with qualification and requalification shall be borne by the Contractor.

8.1.5 Workmanship Requirements.

8.1.5.1 Welding Procedure. The Contractor shall prepare for submission to the Contracting Officer a complete schedule of welding procedures which shall consist of detailed procedure specifications for each item to be welded and tables or diagrams showing the procedure to be used for each required joint. The schedule shall conform to the provisions of Sections 2, 3, 4 and 9, and applicable provisions of Section 10 of AWS D1.1, including filler metal requirements, preheat and interpass temperature requirements and any stress relief heat treatment, and show the types and locations of welds designated on the drawings and/or in the specifications to receive nondestructive examination. The procedures shall be such as to minimize residual stresses and distortion of the completed weldment. Procedures shall be qualified by tests as required and prescribed in Section 5 of AWS D1.1 except for prequalified procedures as described in Article 5.1 of AWS D1.1. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests will establish the joint welding procedure as prequalified. Each procedure shall be clearly identified as being either prequalified or qualified by tests. The test welding and specimen testing must be witnessed and the test report document signed by a representative of the Contracting Officer. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contracting Officer. Approval of any procedure, however, will not relieve the Contractor of the responsibility for producing a finished item meeting all requirements of these specifications.

8.1.5.2 Stress-Relief Heat Treatment. Where stress relief heat treatment is specified or shown on the drawings, it shall be in accordance with the requirements of AWS D1.1, Subsection 4.4, unless otherwise authorized or directed by the Contracting Officer.

8.1.5.3 Preheat and Interpass Temperature. Preheating shall be performed as required by AWS D1.1, Subsection 4.2 and 4.3 or as otherwise specified except that the temperature of the base metal shall be at least 70°F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

8.1.5.4 Temporary Welds. Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. All temporary welds shall be made using low-hydrogen welding electrodes and by welders qualified for permanent work as specified elsewhere in these specifications. Preheat furnished for temporary welds shall be as required by AWS D1.1 for permanent welds except that the minimum temperature shall be 120°F in any case. In making temporary welds arcs shall not be struck in other than weld locations. Each temporary weld shall be removed after serving its purpose and ground flush with adjacent surfaces.

8.1.5.5 Tack Welds. Tacks welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds. Preheating shall be performed as specified above for temporary welds. Such tack welds shall be cleaned and fused thoroughly with the permanent welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

#### 8.1.6 Inspection.

8.1.6.1 General. Welding shall be subject to inspection by the Contracting Officer to determine conformance with the requirements of AWS D1.1, the approved welding procedures, and provisions stated elsewhere in these specifications. The Contracting Officer will require nondestructive examination of designated welds and may require supplemental examination of any joint or coupon cut from any location in any joint. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "CONTRACTOR INSPECTION SYSTEM" .

8.1.6.2 Visual Examination. Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with Section 3 of AWS D1.1. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to

insure compliance with the requirements of AWS D1.1, Section 3 and Section 9, Part D. Defects shall be corrected as provided in paragraph 8.1.7.

8.1.6.3 Test Coupons. The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should any two coupons cut from the work of any welder show strengths, under test, less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat workmanlike manner with joints of the proper type to develop the full strength of the members, with peening as approved or directed to relieve residual stress. The expense for removal and testing of the coupons, repair of the cut members and the performance of nondestructive examination of repairs shall be assigned to the Government or the Contractor in accordance with the Contract Clause entitled "INSPECTION AND ACCEPTANCE".

8.1.6.4 Supplemental Examination. The Government reserves the right to perform supplemental nondestructive examinations as deemed necessary when the soundness of any weld is in doubt and to detect cracking or similar defects that might occur during shipment or erection and before final acceptance by the Government. The cost of such inspection will be borne by the Government. The repairs and the reexamination of repairs will be performed by the Contractor at no additional cost to the Government.

8.1.7 Repairs. Defective weld metal shall be removed by air carbon-arc or oxygen gouging to sound metal. The surfaces shall be thoroughly cleaned before welding. The resulting cavities shall be rewelded in compliance with Article 6.6 of AWS D1.1. When deemed necessary by the Contracting Officer the Contractor shall submit a welding repair plan for approval before repairs are made. Welds that have been repaired shall be retested by the same methods used in the original inspection. All costs of repairs and testing shall be borne by the Contractor, except for repair of members cut to remove test coupons which were found to contain acceptable welds.

8.1.8 Oxygen Cutting. In all oxygen cutting, flame shall be so adjusted and manipulated as to avoid cutting beyond the prescribed lines. Cut surfaces and edges shall be left free of slag.

## 9. STUD WELDING.

9.1 General. Stud welding, unless otherwise specified shall conform to the applicable provisions of section 7, part F of AWS D1.1.

9.2 Stud Materials. The type, size and length of studs shall be as indicated on the drawings. The Contractor shall furnish for approval the manufacturer's certified test reports and certification that the studs conform to the applicable requirements of Articles 7.2 and 7.3 of AWS D1.1.

9.3 Stud Base Qualification Requirements. As a condition of approval, the Contractor shall furnish a certified report giving data, procedures and results of tests performed in accordance with the provisions of Article 7.4 of AWS D1.1. The test specimens shall be prepared using suitable specimen plates of the same base metal to which the studs are to be welded.

9.4 Workmanship. The studs shall be welded in accordance with the provisions of Article 7.4 of AWS D1.1. Studs on which a full 360 degree weld fillet is not obtained may, at the option of the Contractor, be repaired by adding a 3/16-inch fillet, using shielded metal arc process with low-hydrogen welding electrodes. If the reduction of the length of studs becomes less than normal as they are welded, welding shall be stopped immediately and not resumed until the cause has been corrected.

9.5 Inspection. The welding of stud connectors will be subject to visual inspection by Government Inspector. Each stud connector that does not show a full 360 degree weld fillet, that has been repaired by welding, or has a reduction in length due to welding less than normal shall be tested in accordance with the requirements for testing of one in every 100 stated in paragraph 9.6.

9.6 Testing. Prior to starting welding operation and at the beginning of each day's operation, two stud connectors shall be welded in the same general position (flat, vertical, overhead, sloping) to a separate piece of material of similar thickness and composition as the member to which the studs are to be welded. After being allowed to cool, these studs shall be tested by bending to an angle of 30 degree by striking the stud with a hammer. If failure occurs in the weld zone of either stud, the procedure shall be corrected and two successive studs successfully welded and tested before any studs are welded to the member. The foregoing testing shall be performed after any change in the welding procedure. If failure occurs in the stud shank, an investigation shall be made to ascertain and correct the cause before further welds are made. In addition to the foregoing tests at least one stud in every 100 shall be struck with a hammer and bent to an angle of 15 degree or if threaded shall be torque tested with a calibrated torque wrench as indicated in Figure 7.6.6 of AWS D1.1. If the stud fails, two more of the existing studs shall be bent or torque tested. If either of these two studs fails, all of the studs represented by the tests shall be rejected. Studs under testing that crack either in the weld, the base metal, or the shank shall be rejected and replaced by the Contractor at no additional cost to the Government.

## 10. BOLTED CONNECTIONS.

10.1 Structural Steel Connections. Bolts, nuts and washers shall be of the type specified or indicated on the drawings. All nuts shall be equipped with washers except for high strength bolts. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. Where the use of high strength bolts is specified or indicated on the drawings the materials, workmanship and installation shall conform to the applicable provisions of the RCRBSJ Specification for Structural Joints Using ASTM A 325 or A 490 Bolts.

10.1.1 Bolt Holes. Bolt holes shall be accurately located, smooth, perpendicular to the member and cylindrical.

10.1.1.1 Holes for regular bolts shall be drilled or subdrilled and reamed in the shop and shall not be more than 1/16-inch larger than the diameter of the bolt.

10.1.1.2 Holes for fitted bolts shall be match-reamed or drilled in the shop. Burrs resulting from reaming shall be removed. The threads of bolts shall be entirely outside of the holes. The body diameter of bolts shall have tolerances as recommended by ANSI B4.1 for the class of fit specified. Fitted bolts shall be fitted in reamed holes by selective assembly to provide an LN-2 fit.

10.1.1.3 Holes for high strength bolts shall have diameters of not more than 1/16-inch larger than the bolt diameters. If the thickness of the material is not greater than the diameter of the bolts the holes may be punched. If the thickness of the material is greater than the diameter of the bolt, the holes may be drilled full size or subpunched or subdrilled at least 1/8-inch smaller than the diameter of the bolts and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting done during assembly shall not distort the metal or enlarge the holes. For slight mismatching, reaming to a larger diameter of the next standard size bolt will be allowed.

11. SHOP ASSEMBLY. Unless otherwise specified, each unit furnished shall be assembled in the shop to determine the correctness of the fabrication and matching of the component parts. The tolerances shall not exceed those shown on the drawings and each unit assembled shall be closely checked to insure that all necessary clearances have been provided and that binding does not occur in any moving part. Assembly in the shop shall be in the same position as final installation (closed position) in the field unless otherwise specified. Assembly and disassembly work shall be performed in the presence of a Government Inspector, unless waived in writing by the Contracting Officer. Errors or defects disclosed shall be immediately remedied by the Contractor without cost to the Government. Before



disassembly for shipment, each piece of a unit shall be match-marked to facilitate erection in the field. The location of match-marks shall be indicated by circling with a ring of white paint after the shop coat of paint has been applied or as otherwise directed.

## 12. MACHINE WORK.

12.1 General. Unless otherwise shown on the shop drawings, all tolerances, allowances and gages for metal fits between plain, non-threaded, cylindrical parts shall conform to ANSI B4.1 for the class of fit as shown or otherwise required. Where fits are not shown they shall be suitable as approved by the Contracting Officer. All drilled holes bolts shall be accurately located.

12.3 Unfinished Surfaces. So far as practical, all work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining unfinished surfaces, they shall be chipped and ground smooth, or machined, to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the drawings and shall be chipped or ground free of all projections and rough spots. Depressions or holes not affecting the strength or usefulness of the parts shall be filled in a manner approved by the Contracting Officer.

## 13. MISCELLANEOUS PROVISIONS.

### 13.1 Metallic Coatings.

13.1.1 Zinc Coatings. Zinc coatings shall be applied in a manner and of a thickness and quality conforming to ASTM A 123. In all cases where zinc coatings are destroyed by cutting, welding or other causes the affected areas shall be regalvanized by the following methods. Coatings 2 ounces or heavier shall be regalvanized with a suitable low-melting zinc base alloy similar to the recommendations of the American Hot-Dip Galvanizers Association to the thickness and quality specified for the original zinc coating. Coatings less than 2 ounces shall be regalvanized by a repair compound conforming to DOD-P-21035.

13.2 Cleaning of Corrosion-Resisting Steel. After fabrication, oil, paint and other foreign substances shall be removed from corrosion-resisting steel surfaces. Cleaning shall be done by vapor degreasing or by the use of cleaners of the alkaline, emulsion or solvent type. After the surfaces have been cleaned they shall be given a final rinsing with clean water followed by a 24-hour period during which the surfaces are intermittently wet with clean water and then allowed to dry for the purpose of inspecting the clean surfaces. The surfaces shall be visually inspected for evidence of paint, oil, grease, welding slag, heat treatment scale, iron rust or other forms of contamination. If evidence of foreign substance exist, the

surface shall be cleaned in accordance with the applicable provisions of Section 6 of ASTM A 380. The proposed method of treatment shall be furnished for approval. After treatment the surfaces shall be visually reinspected. Brushes used to remove foreign substances shall utilize only stainless steel or nonmetallic bristles. Any contamination occurring subsequent to the initial cleaning shall be removed by one or more of the methods indicated above.

### 13.3 Protection of Finished Work.

13.3.1 Machined Surfaces shall be thoroughly cleaned of foreign matter. All finished surfaces shall be protected by suitable means. Unassembled pins and bolts shall be oiled and wrapped with moisture resistant paper or protected by other approved means. Finished surfaces of ferrous metals to be in bolted contact shall be washed with a rust inhibitor and coated with an approved rust resisting compound for temporary protection during fabrication, shipping and storage periods. Finished surfaces of metals which will be exposed after installation shall be painted as specified in Section 09940, "PAINTING", except that painting of corrosion resisting steel or nonferrous metals will not be permitted unless specifically authorized or specified.

13.3.2.1 Threads on screw jacks and gate latches shall be lubricated with the lubricant specified above and maintained in satisfactory condition until acceptance of the work by the Government.

## 14. INSTALLATION.

14.1 General. All parts to be installed shall be thoroughly cleaned. Packing compounds, rust, dirt, grit and other foreign matter shall be removed. Holes and grooves for lubrication shall be cleaned. Enclosed chambers or passages shall be examined to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected by a representative of the Contracting Officer prior to installation. Disassembly, cleaning and lubrication will not be required except where there is indication that such work is necessary to place the assembly in a clean and properly lubricated condition. Pipe wrenches, cold chisels, or other tools likely to cause damage to the surfaces of rods, nuts or other parts shall not be used for assembling and tightening parts. Bolts and screws shall be tightened firmly and uniformly, but care shall be taken not to overstress the threads. When a half nut is used for the purpose of locking a full nut, the half nut shall be placed first and followed by the full nut. Threads of all bolts, except high strength bolts, nuts and screws shall be lubricated by graphite and oil before assembly. Threads of corrosion-resisting steel bolts and nuts shall be coated with an approved anti-galling compound. Driving and drifting bolts or keys will not be permitted.

14.2 Alignment and Setting. Each unit shall be accurately aligned by the use of steel shims or other approved methods so that no binding in any moving parts or distortion of any member occurs before it is fastened in place. The alignment of all parts with respect to each other shall be true within the respective tolerances required. Units shall be set true to the elevations shown on the drawings.

15. MEASUREMENT AND PAYMENT. Unless otherwise specified herein, any materials or operations used in conjunction with installation or as part of metalwork which is not included in the cost of other items of work listed in the bidding schedule shall not be measured for payment. Payment for miscellaneous metalwork for bridges and floodgates at Veterans Blvd. will be included in the contract lump sum price for "Miscellaneous Metalwork". Price and payment shall constitute full compensation for furnishing and installing all miscellaneous metalwork indicated on the drawings and/or herein specified which is not specified to be paid for under other items of work listed on the bidding schedule.

15.1 Payment for studs welded to sheet piling will be included in the contract unit price per square foot for "Steel Sheet Piling". Payment for metalwork for floodgates near I-10 will be included in the contract lump sum for "Floodwall Gate Near I-10".

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SECTION 05520 - FLOODWALL GATES

PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, shop drawings, equipment, labor and materials for furnishing and installing the floodwall gates and all auxiliary items required for closing, sealing, latching, operating and storing these gates as indicated on the drawings and specified herein.

2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for floodwall gate operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to the following:

- (1) Insure timely submittal of shop drawings.
- (2) Inspection on delivery of fabricated items for damage, defects and conformance with approved shop drawings.
- (3) Installation in conformance with manufacturer's recommendations and/or contract requirements.

2.2 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of the report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. SHOP DRAWINGS. The Contractor shall prepare and submit for approval of the Contracting Officer complete shop drawings and descriptive literature showing details of the swing gates required as indicated herein and on the contract drawings.

PART 2 - PRODUCTS

4. MATERIAL GRADES, TYPES AND CLASSES. Materials for the gates shall be as indicated on the drawings and as follows:

PART	MATERIALS
Channel skin plates, corner protection angles, angles, bars, plates and other structural steel not otherwise indicated or specified	Structural steel as specified in paragraph-4.1.

PART	MATERIALS
Seal plate, and seal retaining bars, for floodwall gates	Corrosion resisting steel as specified in Section 05501
Auxiliary items	As indicated on drawings or specified in Section 05501

4.1 Structural Steel. Structural steel for the gates shall conform to the applicable provisions of ASTM A 36-91a, standard specifications for "Structural Steel", and shall conform to the shapes and sizes indicated on the drawings.

4.2 Gate Seals. Gate seals for the gates shall be made to the shapes, sizes and dimensions shown on the drawings and shall be made from rubber.

4.2.1 The rubber seals shall be molded only and the material shall be compounded of natural rubber or a copolymer of butadiene and styrene, or a blend of both and shall contain reinforcing carbon black, zinc oxide, accelerators, antioxidants, vulcanizing agents and plasticizers. Physical characteristics shall meet the following requirements:

PHYSICAL TEST	TEST VALUE	TEST METHOD SPECIFICATION
Tensile Strength	3000 psi (min)	Fed. Std. 601, Method No. 4111 or - ASTM D412-92
Elongation at Break	450% (min)	Fed. Std. 601, Method No. 4121 or - ASTM D412-92
300% Modulus	900 psi (min)	Fed. Std. 601, Method No. 4131 or - ASTM D412-92
Durometer Hardness Shore type A	60 to 70	Fed. Std. 601, Method No. 3021 or - ASTM D2240-91
Water Absorption	5% by weight (max)	Fed. Std. 601, Method No. 6631 or - ASTM D471-79 (1991)

PHYSICAL TEST	TEST VALUE	TEST METHOD SPECIFICATION
Compression Set	30% (max)	Fed. Std. 601, Method No. 3311 or - ASTM D395-89
Tensile Strength After Oxygen Bombing Agent	80% (min) of tensile strength	Fed. Std. 601, Method No. 7111 or - ASTM D572-88

4.3.2 All joints in seals shall be spliced as specified for non-metallic waterstops in Section 03150.

4.3.3 Manufacturer's Certification. The pedestrian swing gate rubber seals shall be certified for compliance with all specification requirements.

4.4 Auxiliary Items. Auxiliary items shall be as indicated on the drawings and specified in Section 05501.

#### PART 3 - EXECUTION

5. WORKMANSHIP. All metalwork fabrication and machine work shall comply with the applicable provisions of Section 05501. All parts shall be properly fabricated, assembled and installed to conform to the shapes, sizes and dimensions indicated on the contract drawings and approved shop drawings.

6. TRIAL OPERATION AND TEST. After erection and before final acceptance, the gates shall be operated back and forth between the stored position and the latched closed (sealed) position a sufficient number of times to demonstrate to the satisfaction of the Contracting Officer that the gates have been properly installed and adjusted as required by the drawings and specifications. The workmanship and adjustments shall be such that: when unlatched, the gates will move freely; when latched in the stored position, the gates will be securely fastened against movement in any direction and, when latched in the closed position, the gates will be securely fastened against movement in any direction. Any defects disclosed during testing shall be promptly corrected without additional cost to the Government and the tests repeated until the gates have satisfactorily passed the tests. No separate payment will be made for testing and adjusting the gates.

7. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated with floodwall gates, except for the floodwall gate near I-10, will be included in the contract lump sum price for "Miscellaneous Metalwork". Floodwall gates near I-10 shall be

included in the contract lump sum price for "Floodwall Gate Near I-10". Price and payment shall constitute full compensation for furnishing all plant labor, equipment and materials, and performing the work in accordance with details shown on the drawings and these specifications and testing the operation of the floodwall gates.



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SECTION 05831 - ELASTOMERIC BEARING PADS

1. SCOPE. The work covered by this section consists of furnishing all equipment, materials and labor for providing and installing elastomeric bearing pads in accordance with these specifications and the contract drawings.

2. RELATED WORK SPECIFIED ELSEWHERE.

2.1 Prestressed Concrete Bridge Girders. Section 03401, "PRECAST PRESTRESSED CONCRETE BRIDGE GIRDERS".

3. APPLICABLE PUBLICATIONS. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent listed by references thereto.

3.1 Louisiana Standard Specifications for Roads and Bridges (LSSRB) 1992 Edition, State of Louisiana, Department of Transportation and Development (LDOTD) and applicable Supplemental Specifications.

1018.14 Elastomeric Bridge Bearing Pads

4. QUALITY CONTROL.

4.1 Material Certification. The Contractor shall provide material documentation to certify that all bearing materials are in accordance with LSSRB Section 1018.14(a).

4.2 Testing Requirements. The Contractor shall perform material tests and provide results to the Contracting Officer in accordance with LSSRB Section 1018.14(b).

5. FABRICATION. Fabrication of elastomeric bearing pads shall conform to the requirements of LSSRB Sections 1018.14(c) and 1018.14(d).

6. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for the work covered under this section. All costs associated therewith shall be included in the contract lump sum price for "Class A Concrete". Payment shall constitute full compensation for furnishing all plant, labor, equipment and materials, and performing the work in accordance with these specifications.

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SECTION 09940 - PAINTING

PART 1 - GENERAL

1. SCOPE. The work covered by this section of the specifications consists of furnishing all plant, labor, equipment, appliances, and materials and performing all operations in connection with preparation of surfaces and application of paint and other specified materials. This work shall be accomplished in complete and strict accordance with the specifications and the applicable drawings and shall be subject to the terms and conditions of the contract.

2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for painting operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

- (1) Cleaning and preparation of surfaces.
- (2) Paint and formulations.
- (3) Number of coats and rates of applications.
- (4) Protection of painted surfaces.
- (5) Safety and Industrial Hygiene monitoring.

2.2 Reporting. The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of this report shall be as prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

3. APPLICABLE PUBLICATIONS.

3.1 American Conference of Governmental Industrial Hygienists (ACGIH) Publications.

ACGIH-02	1991-1992 Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environmental and Biological Exposure Indices
ACGIH-03	Guidelines to the Selection of Chemical Protective Clothing, Volumes I and II.

3.2 American National Standards Institute (ANSI) Standards.

- Z87.1-79 Occupational and Educational Eye and Face Protection
- Z358.1-81 Emergency Eyewash and Shower Equipment

3.3 American Society for Testing and Materials (ASTM) Publications.

- D 561-82 (1989) Carbon Black Pigment for Paint
- D 740-89 Methyl Ethyl Ketone
- D 770-90 Isopropyl Alcohol
- D 841-90 Nitration Grade Toluene
- D 843-90 Nitration Grade Xylene
- D 1153-90 Methyl Isobutyl Ketone
- D 1186-87 Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base
- D 1200-88 Viscosity by Ford Viscosity Cup
- D 1210-79 (1983) Fineness of Dispersion of Pigment-Vehicle Systems
- D 1400-87 Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Nonferrous Base
- D 2917-91 Methyl Isoamyl Ketone
- D 3721-83 (1991) Synthetic Red Iron Oxide Pigment
- D 4417-84 Field Measurement of Surface Profile of Blast Cleaned Steel
- E 1347-90 Color and Color-Difference Measurement of By Tristimulus (Filter) Colorimetry

3.4 Code of Federal Regulations (CFR).

- 29 Part 1910 Occupational Safety and Health Standards
- 29 Part 1926 Safety and Health Regulations for Construction

3.5 Federal Standards (Fed. Std.).

- No. 313                      Material Safety Data, Transportation Data and  
                                 Disposal Data for Hazardous Materials  
                                 Furnished to Government Activities
- No. 595                      Color Used in Government Procurement

3.6 National Institute for Occupational Safety and Health (NIOSH) Publications.

- Pub. No. 84-100            NIOSH Manual of Analytical Methods
- Pub. No. 87-108            Respirator Decision Logic

3.7 Steel Structures Painting Council Specifications (SSPC).

- SSPC-SP 1                   Solvent Cleaning
- SSPC-SP 5                   White Metal Blast Cleaning

4. SUBMITTALS. The following statements, reports, plans, and samples shall be submitted to the Contracting Officer for approval.

4.1 Safety and Health Statements. The following is a listing of Safety and Health statement submittals required by this contract. Statements shall, as a minimum, include each of the topic areas listed and shall include safety and health provisions as stated in the appropriate paragraphs and may include other criteria as deemed necessary. Each topic shall be developed in a manner to include management and operational aspects.

- (1) Qualifications and Experience Statement.
- (2) Accident Prevention Plan.
- (3) Activity Hazard Analysis Procedures.
- (4) Confined Space Procedures.
- (5) Respiratory Protection Program.
- (6) Material Safety Data Sheet.
- (7) Airborne Sampling Plan.
- (8) Ventilation Assessment.
- (9) Worker Hazard Communication Program.
- (10) Medical Surveillance Program.

4.2 Reports. Results of laboratory conducted airborne sampling shall be submitted within 5 working days after taking samples. Airborne sampling by Direct Reading Instrumentation shall be submitted the same day as taken.

4.3 Samples.

4.3.1 Special Paint Formulas. Two one-quart samples of each batch of special formulation vinyl type paint and thinners not covered by standard specifications shall be labeled and submitted in accordance with paragraph 12.

4.3.2 Ingredients For Special Paint Formulas. Ingredient materials and materials shall be of one-half pint in size and shall be labeled and submitted in accordance with paragraph 12. When the required quantity of any paint is 10 gallons or less, signed certificate from the paint manufacturer showing the percentage of each ingredient used to produce the material and a statement that the material complies with all of the requirements of the formulation will be accepted in lieu of samples.

4.3.3 Paints and Thinners. A 1-quart sample of each batch of Federal and Military Specifications paints and thinners to be used when the required amount of a material of a particular type or color is more than 50 gallons shall be labeled and submitted in accordance with paragraph 12. When the required quantity of any type is 50 gallons or less, he shall supply either of the following:

(1) 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.

(2) 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. He shall also supply a report of tests on the proposed batch showing the following properties applicable to the material specifications: color, gloss, drying time, opacity, viscosity, weight per gallon, and fineness of grind.

4.3.4 Proprietary Brands of Paints. When the required quantity of a particular type or color of a paint covered by a Federal or Military Specification is 10 gallons or less, a proprietary name brand, shelf item paint of the same type and with similar properties to the material specified may be proposed without sampling. To receive consideration, the paint must be in the original container with the manufacturer's label affixed. The Contractor shall submit a statement from the supplier that the paint is appropriate as to type, color, and gloss and is a premium grade of paint.

4.4 Painting Plan. The Contractor shall submit his plan for painting operations, to the Contracting Officer for approval, at the time specified for submittal of the Accident Prevention Program as specified in the General Provision entitled "SAFETY PROVISIONS". The plan shall include whether his painting operations will be done in confined spaces as defined in EM 385-1-1, Section 06.I. When the Contractors plan indicates that no painting will be done in confined spaces, then the applicable requirements for Confined Spaces Procedures, as specified in paragraphs 4.1(4), 6.1.3.(6)(g), 6.1.5, 6.1.8, 6.4.1, 6.7.1.1, 6.7.1.2, 7.1, and 7.2, can be excluded from the Contractors Accident Prevention Plan.

5. QUALIFICATIONS AND EXPERIENCE. The Contractor shall submit for review and acceptance, a written Qualification and Experience statement signed and dated by the Contractor and the "Qualified and Competent Persons" defined in EM 385-1-1, that the Contractor has selected to develop the required safety and health submittal items and who will act as the Contractor's on-site safety and health representative during the contract period. The Qualified and Competent person who is responsible for development and implementation of health related submittal items (i.e., air sampling, confined space program, medical surveillance, hazard communication, ventilation system, etc.) shall be a current practicing qualified Industrial Hygienist with a minimum of 3 years of demonstrated experience in similar related work. Acceptance of this submission must be obtained prior to the submission of other required safety and health submittal items.

#### 6. SAFETY AND HEALTH PROVISIONS.

6.1 General. This section supplements the requirements of Contract Clause "ACCIDENT PREVENTION". The latest issue of U.S. Army Corps of Engineers, EM 385-1-1, "SAFETY AND HEALTH REQUIREMENTS MANUAL", referenced in the Contract Clause entitled "ACCIDENT PREVENTION", is dated October 1992. The Contractor shall comply with the safety and health provisions contained herein in addition to those provisions contained in the Contract Clause entitled "ACCIDENT PREVENTION". These additional provisions are intended to amplify those contained in the aforementioned clause. In any conflict between the "ACCIDENT PREVENTION" clause and this section, the provisions of this section shall govern. The Contractor shall develop all required safety and health plans and procedures consistent with CFR 29 Part 1910; CFR 29 Part 1926, and EM 385-1-1; the Permissible Exposure Limits (PEL's) contained in CFR 29 Part 1910, ACGIH-02, and the provisions of these specifications. The Contractor shall comply with the more stringent PELs contained in either 29 CFR Part 1910, CFR 29 Part 1926, ACGIH-02, EM 385-1-1, or these specifications.

6.1.1 Safety and Health Program and Accident Prevention Plan. The criteria included in EM 385-1-1, Section 1, "PROGRAM MANAGEMENT", shall be followed by the Contractor when preparing



his Accident Prevention Plan. The plan, at a minimum, shall include each of the topic areas listed below but may include other safety and health criteria as deemed necessary. Each topic shall be developed in a concise manner to include management and operational aspects.

6.1.2 Administrative Requirements.

(1) Administrative responsibilities for effecting the Accident Prevention Plan (i.e. identification and accountability of Contractor personnel responsible for accident prevention).

(2) Local requirements, if any, which must be complied with (i.e. noise control, traffic problems, parking and other similar items).

(3) Methods proposed to control and coordinate the work of Subcontractors, including list of Subcontractors.

(4) Plans for layout and use of temporary construction buildings, facilities and equipment including how the Contractor plans to control those of Subcontractors.

(5) Plans for initial indoctrination, continued safety education, and training for the Contractor's and Subcontractor's employees.

6.1.3 Safety Indoctrination Plan. The Safety Indoctrination Plan shall include, but may not be limited to, the following:

(1) General policy and pertinent provisions of EM 385-1-1, the Contractor's Accident Prevention Plan, and Activity Hazard analyses.

(2) General safety and occupational health rules.

(3) Responsibilities and authorities of employees during the contract including accident reporting, protection of property and safety of others.

(4) Procedure for reporting and correcting unsafe conditions or practices.

(5) Identification of specific hazards of the tasks (assignments) employees are to perform and the administrative (standard operating procedures), engineering and personal protective controls to mitigate those hazards.

(6) Procedures and schedules of safety meetings for indoctrination and training of supervisors and employees. Requirements for employee indoctrination and continued training by project safety officer shall include the following:

(a) Training of Contractor's employees for compliance to the Contractor Activity Hazard Analyses of the Accident Prevention Plan.

(b) Material handling.

(c) Heavy equipment.

(d) Electrical (including temporary electrical)

(e) Safe clearance procedures.

(f) Fire and explosion protection and prevention.

(g) Confined space standard operating procedures.

(h) Respiratory protection equipment (selection, fit, use, inspection, maintenance, storage, training, and other criteria in accordance with EM 385-1-1).

(i) Hazard communication for employees to include identification of potential hazards, effects of exposure and control measures to be used for chemical products and physical agents that may be encountered during the performance of work on this contract, and other criteria in accordance with CFR 29 Part 1910, Section 1200 and CFR 29 Part 1926, Section 59.

(j) Training in the use and understanding of material safety data sheets and chemical product hazard warning labels.

(k) Selection, use, inspection, maintenance, and storage of personal protective clothing and equipment.

(l) Communication methods and systems to be used (i.e., voice, hand signals, radios or other means).

(m) Safe work procedures on or around water areas (water safety).

(n) Personal hygiene (washing and cleaning facilities, sanitation, eating, smoking and drinking requirements).

(o) Training in types, use of, and safety features of portable and fixed mechanical supply and exhaust ventilation systems.

(p) Hearing protection.

(q) Training in Contractor substance abuse control.

(r) Medical surveillance.

(s) Emergency Medical and first aid requirements per EM 385-1-1.

(t) Fire fighting and other emergency plans and procedures.

(u) Emergency equipment and supplies (i.e. emergency eyewash/shower and absorbent media for cleaning up spills and other equipment and supplies).

(6) Procedures for continuous housekeeping cleanup, and safe access and egress at the job site.

(7) Plans for emergency procedures (i.e. ambulance service, fire protection, water-related accidents and other site specific emergencies that could occur).

(8) Procedures for job site safety inspection, industrial hygiene, and worker and environmental monitoring of hazardous chemical and physical agents.

(9) Record keeping procedures. Detailed description of methods and procedures proposed for collecting and maintaining required records.

(10) Procedures for accident investigations and reporting (See EM 385-1-1).

(11) Description and sketch of temporary power distribution system.

(12) Procedures and details of fall protection systems.

(13) Description of safe clearance procedures.

6.1.4 Activity Hazard Analysis Procedures. The Contractor shall develop Activities Hazard Analysis Procedures as part of the Accident Prevention Plan. The procedures shall define how the Contractor will implement the Activity Hazard Analysis in accordance with the criteria in EM 385-1-1 as further described below:

(1) In accordance with the requirements of EM 385-1-1, the Contractor shall, prior to the beginning of each major phase of work, prepare an Activity Hazard Analysis for that work phase. This analysis shall address the hazards for each activity to be performed in that work phase and shall detail procedures and safeguards necessary to eliminate the hazards or reduce the risks to an acceptable level.

(2) The Contractor shall develop this Analysis to identify the sequence of work, the specific safety and health hazards anticipated, and the control measures to be implemented to

minimize or eliminate each hazard. The Activity Hazard Analysis shall be job specific and shall address the following major points:

- phase).
- (a) Activity being performed (i.e. identify major phase).
  - (b) Sequence of work.
  - (c) Hazards to be controlled.
  - (d) Control measure(s) to mitigate the hazards.

(3) A work phase in the analysis is defined as a major operation involving a type of work which presents hazards that must be abated or controlled and which has not been experienced in previous operations, or when a new Subcontractor or work crew is to perform work.

(4) The analysis for each major work phase will be discussed by the Contractor and Construction Officer's representative. Work shall not proceed on that phase until the Contractor's Activity Hazards Analysis Procedures has been approved by the Contracting Officer representative.

6.1.5 Confined Space Procedures. Confined space procedures are specified in EM 385-1-1, and CFR 29 Part 1910. The Contractor shall develop detailed written standard operating procedures for confined space monitoring, training, entry, work and emergency actions in accordance with CFR 29 Part 1910, EM 385-1-1, and as further described in this paragraph. The procedures shall include the items listed below as minimum and may consider additional factors as identified by the Contractor.

(1) Equipment and procedures to be used for testing the air in confined spaces prior to entry and during work, to determine oxygen content and to detect combustible and toxic atmospheres. Equipment approvals for use in Immediately Dangerous to Life or Health (IDLH) environments (example, Factory Mutual, Underwriters Laboratory), certificates of calibration, which include type of equipment, model number, date of calibration, firm conducting calibration, and signature of individual certifying calibration.

(2) Detailed emergency procedures for each type of confined work space including appropriate methods of communication (i.e., visual, voice, hand signal, radio or other method) and escape or rescue methods. Communication procedures must be established for personnel working in high noise environments or toxic atmospheres to ensure that such workers do not void the effectiveness of personal protective equipment in order to communicate with others.

(3) A decision-tree diagram identifying the individual(s) by name, their qualifications and detailing their responsibilities for administering the Contractors Confined Space Program to include issuance of confined space permits, confined space monitoring, communication and stand-by responsibilities.

(4) A detailed discussion of the confined space permit system to be used. Provide a copy of the permit which will be utilized with instructions for completion and issuance.

(5) Detail of the procedures to be utilized for conducting simulated drills prior to initiating work in confined spaces to ensure that the emergency procedures developed are feasible. For example, entrance and exit openings to the confined space must be large enough for a rescue worker wearing a Self-Contained Breathing Apparatus (SCBA) to get himself and the victim out.

(6) Safe Entry Procedures under emergency conditions.

(7) Full description of how stand-by personnel will be trained and used for all confined space operations.

(8) Methods of Inspection of personal protective equipment prior to use in confined space.

(9) Work practices and other engineering controls designed to reduce airborne hazardous chemicals exposures to a minimum.

(10) Specification of the design and installation of ventilation systems for confined work spaces to ensure adequate oxygen content and provide for the dilution of paint solvent vapor and lead and other toxic particulates within the confined space. Describe how the Contractor plans to use ventilation smoke tube kits (Mine Safety Appliance (MSA) of Pittsburg, PA Part No. 458481 or equal) to evaluate the adequacy of air flow patterns in all parts of the confined space.

(11) Full description of how all affected workers will be trained in confined space emergency procedures including space entry (i.e. oxygen deficiency and enrichment, and combustible and toxic gases and vapors); methods of evaluating confined space environment (i.e., use of oxygen meters, combustible gas meters, detector tubes, and any other chemical or physical agent sampling detecting devices to be used); entry procedures; isolation and lockout; air monitoring; work in confined space; standby personnel; respiratory protection procedures; communication procedures; safety equipment; smoking policy; use of entry permits and appropriate escape or rescue procedures. Smoking or other ignited materials shall be prohibited in all areas where explosive or combustible gasses and/or materials are present.

6.1.6 Respiratory Protection Program. As part of the Accident Prevention Plan, the Contractor shall develop a comprehensive written respiratory protection program in accordance with CFR 29 Part 1910, Section 134, EM 385-1-1, and consistent with the guidance contained in NIOSH Publication No. 87-108. The program shall define policies and procedures for the selection, fit-testing, use, training, maintenance, cleaning, storage, recordkeeping, and medical requirements for users. The program shall include a listing of the type of respirators to be worn and their National Institute for Occupational Safety and Health and/or Mine Safety and Health Administration (NIOSH/MSHA) approval statements and numbers. The Contractor shall state how employees will be informed that facial hair cannot interfere with the sealing surface or valve function or respirators required to be worn.

6.1.7 Material Safety Data Sheets. The Contractor shall fully detail procedures for obtaining and providing Material Safety Data Sheets (MSDS,s) for hazardous materials that will be brought onto, used, and consumed on the job-site. For the purpose of the Contract, hazardous materials are those described by Federal Standard 313, CFR 29 Part 1910, Section 1200, and CFR 29 Part 1926, Section 59, MSDS's for hazardous materials furnished by the Government are appended to this Contract document. MSDS's for Contractor furnished hazardous materials must be obtained from the product manufacturer, importer, distributor, or supplier and a copy shall be provided to the Government's on-site representative prior to use.

6.1.8 Airborne Sampling Plan. The Contractor shall develop and submit an air sampling plan as part of the Accident Prevention Plan detailing the NIOSH, Factory Mutual, or Underwriters Laboratories approved equipment, equipment calibration procedures, sampling methods and analytical procedures to be used based on the type of work to be performed, confined space air monitoring procedures required in accordance with paragraph 6.1.5 and anticipated toxic contaminants to be generated. The Contractor shall review the constituents of the paint systems, thinners, cleaners and abrasive media as well as confined spaces to be entered to determine the scope of the sampling and analysis using the NIOSH Manual of Analytical Methods. The Contractor shall submit the name of the Laboratory to be used to conduct the analysis of any collected air samples. The laboratory shall be accredited by American Industrial Hygiene Association (AIHA) as described in paragraph 6.7.1.2. The Plan shall note procedures to provide detail of how the Contractor will provide to the Contracting Officer Representative the laboratory conducted analysis of air sampling within 5 working days of the sample date and the results from direct-reading instrumentation on the same day the samples were collected.

6.1.9 Ventilation Assessment. The Contractor shall submit for acceptance the method to be used to provide ventilation assessment required by paragraph 6.7.1.1.

6.1.10 Worker Hazard Communication Program. The Contractor shall submit a worker hazard communication program for his employees consistent with CFR 29 Part 1910, Section 1200, and CFR 29 Part 1926, Section 59, and state and local worker "right-to-know" rules and regulations. The program shall detail how the Contractor's employees will be informed of the constituents of the paint systems, thinners, solvent cleaners, abrasive blasting media, and other materials used, as well as their potential hazards and toxic effects; how they will be informed of control measures that may be taken to prevent or minimize exposure; how they will also be informed of any exposure hazards associated with removal of surface coating materials. This submittal shall show how the hazardous materials to be used or generated during work operations are to be identified, and how employees will be informed of the hazards prior to beginning the work tasks. In addition, the program shall detail how the Contractor will ensure, prior to usage, that all Government and Contractor furnished containers of paints, thinners or other hazardous materials are labeled in accordance with the requirements CFR 29 Part 1910, Section 1200, and CFR 29 Part 1926, Section 59. The program shall describe procedures to ensure that workers will not open any chemical product containers which are improperly labeled and how the Government's on-site representative will be informed of any chemical product containers furnished by the Government that are improperly labeled. The program shall also detail the requirements for labeling a product after it has been transferred from a labeled shipping container to a secondary container to ensure that information required by the OSHA Hazard Communication standard is placed on the secondary container.

6.1.11 Medical Surveillance. The Contractor shall describe how he will provide medical surveillance to his workforce as required in paragraph 8, and provide a statement from the examining physician indicating the name of each employee who has been medically evaluated as described in paragraph 8 and cleared to perform the work required by the Contractor. The statement shall detail any physical limitations, the employee's physical and psychological capability to wear respiratory protective and other personal protective equipment and perform job related tasks, and bear the date of the medical evaluation, the physicians name, signature and telephone number.

## 6.2 Abrasive Blasting.

6.2.1 Hoses and Nozzles. 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. A deadman type control device shall be provided at the nozzle end of the blasting hose to cut off the flow in the event the blaster loses control of the hose.

6.2.2 Blasting Helmets. Blasting operators shall be protected by MSHA/NIOSH approved air-line fed abrasive blasting helmets of a continuous flow, positive pressure type. Breathing air, source of supply and other respirator criteria shall conform to the requirements of CFR 29 Part 1910, CFR 29 Part 1926, and EM 385-1- 1.

6.2.3 Protective Clothing. Blasting operators shall be protected against injury from impact of blast abrasives by wearing appropriate protective equipment, including heavy canvas or leather gloves and aprons or equivalent protection. Safety shoes or boots shall be worn. Hearing protectors shall be worn during all blasting operations.

6.2.4 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 Standard Z87.1 and hearing protectors (ear plugs and/or ear muffs). Representative air sampling, in the breathing zone of the worker, shall be obtained prior to permanent issuance of any respiratory protection to assure that the protection factor of the respirator is not exceeded. The frequency of air sampling may be reduced if non-silica containing abrasive blasting material (1% free silica content or less) is used and when it has been determined by bulk sampling and chemical analysis that the surface coating to be removed will not generate toxic airborne particulates (e.g. lead, cadmium, or chromates). Information regarding chemical composition of primers and surface coatings to be removed and abrasive blasting media shall be fully considered when developing criteria required in paragraph 6.1.8.

6.3 Cleaning With Compressed Air. As required in EM 385-1-1, cleaning with compressed air is prohibited, except where the pressure has been reduced to less than 30 psi (pounds per square inch) or the air hose is equipped with a pressure reducing valve. Persons using high pressure compressed air for blow down after abrasive blasting operations shall be protected by the same equipment required for abrasive blasters in paragraph 6.2.2 and paragraph 6.2.3 above.

#### 6.4 Cleaning With Solvents.

6.4.1 Ventilation and Respiratory Protection. Ventilation shall be provided in confined or enclosed spaces where solvents are used for cleaning to remove solvent vapors at the source and to dilute their concentration to no greater than 10% of the Lower



Explosive Limit (L.E.L). Exhaust ducts shall discharge clear of the working areas and possible sources of ignition. Persons conducting solvent cleaning in confined or enclosed spaces shall wear MSHA/NIOSH approved SCBA with a full face piece operated in a pressure demand or other positive pressure mode or supplied Air Respirators (SAR) (airline type) with full facepiece operated in pressure demand or other positive pressure mode in combination with an auxiliary SCBA (emergency escape bottle), operated in pressure demand or other positive pressure mode. Auxiliary SCBA must be of sufficient duration to permit escape to safety if the air supply is interrupted. Representative air monitoring in accordance with the Contractor's air-monitoring plan shall be conducted to determine hazardous atmospheres. Contractor confined space procedures shall be implemented prior to confined or enclosed space solvent cleaning operations. Where cleaning activities using solvents are being carried out in areas that the Contractor's on-site safety and health representative has determined are NOT confined or enclosed spaces, persons conducting such cleaning shall wear as a minimum, MSHA/NIOSH approved chemical cartridge/canister half or full face piece air-purifying/respirators that has sorbent suitable for the chemical properties of the anticipated gas/vapor contaminants and for the anticipated exposure levels. Whenever high airborne concentration of particulates are anticipated or encountered during cleaning with solvents, approved air-purifying chemical cartridge/canister respirators that have a particulate prefilter suitable for the specific types of gas/vapor and particulate contaminants and for the exposure concentration shall be worn. Air monitoring shall be conducted in the breathing zone of the worker to determine specific solvent vapor concentrations prior to the permanent issuance of respiratory equipment to assure that the Assigned Protection Factor (APF) of the respirator is not exceeded. APF is defined as the anticipated workplace level of respiratory protection provided by a properly functioning respirator or class or respirators to a percentage of properly fitted and trained users. The maximum specified use concentration for a respirator shall be determined by multiplying the permissible exposure limit for the contaminant by the protection factor assigned to a class of respirators. (Refer to the NIOSH-Pub No. 87-108, Respirator Decision Logic, for guidance).

6.4.2 Protective Clothing. Exposure of skin and eyes to solvents shall be avoided by utilization of appropriate chemical resistant gloves, apron, clothing (if applicable), safety goggles and face shield. Guidance regarding selection of appropriate clothing may be obtained by consulting the ACGIH-03.

#### 6.5 Pretreatment of Metals and Concrete With Acids.

6.5.1 Personal Protective Equipment. Exposure of skin and eyes to acids shall be avoided by wearing appropriate acid resistant gloves, apron, clothing (if applicable), approved safety goggles and face shields.

6.5.2 Emergency Equipment. The following requirement for the acid pretreatment operation is in addition to that required by EM 385 1-1. In accordance with ANSI Z 358.1, an emergency eye wash which provides at least 15 minutes of continuous clean water flow, and a deluge shower shall be provided for the acid pretreatment operation.

6.6 Reserved.

6.7 Paint Application.

6.7.1 Fire and Explosion Prevention.

6.7.1.1 Ventilation. A ventilation assessment shall be conducted for enclosed and confined spaces prior to initiating activities to ensure that an adequate amount of makeup air will be provided. All areas of these spaces shall be swept by moving air. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. When using solvent based paints in enclosed and confined spaces, ventilation shall be provided to exchange air in the space at a rate of 5000 cubic feet per minute per spray gun in operation. Except for a zone within 5 feet in any direction from an operating spray nozzle, the concentration of volatile material at any location in the confined or enclosed space shall not exceed 10% of the L.E.L. This may be accomplished by increasing the volume of air exhausted and by carefully selecting the exhaust and supply fan locations. Requirements for electrical equipment are found in paragraph 6.7.1.3. 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% of the L.E.L. (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 which signals system failure shall be an integral part of the ventilation system. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

6.7.1.2 Atmospheric Testing. The Contractor shall implement the Airborne Sampling Plan required by paragraph 6.1.8. Representative air samples shall be collected to determine if toxic contaminants are being generated in concentrations that may be harmful to workers. The Contractor shall utilize NIOSH approved sampling and analytical methods as described in the NIOSH-Pub No. 84-100. Laboratories utilized to analyze samples

shall be AIHA accredited and shall have demonstrated proficiency in the analysis to be performed as evidenced by successful passing participation in the joint NIOSH/AIHA Analytical Testing Proficiency Program (PAT). A listing of AIHA approved laboratories and PAT participants may be obtained by calling AIHA in Fairfax, Virginia at (703) 849-8888. Confined spaces shall be tested prior to and continuously during painting operations, to determine the effectiveness of the ventilation system. Intrinsically safe oxygen, combustible gas and other monitoring instruments to be used in confined spaces, certified by FM and/or Underwriters Laboratories for use in Class 1, Division 1, Group A, B, C and D hazardous areas, shall be used to determine if adequate levels of oxygen and safe concentrations of combustibles or toxic contaminants exist. A minimum level of 19.5% oxygen and a maximum concentration of 10% of the L.E.L for combustible materials are mandatory requirements for safe work in these spaces, except for the zone within 5 feet in any direction from an operating spray nozzle. Periodic testing shall also be conducted in confined space areas adjacent to the area where spray painting is occurring and in areas where the air is being exhausted from the confined space to ensure safe concentrations of oxygen, combustibles and toxic contaminants are maintained. All air monitoring equipment shall be calibrated prior to each use and rechecked after each use. The oxygen and combustible gas meter(s) shall be equipped with an audible alarm which signals unsafe levels of oxygen and/or combustibles gases.

6.7.1.3 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 National Electrical Code. 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 2, 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.

6.7.1.4 Further Precautions. Workers shall wear non-sparking safety shoes. Solvent drums taken into the spraying area shall be placed on non-ferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred. 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 should be further inspected to ensure that no

connections are within fifty (50) feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

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

## 7. HEALTH PROTECTION.

7.1 Respirators. Contractor shall implement the Respirator Protection Program developed in paragraph 6.1.6. During all spray painting operations, spray painters shall use approved SCBA or SAR (airline) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air purifying respirator protection factors. All respiratory equipment shall be selected and used in accordance with EM 385-1-1, CFR 29 Part 1910.134 and consistent with the guidance contained in the NIOSH-Pub No. 87-108. During all confined space spray painting operations, only MSHA/NIOSH approved SCBA with half face or full face piece operated in pressure demand or other positive pressure mode or a SAR (airline) with a half or full face piece or painters helmet, hood or suit operated in pressure demand or other positive pressure mode in combination with an auxiliary SCBA (emergency escape bottle) operated in pressure demand, or other positive pressure mode shall be used. Auxiliary SCBA must be of such duration to permit escape to safety if air supply is interrupted. All employees who wear air-purifying type respirators shall be quantitatively or qualitatively fit-tested, using NIOSH approved procedures, for the specific type air-purifying respirators they will wear. 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 respirator protection. Air purifying chemical cartridge/canister half or full face piece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for non-confined space painting, mixing, and cleaning (using solvents), 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 non-confined spaces, air purifying half face and full face piece respirators or powered air purifying respirators, equipped with appropriate gas vapor cartridges in combination with a high efficiency filter or an appropriate canister incorporating a high efficiency filter shall be used. Stand-by personnel used for all confined space operations shall be

equipped with SCBA with a minimum breathing air supply of 30 minutes. Individuals selected to act as stand-by personnel shall be medically evaluated to ensure that they are physically and psychologically able to perform rescue duties while wearing a SCBA. In addition, they shall be thoroughly trained in confined space monitoring techniques, communications to be used, and emergency rescue techniques. Communications (i.e. visual, voice, signal line, radio or other means) shall be maintained between workers inside confined space and outside stand-by personnel at all times.

7.2 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 utilized during confined space work.

## 8. MEDICAL STATUS.

8.1 Medical Evaluation. 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. The evaluation shall include:

(1) Audiometric testing and evaluation of employees who will work in the noise environments.

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

(3) Medical evaluation shall include but shall not be limited to the following:

(a) 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.

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

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

(d) 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 phosphatase,

bilirubin; Complete urinalysis; EKG (employees over age forty); Blood urea nitrogen (bun); Serum creatinine; Pulmonary function test, FVC and FEV; Chest x-ray (if medically indicated); blood lead (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.

8.2 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 8.1 prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physician's reevaluation statement.

9. DELIVERY, STORAGE, AND HANDLING. Paints shall be so processed and packaged as 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 five gallons in size, with removable friction or lug-type covers. Containers for vinyl-type paints shall be lined with a coating resistant to the solvents in the formulations and capable of effectively isolating the paint from contact with the metal container. Each container of paint or separately packaged component thereof shall be clearly and durably labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification, and the designated name, 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

10. SPECIAL PAINT FORMULAS. The ingredient materials described in this paragraph are applicable only to special paint formulations not covered by standard specifications specified hereinafter and not to those finished-product coatings governed by Federal or other standard specifications.

10.1 General. Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packed in separate containers for mixing on the job.

10.2 Colors and Tints. Colors shall conform to the listed chip of Fed. Std. 595. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

10.3 Paint Formulations.

10.3.1 Formula V-766e:

<u>Ingredients</u>	<u>Percent by Weight</u>
Vinyl Resin, Type 3	5.6
Vinyl Resin, Type 4	11.6
Titanium Dioxide and (for Gray)	
Carbon Black	13.0
Diisodecyl Phthalate	2.9
Methyl Isobutyl Ketone	32.0
Toluene	34.7
Ortho-Phosphoric Acid	.2
	<hr/>
	100.0

10.3.1.1 Processing. The dispersion of pigment in this paint shall be accomplished by means of pebble mills or other approved methods to produce a fineness of grind (ASTM D 1210) of not less than 7 on the Hegman scale. Grinding of this formulation in steel-lined or steel-ball mills will not be permitted. No grinding aids, antissettling agents, or any other materials except those shown in the formula will be permitted. The paint shall show the proper proportions of specified materials when analyzed by chromatographic and/or spectrophotometric methods. The ortho-phosphoric acid shall be measured with great care and diluted with at least four parts of ketone to one part of acid. It shall be slowly incorporated into the finished paint with constant and thorough agitation.

10.3.1.2 Viscosity. The viscosity of this paint shall be between 60 and 90 seconds using a No. 4 Ford cup (ASTM D 1200).

10.3.1.3 Adhesion Test. This paint is subject to the adhesion test for vinyl paint outlined in paragraph 12.2.2.

10.3.1.4 Colors. The white and gray paints shall be furnished in the volume ratio designated by the purchaser. The gray paint shall contain no pigments other than those specified. Enough carbon black shall be included to result in the dry paint film having a reflectance of 20-24 (ASTM E 1347). The resulting gray color shall approximate but not necessarily match color 26231 of Fed. Std. 595.

10.3.1.5 Samples. Except for batches of 10 gallons or less, samples of this paint submitted for approval shall include separate samples of all ingredient materials.

11. INGREDIENTS FOR SPECIAL PAINT FORMULAS. The following ingredient materials and thinners apply only to those paints whose formulations are shown above in detail.

11.1 Pigments and Suspending Agents.

11.1.1 Carbon Black. Carbon black shall conform to ASTM D 561, Type I or II.

11.1.2 Titanium Dioxide. The titanium dioxide in vinyl paint Formula V-766e shall be one of the following: Kronos 2160 or 2101, Kronos, Inc.; Ti-Pure 960, E. I. DuPont DeNemours and Co., Inc.; Unitane OR-650, Kermira Inc.

11.2 Resins, Plasticizer, and Catalyst.

11.2.1 Diisodecyl Phthalate shall have a purity of not less than 99.0 percent, shall contain not more than 0.1 percent water and shall have an acid number (ASTM D 1045) of not more than 0.10.

11.2.2 Vinyl Resin, Type 3. Vinyl resin, Type 3, shall be vinyl chloride-acetate copolymer of medium average molecular weight produced by a solution polymerization process and shall contain 85 to 88 percent vinyl chloride and 12 to 15 percent vinyl acetate by weight. The resin shall have film-forming properties and shall, in the specified formulations, produce results equal to "Vinylite" resin VYHH, as manufactured by the Union Carbide Corporation.

11.2.3 Vinyl Resin, Type 4. Vinyl resin, Type 4, shall be a copolymer of the vinyl chloride-acetate type produced by a solution polymerization process, shall contain (by weight) one percent inter-polymerized dibasic acid, 84 to 87 percent vinyl chloride, and 12 to 15 percent vinyl acetate. The resin shall have film-forming properties and shall, in the specified formulations, produce results equal to "Vinylite" resin VMCH, as manufactured by the Union Carbide Corporation.

11.2.4 Ortho-phosphoric Acid shall be a chemically pure 85 percent grade.

11.3 Solvents and Thinners.

11.3.1 Isopropyl alcohol shall conform ASTM D 770.

11.3.2 Methyl Isobutyl Ketone (MIBK) shall conform to ASTM D 1153.

11.3.4 Methyl Ethyl Ketone (MEK) shall conform to ASTM D 740.

11.3.5 Methyl Isoamyl Ketone (MIAK) shall conform to ASTM D 2917.



11.3.6 Toluene shall conform to ASTM D 841.

11.3.7 Xylene shall conform to ASTM D 843.

## 12. SAMPLING AND TESTING.

12.1 General. Batches of paint that the Contractor proposes to use shall be stored in an approved shelter on the project site or segregated at the source of supply sufficiently in advance of need to allow 30 days for sampling and testing. The Contractor shall notify the Contracting Officer when the paint is available for sampling. Sampling of each batch will be witnessed by a representative of the Contracting Officer unless otherwise specified or directed. Samples of paint submitted for approval shall be clearly labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Where specifically indicated herein or where indicated in a standard specification for a finished product, separate samples of ingredient materials shall be furnished. The ingredient samples shall be clearly identified by commercial name, trade designation, manufacturer, batch or lot number, and such other data as may be required. Testing of paint for compliance with the specifications will be performed at the U.S. Army Construction Engineering Research Laboratory at Interstate Research Park, 2902 Newmark Drive, P.O. Box 4005, Champaign, IL 61820, Attn: Paint Laboratory, at no expense to the Contractor except that the cost of testing any sample representing material that replaces previously rejected material will be deducted from payments to the Contractor at the rate of \$300.00 dollars for each replacement sample.

### 12.2 Paint Formulations Not Covered by Standard Specifications.

12.2.1 Solvents in vinyl and thinners are subject to analysis by programmed temperature gas chromatographic methods and/or spectrophotometric methods, employing the same techniques which give reproducible results on prepared control samples known to meet the specifications. If the solvent being analyzed is of the type consisting primarily of a single chemical compound (or a mixture of two or more such solvents) interpretation of the test results shall take cognizance of the degree of purity of the individual solvents as commercially produced for the paint industry.

12.2.2 Adhesion Test. Vinyl paints shall be subject to the following adhesion test. A total thickness of 5-7 mils (dry) shall be spray applied to mild steel panels. The steel panels shall be essentially free of oil or other contaminants that may interfere with coating adhesion. The test panels shall be dry blast cleaned to a White Metal grade which shall be in compliance with SSPC SP 5. The surface shall have an angular profile of 2.0 - 2.5 mils as measured by ASTM D 4417, Method C. In all cases,

the complete system shall have a total dry film thickness of 5-7 mils above the blast profile. After being air dried for two hours at room temperature, the panel shall be dried in a vertical position for 16 hours at 120 degrees F (°F). After cooling for one hour, the panel shall be immersed in tap water at 85-90 °F for 48-72 hours. Immediately upon removal, the panel shall be dried with soft cloth and examined for adhesion as follows: With a pocket knife or other suitable instrument, two parallel cuts at least one-inch long shall be made 1/4-inch to 3/8-inch apart through the paint film to the steel surface. A third cut shall be made perpendicular to and passing through the ends of the first two. With the tip of the knife blade, the film shall be loosened from the panel from the third cut between the parallel cuts for a distance of 1/8-inch to 1/4-inch. With the panel being held horizontally, the free end of the paint film shall be grasped between the thumb and forefinger and pulled vertically in an attempt to remove the film as a strip from between the first two cuts. The strip of paint film shall be removed at a rate of approximately 1/10- inch per second, and shall be maintained in a vertical position during the process of removal. The adhesion is acceptable if the strip of paint breaks (cannot be removed) when pulled or if the strip elongates a minimum of 10 percent during its removal. Paints not intended to be self-priming shall exhibit no delamination from the primer.

### PART 3 - EXECUTION

#### 13. CLEANING AND PREPARATION OF SURFACES TO BE PAINTED.

13.1 General. Surfaces to be painted shall be clean before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC-SP1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low-toxicity solvents having a flashpoint above 100°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.

13.2 Ferrous surfaces subject to extended periods of immersion or otherwise as required 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. Blast cleaning to SSPC SP5 shall be done in the field and, unless otherwise specifically authorized, after final erection. Within eight hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP5 shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blowdown with clean, dry compressed air, and given the first coat of paint. All abrasives used in sandblasting operations shall contain less than 1% silica, unless otherwise approved in writing by the Contracting Officer. The surfaces if shop blasted, shall be shop coated with the first and second coats of the specified paint system as specified in the paint system instructions. The shop coating shall be maintained in good condition by cleaning and touching up in areas damaged during the construction period. Appearance of pinpoint or general rusting prior to application of field coats will be considered as evidence of poor workmanship, requiring reblasting and repainting 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 such a manner as to make them equivalent to adjacent, undamaged paint surfaces.

#### 14. PAINT APPLICATION.

14.1 General. The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until a Government representative has verified that atmospheric conditions and the surfaces to be coated are satisfactory or has waived specific verification. All paint coats shall be applied in such manner as to produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, 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 gages, 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 shall 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.

14.2 Mixing and Thinning. Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in such a manner as to produce a smooth, homogeneous mixture, free of lumps and dry particles. Where necessary, in the opinion of the Government inspector, to suit conditions of surface, temperature, weather, and method of application, the packaged paint may be thinned immediately prior to use by the addition of not more than one pint per gallon of the proper thinner, provided that 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°F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60°F during the application. Paint that has deteriorated in any manner to such 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 one year old shall be sampled and submitted for testing to determine its suitability for application.

14.3 Atmospheric and Surface Conditions. Paints 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. In no case shall any paint 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°F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32°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 above 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.

14.4 Time Between Surface Preparation and Painting. Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed prior to any deterioration of the prepared surface.

14.5 Method of Paint Application. Unless otherwise specified, paint shall be applied by brush or spray to ferrous and nonferrous metal surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer. Whenever application of paint by a specific method to a surface is permitted or directed, it is to be understood that all areas inaccessible to that method shall be coated by alternate means.

14.6 Coverage and Film Thickness. The actual surface area covered per gallon of paint shall not exceed the spreading rates prescribed for specific paints. 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.

14.6.1 Measurements on Ferrous Metal. Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with one of the thickness gages listed below. 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). The instruments shall be calibrated in the thickness range expected to be encountered and the range of accuracy determined. If thickness readings are encountered outside of the calibrated range, the instrument shall be recalibrated and measurements retaken. The instruments shall be calibrated or calibration verified prior to, during and after each use. Authorized thickness gages:

Mikrotest, Elektro-Physik, Inc.  
Inspector Gage, Elcometer Instruments, Ltd.  
Positest, Defelsko Corporation  
General Electric, Type B, General Electric Company  
Minitector, Elcometer Instruments, Ltd.  
Positector 2000, Defelsko Corporation

14.7 Progress of Painting Work. Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the

finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, 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.

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

14.9 Drying Time Prior to Immersion. Painted surfaces that are to be immersed in water shall be permitted a final drying time as long as practicable; but in any event, the following minimum requirements shall be met. Vinyl-type paint systems shall not be immersed until the final coat has dried at least three days. Minimum drying periods may be required to be increased up to twofold if the drying temperature is below 65°F and/or if the immersion exposure involves considerable abrasion.

14.10 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 such manner and location as 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 specified first overall field coat of paint shall be applied within a reasonable period after the shop coat before weathering of the shop coat becomes extensive.

14.11 Special Directions for Mixing and Applying Vinyl Paints. Vinyl paints shall be spray applied, except that areas inaccessible to spraying shall be brushed. All of the vinyl paints require thinning for spray application. Selection of thinners for all vinyl paints shall be in accordance with Table I.

TABLE I

Approximate Ambient Air Temperature (°F)

<u>Below 50</u>	<u>50 - 70</u>	<u>Above 70</u>
MEK	MIBK	MIAK

The amount of thinner shall be varied to suit the specific paint and prevailing temperature and wind conditions, and shall at all times be sufficient to provide a wet spray and avoid deposition of particles that are semi-dry when they strike the surface. Vinyl paints shall not be applied when the temperature of the ambient air receiving surfaces is less than 35°F nor when the receiving surfaces are higher than 125°F. Each spray coat of vinyl paint contemplated by these specifications shall consist of a preliminary, extra spray pass on edges, corners, interior angles, pits, seams, crevices, junctions of joining members, rivets, weld lines and similar surface irregularities followed by an overall double spray coat. A double spray coat of vinyl type paint shall consist of applying paint to a working area of not less than several hundred square feet in a single, half-lapped pass, followed after drying to at least a near tack-free condition by another spray pass applied at the same coverage rate and where practicable at right angles to the first. Rivets, bolts and similar surface projections shall receive sprayed paint from every direction in order to ensure complete coverage of all faces. Pits, cracks, and crevices shall be filled with paint insofar as practicable, but in any event, all pit surfaces shall be thoroughly covered and all cracks and crevices shall be sealed off against the entrance of moisture. Fluid and atomization pressures shall be kept as low as practicable consistent with good spraying results. Unless otherwise specified, not more than 2.0 mils, average dry film thickness of vinyl paint shall be applied per double spray coat. Except where otherwise indicated, an undercoat of the vinyl type paint may receive the next coat any time after the undercoat is tack-free and firm to the touch provided that no speedup or delay in the recoating schedule shall cause film defects such as sags, runs, air bubbles, air craters or poor intercoat adhesion. Neither the prime coat nor any other coat shall be walked upon or be subjected to any other abrading action until it has hardened sufficiently to resist mechanical damage.

15. PAINT SYSTEMS TO BE APPLIED.

15.1 General. The required paint systems and the surfaces to which they shall be applied are shown in paragraph 16 and on the drawings. Supplementary information follows:

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

(1) surfaces primed (only) in accordance with such standard practices are compatible with specified field-applied finish coats;

(2) surfaces that have been primed and finish painted in accordance with the manufacturer's standard practice are of acceptable color and are capable of being satisfactorily touched up in the field; and,

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

15.1.2 Colors and Tints. Colors and tints shall match the respective color specimens designated by, or shall otherwise be subject to the approval of, the Contracting Officer. Where specified or directed, alternate applications of successive undercoats having the same color shall be tinted with small amounts of lampblack or other approved ingredients, ground in a vehicle compatible with the paint being tinted, in order to ensure that all surfaces are properly coated with the specified number of paint coats. Tinting of vinyl-type paints shall be done by the manufacturer.

15.1.3 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 hereinbefore described.

15.2 Supplementary Application Instructions. Surfaces shall be coated with the system indicated in the schedule and/or as noted on the drawings in accordance with the following instructions:

15.2.1 System No. 4. This vinyl paint system shall be spray applied to an average dry film thickness of at least 7.5 mils for the completed system and the thickness at any point shall be not less than 6.0 mils. The specified total film thickness shall be attained in any event and any additional coats needed to do so shall be applied at no additional cost to the government. Attainment of the specified film thickness in fewer than the prescribed number of coats or spray passes will be acceptable provided heavier applications do not cause an increase in pinholes, bubbles, blisters, or voids in the dried film and



provided that not more than 2.0 mils (dry film thickness) per double spray coat, nor more than 1.0 mil per single spray pass, shall be applied in any event. See safety provisions and special directions for applying vinyl-type paints.

16. PAINTING SCHEDULES.

SYSTEM NO. 4

Items or Surfaces to be Coated: floodgates.

SURFACE PREPARATION	PAINT FORMULAS TO BE APPLIED				
	1ST COAT	2ND COAT	3RD COAT	4TH COAT	5TH COAT
White Metal	White Vinyl V-766e	Gray Vinyl V-766e	White Vinyl V-766e	Gray Vinyl V-766e	Gray Vinyl Blast V-766e
Blast Cleaning	(Double Spray Coat)	(Double Spray Coat)	(Double Spray Coat)	(Double Spray Coat)	(Double Spray Coat)

NOTE: GRAY VINYL PAINT COLOR APPROXIMATES COLOR CHIP 26231 OF FEDERAL (COLOR) STANDARD 595.

17. PROTECTION OF NON-PAINTED ITEMS AND CLEANUP. Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free of damage by paint or painting activities. Prompt cleanup of any paint spillage and prompt repair of any painting activity damage shall be required.

18. MEASUREMENT AND PAYMENT. No separate measurement or payment will be made for painting gates. Payment for painting these items for floodgates at Veterans Blvd. will be included in the contract lump sum price for "Miscellaneous Metalwork". Payment for painting metalwork for the floodgate near I-10 will be included in the contract lump sum price for "Floodwall Gate Near I-10".

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4.	BONDING, I-TYPE FLOODWALL	16640-1
5.	BONDING, BRIDGE ABUTMENT	16640-1
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## SECTION 16640 - CATHODIC PROTECTION

### PART 1 - GENERAL

1. SCOPE. The work covered by this section consists of furnishing all plant, labor, material and equipment required to electrically bond the piling as shown on the drawings and as specified herein to permit installation of a cathodic protection system.

#### 2. QUALITY CONTROL.

2.1 General. The Contractor shall establish and maintain quality control for bonding operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

- (1) Welds connecting No. 6 bar.
- (2) Installation of bond cables.

2.2 Reporting. One original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of report shall be prescribed in the General Provision entitled "CONTRACTOR QUALITY CONTROL".

### PART 2 - PRODUCTS

#### 3. BONDING.

3.1 Reinforcing Bar. A No. 6 reinforcing bar shall be used for electrically bonding sheet piles.

3.2 Bond Cables. Bond cables shall be cathodic protection, type CPS, cables, 7-strand, #4 AWG, Class B, uncoated annealed copper conforming to ASTM B 3 and B 8. Insulation shall be black, high molecular weight polyethylene. Insulation wall thickness shall be a minimum of 110 mils.

### PART 3 - EXECUTION

4. BONDING, I-TYPE FLOODWALL. The sheet piles shall be electrically bonded together with a No. 6 reinforcing bar and bond cables, welded to the piles as shown on the drawings. The bond cables shall be welded as specified in paragraph 6.

5. BONDING, BRIDGE ABUTMENT. The sheet piles shall be electrically bonded together with a No. 6 reinforcing bar and bond cables as indicated in paragraphs 4 and 6. The sheet pile of the abutment shall be bonded to the I-type wall with bond cables.

6. BOND CABLES. Bond cables shall be welded to the piling, using an exothermic type process. Welded joints shall be coated with Scotchcast Electrical Insulating Resin, or approved equal splicing epoxy to obtain a moisture proof joint. The welding process shall be such that the heat of welding will not damage the insulation on the wire. The welding process shall be the Cadweld process of Erico Products, Inc., or equal. Epoxy shall completely cover welded joints and extend two inches over cable insulation.

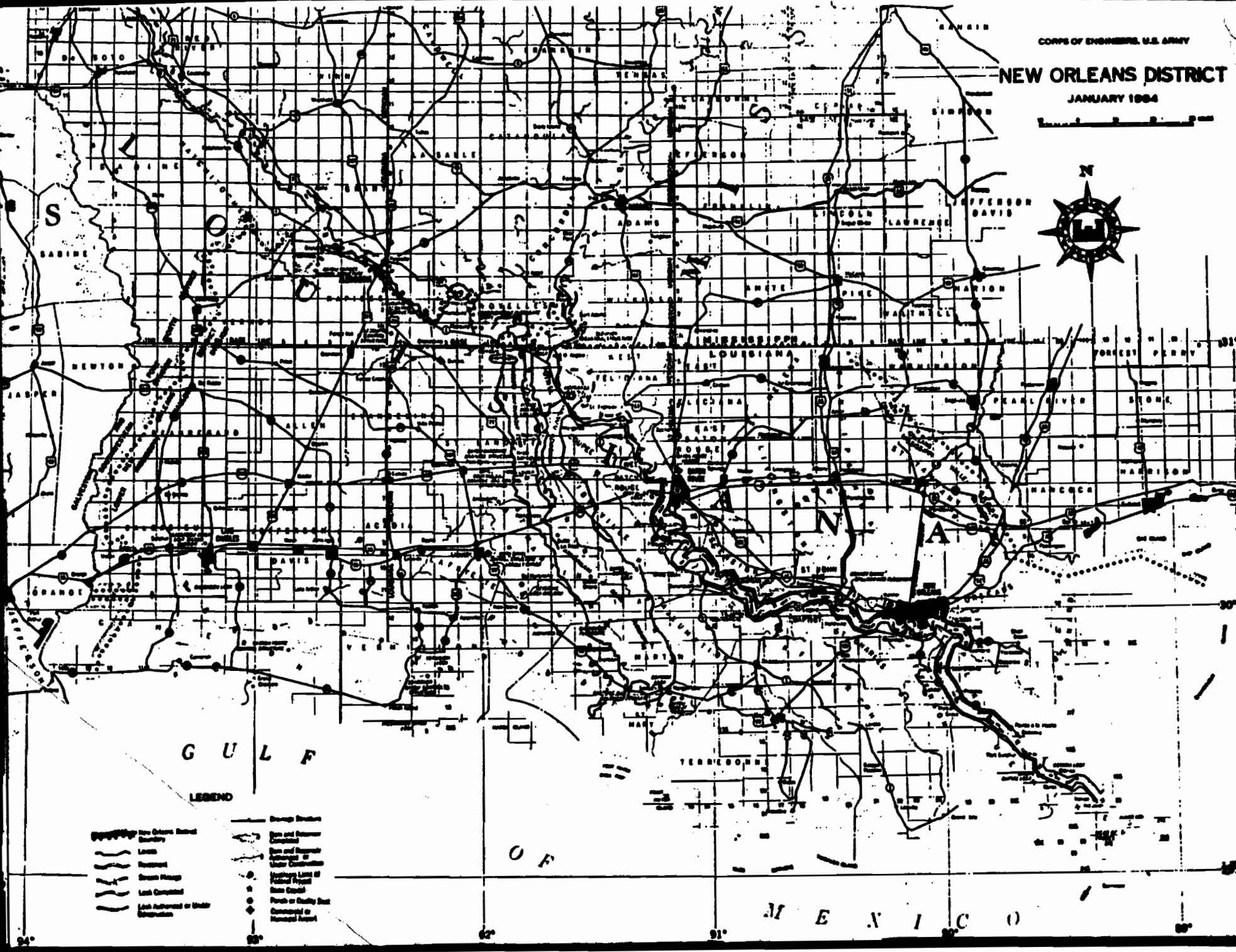
7. MEASUREMENT AND PAYMENT. No measurement will be made for the No. 6 reinforcing bars and flexible jumpers. Payment for furnishing and installing the No. 6 reinforcing bars and flexible jumpers will be included in the contract price for which the work is incidental.

CORPS OF ENGINEERS, U.S. ARMY

# NEW ORLEANS DISTRICT

JANUARY 1964

Scale: 1:500,000



### LEGEND

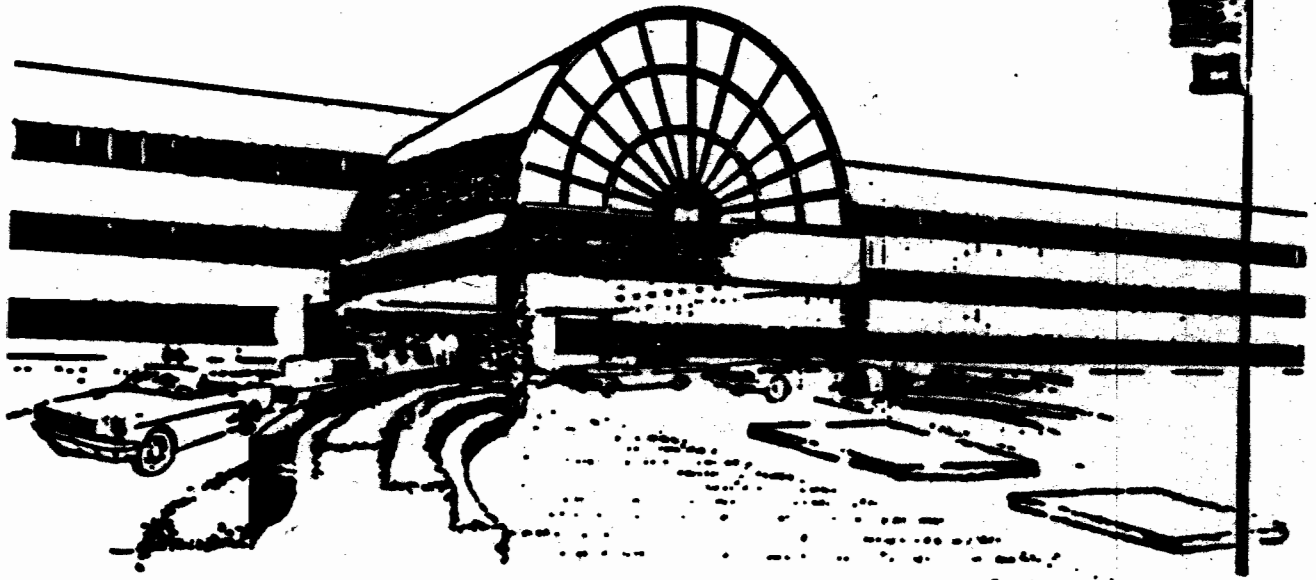
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|--|--|
|  | New Orleans District Boundary                      |
|  | Levee  |
|  | Railroad   |
|  | Stream Flow  |
|  | Lock Completed                                     |
|  | Lock Authorized or Under Construction              |
|  | Storage Structure                                  |
|  | Dam and Reservoir Completed                        |
|  | Dam and Reservoir Authorized or Under Construction |
|  | Working Limit of Flood Control                     |
|  | State Capital                                      |
|  | Parish or County Seat                              |
|  | Command or Regional Airport                        |

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M E X I C O

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Care"*



**NEW ORLEANS DISTRICT  
HEADQUARTERS**

